WINDSOR UTILITIES COMMISSION ELEVATED WATER TOWER – CLASS ENVIRONMENTAL ASSESSMENT

Project File Report

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Prepared by:
Stantec Consulting Ltd.

Project/File:
165620304

Stantec

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Prepared by:

Brooke Salter
Engineering Graduate

Prepared by:

Hannah Rindlisbacher, P.Eng., LEED Green Associate
Environmental Engineer

Reviewed by:

Dr. Jian Li, P.Eng., P.E.
Project Manager

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Executive Summary

General

Enwin Utilities Ltd. on behalf of the Windsor Utilities Commission (WUC) retained Stantec Consulting Ltd. to conduct a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for the purpose of identifying the most suitable solution to address infrastructure needs and potential areas of improvement, preferably one that can meet both short-term and long-term planning objectives for municipal water service in the City of Windsor and the surrounding municipalities which are served under the same scope. As a part of the WUC Water System Master Plan (WSMP) recommendations, a new elevated water tower and associated distribution and transmission system is proposed to be built in a southerly area of the City of Windsor. The new water tower is part of a broader initiative to address system vulnerabilities, particularly those related to pressure inconsistencies, and to meet future water demand projections, while replacing an existing water tower, which has exceeded 70 years of service.

The existing Hanna Water Tower (HWT), which is approaching the end of its useful life and set to be decommissioned, is meant to be replaced by the new Southerly Elevated Water Tower (SEWT) to mitigate potential operational issues related to hydraulic shock and pressure surges, as well as to maintain reliable service to Windsor, Tecumseh, and LaSalle. This decision arose as a part of the needs outlined in the WSMP related to strengthening water supply to those areas with less ideal service as well as projected requirements of the system into the year 2049.

A total of eight (8) location alternatives for the SEWT were identified and evaluated under several criteria. An InfoWater Pro hydraulic model was used to evaluate alternatives, identify associated infrastructure upgrades and assess impacts of decommissioning the HWT. Results from various preliminary investigations, such as the Geotechnical Investigation, Phase I and II Environmental Site Assessment (ESA), Stage 1 Archaeological Assessment and Natural Heritage Assessment were considered in conceptual design.

Identification of an economical and sustainable solution to the matter of adequate and effective water supply in the service areas is the primary goal of this Class EA. This Project File Report (PFR) is the documentation of the Schedule 'B' Class EA process outlined by the Municipal Engineers Association (MEA) for the Elevated Water Tower. The process included identification and evaluation of alternatives, identification of affected stakeholders, relevant government agencies and First Nation communities, findings from investigations, recommendation of the preferred alternative, and design concepts for the elevated tank, in addition to the public and agency consultation completed during the Class EA process.

This PFR comprises Sections 1 to 10, inclusive, and Appendices A to D, inclusive. A brief description of each section is as follows:

Section 1: Introduction

This section provides background information, previous Master Plan recommendations, description of the service area and facilities, purpose of the report, and a description of the Class EA process. This study and the resulting PFR are being undertaken in accordance with the requirements of the Municipal Class EA process.

Section 2: Planning Projections

This section of the report provides an overview of the anticipated storage and demand requirements for the areas serviced by the SEWT into 2049. This section also presents a summary of the projected population of the service area, proposed design criteria, and applicable design guidelines.

Section 3: Problem / Opportunity Statement

This section provides a gap analysis, identifies the problem statement, and establishes the project objective.

Section 4: Alternative Solutions

This section outlines the work undertaken in fulfilment of Phase 2 of the Class EA process. This section involves the identification and evaluation of various conceptual alternatives with the objective of determining alternative solutions which best address the identified problems and needs based on the potential impact to the natural, social, and economic environments.

1. Do Nothing
2. Restrict Community Growth
3. Rehabilitation of the Hanna Water Tower
4. Replace Hanna Water Tower with a New Southerly Elevated Water Tower

Section 5: Alternative Sites

This section includes the methodology and results of the site selection process undertaken as part of Phase 2 of the Class EA for the proposed new water tower. The section lists eight (8) alternative sites for the new water tower that were identified within a defined study area. Each site was evaluated using a set of weighted criteria to ensure a fair and transparent comparison. This process led to the selection of a preferred site based on overall suitability.

Section 6: Existing Conditions

This section provides a general description of the existing conditions in the Windsor-Essex County area, with reference to the defined study area, where the new water tower is to be located. Further, this section includes site-specific conditions based on field investigations, potential environmental impacts and mitigation measures and permitting considerations.

Section 7: Conceptual Design

This section of the report outlines the proposed conceptual design for the proposed new water tower and associated route alignment for the distribution system.

Section 8: Consultation

This section includes documentation of consultation with the public, review agencies, and Indigenous communities that occurred throughout Phases 1 and 2 of the Class EA study.

Section 9: Opinion Of Probable Cost

This section summarizes the opinion of probable cost for the recommended conceptual design.

Section 10: Conclusion

This section summarizes recommendations that are made with respect to this study.

1 Introduction

1.1 Overview

ENWIN serves as the community's integrated water supply system operator under contract with the legal owner of the local water production and distribution infrastructure, the Windsor Utilities Commission (WUC). ENWIN currently manages and controls the treatment and distribution of potable water to the City of Windsor, Town of LaSalle, and Town of Tecumseh. The existing water supply system draws raw water from the Detroit River through two intakes pipes that are connected to the A.J. Brian Pump Station (AJ Brian PS) and Old Low Lift Pump Station where low lift pumps deliver raw water for treatment at the Albert H. Weeks Water Treatment Plant (WTP) located at 3665 Wyandotte Street East in Windsor. The total capacity of the treatment facility is 268 MLD. Treated water is then stored and pumped into the distribution system with high lift pumping systems at both the AJ Brian PS and George Avenue Pumping Station (George PS) both located adjacent to the WTP. The WUC water system relies on approximately 157.8 ML of potable water storage provided in part, by Reservoirs D and G at the WTP, and distribution storage provided at the J.F. Cook Reservoir and Booster Pumping Station (JF Cook BPS), the Hanna Water Tower (HWT), and the Tecumseh Water Tower (TWT).

The WUC is proposing to construct a new Southerly Elevated Water Tower (SEWT) as recommended in the WUC Water System Master Plan (WSMP) 2023 Update. The existing Hanna Water Tower (HWT), which is currently used as a control of the high lift pumping at the WTP, is scheduled to be decommissioned by 2027 and replaced by a new SEWT. The capacity of the new water tower recommended in the 2023 WSMP is 8,000 m3 and the top elevation at 225.2 m for maintaining the required pressure and prevent overfilling under the design scenarios.

The SEWT is proposed to service the southeast portion of the service area with adequate pressure and velocity while maintaining water quality in the distribution system. Currently, the Central Corridor Feedermain which is in construction is integral to the function of the SEWT. This new dedicated Feedermain to the J.F. Cook Reservoir will address reservoir supply issues and pressure problems in the southeast area of Windsor while servicing the future needs of the Town of LaSalle, Town of Tecumseh, and the development areas around the Windsor airport.

The Elevated Water Tower Class Environmental Assessment (Class EA) is being undertaken in accordance with the Schedule B project EA requirements of the MCEA Municipal Class EA (June 2000, as amended in 2007, 2011, 2015, and 2023). In general, the study objective is to follow the planning process defined under the Environmental Assessment Act to arrive at an environmentally responsible and cost-effective solution to address the current and future demands of the integrated water supply system. This Project File Report will identify and evaluate a list of suitable sites for the new SEWT and preliminary route alignment options for the associated distribution system. Hydraulic modelling will also be used to support the evaluation and help establish the preferred solution including the SEWT location and dimensions (volume and height).

1.2 Background

1.2.1 Windsor Utilities Commission Water System Master Plan

The WUC developed a WSMP in 1988 which outlined the development plan for treatment, transmission, and storage facilities to meet the water supply needs for the 10-year period from 1988 to 1997. The preferred alternative for development of the water supply system was the rehabilitation and expansion of the existing Windsor Water Treatment Plant together with additional pumping stations, reservoirs, and transmission mains in the distribution system.

In 1994, the WUC expanded its water treatment capacity with the construction of the A.H. Weeks Water Treatment Plant adjacent to the existing Windsor Water Treatment Plant. This expansion increased the nominal treatment capacity to 349 MLD. The construction of the new treatment plant required the removal of 45.4 ML of existing reservoir storage capacity with the intention of replacing the lost storage capacity at a later date at a remote site in the east end of the water service area.

In 1997 the WUC completed a study of the water distribution system that included model analysis of the system using an updated hydraulic model. The system analysis considered four demand scenarios that included (1) 1996 existing system, (2) 1996 existing system plus Maidstone and Maidstone Hamlet, (3) 2010 with addition of Sandwich South (east), and (4) 2020 with addition of Tecumseh, St. Clair Beach, Belle River, and Rochester.

In 2001, the WUC upgraded its water treatment process with the addition of an ozonation system for primary disinfection and to control tastes and odors.

In 2004, the WUC, City of Windsor and Town of Tecumseh entered into a 50-year service agreement (Agreement) whereby the WUC would supply water to meet the current and future needs of the Town for the next 50 years.

The key elements of the agreement that have relevance to this Class EA are as follows:

1. The WUC will supply water to Tecumseh up to the Maximum Daily Flow of 87 MLD (19.16 MIGD).
2. Tecumseh is responsible for new storage works that may be required to supply Tecumseh's fire flow of water.
3. Storage for equalization and peak hour flow of water for Tecumseh is the responsibility of the WUC.

The WUC WSMP was then updated in 2009 to create a servicing plan forecast for the ultimate design year 2049 based on growth and demand projections. The 2009 WSMP recommended a number of infrastructure upgrades to address system vulnerabilities. Although the 2009 WSMP indicated that the WUC should consider decommissioning and/or relocation of the HWT due to an anticipated decrease in operating range as pumping rates of the A.J. Brian and George Avenue pumping stations increase, it was not identified as an infrastructure requirement.

Since 2009, the WSMP was updated in 2014, 2019 and most recently in 2023 to verify previous servicing strategies, population projections, and recommended infrastructure requirements.

The latest update of the WUC WSMP in 2023 analyzed and updated the following existing information:

- Existing water system and regulatory requirements
- City of Windsor, Town of Tecumseh, and Town of Lasalle growth projections
- Future water system demand and ultimate design criteria for 2049
- Hydraulic model analysis
- Timeline and cost for future infrastructure requirements

The 2023 WSMP hydraulic model was analyzed under ultimate conditions for design year 2049. One of the key constraints identified by this simulation was the limited operational range and flexibility of the HWT due to its proximity to the WTP and pressure control system. While system modeling indicates that the existing operating strategy is sufficient to meet the population projections up to 2049, the operating range will continue to decrease as the required pumping rates at the A.J. Brian and George Avenue pumping stations increase with future demands.

The HWT, which provides the water system with supplemental fire storage, pressure stabilization and surge suppression, was built in 1954 less than 5 kilometres southwest of the WTP with a height of 41 metres. Its pressure control system is designed to prevent overflow when pumping rates increase to meet system demand while maintaining acceptable residual pressures in the outer areas of the distribution system. Although the pressure control system at the HWT is effective at preventing overflows, water quality could become compromised if regular cycling of water in the Tower is not maintained. Hence, the 2023 WSMP recommended the replacement of the HWT with a new SEWT by 2027 to resolve these issues while servicing the future water demands due to growth of the Sandwich South and Tecumseh South areas.

Since the HWT provides some level of surge protection, the 2023 WSMP identified the need for additional system surge protection following the future decommissioning of the HWT. The proposed SEWT would also improve pressure conditions to the south and southeastern parts of the service area that are a considerable distance from the WTP. The 2023 WSMP also updated the recommended storage capacity of the new SEWT from 5.7 ML (equal capacity of the HWT) to 8.0 ML to maintain adequate system pressures and water quality under both current and future (2049) design scenarios.

1.3 Existing Water Supply System

1.3.1 Service Area

The WUC water supply system provides treated water to the City of Windsor, Town of LaSalle, and the Town of Tecumseh. The WUC service area is shown in **Figure 1.1** of **Appendix A**. The total serviced population in 2021 was 285,681 as per Statistics Canada 2021 Census of Population.

The City of Windsor is located in Southwestern Ontario on the south shore of the Detroit River and Lake St. Clair directly across from the City of Detroit, Michigan. The population of Windsor is 229,660 (2021 Canadian Census) with a total land area of approximately 14,602 hectares. Settlement in the Windsor area dates to the 1700's with a population of 200 being reported in 1836 and 2,500 in 1892. Development generally started along the riverfront and progressed southernly away from the river as the population increased. The Windsor Census Metropolitan Area (which includes the Towns of Amherstburg, LaSalle, Lakeshore, and Tecumseh) is the 14th largest metropolitan area in Canada.

The Town of LaSalle is located south of the City of Windsor and east of the Detroit River. The population of LaSalle is 32,721 (2021 Canadian Census) with a total land area of approximately 6,496 hectares. The Town is named after the French explorer, René-Robert Cavelier, Sieur de La Salle, as French settlers first established roots in the area in the mid-1700s. The Town of LaSalle was originally incorporated in the Township of Sandwich West. In 1991, the Township changed its status to that of a Town, and it was renamed LaSalle.

The Town of Tecumseh is situated east of the City of Windsor and south of Lake St. Clair. The population of Tecumseh is 23,300 (2021 Canadian Census) with a total land area of approximately 9,459 hectares. The community was previously known as Ryegate until 1912 when it was renamed Tecumseh in honour of Tecumseh, a Shawnee Warrior who was killed at battle in the War of 1812. In 1999, three historic communities (former Town of Tecumseh, former Village of St. Clair Beach, and former Township of Sandwich South) were amalgamated into the new Town of Tecumseh.

1.3.2 Facilities

The Albert H. Weeks WTP located in East Windsor, was commissioned in 1994 and upgraded in 2001 to use Ozone as the primary disinfectant. Previously, raw water from the Detroit River was treated at both the WTP and the Old Water Treatment Plant (Old WTP) for a combined treatment capacity of 349 MLD. However, in 2022, the Old WTP was decommissioned which reduced the total treatment capacity from 349 MLD to 268 MLD.

The following is a tabulation of the WUC water supply system components and their corresponding capacities:

Water Treatment Plants	
A.H. Weeks WTP	268 MLD
Total Treatment Capacity	**268 MLD**
High Lift Pumping Stations	
A.J. Brian High Lift Pumping Station	285.7 MLD
George Avenue High Lift Pumping Station	181.8 MLD
J.F. Cook Booster Pumping Station	56.5 MLD
Total High Lift Firm Pumping Capacity	**524 MLD**
Treated Water Storage Facilities	
Reservoir D (A.H. Weeks WTP)	35.0 ML
Reservoir G (A.H. Weeks WTP)	68.1 ML
J.F. Cook Reservoir	44.5 ML
Hanna Water Tower	5.7 ML
Tecumseh Water Tower	4.5 ML
Total Treated Storage Capacity	**157.8 ML**
Watermain Network	
1,100 km of pipe ranging in sizes from 150 mm to 1050 mm diameter, all operating under a single pressure zone	

1.4 Class Environmental Assessment

1.4.1 The Environmental Assessment Act

The Ontario Environmental Assessment Act (the Act) aims to protect, conserve, and effectively manage the natural, social, cultural, built, and economic environments as undertakings are planned and implemented in Ontario. The Act provides a means for the public or interested groups to receive the needed assurances that the environment is being protected from adverse effects on any significant public project. If there are necessary adverse effects on the environment, the public also needs assurance that all essential measures are being taken to minimize these impacts. The proponent is to weigh the impacts of several possible alternative ways to achieve the desired objective and to select the best alternative based on a thorough examination of each.

The Act recognized that certain municipal undertakings occur frequently, are small in scale, have a generally predictable range of effects or have relatively minor environmental significance. To ensure that a degree of standardization in the planning process is followed throughout the Province, the Act provides for the preparation of Class EAs for approval by the Ministry of Environment, Conservation, and Parks. A Class EA is an approved planning document that specifies the processes for which the proponent agrees to follow. The work undertaken in preparation of this study report follows the planning and design process of the Municipal Engineers Association (MEA) Class EA, October 2000, as amended in 2007, 2011, 2015, and 2023.

1.4.2 The Process

This report also serves as a statement for public use in the decision-making process under the Act. Municipal staff and consultants can use the Class EA process in planning, design, and construction of projects to ensure that the requirements of the Act are met. Granted the approved Class EA procedure is followed, the implementation of projects within the Class EA does not require further approval under the Act. There are three approval mechanisms available to the proponent under the Class EA:

- **Eligible for Screening to Exempt** (Previously known as Schedule A or Schedule A+) projects are limited in scale, have minimal adverse environmental effects, and include several normal or emergency municipal maintenance and operational objectives. Projects listed in these schedules are now exempt from the Act.
- **Schedule B** projects generally include improvements and minor expansions to existing facilities. In these cases, there is a potential for some adverse environmental impacts and therefore the proponent is required to proceed through a screening process including consultation with those who may be affected.
- **Schedule C** projects generally include the construction of new facilities and major expansions to existing facilities. These projects proceed through the environmental assessment planning process outlined in the Class EA and require preparation of an Environmental Study Report (ESR) to document the planning process.

Figure 1.2 in **Appendix A** illustrates the steps followed in the planning and design of projects covered by the Municipal Class EA. The Municipal Class EA identifies a project that "generally included improvement and minor expansions to existing facilities," or "establish new or expand/replace existing water storage facilities to be a Schedule 'B' project. This project is being completed under the Municipal Class EA as a Schedule B activity.

The procedure for a Schedule 'B' undertaking is indicated below:

Phase 1 Identification of the problem or opportunity.

Phase 2 Identification of alternative solutions to the problem, consultation with review agencies and the public, selection of the preferred solution, and identification of the project as Exempt, Eligible for Screening to Exempt, or a Schedule B or C activity. Preparation of a Project File Report (PFR) to document the planning, evaluation, and consultation process for the project.

1.4.3 Purpose of Report

This PFR has been prepared to document the planning and decision-making process followed under the Municipal Class Environmental Assessment (MCEA) for a Schedule 'B' project. The purpose of this study is to identify and evaluate alternative solutions to address the defined problem statement related to the replacement of the Hanna Water Tower (HWT).

The PFR outlines the rationale for the project, describes the planning and consultation process, and documents the evaluation and selection of a preferred solution. This includes:

- Identification of the problem or opportunity;
- Development and evaluation of alternative solutions;
- Consultation with review agencies, Indigenous communities, and the public;
- Selection of the preferred solution; and
- Development of a conceptual design for the SEWT.

The evaluation and decision-making process has been guided by the goal of minimizing potential impacts on the natural, social, cultural, and economic environments. Where potential impacts are unavoidable, appropriate mitigation measures have been identified.

This report documents the completion of Phases 1 and 2 of the Class EA process, in accordance with the requirements for Schedule 'B' projects

2 Planning Projections

2.1 Population Growth Projections

As per the 2023 WSMP, the City of Windsor's population growth projections to 2049 were based on the Multi-Residential Interim Control By-law Study conducted by Altus Group Economic Consulting as well at the City's Official Plan. The Towns of LaSalle and Tecumseh population growth projections to 2049 were carried forward from the 2019 WSMP Update. The population growth projections and methodology of future demand allocation were reviewed with ENWIN during the development of the 2023 WSMP.

As part of this Class EA, the population projections from the 2023 WSMP were reviewed. It was noted that the 2021 population used in the 2023 WSMP for LaSalle and Tecumseh differed from the Statistics Canada 2021 Census of Population. Hence, the 2021 population projections were updated according to Statistics Canada values.

The growth rate used to project the populations in the 2023 WSMP was compared to the Statistics Canada historical growth rate from 2016 to 2021. The historical growth rate is much lower than the rate applied in the 2023 WSMP projections. Considering that many future developments are planned within the service area; and the Ontario government's strategy to increase the housing density across the province as per the 2022 Ontario Housing Affordability Task Force Report, it is anticipated that future population growth rate will exceed historical growth rates. Therefore, the 2023 WSMP growth rates were applied to the updated 2021 Statistics Canada population to project the population to 2049 for this Class EA.

Based on population data obtained from the 2023 WSMP and Statistics Canada, the population serviced by the integrated water supply system is forecasted to increase from 285,681 persons in 2021 to 387,378 persons in 2049. Table 2-1 below compares the 2023 WSMP population projections with the projections calculated in this Class EA for Windsor, LaSalle, and Tecumseh.

Table 2-1: 2021 and 2022 Treated Water Volumes Pumped

Year	Windsor		LaSalle		Tecumseh		Total	
	Class EA	2023 WSMP	Class EA	2023 WSMP	Class EA	2023 WSMP	Class EA	2023 WSMP
2021	229,660	229,660	32,721[(1)]	29,001	23,300[(1)]	23,450	285,681	282,111
2024	233,806	233,806	40,885	36,238	26,478	26,648	301,169	296,692
2029	240,441	240,441	49,050	43,475	28,091	28,272	317,581	312,188
2034	245,408	245,408	57,216	50,712	37,771	38,015	340,395	334,135
2039	250,374	250,374	65,381	57,948	47,451	47,757	363,206	356,079
2044	254,295	254,295	73,547	65,185	47,451	47,757	375,293	367,237
2049	258,216	258,216	81,711	72,422	47,451	47,757	387,378	378,395

Note:

1. The 2021 population used in the 2023 WSMP for LaSalle and Tecumseh differed from the Statistics Canada 2021 Census of Population. Hence, the 2021 population projections were updated according to Statistics Canada values.

2.2 Water System Demands

2.2.1 WUC Annual Reports

As per WUC's 2021 and 2022 Annual Reports, the WUC water supply system pumped a total of 35,072 ML and 36,338 ML, respectively, of potable water for use by the citizens of the City of Windsor, Town of LaSalle and Town of Tecumseh, as well as the industrial, commercial, and institutional customers within the service area Table 2-2 below presents the volume of water pumped in 2021 and 2022.

Table 2-2: 2021 and 2022 Treated Water Volumes Pumped

Month	Windsor		LaSalle		Tecumseh		Total	
	2021	2022	2021	2022	2021	2022	2021	2022
January	2,346	2,291	120	180	206	216	2,673	2,687
February	2,138	2,118	210	204	188	190	2,536	2,512
March	2,257	2,280	236	227	205	209	2,698	2,716
April	2,089	2,188	242	210	213	211	2,544	2,609
May	2,560	2,534	269	264	291	262	3,120	3,060
June	2,621	2,713	414	399	330	287	3,365	3,399
July	2,637	2,991	328	429	301	416	3,266	3,836
August	2,823	2,908	437	407	390	382	3,650	3,697
September	2,458	2,634	328	362	387	378	3,173	3,374
October	2,294	2,276	236	280	281	313	2,811	2,869
November	2,101	2,209	229	232	246	260	2,576	2,701
December	2,175	2,393	253	242	231	241	2,659	2,877
Total	**28,500**	**29,534**	**3,303**	**3,436**	**3,269**	**3,367**	**35,072**	**36,338**

2.2.2 Design Criteria and Water System Demands

Design criteria and water system demands outlined in the 2023 WSMP were established using 2020-2022 SCADA data from pumping stations, storage facilities, and revenue meters. Tecumseh's design criteria are consistent with the design criteria from their 2018 Water and Wastewater Master Plan Update. The percentage of residential and non-residential consumption for Windsor and LaSalle was carried forward from the 2019 WSMP. The design criteria used in the 2019 and 2023 WSMP updates are summarized in **Table 2-3**, **Table 2-4**, and **Table 2-5** below.

Table 2-3: City of Windsor Design Criteria (from 2023 and 2019 WSMP)

Design Criteria	2023 WSMP		2019 WSMP
	Existing	Future	Existing & Future
Residential and Non-Residential Consumption Rate (L/c/d)	356	419	437
Residential Split Percentage	52%	52%	52%
Non-Residential Split Percentage	48%	48%	48%
Residential Water Use (L/c/d)	185	218	227
Non-Residential Water Use (L/c/d)	171	201	210
Maximum Day Demand Factor	1.45	1.47	1.47
Peak Hour Demand Factor	2.43	2.28	2.28

Table 2-4: Town of LaSalle Design Criteria (from 2023 and 2019 WSMP)

Design Criteria	2023 WSMP		2019 WSMP	
	Existing	Future	Existing	Future
Residential and Non-Residential Consumption Rate (L/c/d)	300	350	300	350
Residential Split Percentage	100%	100%	100%	100%
Non-Residential Split Percentage	0%	0%	0%	0%
Residential Water Use (L/c/d)	300	350	300	350
Non-Residential Water Use (L/c/d)	0	0	0	0
Maximum Day Demand Factor	1.80	1.80	1.80	1.80
Peak Hour Demand Factor	2.70	2.70	2.70	2.70

Table 2-5: Town of Tecumseh Design Criteria (2023 and 2019 WSMP)

Design Criteria	023 WSMP		2019 WSMP
	Existing	Future	Existing & Future
Residential Consumption Rate (L/c/d)	239	347	347
ICI Consumption Rate (L/ha/d)	14,759	21,430	21,430
Highway Service Centre Consumption Rate (L/ha/d)	-	28,000	28,000
Maximum Day Demand Factor	1.74	2.00	2.00
Peak Hour Demand Factor	3.45	3.00	3.00
Residential Consumption Rate (L/c/d)	239	347	347
IC Consumption Rate (L/ha/d)	14,759	21,430	21,430

2.2.3 Review of Population Growth & Water Demands from Previous Studies

The 2021 and 2022 population along with the total treated water volumes from **Table 2-2** were used to compute estimated equivalent mixed-use consumption rates for Windsor, Tecumseh and LaSalle and compared with the consumption rates used in previous studies. The 2022 population for each Municipality was estimated based on the method described in **Section 2.1**. The review of this design criteria is summarized in the following sections below.

2.2.3.1 Windsor

Considering that Windsor's equivalent mixed-use consumption rates for 2021 and 2022 (340 L/c/d and 350 L/c/d) are lower, yet comparable to the residential consumption rate from the 2023 WSMP; the current rate of 356 L/c/d will be carried forward.

As per Ministry of Environment, Conservation and Parks (MECP) Design Guidelines for Drinking-Water Systems, typical maximum day demand factor and peak hour demand factors for populations greater than 150,000 is 1.50 and 2.25, respectively. The existing peaking factors used for Windsor in the 2023 WSMP are comparable to MECP typical values.

Table 2-6: Comparison of Equivalent Mixed-Use Consumptions Rates with 2023 WSMP

Design Parameter	Windsor
2021	
2021 Statistics Canada Population	229,660
2021 Total Treated Volume (ML)	28,500
2021 Equivalent Mixed-use Consumption Rate (L/c/d)	**340**
2022	
2022 Estimated Population (WSMP linear growth rate)	231,042
2022 Total Treated Volume (ML)	29,534
2022 Equivalent Mixed-use Consumption Rate (L/c/d)	**350**
2023 WSMP Values	
Residential Consumption Rate (L/c/d)	**356**
Maximum Day Demand Factor	1.45
Peak Hour Demand Factor	2.43

2.2.3.2 LaSalle

The LaSalle equivalent mixed-use consumption rates calculated for 2021 and 2022 (277 L/c/d and 266 L/c/d) validate the use of the residential consumption rate from the 2023 WSMP. Since the 2023 WSMP rate of 300 L/c/d is higher, it will be used as the current consumption rate for LaSalle.

As per MECP Design Guidelines for Drinking-Water Systems, typical maximum day demand factor and peak hour demand factors for populations of 25,001 to 50,000 is 1.80 and 2.70, respectively. Therefore, the peaking factors used for LaSalle in the 2023 WSMP are equal to the MECP typical values.

Table 2-7: Comparison of Equivalent Mixed-Use Consumption Rates with 2023 WSMP

Design Parameter	LaSalle
2021	
2021 Statistics Canada Population	32,721
2021 Total Treated Volume (ML)	3,303
2021 Equivalent Mixed-use Consumption Rate (L/c/d)	**277**
2022	
2022 Estimated Population (WSMP linear growth rate)	35,443
2022 Total Treated Volume (ML)	3,436
2022 Equivalent Mixed-use Consumption Rate (L/c/d)	**266**
2023 WSMP Values	
Residential Consumption Rate (L/c/d)	**300**
Maximum Day Demand Factor	1.80
Peak Hour Demand Factor	2.70

2.2.3.3 Tecumseh

As per Tecumseh's 2018 Water and Wastewater Servicing Master Plan, the design criteria are broken down into three rates: Residential, Industrial/Commercial/Institutional (ICI), and Highway Service Centre. The Tecumseh equivalent consumption rates calculated for 2021 and 2022 (384 L/c/d and 379 L/c/d) are higher than the residential consumption rate used in the 2023 WSMP. This is expected as the 2021 and 2022 Total Treated Volume accounts for the potable water supplied to residents of Tecumseh as well as industrial, commercial, and institutional customers. Therefore, the residential, ICI, and Highway Service Centre consumption rates from the 2023 WSMP will be carried forward for the proposed design criteria.

In accordance with MECP Design Guidelines for Drinking-Water Systems, typical maximum day demand factor and peak hour demand factors for populations of 10,001 to 25,000 is 1.90 and 2.85, respectively. Therefore, the peaking factors used for Tecumseh in the 2023 WSMP are comparable with the MECP typical values.

Table 2-8: Comparison of Equivalent Mixed-Use Consumption Rates with 2023 WSMP

Design Parameter	LaSalle
2021	
2021 Statistics Canada Population	23,300
2021 Total Treated Volume (ML)	3,269
2021 Equivalent Mixed-use Consumption Rate (L/c/d)	**384**
2022	
2022 Estimated Population (WSMP linear growth rate)	24,359
2022 Total Treated Volume (ML)	3,367
2022 Equivalent Mixed-use Consumption Rate (L/c/d)	**379**
2023 WSMP Values	
Residential Consumption Rate (L/c/d)	**347**
ICI Consumption Rate (L/ha/d)	21,430
Highway Service Centre Consumption Rate (L/ha/d)	28,000
Maximum Day Demand Factor	2.00
Peak Hour Demand Factor	3.00

2.2.4 Proposed Design Criteria

Based on the review of design criteria from previous studies in **Section 2.2.3** above, the 2023 WSMP existing and future design criteria were validated and carried forward. The following design criteria is proposed for the 2049 design year as outlined in **Table 2-9** and **Table 2-10** below.

Table 2-9: Windsor and LaSalle Proposed Design Criteria

Parameter	Windsor		LaSalle	
	2024 (Current)	**2049 (Future)**	**2024 (Current)**	**2049 (Future)**
Mixed Use Consumption Rate (L/c/d)	356	419	300	350
Max. Day Demand Factor	1.45	1.47	1.80	1.80
Peak Hour Demand Factor	2.43	2.28	2.70	2.70

Table 2-10: Tecumseh Proposed Design Criteria

Parameter	2024 (Current)	2049 (Future)
Residential Consumption Rate (L/c/d)	239	347
ICI Consumption Rate (L/ha/d)	14,759	21,430
Highway Service Centre (L/ha/d)	-	28,000
Max. Day Demand Factor	1.74	2.00
Peak Hour Demand Factor	3.45	3.00

2.2.5 Water System Demand Projections

The water system demands were projected for the current (2024) and future (2049) planning horizons. The 2024 projections were based on the population projections developed in this Class EA review and the proposed design criteria outlined in **Section 2.2.4**. The demand projections were then compared with those from the 2023 WSMP and presented in **Table 2-11** and **Table 2-12** below.

Table 2-11: Review of Current Water System Demands (2024 Scenario)

Scenario	Windsor		LaSalle		Tecumseh (1)	
	Class EA	2023 WSMP	Class EA	2023 WSMP	Class EA	2023 WSMP
Projected Population	233,806	233,806	40,885	36,238	26,478	26,648
Avg. Day Demand (MLD)	83.2	98.0	12.3	11.2	10.0	14.1
Max. Day Demand (MLD)	120.7	142.2	22.1	20.2	17.4	28.2
Peak Hour Demand (MLD)	202.3	238.7	33.1	23.5	34.6	42.3

Note:

1. Based on the water demand projections from Tecumseh's 2018 Water and Wastewater Master Servicing Plan, the ICI serviced area was projected at 250 hectares in 2026. To estimate the average day demand, 250 hectares of ICI serviced area was used for 2024.

Table 2-12: Review of Future Water System Demands (2049 Scenario)

Scenario	Windsor		LaSalle		Tecumseh (1)(2)	
	Class EA	2023 WSMP	Class EA	2023 WSMP	Class EA	2023 WSMP
Projected Population	258,216	258,216	81,711	72,422	47,451	47,757
Avg. Day Demand (MLD)	108.2	108.2	28.6	23.9	29.6	29.8
Max. Day Demand (MLD)	159.0	156.8	51.5	43.0	59.2	59.6
Peak Hour Demand (MLD)	246.7	263.3	77.2	64.5	88.7	89.3

Notes:

1. Based on the water demand projections from Tecumseh's 2018 Water and Wastewater Master Servicing Plan, the ICI serviced area was 130 hectares in 2016 and is projected to increase to 552 hectares at full build out by 2036 and beyond. To estimate the average day demand, 552 hectares of ICI serviced area was used for 2049.
2. As per Tecumseh's 2021 Official Plan, the Highway Service Centre development is estimated at 46 hectares.

2.2.5.1 Summary

After comparing the water demand projections from the 2023 WSMP with the projections developed in this Class EA review, it was observed that there is no significant difference. The projected 2049 total maximum day demand as per the 2023 WSMP is 259.4 MLD, whereas the 2049 total maximum day demand calculated in this Class EA is 269.7 MLD. The difference in the future total maximum day demand is less than 4%. Therefore, it is recommended that the population and water system demand projections used in the 2023

WSMP be carried forward and adopted into this Class EA to maintain consistency. The following water system demand projections to be adopted in this Class EA are presented in **Table 2-13**Error! Reference source not found. below.

Table 2-13: Future Water System Demands (2049 Scenario)

Parameter	Windsor	LaSalle	Tecumseh	Total Service Area
Projected Population	258,216	72,422	47,757	378,395
Avg. Day Demand (MLD)	108.2	23.9	29.8	161.9
Max. Day Demand (MLD)	156.8	43.0	59.6	259.4
Peak Hour Demand (MLD)	263.3	64.5	89.3	417.1

2.3 Storage Requirements

2.3.1 MECP Design Guidelines

The MECP Design Guidelines for Drinking Water Systems outlines a method for sizing treated water storage facilities. The method is based on the following:

Total Treated Water Storage Requirement = A + B + C

Where:

A = Fire Storage;

B = Equalization Storage (25% of Maximum Day Demand); and

C = Emergency Storage (25% of A + B)

According to the MECP Design Guidelines, a serviced population exceeding 40,000 persons requires a fire flow of 378 L/s to be available for a duration of 6 hours. The calculated storage requirement for this fire flow is 8.16 ML.

2.3.2 WUC 2023 WSMP Update

The 2023 WSMP evaluated the treated water storage requirements based on the MECP Design Guidelines described in **Section 2.3.1** above. The storage requirements projected to 2049 from the 2023 WSMP are summarized in **Table 2-14** below:

Table 2-14: Projected Storage Requirements to 2049 (from 2023 WSMP)

Scenario	MECP Fire Consideration			Storage Requirement (ML)		
	Suggested Fire Flow (L/s)	Duration (hrs)	Fire (A)	Equalization (B)	Emergency (C)	Total (A+B+C)
2021	378	6	8.2	37.7	11.5	57.4
2024	378	6	8.2	47.6	14.0	69.8
2029	378	6	8.2	50.8	14.7	73.7
2034	378	6	8.2	53.8	15.5	77.5
2039	378	6	8.2	61.4	17.4	87.0
2044	378	6	8.2	63.1	17.8	89.1
2049	378	6	8.2	64.8	18.3	91.3

The existing system's total treated storage capacity is 157.8 ML. Comparing the existing total treated water storage capacity of 157.8 ML with the projected total storage requirement of 91.3 ML in 2049, no additional water storage facilities are required within the planning horizon.

3 Problem Statement

3.1 Gap Analysis

A gap analysis was performed in order to support the definition of the problem or opportunity statement for the SEWT Class EA. Gap analysis for this project includes (1) defining the current state of the water system (2) identifying the desired state of the water supply system, and (3) identifying the current gaps between the current and desired state of the water supply system. Through this gap analysis, problems, or opportunities for improvements of the WUC water supply system have been identified and specific actions / requirements to address these issues are summarized.

Table 3-1 outlines the gap analysis for this Class EA.

Table 3-1: Gap Analysis

Description	Current State	Desired State	Gap
Central Corridor Feedermain (CCFM)	The Central Corridor Feedermain is currently in the design and construction phase.	The Central Corridor Feedermain is commissioned.	Complete design phase, award construction and complete construction and commissioning.
J.F. Cook Reservoir and Booster Pumping Station (BPS)	Inflow/outflow restrictions with pressure problems in the south and southeastern parts of the service area.	J.F. Cook Reservoir levels are maintained under a reasonable range and pressure conditions improved in south and southeastern parts of the service area.	Completion of the CCFM construction which pumps water directly from the A.J. Brian PS to the J.F. Cook Reservoir and BPS.
Southerly Elevated Water Tower (SEWT)	The SEWT was proposed to provide elevated storage near the outer boundaries of the water system and maintain regular cycling to maintain water distribution system quality.	The SEWT is commissioned.	- Completion of Schedule 'B' Class EA to identify the preferred solution for the new SEWT - Enhanced Conceptual Design of the new SEWT - Completion of CCFM, WM Cook(1) , WM1b(2) and WM11(3) construction as identified in the 2023 WSMP Update. - Completion of detailed design phase, award construction, and complete construction of new SEWT.
Hanna Water Tower (HWT)	The HWT is 70 years old with a capacity of 5.7 ML and located in proximity to the WTP. The existing pressure control system enhances distribution system pressures while preventing overflows. However, compromised water quality in the HWT is anticipated as pumping rates increase at the A.J. Brian PS and George PS due to lack of regular water cycling.	Hanna Tower is decommissioned and demolished.	- - Assess impacts of decommissioning the HWT. - - Transient Analysis of the system with the new SEWT in service and HWT removed. - - Completion of Schedule 'B' Class EA for the new SEWT - - Enhanced Conceptual Design of the new SEWT - - Completion of CCFM and associated trunk watermains to the new SEWT - - Commissioning of the new SEWT

Notes:

1. WM Cook is the 900 mm diameter watermain that was recommended to connect the J.F. Cook PS to Howard Avenue.
2. WM1b is the 900-1200 mm diameter watermain that was recommended to connect the J.F. Cook PS to the system.
3. WM11 is the 1050 mm diameter watermain that was recommended to service a new elevated water tower.

The 2023 WSMP Update indicated that these new additional watermains are required to fill the new elevated water tower and for better utilization of the new elevated tower to equalize and maintain operating pressures.

3.2 Problem Statement

Based on the foregoing, the problem may be stated as follows:

The existing HWT has limited operational flexibility and is unable to efficiently maintain acceptable system pressures and water quality to service future growth and increased water system demands from the south and southeastern parts of the service area. The HWT has exceeded 70 years of service and is approaching the end of its useful life.

4 Alternative Solutions

The previous sections of this PFR provide background information regarding this project and outline the problem / opportunity statement for the Elevated Water Tower in fulfillment of Phase 1 of the Class EA process. The following sections present the details of work undertaken as part of Phase 2 of the Class EA process. Phase 2 involves the identification and evaluation of various conceptual alternatives with the objective of determining alternative solutions which best address the identified problems and needs based on the potential impact to the natural, social, and economic environments.

The criteria used to develop the alternative design solutions were based on generally accepted principles and previous experience. The criteria included the following:

- Application of current engineering practices and standards;
- Adherence to applicable laws and regulations;
- Economic considerations;
- Operation and maintenance issues;
- Health and safety;
- Acceptability to concerned stakeholders; and
- Feasibility of implementation.

The Municipal Class EA process in Ontario defines the requirements for the development of a reasonable range of alternatives including a Do-Nothing option to provide a benchmark for the evaluation process. The development of potential alternatives should also consider technical feasibility, social impact, natural environmental impacts, and economic impacts. The purpose of this section is to consider reasonable solutions to the defined problem. Some solutions may be touched upon briefly but not considered as viable options for further evaluation due to unacceptable social, economic, and/or natural environmental impacts.

4.1 Introduction

In this section of the report, alternative design solutions will be identified and screened to lead to the selection of the recommended solution. The Windsor Utilities Commission (WUC) Water System Master Plan (WSMP) was originally developed in 2009 and subsequently updated in 2014, 2019 and 2023. The 2009 WUC WSMP identified a number of infrastructure requirements to address system vulnerabilities and growth demands to 2049. The proposed works in the 2023 WSMP Update align with the original 2009 WUC WSMP recommendations to replace the HWT with a new SEWT. In addition to the recommendations of the WSMP, three additional conceptual alternative solutions were proposed to address the identified problem statement. The following broad planning level alternative solutions have been considered and will be outlined in the following sections:

Alternative No. 1: Do Nothing

Alternative No. 2: Restrict Community Growth

Alternative No. 3: Rehabilitation of the Hanna Water Tower

Alternative No. 4: Replace Hanna Water Tower with a New Southerly Elevated Water Tower

4.2 Evaluation Criteria

The four alternative solutions were evaluated based on a variety of social, natural environmental, economic, technical, and cultural heritage criteria. These evaluation criteria were developed based on servicing needs for the existing water system, applicable municipal plans / commitments, design principles, and past industrial experience. The evaluation criteria are as follows:

Technical Criteria:

- Ability to meet current and future servicing needs;
- Ability to meet acceptable pressure and velocity requirements in WUC and MECP guidelines;
- Constructability, implementation timeline, and phasing; and
- No adverse impacts on existing water system.

Social Criteria:

- Noise, vibration, odour, or air pollution emissions;
- Permanent changes or impacts to society / community;
- Development policies and agreements; and
- Ability to increase development and improve housing supply.

Natural Environmental Criteria:

- Impacts to vegetation, fish and wildlife, areas of natural and scientific interest, environmentally sensitive areas, and soil / geology;
- Regulatory compliances; and
- Development and planning policies.

Economic Criteria:

- Capital, operational and maintenance (O&M) costs; and
- Ability to improve development and generate economic growth.

Archaeological, Cultural Heritage and Built Heritage Criteria:

- Impacts to archaeological sites or areas of archaeological potential; and
- Impacts to known or potential built heritage resources and cultural heritage landscapes.

The advantages and disadvantages of each alternative together with their effects on the socioeconomic and natural environment are discussed in the following sections.

4.3 Description and Screening of Alternative Solutions

4.3.1 Alternative No. 1: Do Nothing

4.3.1.1 Overview

The “Do Nothing” option sets a benchmark for the evaluation and is a required component of the Municipal Class EA process. This option assumes that nothing is done to address the stated problem and the existing HWT would continue to be used for control of the high lift pumping at the WTP. Although this may be an acceptable short-term solution, this is not considered a viable long-term solution.

4.3.1.2 Screening Result

In terms of the evaluation criteria, this solution would not address future servicing needs. Due to the limited operational flexibility of the HWT, there is a lack of water cycling (inflow/outflow) which creates a concern for potentially compromised water quality. This alternative also does not provide adequate pressure and velocity (in accordance with MECP Design Guidelines for Drinking Water Systems) to residents of the City of Windsor, Town of Tecumseh, and Town of LaSalle for the 2049 design year.

Overall, it is clear the do-nothing approach will have an adverse economic impact due to the stagnation of development. This alternative does not address the future increase in servicing demands, maintenance of adequate pressure, velocity, and water quality in the distribution system. For these reasons, Alternative No. 1 – Do Nothing was not considered a viable solution as it does not solve the problem statement, it was not carried forward for detailed evaluation.

4.3.2 Alternative No. 2: Restrict Community Growth

4.3.2.1 Overview

Under this strategy, HWT would continue to be used for control of the high lift pumping at the WTP. Community development or growth would be limited in the southeast portion of the service area to maintain adequate pressure and velocity to existing residents in the service area. Although this may be an acceptable short-term solution, this is not considered a viable long-term solution.

4.3.2.2 Screening Result

In terms of the evaluation criteria, this solution would not address future servicing needs. Due to the limited operational flexibility of the HWT, there is a lack of water cycling (inflow/outflow) which creates a concern for potentially compromised water quality. It would not allow for an increase in housing supply within the service area, which represents a significant opportunity to generate socio-economic growth. This alternative cannot maintain water quality in the distribution system.

Similarly, to Alternative No. 1, Alternative No. 2 – Restrict Community Growth was not considered a viable solution as it does not solve the problem statement, it was not carried forward for detailed evaluation.

4.3.3 Alternative No. 3: Rehabilitation of the Hanna Water Tower

4.3.3.1 Overview

This strategy consists of modifications or improvements to the existing HWT. The rehabilitation work could involve any necessary architectural or structural upgrades to the HWT, mechanical upgrades such as a mixing system to improve water age, and modifications to the HWT controls and pumping rates at the A.J. Brian PS and George PS to increase the operating range. Although this may be an acceptable short-term solution, this is not considered a viable long-term solution.

4.3.3.2 Screening Result

In terms of the evaluation criteria, this alternative may temporarily address the limited operating range, but the HWT is still located 5 km from the WTP and the need for adequate pressure and velocity to the future growth areas on the South end of the service area would not be met. Water demands may not be met if the pumping rates at the A.J. Brian PS and George PS were restricted, this would exacerbate the pressure issues in the south and southeastern ends of the service area. The HWT is also 70 years old so there is an increased risk of potential failure and lack of environmental compliance with the aging infrastructure.

Alternative No.3 – Rehabilitation of the Hanna Water Tower was not considered a viable solution as it does not provide a long-term solution to the overall problem statement; it was not carried forward for detailed evaluation.

4.3.4 Alternative No. 4: Replace Hanna Water Tower with a New Southerly Elevated Water Tower

4.3.4.1 Overview

This alternative involves the construction of a new SEWT closer to the future growth areas in the south and southeastern ends of the service area. Once commissioning of the new SEWT is complete, the HWT would be decommissioned.

4.3.4.2 Screening Result

In terms of the evaluation criteria, this solution would address the limited operating range of the HWT without adverse impacts to the rest of the water supply system. This solution would provide adequate pressure and velocities to service future growth and increased water system demands from the south and southeastern parts of the service area. The new SEWT would be located further from the WTP which will promote regular water cycling and avoid potential impacts to the water quality.

There is low potential for impacts to the natural environment with this solution as the future site would likely be located in an area that is zoned as commercial or industrial. The impact to the social environment is positive as it allows for future housing development and increased water pressure to the outer boundaries of the service area. No significant noise, vibration, odour, or air pollution emissions are anticipated with the new

SEWT. There is potential for impacts to the archaeological, built heritage, and/or cultural heritage resources depending on the future site, but this will be considered in the evaluation of site alternatives. Although this solution may have the highest capital cost investment, operation and maintenance costs are expected to be lower in comparison to Alternative No.3 which involves maintaining a water tower that is over 70 years old.

Overall, it is clear that replacing the HWT with a new SEWT would maintain water quality in the system and service future growth with adequate pressure and velocity to the south and southeastern parts of the service area. In consideration of the factors discussed above, Alternative No. 4 – Replace Hanna Water Tower with a New Southerly Elevated Water Tower was carried forward as the preferred alternative which is consistent with the recommendations of the 2009 WUC WSMP and subsequent WSMP updates.

5 Alternative Sites

This section outlines the methodology and results of the site selection process undertaken as part of Phase 2 of the Class EA for the proposed new water tower. The process began with the identification of a suitable study area, followed by the identification of eight (8) alternative sites within this area. To ensure a fair and transparent evaluation, a set of criteria was established to assess the suitability of each site. These criteria were applied using an evaluation weighting tool to reflect the relative importance of each factor. This process allowed for a clear and objective comparison of the alternatives, leading to the selection of the preferred site for the new water tower.

5.1 Study Area for New Water Tower Site

The general "Study Area" is established as the south and southeastern areas of the City of Windsor, including Wards 9, 10 and the eastern portion of Ward 1 (Highway 401 being the western limit). The study area encompasses the region within which potential sites for the new water tower were identified. Its boundaries were determined by the need for a strategic location that serves the service area and maintains proximity to existing and planned infrastructure. Refer to **Figure 5.1** in **Appendix A** of the Study Area.

The WUC WSMP identified the Walker Road/Provincial Road intersection area as the preferred location for the new water tower. A total of eight (8) alternative sites were identified within the Study Area as potential locations to construct the new water tower, four (4) of which are within the Walker Road/Provincial Road intersection area. The following sections include a description of each site. Refer to **Figure 5.2** in **Appendix A** which consists of a map indicating the location of each site.

Consideration must also be given to the height limitations imposed by Windsor Airport for any structures located within prescribed areas surrounding the airport. Refer to **Figure 5.3** in **Appendix A** for the boundaries of the Windsor Airport's height restricted zone.

5.2 Description of Alternative Sites

5.2.1 Site No.1

Site No.1 is the 1.48-hectare parcel of land northeast of the Provincial Road and Walker Road intersection adjacent to 4680 Walker Road. This site is less than 100 m from the 1,050 mm diameter trunk watermain on Provincial Road and approximately 14 m from a drainage outlet. The site is zoned as CD3.6 (General Commercial, Combined Use) and the land immediately south of this site is a commercial building called 'Rogers Pools & Spas'. The closest residential property line is about 180 m from the site. Site access is directly available from an arterial road (Walker Road).

5.2.2 Site No.2

Site No.2 is the 0.85-hectare parcel of land southeast of the Provincial Road and Walker Road intersection adjacent to 4730 Walker Road. This site is less than 5 m from the 600 mm diameter trunk watermain on Provincial Road and approximately 10 m from a drainage outlet. The site is zoned as CD4.1 (Highway Commercial) and abutting the Canadian National Railway. The closest residential property line is about 190 m from the site. Site access is directly available from an arterial road (Provincial Road).

5.2.3 Site No.3

Site No.3 is the 0.89-hectare parcel of land on 7th Concession Road northwest of the Windsor Christian Fellowship church and across 4405 7th Concession Road. This site is 667 m from the 1,050 mm diameter trunk watermain on Provincial Road and approximately 14 m from a drainage outlet. The site is zoned as MD1.2, (Light Industrial with Limited Commercial) and abutting the Canadian National Railway. This site is not immediately adjacent to any commercial or business operations, but several are located across the street. The closest residential property line is about 615 m from the site. Site access is directly available from a collector road (7th Concession Road).

5.2.4 Site No.4

Site No.4 is the 1.40-hectare parcel of land located at 4845 Walker Road. This site is 290 m from the 1,050 mm diameter trunk watermain on Provincial Road with a municipal drain along the property limits at Walker Road. The site is zoned as CD2.2, (General Commercial, Combined Use Building) but it is designated as a Special Policy Area under the City of Windsor's Official Plan with additional permitted use for dwelling units or a combined use building. While there are no commercial or business operations immediately adjacent to this site, it is located alongside residential properties on Juliet Crescent. Site access is directly available from an arterial road (Walker Road).

5.2.5 Site No.5

Site No.5 is the 1.45-hectare parcel of land northeast of the Marentette Avenue and Sydney Avenue intersection next to 3110 Marentette Avenue. This site is 530 m from the 750 mm diameter trunk watermain on Howard Avenue with a municipal drain along the north property limits. The site is zoned as MD1.1, (Light Industrial with Limited Commercial) and immediately adjacent to a few industrial and commercial buildings. The closest residential property line is about 240 m from the site. Site access is directly available from a collector road (Marentette Avenue).

5.2.6 Site No.6

Site No.6 is the 1.35-hectare parcel of land northeast of the Provincial Road and Walker Road intersection, and east of Site No.1. This site is 128 m from the 600 mm diameter trunk watermain on Provincial Road and approximately 68 m from a drainage outlet. The site is zoned as A, (Agricultural) and abutting the Canadian

National Railway. The lands immediately adjacent to this site are also zoned as 'Agricultural.' The closest residential property line is about 318 m from the site. Site access is not directly available from a collector or arterial road, and the construction of an access road would be required.

5.2.7 Site No.7

Site No.7 is the 0.33-hectare parcel of land at 1425 Division Road. This site is 44 m from the 1,050 mm diameter trunk watermain on 6th Concession Road and approximately 15 m from a drainage outlet. The site is zoned as CD4.1, (Highway Commercial) and the Performance Ford dealership is located directly west of it. The closest residential property line is about 27 m from the site. Site access is directly available from an arterial road (Division Road).

5.2.8 Site No.8

Site No.8 is the 0.55-hectare parcel of land at 4690 Walker Road. This site is less than 5 m from the 600 mm diameter trunk watermain on Provincial Road and approximately 10 m from a drainage outlet. The site is zoned as CD3.6 (General Commercial, Combined Use) and immediately north of this site is a commercial building called 'Rogers Pools & Spas'. There is also a cellular tower located at this site. The closest residential property line is about 200 m from the site. Site access is directly available from an arterial road (Provincial Road) but due to the orientation of this property on the corner, the site cannot be accessed from Walker Road.

5.3 Evaluation Criteria for New Water Tower Site

Evaluation criteria were developed and categorized to assess potential short-term and longer-term impacts of the alternative site locations. The evaluation criteria consist of five major evaluation categories each with a subset of specific considerations including, technical/operational factors, social impacts, economic factors, impacts to the natural environment, and archaeological and cultural heritage impacts. This section presents detailed rationale for each criterion and outlines the weighting tool used to determine a ranking for each alternative.

The evaluation criteria are as follows:

Technical/Operational Criteria:

- Proximity and Ease of Connection to Existing Watermain
- Site Access
- Available Pressure and Fire Flows in the Distribution System (via Hydraulic Modelling)
- Proximity to Drainage Outlet
- Geotechnical Suitability

Social Criteria:

- Impacts on Adjacent Land Uses During Construction and Post Construction
- Proximity to Residential Areas
- Zoning Requirements
- Property Ownership

Environmental Criteria:

- Impacts to the Natural Environment

Economic Criteria:

- Overall Cost: Land Acquisition, Site Work and Watermain Improvements

Archaeological/Heritage Criteria:

- Impacts to Archaeological, Built Heritage and Cultural Heritage Resources

5.3.1 Technical/Operational Criteria

Criteria No. 1 – Proximity and Ease of Connection to Trunk Watermain

The objective of this criterion is to evaluate the alternative locations in terms of proximity and ease of connection to a trunk watermain. The proposed water tower will maintain adequate water supply and operating pressure to the local distribution system, and as such requires connection to a water transmission main. It is also important to evaluate the alternative sites based on their proximity to a trunk watermain to minimize costs and construction related impacts. The scoring for this criterion is assigned as follows:

1. Site is located more than 200 m from available trunk infrastructure.
2. Site is located between 100 m and 199 m from available trunk infrastructure.
3. Site is located between 0 m and 99 m from available trunk infrastructure.

Criteria No. 2 – Site Access

The site should have direct access to a collector or arterial road in order to avoid construction costs associated with permanent access road construction and to minimize construction traffic related nuisances and operations related traffic in residential areas. The scoring for this criterion is assigned as follows:

1. Site access is not directly available and access road construction is required.
2. Site access is directly available from local streets.
3. Site access is directly available from a collector or arterial road.

Criteria No. 3 – Available Pressure and Fire Flows in the Distribution System (via Hydraulic Modelling)

The objective of this criterion was to evaluate the alternatives based on the available pressure and fire flows in the distribution system. Hydraulic modelling will be used to evaluate the sites for this criterion. The scoring for this criterion is assigned as follows:

1. Significant improvements to distribution system are necessary to maintain operating pressure and meet fire flow requirements.
2. Minor improvements to distribution system are necessary to maintain operating pressure and meet fire flow requirements.
3. No improvements to distribution system are necessary to maintain operating pressure and meet fire flow requirements.

Criteria No. 4 – Proximity to Drainage Outlet

The objective of this criterion was to evaluate the alternatives based on their proximity to a drainage outlet. The new water tower should be close to an appropriate drainage outlet for occasional draining of the water tower particularly during overflow events or for significant maintenance needs. Water from the overflow requires a drainage outlet structure which drains away from the tower. The scoring for this criterion is assigned as follows:

1. The site is between 300 m and 500 m of a receiving water body or appropriate drainage outlet.
2. The site is between 50 m and 299 m of a receiving water body or appropriate drainage outlet.
3. The site is within 49 m of a receiving water body or appropriate drainage outlet.

Criteria No. 5 – Geotechnical Suitability

The objective of this criterion is to evaluate the subsurface suitability of the potential sites relative to each other for construction of an elevated water storage tower. Generally, the soil conditions will either be suitable for construction of the tower or are not suitable and some form of remediation may be required. The scoring for this criterion is assigned as follows:

1. Geotechnical conditions are not suitable for construction of an elevated water storage tank (regardless of whether soil remediation is required).
2. Geotechnical conditions are suitable for construction of an elevated water storage tank, but soil remediation is required.
3. Geotechnical conditions are suitable for construction of an elevated water storage tank and soil remediation is not required.

5.3.2 Social Criteria

Criteria No. 6 – Impacts on Adjacent Land Uses During Construction

The objective of this criterion was to evaluate the impacts on adjacent land uses, commercial or business operations during the construction of the water tower. The scoring for this criterion is assigned as follows:

1. Land uses, commercial or business operations are immediately adjacent to the site and will be significantly impacted during construction.
2. Land uses, commercial or business operations are not immediately adjacent to the site but will be moderately impacted during construction.
3. Land uses, commercial or business operations are not immediately adjacent to the site and there will be minimal impact during construction.

Criterion No. 7 – Proximity to Residential Areas

The objective of this criterion is to minimize impacts, perceived or real, of the elevated water tower on residential areas. The scoring for this criterion is assigned as follows:

1. Residential development, existing or proposed, is immediately adjacent the site.
2. Residential development is not immediately adjacent the site, however adjacent property is privately owned and potentially subject to future residential infill development.
3. Residential development, existing or proposed, is not immediately adjacent the site and adjacent property is publicly owned.

Criteria No. 8 – Zoning Requirements

The objective of this criterion is to evaluate the site based on zoning regulations. Ideally the preferred site would not require rezoning, as the approval process can be lengthy and expensive. There is also no guarantee that the rezoning request will be approved at the end of the process. The scoring for this criterion is assigned as follows:

1. The property requires rezoning.
2. The property does not require rezoning.

Criteria No. 9 – Property Ownership

The objective of this criterion was to evaluate the relative difficulty in obtaining property for the water tower site. Although expropriation is possible, there is additional time and cost involved. The possibility of success is questionable if it can be shown that there are alternative sites which are suitable for the tower that do not require expropriation. The scoring for this criterion is assigned as follows:

1. Land is privately owned and within the boundary of a development application plan or approved development plan.
2. Land is privately owned and currently not subject to a development application or approved development plan.
3. The City/Windsor Utilities Commission currently owns land.

5.3.3 Environmental Criteria

Criteria No. 10 – Impacts to the Natural Environment

The objective of this criterion was to consider the potential impacts to the natural environment including but not limited to vegetation, fish, wildlife, areas of natural and scientific interest, environmentally sensitive areas, soil/geology and aquatic or terrestrial habitats. The scoring for this criterion is assigned as follows:

1. Significant impacts to the natural environment from the construction and operation of the water tower are anticipated despite the implementation of mitigation measures.
2. Moderate impacts to the natural environment from the construction and operation of the water tower are anticipated with the implementation of mitigation measures.
3. Minimal impacts to the natural environment from the construction and operation of the water tower are anticipated regardless of the implementation of mitigation measures.

5.3.4 Economic Criteria

Criteria No. 11 – Cost

This criterion evaluates each alternative site based on overall economic considerations, including land acquisition, general site work, watermain improvements, and external servicing requirements. While the construction, operation, and maintenance costs of the water tower itself are assumed to be relatively consistent across all sites, key cost differences are expected to arise from:

- The cost and complexity of land acquisition (e.g., availability, ownership, and willingness of sellers);
- The extent of site preparation work (e.g., grading, access improvements); and
- Required watermain extensions or modifications.

The scoring for this criterion is assigned as follows:

1. High anticipated costs for land acquisition (e.g., privately owned, or difficult to acquire), site work, and watermain improvements relative to other sites.
2. Moderate anticipated costs in comparison to other sites.
3. Low anticipated costs for land acquisition (e.g., municipally owned or easily acquired), site work, and watermain improvements relative to other sites.

5.3.5 Archaeological/Heritage Criteria

Criteria No. 12 – Impacts to Archaeological, Built Heritage, and Cultural Heritage

The selected site should minimize impact to archaeological, built heritage and cultural heritage resources. The scoring for this criterion is assigned as follows:

1. Sites with high archaeological potential and/or individually designated as a heritage property under the Ontario Heritage Act.
2. Sites with medium archaeological potential and/or registered as a heritage property under the Ontario Heritage Act.
3. Sites with low archaeological potential and are not individually designated nor registered as a heritage property under the Ontario Heritage Act.

5.4 Evaluation Weighting Tool

A matrix evaluation system was developed to evaluate the alternative water tower sites. The evaluation included twelve (12) criteria, each assigned a weighting factor out of three (3) to reflect its relative importance or the difficulty of mitigating associated impacts. Each alternative site was then scored out of three (3) for each criterion. The total weighted score for each site was calculated by multiplying the score by the weight for each criterion and summing the results. The site with the highest total weighted score was selected as the preferred location for the new water tower. The following outlines the twelve (12) evaluation criteria and their respective weighting factors.

Table 5-1: Criterion Weighting

Criteria No.	Description	Weight
	Technical/Operational	
1.	Proximity and Ease of Connection to Trunk Watermain	2
2.	Site Access	2
3.	Available Pressure and Fire Flows in the Distribution System	3
4.	Proximity to Drainage Outlet	2
5.	Geotechnical Suitability	1
	Social	
6.	Impacts on Adjacent Land Uses During Construction and Post Construction	2
7.	Proximity To Residential Areas	2
8.	Zoning Requirements	3
9.	Property Ownership	3
	Natural Environment	
10.	Impacts to the Natural Environment	2
	Economic	
11.	Overall Cost	3
	Archaeological/Heritage	
12.	Impacts to Archaeological, Built Heritage, and Cultural Heritage Resources	3

5.5 Evaluation of Alternative Sites

In order to objectively compare the alternatives, an evaluation weighting tool was utilized as described in **Section 5.2** and **Section 0**. The evaluation of alternative water tower sites is presented in **Table 5-2** below.

Table 5-2: Evaluation of Alternative Sites

	Site No.							
Criterion (Weight)	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Proximity and Ease of Connection to Trunk Watermain (2)	3	3	1	1	1	2	3	3
Site Access (2)	3	3	3	3	3	1	3	3
Available Pressure and Fire Flows in the Distribution System (3)	3	3	3	3	3	3	3	3
Proximity to Drainage Outlet (2)	3	3	3	3	3	2	3	3
Impacts on Adjacent Land Uses During Construction (2)	1	2	3	2	1	3	1	2
Proximity to Residential Areas (2)*	3	3	3	1	3	3	2	3
Zoning Requirements (3) **	1	1	3	1	3	1	1	1
Property Ownership (3)***	2	2	2	1	1	2	3	2
Overall Cost: Land Acquisition, Site Work and Watermain Improvements (3)	1	1	3	1	1	1	1	2
Weighted Total	**47**	**49**	**59**	**38**	**46**	**43**	**48**	**52**

Notes:

Assumptions and justifications for the purpose of this evaluation are listed below:

*The Proximity to Residential Areas criterion was scored based on the distance from the alternative site property line to the nearest residential property line in relation to the other candidate sites and the zoning of surrounding land use.

** During pre-consultation with the City of Windsor's planning department, it was confirmed that a 'Water Transportation Facility' is permitted use on lands zoned MD1.1 or MD1.2. Based on this, sites with either of these zoning designations were assumed not to require rezoning and were given a score of 3 under Zoning Requirements. In contrast, sites zoned for commercial or agricultural use were assumed to require rezoning and were therefore scored a 1.

***Site No.4 was listed as a Special Policy Area under the City of Windsor's Official Plan Amendment to permit the use of this land for dwelling units. Site No.4 is privately owned and within the boundary of an approved development plan and therefore this site scored 1 point under the Property Ownership criterion. Site No.5 also scored 1 point under this criterion as it appears to be in the early stages of development.

***Site No.7 was purchased by the City of Windsor for the purpose of a road reconstruction project and therefore this site scored 3 points under the Property Ownership criterion. However, a portion of the adjacent site (Performance Ford Dealership) would need to be acquired in order to achieve space requirements.

***The remaining sites received 2 points under the Property Ownership criterion based on the assumption that they are all privately owned, with no evidence suggesting that any of them are part of a development plan.

As part of this evaluation, only the preferred site will undergo detailed field investigations, including geotechnical, natural heritage, and archaeological/cultural heritage assessments. As such, the following criteria were not included in the **Table 5-2** comparative evaluation of alternative sites, based on the assumptions and background information summarized below:

- Geotechnical Suitability: Soil conditions throughout the Windsor area are generally consistent, characterized by flat, heavy clay soils. Since all candidate sites are located within the same geographic area, they are considered equivalent in terms of geotechnical suitability for the purposes of this evaluation.
- Impacts on the Natural Environment: All alternative sites are situated in highly urbanized and previously disturbed areas with minimal remaining natural vegetation. Given the absence of significant natural features or undisturbed habitats, potential impacts to the natural environment are expected to be minimal and comparable across all sites.
- Impacts to Archaeological, Built Heritage, and Cultural Heritage Resources: A desktop review confirmed that none of the candidate sites are listed on the Windsor Municipal Heritage Register. All properties have experienced prior development and ground disturbance, reducing the likelihood of intact archaeological resources or heritage features. Therefore, these impacts are assumed to be low and consistent across all alternatives.

The preferred site, once confirmed through the EA process, will undergo the required field investigations to confirm geotechnical suitability, assess potential impacts on the natural and cultural environments, and identify any necessary mitigation measures during detailed design.

The results of the alternative sites evaluation are summarized in **Table 5-3** below:

Table 5-3: Evaluation Results – Alternative Sites Ranking

Rank	Site No.
1st	3
2nd	8
3rd	2
4th	7
5th	1
6th	5
7th	6
8th	4

5.6 Selection of the Preferred Water Tower Site

Table 5-2 provides an evaluation of the eight (8) alternative sites for the new SEWT. Based on the evaluation, Alternative Site No. 3 the 0.89-hectare parcel of land located on 7th Concession Road was identified as the preferred location.

In terms of technical and operational suitability, Site No.3 was favoured for its access directly from a collector road and proximity to a drainage outlet. However, additional off-site infrastructure upgrades are required to support the operation of the new SEWT at this site as it is located approximately 667 m from the closest trunk watermain on Provincial Road. Hydraulic modelling analyses were conducted for the top 5 shortlisted alternatives, Site No.'s 1, 2, 3, 7 and 8. Refer to Technical Memo No.4 in **Appendix C** for the results of the analyses.

Site No.3 scored well under the social criteria as it is located the furthest from residential lands compared to the alternative sites and minimal impacts to surrounding land uses are expected during construction. In addition, this site is zoned as MD1.2 (Light Industrial with Limited Commercial) and therefore will not require rezoning as 'Water Transportation Facility' is permitted under this zoning designation. Regarding property ownership, although this site is privately owned it is not subject to a development application or approved development plan.

Although the cost of Site No. 3 was comparable to that of the alternative sites, the real estate agent determined that the likelihood of successfully acquiring Site No. 3 within the required timeline was significantly higher than that of acquiring either of the other shortlisted sites (Site No. 2 and Site No. 8).

Site No.3 was not compared to the alternative sites with respect to geotechnical, natural heritage, and archaeological/cultural heritage assessments, as field investigations were only completed for the preferred site. A summary of the field investigations conducted at Site No.3 and the findings are presented in **Section 6.4.**

6 Existing Conditions

6.1 Introduction

Alternative ways to address the identified problems must be evaluated on the basis of the potential impact on the existing natural, social, and economic environments. The following sections provide a general description of the existing conditions in the Windsor-Essex County area, with particular reference to the Study Area, (as described in **Section 5.1**) where the new water tower is to be located. Further, this section also includes information about the existing conditions of the preferred site that was selected in **Section 5.6**.

6.2 Land Use Within the Study Area

6.2.1 Description of Land Use

The study area, encompassing Wards 9, 10, and the eastern portion of Ward 1 (Highway 401 being the western limit), includes a diverse mix of urban, suburban, and rural land uses reflective of Windsor's transitional southern boundary. Predominantly residential, the area features established neighbourhoods as well as newer suburban subdivisions, supported by institutional uses such as schools and community facilities. Commercial development is concentrated along arterial roads including Walker Road, Dougall Avenue, and Provincial Road, offering retail, service, and automotive uses. The Windsor Airport and surrounding lands introduce industrial, logistics, and airport-compatible uses, particularly near the southeastern edge of the study area.

Large tracts of undeveloped and agricultural land remain, especially near the Highway 401 corridor and along North Talbot Road, contributing to a rural character and providing opportunities for future growth. The area contains natural features such as woodlots, drainage corridors, and open spaces, which support ecological functions and inform stormwater management strategies. The City of Windsor's Official Plan designates this area for a range of uses including Residential, Business Park, and Future Development, aligning with the city's long-term growth and infrastructure planning objectives.

6.2.2 Ontario Provincial Policy Statement

The Provincial Planning Statement (PPS) is a consolidated statement of the government's policies on land use planning. The PPS was updated in 2024 under the Planning Act and, as such, all decisions affecting planning matters shall be consistent with the 2024 Provincial Planning Statement. The 2024 PPS integrates and replaces the previous 2020 Provincial Policy Statement and A Place to Grow: Growth Plan for the Greater Golden Horseshoe and contains policies across five key themes: generating an appropriate housing supply, making land available for development, providing infrastructure to support growth, balancing housing with environmental and agricultural protection, and implementing a streamlined and efficient planning process. The PPS is a key consideration for identifying land-use planning objectives and evaluating alternative design concepts.

6.2.3 Official Plan

The City of Windsor's Official Plan is a policy document that outlines the basic framework for how the City will evolve over the next 20 years. The purpose of the plan is to manage and direct City development in terms of social, economic, and environmental matters and goals. Windsor's Official Plan provides the policy framework for a timeline and sequence of new developments, development locations based on land use designations, strengthening existing and future neighbourhoods, enhancing Windsor's environment and municipal services and infrastructure needs. Municipal Official Plans are required under the Ontario Planning Act to ensure planning decisions are prepared in accordance with the Provincial Policy Statement.

In combination with Municipal Official Plans, the PPS outlines a framework for comprehensive planning that allows Ontario to sustain strong communities, a clean and healthy environment, and economic growth. The key approach for implementing the PPS is through Municipal Official Plans which identify provincial interests and present appropriate land use designations and policies for the local community. It is important that Municipal Official Plans are kept up to date with the PPS to protect provincial interests and ensure that development takes place in suitable areas. This proposed project is consistent with the City of Windsor's Official Plan.

6.3 Natural Environment Within the Study Area

6.3.1 Climate

The climate in Windsor-Essex County is classified as a humid continental climate, which has hot and humid summers with cold winters and adequate precipitation. In comparison with the other areas in the Province, Windsor-Essex County's southerly latitude and proximity to the lower Great Lakes provide for warmer summer and winter temperatures with a longer growing season. Because the area is also on one of the major continental storm tracks, it experiences wide variations in day-to-day weather including severe summer thunderstorms. The normal minimum and maximum temperatures are approximately –9 0C in January and +28 0C in July, respectively, and the mean daily temperature is above 7 0C, which can contribute to elevated surface water temperatures.

6.3.2 Geology and Physiography

The City of Windsor is located in the physiographic region of Southwestern Ontario known as the St. Clair Clay Plain. As the name suggests, the area is covered with extensive clay deposits. The topography of the area is extremely flat with the land sloping gradually in a south to north direction. The region is one of little relief, with elevations ranging from approximately 175 to 204 m above sea level.

Most of the bedrock under the region is sedimentary dolomitic limestone of the Devonian Age, which has a high calcium and magnesium content. The bedrock in the majority of Essex County is covered by glacial overburden ranging in thickness from roughly 3 m to 45 m, increasing from west to east. The parent soil material consists primarily of till (ground moraine) and lacustrine deposits, containing a considerable amount of limestone, appreciable amounts of shale and some igneous fragments.

Salt deposits are known to exist between depths of about 275 m and 455 m below ground surface, and these have been commercially extracted in the past by means of solution mining.

6.3.3 Soil and Subsurface Conditions

Soils within the region were formed from glacial till, glaciofluvial outwash and lacustrine deposits left by the glacial lakes that once covered the area. Most of the area is part of a smooth clay plain and the predominant soil types are Perth and Brookston clays, along with their associated clay loams, with some localized areas of sand and gravel. Developed from parent material rich in dolomitic limestone and shale, Perth clay is classified as imperfectly drained, while Brookston clay is considered poorly drained.

The soil in the eastern section consists mainly of fine sands with a wide density range, and the groundwater table approximately 3.1 m below the ground surface. Soils in the western section are primarily clay till, with an upper weathered zone of brown clay, a desiccated zone of brown clay at a depth of 2.1 to 4.6 m, and a plastic zone of gray clay from approximately 4.0 to 6.1 m deep. The long-term groundwater table in the western section is expected to be near the interface between the brown and gray clay layers. To minimize installations below the groundwater table, sewer systems have been designed with a minimum depth of 1.8 m to allow private service connections at 1.35 m below ground level. The system's shallow sewer depths require buildings with drainage fixtures below the sanitary invert to use sewage ejector pumps to lift raw sewage into the municipal sewer system.

In 2019, the MECP introduced Ontario Regulation 406/19 entitled *On-site and Excess Soil Management* under the Environmental Protection Act. All excess soil and waste materials generated during the construction process must be disposed of in accordance with O. Reg. 406/19.

6.4 Site Specific Conditions – Preferred Water Tower Site

6.4.1 Site Location and Description

The preferred water tower site (the Site) is a 0.89-hectare parcel of land on part of Lot 15, 7th Concession Road and across 4405 7th Concession Road. The eastern limit of the Site is delineated by the Canadian National Railway with an agricultural field beyond the railway tracks. The southern limit is delineated by the private property owned by the Windsor Christian Fellowship and the 7th Concession Road is the western limit. The Site is currently vacant and with no permanent structures and zoned as MD1.2 (Light Industrial with Limited Commercial) under the City of Windsor Zoning Bylaw 8600.

The following field investigations were performed at the Site, Natural Heritage Assessment, Stage 1 Archaeological Assessment, and Phase I and II Environmental Site Assessments (ESA). The following sections include a brief overview of the results from these investigations, additionally the reports can be found in **Appendix D** of this report.

6.4.2 Natural Heritage

A Natural Heritage Assessment was completed for the Site as part of this Class EA. The results of the desktop review and field investigation undertaken on July 19, 2025, are documented in the Natural Heritage Report, which can be found in **Appendix D**.

Vegetation and Land Cover

The southern limit of the Site is defined by a gravel laneway buttressed on one side with concrete blocks. The property to the south of the laneway is privately owned and was not surveyed. A slight depression (road ditch) runs parallel to the paved two-lane 7th Concession Road delineating the western limit. The road ditch becomes non-existent at the north end and is populated with grasses that have been mowed. Commercial properties with mowed grass are identified on the west side of 7th Concession Road. The north limit is defined by a shallow depression with vegetation comprised of secondary grasses including fescues, cattails, grape vine, milkweed, and traces of invasive Phragmites. A sparsely treed hedgerow runs along the eastern limit as a buffer between the Site and the agricultural field. Phragmites, willow and dogwood shrubs were observed within this hedgerow. The Site itself is comprised of densely packed gravel with secondary grasses intermixed in the north and secondary grasses and fescues in the southern half. The entirety of the Site was observed as routinely mowed. No Species at Risk vegetation including Butternut (Juglans cinerea) or Kentucky Coffee Tree (Gymnocladus dioicus) were observed.

Fish and Fish Habitat

During the field investigation, no water was observed within the 7th Street Drain that runs along the western limit of the Site. Essex Region Conservation Authority (ERCA) did not identify any fish habitat or Species at Risk to be associated with the 7th Street Drain or the tributary of the 7th Concession Drain.

Terrestrial Habitat

Through field investigations, no terrestrial Species at Risk or Species of Conservation Concern were observed.

Based on the lack of protective tree cover, the Site does not provide suitable habitat for bats. No suitable trees or snags existed to provide roosting habitat for bats. Foraging areas existing elsewhere near the vicinity. No potential breeding pools for amphibians were observed during the inspection. There may be potential for amphibian breeding and turtle nesting associated with the two drains during spring months when intermittent flows are possible. However, due to the urban environment, lack of habitat connectivity and the lack of adequate water flow in the Class F drains, it is unlikely that Blanding's Turtle would be found within the Site.

However, records of the Eastern Foxsnake (Pantherophis gloydi) and Butler's Gartersnake (Thamnophis butleri) were identified in the background review. The Eastern Foxsnake and Butler's Gartersnake are both listed as an endangered species under Ontario's Endangered Species Act. Based on the assessment, there is low potential for the Eastern Foxsnake and Butler's Gartersnake to be present within the Site.

6.4.3 Built Heritage Resources and Cultural Heritage Landscapes

The MCM's Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes checklist was completed for the Site. The checklist was applied to identify any indicators of built heritage value or cultural heritage landscape potential, including historical associations, architectural features, contextual relationships, and landscape characteristics. Based on the results of this desktop assessment, no features meeting the criteria for further cultural heritage evaluation were identified. In accordance with the guidance provided by the checklist, the study area is considered to have low potential for cultural heritage resources, and no additional cultural heritage investigations are required. The completed checklist for this study is provided in **Appendix D**.

6.4.4 Archaeological Resources

Stantec conducted a Stage 1 archaeological assessment (AA) (under Project Information Form number (PIF) P394-0142-2025) on August 8, 2025, for the Site. The Stage 1 Archaeological Assessment report was entered into the Ontario Public Register of Archaeological Reports as of December 5th, 2025. A Stage 1 AA consists of a review of geographic, land use and historical information for the property and the relevant surrounding area, and contacting MCM to find out whether, or not, there are any known archaeological sites on or near the property. Its purpose is to identify areas of archaeological potential and further archaeological assessment (e.g., Stage 2-4) as necessary. A copy of the Stage 1 AA report is included in **Appendix D**.

The Stage 1 property inspection determined that the entire study area has been subject to previous disturbance, supported by aerial photography which illustrates that the property had turned into a gravel and asphalt lot by at least the early 2000's. Remaining portions of an asphalt laneway and expanses of gravel beneath the overgrowth can be seen in the photo documentation from the property inspection.

The Stage 1 archaeological assessment determined that the Site retains low to no archaeological potential due to previous disturbance. Thus, in accordance with Section 1.3.2 and Section 7.7.4 of the MCM's 2011 Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011), a Stage 2 archaeological assessment is not required for any portions of the study area.

6.4.5 Phase I and Phase II Environmental Site Assessments

A Phase I Environmental Site Assessment (ESA) and subsequent Phase II ESA were completed for the Site. The Phase I ESA identified the presence of historical fill materials on-site as a potential environmental concern, leading to the Phase II ESA investigation.

The Phase II ESA confirmed that surficial fill materials across portions of the site exceed the applicable MECP Table 3 Industrial/Commercial/Community Soil Standards. Based on the findings, an estimated volume of surficial fill may require off-site disposal at a licensed waste facility if excavated during future construction activities. Alternatively, if the impacted fill is to remain on-site, appropriate risk management measures such as health and safety precautions, capping or hardscaping, and/or institutional controls should be incorporated into detailed design and construction planning.

The complete Phase I and Phase II ESA reports, including methods, detailed results, and volume estimates, are provided in **Appendix D**.

6.4.6 Site Drainage

The preferred site is subject to ERCA regulation under the Conservation Authorities Act. ERCA supports the preferred location for a new water tower identified as 4450 7th Concession Road. However, the property falls within the regulated area of the 7th Street Drain. Approvals from ERCA are required prior to any construction or site alteration or other activities affected by Section 28 of the Conservation Authorities Act.

6.4.7 Source Water Protection

The preferred location lies within the Event Based Area (EBA) of the Essex Region Source Protection Plan, which came into effect October 1, 2015. The Source Protection Plan was developed to provide measures to

protect Essex Region's municipal drinking water sources. As a result of these policies, new projects in these areas may require approval by the Essex Region Risk Management Official (RMO) to ensure that appropriate actions are taken to mitigate any potential drinking water threats. If the proposed works require the installation of fuel storage on site, the RMO must be contacted to ensure the handling and storage of fuel will not pose a significant risk to local sources of municipal drinking water.

6.4.8 Climate Change

Climate encompasses all aspects of weather, including temperature, precipitation, air pressure, humidity, wind speeds, and cloudiness. Weather and climate are not static processes and variability is often normal. Weather, for example, changes on a daily and sometimes hourly basis. Weather can also change on a monthly basis, through the changing of seasons. When climate changes on a global scale, it is referred to as Climate Change.

Since the beginning of the industrial revolution in the 18th century, excessive emissions of greenhouse gases, like carbon dioxide and methane, have been released through human activities, causing an increased percentage of solar radiation to be trapped in our atmosphere. In recent decades, the effect of this on climate has become clearer. As more energy is retained within the atmosphere, a general increasing trend in global temperatures has occurred.

Regardless of the cause, the average temperature in Windsor has increased by almost 1°C since 1940. As air temperatures increase, so does the capacity of the air to hold more water leading to more intense rainfall events. The closest Environment Canada weather station to the study area is the Windsor Airport weather station, it has been monitoring and recording weather data since 1953. Since this time, an increasing trend in annual precipitation has been documented.

The effects of climate change are expected to include an increase in the number and severity of storms, leading to increased precipitation. Since 1970, there has been increasing evidence of heavier short duration (24 hours or less) rain events in southern Ontario.

Climate changes related to increasing rainfall in the region have a significant impact on municipal sewer systems. The Windsor-Essex Region recently experienced a significant rainfall event that inundated and overwhelmed the area's sanitary and storm sewer system/facilities. In the last decade alone, this region has experienced six (6) significant storm events that have surpassed current 1:100-year regulatory standards and have resulted in urban flooding issues and sewer backups that have impacted hundreds of homes and businesses in the region. As such, historical data regarding the likelihood of major flooding events must be reconsidered. It is important that the proposed work for wastewater treatment continues to operate effectively in the future. A solution needs to be identified to provide resiliency to the impacts of climate change.

The City of Windsor’s Climate Change Adaptation Plan notes that focus needs to be directed towards the routes for mitigation and adaptation of climate change. The mitigation route includes sustainable transportation, energy efficiency, clean energy. The adaptation route consists of infrastructure upgrades, flood protection, health risk management and disaster management and business continuity. The Climate Change Adaptation Plan lists actions to accomplish both mitigating and adapting to climate change, such as agricultural diversification, water conservation, education, and natural environment preservation. **Table 6-1** which is obtained from The City of Windsor CCAP 2020 summarizes the historical rainfall data and rainfall projections.

Table 6-1: Historical Rainfall Averages and 2050 Rainfall Projections in Windsor

	Recent Past Avg. (1976-2005)	2021-2050 Projection
Annual Avg. Precipitation (mm)	**1256**	**1330**
Average yearly total precipitation is projected to increase		
Avg. Spring Precipitation (mm)	**301**	**323**
Rainfall is expected to fall faster, and shorter storms will have increasingly higher intensity		
Avg. Summer Precipitation (mm)	**240**	**253**
There is an expected increased evaporation rates from ground and lake surfaces.		
Avg. Winter Precipitation (mm)	**375**	**403**
Note: Winter precipitation rates and frequencies are expected to increase. More rainfall and freezing rain events instead of snow, as we progress further towards 2050.		

The Provincial Policy Statement (2024), which is issued under section 3 of the Planning Act and effective October 20, 2024, provides provincial policy direction on land use planning and development. The PPS 2024 continues to emphasize policy themes related to healthy, livable, and safe communities; settlement areas; infrastructure and public service facilities; sewage and water services; and stormwater management, while introducing more explicit provisions to support housing growth, facilitating intensification, and streamline planning processes.

To support climate-focused policy implementation, the Ontario MECP maintains guidance (e.g., Considering Climate Change in the Environmental Assessment Process), and Appendix 2 of the Municipal Class EA (2023) continues to encourage the integration of climate resilience elements such as drought, flooding, runoff and changing water levels in project planning.

6.5 Potential Environmental Impacts And Mitigating Measures

6.5.1 Overview

Table 6-2 provides a summary of potential environmental impacts and proposed mitigating measures for the recommended design. In general, the construction and operation of the recommended design will have a limited effect on the environment. The implementation of the proposed design may be disruptive to the surrounding community due to construction activities, but this impact is anticipated to be temporary. The impacts on air quality, noise, and vibration, and community life will be mitigated through standard construction procedures. It is anticipated that the proposed work will not have a significant effect on the natural environment such as wildlife, vegetation, or the habitat characteristics of any species given that the mitigation measures outlined in the following sections are followed. For more detailed information on mitigation measured related to natural heritage features, refer to the Natural Heritage Report, which can be found in **Appendix D**.

Table 6-2: Environmental Effects and Mitigating Measures

Operation	Impact	Mitigating Measures
Vegetation clearing such as cutting, digging, or trimming ground covers, shrubs, trees etc.	Potential removal of migratory bird habitat	Avoid vegetation clearing during the breeding season, which is generally from April 1 to August 31 in Southern Ontario.
	Disruption to the Eastern Foxsnake or Butler's Gartersnake (endangered species) movement patterns, breeding, nesting, or hibernation.	Exclusionary snake fencing to be erected around the Project Site prior to construction activities. If vegetation clearing is required during the active season from April 1 to November 30, it is recommended that qualified personnel are present at the Project Site. Perform a thorough visual search of the Project Site and equipment before work commences each day during the active season.
	Loss of valued vegetation features	Where possible, restore existing vegetation features to a preconstruction condition.
Trenching / tunnelling, excavation, and construction	Soil erosion and sediment transport to adjacent drainage ditches causing sedimentation and turbidity	Implement project-specific temporary Erosion and Sediment Control (ESC) measures prior to starting work. Stabilize materials that require stockpiling and keep a safe distance (> 30 m) from surface water features. Wash, refuel and/or service equipment a minimum of 30 m from surface water features to reduce the risk of deleterious substances entering the features.
	Temporary disruption of pedestrian and vehicle traffic	- Provide and maintain detours - Provide safe alternate routes with minimal inconveniences - Maintain a minimum of one lane of open traffic - If complete closure is required, emergency services will be advised in advance, and access will be restored at the end of each working day.
	Temporary disruption and inconvenience during construction to adjacent properties, buildings, and inhabitants	- Notify public agencies and neighbouring owners of construction activities - Prepare program for reporting and resolving problems - Ensure access is provided for emergency vehicles and personnel - Apply noise and vibration control measures - Apply dust control measures - Control emissions from construction equipment and vehicles - Use silencers to reduce noise - Comply with municipal noise by-laws - Pedestrian safety will be maintained through excavation barricades and construction fencing
	Decreased ambient air quality due to dust and other particulate matter.	- Avoid site preparation or construction during windy and prolonged dry periods. - Cover and contain fine particulate materials during transportation to and from the site.

Operation	Impact	Mitigating Measures
		- Instruct workers and equipment operators on dust control methods. - Spray water to minimize dust off paved areas or exposed soils. - Stabilize high traffic areas with a clean gravel surface layer or other suitable cover material. - Cover or otherwise stabilize construction materials, debris, and excavated soils against wind erosion.
	Disruption of tile and surface drainage systems.	- Provide for temporary drainage systems until final restoration is accomplished. - Avoid disturbing drainage systems during critical periods. - All existing culverts, tiles, and drainage systems to be restored to pre-construction conditions following construction.
Use of construction equipment	Contamination of surface water drains and public roadways from spills, leaks or equipment refueling.	- Use containment facilities. - Inspect equipment regularly for fuel and oil leaks. - Clean equipment before it travels off site.
	Decreased air quality due to vehicular emissions causing increased concentrations of chemical pollutants.	- Minimize operation and idling of vehicles and gas-powered equipment, particularly during local smog advisories. - Use well-maintained equipment and machinery within operating specifications.
	Introduction of non-native vegetation, including opportunistic species.	- Clean heavy machinery and equipment prior to transporting to new location.

6.5.2 Proximity to Railway Right-of-Way

The Site abuts a railway right-of-way; however, it is not located within the areas described in Section 5.60 of the City of Windsor Zoning By-law 8600, 'Railway Right of Way Provisions' and therefore the provisions listed in 5.60.1 would not apply. Although the 5.60.1 provisions are not applicable to the Site, correspondence with the City of Windsor's Planning Department on August 8, 2024, confirmed that the design would still need to abide by the provisions outlined in 5.60.5, 5.60.10 and 5.60.20. A copy of the correspondence and the City of Windsor By-law 8600 provisions can be found in **Appendix B.**

Transport Canada confirmed that the project does not trigger any requirements under the Railway Safety Act (RSA) because no railway infrastructure will be altered. Refer to Section 8.4 for more detail.

6.5.3 Proximity to Windsor Airport

The Site is located within the height restricted zone enforced by the Windsor Airport Zoning Regulations. The 'Outer Surface' is determined by a 4 km radius measured outwards from the geometric centre of the Windsor Airport. Any building, structure or object within the 4 km radius is restricted to a maximum height of 234.6 m above sea level (ASL) and further height restrictions are applicable to properties which fall within

'Approach/Takeoff Surfaces'. The height restriction of 234.6 m ASL applies to the Site for the proposed new water tower. Refer to **Figure 5.3** in **Appendix A** for the boundaries of the Windsor Airport's height restricted zone. A copy of the correspondence with the Windsor Airport can be found in **Appendix B.**

Transport Canada determined that an Aeronautical Assessment Form (AAF) must be submitted to the applicable Transport Canada Civil Aviation (TCCA) regional office at least 90 days prior to construction or erection of a building, structure or object that constitutes an obstacle to air navigation. Refer to Section 8.4 for more detail.

7 Conceptual Design

7.1 Alternative Elevated Water Tower Designs

In this section of the report, alternative elevated water tower designs are identified and evaluated to determine the recommended option. The following alternatives represent the most common types of elevated water towers used in Canadian municipalities and have been considered for the proposed design:

Alternative No. 1: Standpipe Tower

- A tall, cylindrical water tank, supported by a ground-level structure, with a height greater than its diameter.

Alternative No. 2: Multi-Column Elevated Tank

- A welded steel water tank with a central riser pipe running from ground level to the tank bottom, supported by multiple columns and reinforced with horizontal and diagonal bracing. It typically includes an exterior balcony around the tank.

Alternative No. 3: Spheroid (Hydrosphere) Tank

- A welded steel water tank with a flattened spheroidal shape, supported by a single pedestal. The tank is wider than it is tall, featuring an elliptical cross-section in one direction and a circular cross-section in the other.

Alternative No. 4: Composite Elevated Tank

- A welded carbon steel tank supported by a steel-reinforced concrete pedestal extending from the foundation.

To determine the preferred elevated water tower design, an evaluation of the four (4) alternatives was conducted, as shown in **Table 7-1**.

Table 7-1: Evaluation of Alternative Elevated Water Tower Designs

Criteria	Standpipe Tower	Multi-Column Elevated Tank	Spheroid (Hydrosphere) Tank	Composite Elevated Tank
Advantages	- Simple design - Durable (long lifespan and leak-resistant) - Low construction cost - Small footprint - Flexible aesthetics for community integration	- Proven design - Low construction cost - Easy external access - High structural stability (resistant to wind and seismic forces) - Moderate storage capacity	- Small footprint - High volume-to-surface area efficiency - High structural stability (resistant to wind and seismic forces) - Even pressure distribution - Consistent stored water temperature - Good aesthetics - Higher storage capacity - Ideal for medium to large communities	- Durable (long lifespan and corrosion-resistant) - Lower maintenance requirements (less periodic cleaning over service life) - High structural stability (resistant to wind and seismic forces) - Safer in failure scenarios - Modern aesthetic options - Internal access and storage - High storage capacity - Ideal for large communities
Disadvantages	- Low storage capacity - Limited to small communities - Uneven water pressure if poorly managed - Risk of thermal stratification in stored water - Higher maintenance due to cleaning and inspection challenges	- Large footprint - Poor aesthetics - Limited to small and medium communities - Requires insulation in cold climates - Higher corrosion risk - High maintenance requirements (exposed steel members need regular coating)	- Complex fabrication - High construction and installation costs - Complex maintenance due to lack of internal support structures and unique geometry - Limited suppliers - Not widely used in Ontario	- More complex design - Higher construction cost - Prone to cracking and damages which can be difficult to repair
Overall	Poor	Fair	Good	Great

7.2 Recommended Elevated Water Tower Design

Based on the evaluation, Alternative No. 4 – Composite Elevated Tank has been identified as the preferred solution. This proven design, with high storage capacity, reliably meets the changing demands of large communities. The tank is highly durable and corrosion-resistant, resulting in lower maintenance requirements and an extended service life. Its robust concrete pedestal provides high structural integrity, making it resistant to strong winds and seismic forces. The elevated design ensures consistent pressure distribution throughout the network, thereby supporting optimal system performance for present and future needs.

7.3 Preferred Design Approach

The design of the elevated water tower must account for sufficient storage capacity to maintain adequate water pressure throughout the distribution system, provide fire flow during emergencies, and meet peak demand periods. The MECP Design Guidelines for Drinking Water Systems outlines a method for sizing treated water storage facilities based on factors including projected population and fire flow requirements, ensuring the total treated water storage capacity across all facilities can accommodate the community's fluctuating demands. The elevated water tower shall be designed in accordance with the MECP guidelines.

7.4 Proposed Conceptual Design: Summary Of Preferred Alternatives

7.4.1 Site Selection

Following the evaluation in Section 5.5, the preferred location for the new SEWT was identified as Alternative Site No. 3, a 0.89-hectare parcel of land on 7th Concession Road. Technically, the site is well-suited as it provides direct access to a collector road and is located near a drainage outlet; however, additional off-site infrastructure upgrades will be required to connect to the nearest trunk watermain on Provincial Road. From a social perspective, the site minimizes impacts on surrounding lands during construction, is situated away from residential areas, and does not require rezoning or a development application. Economically, costs are comparable to other alternatives, but the likelihood of successful land acquisition is higher. Onsite assessments further support this selection: a Natural Heritage Assessment confirmed the absence of vegetation, fish, or terrestrial Species at Risk, and a Stage 1 Archaeological Assessment determined the site has low to no archaeological potential due to previous disturbance.

7.4.2 Elevated Water Tower Design Basis

The proposed conceptual design parameters for the elevated water tower are presented in **Table 7-2**.

Table 7-2: Proposed Elevated Water Tower Design Parameters

Design Parameters	
Type	Composite Elevated Tank
Storage Capacity	8000 m^3 or 8.0 ML
Tank Diameter	30 m
Pedestal Diameter	14 m
Tank Top Water Level	225.4 m ASL
Tank Low Water Level	211.7 m ASL
Operating Range	13.7 m
Type	Composite Elevated Tank

7.4.3 Recommended Watermain Upgrades

The InfoWater Pro model of the WUC Water Supply System was used to complete hydraulic analyses to evaluate the necessary watermain upgrades associated with proposed SEWT. The model was updated to include a new proposed 900 mm diameter watermain on 7th Concession Rd. The proposed watermain would run North along the 7th Concession Rd from Provincial Rd (where it will connect to a 1,050 mm watermain) to Division Rd (where it will connect to a 900 mm watermain). The proposed watermain is approximately 1.7 km in total length.

To improve system pressures by reducing headloss and create a continuous watermain from Provincial Rd to North Talbot Rd, two (2) watermains are recommended on 6th Concession Rd:

- 140 m of 300 mm diameter on 6th Concession Rd, connecting to the 1,050 mm on Provincial Rd and the 200 mm on 6th Concession Rd; and,
- 850 m of 300 mm on 6th Concession Rd, connecting to the 200 mm on 6th Concession Rd (at Holburn St) and the 300 mm on 6th Concession Rd (at N Talbot Rd).

The results of the hydraulic analyses are captured in detail in Technical Memorandum No.4 and the Addendum to Technical Memorandum No.4 which are found in **Appendix C**.

8 Consultation

The Municipal Class Environmental Assessment process for a Schedule B undertaking provides at least two points of contact where members of the public and review agencies are invited to review project information and provide input. These opportunities are designed to ensure that concerns and suggestions are considered in the planning and decision-making process. The following sections summarize the approach taken to facilitate public participation throughout this project.

8.1 Public Participation

A notice of commencement was originally published in the November 25th, 2023, edition of the Windsor Star and on the ENWIN/WUC website advising of the initiation of this Class EA undertaking and inviting public input. A copy of the notice and the Windsor Star ad are contained in **Appendix B.**

A Public Information Centre (PIC) was held on November 25, 2025, to provide information regarding this undertaking and to invite input and comment from interested people. Information on alternative solutions selected in Phase 2 of the Class EA process was available for review. The notice was published in the November 8th, 2025, edition of the Windsor Star and on the ENWIN/WUC website. A copy of the notice and the Windsor Star ad are contained in **Appendix B** along with a list of people who attended the PIC and a copy of the material that was given to all attendees.

8.2 Review Agencies

The Class EA provides for the involvement in the project by the MECP' s various branches as well as other provincial and federal ministries and outside agencies. The list of Review Agencies varies depending upon the scope of the project, its location, and the potential environmental impacts.

Emails were sent out to review agencies the week of November 27th, 2023, advising of the initiation of this project. Copies of the letter, notice of project commencement and the list of review agencies are contained in **Appendix B.**

The Notice of Public Information Centre was distributed to review agencies and mandatory contacts November 7th, 2025. A copy of the email, the notice and the distribution list are included in **Appendix B**.

8.3 Response From Public And Review Agencies

8.3.1 Notice of Project Commencement

The Notice of Project Commencement of the project did not generate any public response. The following responses (copies included in **Appendix B**) were received from review agencies and mandatory contacts.

- Ministry of the Environment, Conservation and Parks (MECP) – provided acknowledgement of Notice of Project Commencement on December 28th, 2023.
- Ministry of Citizenship and Multiculturalism (MCM) – provided acknowledgement of Notice of Project Commencement on December 12th, 2023.

- Transport Canada – advised in an email dated December 1st, 2023, that the proponent should self-assess whether the project will interact with a federal property and/or waterway and determine if approval and/or authorization is required under any Acts administered by Transport Canada.
- The Essex Region Conservation Authority (ERCA) – provided acknowledgement of Notice of Project Commencement on November 27th, 2023.
- Windsor International Airport (YQG) – provided acknowledgement of Notice of Project Commencement in an email dated December 11th, 2023, and expressed concerns regarding the location and height of the proposed ENWIN Elevated Water Tower in relation to airport operations.
- Windsor Police Service – provided acknowledgement of Notice of Project Commencement on November 30th, 2023. They have no comments or concerns at this time but requested to be kept informed as the study progresses.
- Town of Tecumseh – provided acknowledgement of Notice of Project Commencement on December 6th, 2023, and requested to remain an active participant throughout the Class EA process.

8.3.2 Public Information Centre

A total of five (5) people attended the PIC held on November 25th, 2025.

The written comments (copies included in **Appendix B**) were received from the following review agencies and mandatory contacts.

- Windsor Police Service – provided acknowledgement of the Notice of PIC and expressed interest in the presentation material on November 7th, 2025 . On November 25th, 2025, they noted they would like to be involved in the design phase for safety and security review.
- Ministry of Natural Resources (MNR) – provided acknowledgement of the Notice of PIC with the MNR Southern Region Information Package - For External Proponent Environmental Assessments on November 28th, 2025. They noted that if no MNR interests are identified based on the information in the package, there is no need to further circulate the MNR for the EA consultation process.
- The Essex Region Conservation Authority (ERCA) – acknowledgement of the Notice of PIC on December 10th, 2025. They noted that the preferred site is located within Event Based Area (EBA) of the Essex Region Source Protection Plan, if the proposed work requires fuel storage on site, approval is required by the Essex Region Risk Management Official (RMO). They also noted that the preferred site is within the regulated area of 7th Street Drain and will require approvals under Section 28 of the Conservation Authorities Act.
- Ministry of Citizenship and Multiculturalism (MCM) – provided acknowledgement of the Notice of PIC and advised on January 14th, 2026, that the Stage 1 Archaeological Assessment report and the completed screening checklist, Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes shall be included in the Project File Report.

In addition, some feedback from the public was received in response to the information provided at the Public Information Centre. ENWIN responded to residents' comments and concerns via email. Copies of the feedback and ENWIN's responses are included in **Appendix B.**

8.4 Transportation Agencies

Copies of correspondence with the Transportation Agencies listed below are available in **Appendix B.**

8.4.1 Transport Canada – Railway Safety Act

Transport Canada reviewed the proposed construction of the new water tower adjacent to the existing CN railway corridor. Transport Canada confirmed that the project does not trigger any requirements under the Railway Safety Act (RSA) because no railway infrastructure will be altered. As a result, no approvals or submissions to Transport Canada are required.

Transport Canada noted that municipal staff and contractors must comply with RSA Section 26.1, which prohibits unauthorized entry onto railway property. Transport Canada recommended that the ENWIN coordinate directly with CN to confirm sightline protection near nearby grade crossings and to address any railway-specific safety or setback considerations. Overall, Transport Canada identified no federal regulatory constraints related to rail safety that would affect the feasibility of the project.

8.4.2 Transport Canada – Aeronautics Act

Transport Canada Civil Aviation (TCCA) noted that proponents are responsible for ensuring compliance with all aeronautical regulations, including Canadian Aviation Regulations (CARs) Standard 621, which outlines requirements for structures that may affect navigable airspace. An Aeronautical Assessment Form (AAF) must be submitted at least 90 days prior to construction when required under Standard 621 or when requested by Transport Canada. TCCA also advised that a separate Land Use Proposal must be submitted to NAV CANADA for their assessment of potential impacts on aviation navigation systems.

8.4.3 Windsor International Airport

The preferred site is located within a designated height restriction zone associated with Windsor International Airport. As part of the consultation process, the Director of Airport Operations was engaged to determine applicable height limitations and to identify any aviation safety considerations associated with the proposed elevated water tower. Windsor International Airport advised the project team to complete both an Aeronautical Assessment Form (AAF) and a NAV Canada Land Use Assessment for the proposed work.

8.4.4 City of Windsor Railway Right-of-Way Provisions

The City of Windsor Planning Department was also consulted for clarification regarding relevant provisions of Zoning By-law 8600, specifically those related to railway right-of-way setbacks and permitted uses in proximity to rail infrastructure. The City of Windsor noted that the preferred site is not within the areas described in section 5.60.1 of the City of Windsor Zoning By-law 8600, so the proposed design does not need to follow 5.60.1. However, the design will still need to abide by the provisions outlined in 5.60.5, 5.60.10 and 5.60.20.

8.4.5 Canadian National Railway

As the preferred site is located adjacent to an active railway corridor under the jurisdiction of Canadian National Railway (CN), CN was contacted to confirm applicable rail-side requirements and to identify any land use considerations relevant to the planned infrastructure. CN provided instructions for submitting an executed work permit for the proposed works.

8.5 Indigenous Consultation

Consultation with Indigenous communities is ongoing in accordance with the Municipal Class EA Consultation requirements. As part of this Environmental Assessment, communications with Indigenous agencies and communities are being undertaken in parallel with the other stakeholder communications and consultations. This report will be sent to the Indigenous groups and organizations to solicit their interest or non-interest in the study.

The communities contacted as a part of this EA study include:

- Ministry of Indigenous Affairs
- Southern First Nations Secretariat
- Aamjiwnaang First Nation
- Caldwell First Nation
- Walpole Island First Nation (Bkejwanong Territory)
- Chippewas of the Thames First Nation
- Chippewas of Kettle & Stony Point First Nation
- Oneida Nation of the Thames (ONYOTA'A:KA)
- Métis Nation of Ontario, Thames Bluewater Métis Council
- Delaware Nation (Moravian of the Thames)

Documentation of consultation with Indigenous communities during the Environmental Assessment Process is available in **Appendix B**.

9 Opinion Of Probable Cost

This section discusses an opinion of probable cost for the preferred solution. The opinion of probable cost is an estimate of the future contract price for the engineering and construction work, which is not yet fully defined and may be subject to changes in scope, design, and market conditions.

9.1 Level Of Accuracy

Opinions of probable cost are typically provided throughout various stages of a project's life cycle. There are a number of classifications for estimates that identify typical minimum and maximum probable costs or levels of accuracy. These classifications vary widely by industry, but all are based on the fact that the level of accuracy is directly proportional to the level of detail available at each stage of the project.

The level of accuracy increases as the project moves through the various stages from planning to preliminary design to final design. A wide range of accuracy would be expected at the planning stage of a project development because a number of details would be unknown. As the project moves closer to completion of final design, the estimate would become more accurate due to the increased level of detail available and the reduced number of unknowns.

Table 9-1 includes a summary of typical estimate classifications used throughout a project's development including a description of the project stage and range of accuracy. The opinions of probable cost in this study are estimated at the study stage (Class 2), and the corresponding level of accuracy could range from –15% to +30% from the opinion presented in the report.

Table 9-1: Classification of Cost Estimates

Class	Description	Level of Accuracy	Stage of Project Lifecycle
1	Conceptual Estimate	+50% to -30%	Screening of alternatives.
2	Study Estimate	+30% to -15%	Treatment system master plans.
3	Preliminary Estimate	+25% to -10%	Pre-design report.
4	Detailed Estimate	+15% to -5%	Completed plans and specifications.
5	Tender Estimate	+10% to -3%	This is the actual tender price, and it can vary depending on the amount of contingency allowance consumed.

9.2 Opinion of Probable Cost for Preferred Solution

A capital budget estimate (in 2024 dollars) is summarized in **Table 9-2** In addition to the level of accuracy discussed, the opinion of probable cost was prepared taking into consideration the following factors.

- All estimates are in 2024 dollars based on an Engineering News Record (ENR) Construction Cost Index of 1200.
- It is assumed that the Contractor will have unrestricted access to the site and will complete the work during normal working hours from 7:00 am to 6:00 pm Monday to Friday. There is no allowance for premium time included. Labour costs are based on union labour rates for the Windsor area.
- An allowance is included for mobilization and demobilization and the Contractor's overhead and profit.
- Equipment costs are based on vendor supplied price quotations and historical pricing of similar equipment.
- Bulk material and equipment rental costs used are typical for the Windsor area.
- The estimate does not include the cost of application or permit fees.
- No allowance is included for escalation beyond the date of this report.
- A factor that could impact the estimate is the possible presence of archaeological resources in the construction area. However, the potential for these resources has been identified to be low and therefore no allowance is included in the estimate.

Table 9-2: Opinion of Probable Capital Cost for Preferred Solution

Item	Description	Probable Cost
1	New Elevated Water Tower	$9,200,000
2	Site work (grading, granular, paved access roads, parking areas, and fencing)	$520,000
3	Disposal of contaminated surficial fill	$350,000
4	~1.7 km of 900 mm dia. Watermain on 7th Concession Rd	$5,950,000
5	~1 km (140 m + 850 m) of 300 mm dia. Watermain on 6th Concession Rd	$500,000
	Sub-total Construction Cost	**$16,520,000**
	Contingency Allowance (30%)	**$4,956,000**
	Engineering Allowance (15%)	**$2,478,000**
	TOTAL CAPITAL COST (excluding taxes)	**$23,954,000**

10 Conclusion

This PFR identified, evaluated, and reported on alternative solutions to determine the recommended long-term solution to maintain acceptable system pressures and water quality to service future growth and increased water system demands from the south and southeastern parts of the service area. The existing Hanna Water Tower has exceeded 70 years of service and is approaching the end of its useful life. The Hanna Water Tower has limited operational flexibility and as such is not able to meet future demands efficiently. **Section 4** summarizes the decision-making process and outcomes of the analysis for each of the alternative solutions to the problem statement; the preferred solution was identified as replacing the existing Hanna Water Tower with a new Southerly Elevated Water Tower. **Section 5** summarizes the identification and evaluation of alternative sites for the new water tower, Site No.3 (located at 4450 7th Concession Road, Windsor ON) was selected as the preferred site.

Technical Memorandum No.4 – Water Modelling, summarizes the hydraulic water modelling conducted to identify potential impacts or constraints within the existing water distribution system related to the implementation of a new water tower. The proposed new water tower was modelled at each of the short-listed alternative site locations to assess pressures, velocities and head losses though the pipe network against the acceptable serviceability criteria. The hydraulic modelling was also used to determine the required infrastructure upgrades associated with each alternative.

Technical Memorandum No.4 – Water Modelling: Addendum No.1, includes the results of updated modelling required to further refine the watermain upgrades to support the operation of the proposed water tower at the preferred location (Site No.3). The model was updated to simulate operation of the water system within a dual-pressure zone.

Technical Memorandum No. 5 – Transient Modelling, covers the hydraulic transient water modelling carried out to identify any impacts and constraints of the existing water distribution system pertaining to the addition and construction of the new proposed elevated storage tank.

Transient Analysis Memorandum – (Central Corridor Feedermain and Distribution System), was completed as part of another study for the ENWIN Central Corridor Feedermain (CCFM), which is integral to the function of the new water tower. This memorandum covers the hydraulic transient analysis conducted to evaluate the need for mitigation measures that will protect the distribution network from undesirable pressure surges. The analysis uses computer modeling to assess expected water hammer behavior, define the system's transient pressure envelope. It also provides guidance on design limits, timing, and operational parameters for pumps and valves.

The Technical Memoranda can be found in **Appendix C.**

Appendices

Appendix A Figures

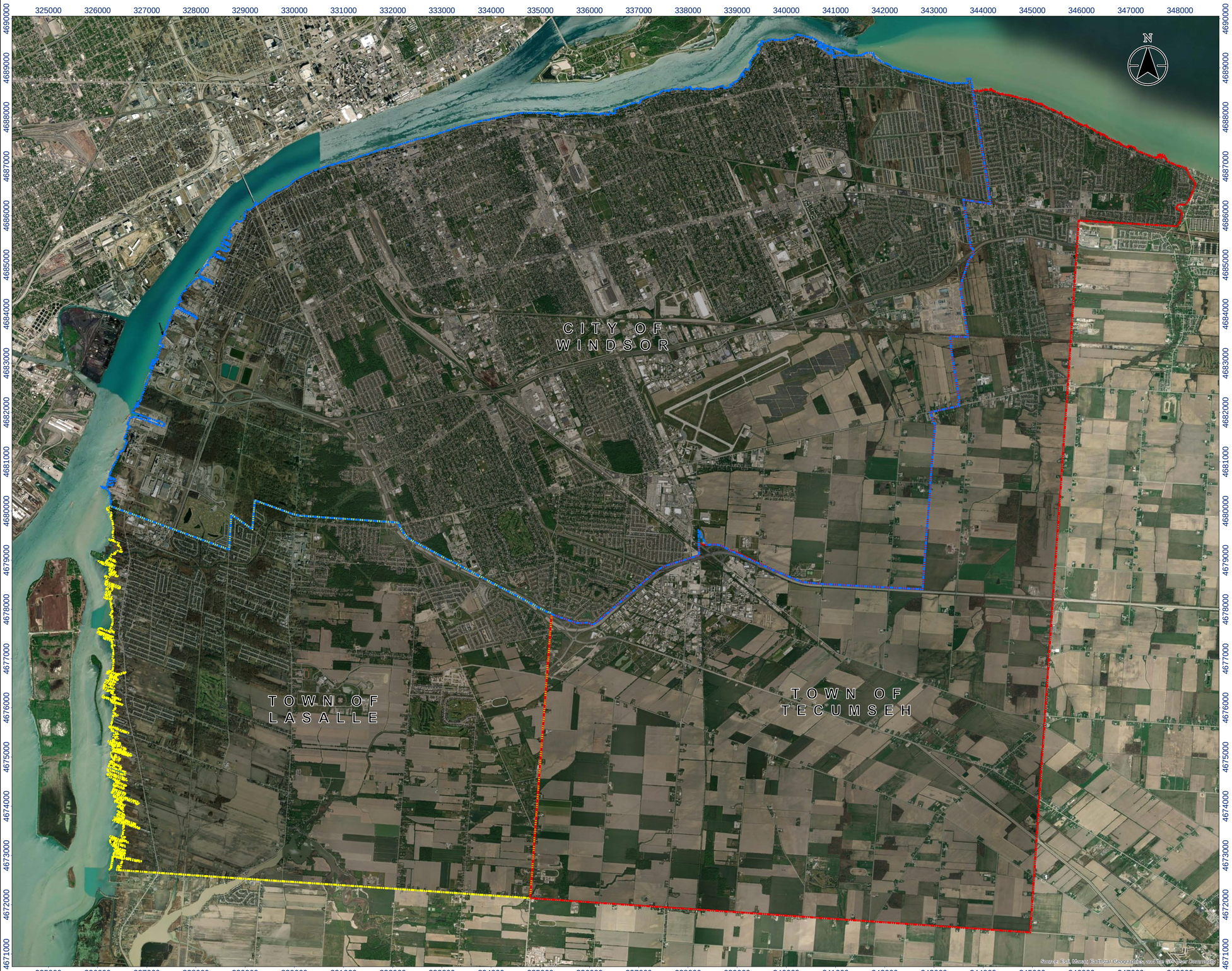
Figure 1.1: Windsor Utilities Commission Water System Service Area

Figure 1.2: Municipal Class EA Planning and Design Process

Figure 5.1: Study Area for New Water Tower Site

Figure 5.2: Alternative Sites for New Water Tower

Figure 5.3: Windsor Airport Obstacle Limitation Surface



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Legend

- Service Area
- Windsor Municipal Boundary
- Tecumseh Municipal Boundary
- LaSalle Municipal Boundary

0 2,700 5,400 metres

1:38,202 (At original document size of 22x34)

Notes

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Project Location
Windsor, Ontario

165620304 REVA
Prepared by HR on 2024-04-30

Client/Project
ENWIN Utilities Ltd.

Elevated Water Tower Environmental Assessment

Figure No.
1.1

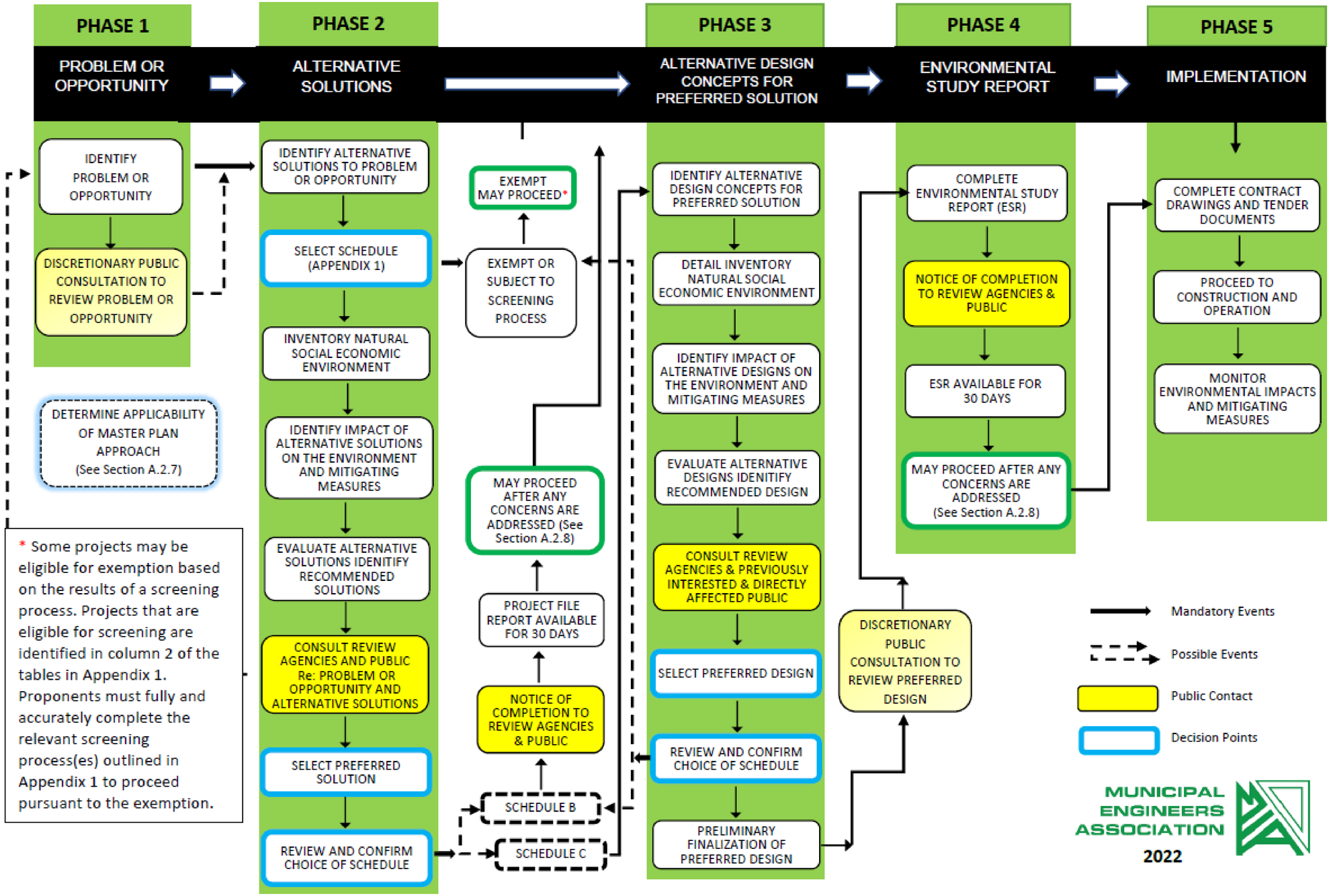
Title
Windsor Utilities Commission Water System Service Area

C:\Users\HRINDL~1\AppData\Local\Temp\arc01D5\165620304_Study Area.mxd Revised: 2024-04-30 by: hrindlisbacher

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EXHIBIT A.2. MUNICIPAL CLASS EA PLANNING AND DESIGN PROCESS

NOTE: This flow chart is to be read in conjunction with Part A of the MCEA



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Legend

Notes

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

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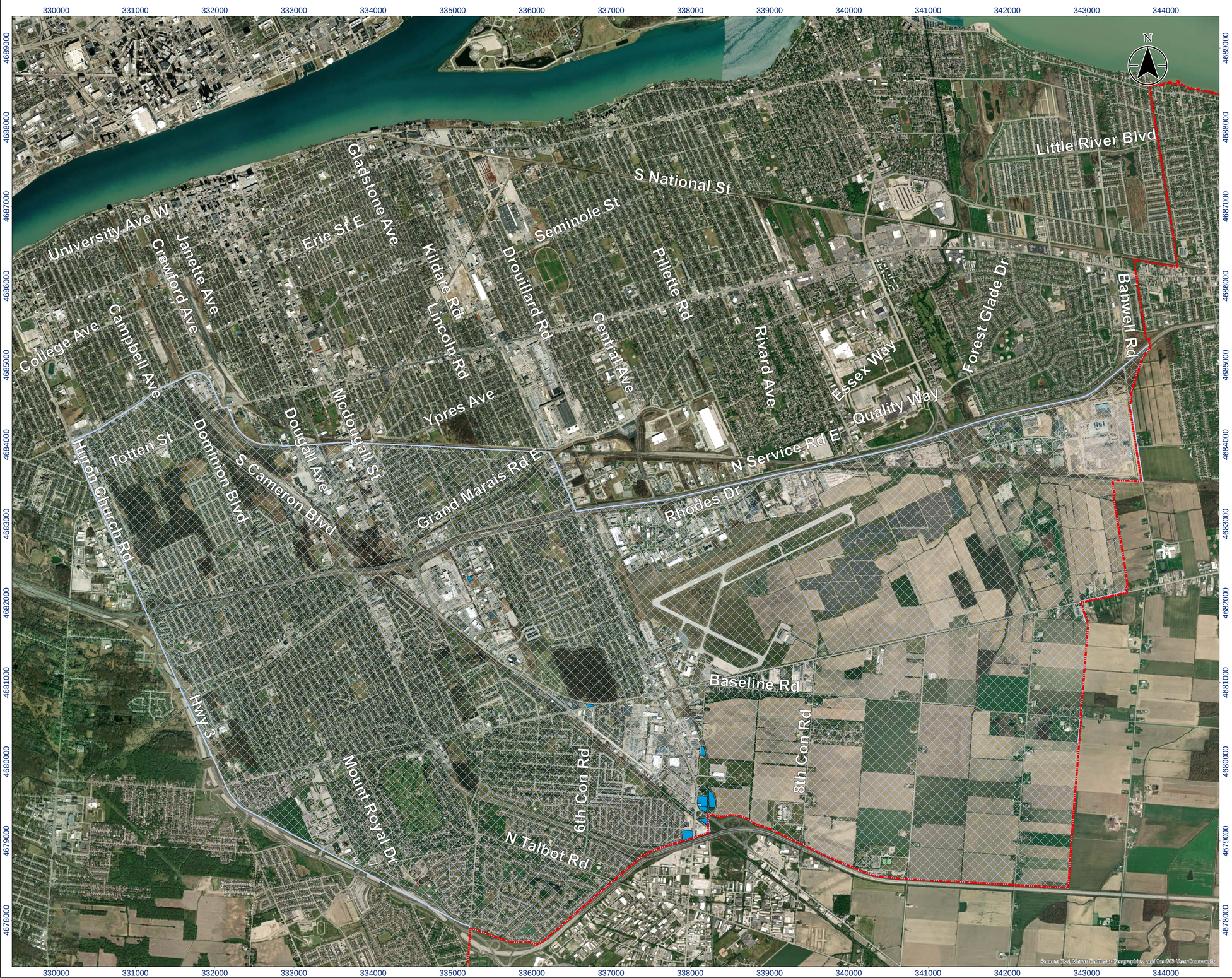
ENWIN Utilities Ltd.

Elevated Water Tower
Environmental Assessment

Title

Municipal Class EA Planning and Design Process from the Municipal Engineers Association

Project No.	Scale
165620262	AS SHOWN
Revision Sheet	Drawing No.
	1.2



Stantec

Legend

- Tecumseh Municipal Boundary
- Alternative Sites
- Study Area

0 1,600 3,200 metres

1:23,739 (At original document size of 22x34)

Notes

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Project Location
Windsor, Ontario

165620304 REVA
Prepared by HR on 2025-10-27

Client/Project
ENWIN Utilities Ltd.

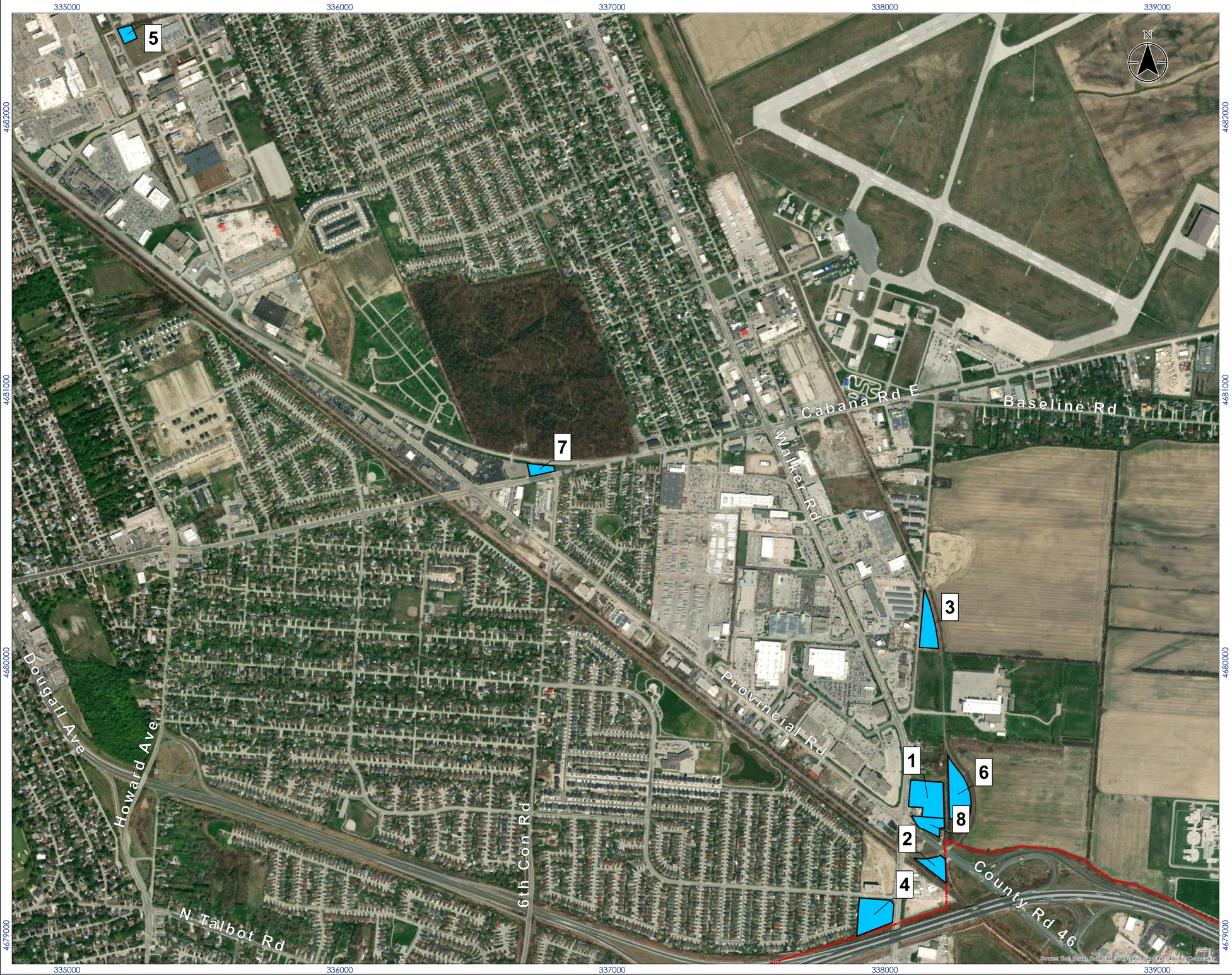
Elevated Water Tower Environmental Assessment

Figure No.
5.1

Title
Study Area **for New Water Tower Site**

C:\Users\HRINDL~1\AppData\Local\Temp\arcGIS\165620304_Study Area_PIC_Figure.mxd Revised: 2025-10-27 By: hrindlskacher

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Stantec

Legend

- Alternative Sites
- Tecumseh Municipal Boundary

0 490 980 metres

1:6,906 (At original document size of 22x34)

Notes

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Project Location
Windsor, Ontario

165620304 REVA
Prepared by HR on 2025-05-15

Client/Project
ENWIN Utilities Ltd.

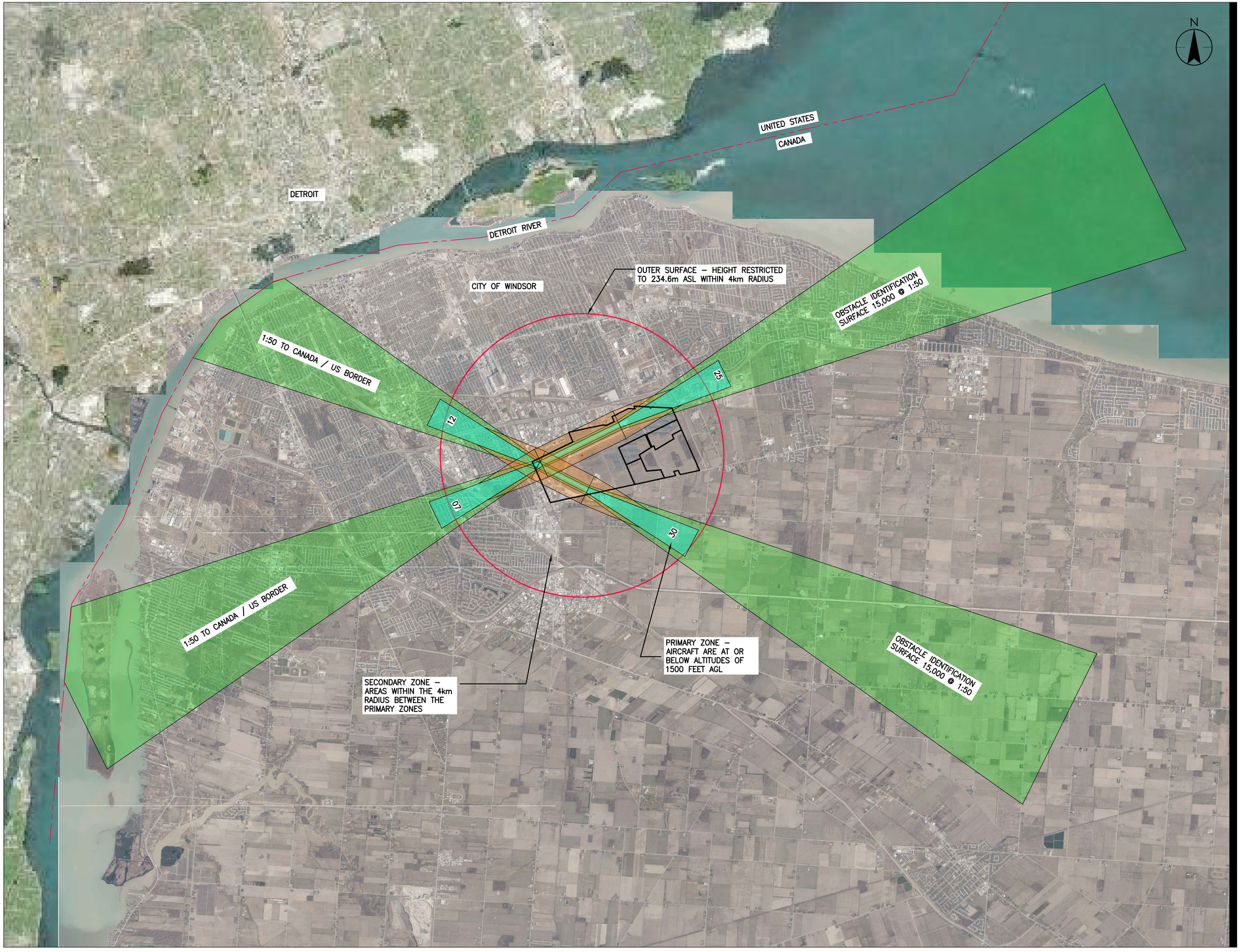
Elevated Water Tower Environmental Assessment

Figure No.
5.2

Title
Alternative Sites for New Water Tower

C:\Users\HRINDI...\1-Apps\Data\Local\Temp\Varc7A1E\1656203O4_Site_Alts_Nov2024.mxd Revised: 2025-05-15 By: hrindlebocher

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2024-4-30 01:09pm BY: klox

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Legend

- AIRPORT PROPERTY BOUNDARY
- INTERNATIONAL BORDER
- 4km OUTER SURFACE
- APPROACH/TAKEOFF SURFACE
- TRANSITIONAL SURFACE
- OBSTACLE IDENTIFICATION SURFACE

AERODROME REFERENCE POINT
N42°16'29"
W82°57'30"
ELEVATION 622' ASL

Notes

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD

File Name: 165620304_C_101	K.F.F. Dwn.	H.R. Chkd.	Dsgn.	2023.12.18 YY.MM.DD

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Client/Project
ENWIN UTILITIES LTD

ELEVATED WATER TOWER
CLASS ENVIRONMENTAL ASSESSMENT

City of Windsor, Ontario

Title
AIRPORT ZONING REGULATION (AZR)
- HEIGHT RESTRICTED AREA

Project No.	Scale
165620304	NTS
Revision	Drawing No.
	5.3

Appendix B Consultation

1. Notice of Study Commencement
2. Public Information Centre
3. Email Packages to Review Agencies
4. Response from Review Agencies – Notice of Project Commencement
5. Response from Review Agencies – Public Information Centre
6. Response from Public – Public Information Centre
7. Indigenous Consultation Log

NOTICE OF STUDY COMMENCEMENT

ELEVATED WATER TOWER
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

THE STUDY

ENWIN Utilities Ltd. (ENWIN) on behalf of the Windsor Utilities Commission (WUC) is undertaking a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for a new Elevated Water Tower and associated distribution and transmission system. In general, the study objective is to follow the planning process outlined in the Municipal Class Environmental Assessment (June 2000, as amended in 2007, 2011, 2015 and 2023) under the *Ontario Environmental Assessment Act* to determine a long-term solution to maintain adequate water supply and operating pressure to the City of Windsor, Town of Tecumseh, and Town of LaSalle. This study will satisfy Phase No.'s 1 and 2 of the Class EA process including: (Phase 1) review of background information and definition of a problem statement and (Phase 2) identification and evaluation of alternative solutions. The planning and decision making of the Class EA process will be documented in a Project File Report.

BACKGROUND

The WUC Water System Master Plan (WSMP) was originally developed in 2009 and subsequently updated in 2014, 2019 and 2023. The 2009 WUC WSMP identified a number of infrastructure requirements to address system vulnerabilities and growth demands to 2049. The proposed works in the most recent WUC WSMP 2023 Update align with the original 2009 WUC WSMP recommendations for a new Southerly Elevated Water Tower to address water supply and pressure issues. The Central Corridor Feedermain, which is currently in the design phase and proceeding to construction next year, is integral to the function of the proposed Southerly Elevated Water Tower.

PUBLIC CONSULTATION

This notice of study commencement marks the initiation of public consultation as part of this Class EA process. Throughout this Class EA, the public will be invited to attend a public open house where interested individuals can learn more about the project, ask questions, and submit feedback to the project team.

If you have any questions or if you wish to be added to the study mailing list, please contact:

Chris Manzon, P.Eng.
Director Engineering (Water), ENWIN Utilities Ltd.
4545 Rhodes Drive
Windsor, Ontario, N8W 5T1
519-251-7300 ext. 295
cmanzon@enwin.com

Jian Li, Ph.D., P. Eng.
Project Manager, Stantec Consulting Ltd.
2555 Ouellette Avenue, Suite 100
Windsor, Ontario, N8X 1L9
226-704-3039
jian.li@stantec.com

Personal information submitted is collected, maintained, and disclosed under the authority of the *Environmental Assessment Act and the Municipal Freedom of Information and Protection of Privacy Act* for transparency and consultation purposes. Personal information you submit will become part of a public record that is available to the general public, unless you request that your personal information remain confidential.

Hoping for hops

Climate change is threatening a main ingredient in beer-making



Ongoing and predicted climate change could lead to a decline in the quality and quantity of hops, an ingredient in beer, sparking research among brewers for solutions. *DEBORAH JAFFE/ FOR THE WASHINGTON POST*

MAGGIE PENMAN

It's getting harder to grow coffee, tea, and grapes for wine on a hotter planet — and now researchers say, climate change may be coming for your IPA.

A new study found drought and higher temperatures will lead to a decrease in the quality and quantity of hops, the aromatic plants that give beer its flavour.

By 2050 in Europe, the research projects, yields for traditional aroma hops will drop by four to 18 per cent. Production of hop acids, which are key for flavouring, will fall by 20 to 31 per cent.

Hop growers are already seeing the impacts.

"Over the past number of decades we can see a decrease of hop quality," said Miroslav Trnka at the Czech Academy of Sciences, one of the researchers of the new paper, which was published in the journal Nature Communications.

"I'm sure we can find a way to grow hops that, in the future, can withstand these conditions," he said. But, he added, "You cannot wait until the industry collapses."

Hops present more challenges for adaptation than wheat or barley because they're a trickier crop.

"If you look at the map and where the hop growing regions are, you'll see them in a fairly narrow band of latitude," said Chuck Skypeck with the Brewers Association in the United States. "They're very light sensitive."

Hops need long days of sunlight during the growing season. Then, they need a couple months of colder temperatures and shorter days to flower and produce the part of the plants used in beer brewing. That's why hops are normally grown in a narrow range of higher latitudes like in central Europe and the Pacific Northwest.

As climate change makes it harder to grow crops in Europe, there's been an explosion in demand for hops from breweries adapting to changing palates. In recent years, a booming craft beer industry has meant increasing demand for high-quality hops to make IPAs and hoppy lagers.

"Craft brewers love hops with their IPAs," Skypeck said. "We've subsequently seen nascent hop growing areas really struggle because they're not meeting those conditions."

For the Carlsberg Group in Copenhagen, experimentation and adaptation isn't new — but there is a new sense of urgency. Though the brewing company gave up hop breeding shortly after the Second World War, they've reinvested in this research in the past few years. Part of the project has been to sequence the full hop genome to better understand how the crop could be adapted to be more resilient under new climate conditions.

"It's going to be difficult," said Birgitte Skadhauge, head of the Carlsberg Research Laboratory and a professor at Copenhagen University. "It is really science and innovation that have to help us to really come up with some of the new big breakthroughs and revolutions to cope with this very extreme weather."

She suggests it could be possible to breed hops to be heat tolerant or drought tolerant. "Genes can help us to make even more robust plants," she said.

The Associated Press

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Public Notices

WINDSOR UTILITIES COMMISSION — ENWIN

NOTICE OF STUDY COMMENCEMENT
ELEVATED WATER TOWER
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

THE STUDY
ENWIN Utilities Ltd. (ENWIN) on behalf of the Windsor Utilities Commission (WUC) is undertaking a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for a new Elevated Water Tower and associated distribution and transmission system. In general, the study objective is to follow the planning process outlined in the Municipal Class Environmental Assessment (June 2000, as amended in 2007, 2011, 2015 and 2023) under the *Ontario Environmental Assessment Act* to determine a long-term solution to maintain adequate water supply and operating pressure to the City of Windsor, Town of Tecumseh, and Town of LaSalle. This study will satisfy Phase No.'s 1 and 2 of the Class EA process including: (Phase 1) review of background information and definition of a problem statement and (Phase 2) identification and evaluation of alternative solutions. The planning and decision making of the Class EA process will be documented in a Project File Report.

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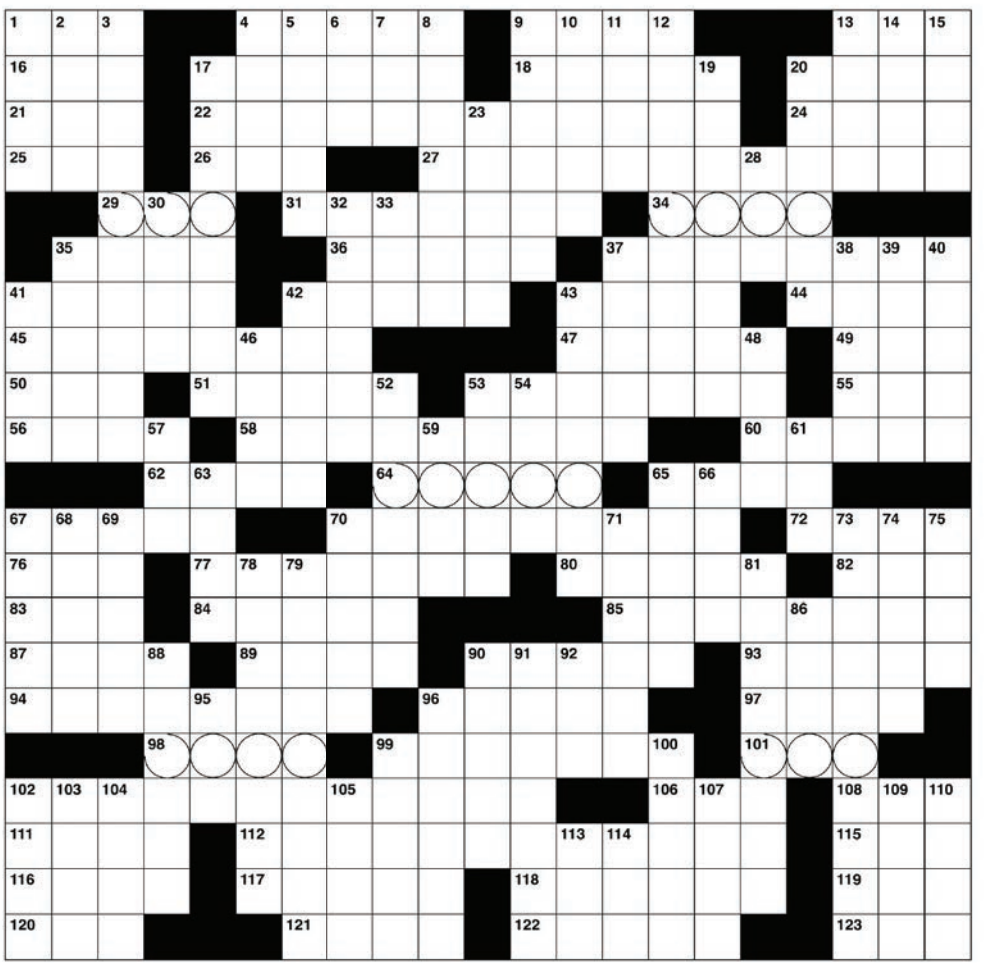
THE GrowthOp
TheGrowthOp.com

No. 1119

RIGHT ON THE MONEY

BY GARRETT CHALFIN / EDITED BY WILL SHORTZ

Garrett Chalfin, of New York City, is a first-year student at the University of Chicago, taking classes in biology, "Human Being and Citizen" and "Classics of Social and Political Thought." This puzzle was a long time in the making. He thought of the theme idea over a year ago, then kept coming back to it until he felt he had it just right. Garrett writes, "I love subtle themes that slowly emerge to the solver." — W.S.



ACROSS

1 Landscaper's purchase
4 Downright
9 [If you'll allow me to butt in …]
13 "Gotcha!"
16 Anton ____, food critic in "Ratatouille"
17 Come-on
18 ____ years (old age)
20 Word with purpose or personality
21 "____ you ready?"
22 Enjoyed oneself
24 Major part of astronomy?
25 Tous ____ jours (French for "every day")
26 Something dot something, say
27 Features of telephone directories
29 Emerged as a victor
31 Grovel
34 Writer Ayn
35 Fight (for)
36 Rest atop
37 Euphemistic cry of frustration
41 Sweetly, in scores
42 Actress Close
43 Japanese buckwheat noodle
44 2022 culinary black comedy, with "The"
45 Peabody-winning journalist Linda
47 Prefix with sphere
49 It can be a lifesaver, in brief
50 One might read, "Caution: Messy eater!"
51 Twilled fabric
53 Satyrs, say
55 Old nomad of Central Asia
56 Playroom collection
58 Where to see heads of gladiators, informally
60 Little fights
62 Degrees for most profs
64 Poet Ezra
65 Dark green Indian dish
67 "That was hilarious!" in textspeak
70 Totally committed to
72 Serves right?
76 Stuff refineries refine
77 Classifies
80 Part of a furniture measurement
82 60 minuti
83 Senator Klobuchar
84 Whole shebang
85 Figure of speech in which words are reversed for effect, like "Never let a fool kiss you or a kiss fool you"
87 Vassal's plot
89 Miss
90 Goldman ____
93 Stylish women's shoes
94 Hasty signature, often
96 Figures in Islamic mythology
97 Twit, to a Brit
98 Not fake
99 Formulates, as a plan
101 Craving
102 Movie hero introduced in 1981
106 Novelist Patchett
108 Go down slightly
111 King Tut, during most of his reign
112 Titular feature of fiction's Lisbeth Salander
115 No. 34
116 Oomph
117 ____ vincit amor
118 Displayed
119 Trawler's need
120 Red army member?
121 Caught
122 Blobby parts of blobfish
123 Much of the planet Saturn

DOWN

1 Product-safety indicator
2 Princess Fiona, e.g.
3 Treats favorably/Has a very good effect
4 Fall fruit
5 It may deliver a punch
6 What may come before Today
7 Gig part
8 Get bigger
9 Jacinda ____, New Zealand prime minister who, at 37, was at the time the world's youngest female head of government
10 Blindly punch
11 Big, big, big
12 Like a momentous occasion/Office communiqué
13 Someone's je ne sais quoi
14 Padlock holder
15 "Sorry to say … "
17 Speaks loudly
19 Firefighter famous for extinguishing burning wells
20 Lollipop with a "mystery flavor"
23 Film company behind "Amadeus" and "Platoon"
28 The "E" of E.S.L., for short
30 "Back in the good old days … "
32 Claim
33 50-50, e.g.
35 First ____ (Shakespeare collection)
37 Movers and shakers
38 Robotic anime genre
39 Enter
40 Switches allegiances, as a spy
41 You're gonna pay for this!
42 Targets of some wipes
43 Got less hairy
46 Bracelet bit
48 Peak in the "Odyssey"
52 Masters/Elaborated
53 Gives kudos
54 Flying fish-eaters
57 Pool locale
59 Application of polish, e.g.
61 Grp. that goes on tour
63 Novelist Tami
65 They're no longer "fresh"
66 Prefix with thesis
67 Enjoys doing nothing
68 Taunt, in a way
69 Philadelphia athlete
70 Drench
71 Worker at the Genius Bar
73 Large, as a lead
74 Blow
75 Give lip service?
78 Captain of M.L.B.'s Swingin' A's of the 1970s
79 What a Tyrannosaurus rex grapples with?
81 "Are you satisfied?"/ Common fairy-tale conclusion
86 "Not a problem"
88 Part of a potter's process/Parts of a building's safety system
90 Early evening hour
91 Actress Jennifer
92 Lead-in to gender
95 Arthur of "The Golden Girls"
96 Christopher Columbus, e.g.
99 Motherless calf
100 "Socrate" composer
102 Chichén ____ (ancient Mayan city)
103 Hamburg refusal
104 Bad impression?
105 Primatologist Goodall
107 Refusals
109 Store whose name is an acronym
110 Some motel prohibitions
113 Year abroad?
114 They might be wall-mounted

Online subscriptions: Today's puzzle and more than 4,000 past puzzles, nytimes.com/crosswords ($39.95 a year).

NOTICE OF PUBLIC INFORMATION CENTRE

ELEVATED WATER TOWER
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

THE STUDY

ENWIN Utilities Ltd. (ENWIN) on behalf of the Windsor Utilities Commission (WUC) is undertaking a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for a new Elevated Water Tower and associated distribution and transmission system. In general, the study objective is to follow the planning process outlined in the Municipal Class Environmental Assessment (2000, as amended in 2007, 2011, 2023) under the *Ontario Environmental Assessment Act* to determine a long-term solution to maintain adequate water supply and operating pressure to the City of Windsor, Town of Tecumseh, and Town of LaSalle. This study will satisfy Phase 1 and 2 of the Class EA process including: (Phase 1) review of background information and definition of a problem statement and (Phase 2) identification and evaluation of alternative solutions. The planning and decision making of the Class EA process will be documented in a Project File Report.

ENWIN, as the proud operator of WUC, is hosting a Public Information Centre (PIC) to present the evaluation of alternative solutions and associated distribution and transmission system for the new Elevated Water Tower. Consultation is an integral part of the EA process and members of the public, agencies, and others interested are invited to participate in the upcoming PIC.

PUBLIC INFORMATION CENTRE
Tuesday, November 25, 2025
4:00 p.m. – 7:00 p.m.
Hellenic Cultural Centre
3052 Walker Road, Windsor ON

Presentation material and feedback forms for this PIC can be found on ENWIN's website starting from November 25, 2025, at: https://ENWIN.com/water/windsor-utilities-commission

Following the PIC, comments are welcomed and will be received until December 23, 2025.

For further information, please contact:

Chris Manzon, P.Eng.
Director Engineering (Water), ENWIN Utilities Ltd.
4545 Rhodes Drive
Windsor, Ontario, N8W 5T1
cmanzon@ENWIN.com

Jian Li, Ph.D., P. Eng.
Project Manager, Stantec Consulting Ltd.
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jian.li@stantec.com

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Obituaries



ROEHLER, Michael

Passed away peacefully on November 2, 2025 at the age of 79. One of nine children of Elmer and Adeline Roehler. Dear husband of Janette (2019). Loving father of Darcy, Darin (Patti), Derek (Tricia), and April (Tracy). Cherished grandfather and great-grandfather. Memorial Visitation will be held at Windsor Chapel Funeral Home – Central Chapel (1700 Tecumseh Rd. E.) 519-253-7234 on Wednesday, November 12, 2025 from 5p.m.-8p.m. Visitation will continue on Thursday, November 13 from 10a.m. until the Time of Service in the Chapel at 11a.m. Interment to follow at Heavenly Rest Cemetery. Memorial donations may be made to The Humane Society of Windsor – Essex. Online condolences may be shared with the family at

www.windsorchapel.com.

WC WINDSOR CHAPEL

Obituaries



TERRY, David Henry

Jan 8, 1940 - Oct 28, 2025

David Henry Terry passed away peacefully on October 28, 2025, at the age of 85. He was predeceased by his beloved wife, Lynn, with whom he shared 53 wonderful years. David is survived by his sisters, Jane Jakobszen (late Tom, 2021) and Kay Atkinson; his brother Ken (Louisette) Terry; and his brother-in-law Mike Barnes (Lucille). He will also be fondly remembered by his many nieces, nephews, and cousins. Dave was a dedicated high school teacher for 35 years, retiring in June 1996. He was a loyal and kind friend and neighbour, always ready with a warm smile and helping hand. Cremation has taken place.

"The rest is silence." - Hamlet

To offer condolences please visit www.simplechoicecremation.ca

Let memories of the times you shared give you comfort

~ Author Unknown

In Memoriams



In Loving Memory Of Daniel Brian Heath

Nov 8, 1957 - Nov 25, 2020

Dan: When all is said and done, we just wish we had more time with you.
Grief is learning to live with you in our hearts, instead of in our arms.
With so much love from Mom, Wayne and Debbie and family



In Loving Memory Of Fernando Mazzoni

Dec 24, 1937 - Nov 8, 2024

Our thoughts are ever with you
Though you have passed away
And those who have loved you dearly
Are thinking of you today.

With much love from
Joyce, Bill, Barbara, Monica, and families

In Loving Memory Of Jack McVittie

Nov 6, 1978

In memory of my father, Jack McVittie,
Who passed away Nov 6, 1978

I look for you in all of the things that you loved .....that is where I find you

Lovingly remembered by daughter Jackie

In Loving Memory Of



FERRO, Lina

In loving memory of our precious mother and nonna
(November 8, 2001)

Our most precious mom;
always a smile, a heart of gold,
One of the best this world can hold.
Never selfish, always kind;
what beautiful memories you left behind.

Forever remembered with love,
your family



POLEWSKI, Emilia M.

November 8, 2016

Beloved Mother, Godmother, Grandmother, and Great-grandmother

Nine years have passed since we have seen your smile or heard your voice. We miss you every day, but are comforted believing you and tat are together again.

Niech jej ziemia lekka bedzie.
Wieczny odpoczynek daj jej Panie.

Lovingly remembered by
the Polewski Family

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Garage Sales

565 Banwell Rd Windsor, ON, CA, N8P 1J8 Estate Sale
Come to 11581 Leathorne St for a family run estate sale. Clothing, housewares, kitchenwares, furniture and more.
Saturday November 08 9:00 AM-3:00 PM
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Legals, Tenders and Notices

THE BANKRUPTCY AND INSOLVENCY ACT

NOTICE OF FIRST MEETING IN LOCAL NEWSPAPER
(Section 102(4))

IN THE MATTER OF THE BANKRUPTCY OF KAILI RACHELLE HORNEY
of the City of Windsor, in the County of Essex and Province of Ontario.

Notice is hereby given that Kaili Rachelle Homey received a Bankruptcy Order made on the 15th day of October, 2025, and the first meeting of creditors will be held on the 2nd day of December, 2025, at 11:00 o'clock in the forenoon, at the office of S. Funtig & Associates Inc. located at 3337 Walker Rd., Suite 100, Windsor, ON.

DATED at Windsor, Ontario this 6th day of November, 2025.

S. FUNTIG & ASSOCIATES INC.,
LICENSED INSOLVENCY TRUSTEE
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Windsor, ON N8W 3R9

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Public Notices

NOTICE OF PUBLIC INFORMATION CENTRE
ELEVATED WATER TOWER
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

THE STUDY

ENWIN Utilities Ltd. (ENWIN) on behalf of the Windsor Utilities Commission (WUC) is undertaking a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for a new Elevated Water Tower and associated distribution and transmission system. In general, the study objective is to follow the planning process outlined in the Municipal Class Environmental Assessment (2000, as amended in 2007, 2011, 2023) under the *Ontario Environmental Assessment Act* to determine a long-term solution to maintain adequate water supply and operating pressure to the City of Windsor, Town of Tecumseh, and Town of LaSalle. This study will satisfy Phase 1 and 2 of the Class EA process including: (Phase 1) review of background information and definition of a problem statement and (Phase 2) identification and evaluation of alternative solutions. The planning and decision making of the Class EA process will be documented in a Project File Report.

ENWIN, as the proud operator of WUC, is hosting a Public Information Centre (PIC) to present the evaluation of alternative solutions and associated distribution and transmission system for the new Elevated Water Tower. Consultation is an integral part of the EA process and members of the public, agencies, and others interested are invited to participate in the upcoming PIC.

PUBLIC INFORMATION CENTRE
Tuesday, November 25, 2025
4:00 p.m. – 7:00 p.m.
Hellenic Cultural Centre
3052 Walker Road, Windsor ON

Presentation material and feedback forms for this PIC can be found on ENWIN's website starting from November 25, 2025, at: https://ENWIN.com/water/windsor-utilities-commission

Following the PIC, comments are welcomed and will be received until December 23, 2025.

For further information, please contact:

Chris Manzon, P.Eng.
Director Engineering (Water),
ENWIN Utilities Ltd.
4545 Rhodes Drive
Windsor, Ontario, N8W 5T1
cmanzon@ENWIN.com

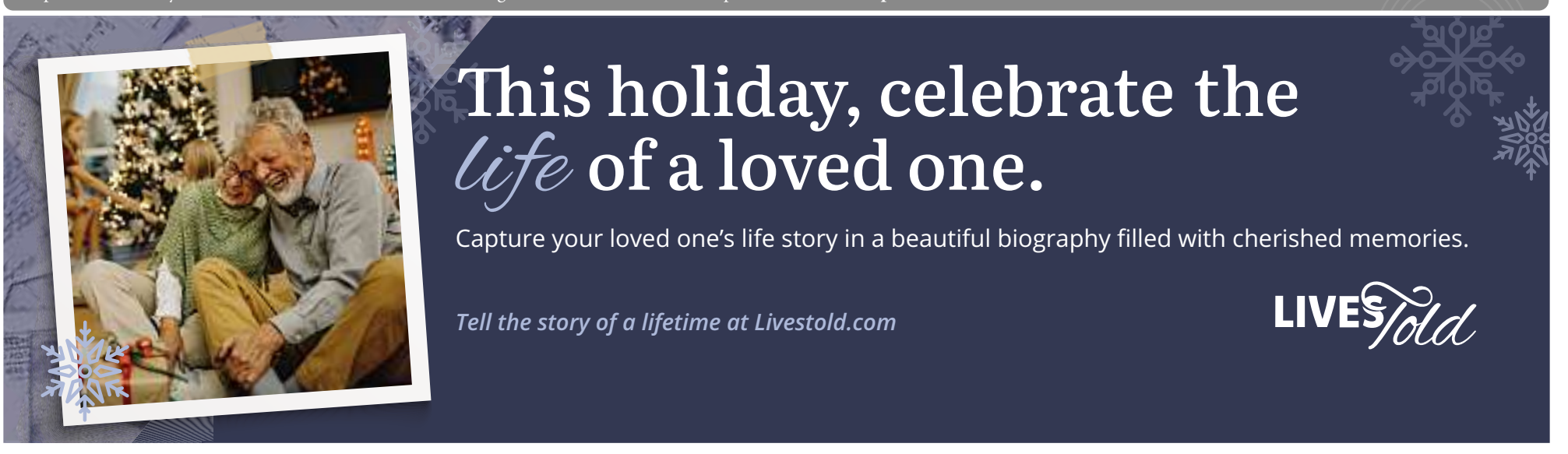
Jian Li, Ph.D., P. Eng.
Project Manager,
Stantec Consulting Ltd.
2555 Ouellette Avenue, Suite 100
Windsor, Ontario, N8X 1L9
jian.li@stantec.com

Personal information submitted is collected, maintained, and disclosed under the authority of the *Environmental Assessment Act and the Municipal Freedom of Information and Protection of Privacy Act* for transparency and consultation purposes. Personal information you submit will become part of a public record that is available to the general public, unless you request that your personal information remain confidential.

CLASSIFINDS! FIND STUFF HERE!

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ENWIN Utilities Ltd.

on behalf of

The Windsor Utilities Commission (WUC)

PUBLIC INFORMATION CENTRE

Elevated Water Tower

Municipal Class Environmental Assessment Study

November 25th, 2025

Introduction

Purpose of this Study

The purpose of this study is to determine a long-term solution to maintain adequate water supply and operating pressure to the service area.

The purpose of this Public Information Center (PIC) is to:

- Describe the Class Environmental Assessment (EA) Process
- Introduce the Study Background
- Present an Evaluation of Alternative Solutions
- Include Feedback in the Evaluation Process

Introduction

Municipal Class EA Process

This study is being conducted in accordance with the Class EA requirements for Schedule ‘B’ Projects.

Municipal Class EA Phases
Phase 1 Identification of the problem or opportunity.
Phase 2 Identification of alternative solutions to the problem, consultation with review agencies and the public, selection of the preferred solution. Preparation of a Project File Report (PFR) to document the planning, evaluation, and consultation process for the project.

Introduction

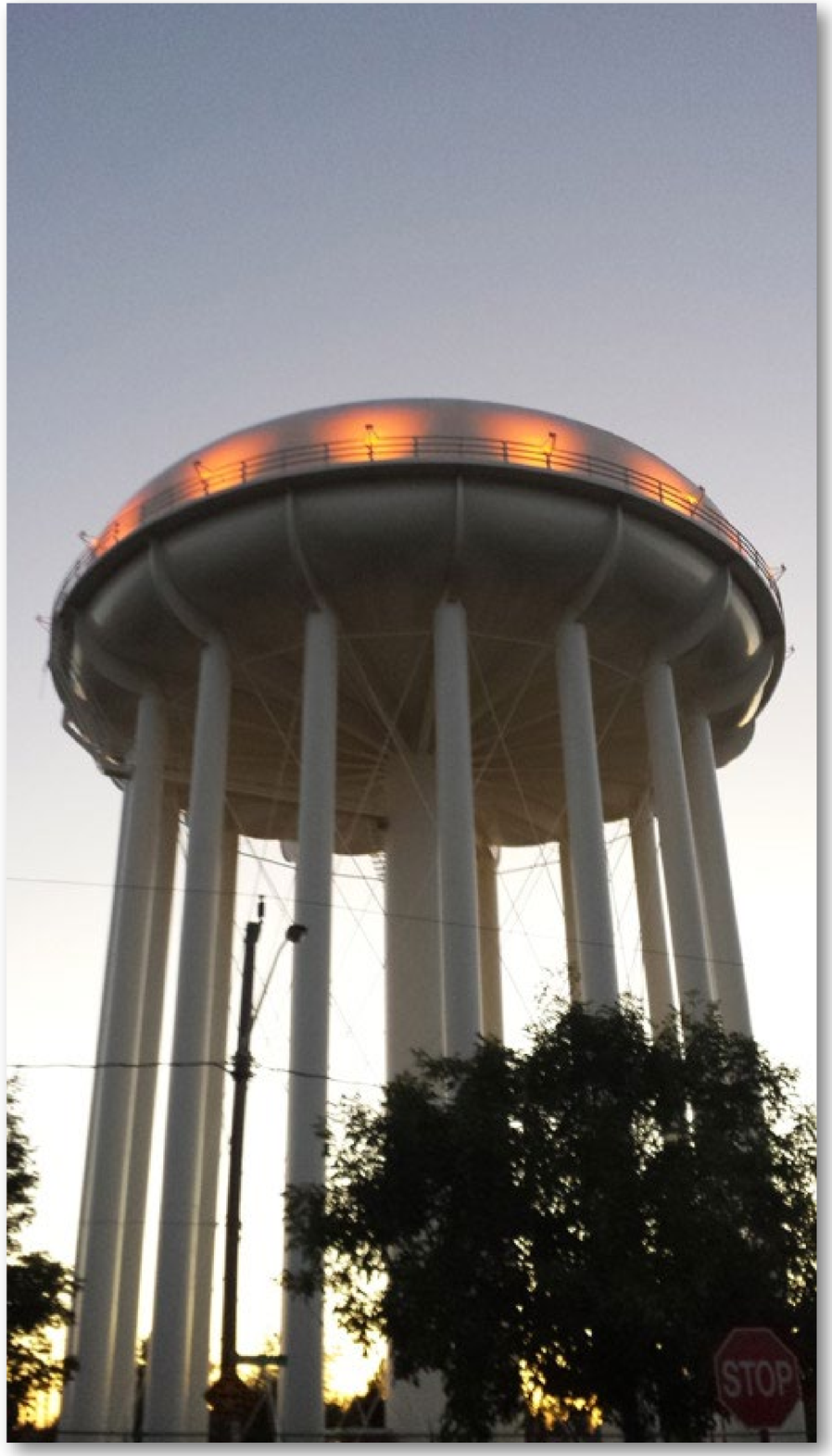
Problem Statement

The Windsor Utilities Commission Water System Master Plan (WUC WSMP) identified a number of infrastructure upgrades to address system vulnerabilities.

The recommendations included the need for a new water tower and associated distribution and transmission system in the Southerly area of Windsor to:

- Replace the existing 71-year-old Hanna Street Water Tower (HWT) due to its age and limited operational range which is expected to decrease as future demands increase
- Service future growth areas with adequate pressure and velocity
- Maintain water quality in the distribution system

The existing HWT has limited operational flexibility and is unable to efficiently maintain acceptable system pressures and water quality to service future growth and increased water system demands.



Background

Existing Water Supply System

The WUC water supply system provides treated water to the City of Windsor, Town of LaSalle and the Town of Tecumseh.

The **Albert H. Weeks Water Treatment Plant** is located at 3665 Wyandotte Street East.

- Total intake capacity of 500 MLD from the Detroit River
- Total treatment capacity of 268 MLD

Three High Lift Pumping Stations: AJ Brian, George Avenue and JF Cook

- Total high lift firm pumping capacity of 524 MLD

Treated Water Storage: JF Cook, Hanna Water Tower, Tecumseh Water Tower, Reservoir D and G

- Total treated storage capacity of 157.8 ML

Watermain Network

- 1,100 km of pipe ranging in sizes from 150 mm to 1200 mm diameter, all operating under a single pressure zone

Background

Future Flow Projections

Future water demand projections were reviewed using data from municipal planning documents, Statistics Canada Census data, and Windsor Utilities Commission (WUC) Annual Reports. These projections were compared to the 2049 projections presented in the 2023 WUC Water System Master Plan (WSMP). The comparison showed less than a 4% difference in the projected maximum day demand for the service area.

As a result, the water demand projections from the 2023 WSMP are considered reliable and are recommended for use in this Class Environmental Assessment to ensure consistency with existing planning documents.

Municipality	Year	Average Day Demand (MLD)	Maximum Day Demand (MLD)	Peak Hour Demand (MLD)
Windsor	2022	98.0	142.2	238.7
	2049	108.2	156.8	263.3
LaSalle	2022	11.2	20.2	23.5
	2049	23.9	43.0	64.5
Tecumseh	2022	14.1	28.2	42.3
	2049	29.8	59.6	89.3
Total for 2049 Projections:		**161.9**	**259.4**	**417.1**

Background

Future Storage Requirements

The MECP *Design Guidelines for Drinking Water Systems* outlines a method for sizing treated water storage facilities. The method is based on the following:

Total Treated Water Storage Requirement = A + B + C

Where:

A = Fire Storage;
B = Equalization Storage (25% of Maximum Day Demand); and
C = Emergency Storage (25% of A + B)

The 2049 total storage requirement is projected to be 91.3 ML

The existing system's total treated storage capacity is 157.8 ML

Therefore, no additional water storage facilities are required within the planning horizon.

Alternative Solutions

Evaluation Criteria

Component	Evaluation Criteria
Technical Suitability	• Ability to meet current and future servicing needs; • Ability to meet acceptable pressure and velocity requirements in WUC and MECP guidelines; • Constructability, implementation timeline, and phasing; and • No adverse impacts on existing water system.
Social	• Noise, vibration, odour, or air pollution emissions; • Permanent changes or impacts to society / community; • Development policies and agreements; and • Ability to increase development and improve housing supply.
Natural Environment	• Impacts to vegetation, fish and wildlife, areas of natural and scientific interest, environmentally sensitive areas, and soil / geology; • Regulatory compliances; and • Development and planning policies.
Economic	• Capital, operational and maintenance (O&M) costs; and • Ability to improve development and generate economic growth
Archaeological, Cultural and Built Heritage	• Impacts to archaeological sites or areas of archaeological potential; and • Impacts to known or potential built heritage resources and cultural heritage landscapes.

Alternative Solutions

Screening Alternatives

Alternative 1: Do Nothing

Alternative 2: Restrict Community Growth

Alternative 3: Rehabilitation of the Hanna Water Tower

Alternative 4: Replace the Hanna Water Tower with a New Southerly Water Tower

Alternatives 1 and 2 are unable to accommodate future servicing requirements, which would hinder development and lead to negative economic impacts. Therefore, Alternatives 1 and 2 were not carried forward for further evaluation.

Alternative 3 and Alternative 4 were carried forward for detailed evaluation.

Alternative Solutions

Evaluation of Alternatives

Evaluation Criteria	Alternative 3: Rehabilitation of Hanna Water Tower	Alternative 4: Replace Hanna Water Tower with a New Southerly Water Tower
Technical	• Unable to meet future servicing needs • Unable to meet pressure and velocity requirements due to limited operational flexibility • Complex modifications to adjust to future needs	• Able to meet current and future servicing needs • Able to meet pressure and velocity requirements • Less complex construction and operation
Social	• Located in proximity to residents • More frequent maintenance and inspection required for aging infrastructure	• New location to be further from residents • Temporary disruption to nearby residents/businesses during construction
Environment	• Minimal impact to the natural environment • Risk of compliance issues with aging infrastructure	• Minimal impact to the natural environment • Ministry approval required
Economic	• Higher O&M cost to maintain 70+ year old tower • Moderate capital cost to modify operating range • Challenges with development due to unmet servicing needs	• Lower O&M cost to maintain a new tower • High capital cost • No restriction to planned future development
Archaeological/ Cultural and Built Heritage	• Minimal impact to areas of archaeological potential • Minimal impact to potential built heritage resources and cultural heritage landscapes.	

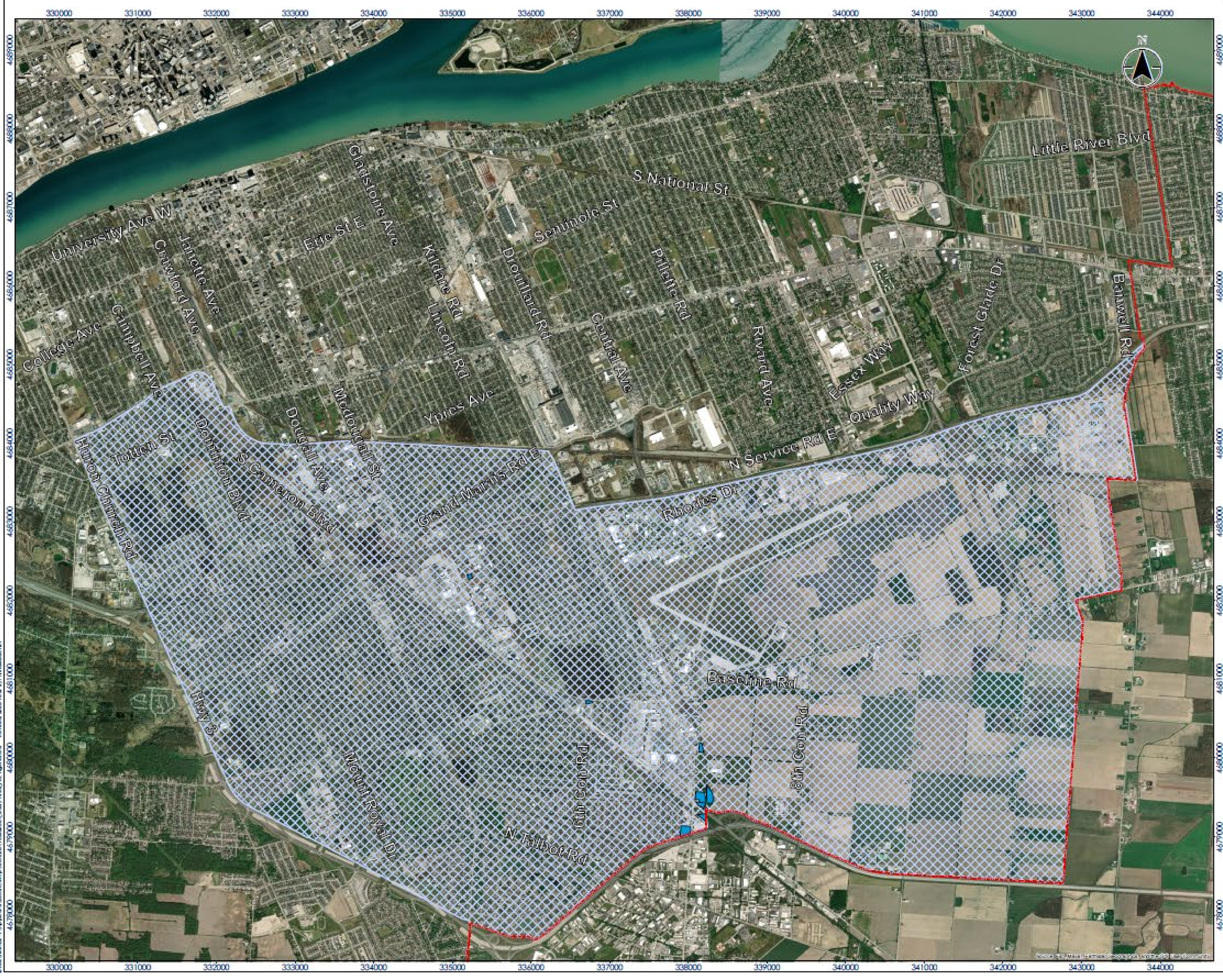
Alternative 4 appears to be more favourable than Alternative 3.

Study Area for New Water Tower Site

Overview

The general “Study Area” was established as the south and southeastern areas of the City of Windsor, which includes Wards 9, 10 and the eastern portion of Ward 1 (Highway 401 being the western limit). The study area definition was also governed by selecting a strategic location with respect to the needs of the developing service area and proximity to existing and planned infrastructure.

The WUC WSMP identified the Walker Road/Provincial Road intersection area as the preferred location for the new water tower. A total of eight (8) alternative sites were identified as potential locations to construct the new water tower, four (4) of which are in the Walker Road/Provincial Road intersection area.



Stantec

Legend

- Tecumseh Municipal Boundary
- Alternative Sites
- Study Area

0 1,600 3,200 metres

1:23,739 (At original document size of 22x34)

Notes

1. Coordinate System: WGS 1984 UTM Zone 17N
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Project Location
Windsor, Ontario

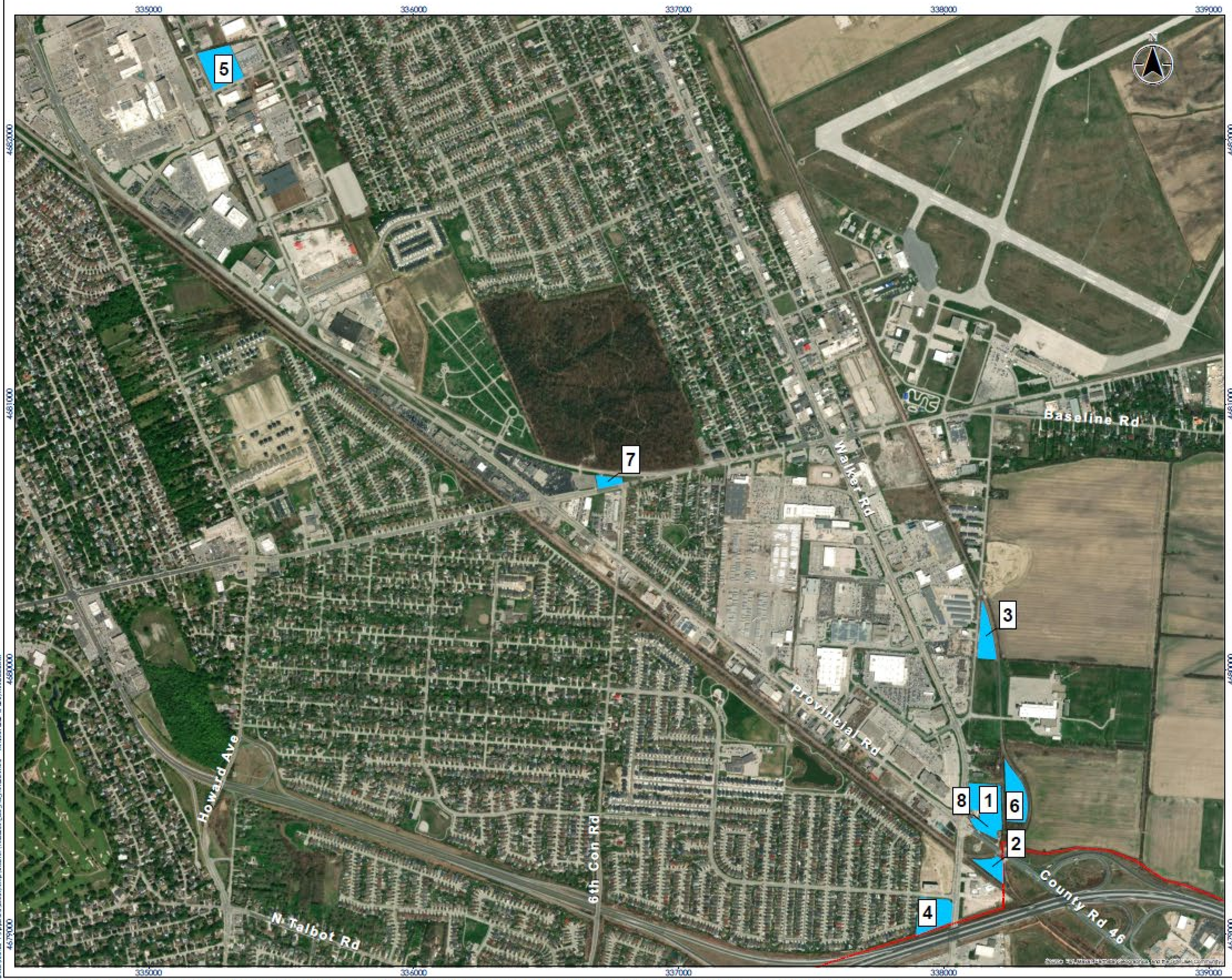
165620304 REVA
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Client/Project
ENWIN Utilities Ltd.

Elevated Water Tower Environmental Assessment

Figure No.
1.2

Title
Study Area



Stantec

Legend

- Alternative Sites
- Tecumseh Municipal Boundary

0 500 1,000 metres

1:7,109 (At original document size of 22x34)

Notes

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Project Location
Windsor, Ontario

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ENWIN Utilities Ltd.

Elevated Water Tower Environmental Assessment

Figure No.
1

Title
Alternative Sites for New Water Tower

Alternative Sites for New Water Tower

Evaluation Criteria

Component	Evaluation Criteria
Technical Suitability	• Proximity and ease of connection to trunk watermain • Site access • Available pressure and fire flows in the distribution system • Proximity to drain • Geotechnical suitability
Social	• Impacts on adjacent land uses • Proximity to residential areas • Zoning requirements • Property ownership
Natural Environment	• Impacts to the natural environment from construction and operation
Economic	• Cost and complexity of land acquisition (e.g. availability, ownership) • Extent of site preparation work • Required watermain upgrades
Archaeological, Cultural and Built Heritage	• Impacts to archaeological, built heritage and cultural heritage resources

Alternative Sites for New Water Tower

Screening of Alternatives

Poor
Fair
Good
Very Good

Alternative	Technical	Social	Economic	Rank
Site No.1	Very Good	Fair	Poor	5th
Site No.2	Very Good	Good	Poor	3rd ★
Site No.3	Good	Very Good	Very Good	1st ★
Site No.4	Good	Poor	Poor	8th
Site No.5	Good	Good	Poor	6th
Site No.6	Fair	Good	Poor	7th
Site No.7	Very Good	Fair	Poor	4th
Site No.8	Very Good	Good	Fair	2nd ★

- Alternatives 4, and 5 were assumed to be in early stages of development per background review
- Alternative 6 does not have direct site access available from a collector or arterial road
- Alternatives 1, 2, 4, 6, 7 and 8 require rezoning

** All alternatives are situated in highly urbanized and previously disturbed areas and therefore the impacts to the Natural Environment & Archaeological/Heritage landscapes were assumed to be minimal and comparable across all sites. Detailed field investigations were completed for the preferred site.*

New Water Tower Site

Selection of the Preferred Alternative

All three (3) of the short-listed sites were deemed technically suitable for the new water tower through hydraulic modelling and background reviews.

Site No.3 located at 4450 7th Concession Road, was identified as the preferred site due to the following factors:

- Located furthest from residential lands
- No rezoning required
- Property owner open to offers



New Water Tower

Comparison of Elevated Water Storage Types

- Poor
- Fair
- Good
- Very Good









Type	Advantages	Disadvantages	Evaluation Result
Standpipe Tower	-Simple design -Lower initial cost -Smaller footprint	-Height restrictions and limited system pressure -Difficult to clean	More suitable for small systems or low head needs
Multi-Column Elevated Tank	-Proven design -Familiar construction methods	-High maintenance (several exposed steel members) -Higher corrosion risk	Functional but outdated design
Spheroid (Hydrosphere) Tank	-Compact, high volume to surface area efficiency	-High fabrication and coating cost -Complex maintenance -Limited local suppliers	Effective but high initial and maintenance costs
Composite Elevated Tank	-High durability -Less maintenance -Strong wind/seismic resistance -Internal access & storage	-Slightly higher initial cost	Best balance of durability, maintainability and system performance **Preferred**

New Water Tower

Design Basis

Storage Capacity: 8000 m^3

Tank Top Water Level: 225.4 m ASL

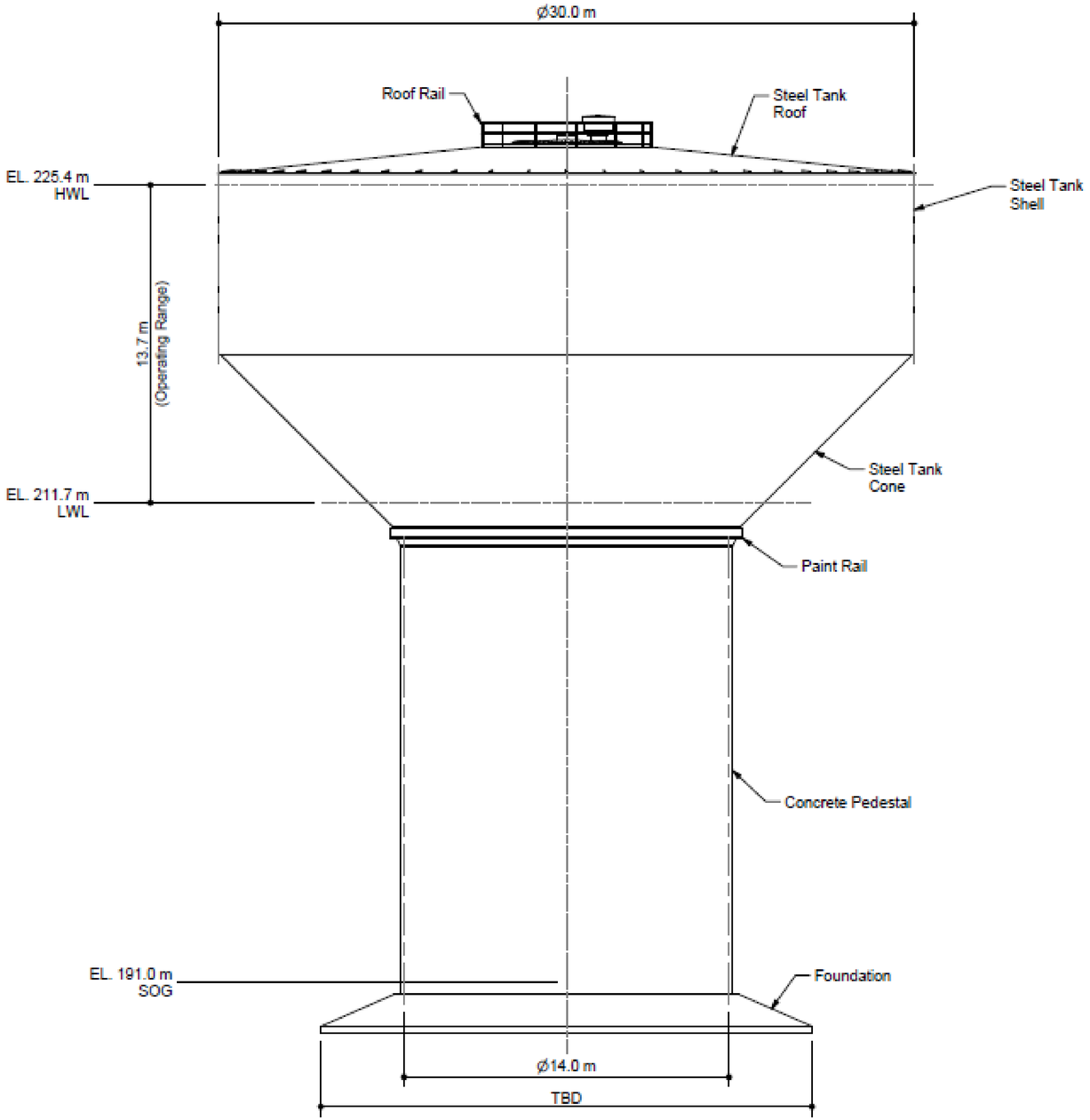
Tank Low Water Level: 211.7 m ASL

Operating Range: 13.7 m

Pedestal Diameter: 14 m

Tank Diameter: 30 m

Type: Composite Elevated Tank



Next Steps

- Review and consider public inputs from this Public Information Centre
- Finalize Project File Report with inputs from public and review agencies
- Place Project File Report on public record and issue Notice of Completion

Thank You

Please visit the project website to submit a feedback form.

ELEVATED WATER TOWER CLASS ENVIRONMENTAL ASSESSMENT
PUBLIC INFORMATION CENTRE
SIGN-IN SHEET

Hellenic Cultural Centre
November 25th, 2025 – 4:00 p.m. to 7:00 p.m.

No.	Name (Please Print)	Address	Telephone Number
1	Cameron Hedges Town of Tecumseh		519 735 2184 ext 120
2	DAVE MIDDLETON	533 DRESDEN, TECUMSEH	519-817-3601
3	Rob Spagnuolo	1150 Minto Ave, LaSalle	519-796-2788
4	Brad Dupuis Town of Tecumseh	917 Lesperance Rd. Tecumseh.	519-791-6509
5	Rylee Casey-Whittaker	286-3371 Sandwich Windsor Ontario	226 344-9777
6			
7			
8			
9			
10			
11			
12			

Surname	First Name	Organization	Department	Job Title	Address	City/Prov	Postal Code	Tel.	E-Mail
Local Municipalities									
Botham	Allan	County of Essex		Director of Infrastructure and Planning	360 Fairview Avenue West	Essex, Ontario	N8M 1Y6	519-776-6441 ex 1397	abotham@countyofessex.ca
Samuel	Nithen	County of Essex		Environmental Coordinator	360 Fairview Avenue West	Essex, Ontario	N8M 1Y6	519-776-6441 ex 1385	Nsamuel@countyofessex.ca
Marra	Peter	Town of LaSalle		Deputy Chief Administrative Officer	5950 Malden Road	LaSalle, Ontario	N9H 1S4	519-969-7770	pmarra@lasalle.ca
Girard	Kevin	Town of Essex		Director of Infrastructure Services	33 Talbot Street South	Essex, Ontario	N8M 1A8	519-776-7336 ext 1119	kgirard@essex.ca
Giofu	Antonietta	Town of Amherstburg		Director of Engineering & Public Works	271 Sandwich Street South	Amherstburg, ON	N9V 2A5	519-736-0012	agiofu@amherstburg.ca
Bartnik	Phil	Town of Tecumseh		Director Public Works & Engineering Services	917 Lesperance Road	Tecumseh, ON	N8N 1W9	519-735-2184	pbartnik@tecumseh.ca
Henderson	John	Town of Tecumseh		Manager Engineering Services	917 Lesperance Road	Tecumseh, ON	N8N 1W9		jhenderson@tecumseh.ca
Hillman	Brian	Town of Tecumseh		Director Development Services	917 Lesperance Road	Tecumseh, ON	N8N 1W9		bhillman@tecumseh.ca
McBride	Truper	Municipality of Lakeshore		CAO	419 Notre Dame Street	Belle River, ON	N0R 1A0		tmcbride@lakeshore.ca
Kalbol	Krystal	Municipality of Lakeshore		Corporate Leader - Operations	419 Notre Dame Street	Belle River, ON	N0R 1A0	519-728-2488 x655	kkalbol@lakeshore.ca
Sharon	Robert	Municipality of Leamington		Director of Infrastructure Services					rsharon@leamington.ca
Del Greco	Tim	Town of Kingsville		Manager of Engineering	2021 Division Rd North	Kingsville, ON	N9Y2Y9		tdelgreco@kingsville.ca
Conservation Authority									
		Essex Region Conservation Authority			360 Fairview Avenue West, Suite 311	Essex, ON	N8M 1Y6		planning@erca.org
Martin	Tian	Essex Region Conservation Authority		Water Resources Engineer	360 Fairview Avenue West, Suite 311	Essex, ON	N8M 1Y6		tmartin@erca.org
Emergency Services									
Lammers	Justin	Essex-Windsor EMS		Chief	920 Mercer Street	Windsor, ON	N9A 1N6		jlammers@countyofessex.on.ca
Horrobin	Barry	Windsor Police Service	Police Headquarters	Director of Planning & Physical Resources	150 Goyeau Street, PO Box 60	Windsor, ON	N9A 6J5	519-255-6700 x4471	bhorrobin@police.windsor.on.ca
Laforet	Stephen	Windsor Fire and Rescue		Fire Chief	815 Goyeau Street	Windsor, ON	N9A 1H7	519-253-6573	slaforet@citywindsor.ca
Benoit	Josh	Central Ambulance Communications Centre			4510 Rhodes Drive, Suite 320	Windsor, ON	N8W 5K5	519-256-2373	josh.benoit@ontario.ca
Peczulis	Victoria	Windsor Essex County Health Unit	Environmental Health	Manager	1005 Ouellette Avenue	Windsor, ON	N9A 4J8	(519) 258-2146	vpeczulis@wechu.org
Interest Groups									
Zulfiqar	Salar	CN Rail	Engineering	Senior Officer, Public Works	4 Welding Way, P.O. Box 1000	Concord, ON	L4K 1B9		salar.zulfiqar@cn.ca
Van Humbeck	Joe	CP Rail		System Manager, Environmental Assessment				403-319-6530	Joe_VanHumbeck@cpr.ca
Naidu	Rakesh	Windsor-Essex Regional Chamber of Commerce		President & CEO	2575 Ouellette Place	Windsor, ON	N8X 1L9	519-966-3696 x222	rnaidu@windsoressexchamber.org
		Citizen Environmental Alliance							ceaadmin@cogeco.net
Frank	Butler	Citizen Environmental Alliance of Southwestern Ontario							flbutler12@gmail.com
Trish	Morris	International Joint Commission							commission@windsor.ijc.org
Trevor	Pitcher	Great Lakes Institute for Environmental Research							glierdir@uwindsor.ca
Averil	Parent	Windsor Essex County Environment Committee							aparent@citywindsor.ca
Tuffin	Steve	Windsor Airport		Director of Operations	3200 County Rd 42	Windsor, ON	N8V 0A1		stuffin@yqg.ca

Surname	First Name	Organization	Department	Job Title	Address	City/Prov	Postal Code	Tel.	E-Mail
Provincial Agencies									
Badali	Mark	Ministry of the Environment, Conservation and Parks	Project Review Unit | Environmental Assessment Branch	Regional Environmental Planner (REP) – Southwest Region	1st Flr, 135 St Clair Ave W, Toronto, ON M4V 1P5	Toronto, ON	M4V 1P5		Mark.Badali1@ontario.ca
		Ministry of the Environment, Conservation and Parks				Toronto, ON	M4V 1P5		eanotification.swregion@ontario.ca
Barboza	Karla	Ministry of Citizenship and Multiculturalism (MCM)		Team Lead - Heritage	5th Flr, 400 University Ave	Toronto, ON	M7A 2R9	416-660-1027	karla.barboza@ontario.ca
Harvey	Joseph	Ministry of Citizenship and Multiculturalism (MCM)		Heritage Planner	5th Flr, 400 University Ave	Toronto, ON	M7A 2R9		joseph.harvey@ontario.ca
Cerniavskaja	Karina	Ministry of Northern Development, Mines, Natural Resources and Forestry (NRF)	Aylmer District	District Planner	615 John Street North	Aylmer, ON	N5H 2S8	519-773-4710	karina.cerniavskaja@ontario.ca
Creighton	Nancy	Ministry of Economic Development, Job Creation and Trade	Windsor Office	Senior Business Advisor	Roundhouse Centre Suite 214, 3155 Howard Ave	Windsor, Ontario	N8X 4Y8	519-259-5509	nancy.creighton@ontario.ca
Kerr	Ian	Ministry of Municipal Affairs and Housing	Municipal Services Office - Western Ontario Region	Regional Director	659 Exeter Road, 2nd Floor	London, ON	N6E 1L3	519-873-4026	ian.kerr@ontario.ca
Boyd	Eric	Ministry of Municipal Affairs and Housing	Community Planning and Development	Manager	659 Exeter Road, 2nd Floor	London, ON	N6E 1L3	519-873-4025	erick.boyd@ontario.ca
Eckert	Anneleis	Ministry of Environment and Climate Change							anneleis.eckert@ontario.ca
Perry	Elizabeth	Ontario Ministry of Transportation	Transportation Infrastructure Management Division Design and Engineering Branch Engineering Program Delivery West	Head, Environmental	659 Exeter Road	London, ON	N6E 1L3	519-619-4086	elizabeth.perry@ontario.ca
Mitchell	James	Ontario Ministy of Agriculture, Food and Rural Affairs		Director of Environmental Management Branch					james.mitchell@Ontario.ca
Carlow	Dan	Ontario Ministy of Agriculture, Food and Rural Affairs		Manager of Innovation, Engineering and Program Delivery, Western Region	581 Huron St,	Stratford, ON	N5A 5T8		dan.carlow@ontario.ca
Brunke	Richard	Ontario Ministy of Agriculture, Food and Rural Affairs		Nutrient Management Engineer	581 Huron St,	Stratford, ON	N5A 5T8		richard.brunke@ontario.ca
Federal Agencies									
Knox	Louise	Environment Canada	Canadian Environmental Assessment Agency - Ontario Region	Regional Director	55 St Clair Ave East, 9th Floor	Toronto, ON	M4T 1M2		louise.knox@ceaa-acee.gc.ca
General		Environment and Climate Change Canada							ec.enviroinfo.ec@canada.ca
Shea	Suzanne	Transport Canada Marine	Navigable Water Protection Officer		100 Front Street South, 1st Floor	Sarnia, ON	N7T 2M4	519-383-1863	NPPONT-PPNONT@tc.gc.ca
Barry	Peter	Windsor Port Authority		Director	3190 Sandwich Street	Windsor, ON	N9C 1A6	519-258-5741 xt.211	pberry@portwindsor.com
Winger	Darren	Ministry of Citizenship, Immigration & International Trade / Ministry of Tourism, Culture & Sport	Windsor Office	Regional Development Advisor	221 Mill Street	Windsor, ON	N9C 2R1		darren.winger@ontario.ca

Surname	First Name	Organization	Department	Job Title	Address	City/Prov	Postal Code	Tel.	E-Mail
Fuerth	Tyson	Bell Canada		Manager, Network Provisioning	1149 Goyeau Street, PO Box 1601	Windsor, ON	N9A 1H9	519-973-4711	tyson.fuerth@bell.ca
Markc	Rachel	Bell Canada							rachel.marks@bell.ca
Kovacs	Aaron	Bell Canada							aaron.kovacs@bell.ca
Team Email		TELUS							telusutilitymarkups@telecon.ca
Planning Support		ROGERS							planningsupport.team@rci.rogers.com
Jones	Mark	MNSI							mjones@mnsi.net
Hartleib	Dave	MNSI							hartleib@mnsi.net
Raymond	Frank	Cogeco Cable Services			2225 Dougall Avenue	Windsor, ON	N8X 5A7		raymond.frank@cogeco.com
Haggins	Daniel	Cogeco Cable Services							daniel.haggins@cogeco.com
Ceccacci	Will	Union Gas			50 Keil Drive North	Chatham, ON	N7M 5M1		wceccacci@uniongas.com
Anthony	Clavet	Essex Power							aclavet@essexpowerlines.ca
MacAulay	Norman	E.L.K Energy		Operations Manager					nmacaulay@elkenergy.com
		Ontario Power Generation							Executivevp.lawanddevelopment@opg.com
		Essex Terminal Railway Company			1601 Lincoln Road	Windsor, ON	N8Y 2J3	519-973-8222	info@etr.ca
Zerdin	Joseph	Hydro One		Director of Customer Care					joseph.zerdin@hydroone.com
Maga	Jessica	Hydro One		Manager-Government Relations					jessica.maga@hydroone.com
Yeung	Michael	Enbridge				Windsor, ON	N9A 6N7		michael.yeung@enbridge.com

Main Contact	Surname	First Name	Organization	Job Title	Address	City/Prov	Postal Code	Tel.	E-Mail	Note
Indigenous Agencies										
	Mann	Molly	Ministry of Indigenous Affairs		Suite 400, 160 Bloor Street East	Toronto, ON	M7A 2E6		molly.mann@ontario.ca	
	Levecque	Heather	Ministry of Indigenous Affairs		Suite 400, 160 Bloor Street East	Toronto, ON	M7A 2E6	416-325-7032	heather.levecque@ontario.ca	
	Whiteye	Jennifer	Southern First Nations Secretariat	Executive Director	22361 Austin Line	Bothwell, ON	N0L 1Y0	519-692-5868 x242	jenwhiteye@sfns.on.ca	
	Kathleen	Anderson	Métis Nation of Ontario, Thames Bluewater Métis Council	President	183 Summerset Crescent	London, ON	N6K 3S5		tbwmc.president@gmail.com	
			Métis Nation of Ontario	Consultations					mno@metisnation.org	
First Nation Communities										
	Nahmabin	Janelle	Aamjiwnaang First Nation	Chief	978 Tashmoo Avenue	Sarnia, ON	N7T 7H5	519-336-8410	jnahmabin@aamjiwnaang.ca	
	Rosales	Lynn	Aamjiwnaang First Nation	Environmental Coordinator	978 Tashmoo Avenue	Sarnia, ON	N7T 7H5	519-336-8410	lrosales@aamjiwnaang.ca	
	Jackson	Courtney	Aamjiwnaang First Nation	Environment Worker	978 Tashmoo Avenue	Sarnia, ON	N7T 7H5	519-336-8410	cjackson@aamjiwnaang.ca	
	Miskokomon	Dan	Bkejwanong (Walpole Island First Nation)	Heritage Centre Director	117 Tahgahoning Road,R.R. #3	Wallaceburg, ON	N8A 4K9	519-627-1475	drskoke@wifn.org	
*	MacBeth	Janet	Bkejwanong (Walpole Island First Nation)	Project Review Coordinator	117 Tahgahoning Road,R.R. #3	Wallaceburg, ON	N8A 4K9	519-627-1481	janet.macbeth@wifn.org	
*	Hamm	Zack	Caldwell First Nation	Environment and Consultation Department Manager	14 Orange Street	Leamington, ON	N8H 1P5	519-326-1766	ecd.manager@caldwellfirstnation.ca	
			Caldwell First Nation	Environmental & Consultation Coordinator	15 Orange Street	Leamington, ON	N8H 1P6	519-326-1767	ecc@caldwellfirstnation.ca	* Use https://nationsconnect.ca/
	Bressette	Kimberly	Chippewas of Kettle & Stony Point First Nation	Chief	6247 Indian Lane, RR#2	Forest, ON	N0N 1J1	519-786-2125	Kimberly.Bressette@kettlepoint.org	* Use https://nationsconnect.ca/
*	Ferguson	Emily	Chippewas of Kettle & Stony Point First Nation	Consultation Coordinator	6247 Indian Lane, RR#2	Forest, ON	N0N 1J1	519-786-2125	consultation@kettlepoint.org	
	Jacqueline	French	Chippewas of the Thames First Nation	Chief	320 Chippewa Road	Muncey, ON	N0L 1Y0	519-289-5555	jfrench@cottfn.com	
	Riley	Kelly	Chippewas of the Thames First Nation	Director of Treaties, Lands & Environment	320 Chippewa Road	Muncey, ON	N0L 1Y0	519-289-5555 x 209	kriley@cottfn.com	
*	Burch	Fallon	Chippewas of the Thames First Nation	Consultation Coordinator	320 Chippewa Road	Muncey, ON	N0L 1Y0	519-289-5555 x 213	fburch@cottfn.com	* Use https://nationsconnect.ca/
	Stonefish	Denise	Delaware Nation (Moravian of the Thames)	Chief	14760 School House Line, RR 3	Thamesville, ON	N0P 2K0	519-692-3936	denise.stonefish@delawarenation.on.ca	
	Cornelius	Catherine	Onelda Nation of the Thames ONYOTA'A:KA	Political Office Manager	2212 Elm Avenue	Southwold, ON	N0L 2G0	(519) 318-4593	catherine.cornelius@oneida.on.ca	

From: Rindlisbacher, Hannah
To:

Subject: 165620304: Notice of Study Commencement – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission
Date: Monday, November 27, 2023 4:24:00 PM
Attachments: 1. ENWIN EWT EA - Notice of Study Commencement.pdf

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To Whom It May Concern,

ENWIN Utilities Ltd. (ENWIN) on behalf of the Windsor Utilities Commission is undertaking a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for a new Elevated Water Tower and associated distribution and transmission system. This study will satisfy Phase No.'s 1 and 2 of the Class EA process including: (Phase 1) review of background information and definition of a problem statement and (Phase 2) identification and evaluation of alternative solutions. The planning and decision making of the Class EA process will be documented in a Project File Report. A copy of the Notice of Study Commencement for the project is attached.

On behalf of ENWIN, we invite you to participate in this project by providing your feedback and identifying environmental, social, and cultural impacts that may relate to this study. A reply by December 22nd, 2023, would be appreciated so that we may consider your comments early in this study stage.

If you have any comments or concerns regarding this Study, please contact the undersigned below or one of the individuals named in the attached Notice of Commencement.

Sincerely,

Hannah Rindlisbacher E.I.T., LEED Green Associate
Environmental Engineer in Training

Direct: 226-704-3060
Fax: 519-966-2253
hannah.rindlisbacher@stantec.com

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Windsor ON N8X 1L9

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From:	Rindlisbacher, Hannah
To:	
Subject:	165620304: Notice of Public Information Centre – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission
Date:	Friday, November 7, 2025 12:10:00 PM
Attachments:	ENWIN EWT EA - Notice of PIC.pdf

To Whom It May Concern,

ENWIN Utilities Ltd. (ENWIN) on behalf of the Windsor Utilities Commission (WUC) is undertaking a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for a new Elevated Water Tower and associated distribution and transmission system. This study will satisfy Phase No.'s 1 and 2 of the Class EA process including: (Phase 1) review of background information and definition of a problem statement and (Phase 2) identification and evaluation of alternative solutions. The planning and decision making of the Class EA process will be documented in a Project File Report.

ENWIN, as the proud operator of WUC, is hosting a Public Information Centre (PIC) to present the evaluation of alternative solutions and associated distribution and transmission system for the new Elevated Water Tower. The PIC will be held on November 25, 2025 (4:00 to 7:00 pm) at the Hellenic Cultural Centre, 3052 Walker Road, Windsor ON to receive input from interested residents and stakeholders.

A copy of the Notice of Public Information Centre for the project is attached and additional information regarding the project will be available starting November 25 on ENWIN's website: https://ENWIN.com/water/windsor-utilities-commission

Following the PIC, comments are welcomed and will be received until December 23, 2025.

If you have any comments or concerns regarding this Study, please contact the undersigned.

Sincerely,

Hannah Rindlisbacher P.Eng., LEED Green Associate
Environmental Engineer

Direct: 226-704-3060
Fax: 519-966-2253
hannah.rindlisbacher@stantec.com

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From:	Alicia Good
To:	Rindlisbacher, Hannah
Subject:	RE: 165620304: Notice of Study Commencement – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission
Date:	Monday, November 27, 2023 3:24:29 PM

Good afternoon Hannah,
Thank you for circulating ERCA on the Schedule 'B' Municipal Class Environmental Assessment for a new Elevated Water Tower and associated distribution and transmission system. Please continue to circulate our office on this study.
Have a great week,
Alicia Good

Alicia Good (she/her)
Watershed Planner
Essex Region Conservation Authority
360 Fairview Avenue West, Suite 311 | Essex, Ontario | N8M 1Y6
P. 519-776-5209 x3794 | F. 519-776-8688
agood@erca.org www.essexregionconservation.ca

While this email is sent when it is convenient for me, I do not expect a response or action outside of your own regular working hours.

The ERCA Office is now open to the public **Tuesdays, Wednesdays and Thursdays** to provide "counter service"; however, services continue to be delivered online and through email. Please consult ERCA's website for more information and direction regarding online services (i.e. permitting, cottage bookings, seasonal passes etc.)

From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: Monday, November 27, 2023 3:03 PM
Subject: 165620304: Notice of Study Commencement – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission

To Whom It May Concern,

ENWIN Utilities Ltd. (ENWIN) on behalf of the Windsor Utilities Commission is undertaking a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for a new Elevated Water Tower and associated distribution and transmission system. This study will satisfy Phase No.'s 1 and 2 of the Class EA process including: (Phase 1) review of background information and definition of a problem statement and (Phase 2) identification and evaluation of alternative solutions. The planning and decision making of the Class EA process will be documented in a Project File Report. A copy of the Notice of Study Commencement for the project is attached.

On behalf of ENWIN, we invite you to participate in this project by providing your feedback and identifying environmental, social, and cultural impacts that may relate to this study. A reply by December 22nd, 2023, would be appreciated so that we may consider your comments early in this study stage.

If you have any comments or concerns regarding this Study, please contact the undersigned below or one of the individuals named in the attached Notice of Commencement.

Sincerely,

Hannah Rindlisbacher E.I.T., LEED Green Associate
Environmental Engineer in Training

Direct: 226-704-3060
Fax: 519-966-2253
hannah.rindlisbacher@stantec.com

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From:	Rindlisbacher, Hannah
To:	"Horrobin, Barry"
Subject:	RE: Windsor Police comments – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission
Date:	Thursday, November 30, 2023 4:33:00 PM

Good afternoon Barry,

Thank you for your response.

We will certainly keep the Windsor Police Service informed as the study progresses and more site details are available.

Regards,

Hannah Rindlisbacher E.I.T., LEED Green Associate
Environmental Engineer in Training

Direct: 226-704-3060
Fax: 519-966-2253
hannah.rindlisbacher@stantec.com

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From: Horrobin, Barry <bhorrobin@windsorpolice.ca>
Sent: Thursday, November 30, 2023 3:28 PM
To: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Subject: Windsor Police comments – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission

Hannah:

The Windsor Police Service has no concerns or specific comments to make at this early stage of the project. However, once a drawing is completed that shows both the geographical location for the proposed new elevated water tower, plus applicable site details/specifications/layouts, we will provide more detailed remarks.

Can you therefore kindly ensure we are kept in the loop on the project as it unfolds? We will provide more specific details at the appropriate time.

Respectfully,

Barry Horrobin, B.A., M.A., CLEP, CMM-III
Director of Planning & Physical Resources
WINDSOR POLICE SERVICE

Advanced Certified Law Enforcement Planner

From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: Monday, November 27, 2023 3:03 PM
Subject: 165620304: Notice of Study Commencement – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission

EXTERNAL EMAIL: Do not click any links or open any attachments unless you trust the sender and know the content is safe. The Original Sender of this email is "Rindlisbacher, Hannah" <Hannah.Rindlisbacher@stantec.com>

To Whom It May Concern,

ENWIN Utilities Ltd. (ENWIN) on behalf of the Windsor Utilities Commission is undertaking a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for a new Elevated Water Tower and associated distribution and transmission system. This study will satisfy Phase No.'s 1 and 2 of the Class EA process including: (Phase 1) review of background information and definition of a problem statement and (Phase 2) identification and evaluation of alternative solutions. The planning and decision making of the Class EA process will be documented in a Project File Report. A copy of the Notice of Study Commencement for the project is attached.

On behalf of ENWIN, we invite you to participate in this project by providing your feedback and identifying environmental, social, and cultural impacts that may relate to this study. A reply by December 22nd, 2023, would be appreciated so that we may consider your comments early in this study stage.

If you have any comments or concerns regarding this Study, please contact the undersigned below or one of the individuals named in the attached Notice of Commencement.

Sincerely,

Hannah Rindlisbacher E.I.T., LEED Green Associate
Environmental Engineer in Training

Direct: 226-704-3060
Fax: 519-966-2253
hannah.rindlisbacher@stantec.com

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From:	ONT Environment / Environnement ONT
To:	Rindlisbacher, Hannah
Subject:	RE: [External/Externe]: 165620304: Notice of Study Commencement – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission
Date:	Friday, December 1, 2023 10:03:06 AM
Attachments:	1. ENWIN EWT EA - Notice of Study Commencement.pdf

You don't often get email from enviroont@tc.gc.ca. Learn why this is important

Greetings,

Thank you for your correspondence.

Please note Transport Canada does not require receipt of all Individual or Class EA related notifications. We request that project proponents self-assess whether their project:

1. Will interact with a federal property and/or waterway by reviewing the Directory of Federal Real Property, available at at www.tbs-sct.gc.ca/dfrp-rbif/; **and**
2. Will require approval and/or authorization under any Acts administered by Transport Canada* available at http://www.tc.gc.ca/eng/acts-regulations/menu.htm.

Proposed projects that will occur on federal property (including reserve lands or lands owned by federal departments other than Transport Canada) will be subject to an Impact Assessment per Section 82 of the *Impact Assessment Act, 2019* prior to exercising a federal power (including full or partial funding), and/or performing a function or duty (e.g. regulatory approval or issuance of a lease) in relation to that project.

If the criteria above do not apply, Transport Canada's Environmental Assessment program should not be included in any further correspondence, and future notifications will not receive a response. If there is a role under the program, correspondence should be forwarded to: EnviroOnt@tc.gc.ca with a **brief description of Transport Canada's expected role**.

*Below is a summary of the most common Acts that apply to projects in an Environmental Assessment context:

- ***Canadian Navigable Waters Act (CNWA)*** – the Act applies primarily to works constructed or placed in, on, over, under, through, or across navigable waters set out under the Act. The Navigation Protection Program administers the CNWA through the review and authorization of works affecting navigable waters. Information about the Program, CNWA and approval process is available at: http://www.tc.gc.ca/eng/programs-621.html. Inquiries can be directed to NPPONT-PPNONT@tc.gc.ca or by calling (519) 383-1863.

- ***Railway Safety Act (RSA)*** – the Act provides the regulatory framework for railway safety, security, and some of the environmental impacts of railway operations in Canada. The Rail Safety Program develops and enforces regulations, rules, standards and procedures governing safe railway operations. Additional information about the Program is available at: https://www.tc.gc.ca/eng/railsafety/menu.htm. Inquiries can be directed to

RailSafety@tc.gc.ca or by calling (613) 998-2985.

- ***Transportation of Dangerous Goods Act (TDGA)*** – the transportation of dangerous goods by air, marine, rail and road is regulated under the TDGA. Transport Canada, based on risks, develops safety standards and regulations, provides oversight and gives expert advice on dangerous goods to promote public safety. Additional information about the transportation of dangerous goods is available at: https://www.tc.gc.ca/eng/tdg/safety-menu.htm. Inquiries can be directed to TDG-TMDOntario@tc.gc.ca or by calling (416) 973-1868.

- ***Aeronautics Act*** – this Act and the associated Canadian Aviation Regulations (CARs) govern civil aviation in Canada. Transport Canada should be notified of projects involving aerodromes and associated structures, or activities that could affect aviation safety. Elevated structures, such as wind turbines and communication towers, are examples of projects that must be assessed for lighting and marking requirements in accordance with the CARs. Transport Canada also has an interest in projects that have the potential to cause interference between wildlife and aviation activities. One example would be waste facilities, which may attract birds into commercial and recreational flight paths. Additional guidance can be found in the *Land Use In The Vicinity of Aerodromes* publication, available at: https://www.tc.gc.ca/eng/civilaviation/publications/tp1247-menu-1418.htm. Information about Transport Canada's Civil Aviation program can be found at: https://tc.canada.ca/en/aviation. Inquires can be directed to aviation.ont@tc.gc.ca or by calling 1 (800) 305-2059 / (416) 952-0230.

Please advise if additional information is needed.

Thank you,

Environmental Assessment Program, Ontario Region
Transport Canada / Government of Canada / 4900 Yonge St., Toronto, ON M2N 6A5
EnviroOnt@tc.gc.ca

Programme d'évaluation environnementale, Région de l'Ontario
Transports Canada / Gouvernement du Canada / 4900, rue Yonge, Toronto, ON, M2N 6A5
EnviroOnt@tc.gc.ca

From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: Monday, November 27, 2023 3:06 PM
Subject: [External/Externe]: 165620304: Notice of Study Commencement – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission

To Whom It May Concern,

ENWIN Utilities Ltd. (ENWIN) on behalf of the Windsor Utilities Commission is undertaking a Schedule ‘B’ Municipal Class Environmental Assessment (Class EA) for a new Elevated Water Tower and associated distribution and transmission system. This study will satisfy Phase No.’s 1 and 2 of the Class EA process including: (Phase 1) review of background information and definition of a problem statement and (Phase 2) identification and evaluation of alternative solutions. The planning and decision making of the Class EA process will be documented in a Project File Report. A copy of the Notice of Study Commencement for the project is attached.

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If you have any comments or concerns regarding this Study, please contact the undersigned below or one of the individuals named in the attached Notice of Commencement.

Sincerely,

Hannah Rindlisbacher E.I.T., LEED Green Associate
Environmental Engineer in Training

Direct: 226-704-3060
Fax: 519-966-2253
hannah.rindlisbacher@stantec.com

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From:	Rindlisbacher, Hannah
To:	Rindlisbacher, Hannah
Subject:	FW: 165620304: Notice of Study Commencement – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission [ATS-23-24-00045335]
Date:	Wednesday, December 10, 2025 4:49:32 PM
Attachments:	image001.png

From: So, Wilfred <wilfred.so@tc.gc.ca>
Sent: Monday, October 28, 2024 8:53 AM
To: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Cc: Li, Jian <jian.li@stantec.com>; Christopher Manzon <cmanzon@enwin.com>
Subject: 165620304: Notice of Study Commencement – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission [ATS-23-24-00045335]

> Some people who received this message don't often get email from wilfred.so@tc.gc.ca. Learn why this is important

Good morning Hannah,

Our apologies for the delayed response. We have reviewed your submission but without an exact location we are unable to provide any comments to your proposal.

For your reference, when any building, structure or object is set to be built, the proponent is responsible to ensure it is in compliance with the regulations of all levels of government. For Transport Canada, an Aeronautical Assessment Form (AAF) is submitted if requested by Transport Canada, or if required as per:

- The instructions in the Aeronautical Assessment Form;
- Your obligations under Canadian Aviation Regulations Standard 621. https://www.tc.gc.ca/en/transport-canada/corporate/acts-regulations/regulations/sor-96-433/standard-621.html

The Aeronautical Assessment Form must be submitted at least 90 days prior to construction or erection of the building, structure or object. The form is available online in English or French.

- English: http://wwwapps.tc.gc.ca/Corp-Serv-Gen/5/forms-formulaires/download/26-0427_BO_PX
- French: http://wwwapps.tc.gc.ca/Corp-Serv-Gen/5/forms-formulaires/telecharger/26-0427_BO_PX

An application for Transport Canada Civil Aviation (TCCA) service including the aeronautical assessment can be submitted by email to aviation.ont@tc.gc.ca.

Please note, a Land Use submission form is to be applied for and sent separately to NAV CANADA at landuse@navcanada.ca. For a detailed description on NAV CANADA's

requirements, refer to NAV CANADA Land Use Proposal website at www.navcanada.ca, or for further information, call 1-866-577-0247.
Should you require additional information, please do not hesitate to contact me at (416) 452-1782 or wilfred.so@tc.gc.ca.

Kind regards,

Wilfred So

Civil Aviation Safety Inspector - Aerodromes and Air Navigation (PAH-TOR-S)
Civil Aviation / Transport Canada / Government of Canada
wilfred.so@tc.gc.ca / Cell: 416-452-1782 / TTY: 1-888-675-6863

Inspecteur de la sécurité de l'Aviation civile - aérodromes et navigation aérienne (PAH-TOR-S)
Aviation civile / Transports Canada / Gouvernement du Canada
wilfred.so@tc.gc.ca / Tél. Cell. 416-452-1782 / ATS : 1-888-675-6863

Transport Canada Transports Canada

From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: Wednesday, December 13, 2023 2:55 PM
To: ONT Environment / Environnement ONT <EnviroOnt@tc.gc.ca>
Cc: ONT Aviation Services / Services aviation ONT (TC) <aviation.ont@tc.gc.ca>; Li, Jian <jian.li@stantec.com>; Christopher Manzon <cmanzon@enwin.com>
Subject: RE: [External/Externe]: 165620304: Notice of Study Commencement – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission

Good afternoon,

Stantec has completed a self-assessment of this project, and it appears we may require approval and/or authorization under the Aeronautics Act.

ENWIN Utilities Ltd. (ENWIN) on behalf of the Windsor Utilities Commission is undertaking a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for a new Elevated Water Tower and associated distribution and transmission system in the City of Windsor, Ontario. The Notice of Study Commencement was issued on November 27th, 2023, so we are still in the very early stages of the planning phase.

As this study is being carried out for a new elevated water tower, we believe Transport Canada should be notified of this project as it could impact aviation safety. The broad study area is nearby the Windsor Airport and the proposed top elevation of the new tower is 225.2 m. Alternative locations will be identified and evaluated as part of Phase 2 of the Class EA process sometime in early 2024.

Please advise if Transport Canada agrees that this project will require future approval and/or authorization and we will continue to inform Transport Canada as the study progresses.

Thanks,

Hannah Rindlisbacher E.I.T., LEED Green Associate
Environmental Engineer in Training

Direct: 226-704-3060
Fax: 519-966-2253
hannah.rindlisbacher@stantec.com

Stantec
100-2555 Ouellette Avenue
Windsor ON N8X 1L9

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From: ONT Environment / Environnement ONT <EnviroOnt@tc.gc.ca>
Sent: Friday, December 1, 2023 10:02 AM
To: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Subject: RE: [External/Externe]: 165620304: Notice of Study Commencement – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission

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Greetings,

Thank you for your correspondence.

Please note Transport Canada does not require receipt of all Individual or Class EA related notifications. We request that project proponents self-assess whether their project:

1. Will interact with a federal property and/or waterway by reviewing the Directory of Federal Real Property, available at at www.tbs-sct.gc.ca/dfrp-rbif/; **and**
2. Will require approval and/or authorization under any Acts administered by Transport Canada* available at http://www.tc.gc.ca/eng/acts-regulations/menu.htm.

Proposed projects that will occur on federal property (including reserve lands or lands owned by federal departments other than Transport Canada) will be subject to an Impact Assessment per Section 82 of the *Impact Assessment Act, 2019* prior to exercising a federal power (including full or partial funding), and/or performing a function or duty (e.g. regulatory approval or issuance of a lease) in relation to that project.

If the criteria above do not apply, Transport Canada's Environmental Assessment program should not be included in any further correspondence, and future notifications will not receive a response. If there is a role under the program, correspondence should be forwarded to: EnviroOnt@tc.gc.ca with a **brief description of Transport Canada's expected role**.

*Below is a summary of the most common Acts that apply to projects in an Environmental Assessment context:

- ***Canadian Navigable Waters Act (CNWA)*** – the Act applies primarily to works constructed or placed in, on, over, under, through, or across navigable waters set out under the Act. The Navigation Protection Program administers the CNWA through the review and authorization of works affecting navigable waters. Information about the Program, CNWA and approval process is available at: http://www.tc.gc.ca/eng/programs-621.html. Inquiries can be directed to NPPONT-PPNONT@tc.gc.ca or by calling (519) 383-1863.

- ***Railway Safety Act (RSA)*** – the Act provides the regulatory framework for railway safety, security, and some of the environmental impacts of railway operations in Canada. The Rail Safety Program develops and enforces regulations, rules, standards and procedures governing safe railway operations. Additional information about the Program is available at: https://www.tc.gc.ca/eng/railsafety/menu.htm. Inquiries can be directed to RailSafety@tc.gc.ca or by calling (613) 998-2985.

- ***Transportation of Dangerous Goods Act (TDGA)*** – the transportation of dangerous goods by air, marine, rail and road is regulated under the TDGA. Transport Canada, based on risks, develops safety standards and regulations, provides oversight and gives expert advice on dangerous goods to promote public safety. Additional information about the transportation of dangerous goods is available at: https://www.tc.gc.ca/eng/tdg/safety-menu.htm. Inquiries can be directed to TDG-TMDOntario@tc.gc.ca or by calling (416) 973-1868.

- ***Aeronautics Act*** – this Act and the associated Canadian Aviation Regulations (CARs) govern civil aviation in Canada. Transport Canada should be notified of projects involving aerodromes and associated structures, or activities that could affect aviation safety. Elevated structures, such as wind turbines and communication towers, are examples of projects that must be assessed for lighting and marking requirements in accordance with the CARs. Transport Canada also has an interest in projects that have the potential to cause interference between wildlife and aviation activities. One example would be waste facilities, which may attract birds into commercial and recreational flight paths. Additional guidance can be found in the *Land Use In The Vicinity of Aerodromes* publication, available at: https://www.tc.gc.ca/eng/civilaviation/publications/tp1247-menu-1418.htm. Information about Transport Canada's Civil Aviation program can be found at: https://tc.canada.ca/en/aviation. Inquires can be directed to aviation.ont@tc.gc.ca or by calling 1 (800) 305-2059 / (416) 952-0230.

Please advise if additional information is needed.

Thank you,

Environmental Assessment Program, Ontario Region
Transport Canada / Government of Canada / 4900 Yonge St., Toronto, ON M2N 6A5
EnviroOnt@tc.gc.ca

Programme d'évaluation environnementale, Région de l'Ontario
Transports Canada / Gouvernement du Canada / 4900, rue Yonge, Toronto, ON, M2N 6A5

EnviroOnt@tc.gc.ca

From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: Monday, November 27, 2023 3:06 PM
Subject: [External/Externe]: 165620304: Notice of Study Commencement – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission

To Whom It May Concern,

ENWIN Utilities Ltd. (ENWIN) on behalf of the Windsor Utilities Commission is undertaking a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for a new Elevated Water Tower and associated distribution and transmission system. This study will satisfy Phase No.'s 1 and 2 of the Class EA process including: (Phase 1) review of background information and definition of a problem statement and (Phase 2) identification and evaluation of alternative solutions. The planning and decision making of the Class EA process will be documented in a Project File Report. A copy of the Notice of Study Commencement for the project is attached.

On behalf of ENWIN, we invite you to participate in this project by providing your feedback and identifying environmental, social, and cultural impacts that may relate to this study. A reply by December 22nd, 2023, would be appreciated so that we may consider your comments early in this study stage.

If you have any comments or concerns regarding this Study, please contact the undersigned below or one of the individuals named in the attached Notice of Commencement.

Sincerely,

Hannah Rindlisbacher E.I.T., LEED Green Associate
Environmental Engineer in Training

Direct: 226-704-3060
Fax: 519-966-2253
hannah.rindlisbacher@stantec.com

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Windsor ON N8X 1L9

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From: Li, Jian
To: Tuffin, Steve
Cc: Christopher Manzon; Rindlisbacher, Hannah
Subject: 165620295 Enwin Elevated Water Tower - YQA Comments
Date: Tuesday, December 12, 2023 6:28:14 PM
Attachments: image001.png

Hi Steve,

Thank you so much for your comments on the location and the height of the tower in relation to the airport.

The potential locations and height of the proposed water tower will be carefully evaluated as part of this study.

You've advised that the AZR height restriction is a height of 150 feet (45 m) above the established airport runaway elevation. In the previous Mater Plan study, the proposed top elevation of the new water tower is 225.2 m. What is your airport runaway elevation? We would like you to confirm that the height of the proposed water tower meets the AZR height restriction requirements.

I will call you to discuss.

Regards,

Jian Li, Ph.D., P.Eng.
Project Manager

Direct: 226-704-3039
Mobile: 519 562-7541

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2555 Ouellette Ave
Windsor ON N8X 1L9 CA

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From: Tuffin, Steve <stuffin@yqg.ca>
Sent: Monday, December 11, 2023 12:09 PM
To: Li, Jian <jian.li@stantec.com>
Subject: Enwin Elevated Water Tower

You don't often get email from stuffin@yqg.ca. Learn why this is important

Good afternoon Jian

I am wondering if you have a few minutes to discuss the Enwin Elevated Water Tower location. As the operator of the Windsor Airport, my concern is the location and the height of the tower in relation to the airport, taking into consideration the 4km Obstacle Limitation Surface, and the Airport Zoning Regulations. Although I am confident you would have considered these regulations, I just wanted to touch base with you and your team before the public meetings are started. I understand that one considered location is near the Walker Road, Provincial Road area. Depending on the proposed location in that area, the AZR height restriction in that area is 150 feet. I do not build water towers or sky scrapper so I do not know the normal height of such towers and will leave that the experts, such as yourselves.

Looking forward to participating in the public meetings

Thanks for your time

Steve Tuffin
Director of Airport Operations

YQG YOUR QUICK GATEWAY
WINDSOR INTERNATIONAL AIRPORT

3200 County Rd. 42, Unit 200, Windsor, ON, Canada N8V 0A1
phone: (519) 969-2430 Ext. 436 · **fax:** (519) 969-6053
cell: (519) 965-2701
email: *stuffin@yqg.ca* · **web:** www.yqg.ca ·

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From: Li, Jian
To: Tuffin, Steve
Cc: Christopher Marcoux; Rindlisbacher, Hannah
Subject: RE: Message from "RNPS83879921DDE"
Date: Wednesday, December 13, 2023 11:22:35 AM
Attachments: [redacted]

Hi Steve,

Thanks for the attached manual highlighting the AZR height restriction requirements.

We will prepare a site plan with potential elevated tower locations. And send it to you for your review and comments prior to the public information centre.

Best regards,

Jian Li, Ph.D., P.Eng.
Project Manager

Direct: 226-704-3039
Mobile: 519 562-7541

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-----Original Message-----
From: Tuffin, Steve <stuffin@yqg.ca>
Sent: Wednesday, December 13, 2023 8:35 AM
To: Li, Jian <jian.li@stantec.com>
Subject: FW: Message from "RNPS83879921DDE"

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Good morning Lian

Attached is a page from our Airport Operations manual (AOM)

You will find most of the info you should need on this page.
The geometric centre, the starting point of measure outward 4000m forming the outer surface.
Elevation Above Sea Level of 622' (189.6m) is the highest point of our surface structures and the point of measure for the 150' (45m) outer surface.

If you need any other info please do not hesitate to ask

Steve Tuffin
Director of Airport Operations

3200 County Rd. 42, Unit 200, Windsor, ON, Canada N8V 0A1
phone: (519) 969-2430 Ext. 436 · fax: (519) 969-6053
cell: (519) 965-2701
email: stuffin@yqg.ca · web: https://can01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.yqg.ca%2F&data=05%7C02%7CHannah.Rindlisbacher%40stantec.com%7C51217d597a354e510fd0fdbdbdbd7f79c75%7C413c6f2c219a469297d3f2b4d8028 1e7%7C0%7C0%7C638380813450402618%7CUnknown%7CTWFpbGZsb3dfeyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=JYhGkVqScpTH4bnKekUGt6rwHPBs1yKyBUdBalAVjj4%3D&reserved=0

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3.1 Aerodrome Data

Reference Point	Co-ordinates	N42° – 16' – 29"	W82° – 57' – 30"
	Elevation	622' ASL	
Geometric Centre	Co-ordinates	N42° – 16' – 33.52"	W82° – 57' – 19.44"
	Published	N42° – 16' – 34"	W82° – 57' – 19"
Aerodrome Elevation	Location	N42° – 16' – 24.1" (Intersection 07-25 and 12-30)	W82° – 58' – 13.1"
	Elevation	622' ASL	
Aerodrome Magnetic Variation	7°W		
Aerodrome Reference Temperature	26.6°C		
Windsock Locations	See site plan in Appendix C		
Electronic Navigation Aids			
NDB	QG 353 (L)	N42° – 18' – 46"	W82° – 52' – 07"
ILS	IQG 110.3 (Rwy 25)		

RVR (Rwy 07/25) RVR available from London FSS (126.7) when tower closed

Significant Obstacles in the Vicinity of the Aerodrome:

	Elevation	Location
Mill-Am Corporation (asphalt piles)		
Hydro pole(s) [Rwy 07 displacement]		
Rail corridor	(6 m above the rails)	Runs north-south on the west side of the airport property, approximately 380 m from the displaced threshold of runway 12.
Highway 42	(4.3 m above crown)	Runs east-west on the south side of the airport property, approximately 300 m from the displaced threshold of runway 30.

From:	Rindlisbacher, Hannah
To:	"Leclerc, Erika (MCM)"
Cc:	Barboza, Karla (She/Her) (MCM); Harvey, Joseph (MCM); Christopher Manzon; Li, Jian
Subject:	RE: MCM Response - Notice of Study Commencement - Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission
Date:	Wednesday, December 13, 2023 4:59:00 PM

Good afternoon Erika,

Thank you for your letter in response to the Notice of Study Commencement for the Elevated Water Tower EA.

We will reference the information in this letter throughout the study and during the preparation of the Project File Report. We will continue to send notices and project updates to both Karla and Joseph.

Thanks,

Hannah Rindlisbacher E.I.T., LEED Green Associate
Environmental Engineer in Training

Direct: 226-704-3060
Fax: 519-966-2253
hannah.rindlisbacher@stantec.com

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Windsor ON N8X 1L9

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From: Leclerc, Erika (MCM) <Erika.Leclerc2@ontario.ca>
Sent: Tuesday, December 12, 2023 1:29 PM
To: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Cc: Barboza, Karla (She/Her) (MCM) <Karla.Barboza@ontario.ca>; Harvey, Joseph (MCM) <Joseph.Harvey@ontario.ca>; Christopher Manzon <cmanzon@enwin.com>; Li, Jian <jian.li@stantec.com>
Subject: MCM Response - Notice of Study Commencement - Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission

Some people who received this message don't often get email from erika.leclerc2@ontario.ca. Learn why this is important

Sent on behalf of Joseph Harvey, Heritage Planner, Ministry of Citizenship and Multiculturalism

Dear Hannah Rindlisbacher,

Thank you for sending the Notice of Commencement the above-mentioned project to

the Ministry of Citizenship and Multiculturalism (MCM). Please find attached MCM's initial letter on this project.

Please do not hesitate to contact us if you have any questions.

Kind regards,

Erika Leclerc (she/her)
Heritage Planner, Heritage Planning Unit
Ministry of Citizenship and Multiculturalism
416.305.0757
erika.leclerc2@ontario.ca

From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: November 27, 2023 3:06 PM
Subject: 165620304: Notice of Study Commencement – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission

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To Whom It May Concern,

ENWIN Utilities Ltd. (ENWIN) on behalf of the Windsor Utilities Commission is undertaking a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for a new Elevated Water Tower and associated distribution and transmission system. This study will satisfy Phase No.'s 1 and 2 of the Class EA process including: (Phase 1) review of background information and definition of a problem statement and (Phase 2) identification and evaluation of alternative solutions. The planning and decision making of the Class EA process will be documented in a Project File Report. A copy of the Notice of Study Commencement for the project is attached.

On behalf of ENWIN, we invite you to participate in this project by providing your feedback and identifying environmental, social, and cultural impacts that may relate to this study. A reply by December 22nd, 2023, would be appreciated so that we may consider your comments early in this study stage.

If you have any comments or concerns regarding this Study, please contact the undersigned below or one of the individuals named in the attached Notice of Commencement.

Sincerely,

Hannah Rindlisbacher E.I.T., LEED Green Associate
Environmental Engineer in Training

Direct: 226-704-3060
Fax: 519-966-2253
hannah.rindlisbacher@stantec.com

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Ministry of Citizenship and Multiculturalism

Heritage Planning Unit
Heritage Branch
Citizenship, Inclusion and Heritage Division
5th Flr, 400 University Ave
Tel.: 613-242-3743

Ministère des Affaires civiques et du Multiculturalisme

Unité de la planification relative au patrimoine
Direction du patrimoine
Division des affaires civiques, de l'inclusion et du patrimoine
Tél.: 613-242-3743

December 12, 2023 EMAIL ONLY

Jian Li, Ph.D., P. Eng.
Project Manager, Stantec Consulting Ltd.
2555 Ouellette Avenue, Suite 100
Windsor, Ontario, N8X 1L9
jian.li@stantec.com

MCM File	**:**	**0020731**
Proponent	**:**	**ENWIN Utilities Ltd., on behalf of Windsor Utilities Commission**
Subject	**:**	**Municipal Class Environmental Assessment – Schedule B – Notice of Study Commencement**
Project	**:**	**Elevated Water Tower**
Location	**:**	**City of Windsor, County of Essex**

Dear Jian Li:

Thank you for providing the Ministry of Citizenship and Multiculturalism (MCM) with the Notice of Study Commencement for the above-referenced project.

MCM's interest in this project relates to its mandate of conserving Ontario's cultural heritage, which includes:

- archaeological resources, including land and marine;
- built heritage resources, including bridges and monuments; and
- cultural heritage landscapes.

Under the Environmental Assessment (EA) process, the proponent is required to determine a project's potential impact on known (previously recognized) and potential cultural heritage resources.

Project Summary
ENWIN Utilities Ltd., on behalf of the Windsor Utilities Commission, is undertaking a Schedule 'B' Municipal Class EA for a new Elevated Water Tower and associated distribution and transmission system. In general, the study objective is to follow the planning process outlined in the Municipal Class Environmental Assessment (June 2000, as amended in 2007, 2011, 2015 and 2023) under the *Ontario Environmental Assessment Act* to determine a long-term solution to maintain adequate water supply and operating pressure to the City of Windsor, Town of Tecumseh, and Town of LaSalle. This study will satisfy Phase No.'s 1 and 2 of the Class EA process including:

(Phase 1) review of background information and definition of a problem statement and (Phase 2) identification and evaluation of alternative solutions. The planning and decision making of the Class EA process will be documented in a Project File Report.

Identifying Cultural Heritage Resources
While some cultural heritage resources may have already been formally identified, others may be identified through screening and evaluation.

Archaeological Resources
This EA project may impact archaeological resources and should be screened using the Ministry's *Criteria for Evaluating Archaeological Potential* and *Criteria for Evaluating Marine Archaeological Potential* (if shoreline or in-water works are proposed) to determine if an archaeological assessment is needed. MCM archaeological sites data are available at *archaeology@ontario.ca*.

If the EA project area exhibits archaeological potential, then an archaeological assessment (AA) shall be undertaken by an archaeologist licenced under the *Ontario Heritage Act (OHA)*, who is responsible for submitting the report directly to MCM for review.

Built Heritage Resources and Cultural Heritage Landscapes
The Ministry's *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* should be completed to help determine whether this EA project may impact known or potential built heritage resources and/or cultural heritage landscapes.

If there is potential for built heritage resources and/or cultural heritage landscapes on the property or within the project area, a Cultural Heritage Evaluation Report (CHER) should be undertaken by a qualified person to determine the cultural heritage value or interest of the property (or project area). If the property (or project area) is determined to be of cultural heritage value or interest and alterations or development is proposed, MCM recommends that a Heritage Impact Assessment (HIA), prepared by a qualified consultant, be completed to assess potential project impacts. Please send the HIA to MCM for review and comment and make it available to local organizations or individuals who have expressed interest in review.

Community input should be sought to identify locally recognized and potential cultural heritage resources. Sources include, but are not limited to, municipal heritage committees, historical societies and other local heritage organizations.

Cultural heritage resources are often of critical importance to Indigenous communities. Indigenous communities may have knowledge that can contribute to the identification of cultural heritage resources, and we suggest that any engagement with Indigenous communities includes a discussion about known or potential cultural heritage resources that are of value to them.

Environmental Assessment Reporting
All technical cultural heritage studies and their recommendations are to be addressed and incorporated into EA projects. Please advise MCM whether any technical cultural heritage studies will be completed for this EA project, and provide them to MCM before issuing a Notice of Completion or commencing any work on the site. If screening has identified no known or potential cultural heritage resources, or no impacts to these resources, please include the completed checklists and supporting documentation in the EA report or file.

Please note that the responsibility for administration of the *Ontario Heritage Act* and matters related to cultural heritage have been transferred from the Ministry of Tourism, Culture and Sport (MTCS) to the Ministry of Citizenship and Multiculturalism (MCM). Individual staff roles and

contact information remain unchanged. Please continue to send any notices, report and/or documentation **via email only** to both Karla Barboza and Joseph Harvey.

- Karla Barboza, Team Lead - Heritage | Heritage Planning Unit (Citizenship and Multiculturalism) | 416-660-1027 | karla.barboza@ontario.ca
- Joseph Harvey, Heritage Planner | Heritage Planning Unit (Citizenship and Multiculturalism) | 613-242-3743 | joseph.harvey@ontario.ca

Thank you for consulting MCM on this project and please continue to do so throughout the EA process. If you have any questions or require clarification, please do not hesitate to contact me.

Sincerely,

Erika Leclerc
On behalf of

Joseph Harvey
Heritage Planner
Joseph.Harvey@Ontario.ca

Copied to: Chris Mazon, Director Engineering (Water), ENWIN Utilities Ltd.
Hannah Rindlisbacher, Environmental Engineer in Training, Stantec
Karla Barboza, Team Lead – Heritage Planning Unit, MCM

It is the sole responsibility of proponents to ensure that any information and documentation submitted as part of their EA report or file is accurate. The Ministry of Citizenship and Multiculturalism (MCM) makes no representation or warranty as to the completeness, accuracy or quality of the any checklists, reports or supporting documentation submitted as part of the EA process, and in no way shall MCM be liable for any harm, damages, costs, expenses, losses, claims or actions that may result if any checklists, reports or supporting documents are discovered to be inaccurate, incomplete, misleading or fraudulent.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out an archaeological assessment, in compliance with Section 48(1) of the *Ontario Heritage Act*.

The *Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33* requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with *Ontario Regulation 30/11* the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, which administers provisions of that Act related to burial sites. In situations where human remains are associated with archaeological resources, the Ministry of Citizenship and Multiculturalism should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*.

From:	Rindlisbacher, Hannah
To:	Badali, Mark (He/Him) (MECP); Christopher Manzon
Cc:	Li, Jian; Wilson, Marcelina (MECP); Bechard, Marc (MECP)
Subject:	RE: Windsor, Ontario, MEA Class EA, ENWIN Elevated Water Tower
Date:	Thursday, January 4, 2024 5:58:00 PM

Hi Mark,

Thank you for providing the MECP's acknowledgement letter for the ENWIN Elevated Water Tower EA Notice of Commencement.

We will keep you informed as the study progresses.

Thanks,

Hannah Rindlisbacher E.I.T., LEED Green Associate
Environmental Engineer in Training

Direct: 226-704-3060
Fax: 519-966-2253
hannah.rindlisbacher@stantec.com

Stantec
100-2555 Ouellette Avenue
Windsor ON N8X 1L9

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Please consider the environment before printing this email.

From: Badali, Mark (He/Him) (MECP) <Mark.Badali1@ontario.ca>
Sent: Thursday, December 28, 2023 12:32 PM
To: Christopher Manzon <cmanzon@enwin.com>
Cc: Li, Jian <jian.li@stantec.com>; Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>; Wilson, Marcelina (MECP) <Marcelina.Wilson@ontario.ca>; Bechard, Marc (MECP) <Marc.Bechard@ontario.ca>
Subject: RE: Windsor, Ontario, MEA Class EA, ENWIN Elevated Water Tower

Good afternoon,

Please find the attached letter of acknowledgement and supporting attachments in response to the Notice of Commencement of the ENWIN Elevated Water Tower project being undertaken by ENWIN Utilities Ltd. in accordance with the Municipal Class Environmental Assessment (Schedule B).

Best regards,

Mark Badali (he/him) | Senior Project Evaluator
Environmental Assessment Program Support | Environmental Assessment Branch
Ontario Ministry of the Environment, Conservation and Parks

Mark.Badali1@ontario.ca | (416) 457-2155

From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: November 24, 2023 4:20 PM
To: EA Notices to SWRegion (MECP) <eanotification.swregion@ontario.ca>
Subject: Windsor, Ontario, MEA Class EA, ENWIN Elevated Water Tower

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

To Whom It May Concern,

ENWIN Utilities Ltd. (ENWIN) on behalf of the Windsor Utilities Commission is undertaking a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for a new Elevated Water Tower and associated distribution and transmission system. This study will satisfy Phase No.'s 1 and 2 of the Class EA process including: (Phase 1) review of background information and definition of a problem statement and (Phase 2) identification and evaluation of alternative solutions. The planning and decision making of the Class EA process will be documented in a Project File Report. A copy of the Notice of Study Commencement for the project is attached.

On behalf of ENWIN, we invite you to participate in this project by providing your feedback and identifying environmental, social, and cultural impacts that may relate to this study. A reply by December 22nd, 2023, would be appreciated so that we may consider your comments early in this study stage.

If you have any comments or concerns regarding this Study, please contact the undersigned below or one of the individuals named in the attached Notice of Commencement.

Sincerely,

Hannah Rindlisbacher E.I.T., LEED Green Associate
Environmental Engineer in Training

Direct: 226-704-3060
Fax: 519-966-2253
hannah.rindlisbacher@stantec.com

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Ministry of the Environment, Conservation and Parks

Environmental Assessment Branch

7th Floor
135 St. Clair Avenue W
Toronto ON M4V 1P5
Tel.: 416 314-8001
Fax.: 416 314-8452

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Direction des évaluations environnementales

7ème étage
135, avenue St. Clair Ouest
Toronto ON M4V 1P5
Tél. : 416 314-8001
Téléc. : 416 314-8452

December 28, 2023

Chris Manzon
Director Engineering (Water)
ENWIN Utilities Ltd.
cmanzon@enwin.com

BY EMAIL ONLY

Re: **ENWIN Elevated Water Tower**
ENWIN Utilities Ltd.
Municipal Class Environmental Assessment, Schedule B
Acknowledgement of Notice of Commencement

Dear Chris Manzon,

This letter is in response to the Notice of Commencement for the above noted project. The Ministry of the Environment, Conservation and Parks (MECP) acknowledges ENWIN Utilities Ltd. (proponent) has indicated that the study is following the approved environmental planning process for a Schedule B project under the Municipal Class Environmental Assessment (Class EA).

The **updated (August 2022)** attached "Areas of Interest" document provides guidance regarding the ministry's interests with respect to the Class EA process. Please address all areas of interest in the EA documentation at an appropriate level for the EA study. Proponents who address all the applicable areas of interest can minimize potential delays to the project schedule. **Further information is provided at the end of the Areas of Interest document relating to recent changes to the Environmental Assessment Act through Bill 197, Covid-19 Economic Recovery Act 2020.**

The Crown has a legal duty to consult Aboriginal communities when it has knowledge, real or constructive, of the existence or potential existence of an Aboriginal or treaty right and

contemplates conduct that may adversely impact that right. Before authorizing this project, the Crown must ensure that its duty to consult has been fulfilled, where such a duty is triggered. Although the duty to consult with Aboriginal peoples is a duty of the Crown, the Crown may delegate procedural aspects of this duty to project proponents while retaining oversight of the consultation process.

The proposed project may have the potential to affect Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982. Where the Crown's duty to consult is triggered in relation to the proposed project**, the MECP is delegating the procedural aspects of rights-based consultation to the proponent through this letter.** The Crown intends to rely on the delegated consultation process in discharging its duty to consult and maintains the right to participate in the consultation process as it sees fit.

Based on information provided to date and the Crown`s preliminary assessment the proponent is required to consult with the following communities who have been identified as potentially affected by the proposed project:

- Aamjiwnaang First Nation
- Bkejwanong (Walpole Island)
- Caldwell First Nation
- Chippewas of Kettle and Stony Point
- Chippewas of the Thames First Nation
- Oneida Nation of the Thames
- Munsee Delaware
- Delaware Nation

Steps that the proponent may need to take in relation to Aboriginal consultation for the proposed project are outlined in the "Code of Practice for Consultation in Ontario's Environmental Assessment Process". Additional information related to Ontario's Environmental Assessment Act is available online at: www.ontario.ca/environmentalassessments.

Please also refer to the attached document "A Proponent's Introduction to the Delegation of Procedural Aspects of consultation with Aboriginal Communities" for further information, including the MECP's expectations for EA report documentation related to consultation with communities.

The proponent must contact the Director of Environmental Assessment Branch (EABDirector@ontario.ca) under the following circumstances after initial discussions with the communities identified by the MECP:

- Aboriginal or treaty rights impacts are identified to you by the communities;
- You have reason to believe that your proposed project may adversely affect an Aboriginal or treaty right;

- Consultation with Indigenous communities or other stakeholders has reached an impasse; or
- A Section 16 Order request is expected based on impacts to Aboriginal or treaty rights

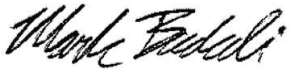
The MECP will then assess the extent of any Crown duty to consult for the circumstances and will consider whether additional steps should be taken, including what role you will be asked to play should additional steps and activities be required.

A draft copy of the report should be sent directly to me prior to the filing of the final report, allowing a minimum of 30 days for the ministry's technical reviewers to provide comments.

Please also ensure a copy of the final notice is sent to the ministry's Southwestern Region EA notification email account (eanotification.swregion@ontario.ca) after the draft report is reviewed and finalized.

Should you or any members of your project team have any questions regarding the material above, please contact me at mark.badali1@ontario.ca.

Sincerely,



Mark Badali
Senior Project Evaluator
Environmental Assessment Program Support, Environmental Assessment Branch

Cc: Marcelina Wilson, Supervisor, Windsor Area Office, MECP
Marc Bechard, Water Compliance Supervisor, Sarnia District Office, MECP
Jian Li, Project Manager, Stantec Consulting Ltd.
Hannah Rindlisbacher, Environmental Engineer in Training, Stantec Consulting Ltd.

Enclosed: Areas of Interest

Attached: Client's Guide to Preliminary Screening for Species at Risk

A Proponent's Introduction to the Delegation of Procedural Aspects of Consultation with Aboriginal Communities

AREAS OF INTEREST (v. August 2022)

It is suggested that you check off each section after you have considered / addressed it.

☐ **Planning and Policy**

- Applicable plans and policies should be identified in the report, and the proponent should describe how the proposed project adheres to the relevant policies in these plans.
    - Projects located in MECP Central, Eastern or West Central Region may be subject to **A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2020)**.
    - Projects located in MECP Central or Eastern Region may be subject to the **Oak Ridges Moraine Conservation Plan (2017)** or the **Lake Simcoe Protection Plan (2014)**.
    - Projects located in MECP Central, Southwest or West Central Region may be subject to the **Niagara Escarpment Plan (2017)**.
    - Projects located in MECP Central, Eastern, Southwest or West Central Region may be subject to the **Greenbelt Plan (2017)**.
    - Projects located in MECP Northern Region may be subject to the **Growth Plan for Northern Ontario (2011).**

- The **Provincial Policy Statement (2020)** contains policies that protect Ontario's natural heritage and water resources. Applicable policies should be referenced in the report, and the proponent should describe how the proposed project is consistent with these policies.

- In addition to the provincial planning and policy level, the report should also discuss the planning context at the municipal and federal levels, as appropriate.

☐ **Source Water Protection**

The *Clean Water Act*, 2006 (CWA) aims to protect existing and future sources of drinking water. To achieve this, several types of vulnerable areas have been delineated around surface water intakes and wellheads for every municipal residential drinking water system that is located in a source protection area. These vulnerable areas are known as a Wellhead Protection Areas (WHPAs) and surface water Intake Protection Zones (IPZs). Other vulnerable areas that have been delineated under the CWA include Highly Vulnerable Aquifers (HVAs), Significant Groundwater Recharge Areas (SGRAs), Event-based modelling areas (EBAs), and Issues Contributing Areas (ICAs). Source protection plans have been developed that include policies to address existing and future risks to sources of municipal drinking water within these vulnerable areas.

Projects that are subject to the Environmental Assessment Act that fall under a Class EA, or one of the Regulations, have the potential to impact sources of drinking water if they occur in designated vulnerable areas or in the vicinity of other at-risk drinking water systems (i.e.

systems that are not municipal residential systems). MEA Class EA projects may include activities that, if located in a vulnerable area, could be a threat to sources of drinking water (i.e. have the potential to adversely affect the quality or quantity of drinking water sources) and the activity could therefore be subject to policies in a source protection plan. Where an activity poses a risk to drinking water, policies in the local source protection plan may impact how or where that activity is undertaken. Policies may prohibit certain activities, or they may require risk management measures for these activities. Municipal Official Plans, planning decisions, Class EA projects (where the project includes an activity that is a threat to drinking water) and prescribed instruments must conform with policies that address significant risks to drinking water and must have regard for policies that address moderate or low risks.

- In October 2015, the MEA Parent Class EA document was amended to include reference to the Clean Water Act (Section A.2.10.6) and indicates that proponents undertaking a Municipal Class EA project must identify early in their process whether a project is or could potentially be occurring with a vulnerable area. **Given this requirement, please include a section in the report on source water protection.**

    - The proponent should identify the source protection area and should clearly document how the proximity of the project to sources of drinking water (municipal or other) and any delineated vulnerable areas was considered and assessed. Specifically, the report should discuss whether or not the project is located in a vulnerable area and provide applicable details about the area.

    - If located in a vulnerable area, proponents should document whether any project activities are prescribed drinking water threats and thus pose a risk to drinking water (this should be consulted on with the appropriate Source Protection Authority). Where an activity poses a risk to drinking water, the proponent must document and discuss in the report how the project adheres to or has regard to applicable policies in the local source protection plan. This section should then be used to inform and be reflected in other sections of the report, such as the identification of net positive/negative effects of alternatives, mitigation measures, evaluation of alternatives etc.

- While most source protection plans focused on including policies for significant drinking water threats in the WHPAs and IPZs it should be noted that even though source protection plan policies may not apply in HVAs, these are areas where aquifers are sensitive and at risk to impacts and within these areas, activities may impact the quality of sources of drinking water for systems other than municipal residential systems.

- In order to determine if this project is occurring within a vulnerable area, proponents can use Source Protection Information Atlas, which is an online mapping tool available to the public. Note that various layers (including WHPAs, WHPA-Q1 and WHPA-Q2, IPZs, HVAs, SGRAs, EBAs, ICAs) can be turned on through the “Map Legend” bar on the left. The

mapping tool will also provide a link to the appropriate source protection plan in order to identify what policies may be applicable in the vulnerable area.

- For further information on the maps or source protection plan policies which may relate to their project, proponents must contact the appropriate source protection authority. **Please consult with the local source protection authority to discuss potential impacts on drinking water. Please document the results of that consultation within the report and include all communication documents/correspondence.**

More Information

For more information on the *Clean Water Act*, source protection areas and plans, including specific information on the vulnerable areas and drinking water threats, please refer to Conservation Ontario's website where you will also find links to the local source protection plan/assessment report.

A list of the prescribed drinking water threats can be found in section 1.1 of Ontario Regulation 287/07 made under the *Clean Water Act*. In addition to prescribed drinking water threats, some source protection plans may include policies to address additional "local" threat activities, as approved by the MECP.

☐ **Climate Change**

The document "Considering Climate Change in the Environmental Assessment Process" (Guide) is now a part of the Environmental Assessment program's Guides and Codes of Practice. The Guide sets out the MECP's expectation for considering climate change in the preparation, execution and documentation of environmental assessment studies and processes. The guide provides examples, approaches, resources, and references to assist proponents with consideration of climate change in EA. Proponents should review this Guide in detail.

- **The MECP expects proponents of Class EA projects to:**

1. Consider during the assessment of alternative solutions and alternative designs, the following:
    a. the project's expected production of greenhouse gas emissions and impacts on carbon sinks (climate change mitigation); and
    b. resilience or vulnerability of the undertaking to changing climatic conditions (climate change adaptation).
2. Include a discrete section in the report detailing how climate change was considered in the EA.

How climate change is considered can be qualitative or quantitative in nature and should be scaled to the project's level of environmental effect. In all instances, both a project's impacts on climate change (mitigation) and impacts of climate change on a project (adaptation) should be considered.

- The MECP has also prepared another guide to support provincial land use planning direction related to the completion of energy and emission plans. The "Community Emissions Reduction Planning: A Guide for Municipalities" document is designed to educate stakeholders on the municipal opportunities to reduce energy and greenhouse gas emissions, and to provide guidance on methods and techniques to incorporate consideration of energy and greenhouse gas emissions into municipal activities of all types. We encourage you to review the Guide for information.

Air Quality, Dust and Noise

- If there are sensitive receptors in the surrounding area of this project, a quantitative air quality/odour impact assessment will be useful to evaluate alternatives, determine impacts and identify appropriate mitigation measures. The scope of the assessment can be determined based on the potential effects of the proposed alternatives, and typically includes source and receptor characterization and a quantification of local air quality impacts on the sensitive receptors and the environment in the study area. The assessment will compare to all applicable standards or guidelines for all contaminants of concern. **Please contact this office for further consultation on the level of Air Quality Impact Assessment required for this project if not already advised.**

- If a quantitative Air Quality Impact Assessment is not required for the project, the MECP expects that the report contain a qualitative assessment which includes:

    - A discussion of local air quality including existing activities/sources that significantly impact local air quality and how the project may impact existing conditions;
    - A discussion of the nearby sensitive receptors and the project's potential air quality impacts on present and future sensitive receptors;
    - A discussion of local air quality impacts that could arise from this project during both construction and operation; and
    - A discussion of potential mitigation measures.

- As a common practice, "air quality" should be used an evaluation criterion for all road projects.

- Dust and noise control measures should be addressed and included in the construction plans to ensure that nearby residential and other sensitive land uses within the study area are not adversely affected during construction activities.

- The MECP recommends that non-chloride dust-suppressants be applied. For a comprehensive list of fugitive dust prevention and control measures that could be applied, refer to *Cheminfo Services Inc. Best Practices for the Reduction of Air Emissions from*

Construction and Demolition Activities report prepared for Environment Canada. March 2005.

- The report should consider the potential impacts of increased noise levels during the operation of the completed project. The proponent should explore all potential measures to mitigate significant noise impacts during the assessment of alternatives.

Ecosystem Protection and Restoration

- Any impacts to ecosystem form and function must be avoided where possible. The report should describe any proposed mitigation measures and how project planning will protect and enhance the local ecosystem.

- Natural heritage and hydrologic features should be identified and described in detail to assess potential impacts and to develop appropriate mitigation measures. The following sensitive environmental features may be located within or adjacent to the study area:
  - Key Natural Heritage Features: Habitat of endangered species and threatened species, fish habitat, wetlands, areas of natural and scientific interest (ANSIs), significant valleylands, significant woodlands; significant wildlife habitat (including habitat of special concern species); sand barrens, savannahs, and tallgrass prairies; and alvars.
  - Key Hydrologic Features: Permanent streams, intermittent streams, inland lakes and their littoral zones, seepage areas and springs, and wetlands.
  - Other natural heritage features and areas such as: vegetation communities, rare species of flora or fauna, Environmentally Sensitive Areas, Environmentally Sensitive Policy Areas, federal and provincial parks and conservation reserves, Greenland systems etc.

We recommend consulting with the Ministry of Natural Resources and Forestry (MNRF), Fisheries and Oceans Canada (DFO) and your local conservation authority to determine if special measures or additional studies will be necessary to preserve and protect these sensitive features. In addition, for projects located in Central Region you may consider the provisions of the Rouge Park Management Plan if applicable.

Species at Risk

- The Ministry of the Environment, Conservation and Parks has now assumed responsibility of Ontario's Species at Risk program. Information, standards, guidelines, reference materials and technical resources to assist you are found at https://www.ontario.ca/page/species-risk.

- The Client's Guide to Preliminary Screening for Species at Risk (Draft May 2019) has been attached to the covering email for your reference and use. Please review this document for next steps.

- For any questions related to subsequent permit requirements, please contact SAROntario@ontario.ca.

Surface Water

- The report must include enough information to demonstrate that there will be no negative impacts on the natural features or ecological functions of any watercourses within the study area. Measures should be included in the planning and design process to ensure that any impacts to watercourses from construction or operational activities (e.g. spills, erosion, pollution) are mitigated as part of the proposed undertaking.

- Additional stormwater runoff from new pavement can impact receiving watercourses and flood conditions. Quality and quantity control measures to treat stormwater runoff should be considered for all new impervious areas and, where possible, existing surfaces. The ministry's Stormwater Management Planning and Design Manual (2003) should be referenced in the report and utilized when designing stormwater control methods. **A Stormwater Management Plan should be prepared as part of the Class EA process** that includes:

    - Strategies to address potential water quantity and erosion impacts related to stormwater draining into streams or other sensitive environmental features, and to ensure that adequate (enhanced) water quality is maintained
    - Watershed information, drainage conditions, and other relevant background information
    - Future drainage conditions, stormwater management options, information on erosion and sediment control during construction, and other details of the proposed works
    - Information on maintenance and monitoring commitments.

- Ontario Regulation 60/08 under the *Ontario Water Resources Act* (OWRA) applies to the Lake Simcoe Basin, which encompasses Lake Simcoe and the lands from which surface water drains into Lake Simcoe. If a proposed sewage treatment plant is listed in Table 1 of the regulation, the report should describe how the proposed project and its mitigation measures are consistent with the requirements of this regulation and the OWRA.

- Any potential approval requirements for surface water taking or discharge should be identified in the report. A Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, except for certain water taking activities that have been prescribed by the Water Taking EASR Regulation – *O. Reg. 63/16*. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please

review the Water Taking User Guide for EASR for more information. Additionally, an Environmental Compliance Approval under the OWRA is required for municipal stormwater management works.

☐ **Groundwater**

- The status of, and potential impacts to any well water supplies should be addressed. If the project involves groundwater takings or changes to drainage patterns, the quantity and quality of groundwater may be affected due to drawdown effects or the redirection of existing contamination flows. In addition, project activities may infringe on existing wells such that they must be reconstructed or sealed and abandoned. Appropriate information to define existing groundwater conditions should be included in the report.

- If the potential construction or decommissioning of water wells is identified as an issue, the report should refer to Ontario Regulation 903, Wells, under the OWRA.

- Potential impacts to groundwater-dependent natural features should be addressed. Any changes to groundwater flow or quality from groundwater taking may interfere with the ecological processes of streams, wetlands or other surficial features. In addition, discharging contaminated or high volumes of groundwater to these features may have direct impacts on their function. Any potential effects should be identified, and appropriate mitigation measures should be recommended. The level of detail required will be dependent on the significance of the potential impacts.

- Any potential approval requirements for groundwater taking or discharge should be identified in the report. A Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, with the exception of certain water taking activities that have been prescribed by the Water Taking EASR Regulation – *O. Reg. 63/16*. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the Water Taking User Guide for EASR for more information.

- Consultation with the railroad authorities is necessary wherever there is a plan to use construction dewatering in the vicinity of railroad lines or where the zone of influence of the construction dewatering potentially intercepts railroad lines.

☐ **Excess Materials Management**

- In December 2019, MECP released a new regulation under the Environmental Protection Act, titled "On-Site and Excess Soil Management" (O. Reg. 406/19) to support improved management of excess construction soil. This regulation is a key step to support proper management of excess soils, ensuring valuable resources don't go to waste and to provide

clear rules on managing and reusing excess soil. New risk-based standards referenced by this regulation help to facilitate local beneficial reuse which in turn will reduce greenhouse gas emissions from soil transportation, while ensuring strong protection of human health and the environment. The new regulation is being phased in over time, with the first phase in effect on January 1, 2021. For more information, please visit https://www.ontario.ca/page/handling-excess-soil.

- The report should reference that activities involving the management of excess soil should be completed in accordance with O. Reg. 406/19 and the MECP's current guidance document titled "Management of Excess Soil – A Guide for Best Management Practices" (2014).

- All waste generated during construction must be disposed of in accordance with ministry requirements

Contaminated Sites

- Any current or historical waste disposal sites should be identified in the report. The status of these sites should be determined to confirm whether approval pursuant to Section 46 of the EPA may be required for land uses on former disposal sites. We recommend referring to the MECP's D-4 guideline for land use considerations near landfills and dumps.
  - Resources available may include regional/local municipal official plans and data; provincial data on large landfill sites and small landfill sites; Environmental Compliance Approval information for waste disposal sites on Access Environment.

- Other known contaminated sites (local, provincial, federal) in the study area should also be identified in the report (Note – information on federal contaminated sites is found on the Government of Canada's website).

- The location of any underground storage tanks should be investigated in the report. Measures should be identified to ensure the integrity of these tanks and to ensure an appropriate response in the event of a spill. The ministry's Spills Action Centre must be contacted in such an event.

- Since the removal or movement of soils may be required, appropriate tests to determine contaminant levels from previous land uses or dumping should be undertaken. If the soils are contaminated, you must determine how and where they are to be disposed of, consistent with *Part XV.1 of the Environmental Protection Act* (EPA) and Ontario Regulation 153/04, Records of Site Condition, which details the new requirements related to site assessment and clean up. Please contact the appropriate MECP District Office for further consultation if contaminated sites are present.

Servicing, Utilities and Facilities

- The report should identify any above or underground utilities in the study area such as transmission lines, telephone/internet, oil/gas etc. The owners should be consulted to discuss impacts to this infrastructure, including potential spills.

- The report should identify any servicing infrastructure in the study area such as wastewater, water, stormwater that may potentially be impacted by the project.

- Any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste must have an Environmental Compliance Approval (ECA) before it can operate lawfully. Please consult with MECP's Environmental Permissions Branch to determine whether a new or amended ECA will be required for any proposed infrastructure.

- We recommend referring to the ministry's environmental land use planning guides to ensure that any potential land use conflicts are considered when planning for any infrastructure or facilities related to wastewater, pipelines, landfills or industrial uses.

Mitigation and Monitoring

- Contractors must be made aware of all environmental considerations so that all environmental standards and commitments for both construction and operation are met. Mitigation measures should be clearly referenced in the report and regularly monitored during the construction stage of the project. In addition, we encourage proponents to conduct post-construction monitoring to ensure all mitigation measures have been effective and are functioning properly.

- Design and construction reports and plans should be based on a best management approach that centres on the prevention of impacts, protection of the existing environment, and opportunities for rehabilitation and enhancement of any impacted areas.

- The proponent's construction and post-construction monitoring plans must be documented in the report, as outlined in Section A.2.5 and A.4.1 of the MEA Class EA parent document.

Consultation

- The report must demonstrate how the consultation provisions of the Class EA have been fulfilled, including documentation of all stakeholder consultation efforts undertaken during the planning process. This includes a discussion in the report that identifies concerns that were raised and **describes how they have been addressed by the proponent** throughout

the planning process. The report should also include copies of comments submitted on the project by interested stakeholders, and the proponent's responses to these comments (as directed by the Class EA to include full documentation).

- Please include the full stakeholder distribution/consultation list in the documentation.

Class EA Process

- If this project is a Master Plan: there are several different approaches that can be used to conduct a Master Plan, examples of which are outlined in Appendix 4 of the Class EA. **The Master Plan should clearly indicate the selected approach for conducting the plan**, by identifying whether the levels of assessment, consultation and documentation are sufficient to fulfill the requirements for Schedule B or C projects. Please note that any Schedule B or C projects identified in the plan would be subject to Part II Order Requests under the Environmental Assessment Act, although the plan itself would not be. **Please include a description of the approach being undertaken (use Appendix 4 as a reference).**

- If this project is a Master Plan: Any identified projects should also include information on the MCEA schedule associated with the project.

- The report should provide clear and complete documentation of the planning process in order to allow for transparency in decision-making.

- The Class EA requires the consideration of the effects of each alternative on all aspects of the environment (including planning, natural, social, cultural, economic, technical). The report should include a level of detail (e.g. hydrogeological investigations, terrestrial and aquatic assessments, cultural heritage assessments) such that all potential impacts can be identified, and appropriate mitigation measures can be developed. Any supporting studies conducted during the Class EA process should be referenced and included as part of the report.

- Please include in the report a list of all subsequent permits or approvals that may be required for the implementation of the preferred alternative, including but not limited to, MECP's PTTW, EASR Registrations and ECAs, conservation authority permits, species at risk permits, MTO permits and approvals under the *Impact Assessment Act*, 2019.

- Ministry guidelines and other information related to the issues above are available at http://www.ontario.ca/environment-and-energy/environment-and-energy. We encourage you to review all the available guides and to reference any relevant information in the report.

Amendments to the EAA through the Covid-19 Economic Recovery Act, 2020
Once the EA Report is finalized, the proponent must issue a Notice of Completion providing a minimum 30-day period during which documentation may be reviewed and comment and input can be submitted to the proponent. The Notice of Completion must be sent to the appropriate MECP Regional Office email address.

The public can request a higher level of assessment on a project if they are concerned about potential adverse impacts to constitutionally protected Aboriginal and treaty rights. In addition, the Minister may issue an order on his or her own initiative within a specified time period. The Director (of the Environmental Assessment Branch) will issue a Notice of Proposed Order to the proponent if the Minister is considering an order for the project within 30 days after the conclusion of the comment period on the Notice of Completion. At this time, the Director may request additional information from the proponent. Once the requested information has been received, the Minister will have 30 days within which to make a decision or impose conditions on your project.

Therefore, the proponent cannot proceed with the project until at least 30 days after the end of the comment period provided for in the Notice of Completion. Further, the proponent may not proceed after this time if:

- a Section 16 Order request has been submitted to the ministry regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, or
- the Director has issued a Notice of Proposed order regarding the project.

Please ensure that the Notice of Completion advises that outstanding concerns are to be directed to the proponent for a response, and that in the event there are outstanding concerns regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, Section 16 Order requests on those matters should be addressed in writing to:

Minister of the Environment, Conservation and Parks
Ministry of the Environment, Conservation and Parks
777 Bay Street, 5th Floor
Toronto ON M7A 2J3
minister.mecp@ontario.ca

and

Director, Environmental Assessment Branch
Ministry of the Environment, Conservation and Parks
135 St. Clair Ave. W, 1st Floor
Toronto ON, M4V 1P5
EABDirector@ontario.ca

Client's Guide to Preliminary Screening for Species at Risk

Ministry of the Environment, Conservation and Parks

Species at Risk Branch, Permissions and Compliance

DRAFT - May 2019

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1.0 Purpose, Scope, Background and Context

1.1 Purpose of this Guide

This guide has been created to:

- help clients better understand their obligation to gather information and complete a preliminary screening for species at risk before contacting the ministry,
- outline guidance and advice clients can expect to receive from the ministry at the preliminary screening stage,
- help clients understand how they can gather information about species at risk by accessing publicly available information housed by the Government of Ontario, and
- provide a list of other potential sources of species at risk information that exist outside the Government of Ontario.

It remains the client's responsibility to:

- carry out a preliminary screening for their projects,
- obtain best available information from all applicable information sources,
- conduct any necessary field studies or inventories to identify and confirm the presence or absence of species at risk or their habitat,
- consider any potential impacts to species at risk that a proposed activity might cause, and
- comply with the *Endangered Species Act* (ESA).

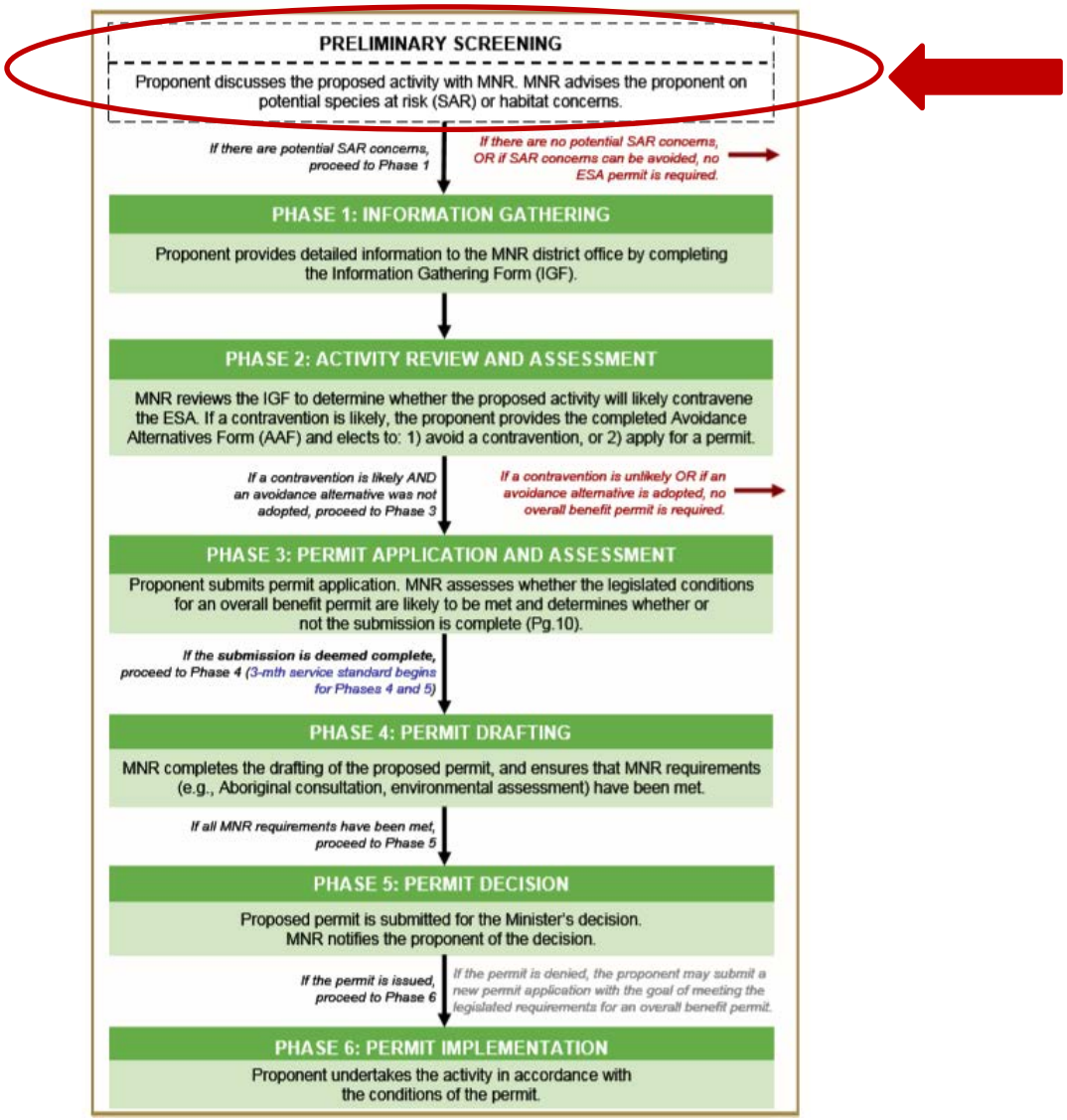
To provide the most efficient service, clients should initiate species at risk screenings and seek information from all applicable information sources identified in this guide, at a minimum, prior to contacting Government of Ontario ministry offices for further information or advice.

1.2 Scope

This guide is a resource for clients seeking to understand if their activity is likely to impact species at risk or if they are likely to trigger the need for an authorization under the ESA. It is not intended to circumvent any detailed site surveys that may be necessary to document species at risk or their habitat nor to circumvent the need to assess the impacts of a proposed activity on species at risk or their habitat. This guide is not an exhaustive list of available information sources for any given area as the availability of information on species at risk and their habitat varies across the province. This guide is intended to support projects and activities carried out on Crown and private land, by private landowners, businesses, other provincial ministries and agencies, or municipal government.

1.3 Background and Context

To receive advice on their proposed activity, clients must first determine whether any species at risk or their habitat exist or are likely to exist at or near their proposed activity, and whether their proposed activity is likely to contravene the ESA. Once this step is complete, clients may contact the ministry at SAROntario@ontario.ca to discuss the main purpose, general methods, timing and location of their proposed activity as well as information obtained about species at risk and their habitat at, or near, the site. At this stage, the ministry can provide advice and guidance to the client about potential species at risk or habitat concerns, measures that the client is considering to avoid adverse effects on species at risk or their habitat and whether additional field surveys are advisable. This is referred to as the "Preliminary Screening" stage. For more information on additional phases in the diagram below, please refer to the *Endangered Species Act Submission Standards for Activity Review and 17(2)(c) Overall Benefit Permits* policy available online at https://www.ontario.ca/page/species-risk-overall-benefit-permits



2.0 Roles and Responsibilities

To provide the most efficient service, clients should initiate species at risk screenings and seek information from all applicable information sources identified in this guide prior to contacting Government of Ontario ministry offices for further information or advice.

Step 1: Client seeks information regarding species at risk or their habitat that exist, or are likely to exist, at or near their proposed activity by referring to all applicable information sources identified in this guide.

Step 2: Client reviews and consider guidance on whether their proposed activity is likely to contravene the ESA (see section 3.4 of this guide for guidance on what to consider).

Step 3: Client gathers information identified in the checklist in section 4 of this guide.

Step 4: Client contacts the ministry at SAROntario@ontario.ca to discuss their preliminary screening. Ministry staff will ask the client questions about the main purpose, general methods, timing and location of their proposed activity as well as information obtained about species at risk and their habitat at, or near, the site. Ministry staff will also ask the client for their interpretation of the impacts of their activity on species at risk or their habitat as well as measures the client has considered to avoid any adverse impacts.

Step 5: Ministry staff will provide advice on next steps.

Option A: Ministry staff may advise the client they can proceed with their activity without an authorization under the ESA where the ministry is confident that:

- no protected species at risk or habitats are likely to be present at or near the proposed location of the activity; or
- protected species at risk or habitats are known to be present but the activity is not likely to contravene the ESA; or
- through the adoption of avoidance measures, the modified activity is not likely to contravene the ESA.

Option B: Ministry staff may advise the client to proceed to Phase 1 of the overall benefit permitting process (i.e. Information Gathering in the previous diagram), where:

- there is uncertainty as to whether any protected species at risk or habitats are present at or near the proposed location of the activity; or
- the potential impacts of the proposed activity are uncertain; or
- ministry staff anticipate the proposed activity is likely to contravene the ESA.

3.0 Information Sources

Land Information Ontario (LIO) and the Natural Heritage Information Centre (NHIC) maintain and provide information about species at risk, as well as related information about fisheries, wildlife, crown lands, protected lands and more. This information is made available to organizations, private individuals, consultants, and developers through online sources and is often considered under various pieces of legislation or as part of regulatory approvals and planning processes.

The information available from LIO or NHIC and the sources listed in this guide should not be considered as a substitute for site visits and appropriate field surveys. Generally, this information can be regarded as a starting point from which to conduct further field surveys, if needed. While this data represents best available current information, it is important to note that a lack of information for a site does not mean that species at risk or their habitat are not present. There are many areas where the Government of Ontario does not currently have information, especially in more remote parts of the province. The absence of species at risk location data at or near your site does not necessarily mean no species at risk are present at that location. On-site assessments can better verify site conditions, identify and confirm presence of species at risk and/or their habitats.

Information on the location (i.e. observations and occurrences) of species at risk is considered sensitive and therefore publicly available only on a 1km square grid as opposed to as a detailed point on a map. This generalized information can help you understand which species at risk are in the general vicinity of your proposed activity and can help inform field level studies you may want to undertake to confirm the presence, or absence of species at risk at or near your site.

Should you require specific and detailed information pertaining to species at risk observations and occurrences at or near your site on a finer geographic scale; you will be required to demonstrate your need to access this information, to complete data sensitivity training and to obtain a Sensitive Data Use License from the NHIC. Information on how to obtain a license can be found online at https://www.ontario.ca/page/get-natural-heritage-information.

Many organizations (e.g. other Ontario ministries, municipalities, conservation authorities) have ongoing licensing to access this data so be sure to check if your organization has this access and consult this data as part of your preliminary screening if your organization already has a license.

3.1 Make a Map: Natural Heritage Areas

The Make a Natural Heritage Area Map (available online at http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US provides public access to natural heritage information, including species at risk, without the user needing to have Geographic Information System (GIS) capability. It allows users to view and identify generalized species at risk information, mark areas of interest, and create and print a custom map directly from the web application. The tool also shows topographic information such as roads, rivers, contours and municipal boundaries.

Users are advised that sensitive information has been removed from the natural areas dataset and the occurrences of species at risk has been generalized to a 1-kilometre grid to mitigate the risks to the species (e.g. illegal harvest, habitat disturbance, poaching).

The web-based mapping tool displays natural heritage data, including:

- Generalized Species at risk occurrence data (based on a 1-km square grid),
- Natural Heritage Information Centre data.

Data cannot be downloaded directly from this web map; however, information included in this application is available digitally through Land Information Ontario (LIO) at https://www.ontario.ca/page/land-information-ontario.

3.2 Land Information Ontario (LIO)

Most natural heritage data is publicly available. This data is managed in a large provincial corporate database called the LIO Warehouse and can be accessed online through the LIO Metadata Management Tool at https://www.javacoeapp.lrc.gov.on.ca/geonetwork/srv/en/main.home. This tool provides descriptive information about the characteristics, quality and context of the data. Publicly available geospatial data can be downloaded directly from this site.

While most data are publicly available, some data may be considered highly sensitive (i.e. nursery areas for fish, species at risk observations) and as such, access to some data maybe restricted.

3.3 Additional Species at Risk Information Sources

- The Breeding Bird Atlas can be accessed online at http://www.birdsontario.org/atlas/index.jsp?lang=en
- eBird can be accessed online at https://ebird.org/home
- iNaturalist can be accessed online at https://www.inaturalist.org/
- The Ontario Reptile and Amphibian Atlas can be accessed online at https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas
- Your local Conservation Authority. Information to help you find your local Conservation Authority can be accessed online at https://conservationontario.ca/conservation-authorities/find-a-conservation-authority/

  Local naturalist groups or other similar community-based organizations
- Local Indigenous communities
- Local land trusts or other similar Environmental Non-Government Organizations
- Field level studies to identify if species at risk, or their habitat, are likely present or absent at or near the site.
- When an activity is proposed within one of the continuous caribou ranges, please be sure to consider the caribou Range Management Policy. This policy includes figures and maps of the continuous caribou range, can be found online at https://www.ontario.ca/page/range-management-policy-support-woodland-caribou-conservation-and-recovery

3.4 Information Sources to Support Impact Assessments

- Guidance to help you understand if your activity is likely to adversely impact species at risk or their habitat can be found online at https://www.ontario.ca/page/policy-guidance-harm-and-harass-under-endangered-species-act and https://www.ontario.ca/page/categorizing-and-protecting-habitat-under-endangered-species-act
- A list of species at risk in Ontario is available online at https://www.ontario.ca/page/species-risk-ontario. On this webpage, you can find out more about each species, including where is lives, what threatens it and any specific habitat protections that apply to it by clicking on the photo of the species.

4.0 Check-List

Please feel free to use the check list below to help you confirm you have explored all applicable information sources and to support your discussion with Ministry staff at the preliminary screening stage.

- ✓ Land Information Ontario (LIO)
- ✓ Natural Heritage Information Centre (NHIC)
- ✓ The Breeding Bird Atlas
- ✓ eBird
- ✓ iNaturalist
- ✓ Ontario Reptile and Amphibian Atlas
- ✓ List Conservation Authorities you contacted:_____

  _____
- ✓ List local naturalist groups you contacted:_____

  _____
- ✓ List local Indigenous communities you contacted:_____

  _____
- ✓ List any other local land trusts or Environmental Non-Government Organizations you contacted:_____

  _____
- ✓ List and field studies that were conducted to identify species at risk, or their habitat, likely to be present or absent at or near the site: _____

  _____
- ✓ List what you think the likely impacts of your activity are on species at risk and their habitat (e.g. damage or destruction of habitat, killing, harming or harassing species at risk):_____

  _____

December 6, 2023

EMAILED December 6, 2023

ENWIN Utilities Ltd.
4545 Rhodes Drive
Windsor, ON N8W 5T1

Attention: **Mr. Chris Manzon, P.Eng. – Director Engineering (Water)**

RE: **Elevated Water Tower, Municipal Class Environmental Assessment**
Notice of Study Commencement

Dear Mr. Manzon,

The Town of Tecumseh is in receipt of the attached Notice of Study Commencement for the "Elevated Water Tower, Municipal Class Environmental Assessment". Given the consultative obligations under the Act and the respective obligations pursuant to the existing 2004 Water Agreement between the Town, ENWIN (WUC) and the City, the Town is respectfully asking to be and remain as an active participant throughout the Municipal Class Environmental Assessment (EA) process. As a major stakeholder thereof, the Town also requests that it be given sufficient time and opportunity to review the study documentation at each of the critical milestones throughout the EA process.

We look forward to working with you on this important infrastructure study. In the meantime if you have any questions or comments regarding the same please feel free to contact me at any time.

Thank you,

Phil Bartnik, P.Eng.
Director Public Works & Engineering Services
The Corporation of the Town of Tecumseh

Attachment: Notice of Study Commencement, Elevated Water Tower

cc: Jian Li, Ph.D., P.Eng. – Project Manager, Stantec Consulting
John Henderson, P.Eng. – Manager Engineering Services, Town of Tecumseh
Brad Dupuis, C.Tech. – Manager Water Services, Town of Tecumseh

NOTICE OF STUDY COMMENCEMENT

ELEVATED WATER TOWER
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

THE STUDY

ENWIN Utilities Ltd. (ENWIN) on behalf of the Windsor Utilities Commission (WUC) is undertaking a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for a new Elevated Water Tower and associated distribution and transmission system. In general, the study objective is to follow the planning process outlined in the Municipal Class Environmental Assessment (June 2000, as amended in 2007, 2011, 2015 and 2023) under the *Ontario Environmental Assessment Act* to determine a long-term solution to maintain adequate water supply and operating pressure to the City of Windsor, Town of Tecumseh, and Town of LaSalle. This study will satisfy Phase No.'s 1 and 2 of the Class EA process including: (Phase 1) review of background information and definition of a problem statement and (Phase 2) identification and evaluation of alternative solutions. The planning and decision making of the Class EA process will be documented in a Project File Report.

BACKGROUND

The WUC Water System Master Plan (WSMP) was originally developed in 2009 and subsequently updated in 2014, 2019 and 2023. The 2009 WUC WSMP identified a number of infrastructure requirements to address system vulnerabilities and growth demands to 2049. The proposed works in the most recent WUC WSMP 2023 Update align with the original 2009 WUC WSMP recommendations for a new Southerly Elevated Water Tower to address water supply and pressure issues. The Central Corridor Feedermain, which is currently in the design phase and proceeding to construction next year, is integral to the function of the proposed Southerly Elevated Water Tower.

PUBLIC CONSULTATION

This notice of study commencement marks the initiation of public consultation as part of this Class EA process. Throughout this Class EA, the public will be invited to attend a public open house where interested individuals can learn more about the project, ask questions, and submit feedback to the project team.

If you have any questions or if you wish to be added to the study mailing list, please contact:

Chris Manzon, P.Eng.
Director Engineering (Water), ENWIN Utilities Ltd.
4545 Rhodes Drive
Windsor, Ontario, N8W 5T1
519-251-7300 ext. 295
cmanzon@enwin.com

Jian Li, Ph.D., P. Eng.
Project Manager, Stantec Consulting Ltd.
2555 Ouellette Avenue, Suite 100
Windsor, Ontario, N8X 1L9
226-704-3039
jian.li@stantec.com

Personal information submitted is collected, maintained, and disclosed under the authority of the *Environmental Assessment Act and the Municipal Freedom of Information and Protection of Privacy Act* for transparency and consultation purposes. Personal information you submit will become part of a public record that is available to the general public, unless you request that your personal information remain confidential.

From:	Horrobin, Barry
To:	Rindlisbacher, Hannah
Subject:	RE: 165620304: Notice of Public Information Centre – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission
Date:	Friday, November 7, 2025 12:25:03 PM

Hannah:

Further to our conversation earlier today, I am not available to attend the PIC on Nov 25, due to being out of town. However, if you are able to email the visuals/presentation materials that will be presented at the PIC on that date as you mentioned, I will use these to formulate any comments we (Windsor Police) may submit from our public safety and security impact perspective, ahead of the December 23rd comment submission deadline.

Thanks,

Barry Horrobin, B.A., M.A., CLEP, CMM-III
Director of Planning & Physical Resources
WINDSOR POLICE SERVICE
IALEP
INTERNATIONAL ASSOCIATION OF LAW ENFORCEMENT PLANNERS
Advanced Certified Law Enforcement Planner

From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: Friday, November 7, 2025 11:51 AM
Subject: 165620304: Notice of Public Information Centre – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission

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To Whom It May Concern,

ENWIN Utilities Ltd. (ENWIN) on behalf of the Windsor Utilities Commission (WUC) is undertaking a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for a new Elevated Water Tower and associated distribution and transmission system. This study will satisfy Phase No.'s 1 and 2 of the Class EA process including: (Phase 1) review of background information and definition of a problem statement and (Phase 2) identification and evaluation of alternative solutions. The planning and decision making of the Class EA process will be documented in a Project File Report.

ENWIN, as the proud operator of WUC, is hosting a Public Information Centre (PIC) to present the evaluation of alternative solutions and associated distribution and transmission system for the new Elevated Water Tower. The PIC will be held on November 25, 2025 (4:00 to 7:00 pm) at the Hellenic Cultural Centre, 3052 Walker Road, Windsor ON to receive input from interested residents and stakeholders.

A copy of the Notice of Public Information Centre for the project is attached and additional information regarding the project will be available starting November 25 on ENWIN's website: https://ENWIN.com/water/windsor-utilities-commission

Following the PIC, comments are welcomed and will be received until December 23, 2025.

If you have any comments or concerns regarding this Study, please contact the undersigned.

Sincerely,

Hannah Rindlisbacher P.Eng., LEED Green Associate
Environmental Engineer

Direct: 226-704-3060
Fax: 519-966-2253
hannah.rindlisbacher@stantec.com

Stantec
100-2555 Ouellette Avenue
Windsor ON N8X 1L9





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From:	Horrobin, Barry
To:	Rindlisbacher, Hannah
Subject:	RE: P.I.C. visuals for new water tower project
Date:	Wednesday, November 26, 2025 3:17:09 PM
Attachments:	image001.png

Hannah:

Thanks for sending this slideshow document form the P.I.C. I will review and await further word as the design phase for the project unfolds.

Regards,

Barry Horrobin
Director of Planning & Physical Resources
Windsor Police Service
bhorrobin@windsorpolice.ca
O: (519) 255-6700, ext. 7051
C: (519) 982-3180

WINDSOR POLICE SERVICE
HONOUR IN SERVICE

From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: Wednesday, November 26, 2025 1:53 PM
To: Horrobin, Barry <bhorrobin@windsorpolice.ca>
Subject: RE: P.I.C. visuals for new water tower project

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Hi Barry,

As discussed, please see the attached slideshow from our Public Information Centre yesterday. We don't have a site layout just yet, but you will see the selected property for the water in the slideshow.

I will also be working with Enwin for the design phase so we can coordinate with Windsor Police to incorporate security measures in our design.

Please let me know if you have any questions.

Thanks,

Hannah Rindlisbacher P.Eng., LEED Green Associate
Environmental Engineer

Direct: 226-704-3060
Fax: 519-966-2253

hannah.rindlisbacher@stantec.com

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From: Horrobin, Barry <bhorrobin@windsorpolice.ca>
Sent: Wednesday, November 26, 2025 12:27 PM
To: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Subject: P.I.C. visuals for new water tower project

Hannah:

You may recall from our earlier conversation on this that you indicated the presentation boards/visuals would be ready after Nov 25th. If this is the case, can you possibly forward them? I would like to give them a quick review from my safety and security perspective.

Thanks,

Barry Horrobin
Director of Planning & Physical Resources
Windsor Police Service
bhorrobin@windsorpolice.ca
O: (519) 255-6700, ext. 7051
C: (519) 982-3180

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From:	Li, Jian
To:	Rindlisbacher, Hannah
Subject:	FW: 165620304: Notice of Public Information Centre – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission
Date:	Friday, November 28, 2025 5:36:24 PM
Attachments:	MNR Southern Region Information Package – For External Proponent Environmental Assessments_Ver2.pdf

Hi Hannah,

For your review and action, forwarded is MNR's response for Elevated Water Tower.

Thanks,

Jian Li Ph.D., P.Eng.
Business Centre Practice Leader, Water

Direct: 226-704-3039
Mobile: 519 562-7541
jian.li@stantec.com

Stantec
2555 Ouellette Ave
Windsor ON N8X 1L9

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From: O'Connor, Karen (MNR) <Karen.OConnor@ontario.ca>
Sent: Friday, November 28, 2025 11:48 AM
To: Christopher Manzon <cmanzon@enwin.com>; Li, Jian <jian.li@stantec.com>
Subject: RE: 165620304: Notice of Public Information Centre – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission

> You don't often get email from karen.oconnor@ontario.ca. Learn why this is important

Hello Chris and Jian,

The Ministry of Natural Resources (MNR) received the Notice of Public Information Centre for Elevated Water Tower on November 7th, 2025. Thank you for circulating this to our office.

MNR has prepared the attached **MNR Southern Region Information Package – For External Proponent Environmental Assessments** (Package) to help project proponents understand MNR's role as a commenting agency and interests related to environmental assessment within the Ministry's mandate. The Package also provides information on the Ministry's regulatory authority to issue authorizations, permits, licenses and/or approvals. The information provided is subject to change from time to time and it is the proponent's responsibility to

ensure the information used to support project planning and compliance with *Environmental Assessment Act* requirements is current and accurate. It is the proponent's responsibility to be aware of, and comply with, all relevant federal or provincial legislation, municipal by-laws and/or other agency approvals.

Please note the ministry has not completed a screening of natural heritage or other resource values at this time. If no MNR interests are identified based on the information contained in this Package, there is no need to further circulate MNR as a commenting agency when undertaking consultation and review under the applicable EA process. If you have identified any MNR interests in your project planning and require additional technical information, or if you have questions about the content of this Package, please feel free to contact me, or SR.planning@ontario.ca.

Best Regards,

Karen O'Connor (She/Her)
Regional Planner | Land Use Planning and Strategic Issues Section
Ministry of Natural Resources | Ontario Public Service
(705) 761 7061 | karen.oconnor@ontario.ca

Ontario

Taking pride in strengthening Ontario, its places and its people

As part of providing accessible customer service, please let me know if you have any accommodation needs or require communication supports or alternate formats.

From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: November 7, 2025 11:59 AM
Subject: 165620304: Notice of Public Information Centre – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission

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To Whom It May Concern,

ENWIN Utilities Ltd. (ENWIN) on behalf of the Windsor Utilities Commission (WUC) is undertaking a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for a new Elevated Water Tower and associated distribution and transmission system. This study will satisfy Phase No.'s 1 and 2 of the Class EA process including: (Phase 1) review of background information and definition of a problem statement and (Phase 2) identification and evaluation of alternative solutions. The planning and decision making of the Class EA process will be documented in a Project File Report.

ENWIN, as the proud operator of WUC, is hosting a Public Information Centre (PIC) to present the evaluation of alternative solutions and associated distribution and transmission system for the new Elevated Water Tower. The PIC will be held on November 25, 2025 (4:00 to 7:00 pm) at the Hellenic

Cultural Centre, 3052 Walker Road, Windsor ON to receive input from interested residents and stakeholders.

A copy of the Notice of Public Information Centre for the project is attached and additional information regarding the project will be available starting November 25 on ENWIN's website: https://ENWIN.com/water/windsor-utilities-commission

Following the PIC, comments are welcomed and will be received until December 23, 2025.

If you have any comments or concerns regarding this Study, please contact the undersigned.

Sincerely,

Hannah Rindlisbacher P.Eng., LEED Green Associate
Environmental Engineer

Direct: 226-704-3060
Fax: 519-966-2253
hannah.rindlisbacher@stantec.com

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MNR SOUTHERN REGION INFORMATION PACKAGE – FOR EXTERNAL PROPONENT ENVIRONMENTAL ASSESSMENTS

MNR – SOUTHERN REGION – LUPSI

October 2024

How to Use This Information Package

Environmental Assessment (EA) is a planning and decision-making process used to promote environmentally responsible decision-making. In Ontario, this process is defined and is required pursuant to the *Environmental Assessment Act (EAA)*. The Ministry of Environment, Conservation and Parks (MECP) administers the *EAA*.

The Ministry of Natural Resources (MNR) may be asked by a proponent of a project subject to an EA or Class EA to participate as a commenting agency to ensure provincial interests within MNR's mandate are considered by the proponent in the project planning process.

Use of this Information Package "Package" is intended to help project proponents understand MNR's:

- role as a commenting agency and interests related to environmental assessment within the Ministry's mandate (refer Sections 1 through 8 of this document)
- regulatory authority to issue authorizations, permits, licenses and/or approvals (refer Appendix A – MNR Regulatory Role)

The information provided by MNR and the sources listed in this Package should not be considered exhaustive nor a substitute for consultation with other agencies, site visits and appropriate field studies. The information provided is subject to change from time to time and it is the proponent's responsibility to ensure the information used to support project planning and compliance with *EAA* requirements is current and accurate.

If no MNR interests are identified based on the information contained in this Package there is no need to further circulate MNR as a commenting agency when undertaking consultation and review under the applicable EA process. MNR Southern Region (via sr.planning@ontario.ca) may be contacted if there are any questions about the content of this Package or if specific technical information is required.

This Package is intended for use within MNR's Southern Region (SR) regional boundary only. To view the MNR SR regional boundary please see Ministry of Natural Resources and Forestry work centres | ontario.ca.

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1. MNR Mandate

MNR has a mandate to protect Ontario's biodiversity while promoting economic opportunities in the resource sector and supporting outdoor recreation opportunities by:

- Sustainably managing Ontario's fish and wildlife resources.
- Leading the management of Ontario's public (also referred to as Crown) lands, including the beds of navigable waters, oil, gas, salt and aggregate resources, and access to Crown land for renewable energy projects.
- Ensuring the sustainable management of Ontario's Crown forests.
- Protecting people, property and communities from forest fires, floods, and droughts.
- Developing and applying geographic information to help manage the province's natural resources.

MNR's regulatory role is triggered when a project proponent seeks an approval under legislation administered by the Ministry. Information on the Ministry's regulatory role under applicable legislation can be found in Appendix A.

2. MNR Role as Commenting Agency

MNR's role as a commenting agency on projects subject to *EAA* requirements is to:

- Assist and enable project proponents to access relevant technical and scientific information within the scope of MNR's mandate.
- Provide legislative / regulatory / policy information and direction regarding interests within MNR's mandate.
- Support the identification and consideration of the potential effects of a project on matters within MNR's mandate.
- Identify where the project proponent may need to seek MNR approvals regarding the project.

3. Provincial Planning Policies

Provincial plans together with the *Provincial Policy Statement, 2024* (PPS) issued under section 3(1) of the *Planning Act,* provide policy direction on matters of provincial interest related to land use planning and development in Ontario. The PPS and provincial plans contain policies specific to infrastructure projects.

A summary of matters related to MNR's mandate within specific infrastructure-related provincial planning policies can be found below. Please note, this is not an exhaustive list of provincial policies that may apply to a project and other MNR mandated interests may be applicable. It is the project proponent's responsibility to review the provincial plans and PPS,

which may be amended from time to time, to determine policies applicable to the proposed project.

Provincial Plan Mapping

Mapping of provincial plan boundaries and natural heritage areas as defined in individual provincial plans is available to view or download through Make A Map: Natural Heritage Areas or Ontario GeoHub (GeoHub) - Natural Heritage System Area.

Greenbelt Plan, 2017

Section 4.2.1.2 of the Greenbelt Plan contains policies which are designed to direct infrastructure away from, or where not possible, to minimize the impacts on the Natural Heritage and Water Resource Systems. It requires that new or expanding infrastructure "shall avoid *key natural heritage features, key hydrologic features or key hydrologic areas* unless need has been demonstrated and it has been established that there is no other reasonable alternative."

Niagara Escarpment Plan (NEP), 2017

The NEP is administered by the Niagara Escarpment Commission, the government agency mandated to develop, interpret, and apply NEP policies that maintain and enhance the Niagara Escarpment's unique environmental and landscape features. In addition to Make A Map: Natural Heritage Areas, mapping of NEP Escarpment Natural Areas and Escarpment Protection Areas may be obtained from your local municipality or the Niagara Escarpment Commission.

Oak Ridges Moraine Conservation Plan (ORMCP), 2017

Section 41 of the ORMCP contains policies specific to the development of new or the upgrading/extension of existing infrastructure. This policy direction includes where development shall not be permitted unless specified criteria have been satisfied (including where applicable that there is no other reasonable alternative) and establishes required documentation to support infrastructure projects. Specific conditions apply to proposed infrastructure development within a natural core area and infrastructure crossings of key natural heritage features.

Lake Simcoe Protection Plan (LSPP), 2009

Policy 6.23-DP of the LSPP directs that development or site alteration in relation to infrastructure shall not be permitted within a key natural heritage feature, a key hydrologic feature or within a related vegetation protection zone unless the need for the project has been demonstrated through an Environmental Assessment or other similar environmental approval and it has been demonstrated there is no reasonable alternative. Some exceptions may apply.

4. Fish, Wildlife and Natural Heritage

MNR's natural heritage and natural resources geospatial data layers can be accessed through the ministry's GeoHub and Natural Resources Data Access Requests | Ontario GeoHub. Please note, these Geospatial Ontario (formerly known as Land Information Ontario) GIS data layers available from MNR and the sources listed and linked on this webpage should not be considered as a substitute for site visits and appropriate field surveys. Generally, information available from MNR can be regarded as a starting point from which to conduct further field studies, if needed. While this data represents MNR's best available current information, it is important to note that a lack of information for a site does not mean that additional features and values are not present. There are many areas where MNR does not currently have information. On-site assessments can better verify site conditions, identify natural features and values and confirm presence of species at risk and/or their habitats.

The information below provides an overview of MNR's mandated interests in natural heritage to consider within the project study area. A detailed list of provincial technical guidance material used to identify significant natural heritage features in different landscapes can be found in Appendix B.

Fisheries

All permanent and intermittent watercourses and waterbodies have potential to contain fish habitat or contribute to fisheries resources. MNR is responsible for administering and enforcing the Ontario Fishery Regulations under the *Fisheries Act*.

When agency approvals are required for a proposed project, it is the responsibility of the authorizing regulatory agency to set any in-water work timing windows in their authorizations. These timing windows may be based on the MNR's In-water Work Timing Window Guidelines.

Areas of Natural and Scientific Interest

The study area should be screened for the presence of Areas of Natural and Scientific Interest (ANSI). ANSIs are lands and waters containing features that are important for natural heritage protection, scientific study, and education. ANSIs are identified and confirmed by MNR based on their representation of Ontario's significant geological and natural heritage features and are categorized as either Earth Science or Life Science.

Wetlands

Study areas that contain unevaluated or unmapped wet features should be investigated for the presence of wetlands. Wetlands are lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to the surface. Wetlands may

vary in their significance, and the four major types of wetlands are swamps, marshes, bogs, and fens.

As of January 1, 2023, MNR no longer reviews and confirms wetland evaluations. MNR's role with respect to wetland evaluation includes providing the provincial framework under which wetlands in Ontario are evaluated for significance (OWES), and uploading digital wetland boundary mapping and wetland status into the Geospatial Ontario database.

Significant Wildlife Habitat

Study areas which may contain significant wildlife habitat should be investigated for its presence or absence. Significant wildlife habitat may include features such as: seasonal concentration areas for wildlife species (e.g., snake hibernaculum), rare vegetation communities (e.g., tallgrass prairie), specialized habitats of wildlife (e.g., turtle nesting and over-wintering areas), habitats of species of conservation concern (e.g., Special Concern species as identified on the Species at Risk in Ontario list) and animal movement corridors (e.g., amphibian movement corridors). Provincially tracked species data (generalized to Natural Heritage Information Centre 1 km screening grid) can be viewed in Natural Heritage Make a Map. Detailed geospatial data may be obtained through GeoHub via a data sharing agreement.

Please note, relying on online mapping tools only may not accurately reflect the presence or absence of significant wildlife habitat within the project study area. Surveys or additional site level assessment are often required to confirm presence or absence of natural heritage features and values.

Significant Woodlands

Project study areas that contain wooded areas should be investigated for the presence of significant woodlands. Significant woodlands are areas that are ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to their contribution to the broader landscape; or economically important. Local planning authorities are responsible for identifying significant woodlands in accordance with criteria established by MNR.

Significant Valleylands

Project study areas that occur in a valley or other landform depression that has water for some period of the year should be investigated for the presence of significant valleylands. The identification of valleyland significance is the responsibility of the local planning authority. MNR recommends criteria for determination of valleyland significance.

5. Natural Hazards

In Ontario, development is generally directed away from areas impacted by natural hazards to prevent risks from inappropriate development on and around these lands and to ensure that the risks to public health and safety are minimized. Keeping people and property out of harm's way is a cost-effective, socially responsible, and proactive approach to addressing natural hazards. Various policies and programs direct people and development outside of natural hazard areas.

Responsibility for natural hazard management and implementation of programs and policies for most natural hazards has been delegated to municipalities and Conservation Authorities (CA) where they exist. MNR supports implementation of natural hazard policies by local municipalities and CAs by providing a series of natural hazard technical guidelines (see Appendix B).

Hazardous Lands (flooding, erosion and dynamic beach hazards)

The project location should be reviewed for the presence of hazardous lands. These may include lands subject to flooding and/or erosion and dynamic beaches. These lands become hazardous when people and property locate in these areas. The local municipality and CA should be contacted for further guidance where required.

Special Policy Areas

Some localized areas of the province may be subject to an approved Special Policy Area (SPA), as defined by the PPS. If the study area is located within or adjacent to a SPA, special consideration for any impacts to the flood plain and site-specific SPA policies may be necessary. Any proposed change or modification to the official plan policies, land use designations or boundaries applying to SPA lands, requires joint approval by the Ministers of the Ministry of Municipal Affairs and Housing (MMAH) and MNR.

Local official plans may be reviewed to identify the presence of SPAs within the study area. MNR may have additional information regarding SPAs which can be made available upon request.

Where applicable, information should be identified at the EA stage regarding any expected changes to the floodplain or potential modifications to the SPA subject to provincial approval.

Hazardous Sites (unstable soils and bedrock)

The project location should be reviewed for the presence of hazardous sites. These may include unstable soils (sensitive marine clays [leda], organic soils) or unstable bedrock (karst topography). General information and mapping tools available to assist in identifying the

potential presence of hazardous sites (e.g., karst and organic soils) include, but are not limited to:

- GeologyOntario (gov.on.ca) is maintained by the Ministry of Mines and provides access to all Ontario Geological Survey maps, reports and digital datasets.
- Wetland mapping
- Soil information and mapping maintained by the Ministry of Agriculture, Food and Rural Affairs is available at Soil Survey Complex (GeoON) or AgMaps

Hazardous Forest Types for Wildland Fire

Project study areas containing wooded areas should be screened for the presence of hazardous forest types for wildland fire. Data to identify potential areas that meet this definition can be found in GeoHub - Potential Hazardous Forest Types for Wildland Fire. Note that this data layer is based on forest type data at a coarse scale. Complete assessment of risk and determination of appropriate mitigation measures can only be done with confidence on a site-specific basis.

6. Oil, Gas and Salt Resources

Oil, gas or salt wells are regulated under the *Oil, Gas and Salt Resources Act*, and the supporting regulations and operating standards.

To help determine the presence of petroleum wells within the proposed project area, basic mapping information can be found through the GeoHub portal or the Ontario Oil, Gas and Salt Resources Library (www.ogsrlibrary.com). The 'Definitions and Terminology Guide' listed in the publications section on the library website may provide a better understanding of the well and resource information available.

The Ontario Petroleum Institute (OPI) is an industry association that can assist with retaining the services of a consultant who can provide information about the potential resources located below the property.

If any unanticipated petroleum wells or associated works are encountered during a project, the proponent should cease work immediately and contact MNR's Petroleum Operations Section (POS) to further understand the proponent's obligations under the *Oil, Gas and Salt Resources Act*. The POS may be contacted at POSRecords@ontario.ca or 519-873-4634. In the event of a spill, the project proponent should report it to the Spills Action Centre at 416-325-3000, 1-800-268-6060 (toll free), or 1-855-889-5775 (TTY).

7. Mineral Aggregate Resources

Mineral aggregate resources are usually sand, gravel, clay, earth and bedrock. They are used to make roads, subway tunnels, homes and other structures. Mineral aggregate resources are a non-renewable resource that exist in fixed locations.

MNR has an interest in protecting mineral aggregate resources from incompatible development so they may continue to be available for future extraction. Data to map known deposits of mineral aggregate resources is available from Geology Ontario at GeologyOntario (gov.on.ca).

Project proponents should consider mineral aggregate resources by screening for existing aggregate operations at Find Pits and Quarries | ontario.ca, and consider any potential to preclude or hinder operations and the use of aggregate resource deposits through incompatible development.

8. Crown Lands, Lakes, Rivers and Forests

MNR manages public lands including the beds of most lakes and rivers. Some activities on shore lands (both public and private) are also managed by the MNR.

Public land boundaries (mapping is representative only) and applicable Crown land use policies can be viewed at Crown Land Use Policy Atlas | ontario.ca. Provincial parks and conservation reserves are managed by MECP under the *Provincial Parks and Conservation Reserves Act*.

MNR manages the health of Crown forests so they may continue to provide ecological, economic, and social benefits. Most of Ontario's Crown forests are managed by forest companies under 20-year Sustainable Forest Licences. These companies are responsible for working with government and others to prepare and implement a forest management plan for their licence area, monitoring compliance with the plan and renewing the forest after harvesting trees.

9. Conclusion

The list of interests within MNR's mandate described in this document is not exhaustive. For additional information on legislation and programs the ministry administers see Ministry of Natural Resources | ontario.ca.

If you have identified any MNR interests in your project planning and require additional information, please direct your specific questions to the designated Regional Planner for the project, or to SR.planning@ontario.ca.

Appendix A – MNR Regulatory Role

MNR's regulatory role is triggered when a project proponent seeks an approval under legislation administered by the Ministry. This Appendix provides information about some of the more commonly applicable approvals issued by MNR. Please note, MNR may not be able to confirm the requirement for an approval until a detailed project and site plan have been provided to the Ministry.

A proposal for an MNR approval may engage the ministry's duty to consult Indigenous peoples.

Where MNR is considering an application, the ministry must also ensure its own obligations under the *EAA* are satisfied prior to a final decision. Where an approval would dispose of rights to Crown Resources for a project that has already completed *EAA* requirements under another process, MNR will require written documentation from the applicant setting out how *EAA* requirements for the project have been met prior to MNR issuing any requested approval.

Fish and Wildlife Conservation Act

The *Fish and Wildlife Conservation Act, 1997* regulates the relocation of fish and wildlife. Accordingly, should a project require:

- The relocation of fish outside of the work area, a Licence to Collect Fish for Scientific Purposes will be required.
- The relocation of wildlife outside of the work area (including amphibians, reptiles, and small mammals), will require a Wildlife Collector's Authorization.
- The destruction, taking or possession of any nests or eggs of species not protected by the *Migratory Birds Convention Act (*MBCA*)* or excluded under section 7(2) of the FWCA may also require a Wildlife Collector's Authorization.

To learn more about the management of Fish and Wildlife in Ontario, or to apply for permits or licenses, please visit the Natural Resources Information Portal.

Aggregate Resources Act

The *Aggregate Resources Act* (ARA) is the primary legislative framework for regulating aggregate resource extraction in Ontario. The MNR administers the *ARA* and issues licenses, permits and approves amendments to existing approvals. Information on existing pits and quarries and when an aggregate permit or license may be required can be accessed from MNR's Aggregates Section or GeoHub – Additional Resources

Lakes and Rivers Improvement Act

The *Lakes and Rivers Improvement Act* (LRIA) provides the MNR with regulatory authority over the design, construction, operation, maintenance and safety of dams in Ontario. For

information regarding when a MNR approval may be required and how the LRIA is administered by the Ministry visit Lakes and Rivers Improvement Act administrative guide | ontario.ca

Public Lands Act

The use of public land and shore lands are regulated under the *Public Lands Act*. A work permit must be obtained from MNR to undertake certain activities on public land and shore lands. To occupy public lands in Ontario, you must receive prior approval from MNR unless the use is permitted by regulation. Visit Natural Resources Information Portal for information on when a permit or approval is required and how to submit an application.

Crown Forest Sustainability Act

Any activities that involve a proposal to cut Crown forest resources (e.g., trees on Crown land) may require approval under the *Crown Forest Sustainability Act, 1994.*

Appendix B – Technical Guides

The following technical guides are the province's best available information to support identification of significant natural heritage features in different landscapes:

- Natural Heritage Reference Manual (2010)
- Greenbelt Technical Paper (2005)
- Oak Ridges Moraine Technical Paper 1 (Natural Heritage Features)
- Oak Ridges Moraine Technical Paper 2 (Significant Wildlife Habitat)
- Oak Ridges Moraine Technical Paper 7 (Significant Woodlands)
- Lake Simcoe Protection Plan Technical Paper
- Ontario Wetland Evaluation System (OWES)
- Significant Wildlife Habitat Technical Guide
    - Ecoregion Criterion Schedules for the identification of Significant Wildlife Habitat
        - Ecoregion 5E
        - Ecoregion 6E
        - Ecoregion 7E
    - Significant Wildlife Habitat Mitigation Support Tool (MiST)

Other supporting information may be found at Ontario GeoHub or Natural Resources Data Access Requests | Ontario GeoHub.

The following technical guides are the province's best available information to support implementation of MNR's interest in natural hazards (contact MNR to request pdf copies):

- Understanding Natural Hazards (2001)
- Special Policy Areas Procedures (2009)
- Technical Guide – River & Stream Systems: Flooding Hazard Limit (2002)
- Technical Guide – River & Stream Systems: Erosion Hazard Limit (2002)
- Great Lakes-St. Lawrence River Shorelines: Flooding, Erosion and Dynamic Beaches (2001)
- Technical Guide for Large Inland Lakes Shorelines: Flooding, Erosion and Dynamic Beaches (1996)
- Hazardous Sites Technical Guide (1996)
- Technical Bulletin: Flooding Hazards: Data Survey and Mapping Specifications (2023)
- Wildland Fire Risk Assessment and Mitigation Reference Manual (2017)

The following technical guide is the province's best available information supporting implementation of MNR's mandated interest in mineral aggregate resources (contact MNR to request pdf copy):

- Non-renewable Resources Training Manual (1997)

planning@erca.org
P.519.776.5209
F.519.776.8688
360 Fairview Avenue West
Suite 311, Essex, ON N8M 1Y6

December 10, 2025
ERCA File: 2639-25

Chris Manzon, P. Eng.
Director Engineering (Water), ENWIN Utilities Ltd.
4545 Rhodes Drive
Windsor, Ontario, N8W 5T1
cmanzon@enwin.com

Jian Li, Ph.D., P. Eng.
Project Manager, Stantec Consulting Ltd.
2555 Ouellette Avenue, Suite 100
Windsor, Ontario, N8X 1L9
Jian.li@stantec.com

Re: Notice of Study Commencement – Elevated Water Tower Municipal Class EA

Thank you for circulating our office with the Notice of Study Commencement for the Elevated Water Tower Municipal Class Environmental Assessment. Our office understands that the purpose of this study is to determine a long-term solution to maintain adequate water supply and operating pressure to the service area. The site located at 4450 7th Concession Road was identified as the preferred site for construction of a new elevated water tower.

ERCA supports the preferred location for a new water tower identified as 4450 7th Concession Road. This property is subject to ERCA regulation under the Conservation Authorities Act. The parcel falls within the regulated area of the 7th Street Drain. Approvals from our office are required prior to any construction or site alteration or other activities affected by Section 28 of the Conservation Authorities Act.

The preferred location lies within the Event Based Area (EBA) of the Essex Region Source Protection Plan, which came into effect October 1, 2015. The Source Protection Plan was developed to provide measures to protect Essex Region's municipal drinking water sources. As a result of these policies, new projects in these areas may require approval by the Essex Region Risk Management Official (RMO) to ensure that appropriate actions are taken to mitigate any potential drinking water threats. Should this proposal require the installation of fuel storage on site, please contact the RMO to ensure the handling and storage of fuel will not pose a significant risk to local sources of municipal drinking water. If a Risk Management Plan has previously been negotiated on the subject property, it will be the responsibility of the new owner to contact the Essex Region Risk Management Official to establish an updated Risk Management Plan. The Essex Region's Risk Management Official can be reached by email at riskmanagement@erca.org. For any questions regarding Source Water Protection and the applicable source protection plan policies that may apply to the site, please contact the Essex Region Risk Management Official.

Our office would be pleased to review the final report for this study. Please note that dependent upon the scope and scale of the review, a fee may apply of $1500.00 per line item 35 of the ERCA 2025 Board Approved Fee Schedule. Please continue to circulate our office as this study progresses at the following email address: planning@erca.org

Essex Region Conservation Authority
sustaining the place for life

If you have any questions or require any additional information, please contact the undersigned.

Sincerely,

Alicia Good

Watershed Planner

/alg

From:	Rindlisbacher, Hannah
To:	Alicia Good
Cc:	Li, Jian; Christopher Manzon
Subject:	RE: ERCA Comments Elevated Water Tower PIC 1
Date:	Wednesday, January 21, 2026 11:25:00 AM
Attachments:	image001.png

Good morning Alicia,

Thank you for your comments on the Elevated Water Tower Class EA. We will continue to circulate your office as the study progresses and will provide the Final EA Report for your review.

We understand approvals under Section 28 of the Conservation Authorities Act will be required for any construction or site alteration within the regulated area of the 7th Street Drain.

We will coordinate permit pre-consultation and submit the required materials.

Thanks,

Hannah Rindlisbacher, P.Eng., LEED Green Associate
Environmental Engineer

Direct: (226) 704 3060
hannah.rindlisbacher@stantec.com

Stantec

From: Li, Jian <jian.li@stantec.com>
Sent: Thursday, December 11, 2025 11:50 AM
To: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Subject: FW: ERCA Comments Elevated Water Tower PIC 1

See attached ERCA comments

BC Practice Leader

Stantec

From: Alicia Good <AGood@erca.org>
Sent: Wednesday, December 10, 2025 12:11 PM
To: Christopher Manzon <cmanzon@enwin.com>; Li, Jian <jian.li@stantec.com>
Cc: hannah.rindlishbacher@stantec.ca
Subject: ERCA Comments Elevated Water Tower PIC 1

You don't often get email from agood@erca.org. Learn why this is important

Good afternoon,

Please find attached ERCA's comments for the Schedule B Municipal Class Environmental Assessment for a new water tower.

Best regards,
Alicia

Alicia Good (she/her)
Watershed Planner
Essex Region Conservation Authority
360 Fairview Avenue West, Suite 311 | Essex, Ontario | N8M 1Y6
P. 519-776-5209 x3794 | F. 519-776-8688
agood@erca.org www.essexregionconservation.ca

While this email is sent when it is convenient for me, I do not expect a response or action outside of your own regular working hours.

The ERCA Office is now open to the public **Tuesdays, Wednesdays and Thursdays** to provide "counter service"; however, services continue to be delivered online and through email. Please consult ERCA's website for more information and direction regarding online services (i.e. permitting, cottage bookings, seasonal passes etc.)

Caution: This email originated from outside of Stantec. Please take extra precaution.

Attention: Ce courriel provient de l'extérieur de Stantec. Veuillez prendre des précautions supplémentaires.

Atención: Este correo electrónico proviene de fuera de Stantec. Por favor, tome precauciones adicionales.

From:	Rindlisbacher, Hannah
To:	"Abrazhevich, Anastasia (MCM)"
Cc:	Barboza, Karla (She/Her) (MCM)
Subject:	RE: MCM Response: 165620304: Notice of Study Commencement – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission
Date:	Tuesday, January 20, 2026 11:56:00 AM
Attachments:	image002.png image003.png

Good morning Anastasia,

Thank you for your response.

The Stage 1 AA report will be included in the appendix of the PFR. We have not issued the notice of completion yet, but the notice will be sent you at that time.

There were no known or potential built heritage resources and/or cultural heritage landscapes on this property, we will include the screening checklist in the PFR.

Thanks,

Hannah Rindlisbacher, P.Eng., LEED Green Associate
Environmental Engineer

Direct: (226) 704 3060
hannah.rindlisbacher@stantec.com

From: Abrazhevich, Anastasia (MCM) <Anastasia.Abrazhevich@ontario.ca>
Sent: Wednesday, January 14, 2026 2:40 PM
To: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Cc: Barboza, Karla (She/Her) (MCM) <Karla.Barboza@ontario.ca>
Subject: RE: MCM Response: 165620304: Notice of Study Commencement – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission

Good afternoon Hannah,

Thank you for providing the Ministry of Citizenship and Multiculturalism (MCM) with this additional information for the above-referenced project.

I would appreciate if you can clarify that the Stage 1 AA has been included in the PFR. We have yet to receive the notice of completion for this project.

Furthermore, could you please clarify if there any known or potential built heritage resources and/or cultural heritage landscapes? And if yes, could you please advise if technical studies (e.g., cultural heritage evaluation report, heritage impact assessment) have been completed?

If screening has identified no known or potential built heritage resources or cultural heritage landscape or no impacts to these resources, please include the completed checklist *Criteria for*

Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes along with supporting documentation in the final EA report.

Looking forward to hearing from you.

Kind regards,

Anastasia Abrazhevich
Heritage Planner | Citizenship, Inclusion and Heritage Division
Ministry of Citizenship and Multiculturalism | Ontario Public Service
437 240 2379 anastasia.abrazhevich@ontario.ca

Taking pride in strengthening Ontario, its places and its people

---

From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: December 19, 2025 1:58 PM
To: Abrazhevich, Anastasia (MCM) <Anastasia.Abrazhevich@ontario.ca>
Cc: Barboza, Karla (She/Her) (MCM) <Karla.Barboza@ontario.ca>
Subject: RE: MCM Response: 165620304: Notice of Study Commencement – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Good afternoon Anastasia,

Please see the attached checklist, '*Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes'.*

A Stage 1 Archaeological Assessment was carried out for this project, the PIF number is P394-0142-2025. The checklist and Stage 1 AA report will both be appended to the Project File Report for this Class EA.

Please let me know if you need anything else.

Thanks,

Hannah Rindlisbacher, P.Eng., LEED Green Associate
Environmental Engineer

Direct: (226) 704 3060
hannah.rindlisbacher@stantec.com

From: Abrazhevich, Anastasia (MCM) <Anastasia.Abrazhevich@ontario.ca>
Sent: Friday, December 19, 2025 1:45 PM
To: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Cc: Barboza, Karla (She/Her) (MCM) <Karla.Barboza@ontario.ca>
Subject: MCM Response: 165620304: Notice of Study Commencement – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission

Dear Hannah Rindlisbacher,

Thanks for sending the Notice of Public Information Centre for the above referenced project to the Ministry of Citizenship and Multiculturalism (MCM).

We sent our preliminary advice on December 12, 2023 (see attached). Could you please advise on the status of technical cultural heritage studies? If an archaeological assessment has been initiated, could you please send us the Project Information Form (PIF) number?

We look forward to hearing from you about the status of the studies.

Thanks in advance,

Anastasia Abrazhevich
Heritage Planner | Citizenship, Inclusion and Heritage Division
Ministry of Citizenship and Multiculturalism | Ontario Public Service
437 240 2379 anastasia.abrazhevich@ontario.ca

Taking pride in strengthening Ontario, its places and its people

---

From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: November 27, 2023 3:06 PM
Subject: 165620304: Notice of Study Commencement – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission

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To Whom It May Concern,

ENWIN Utilities Ltd. (ENWIN) on behalf of the Windsor Utilities Commission is undertaking a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for a new Elevated Water Tower and associated

distribution and transmission system. This study will satisfy Phase No.'s 1 and 2 of the Class EA process including: (Phase 1) review of background information and definition of a problem statement and (Phase 2) identification and evaluation of alternative solutions. The planning and decision making of the Class EA process will be documented in a Project File Report. A copy of the Notice of Study Commencement for the project is attached.

On behalf of ENWIN, we invite you to participate in this project by providing your feedback and identifying environmental, social, and cultural impacts that may relate to this study. A reply by December 22nd, 2023, would be appreciated so that we may consider your comments early in this study stage.

If you have any comments or concerns regarding this Study, please contact the undersigned below or one of the individuals named in the attached Notice of Commencement.

Sincerely,

Hannah Rindlisbacher E.I.T., LEED Green Associate
Environmental Engineer in Training

Direct: 226-704-3060
Fax: 519-966-2253
hannah.rindlisbacher@stantec.com

Stantec
100-2555 Ouellette Avenue
Windsor ON N8X 1L9

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From:	Rindlisbacher, Hannah
To:	ONT Environment / Environnement ONT
Cc:	Mike Reaume
Subject:	RE: [External/Externe]: 165620304: Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission - Railway Safety Act Authorization
Date:	Tuesday, February 10, 2026 2:26:00 PM
Attachments:	image001.png

Good afternoon Jeremy,

Thank you for the information provided by your rail team.

We appreciate the clarification that the proposed water tower does not fall under any requirements of the Railway Safety Act (RSA) and that no submissions to Transport Canada are needed. We will ensure all project staff are aware of the restrictions under section 26.1 regarding access to railway property.

We will review the RAC–FCM proximity guidelines and continue coordinating with CN regarding sightline considerations, setbacks, and any requirements related to the Grade Crossings Regulations.

Please let us know if any further information is required.

Thanks,

Hannah Rindlisbacher, P.Eng., LEED Green Associate
Environmental Engineer

Direct: (226) 704 3060
hannah.rindlisbacher@stantec.com

Stantec

From: ONT Environment / Environnement ONT <EnviroOnt@tc.gc.ca>
Sent: Monday, January 26, 2026 5:03 PM
To: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Cc: Mike Reaume <mreaume@enwin.com>
Subject: RE: [External/Externe]: 165620304: Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission - Railway Safety Act Authorization

UNCLASSIFIED / NON CLASSIFIÉ

Hello;
The following has been provided by our rail team:

There does not appear to be any requirements under the *Railway Safety Act* (RSA) or the rest of Transport Canada's regulatory regime in the present situation, namely the building of a water tower by a municipality bordering tracks that already exist and for which the railway infrastructure will not be altered.

It is our understanding that the municipality is building the water tower or maintaining it; during this work, it is prohibited for them to enter on land where a rail work is situated, as per section 26.1 of the RSA. Anyone found on the right-of-way without lawful excuse may be issued a fine by local authorities or by a railway company police officer.

The Railway Association of Canada (RAC) and the Federation of Canadian Municipalities (FCM) have jointly developed the Guidelines for New Development in Proximity to Railway Operations to establish best practices for developers seeking to bring rail operations closer to new developments. The guidelines recommend consultation with the railway, and consider issues such as drainage, vibrations, noise mitigation, access, and safety mitigation for developments adjacent to railway rights-of-way, etc. They are helpful from a planning and best practices point of view. However, it is important to note that these guidelines are not federal requirements and are not binding upon the parties.

In the spirit of section 3 of the RSA, it is important to encourage the parties to collaborate and participate in improving the safety and security of railways. We therefore recommend that all parties undertaking work in proximity to rail lines communicate with the relevant railway company so they can work together.

CN may require that no buildings are within the sightline triangle of the crossings on either side of the property or a specific setback requirement. The RSA does not stipulate anything specific, but the design will need to take the Grade Crossings Regulations into account as well as any recommended best practices through the RAC.

They would not need to provide TC anything under the RSA as this is not a railway work.

If you have any additional questions or require clarification, please let us know.

Thank you,
Jeremy

From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: Friday, January 23, 2026 3:36 PM
To: ONT Environment / Environnement ONT <EnviroOnt@tc.gc.ca>
Cc: Mike Reaume <mreaume@enwin.com>
Subject: RE: [External/Externe]: 165620304: Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission - Railway Safety Act Authorization

Good afternoon,

We are hoping to begin construction of the new water tower later this year. The new tower will be located on private property adjacent to the railway right-of-way, our conceptual design has the base of the tower approximately 30 metres from the railway corridor. We have notified the rail authority (CN Rail) of the project and will submit a Work Permit Application for their approval.

After further review of the Railway Safety Act (RSA), it appears that this type of project may fall outside the scope of activities requiring approval under the RSA, as the construction does not involve “railway work” nor any alteration to railway infrastructure. The project is not expected to create interference with railway operations.

With that said, we want to ensure full compliance and alignment with Transport Canada’s expectations. Could you please confirm whether approval under the Railway Safety Act is required for this project, or advise if any further review would be appropriate?

We are happy to provide additional details if needed.

Thanks,

Hannah Rindlisbacher, P.Eng., LEED Green Associate
Environmental Engineer

Direct: (226) 704 3060
hannah.rindlisbacher@stantec.com

Stantec

From: ONT Environment / Environnement ONT <EnviroOnt@tc.gc.ca>
Sent: Thursday, January 22, 2026 1:18 PM
To: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Subject: RE: [External/Externe]: 165620304: Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission - Railway Safety Act Authorization

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UNCLASSIFIED / NON CLASSIFIÉ

Hi Hannah;
What are the timelines for the project? When do you need confirmation of rail requirements?

Thank you.

From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: Monday, January 12, 2026 11:20 AM
To: ONT Environment / Environnement ONT <EnviroOnt@tc.gc.ca>

Subject: [External/Externe]: 165620304: Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission - Railway Safety Act Authorization

Good morning,

As we have now selected a site for the new water tower through evaluation in accordance with the Class Environmental Assessment process. I believe that this project will require approval and/or authorization under the Railway Safety Act, as the site is abutting a railway right-of-way. I've contacted CN Rail as well for direction on permitting. The site is located at 4450 7th Concession Road, Windsor Ontario. I've attached an aerial image of the site for reference.

Previous correspondence with Transport Canada, indicated that an Aeronautical Assessment Form shall be submitted prior to construction. We are also aware that the location is within the Windsor Airport's Obstacle Limitation Surface, where structures are limited to a height of 234.6 m ASL (as per our discussions with the Windsor Airport). This will be noted in our Project File Report for the Class EA.

Please advise on actions to be taken in accordance with the Railway Safety Act.

Thanks,

Hannah Rindlisbacher, P.Eng., LEED Green Associate
Environmental Engineer

Direct: (226) 704 3060
hannah.rindlisbacher@stantec.com

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From: ONT Environment / Environnement ONT <EnviroOnt@tc.gc.ca>
Sent: Thursday, November 13, 2025 9:11 AM
To: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Subject: RE: 165620304: Notice of Public Information Centre – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission

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Hello Hannah,

Our NPP colleagues forwarded your email to us for a response.

Please note Transport Canada does not require receipt of all Individual or Class EA related notifications. We request that project proponents self-assess whether their project:

1. Will interact with a federal property and/or waterway by reviewing the Directory of Federal Real Property, available at at www.tbs-sct.gc.ca/dfrp-rbif/; **and**
2. Will require approval and/or authorization under any Acts administered by Transport Canada* available at http://www.tc.gc.ca/eng/acts-regulations/menu.htm.

Proposed projects that will occur on federal property (including reserve lands or lands owned by federal departments other than Transport Canada) will be subject to an Impact Assessment per **Section 82 of the *Impact Assessment Act, 2019*** prior to exercising a federal power (including full or partial funding), and/or performing a function or duty (e.g. regulatory approval or issuance of a lease) in relation to that project.

If the criteria above do not apply, Transport Canada's Environmental Assessment program should not be included in any further correspondence, and future notifications will not receive a response. If there is a role under the program, correspondence should be forwarded to: EnviroOnt@tc.gc.ca with a **brief description of Transport Canada's expected role**.

*Below is a summary of the most common Acts that apply to projects in an Environmental Assessment context:

- ***Canadian Navigable Waters Act (CNWA)*** – the Act applies primarily to works constructed or placed in, on, over, under, through, or across navigable waters set out under the Act. The Navigation Protection Program administers the CNWA through the review and authorization of works affecting navigable waters. Information about the Program, CNWA and approval process is available at: http://www.tc.gc.ca/eng/programs-621.html. Inquiries can be directed to NPPONT-PPNONT@tc.gc.ca or by calling (519) 383-1863.

- ***Railway Safety Act (RSA)*** – the Act provides the regulatory framework for railway safety, security, and some of the environmental impacts of railway operations in Canada. The Rail Safety Program develops and enforces regulations, rules, standards and procedures governing safe railway operations. Additional information about the Program is available at: https://www.tc.gc.ca/eng/railsafety/menu.htm. Inquiries can be directed to RailSafety@tc.gc.ca or by calling (613) 998-2985.

- ***Transportation of Dangerous Goods Act (TDGA)*** – the transportation of dangerous goods by air, marine, rail and road is regulated under the TDGA. Transport Canada, based on risks, develops safety standards and regulations, provides oversight and gives expert advice on dangerous goods to promote public safety. Additional information about the transportation of dangerous goods is available at:

https://www.tc.gc.ca/eng/tdg/safety-menu.htm. Inquiries can be directed to TDG-TMDOntario@tc.gc.ca or by calling (416) 973-1868.

- ***Aeronautics Act*** – this Act and the associated Canadian Aviation Regulations (CARs) govern civil aviation in Canada. Transport Canada should be notified of projects involving aerodromes and associated structures, or activities that could affect aviation safety. Elevated structures, such as wind turbines and communication towers, are examples of projects that must be assessed for lighting and marking requirements in accordance with the CARs. Transport Canada also has an interest in projects that have the potential to cause interference between wildlife and aviation activities. One example would be waste facilities, which may attract birds into commercial and recreational flight paths. Additional guidance can be found in the *Land Use In The Vicinity of Aerodromes* publication, available at: https://www.tc.gc.ca/eng/civilaviation/publications/tp1247-menu-1418.htm. Information about Transport Canada's Civil Aviation program can be found at: https://tc.canada.ca/en/aviation. Inquires can be directed to aviation.ont@tc.gc.ca or by calling 1 (800) 305-2059 / (416) 952-0230.

Please advise if additional information is needed.

Thank you,

Environmental Assessment Program, Ontario Region
Transport Canada / Government of Canada / 4900 Yonge St., Toronto, ON M2N 6A5
EnviroOnt@tc.gc.ca

Programme d'évaluation environnementale, Région de l'Ontario
Transports Canada / Gouvernement du Canada / 4900, rue Yonge, Toronto, ON, M2N 6A5
EnviroOnt@tc.gc.ca

From: NPP ONT / PPN ONT <NPPONT-PPNONT@tc.gc.ca>
Sent: Wednesday, November 12, 2025 9:50 AM
To: ONT Environment / Environnement ONT <EnviroOnt@tc.gc.ca>
Subject: FW: 165620304: Notice of Public Information Centre – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission

From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: Friday, November 07, 2025 11:59 AM
Subject: 165620304: Notice of Public Information Centre – Class EA Elevated Water Tower, ENWIN Utilities Ltd. / Windsor Utilities Commission

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To Whom It May Concern,

ENWIN Utilities Ltd. (ENWIN) on behalf of the Windsor Utilities Commission (WUC) is undertaking a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for a new Elevated Water Tower and associated distribution and transmission system. This study will satisfy Phase No.'s 1 and 2 of the Class EA process including: (Phase 1) review of background information and definition of a problem statement and (Phase 2) identification and evaluation of alternative solutions. The planning and decision making of the Class EA process will be documented in a Project File Report.

ENWIN, as the proud operator of WUC, is hosting a Public Information Centre (PIC) to present the evaluation of alternative solutions and associated distribution and transmission system for the new Elevated Water Tower. The PIC will be held on November 25, 2025 (4:00 to 7:00 pm) at the Hellenic Cultural Centre, 3052 Walker Road, Windsor ON to receive input from interested residents and stakeholders.

A copy of the Notice of Public Information Centre for the project is attached and additional information regarding the project will be available starting November 25 on ENWIN's website: https://ENWIN.com/water/windsor-utilities-commission

Following the PIC, comments are welcomed and will be received until December 23, 2025.

If you have any comments or concerns regarding this Study, please contact the undersigned.

Sincerely,

Hannah Rindlisbacher P.Eng., LEED Green Associate
Environmental Engineer

Direct: 226-704-3060
Fax: 519-966-2253
hannah.rindlisbacher@stantec.com

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From: O"Rourke, Conner
To: Rindlisbacher, Hannah
Cc: planningdept
Subject: RE: Railway Right of Way Provisions
Date: Thursday, August 8, 2024 3:08:46 PM
Attachments: image001.png
image003.png

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Hello,

These properties are not within the described areas in 5.60.1., so it would not need to follow the 5.60.1 provisions. However, said properties would still need to abide by the provisions outlined in 5.60.5, 5.60.10 and 5.60.20.

If you require any clarification or have any additional questions let me know.

Kind regards,
Conner O'Rourke | Zoning Coordinator
Planning and Building Department
350 City Hall Square West | Suite 210 | Windsor, ON | N9A 6S1
(519)-255-6543 ext. 6447
www.citywindsor.ca

From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: Wednesday, August 7, 2024 4:49 PM
To: planningdept <planningdept@citywindsor.ca>
Subject: Railway Right of Way Provisions

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Good afternoon,

I am looking into some potential sites for a project to build a future water storage tank and I was wondering if the 'Railway Right of Way Provisions' stated in Section 5.60 of Zoning Bylaw 8600 would apply to the sites located along 7th Concession Road in the screenshots below:



Thanks,

Hannah Rindlisbacher E.I.T., LEED Green Associate
Environmental Engineer in Training

Direct: 226-704-3060
Fax: 519-966-2253
hannah.rindlisbacher@stantec.com

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5.60 RAILWAY RIGHT OF WAY PROVISIONS

5.60.1 On a *lot* abutting one of the following railway rights of way (as shown on the Zoning District Maps) located:

on the south side of the Detroit River Tunnel Partnership (formerly the Canadian National Railway Caso) Line between Walker Road and Sixth Concession Road;

on the north side of the CN Railway Chatham Line between the Little River and the City of Windsor/Town of Tecumseh municipal boundary;

on the west side of the Detroit River Tunnel Partnership (formerly the Canadian National Railway Caso) Line between Cabana Road West and Howard Avenue; or

on the south side of the CN Railway Chatham Line between Lauzon Road and the east limit of the CN Railway Jefferson Yard,

.1 An earth berm having a minimum height of 2.50 m and slopes of 2.5 to 1 or greater shall be constructed continuously adjacent to the common boundary line between the *lot* and the railway right of way and maintained in good practice.

.2 A minimum separation of 30.0 m shall be maintained between the railway right-of-way and a residential, commercial, institutional, or recreational *use*. In the absence of an earth berm, for an *existing building* only, any addition to the *building* shall have a minimum separation of 60.0 m from the railway right-of-way.

.3 A minimum separation of 15.0 m shall be maintained between the railway right-of-way and an industrial *use*. In the absence of an earth berm, for an *existing building* only, any addition to the *building* shall have a minimum separation of 60.0 m from the railway right-of-way.

5.60.5 Where a *lot* abuts a railway right-of-way, at the time of erection of a *main building* or an addition to an existing *main building*, a security fence having a minimum height of 1.830 m shall be erected continuously along the common boundary line between the *lot* and the railway right-of-way.

5.60.10 On a *lot* situated at the intersection of and abutting upon the intersection of a *street* and a railway right-of-way that does not have a railway control gate at said intersection, a *building*, *structure*, or part thereof, is prohibited within 6.0 m of the point of that intersection.

5.60.20 Notwithstanding any other provisions of this by-law in conflict herewith, on a *lot* which abuts a railway right-of-way, for an *existing dwelling* or a new *dwelling* that replaces an *existing dwelling*, the minimum separation from the railway right-of-way shall be the greater of the existing separation or the minimum setback required for a *dwelling* in the *zoning district* in which it is located.

From: Sarangan Srikanth on behalf of GLD-Permits
To: Rindlisbacher, Hannah
Subject: RE: Requesting Guidance for Watermain Installation Under Railway Corridor
Date: Sunday, December 21, 2025 11:41:12 PM
Attachments: image001.png
EFT Payment Instructions - Copy.pdf
Instruction for the Protection of Underground Cables (SCP-1005).pdf
Work Access Permit Project Scope.pdf
Work Permit Application 2025.pdf

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Hello Hannah,

Thank you for the email.

For any work within or in the proximity of the CN Right of Way, an executed work permit is required.

- Please find the Work Permit Application 2025 attached. Kindly fill out, initial every page, sign and send back to permits.gld@cn.ca
- Please fill in the attached Work Access Permit Project Scope and submit along with your signed work permit application
- Please read the **Instruction for the Protection of Underground Cables (SCP-1005)** if an **underground utility permit application** is being submitted for a review.
- Flagging can only be requested after receiving a work permit executed by CN. Note that flagging is in high demand and your requested dates for a CN flagger is not guaranteed. Current Flagging turnaround time is a minimum of 12 weeks
- CN requires proof of insurance $10,000,000 (CN must be additionally insured), as indicated in the Work Permit. Please review the requirements and submit this along with your signed work permit.
- Ensure that all personnel have completed their Contractor Orientation Course before entering CN ROW (www.contractororientation.com)
- Please see attached EFT instruction for payments. After your Work Permit is executed, an invoice will be sent to you.
- However during the review process, CN would require **ONLY the applicable documents** to proceed with the application:
    1. Method of Procedure (MOP) detailing the step by step sequence of actions to be executed by the applicant/contractor
    2. Certificate of Insurance as mentioned in the work permit application
    3. Stamped engineering drawings
    4. Distance from the nearest track while working
    5. Worksite access plan
    6. Traffic Control Plan
    7. During complete road closures a Detour plan will be required and if CN will be affected by the detour plan
    8. Type of equipment and machinery to be used
    9. equipment and machinery staging plan,
    10. Trenching plan if excavation within CN ROW
    11. Details of excavation if applicable to the scope of work

When sending in the documents please DO NOT combine them as a single document/PDF. Kindly send them separately.
When completing the documents please DO NOT LOCK THE PDF.

An additional fee will apply for in depth Engineering review and for High voltage wires crossing the CN tracks.

The turnaround time for the review process is 8 weeks beginning from the date you receive the confirmation email.

Thank you,

CN
Sarangan Srikanth
Officer Public Works | Engineering-GLD- Eastern Canada
C: **437-329-4963**
What's New at CN | *Quoi de neuf au CN*

From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: Thursday, December 18, 2025 11:09 AM
To: GLD-Permits <permits.gld@cn.ca>
Subject: RE: Requesting Guidance for Watermain Installation Under Railway Corridor

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Good morning,

My team is working on a project for ENWIN Utilities to design a new water in the City of Windsor, Ontario. The preferred site for the new water tower is abutting a railway right of way, that I believe is under the authority of CN.
I am reaching out to determine CN's regulations/standards or permits required for building on a site next to a railway. The address of the site is 4450 7th Concession Road, Windsor ON N8W 5V6. I've also attached a photo of the site.
Looking forward to hearing from you.

Thanks,

Hannah Rindlisbacher, P.Eng., LEED Green Associate
Environmental Engineer

Direct: (226) 704 3060
hannah.rindlisbacher@stantec.com

Stantec

From: Sarangan Srikanth <Sarangan.Srikanth@cn.ca>
Sent: Friday, December 12, 2025 11:58 AM
To: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>; GLD-Permits <permits.gld@cn.ca>
Subject: RE: Requesting Guidance for Watermain Installation Under Railway Corridor

Hello Hannah,

Thank you for reaching out.

I have copied the permits inbox here. Please reach out to the permits group for standards regarding construction in the proximity of CN rail Right of way.

Thank you,

CN

Sarangan Srikanth
Officer Public Works | Engineering-GLD- Eastern Canada
C: **437-329-4963**
What's New at CN | *Quoi de neuf au CN*

From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: Wednesday, December 10, 2025 1:51 PM
To: Sarangan Srikanth <Sarangan.Srikanth@cn.ca>
Subject: RE: Requesting Guidance for Watermain Installation Under Railway Corridor

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Good afternoon Sarangan,

My team is working on a project for ENWIN Utilities to design a new water in the City of Windsor, Ontario. The preferred site for the new water tower is abutting a railway right of way, that I believe is under the authority of CN.

I am reaching out to you to determine CN's regulations/standards or permits required for building on a site next to a railway. The address of the site is 4450 7th Concession Road, Windsor ON N8W 5V6. I've also attached a photo of the site.

Looking forward to hearing from you.

Thanks,

Hannah Rindlisbacher P.Eng., LEED Green Associate
Environmental Engineer

Direct: 226-704-3060
Fax: 519-966-2253
hannah.rindlisbacher@stantec.com

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From: Van Der Mark, Lukas
To: Rindlisbacher, Hannah
Cc: Christopher Manzon; Li, Jian; Mike Reaume
Subject: Re: 165620304 Enwin Elevated Water Tower Class Environmental Assessment Study
Date: Tuesday, January 13, 2026 3:47:31 PM
Attachments: image006.png
image007.png
image008.png
image009.png

Hi Hannah,

My apologies that I missed your original message.

You are correct 234.6 metres ASL is the maximum heighjt for that location. The next steps would be to submit Land Use applications to both Transport Canada and NAV Canada. Please see the links below:

Transport Canada - Aeronautical Assessment Form (AAF)

https://tc.canada.ca/en/aviation/general-operating-flight-rules/marking-lighting-obstacles-air-navigation

NAV Canada - Land Use Application

https://www.navcanada.ca/en/aeronautical-information/land-use-program.aspx

If you require anything further, please let me know. I kindly ask that you keep me informed as you progress through the planning process.

Thanks,

Luke

Luke Van Der Mark
Director of Operations
YQG YOUR QUICK GATEWAY
WINDSOR INTERNATIONAL AIRPORT
3200 Cabana Rd E, Unit 200, Windsor, ON, Canada N8V 0A1
phone: (519) 969-2430 Ext. 439 · **fax:** (519) 969-6053
cell: (519) 563-8538
email: lvandermark@yqg.ca · **web:** www.yqg.ca

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From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: Tuesday, January 13, 2026 2:37 PM
To: Van Der Mark, Lukas <lvandermark@yqg.ca>
Cc: Manzon, Chris (Enwin) <cmanzon@enwin.com>; Li, Jian <jian.li@stantec.com>; Mike Reaume <mreaume@enwin.com>
Subject: RE: 165620304 Enwin Elevated Water Tower Class Environmental Assessment Study

You don't often get email from hannah.rindlisbacher@stantec.com. Learn why this is important

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Good afternoon Lukas,

Happy New Year!

I left you a voicemail back in November and I am following up on my previous email below.

Through this Class Environmental Assessment (Class EA), we evaluated eight (8) alternative locations for the new water tower. The property selected is located at 4450 7th Concession Road. We held a Public Information Centre on November 25th, 2025, in accordance with the Municipal Class EA consultation process to present the preferred location to the public. I've attached an aerial photo of the site and the slideshow that was presented at the Public Information Centre for your reference.

The location is within the Windsor Airport's Obstacle Limitation Surface, where structures are limited to a height of 234.6 m ASL (as per our understanding from previous discussions with Steve Tuffin from the Windsor Airport). Transport Canada has advised us to prepare and submit the *Aeronautical Assessment Form* under the Aeronautics Act prior to construction. We are happy to continue conversations with the Windsor Airport as this project progresses.

Please let us know if you have any questions or concerns with the information provided.

Thanks,

Hannah Rindlisbacher, P.Eng., LEED Green Associate
Environmental Engineer

Direct: (226) 704 3060
hannah.rindlisbacher@stantec.com

Stantec

From: Rindlisbacher, Hannah
Sent: Tuesday, November 4, 2025 3:12 PM
To: 'lvandermark@yqg.ca' <lvandermark@yqg.ca>
Cc: Christopher Manzon <cmanzon@enwin.com>; Li, Jian <jian.li@stantec.com>
Subject: 165620304 Enwin Elevated Water Tower Class Environmental Assessment Study

Good afternoon Lukas,

I hope this email finds you well.

I had previously tried to connect with Steve Tuffin regarding the New Water Tower Class Environmental Assessment study that Stantec Consulting is working on with ENWIN, but I recently learned that he's moved on since our last time in contact with him.

We would like to set up a meeting between Stantec, ENWIN and the Windsor Airport to update on the progress of this project and discuss any required permitting/concerns for the New Water Tower design.

Would you be available for either a virtual or in-person meeting sometime next week? If so, please let me know dates/times that work for you.

Thanks,

Hannah Rindlisbacher P.Eng., LEED Green Associate
Environmental Engineer

Direct: 226-704-3060
Fax: 519-966-2253
hannah.rindlisbacher@stantec.com

Stantec
100-2555 Ouellette Avenue
Windsor ON N8X 1L9

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From: Rindlisbacher, Hannah
Sent: Wednesday, October 22, 2025 3:36 PM
To: 'Tuffin, Steve' <stuffin@yqg.ca>
Cc: Christopher Manzon <cmanzon@enwin.com>; Li, Jian <jian.li@stantec.com>
Subject: RE: AZR maps

Good afternoon Steve,

I hope this email finds you well.

We are looking to schedule a meeting with you to update you on the progress of this project and discuss any required permitting/concerns from the Windsor Airport.

Can you please provide me with your availability for the following dates, November 3rd, 4th, 5th or 6th? We are open to an in-person meeting (Stantec Office is an option) or virtual meeting depending on your preference.

Thanks,

Hannah Rindlisbacher P.Eng., LEED Green Associate
Environmental Engineer

Direct: 226-704-3060
Fax: 519-966-2253
hannah.rindlisbacher@stantec.com

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From: Tuffin, Steve <stuffin@yqg.ca>
Sent: Wednesday, July 24, 2024 1:08 PM
To: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>

Cc: Christopher Manzon <cmanzon@enwin.com>; Li, Jian <jian.li@stantec.com>
Subject: RE: AZR maps

Hi Hannah,

The exemption process is long could be anywhere from 1 to 3 years, only because it is within the Airport Zoning Regulations. I would send an application now and see what response you get. Nav Canada will also need to weigh in on this location just to ensure no interference with Navigational aids and flight patterns.

Let me know if I can help.

Steve

From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: Tuesday, July 23, 2024 11:51 AM
To: Tuffin, Steve <stuffin@yqg.ca>
Cc: Manzon, Chris (Enwin) <cmanzon@enwin.com>; Li, Jian <jian.li@stantec.com>
Subject: RE: AZR maps

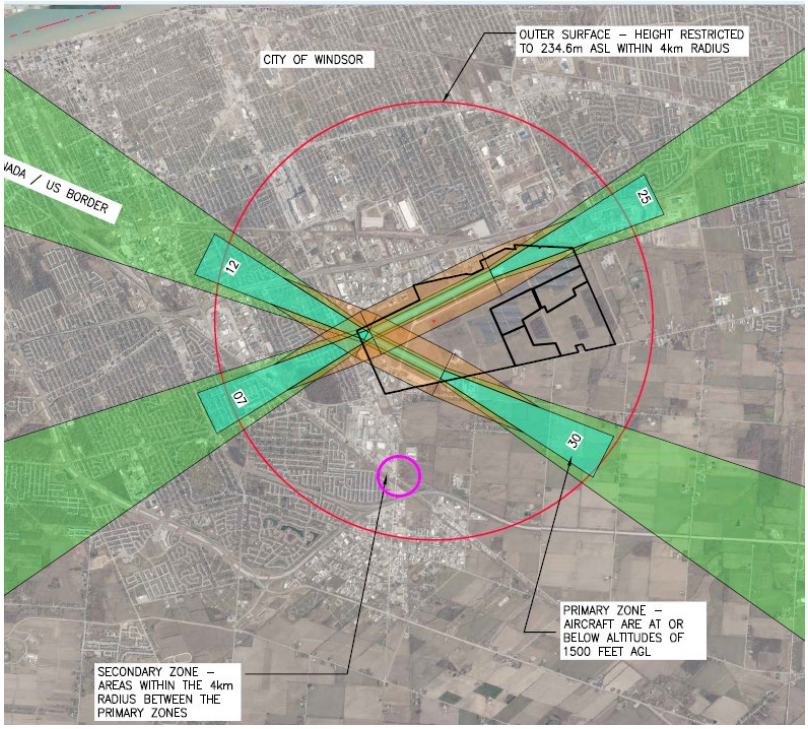
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Good morning Steve,

I was wondering if you have any idea what the timeline typically is like for this application process?

One potential location we are looking at for the water tower is at the intersection of Walker and Provincial, see pink circle in the screenshot below.

This may be a better question for Transport Canada, but do you think we are more likely to get approved since the location doesn't fall under a takeoff/approach surface?



Thanks,
Hannah

From: Tuffin, Steve <stuffin@yqg.ca>
Sent: Wednesday, July 17, 2024 3:00 PM
To: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Subject: RE: AZR maps

There is and has been some exemptions. These are granted by Transport Canada. If you go to their website the application for exemption is there. It is a long process
Even for temporary things such as construction cranes. I will be back in the office next week and able to help if needed

Steve

Sent from my Galaxy

-------- Original message --------
From: "Rindlisbacher, Hannah" <Hannah.Rindlisbacher@stantec.com>
Date: 2024-07-17 2:35 p.m. (GMT-05:00)
To: "Tuffin, Steve" <stuffin@yqg.ca>
Subject: RE: AZR maps

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Good afternoon Steve,

Thanks for your help with this.

I was wondering if you were aware of any flexibility for the height limitations within the 4 km radius or if the restriction is set in stone. Have you ever seen any exception made in the past if the obstacle is located within the 4 km radius but not located within a takeoff/approach surface? Any information you have would be helpful.

Thanks,
Hannah

From: Tuffin, Steve <stuffin@yqg.ca>
Sent: Tuesday, July 9, 2024 3:32 PM
To: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Subject: RE: AZR maps

I would agree that at 4500 m from the inner edge the maximum height would be 90 m

Steve

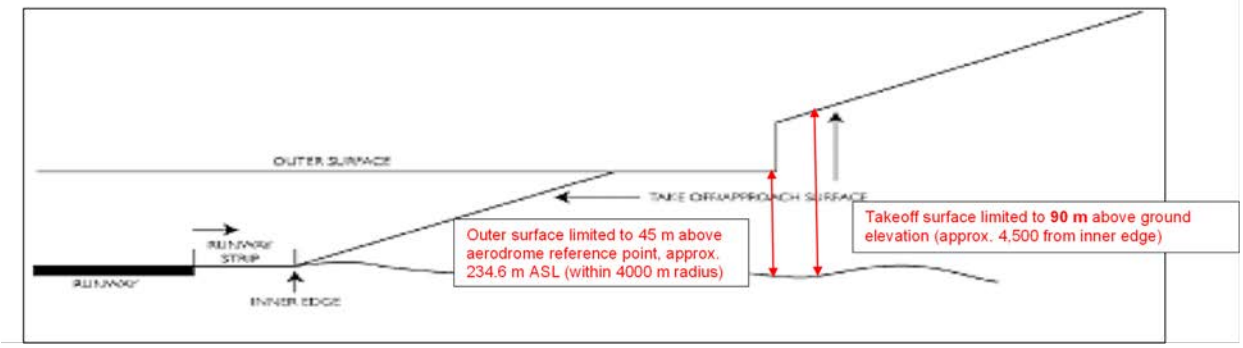
From: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Sent: Tuesday, July 9, 2024 3:06 PM
To: Tuffin, Steve <stuffin@yqg.ca>
Subject: RE: AZR maps

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Hi Steve,

So, my understanding is the takeoff/approach surface is measured from the inner edge increasing at a 2% slope for a total length of 15,000 m.

Regardless of the 2% slope, the height is restricted to 45 m above the aerodrome reference point (approx. 234.6 m ASL) within the 4 km radius… is it safe to say the height limit at 4,500 m from the inner edge the height is restricted to approximately 90 m above ground elevation? (see screenshot below) Please correct me if I'm incorrect.



We are looking at a potential site that is close to the takeoff/approach surface but may not fall directly under it, so we just want to double check our height limits within the approach surface.

Thanks,
Hannah

From: Tuffin, Steve <stuffin@yqg.ca>
Sent: Tuesday, July 9, 2024 1:00 PM
To: Rindlisbacher, Hannah <Hannah.Rindlisbacher@stantec.com>
Subject: FW: AZR maps

Other than in the approach surfaces there is no height limits imposed by the AZR outside of the 4 km radius

Steve Tuffin
Director of Airport Operations

YQG YOUR QUICK GATEWAY
WINDSOR INTERNATIONAL AIRPORT
3200 County Rd. 42, Unit 200, Windsor, ON, Canada N8V 0A1
phone: (519) 969-2430 Ext. 436 · fax: (519) 969-6053 cell: (519) 965-2701
email: stuffin@yqg.ca · web: www.yqg.ca ·

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From: Christopher Manzon
To: Alison Shanks
Subject: RE: [External] New water tower/connection
Date: Monday, November 10, 2025 8:23:19 AM
Attachments: ATT00001.png
ATT00002.png
ATT00003.png

Alison,
Regarding the Union Water Project there is a separate Environmental Assessment proceeding for that project. If you follow the link there you will see there were PIC's held earlier this year with the documentation available for a period for public comment. There will be a second PIC#2 coming up later with the next stage of the process if you wish to attend. You can submit your contact information to the Consultant Project Manager (listed on the site) to be placed on the notification list.
That project is more to address the Security of Supply from the source perspective of either system.
Regarding the new water tower there is a site identified, and it will be shown and explained at the PIC. There was an evaluation of locations based on the recommend general area in the master plan.
Hoping you can make it to the PIC.
Regards,
Chris Manzon

Christopher Manzon, P. Eng.
Director Engineering (Water)
ENWIN Utilities Ltd.
[redacted]

4545 Rhodes Drive | P.O. Box 1625 Station A | Windsor, Ontario | N8W 5T1

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From: Alison Shanks <a.shanks@sympatico.ca>
Sent: November 8, 2025 7:38 PM

To: Christopher Manzon <cmanzon@enwin.com>
Subject: Re: [External] New water tower/connection

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Thanks for your response!

I would think that connecting to Union Water, with the over-consumption of water by the Greenhouse industry, as well as their semi- frequent boil advisories would be a negative for us.

Is that connection not impacting our need for more Water Towers, reservoirs, and for ensuring potable water for Windsor/Lasalle and Tecumseh residents? Their water source is subject to the Lake Erie algae blooms that the Windsor Detroit River one is not. I would be interested in knowing what "redundancies" are being addressed by connecting the 2 systems. I see Union is building a new reservoir: which again, I would think is largely required due to the Greenhouse/Cannabis industry in Leamington/Kingsville?

I worked at the old Waterford Treatment plant on Wyandotte in the old lab many years ago, after completing my Microbiology degree, and then toured the new lab with grade 5 classes about 12years ago or so. (Not sure they do those tours anymore). So I am familiar with some of the issues. I also live in South Walkerville, so not far from the Hanna Tower.

Is there a proposed site for the new tower?

Thanks again for your quick response!!
Alison

Sent from my iPhone

On Nov 8, 2025, at 5:23 PM, Christopher Manzon <cmanzon@enwin.com> wrote:

Alison
Thank you for your interest. Here is the direct link under the "Latest News" The Windsor Utilities Commission | ENWIN. You will see the first item "Notice of Public Information Centre Elevated Water Tower - Municipal Class Environmental Assessment" regarding the Public Information Centre which is scheduled on November 25th. The Notice is included in the link.
The Presentation material and feedback forms will be available at the PIC and on the website starting on November 25th. Unfortunately, the general description you see in the notice is all that is available currently.
The Union-WUC Water System Interconnection you are referring to is a different project.
If you have questions and would like to discuss the project in the meantime, we can schedule a time. Please let me know your availability this week and we can arrange a phone call.
Thanks
Chris Manzon

<mime-attachment.png>

Christopher Manzon, P. Eng.
Director Engineering (Water)
ENWIN Utilities Ltd.
[redacted]

4545 Rhodes Drive | P.O. Box 1625 Station A | Windsor, Ontario | N8W 5T1

www.enwin.com

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From: Alison Shanks <a.shanks@sympatico.ca>
Sent: November 8, 2025 2:58 AM
To: Christopher Manzon <cmanzon@enwin.com>
Subject: [External] New water tower/connection

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Hello,
I read with interest in The Star about an EA and public consultation taking place in regard to a new water tower or other reservoir, and an indication to go to the Enwin site for more details. I did so, and found some information about connecting with the Union county system, but no specifics about the actual plan or EA, so am not sure if that is the same thing.

I would like to read over the plans to see if I want to provide feedback.

If you could guide me to the correct link(s), much appreciated.

Alison Shanks, Ms.

Sent from my iPhone



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From: support@nationsconnect.ca
To: Bedlibacher, Hannah
Cc: support@nationsconnect.ca
Subject: Consultation submitted
Date: Monday, November 27, 2023 4:21:53 PM

The following project has been submitted for review on NationsConnect:

ENWIN Elevated Water Tower Class EA, Windsor, Ontario
https://can01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fnationsconnect.ca%2Fi-Consultation-98638data=05%7C01%7Channah.rindlisbacher%40stantec.com%7C2b65650a5dcf4c0925f808dbef8edc3a%7C413c6f2c219a469297d3f2b4d80281e7%7C0%7C0%7C638367169124006561%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=gDTrpuH7oj7q1xVrgMkvWM94IeAMGGPqhdkjce5apCk%3D&reserved=0

Once your project details have been reviewed for completion and accuracy,
the project will be sent to the selected communities.

Please log back in to NationsConnect to check the status of your project.
Contact support@nationsconnect.ca with any questions.

Regards,
The NationsConnect Support Team

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Indigenous Consultation Log
Municipal Class Environmental Assessment
Elevated Water Tower, ENWIN Utilities

Contact Information	Date/Method of Communication	Correspondence Received and/or Project Information Distributed	Consultant Response
Ministry of Indigenous Affairs Molly Mann molly.mann@ontario.ca Manager, Indigenous Relations Unit Heather Levecque heather.levecque@ontario.ca Director, Indigenous Relations Unit Suite 400, 160 Bloor Street East Toronto, ON M7A 2E6	**Notice of Commencement** Date: November 27th, 2023 Method: Via Email	The Notice of Commencement was sent to the contacts listed via email, on November 27th, 2023.	N/A
	Notice of PIC Date: November 7th, 2025 Method: Newspaper, Online and Email	The Notice of Public Information Centre was sent to the contacts listed via email on November 7th, 2025, and posted on ENWIN's website. The Notice was also published in the Windsor Star on November 8th, 2025. The Public Information Centre was held on November 25th, 2025.	N/A
	Notice of Completion Date: Method: Email	TBD	N/A
Southern First Nations Secretariat Ms. Jennifer Whiteye jenwhiteye@sfns.on.ca Executive Director 22361 Austin Line Bothwell, ON N0L 1Y0	**Notice of Commencement** Date: November 27th, 2023 Method: Via Email	The Notice of Commencement was sent to the contacts listed via email, on November 27th, 2023.	N/A
	Notice of PIC Date: November 7th, 2025 Method: Newspaper, Online and Email	The Notice of Public Information Centre was sent to the contacts listed via email on November 7th, 2025, and posted on ENWIN's website. The Notice was also published in the Windsor Star on November 8th, 2025. The Public Information Centre was held on November 25th, 2025.	N/A
	Notice of Completion Date: Method: Email	TBD	N/A
Walpole Island First Nation / Bkejwanong Territory Dan Miskokomon drskoke@wifn.org Heritage Centre Director Janet MacBeth janet.macbeth@wifn.org Project Review Coordinator 117 Tahgahoning Road,R.R. #3 Wallaceburg, ON N8A 4K9	**Notice of Commencement** Date: November 27th, 2023 Method: Via Email	The Notice of Commencement was sent to the contacts listed via email, on November 27th, 2023.	N/A
	Notice of PIC Date: November 7th, 2025 Method: Newspaper, Online and Email	The Notice of Public Information Centre was sent to the contacts listed via email on November 7th, 2025, and posted on ENWIN's website. The Notice was also published in the Windsor Star on November 8th, 2025. The Public Information Centre was held on November 25th, 2025.	N/A
	Notice of Completion Date: Method: Email	TBD	N/A
Métis Nation of Ontario Consultations mno@metisnation.org	**Notice of Commencement** Date: November 27th, 2023 Method: Via Email	The Notice of Commencement was sent to the contacts listed via email, on November 27th, 2023.	N/A
	Notice of PIC Date: November 7th, 2025 Method: Newspaper, Online and Email	The Notice of Public Information Centre was sent to the contacts listed via email on November 7th, 2025, and posted on ENWIN's website. The Notice was also published in the Windsor Star on November 8th, 2025. The Public Information Centre was held on November 25th, 2025.	N/A
	Notice of Completion Date: Method: Email	TBD	N/A

Indigenous Consultation Log
Municipal Class Environmental Assessment
Elevated Water Tower, ENWIN Utilities

Contact Information	Date/Method of Communication	Correspondence Received and/or Project Information Distributed	Consultant Response
Caldwell First Nation Zack Hamm ecd.manager@caldwellfirstnation.ca Environment & Consultation Department Manager ecc@caldwellfirstnation.ca 14 Orange Street Leamington, ON N8H 1P5	**Notice of Commencement** Date: November 27th, 2023 Method: Online Consultation Tool and Email	The Notice of Commencement was sent to the contacts listed via email, and submitted online through the online consultation tool: www.consultwithcaldwell.ca on November 27th, 2023	The community transitioned to using www.nationsconnect.ca following this notice.
	Notice of PIC Date: November 13th, 2025 Method: Newspaper, Online Consultation Tool and Email	The Notice of Public Information Centre was sent to the contacts listed via email on November 7th, 2025 and posted on ENWIN's website. The Notice was submitted through the online consultation tool: www.nationsconnect.ca on November 13th, 2025. The Notice was also published in the Windsor Star on November 8th, 2025. The Public Information Centre was held on November 25th, 2025.	N/A
	Notice of Completion Date: Method: Email	TBD	N/A
Aamjiwnaang First Nation Janelle Nahmabin jnahmabin@aamjiwnaang.ca Chief Lynn Rosales lrosales@aamjiwnaang.ca Environmental Coordinator Courtney Jackson cjackson@aamjiwnaang.ca Environment Worker 978 Tashmoo Avenue Sarnia, ON N7T 7H5	**Notice of Commencement** Date: November 27th, 2023 Method: Via Email	The Notice of Commencement was sent to the contacts listed via email, on November 27th, 2023.	N/A
	Notice of PIC Date: November 7th, 2025 Method: Newspaper, Online and Email	The Notice of Public Information Centre was sent to the contacts listed via email on November 7th, 2025, and posted on ENWIN's website. The Notice was also published in the Windsor Star on November 8th, 2025. The Public Information Centre was held on November 25th, 2025.	N/A
	Notice of Completion Date: Method: Email	TBD	N/A
Delaware Nation (Moravian of the Thames) Denise Stonefish denise.stonefish@delawarenation.on.ca Chief 14760 School House Line Thamesville ON N0P 2K0	**Notice of Commencement** Date: November 27th, 2023 Method: Via Email	The Notice of Commencement was sent to the contacts listed via email, on November 27th, 2023.	N/A
	Notice of PIC Date: November 7th, 2025 Method: Newspaper, Online and Email	The Notice of Public Information Centre was sent to the contacts listed via email on November 7th, 2025, and posted on ENWIN's website. The Notice was also published in the Windsor Star on November 8th, 2025. The Public Information Centre was held on November 25th, 2025.	N/A
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Chippewas of Kettle and Stony Point First Nation Kimbery Bressette Kimberly.Bressette@kettlepoint.org Chief Emily Ferguson	**Notice of Commencement** Date: November 27th, 2023 Method: Via Email	The Notice of Commencement was sent to the contacts listed via email, on November 27th, 2023.	N/A
	Notice of PIC Date: November 13th, 2025 Method: Newspaper, Online Consultation Tool and Email	The Notice of Public Information Centre was sent to the contacts listed via email on November 7th, 2025 and posted on ENWIN's website. The Notice was submitted through the online consultation tool: www.nationsconnect.ca on November 13th, 2025.	N/A

Indigenous Consultation Log
Municipal Class Environmental Assessment
Elevated Water Tower, ENWIN Utilities

Contact Information	Date/Method of Communication	Correspondence Received and/or Project Information Distributed	Consultant Response
consultation@kettlepoint.org Consultation Advisor 6247 Indian Lane, R.R. #2 Forest, ON N0N 1J1		The Notice was also published in the Windsor Star on November 8th, 2025. The Public Information Centre was held on November 25th, 2025.	
	Notice of Completion Date: Method: Email	TBD	N/A
Chippewas of the Thames First Nation (COTTFN) Jacqueline French jfrench@cottfn.com Chief Kelly Riley kriley@cottfn.com Director of Treaties, Lands & Environment Fallon Burch fburch@cottfn.com Consultation Coordinator 320 Chippewa Road Muncey, ON N0L 1Y0	**Notice of Commencement** Date: November 27th, 2023 Method: Via Email	The Notice of Commencement was sent to the contacts listed via email, on November 27th, 2023 and submitted through the online consultation tool: www.nationsconnect.ca.	N/A
	Notice of PIC Date: November 7th, 2025 Method: Newspaper, Online Consultation Tool and Email	The Notice of Public Information Centre was sent to the contacts listed via email on November 7th, 2025, posted on ENWIN's website and submitted through the online consultation tool: www.nationsconnect.ca. The Notice was also published in the Windsor Star on November 8th, 2025. The Public Information Centre was held on November 25th, 2025.	N/A
	Notice of Completion Date: Method: Email	TBD	N/A
Oneida Nation of the Thames ONYOTA'A:KA Catherine Cornelius catherine.cornelius@oneida.on.ca Political Office Manager 2212 Elm Avenue Southwold, ON N0L 2G0	**Notice of Commencement** Date: November 27th, 2023 Method: Via Email	The Notice of Commencement was sent to the contacts listed via email, on November 27th, 2023.	N/A
	Notice of PIC Date: November 7th, 2025 Method: Newspaper, Online and Email	The Notice of Public Information Centre was sent to the contacts listed via email on November 7th, 2025, and posted on ENWIN's website. The Notice was also published in the Windsor Star on November 8th, 2025. The Public Information Centre was held on November 25th, 2025.	N/A
	Notice of Completion Date: Method: Email	TBD	N/A

Deshkan Ziibiing
Chippewas of the Thames
First Nation Treaties, Lands
and Environment

320 Chippewa Road
Muncey, ON, N0L 1Y0
Tel: 519-289-5555
Fax: 519-289-2230
info@cottfn.com

Project Name:
ENWIN Elevated Water Tower Class EA, Windsor, Ontario

FN Consultation ID:
165620304

Consulting Org Contact:
Hannah Rindlisbacher

Consulting Organization:
Stantec

Date Received:
Monday, November 27, 2023

December 6, 2023

Dear: Hannah,

We have received information concerning the ENWIN Elevated Water Tower Class EA, Windsor, Ontario, dated November 27, 2023. The proposed project is located within the McKee Treaty Area to which Chippewas of the Thames First Nation (COTTFN) is a signatory. It is also located within the Big Bear Creek Additions to Reserve (ATR) land selection area, as well as COTTFN Traditional Territory.

After reviewing the ENWIN Elevated Water Tower Class EA Notice of Study Commencement, we look forward to receiving regular project updates, invitations to the public information center's, and the opportunity to review the project file report to identify potential impacts.

If there is an Archaeology Assessment conducted, we require notification and the opportunity to actively participate by sending First Nation Field Liaisons on behalf of this First Nation.

We look forward to continuing this open line of communication. To implement meaningful consultation, COTTFN has developed its own protocol - a document and a process that will guide positive working relationships. As per ‘Appendix C’ of the Wiindmaagewin, we will be sending an invoice based on our time to review the documentation and assess based on our protocol.

Please do not hesitate to contact me if you need further clarification of this letter.

Sincerely,

_____

Original Signed
Fallon Burch
Consultation Coordinator
Chippewa of the Thames First Nation
320 Chippewa Road, Muncey, ON, N0L 1Y0
(519) 289-5555 Ext 251
consultation@cottfn.com

16-Dec-2025 12:01 EST

ENWIN Elevated Water Tower Class EA 2

Re:

Thank you for sharing information regarding the proposed project: ENWIN Elevated Water Tower Class EA 2. We have minimal concerns about this specific project based on community perspectives and priorities. However, we are concerned about the cumulative impacts of all development and land use change in our territory. While this concern extends beyond this individual project, we want proponents to be aware and welcome collaboration or support in our community-led assessments on cumulative impacts. We do not foresee any negative impacts with this proposed project but do wish to stay informed of any changes.

If future projects may impact CKSPFN reserve lands or traditional territory, we would welcome future notices be shared via NationsConnect. If you have any questions or concerns, please let us know.

Regards,

Chippewas of Kettle and Stony Point Consultation

cc: Jessica Wakefield, Major Projects and IBAs

cc: Jana George, Consultation and Monitoring Coordinator

Appendix C Technical Memoranda

1. Technical Memorandum No.4 – Water Modelling
    a. Addendum to Technical Memorandum No.4
2. Technical Memorandum No.5 – Transient Modelling
3. Transient Analysis Memorandum – (Central Corridor Feedermain and Distribution System

Technical Memo No. 4

Stantec

To:	Christopher Manzon, P.Eng. ENWIN Utilities Ltd. 4545 Rhodes Dr Windsor, Ontario N8W 5T1 Phone: (519) 251-7300, ext. 295	From:	Gillian Wilton, M.E.Sc., E.I.T. Jasmin Sidhu, P.Eng. Stantec Consulting Ltd. 2555 Ouellette Avenue, Suite 100 Windsor, Ontario N8X 1L9 Phone: (226) 704-3060
Project/File:	165620304	Date:	June 2, 2025

Reference: Elevated Water Tower Schedule B – Municipal Class Environmental Assessment
Technical Memorandum No. 4 – Water Modelling

Hello Chris,

Please see Technical Memorandum No. 4 for the Elevated Water Tower, Schedule 'B' Municipal Class Environmental Assessment (MCEA). This Technical Memorandum covers the hydraulic water modelling carried out to identify any impacts and constraints of the existing water distribution system pertaining to the implementation of the new proposed elevated storage tank.

If you have any questions or concerns, please contact the undersigned.

Thank you,

STANTEC CONSULTING LTD.

Gillian Wilton M.E.Sc., E.I.T.
Water Resources EIT
Gillian.Wilton@stantec.com

Jasmin Sidhu P.Eng.
Senior Water Resources Engineer
Jasmin.Sidhu@stantec.com

Attachment: Appendix A - Technical Memorandum No. 4

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1 Introduction

The Windsor Utilities Commission (WUC) owns an integrated water supply system that provides water to the City of Windsor, Town of LaSalle, and Town of Tecumseh. ENWIN serves as the community's integrated water supply system operator under contract with the WUC. The water system currently draws water from the Detroit River and is pumped into the distribution system with high lift pumping systems at both the AJ Brian PS and George Avenue PS. The system relies on treated water storage, which is provided by Reservoirs D and G at the Albert H. Weeks Water Treatment Plant (WTP), and distribution storage provided at the JF Cook Reservoir and Pumping Station, the Hanna St elevated storage tank (Hanna ET), and the Tecumseh elevated storage tank (Tecumseh ET).

The WUC is proposing to construct a new Southerly Elevated Water Tower (SEWT) as recommended in the WUC Water System Master Plan (WSMP) 2023 Update. The existing Hanna ET is currently used as a control of the high lift pumping at the WTP and is scheduled to be decommissioned by 2027 and replaced by a new SEWT. The SEWT is proposed to provide water supply to the South Tecumseh System at required pressures while maintaining water quality in the distribution system.

The Central Corridor Feedermain (CCFM) is a new dedicated feedermain which is in design and will extend from AJ Brian Pumping Station (PS) to JF Cook Reservoir and PS and continue southeast of JF Cook along Division Rd to the intersection at Cabana Rd E. The CCFM will be proceeding to construction in phases next year, which is integral to the function of the SEWT. This new dedicated feedermain to JF Cook Reservoir will address reservoir supply issues and pressure problems in the southeast area of Windsor while servicing the future needs of the Town of Lasalle, Town of Tecumseh, and the development areas around the Windsor airport.

The objectives of this Technical Memorandum 4 (TM4) include:

- Update the provided City-wide all-pipe InfoWater Pro hydraulic model to include the recommended alternative storage location and decommissioning of the Hannah ET;
- Confirm volume requirements for the SEWT as outlined in the 2023 WUC WSMP Update;
- Complete hydraulic model extended period simulations for the following scenarios: 2021 and 2051 Average Day (i.e., Minimum Hour and Average Day), 2021 and 2051 Maximum Day (i.e., Maximum Day, Peak Hour, and Fire Flow);
- Determine limits of existing pressure zones; and,
- Identify the preferred design to be carried forward for the detailed design.

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2 Background Review

The following information was requested from ENWIN and/or obtained by Stantec for review and use in this assessment:

- Latest all-pipe hydraulic water model based off the 2023 Water System Master Plan Update (including most recent CCFM modelling);
- Record drawings of the AJ Brian Pumping Station, JF Cook Reservoir and Pumping Station, Hanna ET, and Tecumseh ET;
- Background reports/studies/guidelines:
- WUC Water System Master Plan 2023 Update (AECOM, 2023) (herein referred to as the 2023 WUC WSMP);
- WUC Water System Master Plan 2019 Update (AECOM, 2023) (herein referred to as the 2019 WSMP);
- Town of Tecumseh 2018 Water and Wastewater Master Plan Update (Cima+, 2019) (herein referred to as the Tecumseh 2018 WSMP);
- Windsor Utilities Commission Design and Guidelines & Specifications for Water Main and Water Service Installation (WUC, 2022); and,
- Ministry of the Environment Design Guidelines for Drinking-Water Systems.

3 Existing Conditions

The following sub-sections provide a summary of the serviceability criteria, existing system demands, the existing system operational strategy and the system performance. The results of the existing conditions are used to identify any impacts and/or constraints of the existing water distribution system pertaining to the implementation of the new SEWT at the potential and preferred locations identified through the EA process.

3.1 Serviceability Criteria

The serviceability requirements for the system with respect to system pressures and velocities are specified in the *Windsor Utilities Commission Design and Guidelines & Specifications for Water Main and Water Service Installation* (November 2022) and the *Ministry of the Environment, Conservation, and Parks (MECP) Design Guidelines for Drinking-Water Systems* (2023). These serviceability criteria are to be achieved under all conditions (existing and future). These criteria are in line with those considered in the 2023 WUC WSMP and are as follows:

- Minimum acceptable pressure – 275 kPa (40 psi);
- Maximum acceptable pressure – 550 kPa (80 psi);
- Minimum acceptable pressure under Fire Flow conditions – 140 kPa (20 psi); and,
- Maximum acceptable velocity – 2 m/s.

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3.2 Existing Water Demands

Per the 2023 WUC WSMP, the existing system average day demands (ADD), maximum day demands (MDD), and peak hour demands (PHD) for Windsor, LaSalle, and Tecumseh, are summarized in **Table 3-1**.

Table 3-1: Existing (2021) System-Wide Water Demands from 2023 WUC WSMP

Area	ADD (MLD)	MDD (MLD)	PHD (MLD)
Windsor	81.8	118.6	199.4
LaSalle	8.7	15.6	23.5
Tecumseh	9.3	16.4	34.9
Total	99.8	150.6	257.8

3.3 System Operational Strategy

At present there are six pumps installed at AJ Brian PS; three on the north side (HLP4, HLP3, and HLP6) and three on the south side (HLP2, HLP1, and HLP5). The existing distribution system is typically supplied by a single pump (HLP3) on the north header with flows and pressures managed by VFD. The south header is only minimally used. The north and south headers are interconnected with the intention that the pumps on both headers can supply the distribution system, if needed.

At George Ave PS, there are three pumps configured in parallel (HLP1, HLP2, HLP3). At present, only HLP1 and HLP3 are active, with HLP1 working to supply the distribution system and HLP3 working to control levels at Tecumseh ET.

At JF Cook PS, there are three pumps configured in parallel (P1, P2, P3). The intention of this PS is to provide additional supply during peak demand conditions. Presently, P3 is set to provide additional supply on a timed approach. P1 and P2 are available to use to provide additional supply when needed.

ENWIN retained Stantec to complete the design work for a new 1200 mm CCFM connecting from AJ Brian to JF Cook and continuing southeast to the intersection of Division Rd and Cabana Rd E. It is assumed that the CCFM will be partially or fully built out at the time the new SEWT is brought online. Therefore, the most recent CCFM work was incorporated into the modelling with the SEWT under both existing (2021) and future (2049) conditions for a complete system wide approach. However, the existing condition baseline results presented in **Section 3.5** do not include the CCFM work. These results are presented to provide a baseline as to how the system operates under present-day conditions.

Operating pressures within the distribution system are influenced by the operating hydraulic gradelines (HGLs) within the elevated tanks and boosted by JF Cook PS. A summary of the tank top water levels (TWLs) and low water levels (LWLs), and discharge pressures from JF Cook PS is shown in **Table 3-2**.

Table 3-2: Water Distribution System HGL Summary

Reservoir/ET	TWL (m)	LWL (m)	PS Discharge HGL (m)
Tecumseh ET	225.40	216.84	N/A
Hanna ET	225.55	217.93	N/A
JF Cook Reservoir & PS	190.80	184.40	226.43 – 234.14

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3.4 Pressure Zone Boundary Analysis

To better understand the nature of the system constraints and low pressures observed in the South Tecumseh area, and to confirm if a new SEWT at one of the proposed locations will be able to fully resolve these constraints, a pressure zone boundary analysis (PZBA) was completed.

This analysis was completed using a GIS-based Pressure Mapping Tool (PMT) to identify the potential limits of the existing single pressure zone using open-source GIS topology, headloss and hydraulic gradelines. The analysis was based on the proposed TWL (225.0 m) of the new SEWT from which the ground elevation was subtracted. Headlosses were also subtracted based on the radial distance from the vicinity of the new SEWT and an assumed average headloss rate of 1 m/km.

The results from the PZBA, as presented in **Figure 3-1**, show that even with the addition of the new SEWT, the existing low-pressure area in South Tecumseh would still experience minimum pressures below 40 psi. The pressures (considering headlosses) in the South Tecumseh area are expected to range from 30 to 45 psi, which is lower than minimum pressure criteria (40 psi) and lower than the operating pressures of the rest of the system. These results are also consistent with the modelled results presented in **Figure 3-6** (Existing MDD Baseline Result) which show low pressures in the same southeast area.

This demonstrates that the primary constraint in this part of the distribution system is due to topography, suggesting the need for the creation of a new pressure zone (**Figure 3-2**) where pressures can be adequately boosted to satisfy pressure requirements.

These findings are also inline with conclusions and recommendations presented in the Tecumseh 2018 WSMP, which also recommended the need for a secondary pressure zone (as outlined in **Figure 3-2**) to be supplied by a new a booster pumping station and elevated storage tank.

Therefore, for the hydraulic evaluation of the proposed SEWT locations, it will be assumed that any low pressures contained within the proposed secondary pressure zone extents will be addressed by the upgrades identified in the Tecumseh 2018 WSMP, including the creation of the secondary pressure zone itself. As such, low pressures within this boundary will be ignored for the purpose of the SEWT analysis.

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Reference: Elevated Water Tower Schedule B – Municipal Class Environmental Assessment - Technical Memo No. 4 – Water Modelling

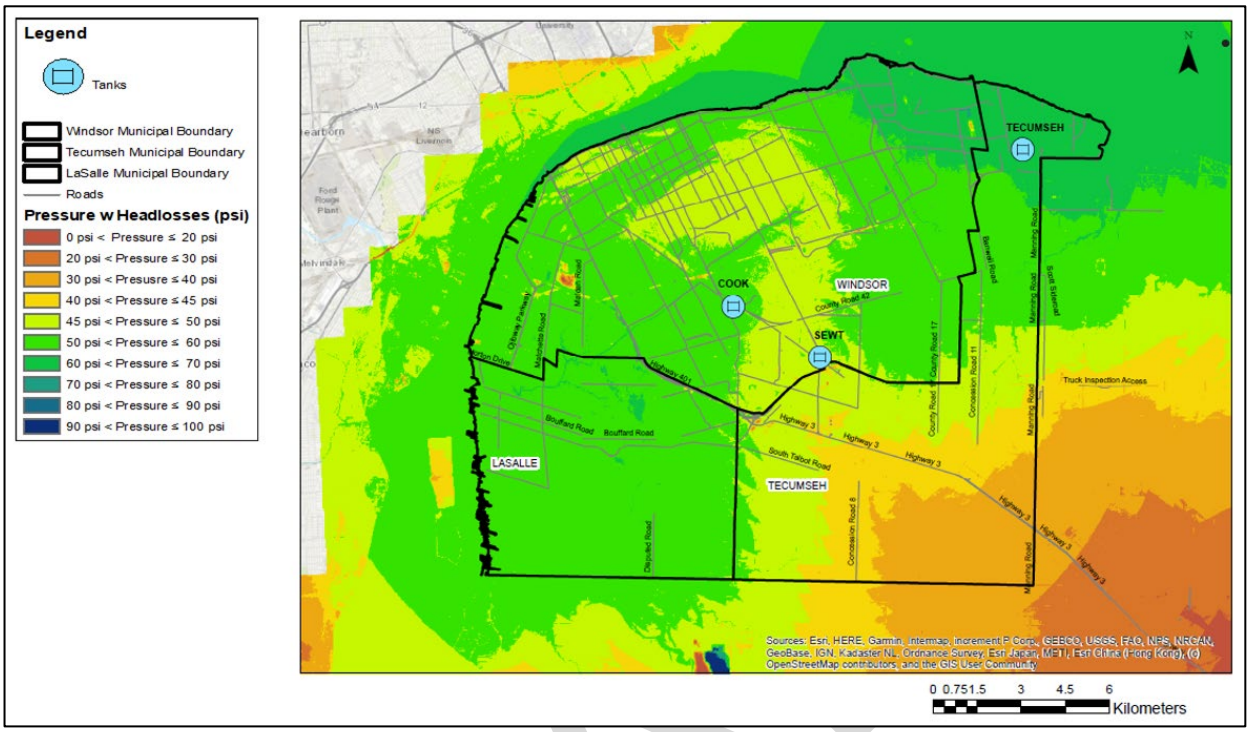


Figure 3-1: PZBA Results

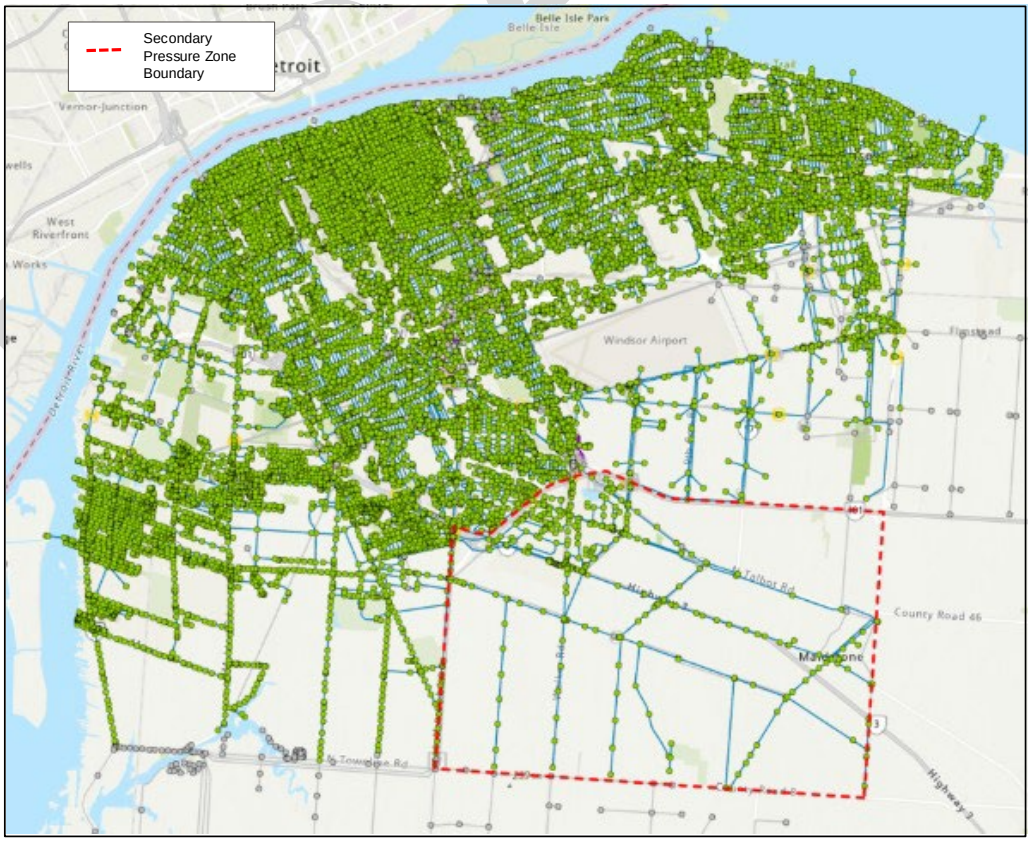


Figure 3-2: Secondary Pressure Zone Boundary

3.5 Existing System Performance

The WUC's latest InfoWater Pro hydraulic model was updated by AECOM as part of the 2023 WUC WSMP. Stantec obtained the most recent hydraulic model to complete the water system analysis for this project. The results presented under this section serve as a baseline to how the system operates under present-day conditions. These results do not consider the build-out of the CCFM or other 2023 WUC WSMP recommendation work. It should be noted that for the analysis, it was assumed that the provided model is reliable for use. No additional model calibration/validation was completed. The following sub-sections summarize existing system performance results under ADD, MDD/PHD and MDD+FF conditions.

3.5.1 Existing ADD

Under ADD, the maximum pressures in the distribution system generally fall within the range of 50 to 90 psi, with the highest max pressure of 90 psi. The pressures in the system exceed 80 psi (maximum acceptable) mainly in the low-lying areas along the Detroit River and Little River in the northeast and southwest of portions of the distribution system. **Figure 3-3** shows the maximum modelled city-wide pressures under ADD.

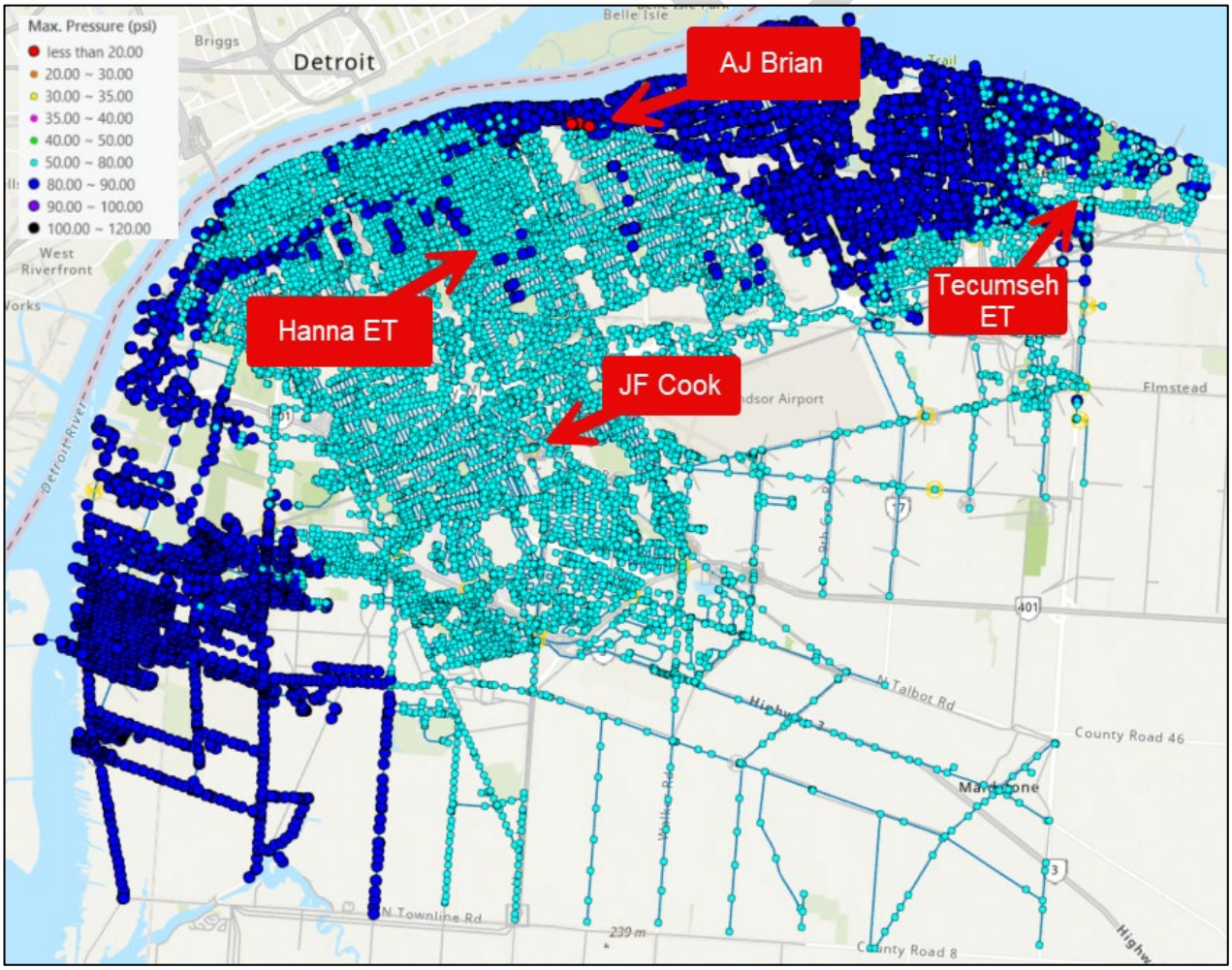


Figure 3-3: Maximum Pressures of Existing (2021) Baseline System Under ADD

The modelled operating tank HGLs for existing ADD are shown in **Figure 3-4**. As shown in **Figure 3-5**, water levels at all three facilities are observed to have sustainable water levels over the simulated 48-hr period, with percent full volume ranging between 59 to 74% at Hanna ET, 64 to 100% at Tecumseh ET, and 82 to 100% at JF Cook Reservoir. Although model results suggests that Tecumseh ET and JF Cook Reservoir reach 100% volume (i.e. potentially overflows) for short durations, it is understood that under current operating procedures, water levels in the distribution system storage tanks are monitored by various pressure monitoring stations hourly, which helps determine pump operation to avoid overfilling the tanks.

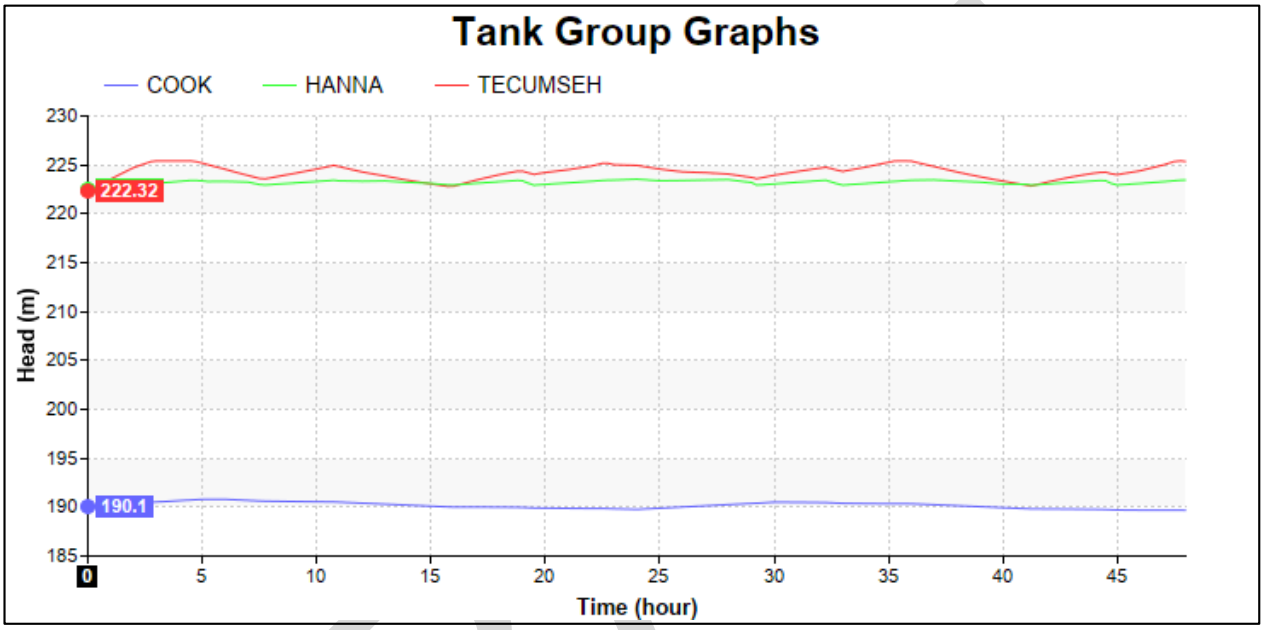


Figure 3-4: Existing ADD Tank HGLs

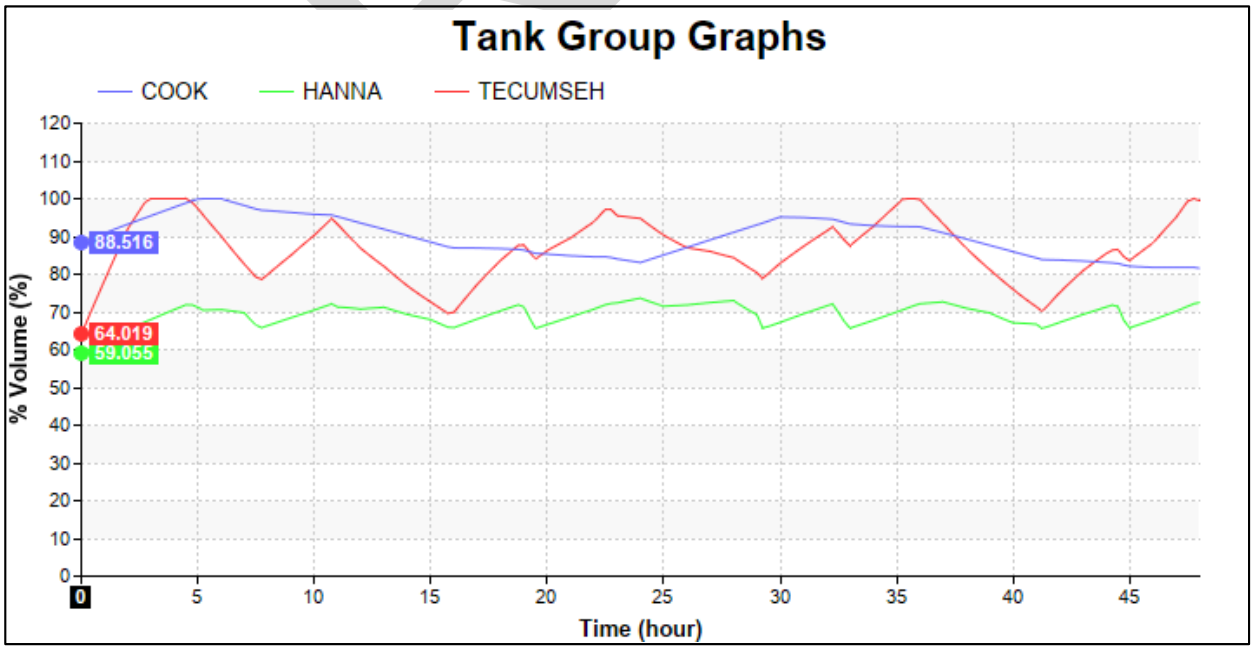


Figure 3-5: Existing ADD Tank % Volumes

3.5.2 Existing MDD/PHD

Under MDD/PHD, the minimum pressures in the system generally range from 40 to 80 psi, with instances of pressures dropping below 40 psi in the southeast portion of the distribution system in South Tecumseh (lowest modelled pressure was 38 psi). This low-pressure area was previously identified in both the 2023 WUC WSMP and 2018 Tecumseh WSMP. **Figure 3-6** shows minimum modelled pressures under existing MDD/PHD conditions.

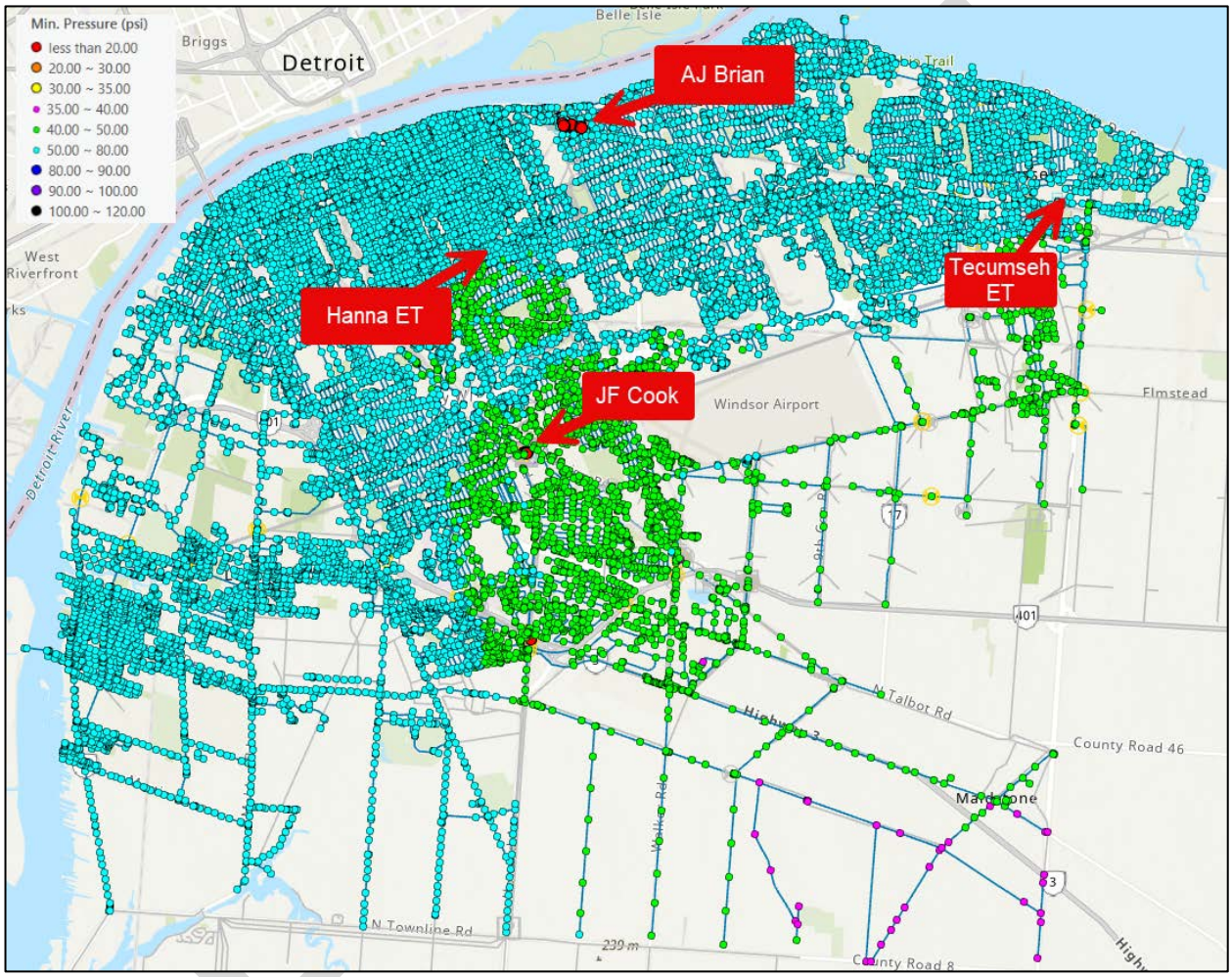


Figure 3-6: Minimum Pressures of Existing (2021) Baseline System Under MDD/PHD

The modelled operating tank HGLs for existing MDD/PHD are shown in **Figure 3-7**. As shown in **Figure 3-8**, water levels at all three facilities are observed to have sustainable water levels over the simulated 48-hr period, with percent full volume ranging between 79 to 100% at Hanna ET, 58 to 92% at Tecumseh ET, and 59 to 84% at JF Cook Reservoir. Although model results suggests that Hanna ET reaches 100% volume (i.e. potentially overflows) for short durations, as previously noted, it is understood that under current operating procedures, water levels in the distribution system storage tanks are monitored by various pressure monitoring stations hourly, which helps determine pump operation to avoid overfilling the tanks.

To review existing distribution system capacity constraints, maximum headloss (in m/km) was evaluated under existing (2021) baseline MDD conditions. Typically, values above 5 m/km under peak demand conditions are considered areas of potential constraint. The results in **Figure 3-9** show that in the watermains 600 mm or greater (i.e., feedermains), headloss ranges up to 3 m/km. Therefore, there are no identified system constraints within current supply routes to the proposed potential ET sites.

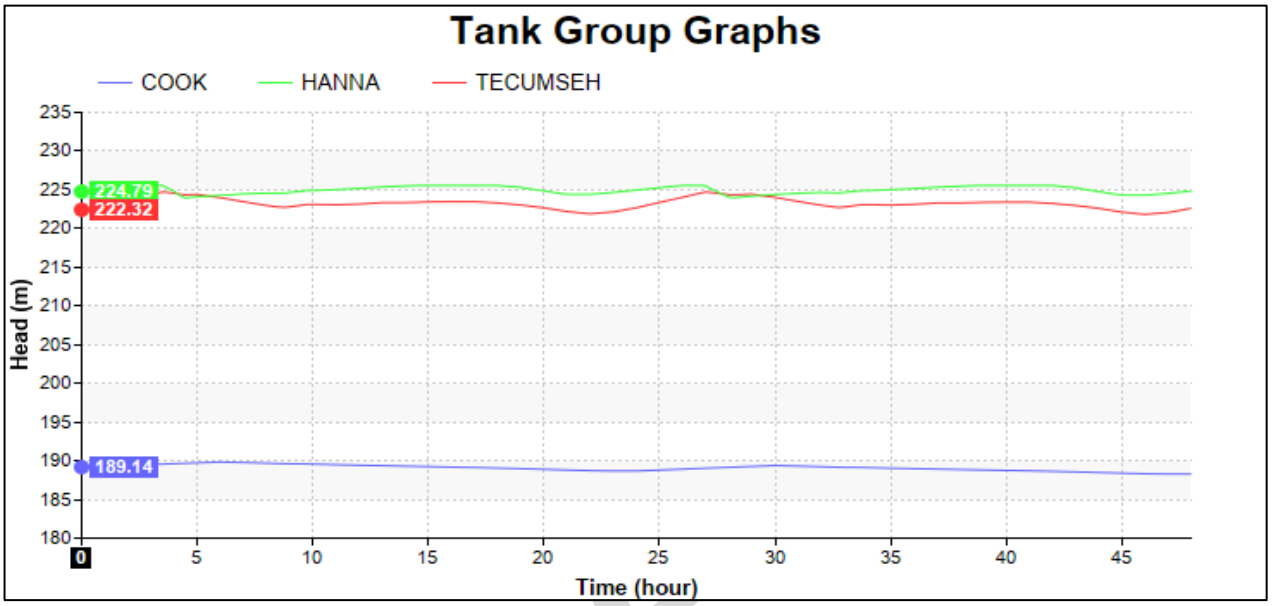


Figure 3-7: Existing MDD Tank HGLs

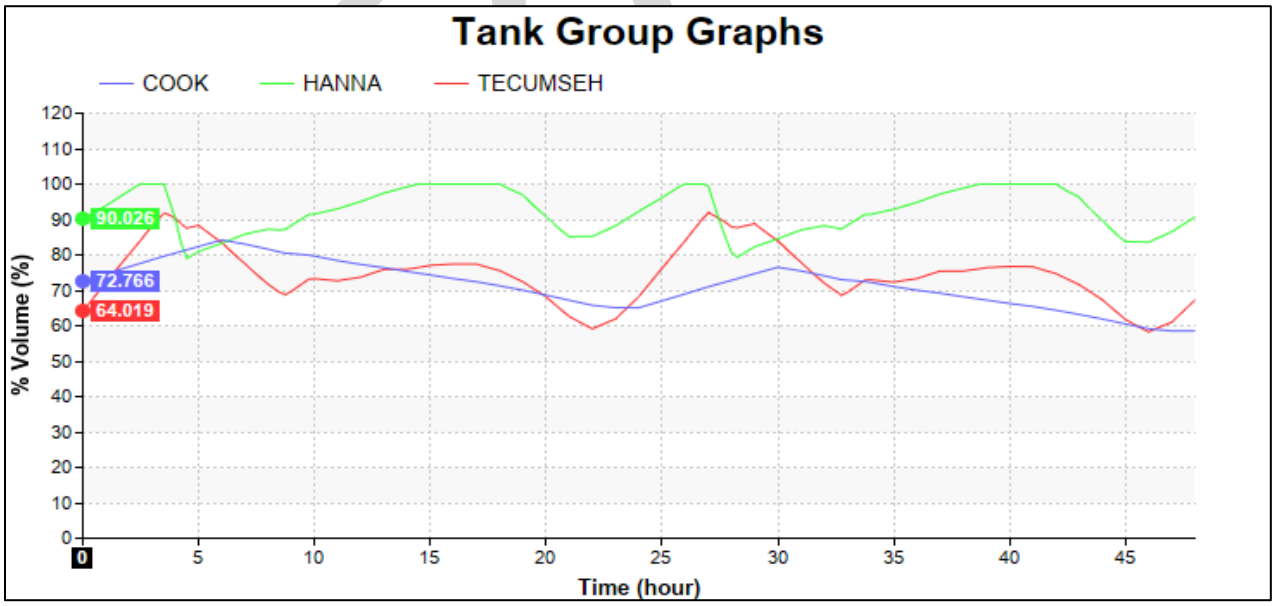


Figure 3-8: Existing MDD Tank % Volumes



Figure 3-9: Maximum Headloss (m/km) (2021 MDD) in 600 mm or Greater Watermains

3.5.3 Existing MDD+FF

The existing (2021) baseline system was run under MDD+FF using the built-in fire flow simulator in InfoWater Pro. These results can be used to assess the current system fire flow capacity throughout the network to determine what level of service is currently provided to the system. The existing fire flow scenario built in the provided model applied 80 L/s (4,800 L/min) as the fire flow demand to the nodes in the system. This fire flow demand will therefore be carried forward for all fire flow simulations.

The results in **Figure 3-10** show that the system is generally well supplied for fire flows. The system wide results determined that the available fire flow at a residual pressure of 20 psi ranges up to 7,140 L/s, the majority of which sees available flows greater than 80 L/s. However, there are locations throughout the system (e.g., dead-end watermains, south Tecumseh) that experience fire flows less than 33.3 L/s (2,000 L/min, i.e., minimum required fire flow per the Fire Underwriters Survey Guidelines). The results of the baseline existing MDD+FF simulation will be compared to the results under the proposed SEWT locations to assess impact to existing level of service.

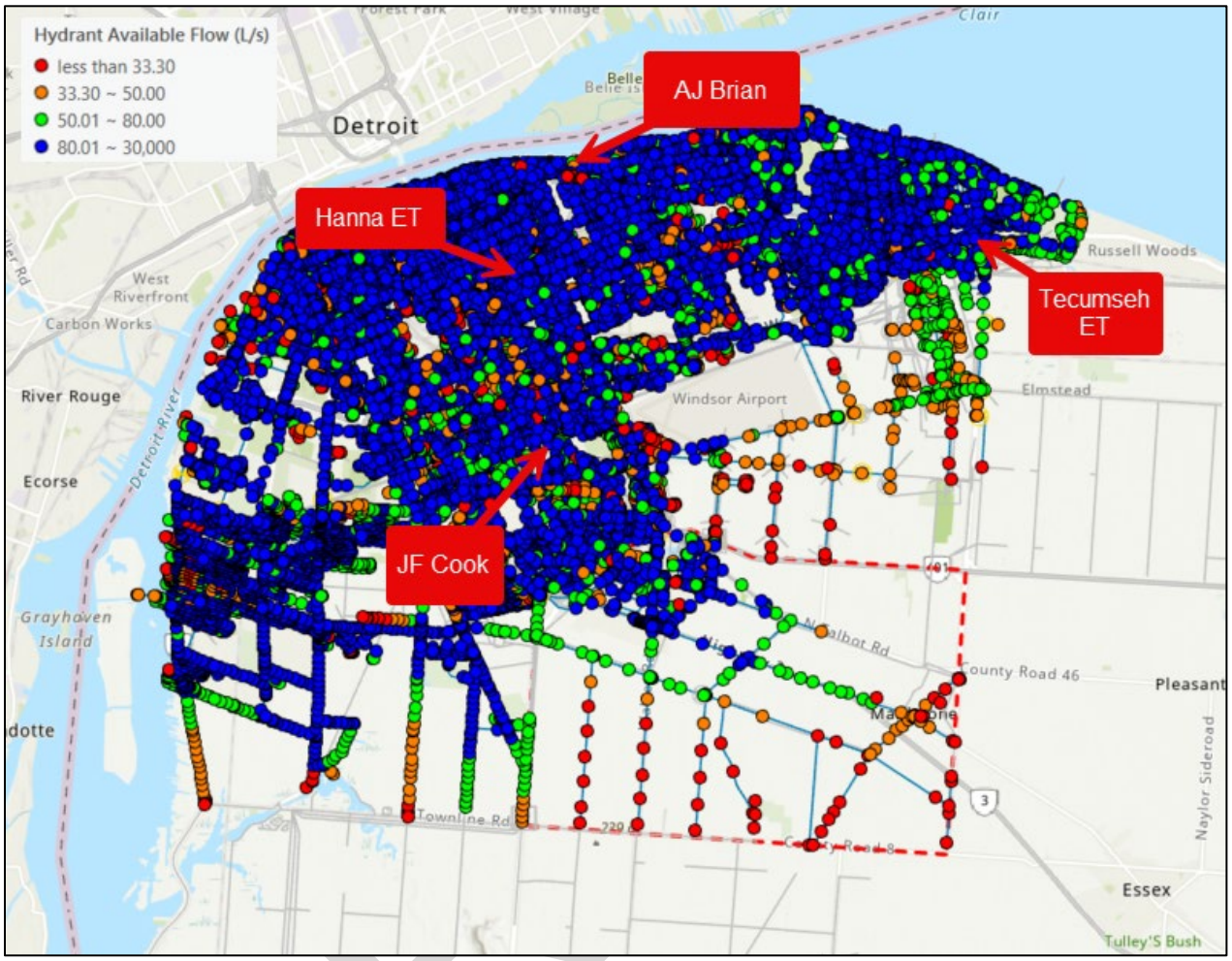


Figure 3-10: Existing (2021) Baseline MDD+FF Available Flow (L/s) at a Residual Pressure of 20 psi

4 Proposed Conditions

The following sub-sections provide a summary of the future system demands, a review of system storage volume requirements, the hydraulic assessment of potential sites for the new SEWT, and identification of additional offsite infrastructure needs. The findings of this assessment will help inform the selection of a preferred site.

4.1 Future Water Demands

Per the 2023 WUC WSMP, the future system ADD, MDD, and PHD demand projections for Windsor, LaSalle, and Tecumseh are summarized in **Table 4-1**.

Table 4-1: System-Wide Future Demand Projections from 2023 WUC WSMP

Planning Horizon	Area	ADD (MLD)	MDD (MLD)	PHD (MLD)
2024	Windsor	98.0	142.2	238.7
	LaSalle	11.2	20.2	30.3
	Tecumseh	14.1	28.2	42.3
	Total	**123.3**	**190.6**	**311.3**
2029	Windsor	100.7	145.9	245.0
	LaSalle	13.8	24.8	37.2
	Tecumseh	16.2	32.4	48.6
	Total	130.7	203.1	330.8
2034	Windsor	102.8	149.1	250.3
	LaSalle	16.3	29.4	44.1
	Tecumseh	18.3	36.7	55.0
	Total	**137.5**	**215.2**	**349.3**
2039	Windsor	104.9	152.0	255.1
	LaSalle	18.8	33.9	50.9
	Tecumseh	29.8	59.6	89.3
	Total	153.5	245.4	395.3
2044	Windsor	106.5	154.5	259.3
	LaSalle	21.4	38.5	57.7
	Tecumseh	29.8	59.6	89.3
	Total	**157.7**	**252.5**	**406.3**
2049	Windsor	108.2	156.8	263.3
	LaSalle	23.9	43.0	64.5
	Tecumseh	29.8	59.6	89.3
	Total	**161.9**	**259.4**	**417.1**

4.2 Storage Volume Requirements

The recommended size for the new SEWT as documented in the 2023 WUC WSMP is 8 ML. At the time of SEWT commissioning, Hanna ET will be decommissioned, which has a capacity of 5.7 ML. Therefore, the planned SEWT size is expected to provide more storage compared to existing conditions. To determine if the new SEWT has been adequately sized, a storage volume requirement analysis was completed. Section 8.4 – Sizing of Storage Facilities from MECP *Design Guidelines for Drinking-Water Systems* outlines the procedure for determining total treated water storage requirements.

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The procedure is outlined below:

Total Treated Water Storage Requirement = A + B + C

where:

A = Fire Storage

B = Equalization Storage (25% of MDD)

C = Emergency Storage (25% of A + B)

Table 4-2: Total System Storage Volume Requirement Summary

Planning Horizon	MECP Fire Consideration		Storage Requirement (ML)				Total Available Storage Capacity (ML)	Storage Surplus/ Deficit (ML)
	Suggested Fire Flow (L/s)	Duration (hrs)	Fire	Equalization	Emergency	Total		
2021	378	6	8.2	36.0	13.7	57.9	160.1	102.2
2024	378	6	8.2	41.0	15.5	64.7	160.1	95.4
2029	378	6	8.2	43.5	16.4	68.0	160.1	92.1
2034	378	6	8.2	47.1	17.7	73.0	160.1	87.1
2039	378	6	8.2	50.6	18.8	77.6	160.1	82.5
2044	378	6	8.2	52.4	19.2	79.8	160.1	80.3
2049	378	6	8.2	54.1	19.7	82.0	160.1	78.1

The results of the total system storage volume requirement analysis (**Table 4-2**) show that in 2049, the required storage is 82.0 ML. This differs from the 2023 WUC WSMP required storage of 91.3 ML. The difference in storage volume requirements can be attributed to differences in assumed MDD peaking factors. Therefore, it is assumed that the most conservative value for required storage should be achieved (91.3 ML).

The available system storage capacity is the cumulative sum of Reservoir D, JF Cook Reservoir, Tecumseh ET, Reservoir G, and the new SEWT. Assuming the new SEWT will maintain the suggested 8 ML size, the available system storage capacity is expected to be 160.1 ML. Therefore, since the available system capacity (160.1 ML) is greater than the required storage (91.3 ML) it is determined that 8 ML can sufficiently support the required storage to the 2049 planning horizon (and beyond).

4.3 Proposed Location

Seven locations were assessed as part of Technical Memorandum (TM) 3 – Evaluation of Alternative Solutions: Sites for New Water Tower (Stantec, 2025). The locations evaluated were as follows:

- Location 1: Northeast of the Provincial Rd and Walker Rd intersection, adjacent to 4680 Walker Rd.
- Location 2: Southeast of the Provincial Rd and Walker Rd intersection, adjacent to 4730 Walker Rd.
- Location 3: On 7th Concession Rd, northwest of the Windsor Christian Fellowship Church and across 4405 7th Concession Rd.

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- Location 4: Northwest of Walker Rd and Hwy 401 intersection, located at 4845 Walker Rd.
- Location 5: Northeast of the Marentette Ave and Sydney Ave intersection, adjacent to 3110 Marentette Ave.
- Location 6: Northeast of the Provincial Rd and Walker Rd intersection and east of Location 1.
- Location 7: North of Cabana Rd, located at 1425 Division Rd.
- Location 8: Northeast of the Provincial Rd and Walker Rd intersection, located at 4690 Walker Rd.

The location alternatives are shown in **Figure 4-1**. TM3 performed a preliminary evaluation of each site under the following criteria: proximity and ease of connection to trunk watermain, site access, available pressure and fire flows in the distribution system, proximity to drainage outlet, impacts on adjacent land uses during construction, proximity to residential areas, zoning requirements, and property ownership. Each site location was given a score from 1 – 3 for each criterion and was evaluated on a weighted criteria approach, resulting in a weighted subtotal score for each potential location. The highest score represents the most preferred option, and the lowest score represents the least preferred option, resulting in a total possible rating scale of 18 – 54 for the weighted subtotal. The results of the weighted evaluation are summarized in **Table 4-3**. For the purpose of the hydraulic modelling assessment, the long list of alternatives was shortlisted to the top 5, which includes Site Locations 1, 2, 3, 7, and 8. These locations will be carried forward for the remainder of the assessment. The results of the preliminary weighted evaluation determined that Site Location 3 is the preferred location.

Table 4-3: Weighted Evaluation Results

Rank	Site Location #	Weighted Subtotal
1	3	59
2	8	52
3	2	49
4	7	48
5	1	47
6	5	46
7	6	43
8	4	38

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Site No.1: Northeast of the Provincial Road and Walker Road intersection adjacent to 4680 Walker Road. This site is zoned as 'General Commercial.'



Site No.2: Southeast of the Provincial Road and Walker Road intersection adjacent to 4730 Walker Road. This site is zoned as 'Highway Commercial.'



Site No.3: On 7th Concession Rd northwest of the Windsor Christian Fellowship Church and across 4405 7th Concession Rd. This site is zoned as 'Light Industrial with Limited Commercial.'



Site No.4: Located at 4845 Walker Rd. This site is zoned as 'General Commercial.'



Site No. 5: Northeast of the Marentette Avenue and Sydney Avenue intersection next to 3110 Marentette Avenue. This site is zoned as 'Light Industrial with Limited Commercial.'



Site No. 6: Northeast of the Provincial Road and Walker Road intersection, and east of Site No.1. This site is zoned as 'Agricultural.'



Site No. 7: Located at 1425 Division Rd. The site is zoned as 'Highway Commercial.'



Site No. 8: Located at 4690 Walker Rd, directly south of Site No.1. The site is zoned as 'General Commercial.'

Figure 4-1: SEWT Tank Location Options

4.4 Modelling Approach

The shortlisted proposed SEWT locations (1, 2, 3, 7, and 8) were incorporated into the WUC's latest InfoWater hydraulic model. The following model scenarios were carried out for this study. It should be noted that all scenarios evaluating locations for the SEWT include all infrastructure recommendations from the 2023 WUC WSMP, including the CCFM.

- 2021 (Existing) ADD
- 2021 (Existing) MDD/PHD
- 2049 ADD
- 2049 MDD/PHD
- 2049 MDD+FF

Pressures, velocities, and headlosses through the pipe network were assessed against the acceptable serviceability criteria outlined in **Section 3.1** to review the hydraulic feasibility of each location, as well as the identification of any additional off-site infrastructure needs.

4.4.1 Model Assumptions

The following assumptions were applied:

- The proposed tank sizing of 8 ML per the 2023 WUC WSMP was carried forward;
- Top water level was maintained at 225.40 m to match the TWL of the Tecumseh ET;
- Low water level was set to 211.28 m, which was assumed based on the TWL, manufacturer tank dimensions (see **Section 4.4.2**), proposed operating range, and local ground elevations;
- Initial tank level was set to ~80% full;
- The following C-factors were applied to new/upgraded pipes:
    - 100 for 150 mm;
    - 110 for 200 to 250 mm;
    - 120 for 300 to 600 mm;
    - 130 for sizes greater than 600 mm;
- All proposed 2023 WUC WSMP infrastructure projects were active for modelled scenarios with the new SEWT;
- Pump controls for existing (2021) and 2049 scenarios were maintained to be the same across all preliminary location scenarios. The hydraulic modelling completed for this analysis exclusively assessed existing (2021) and 2049 planning horizons.
- As a result of the PZBA, any low pressures contained within the proposed secondary pressure zone extents (i.e., south Tecumseh) will be ignored for the purpose of the SEWT analysis.

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4.4.2 Tank Dimensions

Landmark Structures was consulted to determine the tank dimensions to be used for the proposed SEWT. Based on the proposed volume size of 8 ML (8,000 m^3), the dimensions as presented in **Table 4-4** were proposed.

Table 4-4: Proposed Tank Dimensions

Parameter	Size
Volume	8,000 m^3
Tank Diameter	30 m
Pedestal Diameter	14.02 m
Head Range	13.72 m

With a TWL of 225.40 m and an operating range of 13.72 m, the tank LWL was determined to be 211.68 m, which was applied in the model.

4.4.3 Latest CCFM Work

As previously mentioned, the design work for the 1200 mm CCFM is ongoing but it is assumed that the CCFM will be partially or fully built at the time of the new SEWT commissioning. Upon discussion with the client, it was determined that the desired operation at AJ Brain was to use new and existing high lift pumps at AJ Brian to supply a combination of both the CCFM and the distribution system.

This option will require HLP1 and HLP5 to be replaced with new pumps of similar size to the existing HLP2. This will isolate HLP2 from HLP1 and HLP5. HLP2 will supply the distribution system while HLP1 and HLP5 will operate in parallel to supply the CCFM. Under this configuration, the north discharge header will provide redundancy to the distribution system through interconnections between the north and south headers. A PRV/PSV is to be installed on the CCFM at the JF Cook Reservoir to maintain flow and pressure in the distribution system as well as manage pump flow and pressure. There are no changes to the pump station suction piping proposed. The proposed system schematic is shown in **Figure 4-2**.

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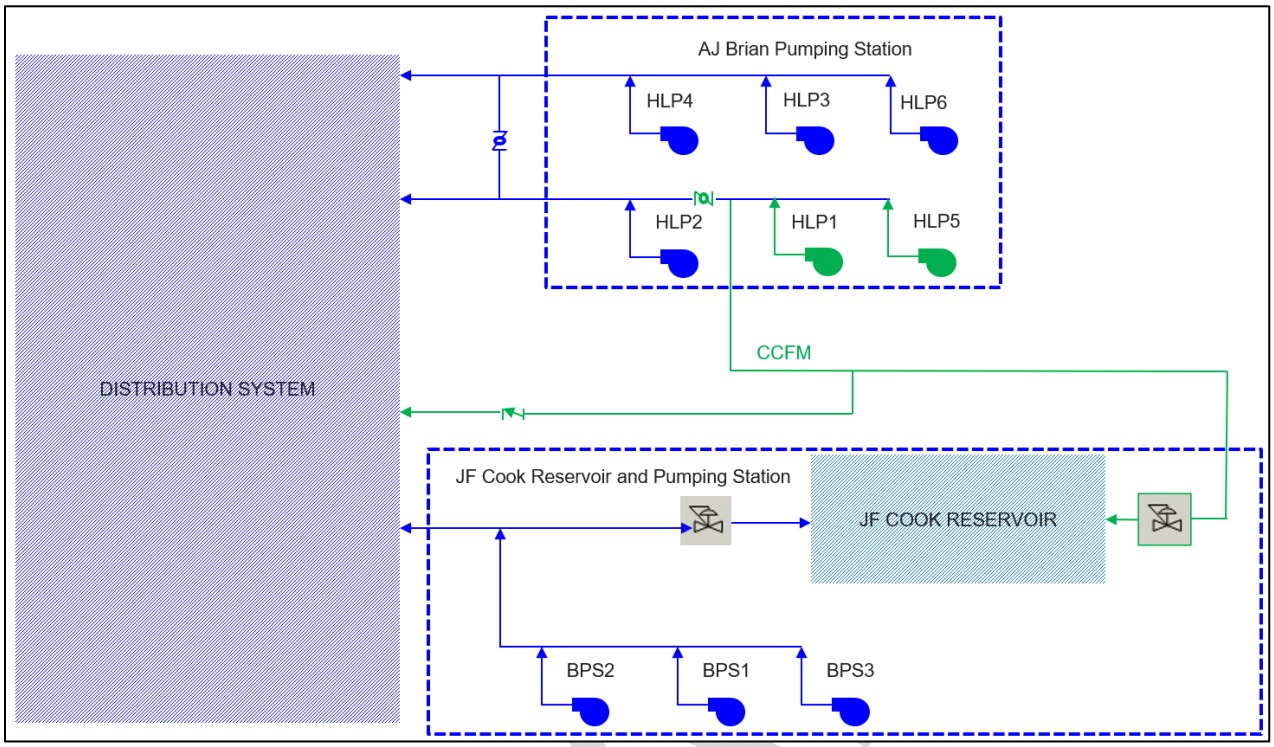


Figure 4-2: CCFM Pump Supply Updated System Schematic (AJ Brian PS to JF Cook Reservoir & PS)

4.5 Results

4.5.1 Proposed System Performance

As mentioned in **Section 4.4.1**, pumping controls were maintained to be the same for all preliminary model results. The control sets were based off the original controls from the 2023 WUC WSMP model, which are summarized in **Table 4-5**. All shortlisted locations were modelled as preliminary using the original controls, to assess if further infrastructure upgrades were required. The preliminary model results are discussed in the following sub-sections.

Table 4-5: Original Model Controls

	Ex. ADD	Ex. MDD	2049 ADD	2049 MDD
AJ Brian Pump #1/5	ON when Cook below 5.0 m OFF when Cook above 6.0 m	ON when Cook below 5.0 m OFF when Cook above 6.0 m	ON when Cook below 5.0 m OFF when Cook above 6.0 m	ON when Cook below 5.0 m OFF when Cook above 6.0 m
AJ Brian Pump #2	ON when Cook below 5.0 m OFF when Cook above 6.0 m Setting = 0.950 at time = 0.00 hr	ON when Cook below 5.0 m OFF when Cook above 6.0 m Setting = 0.950 at time = 0.00 hr	ON when Cook below 5.0 m OFF when Cook above 6.0 m	ON when Cook below 5.0 m OFF when Cook above 6.0 m

	Ex. ADD	Ex. MDD	2049 ADD	2049 MDD
AJ Brian Pump #3	ON when Tecumseh below 7.0 m OFF when Tecumseh above 8.0 m	ON when Tecumseh below 7.0 m OFF when Tecumseh above 8.0 m	Setting = 0.970 when Tecumseh below 9.9 m OFF when Tecumseh above 10.5 m	Setting = 0.970 when Tecumseh below 9.9 m OFF when Tecumseh above 10.5 m
AJ Brian Pump #4	ON when SEWT below 12.0 m OFF when SEWT above 13.5 m	ON when SEWT below 12.0 m OFF when SEWT above 13.5 m	Setting = 0.990 at time = 0.00 hrs	Setting = 0.990 at time = 0.00 hrs
George Ave Pump #1	Setting = 0.900 at time = 0.00 hr	Setting = 0.900 at time = 0.00 hr	Setting = 0.800 when SEWT below 12.0 m OFF when SEWT above 13.5 m	Setting = 0.8 when SEWT below 13.5 m OFF when SEWT above 14.0 m
George Ave Pump #2	-	-	ON when Tecumseh below 9.0 m OFF when Tecumseh above 12.0 m	-
George Ave Pump #3	ON when Tecumseh below 9.5 m OFF when Tecumseh above 11.5 m	ON when SEWT below 9.5 m OFF when SEWT above 11.5 m	ON when SEWT below 9.5 m OFF when SEWT above 11.5 m	ON when SEWT below 9.5 m OFF when SEWT above 11.5 m
JF Cook Pump #1	-	-	ON when SEWT below 11.6 m OFF when SEWT above 13.5 m	ON when SEWT below 11.6 m OFF when SEWT above 13.6 m
JF Cook Pump #2	-	-	ON when SEWT below 11.5 m OFF when SEWT above 13.2 m	ON when SEWT below 11.5 m OFF when SEWT above 13.5 m
JF Cook Pump #3	ON at time 0AM Setting = 0.823 at Clock time 6	Closed at time 0AM Setting = 0.823 at Clock time 6	ON when SEWT below 11.5 m OFF when SEWT above 13.5 m	ON when SEWT below 11.6 m OFF when SEWT above 13.6 m

4.5.1.1 Location 1

4.5.1.1.1 ADD & MDD/PHD Results

Location 1, located northeast of the Provincial Rd and Walker Rd intersection was modelled with the original controls. The detailed InfoWater Pro model results are shown in **Appendix A**.

The results determined that for Location 1, low pressure areas still exist. Under existing MDD, the minimum pressures ranged from 35 – 80 psi, with pressures < 40 psi existing within and just outside of the proposed secondary pressure zone boundary. Under 2049 MDD the minimum pressures ranged from 20 – 80 psi,

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where majority of the system experienced low pressures. Therefore, additional off-site infrastructure upgrades are required to improve the system pressure results.

The headloss in feedermains (watermains 600 mm or greater) were evaluated to determine if any system constraints exist as a result of the proposed location (**Figure 4-3**). The results show that higher headlosses are experienced on Walker Rd and Howard Ave. However, the headlosses are generally 3 m/km and under and are unlikely to result in major system constraints related to the low pressures identified. The headloss was also evaluated for all watermains surrounding proposed Location 1. Headloss greater than 3 m/km was found leading into the ET along Walker Rd. Additionally, headlosses ranging from 1.4 – 2.9 m/km were found along Walker Rd (from Provincial Rd to N Talbot Rd) and N Talbot Rd (from Walker Rd to Tumbleweed Cres), which may be a constraint resulting in the low pressures experienced in this area (**Figure 4-4**).

To improve minimum pressures, the infrastructure upgrades identified in **Table 4-6** were proposed, which are also illustrated in **Figure 4-5**.

Table 4-6: Additional Off-Site Infrastructure Upgrades for Location 1

Location	Existing Size (mm)	Proposed Size (mm)	Approximate Length (m)
Walker Rd (north of Provincial Rd to SEWT)	300	800	100
Walker Rd (from Provincial Rd to N Talbot Rd)	300	800	1,222
N Talbot Rd (Walker Rd to Tumbleweed Cres)	300	600	1,180

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Reference: Elevated Water Tower Schedule B – Municipal Class Environmental Assessment - Technical Memo No. 4 – Water Modelling



Figure 4-3: Location 1 2049 MDD Maximum Headloss (m/km) in Watermains 600 mm or Greater

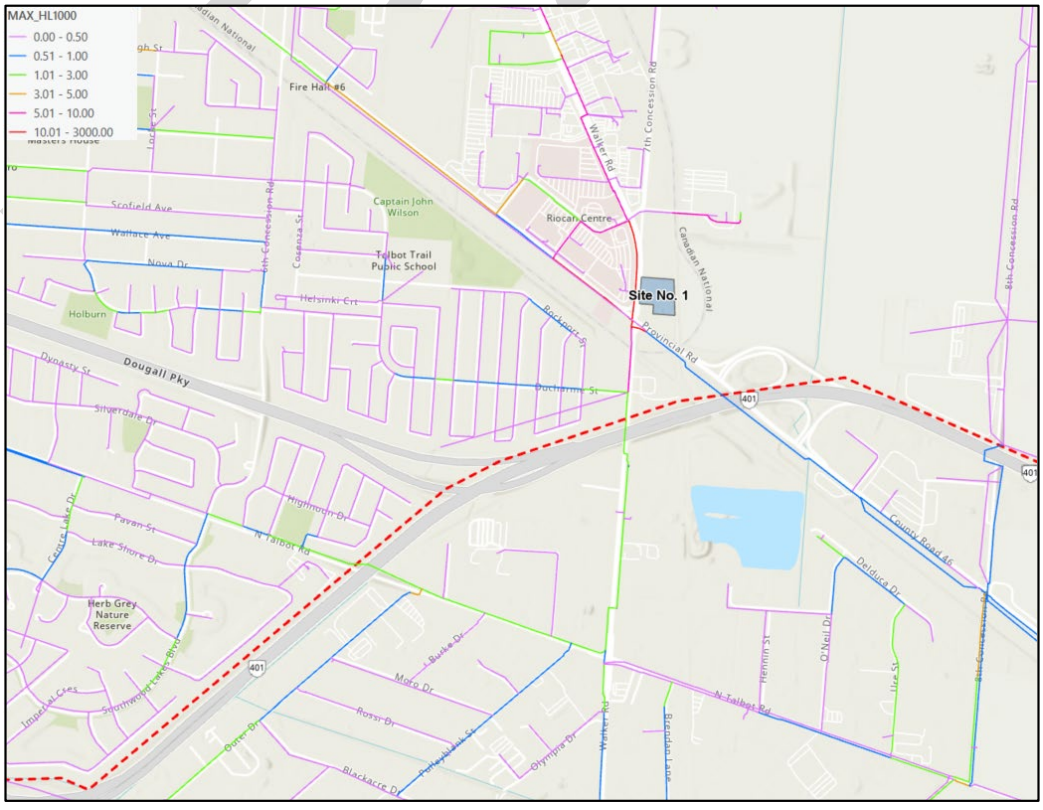


Figure 4-4: 2049 MDD Headloss (m/km) Surrounding Location 1



Figure 4-5: Location 1 Off-Site Infrastructure Upgrades

The InfoWater Pro model was run with these upgrades under existing and 2049 ADD and MDD. Under ADD the maximum system pressures range from 50 – 100 psi for existing and 2049 conditions. High pressures (>80 psi) are seen in the north system. While the pressures in this area exceed the maximum pressure criteria per WUC design criteria, these pressures do not exceed 100 psi which is the maximum pressure outlined by the MECP in *Design Guidelines for Drinking-Water Systems* (2023). Under MDD, the minimum pressures under existing range from 40 – 80 psi. Under 2049, the MDD minimum pressures range from 35 – 80 psi. The low pressures are mainly within the proposed secondary pressure zone boundary which can be ignored. There are minor instances of pressures lower than 40 psi just outside of the proposed secondary pressure zone boundary, which are marginally lower than the required minimum (39 – 40 psi). For the purpose of this analysis, these low-pressure instances can be ignored.

The levels in the tanks show that Tecumseh ET may be slowly draining under 2049 MDD. This was seen in the results before and after the additional infrastructure upgrades since the levels in the tanks are a function of the pump controls. The levels in the SEWT were also seen to be overfilling under 2049 ADD. To further improve the results (pressures and tank levels), a combination of control optimization and further infrastructure upgrades may be assessed. However, for preliminary comparison purposes, original controls were maintained and proposed off-site watermain upgrades, as presented in **Table 4-6**, were considered.

4.5.1.1.2 MDD+FF Results

The proposed off-site infrastructure upgrades were also run in the model under 2049 MDD+FF conditions. The system results are shown in **Appendix A**. These results show that the available fire flow at a residual pressure of 20 psi ranges up to 9,364 L/s. Similar to the existing baseline results (**Section 3.5.3**), the majority of locations that experience fire flows less than 33.3 L/s are found in dead-end watermains or south Tecumseh. The results show that the available fire flows within the system are improved, particularly within the south and eastern portion of the City system.

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4.5.1.2 Location 2

4.5.1.2.1 ADD & MDD/PHD Results

Location 2, located southeast of the Provincial Rd and Walker Rd intersection, was modelled with original controls and the CCFM and 2023 WUC WSMP upgrades active. The detailed InfoWater Pro model results are shown in **Appendix A**. The results show that under MDD, the minimum pressures under existing conditions range from 40 – 80 psi. Under 2049 MDD, however, the minimum pressures range from 35 – 80 psi, which is below the minimum pressure criteria. Majority of the low pressures experienced (< 40 psi) are seen in the proposed secondary pressure zone boundary and surrounding areas, meaning additional upgrades are required.

The headloss in feedermains (watermains 600 mm or greater) were evaluated to determine if any system constraints exist as a result of the proposed location (**Figure 4-6**). Similar to Location 1, these results show that higher headlosses are experienced on Walker Rd and Howard Ave. These higher headlosses are generally 3 m/km and under and are unlikely to result in major system constraints related to the low pressures identified. The headloss was also evaluated at all watermains surrounding proposed Location 2. Headloss greater than 10 m/km was found leading into the ET along Provincial Rd. Additionally, headlosses ranging from 1.4 – 5.8 m/km were found along Walker Rd (from Provincial Rd to N Talbot Rd) and N Talbot Rd (from Walker Rd to Tumbleweed Cres), which may be a constraint resulting in the low pressures experienced in the identified south area (**Figure 4-7**).

The additional proposed upgrades to support Location 2 are summarized in **Table 4-7** and illustrated in **Figure 4-8**.

Table 4-7: Additional Off-Site Infrastructure Upgrades for Location 2

Location	Original Size (mm)	Proposed Size (mm)	Approximate Length (m)
Provincial Rd	600	900	150
Provincial Rd to Walker Rd	300	600	241
Walker Rd (Ducharme St to N Talbot Rd)	300	400	953
N Talbot Rd (Walker Rd to Tumbleweed Cres)	300	400	1,180

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Figure 4-6: Location 2 2049 MDD Maximum Headloss (m/km) in Watermains 600 mm or Greater

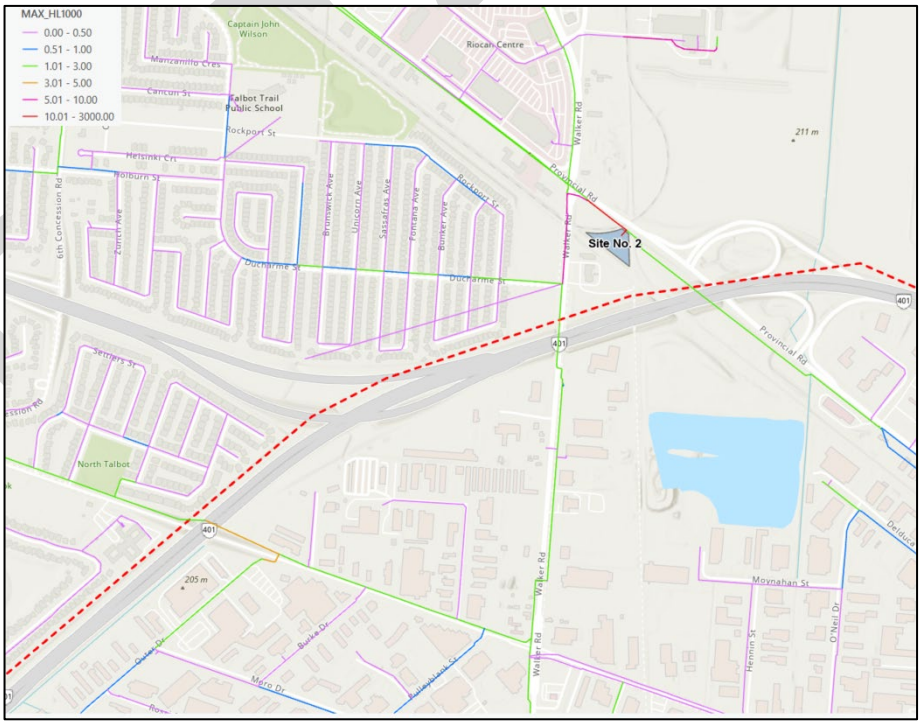


Figure 4-7: 2049 MDD Headloss (m/km) Surrounding Location 2



Figure 4-8: Location 2 Off-Site Infrastructure Upgrades

The results with these proposed upgrades show that under ADD the maximum pressures range from 50 – 100 psi under both existing and 2049 conditions. Similar to Location 1, the highest pressures (> 80 psi) are seen in the north and do not exceed 100 psi. The minimum pressures under MDD range from 50 – 80 psi under existing conditions and 35 – 80 psi under 2049 conditions. The low pressures (< 40 psi) experienced under 2049 conditions are exclusively experienced within the proposed secondary pressure zone boundary and can therefore be ignored for this assessment.

The levels in the tanks show that Tecumseh ET is slowly draining and the SEWT is oscillating frequently between 80 – 100% under 2049 MDD. The levels in the SEWT were also seen to be overfilling under 2049 ADD. Therefore, it is recommended that the pump controls based on the SEWT being placed at Location 2 be further refined should this site be selected as the preferred option.

4.5.1.2.2 MDD+FF Results

The proposed off-site infrastructure upgrades were evaluated in the model under 2049 MDD+FF conditions. The system results are shown in **Appendix A**. These results show that the available fire flow at a residual pressure of 20 psi ranges up to 10,388 L/s. Similar to the existing baseline and Location 1 results, the majority of locations that experience fire flows less than 33.3 L/s are found in dead end watermains and south Tecumseh. The results show that the available fire flows within the system are improved compared to the existing baseline results (**Section 3.5.3**), particularly within the south and eastern portion of the City system.

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4.5.1.3 Location 3

4.5.1.3.1 ADD & MDD/PHD Results

Location 3, located on 7th Concession Rd northwest of the Windsor Christian Fellowship Church, was first modelled under existing and 2049 MDD with original controls, and the CCFM and 2023 WUC WSMP upgrades active to assess the need for further infrastructure upgrades. The detailed results are shown in **Appendix A**.

The results show that the existing MDD minimum system pressures range from 30 – 80 psi and the 2049 MDD minimum system pressures range from < 20 psi – 80 psi. The higher pressures are seen to the north and lower pressures are seen to the south with low pressures also seen in the centre of the system under 2049 MDD. Since pressures below 40 psi are experienced in the system, additional upgrades are required to support Location 3 for the SEWT.

The headloss in feedermains (watermains 600 mm or greater) were evaluated to determine if any system constraints exist as a result of the proposed location (**Figure 4-9**). Similar to Location 1 and Location 2, the results show that higher headlosses are experienced on Walker Rd and Howard Ave. These higher headlosses are generally 3 m/km and under and are unlikely to result in major system constraints related to the low pressures identified. The headloss was also evaluated at all watermains surrounding proposed Location 3. Headloss greater than 10 m/km was found leading into the ET. Additionally, headlosses ranging from 1.3 – 10.0 m/km were found along Walker Rd (North of Provincial Rd to N Talbot Rd) and N Talbot Rd (from Walker Rd to Sixth Concession Rd), which may be a constraint resulting in the low pressures experienced in the identified south area (**Figure 4-10**).

The upgrades required to support Location 3 are summarized in **Table 4-8** and shown in **Figure 4-11**.

Table 4-8: Additional Off-Site Infrastructure Upgrades for Location 3

Location	Original Size (mm)	Proposed Size (mm)	Approximate Length (m)
Walker Rd (north of Provincial Rd to SEWT)	300	800	761
Walker Rd (from Provincial Rd to N Talbot Rd)	300	800	1,222
N Talbot Rd (Walker Rd to Sixth Concession Rd)	300	600	1,554

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Figure 4-9: Location 3 2049 MDD Maximum Headloss (m/km) in Watermains 600 mm or Greater

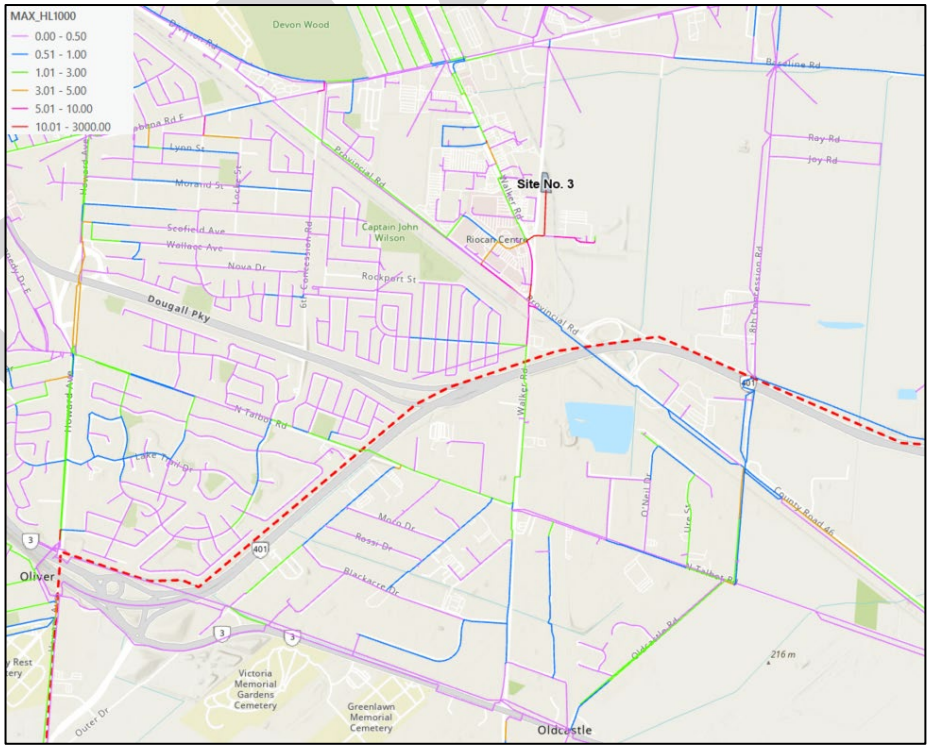


Figure 4-10: 2049 MDD Headloss (m/km) Surrounding Location 3



Figure 4-11: Location 3 Off-Site Infrastructure Upgrades

The results with the proposed upgrades show that under ADD, the maximum pressures range from 50 – 100 psi for existing and 2049 conditions, similar to Location 1 and 2. Under MDD, the minimum pressures range from 40 – 80 psi under existing condition and 35 – 80 psi under 2049 conditions. Pressures below 40 psi experienced under 2049 conditions are limited to within the proposed secondary pressure zone boundary. Therefore, these upgrades are able to support the pressures in the system for Location 3.

The tank levels show that under 2049 MDD, the Tecumseh ET is slowly draining and under 2049 ADD the SEWT is overfilling. Therefore, it is recommended that the pump controls based on the SEWT being placed at Location 3 be further refined should this site be selected as the preferred option.

4.5.1.3.2 MDD+FF Results

The proposed off-site infrastructure upgrades were evaluated in the model under 2049 MDD + FF conditions. The system results are shown in **Appendix A**. These results show that the available fire flow at a residual pressure of 20 psi ranges up to 4,803 L/s. Similar to the existing baseline and previous location results, the majority of nodes that experience fire flows less than 33.3 L/s are found in dead end watermains and south Tecumseh. The results show that the available fire flows within the system are improved compared to the existing baseline results (**Section 3.5.3**), particularly within the south and eastern portion of the City system.

4.5.1.4 Location 7

4.5.1.4.1 ADD & MDD/PHD Results

Location 7, located at 1425 Division Rd, was modelled following the same procedure as the Locations discussed above where the existing and 2049 MDD scenarios were first modelled to assess the need for additional upgrades. The modelling results are included in **Appendix A**. The results show that for existing MDD, the minimum system pressures range from 40 – 80 psi and for 2049 MDD, the minimum system pressures range from 35 – 80 psi. The pressures less than the minimum criteria (40 psi) are experienced mainly within the proposed secondary pressure zone boundary. Some nodes just outside of this boundary

experienced pressures marginally below 40 psi and for the purpose of this analysis they can be taken to be 40 psi. This means that Location 7 alone can support the system pressures without the need for additional infrastructure upgrades.

The headloss in feedermains (watermains 600 mm or greater) were evaluated to determine if any system constraints exist as a result of the proposed location (**Figure 4-12**). Similar to the other locations, the results show that higher headlosses are experienced on Walker Rd and Howard Ave. These higher headlosses are generally 3 m/km and under and are unlikely to result in major system constraints. The headloss was also evaluated at all watermains surrounding proposed Location 7 and the identified low-pressure area. Headloss of 3.24 m/km was found leading into the ET. Headlosses less than 3 m/km were experienced on Walker Rd and N Talbot Rd, which is less than the headloss experienced in this location under the other proposed tank locations (**Figure 4-13**). These results further confirm that under the original model controls, Location 7 can support the water system without the need for additional infrastructure upgrades.



Figure 4-12: Location 7 2049 MDD Maximum Headloss (m/km) in Watermains 600 mm or Greater

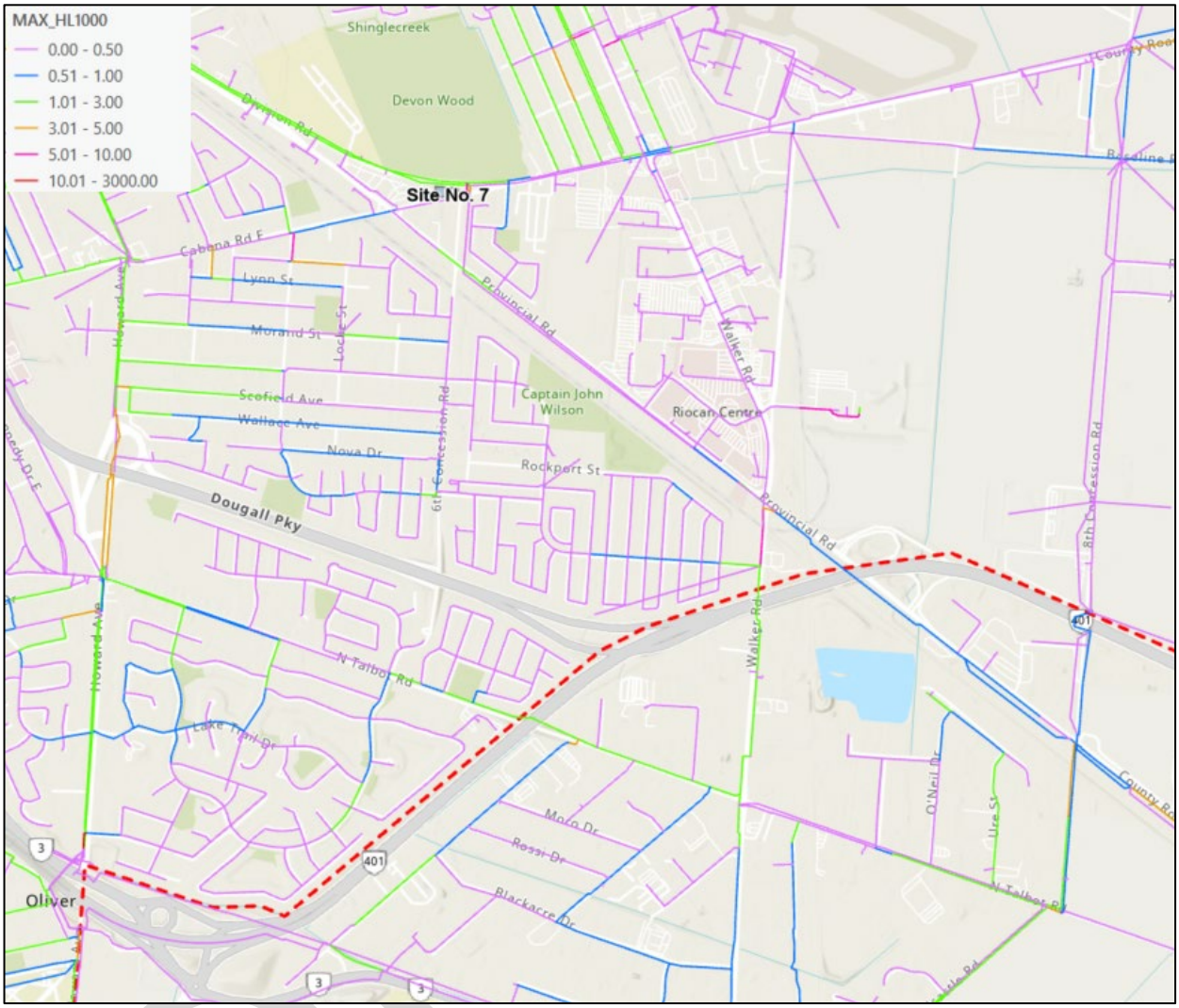


Figure 4-13: 2049 MDD Headloss (m/km) Surrounding Location 7

The system was also modelled under ADD to verify that system pressures are also operating within acceptable criteria. Under existing and 2049 ADD the maximum pressures range from 50 – 100 psi. Under 2049 ADD, there are less instances of pressures exceeding 80 psi. However, under both conditions, no pressures exceed 100 psi, satisfying MECP pressure criteria.

The tank levels for this location show similar results as the previous SEWT location options. Under 2049 MDD Tecumseh ET is shown to be slowly draining. Under both ADD scenarios, the SEWT is seen to be overfilling during certain timesteps. Therefore, it is recommended that the pump controls based on the SEWT being placed at Location 7 be further refined should this site be selected as the preferred option.

4.5.1.4.2 MDD+FF Results

The proposed off-site infrastructure upgrades were evaluated in the model under 2049 MDD + FF conditions. The system results are shown in **Appendix A**. These results show that the available fire flow at a residual pressure of 20 psi ranges up to 7,651 L/s. Similar to the existing baseline and previous location results, the

majority of nodes that experience fire flows less than 33.3 L/s are found in dead end watermains and south Tecumseh. The results show that the available fire flows within the system are improved compared to the existing baseline results (**Section 3.5.3**), particularly within the eastern portion of the City system.

4.5.1.5 Location 8

Location 8 is located at 4690 Walker Rd and is northeast of the Provincial Rd and Walker Rd intersection. This location is also located directly south of Location 1 and north of Location 2. For this reason, a complete model assessment was not completed for Location 8. The results are likely similar to Location 1 or Location 2 depending on the connecting watermain. Location 8 has the option to tie into the 300 mm watermain on Walker Rd, similar to Location 1 or the 600 mm watermain on Provincial Rd, similar to Location 2. The upgrades for the Walker Rd connection option will likely be reduced compared to Location 1 since Location 8 is closer to the Walker Rd and Provincial Rd intersection. The upgrades for the Provincial Rd connection option will likely be the same as for Location 2. The estimated infrastructure upgrade options are summarized in **Table 4-9**.

Table 4-9: Estimated Additional Infrastructure Upgrade Options for Location 8

Option	Location	Original Size (mm)	Proposed Size (mm)	Approximate Length (m)
Walker Rd Connection	Walker Rd (north of Provincial Rd to SEWT)	300	800	20
	Walker Rd (from Provincial Rd to N Talbot Rd)	300	800	1,222
	N Talbot Rd (Walker Rd to Tumbleweed Cres)	300	600	1,180
Provincial Rd Connection	Provincial Rd	600	900	150
	Provincial Rd to Walker Rd	300	600	241
	Walker Rd (Ducharme St to N Talbot Rd)	300	400	953
	N Talbot Rd (Walker Rd to Tumbleweed Cres)	300	400	1,180

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5 Preferred Location

The results presented in **Section 4.5** suggested that all location options are hydraulically feasible and can result in system operating pressures that are in line with the specified pressure criteria. However, almost all locations will require additional off-site infrastructure upgrades to support the operation of the new SEWT.

Based on the evaluation documented in TM3 and input from real estate agents, Location 3 was selected as the preferred alternative. The evaluation determined that Location 3 is the farthest from residential areas, does not require rezoning, is expected to be more cost-effective than other sites, presents minimal challenges for acquisition, and is also preferred in terms of site access and drainage. Although this location results in the most identified watermain upgrades (**Table 4-8**), the site-specific benefits mentioned resulted in this location being deemed as preferred.

5.1 Preferred Location Control Optimization

Since Location 3 was selected as the preferred location for the SEWT, the pump controls were revisited so that they can be optimized for improved tank hydraulic performance. This is because the results documented in **Section 4.5.1.3** mentioned that the Tecumseh ET is slowly draining and the SEWT is overfilling at certain time periods. The pump controls of all pump facilities (AJ Brian, George Ave, and JF Cook) were evaluated and the optimized pump controls are outlined in **Table 5-1**.

The InfoWater Pro model was run using the optimized controls and additional upgrades outlined in **Table 4-8**. The results are included in **Appendix A**. These results show that under existing ADD, the maximum system pressures fall in the range from 40 – 90 psi, with minor instances of pressures exceeding 80 psi. The maximum system pressures fall in the range of 40 – 80 psi under 2049 ADD. The minimum system pressures under both existing and 2049 MDD fall in the range of 35 – 80 psi. Pressures < 40 psi are only experienced within the proposed secondary pressure zone boundary and can therefore taken to be acceptable since these low-pressure issues will be resolved through Tecumseh master plan upgrades and the creation of a secondary pressure zone. The optimized pump controls allow all tanks (Cook, Tecumseh ET, and the SEWT) to operate with efficient fill-drain cycles and maintain healthy levels. Therefore, the updated pump operation is hydraulically optimal and can support ideal pressures in the system. No additional infrastructure upgrades are required when using the optimized pump controls.

The InfoWater Pro model was also run under 2049 MDD+FF conditions, considering the off-site upgrades and optimized controls. The results determined that the system could achieve fire flows at a residual pressure of 20 psi in the range of up to 4,024 L/s. Majority of the available fire flow in the system is in exceedance of 80 L/s (the applied fire flow demand). Similar to the other fire flow results reported, all instances of fire flows less than 33.3 L/s were experienced in dead end watermains and south Tecumseh. Therefore, the level of service is improved when compared to the baseline (present-day) MDD+FF results.

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Table 5-1: Location 3 Optimized Pump Controls

	Ex. ADD	Ex. MDD	2049 ADD	2049 MDD
AJ Brian Pump #1/5	ON when Cook below 5.0 m OFF when Cook above 6.0 m	ON when Cook below 5.0 m OFF when Cook above 6.0 m	ON when Cook below 5.0 m OFF when Cook above 6.0 m	Open when Cook below 5.0 m Closed when Cook above 6.0 m
AJ Brian Pump #2	ON when Cook below 4.0 m OFF when Cook above 5.0 m	ON when Cook below 4.0 m OFF when Cook above 5.0 m	ON when Cook below 4.0 m OFF when Cook above 5.0 m	ON when Cook below 5.0 m OFF when Cook above 6.0 m
AJ Brian Pump #3	ON when Tecumseh below 7.0 m OFF when Tecumseh above 8.0 m	ON when Tecumseh below 9.0 m OFF when Tecumseh above 9.8 m	ON when Tecumseh below 9.0 m OFF when Tecumseh above 10.5 m	ON when Tecumseh below 8.0 m OFF when Tecumseh above 9.0 m
AJ Brian Pump #4	ON when SEWT below 10.0 m OFF when SEWT above 13.0 m	ON when SEWT below 11.0 m OFF when SEWT above 13.5 m	ON when SEWT below 10.0 m OFF when SEWT above 13.0 m	ON when SEWT below 12.0 m OFF when SEWT above 13.4 m
George Ave Pump #1	-	-	-	ON when Tecumseh below 8.0 m OFF when Tecumseh above 10.0 m
George Ave Pump #2	ON when Tecumseh below 9.0 m OFF when Tecumseh above 10.0 m	ON when Tecumseh below 9.5 m OFF when Tecumseh above 10.0 m	ON when Tecumseh below 9.5 m OFF when Tecumseh above 11.5 m	ON when Tecumseh below 9.0 m OFF when Tecumseh above 10.0 m
George Ave Pump #3	-	-	-	-
JF Cook Pump #1	-	-	-	ON when SEWT below 11.5 m OFF when SEWT above 13.6 m
JF Cook Pump #2	-	-	-	ON when SEWT below 12.0 m OFF when SEWT above 14.0 m
JF Cook Pump #3	ON when SEWT below 11.0 m OFF when SEWT above 13.5 m	Setting = 0.83 when Node 913 below 60.0 m OFF when Node 913 above 74.0 m	OFF when SEWT below 11.0 m ON when SEWT above 13.5 m	ON when SEWT below 11.0 m OFF when SEWT above 13.0 m

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6 Water Age

A water age analysis was completed in order to assess the high-level impact on overall water age within the distribution system with the addition of the new SEWT. In InfoWater Pro, a water age analysis computes the amount of time that water has been in the network at each node throughout an extended period simulation, based on a single point source. This water age analysis was simulated under existing baseline ADD conditions, over a time period of 14 days (2 weeks). The baseline results are those under present day conditions and do not consider the CCFM or the new SEWT (Hanna ET is still active). Monitoring nodes across the distribution system were selected to provide a good geographic representation of the zone.

Appendix A shows the temporal evolution of water age at these at these nodes, with overall water age results presented in **Table 6-1**. Based on these results, the following findings were made:

- Under existing ADD with existing (baseline) infrastructure in-place, water age across the distribution system ranges from 0.6 hrs to in excess of 17.2 days. Given the simplified nature of InfoWater Pro's water age simulator, which does not account for additional points of rechlorination and/or mixing that may occur within a distribution system (as is the case for the WUC system), this is considered to be qualitative proxy of actual system water age that should be used for relative comparison purposes only.
- Under existing ADD with proposed off-site infrastructure in-place and the new SEWT at Location 3, water age across the distribution system ranges from 1.1 hrs to in excess of 14.7 days. Overall, there is a slight reduction observed in relative maximum water age when compared to existing ADD with existing (baseline) infrastructure in-place. Therefore, it is anticipated that a new SEWT at Location 3 should not negatively impact overall system water age.
- Under 2049 ADD with proposed off-site infrastructure in-place and the new SEWT at Location 3, water age across the distribution system ranges from 0.6 hrs to in excess of 17.2 days. Overall, this is similar to results observed under existing ADD with existing (baseline) infrastructure in-place. It should also be noted that the proposed SEWT is anticipated to include rechlorination and mixing at the tower to help assist in improved water quality. Therefore, it is anticipated that a new SEWT at Location 3 should not negatively impact overall system water age.

Table 6-1: Water Age Comparison

	Minimum Water Age (hrs)	Maximum Water Age (hrs)
Ex ADD (Existing Baseline)[1]	0.6	413 (17.2 days)
Ex ADD (SEWT Location 3)[2]	1.1	353 (14.7 days)
2049 ADD (SEWT Location 3)[2]	0.6	413 (17.2 days)

Notes:

Baseline refers to present-day conditions with existing infrastructure (i.e., no SEWT or CCFM and Hanna ET are active).

Results include SEWT Location 3 active, all 2023 WUC WSMP recommendations active (including CCFM), and all proposed off-site upgrades.

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7 Conclusions

A water network analysis was performed with InfoWater Pro modelling software. The preferred SEWT location and additional proposed infrastructure upgrades were added to the City's existing water model (including latest CCFM works) to determine if serviceability criteria can be met. Four scenarios were built in the model: Existing ADD, Existing MDD, 2049 ADD, and 2049 MDD which were derived from existing model scenarios. All built scenarios include 2023 WUC WSMP infrastructure recommendations. Based on the results presented herein, the following conclusions and recommendations are made:

- An 8 ML tank with top water level of 225.0 m was found to be sufficient to support the storage requirements;
- As per the 2018 Tecumseh WSMP, it is recommended that a secondary pressure zone be created to service the low-pressure area in South Tecumseh. As the primary constraint in this part of the distribution system is due to topography, a new pressure zone (complete with a booster pumping station, inter-boundary isolation valves, and ET) will allow HGLs/pressures to be adequately boosted to satisfy pressure requirements;
- Location 3 (on 7th Concession Rd, northwest of the Windsor Christian Fellowship Church and across 4405 7th Concession Rd) was selected as the preferred location based on the results in this memo which indicate that this location is hydraulically feasible with the implementation of off-site upgrades. Additionally, this location is the farthest from residential areas, does not require rezoning, is expected to be more cost effective than other sites, presents minimal challenges for acquisition, and is preferred in terms of access and drainage;
- Watermain upgrades are required on Walker Rd and N Talbot Rd to support system pressures with Location 3;
- With the proposed adjusted pump controls, the system can operate hydraulically optimally and maintain adequate system pressures; and,
- Water age in the system was found to be similar to the results observed under existing ADD with existing (baseline) infrastructure in-place. Therefore, a new SEWT at Location 3 should not negatively impact overall system water age.

These conclusions recommendations are based on the modelling results completed as part of this memo. Further hydraulic modelling should be carried out during the detailed design phase of this project to verify these conclusions and recommendations.

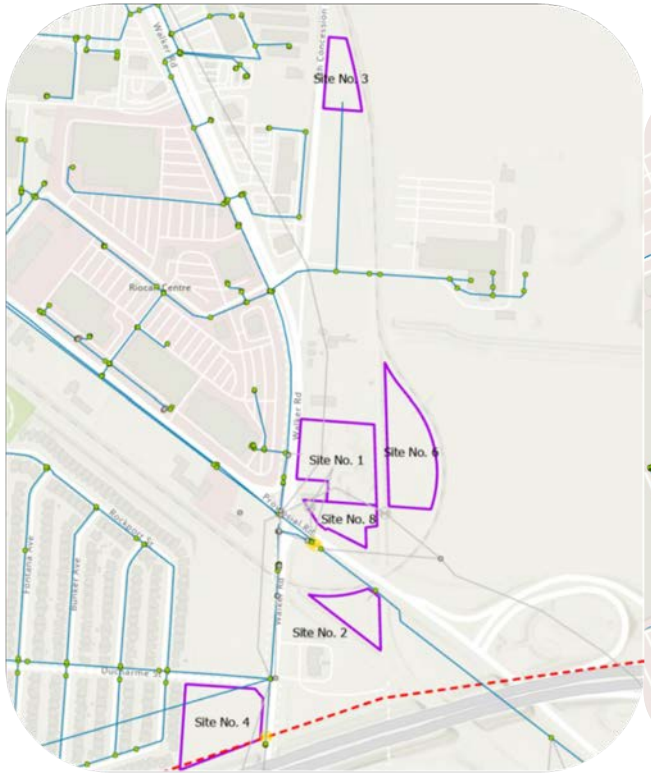
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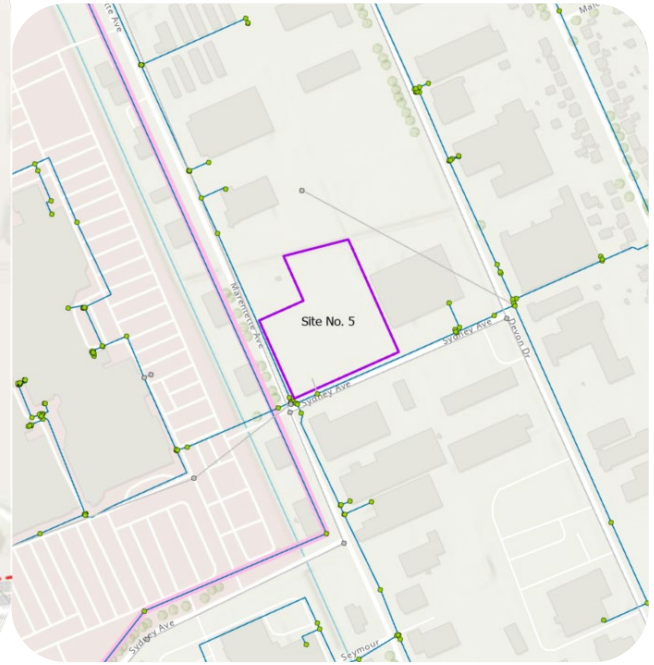
Appendix A – Model Results

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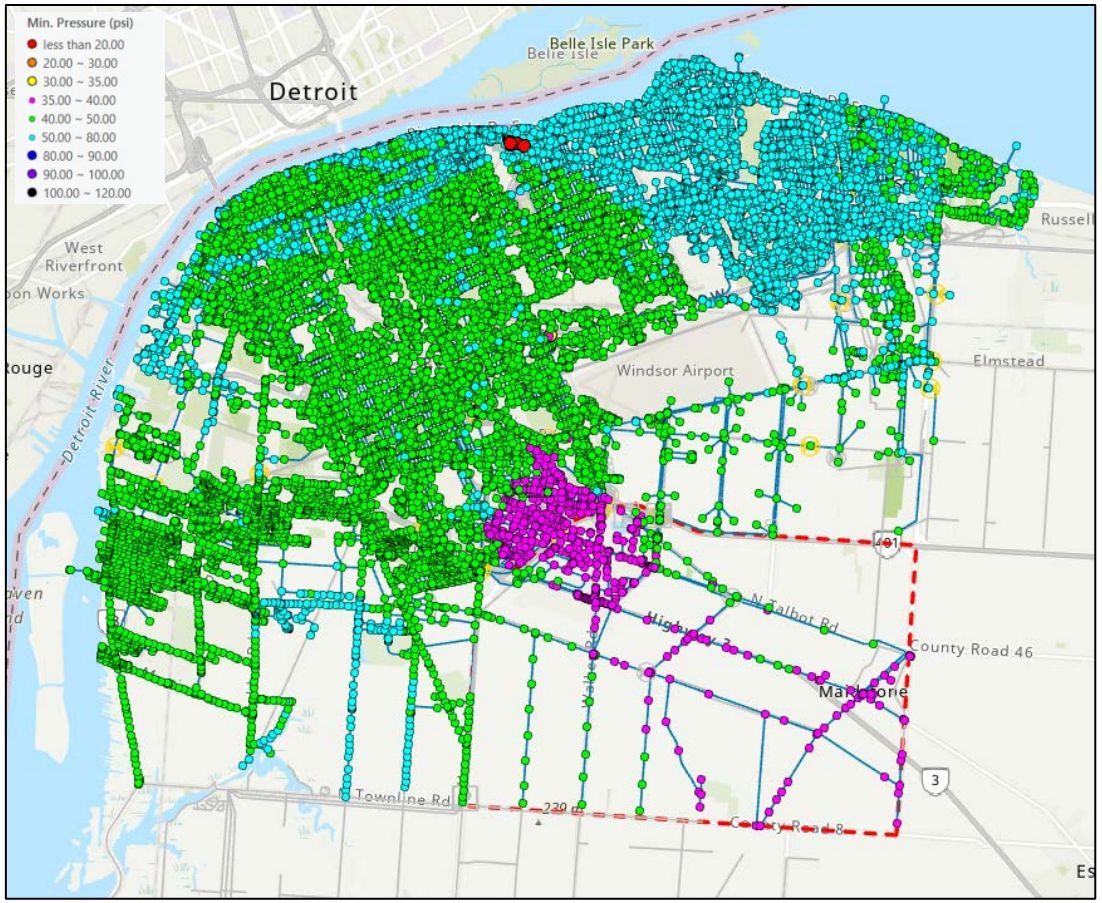
ENWIN SEWT Modelling Results

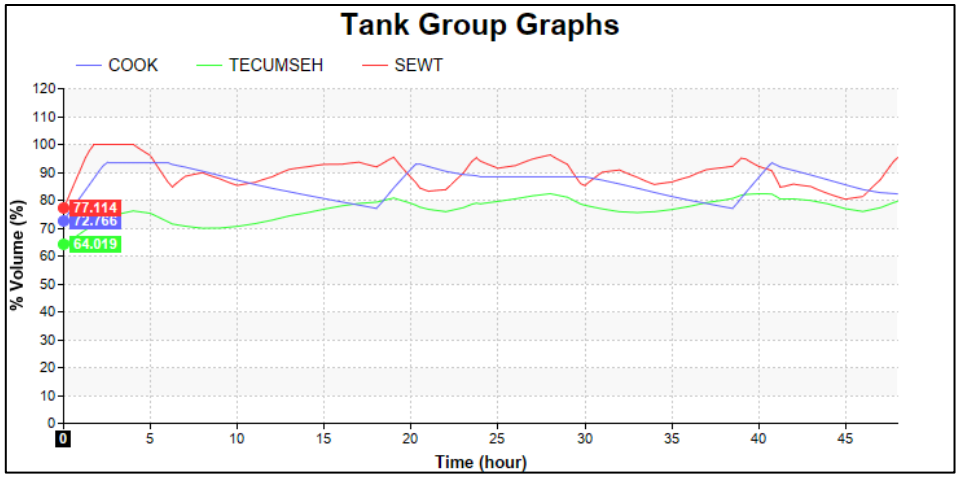






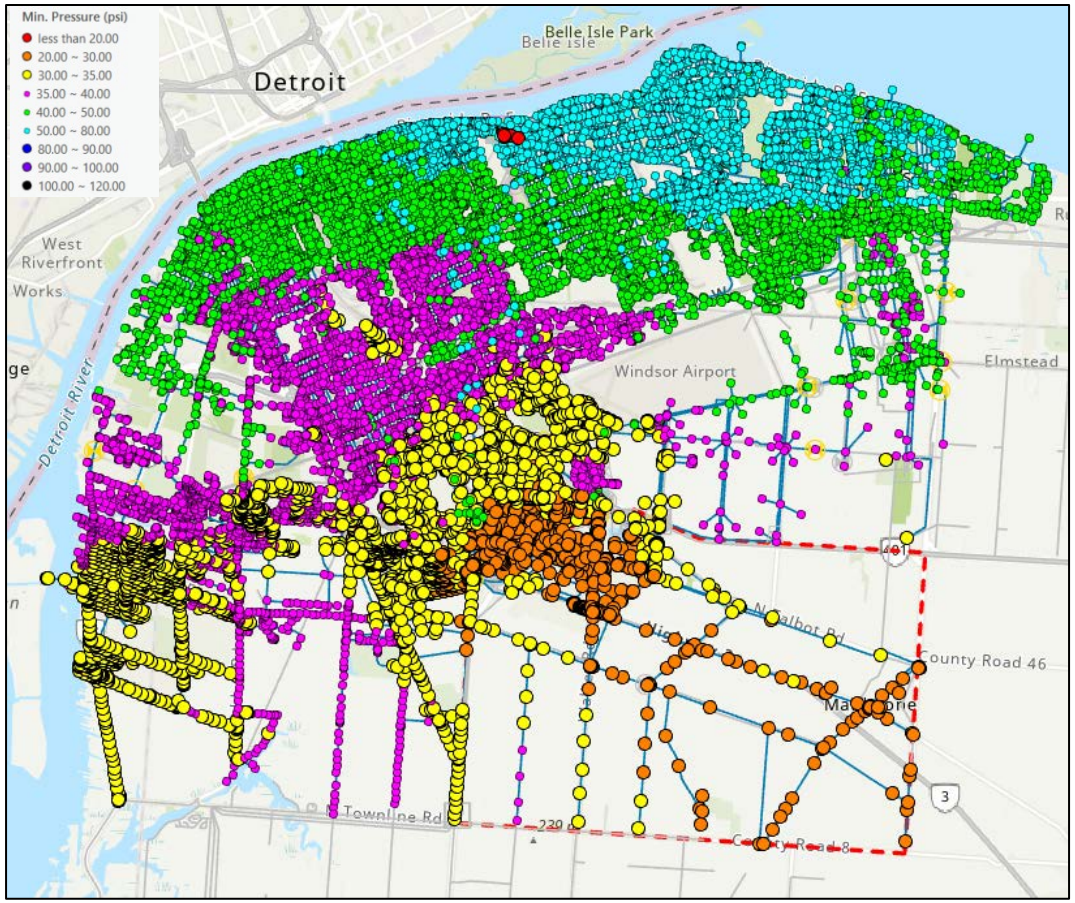
Location 1 – Ex. MDD

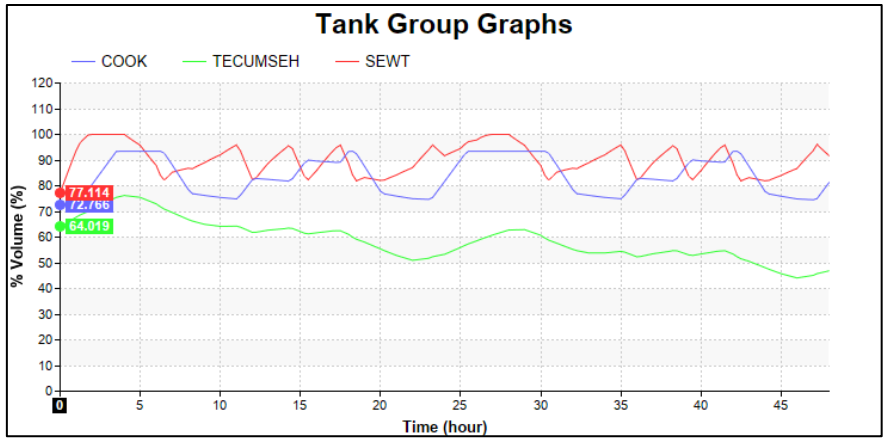




- Existing MDD
- CCFM active
- WM11 active
- All 2023 WSMP infrastructure recommendations are active
- Low pressure areas exist → upgrades are required

Location 1 – 2049 MDD





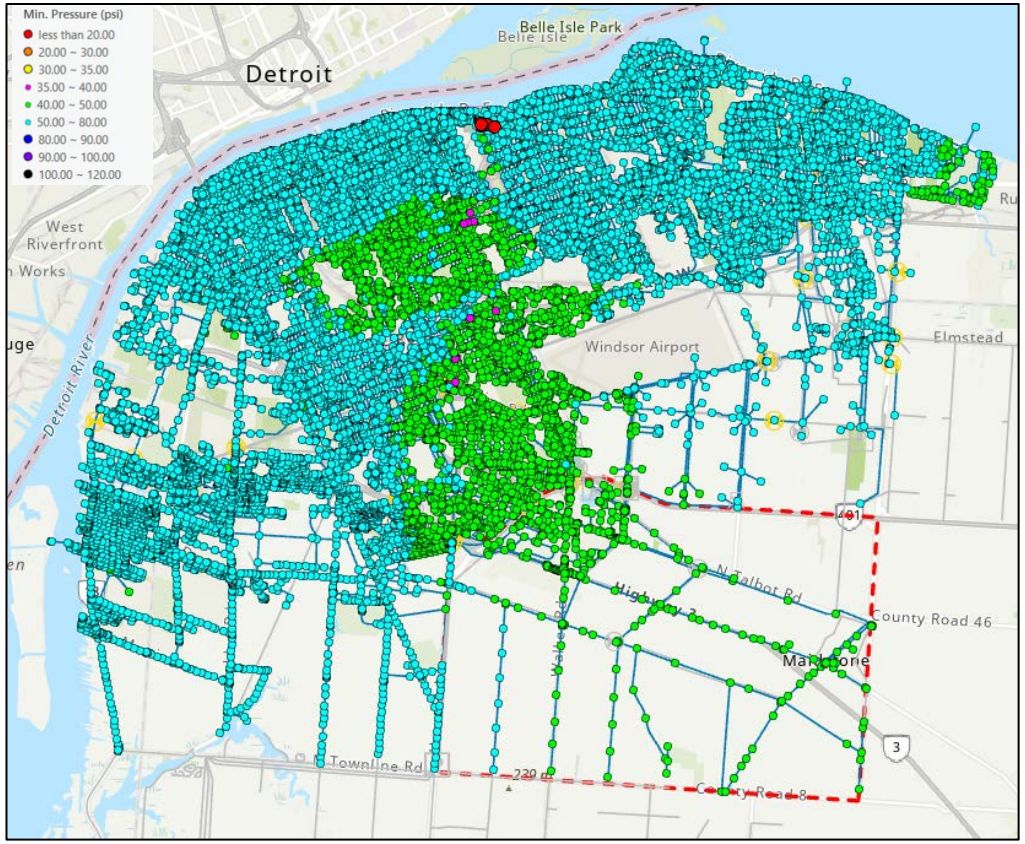
- 2049 MDD
- CCFM active
- WM11 active
- All 2023 WSMP infrastructure recommendations are active
- Low pressure areas exist → upgrades are required

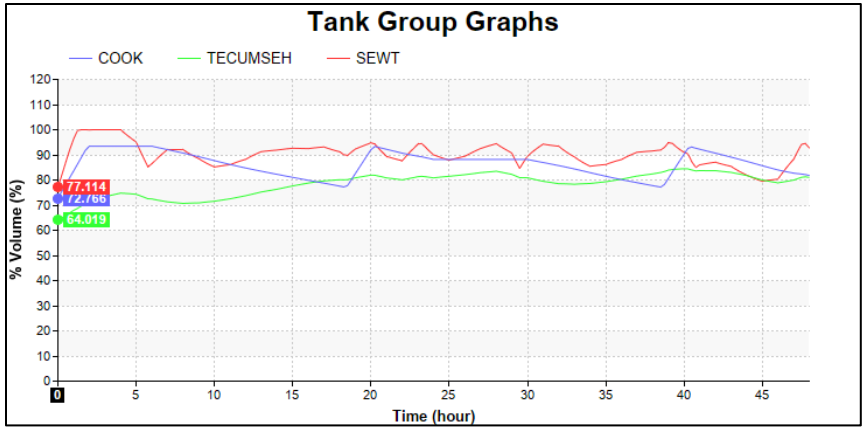
Location 1 – Proposed Off-Site Upgrades



Location	Original Size (mm)	Proposed Size (mm)	Approximate Length (m)
Walker Rd (north of Provincial Rd to SEWT)	300	800	100
Walker Rd (from Provincial Rd to N Talbot Rd)	300	800	1,222
N Talbot Rd (Walker Rd to Tumbleweed Cres)	300	600	1,180

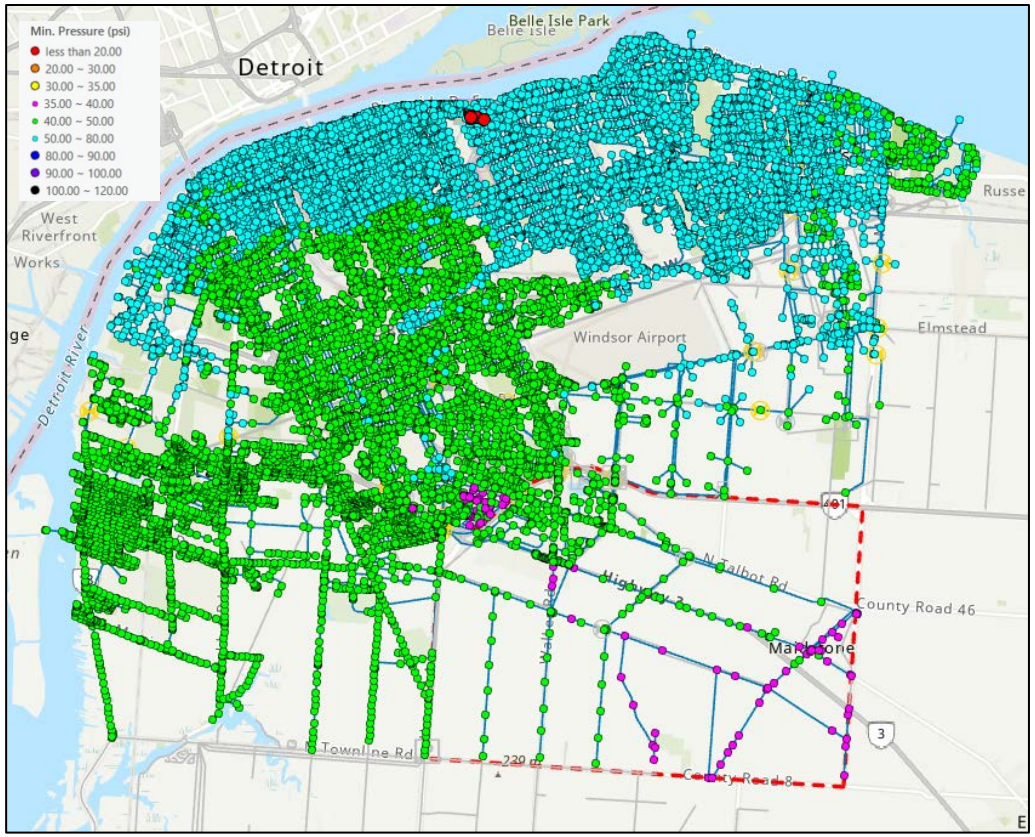
Location 1 – Ex. MDD + Upgrades

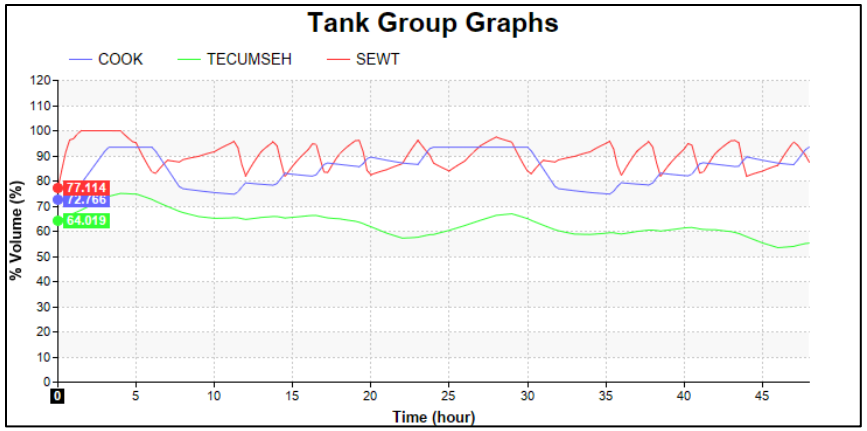




- SEWT operating between 80 – 100% full → in line with the operating range of other tanks
- Low pressures resolved in both Windsor and Tecumseh

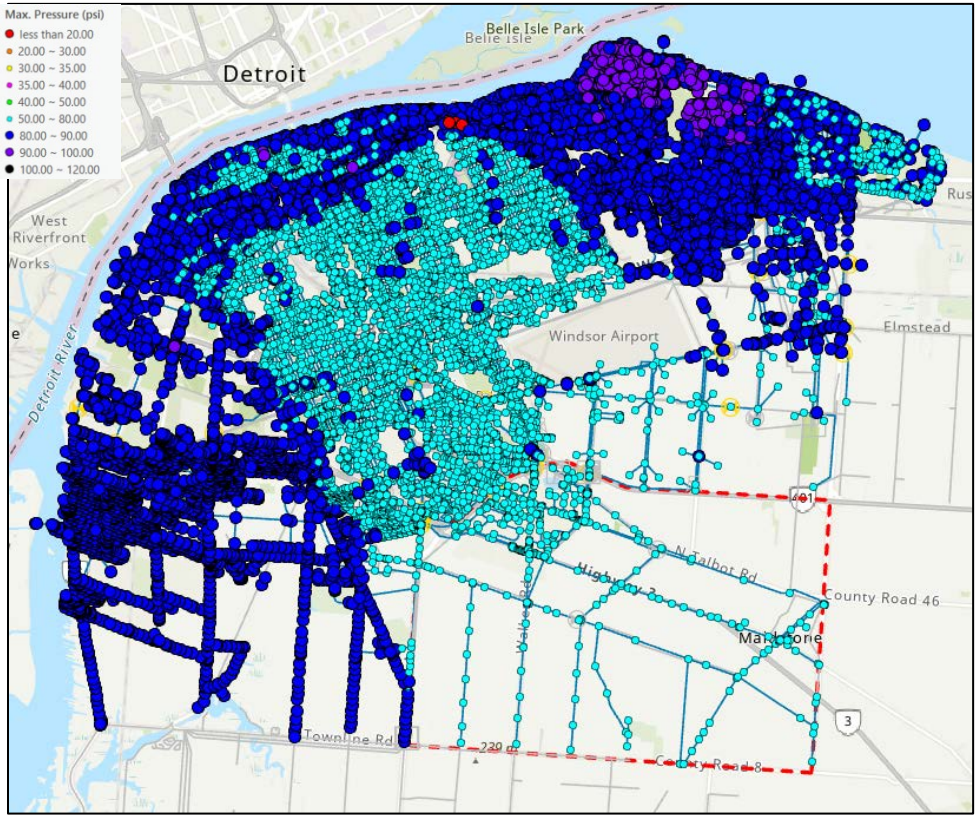
Location 1 – 2049 MDD + Upgrades

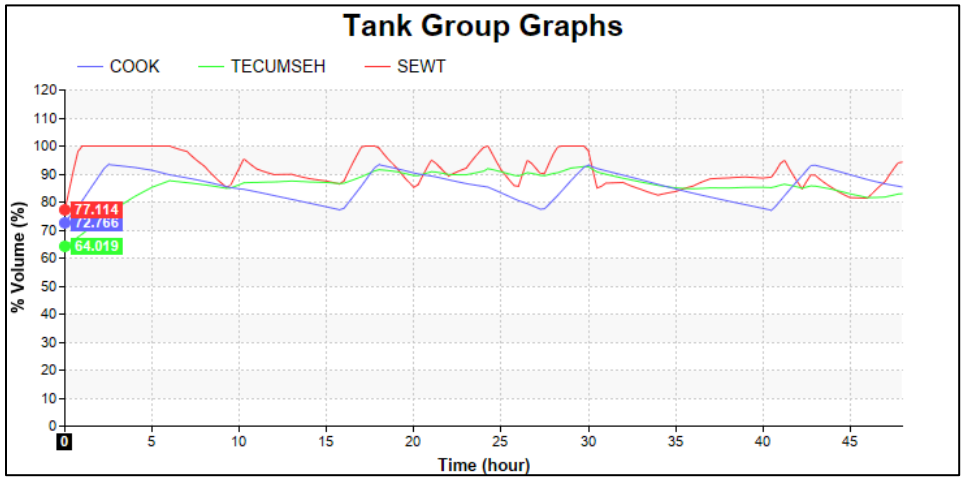




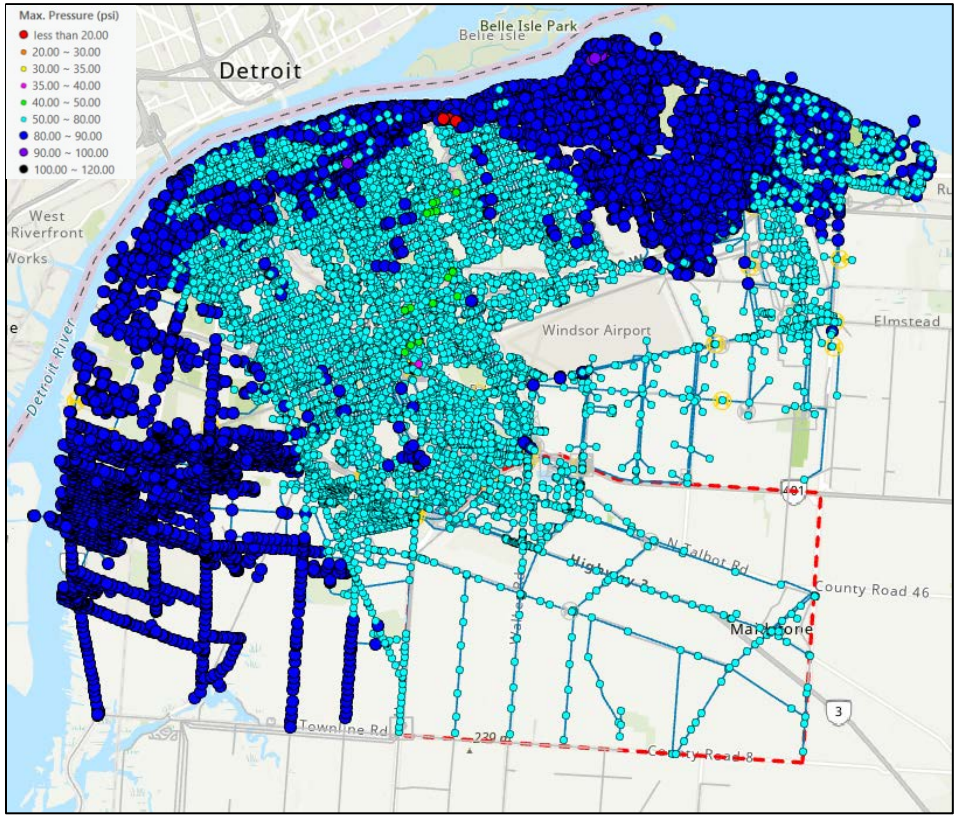
- SEWT operating between 80 – 100% full → in line with the operating range of Cook
- Tecumseh levels decreasing over time
- Majority of low pressures resolved. Some low pressures (39 psi) experienced just outside of the south Tecumseh border. These low pressures can be ignored since it is assumed that it will be addressed through the upgrades proposed in the 2018 Tecumseh WSMP.

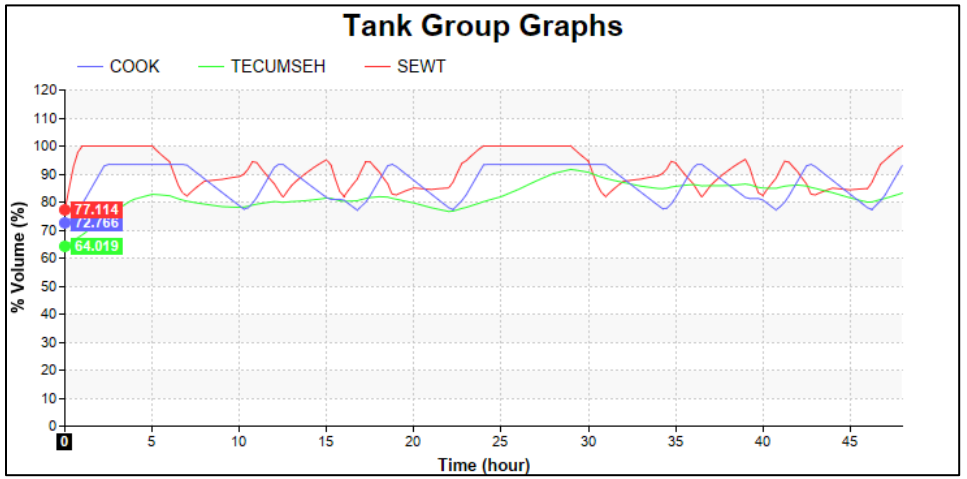
Location 1 – Ex. ADD + Upgrades



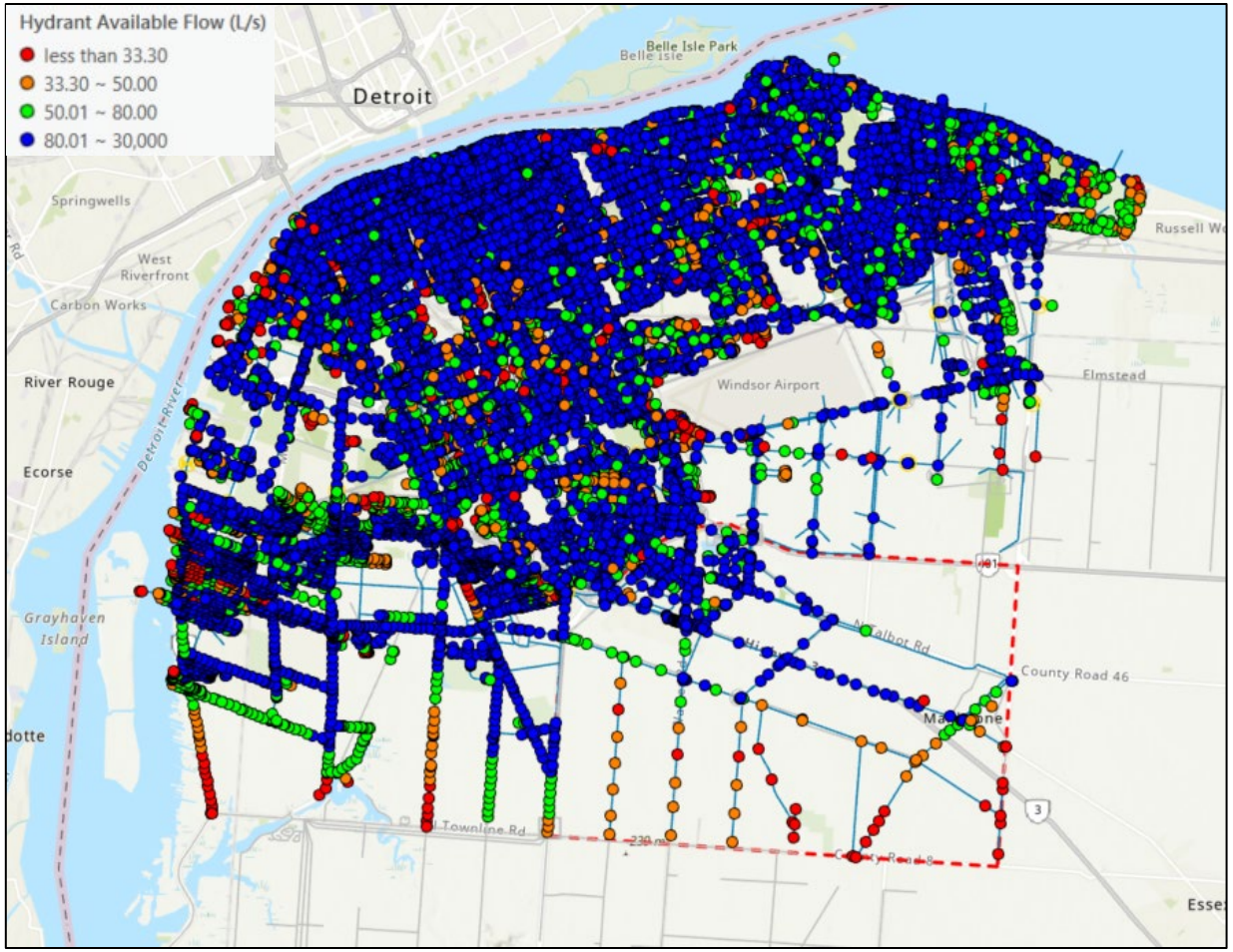


Location 1 – 2049 ADD + Upgrades



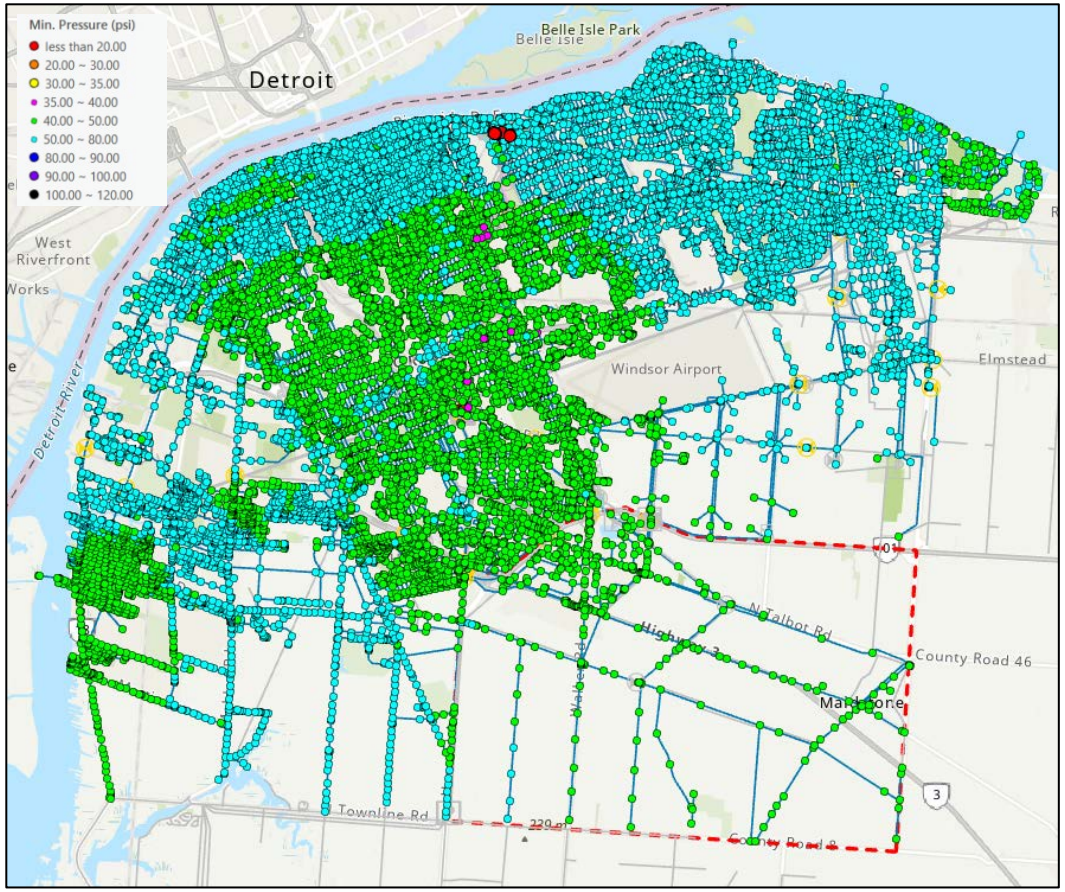


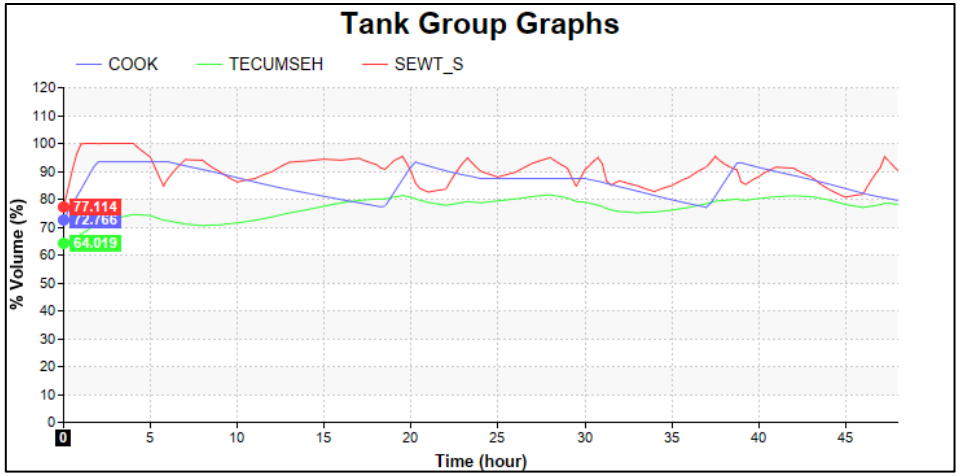
Location 1 – 2049 MDD + FF



- Network includes proposed upgrades
- Hydrant available flow at a residual pressure of 20 psi
- Available hydrant flow: 1.03 L/s to 9,364 L/s
- Majority of locations with fire flow < 33.3 L/s are found in dead-end watermains

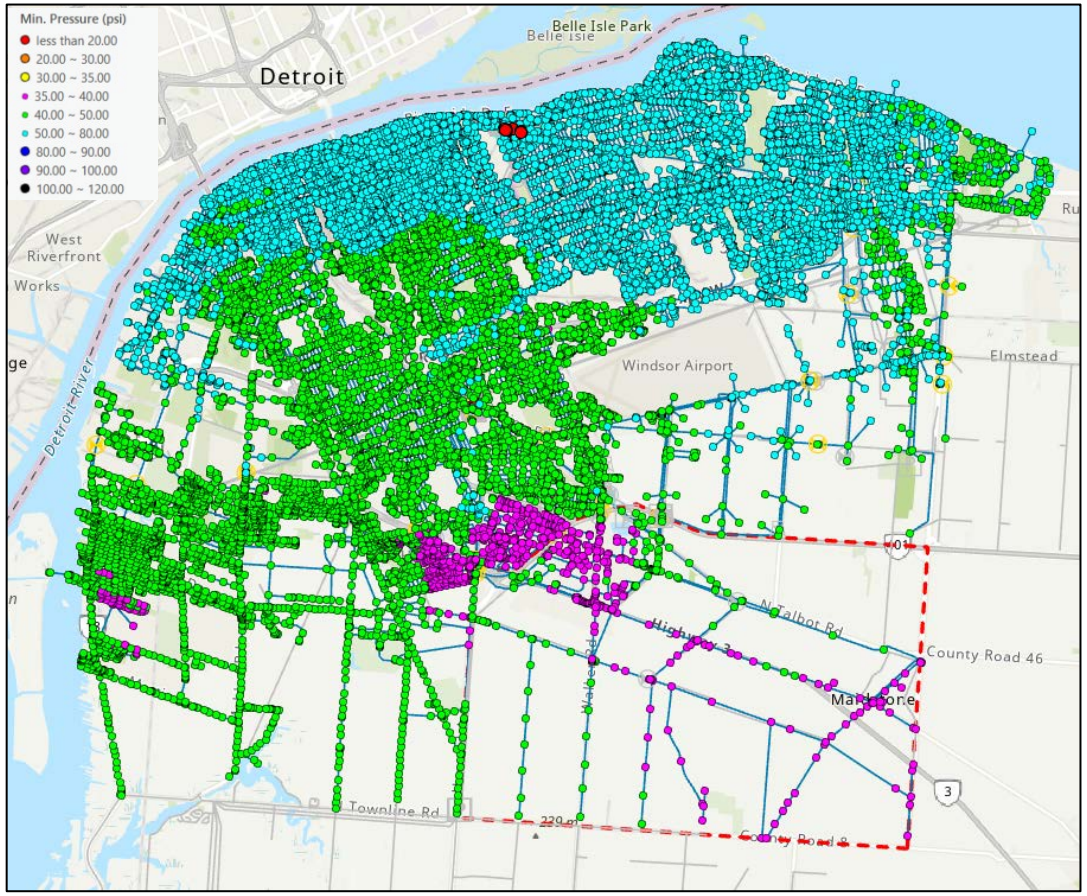
Location 2 – Ex. MDD

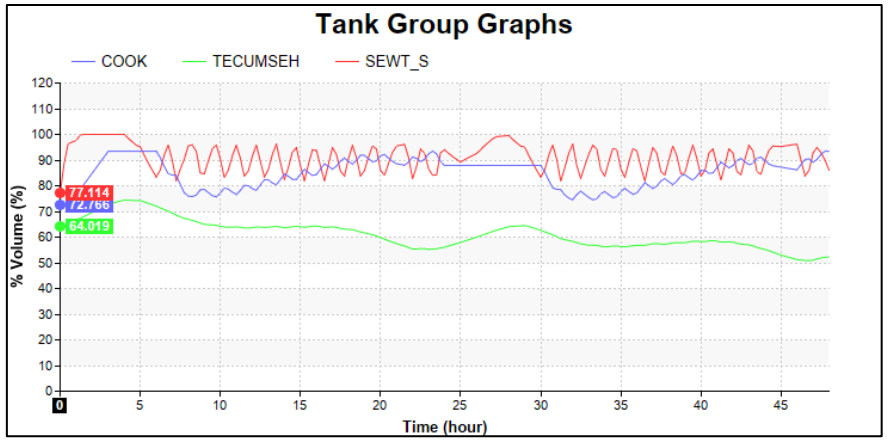




- Existing MDD
- CCFM active
- WM11 active
- All 2023 WSMP infrastructure recommendations are active

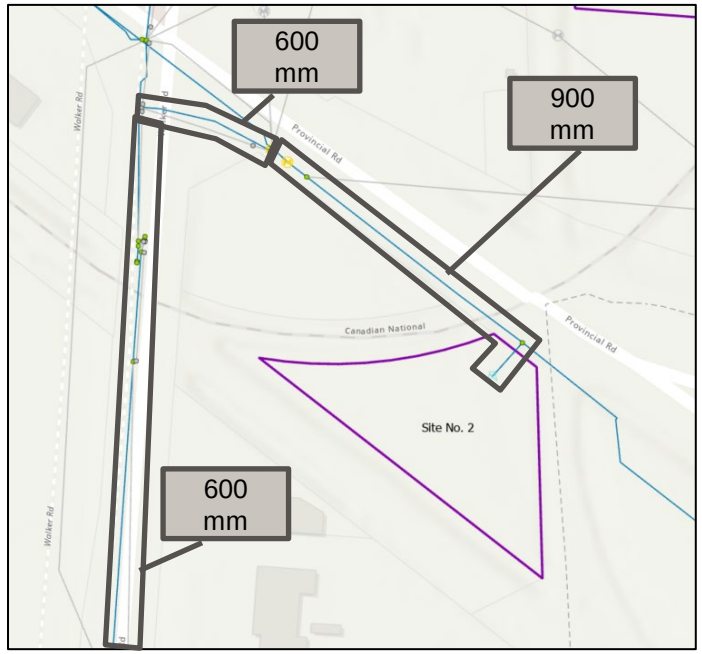
Location 2 – 2049 MDD





- 2049 MDD
- CCFM active
- WM11 active
- All 2023 WSMP infrastructure recommendations are active
- Low pressures exist → Upgrades required

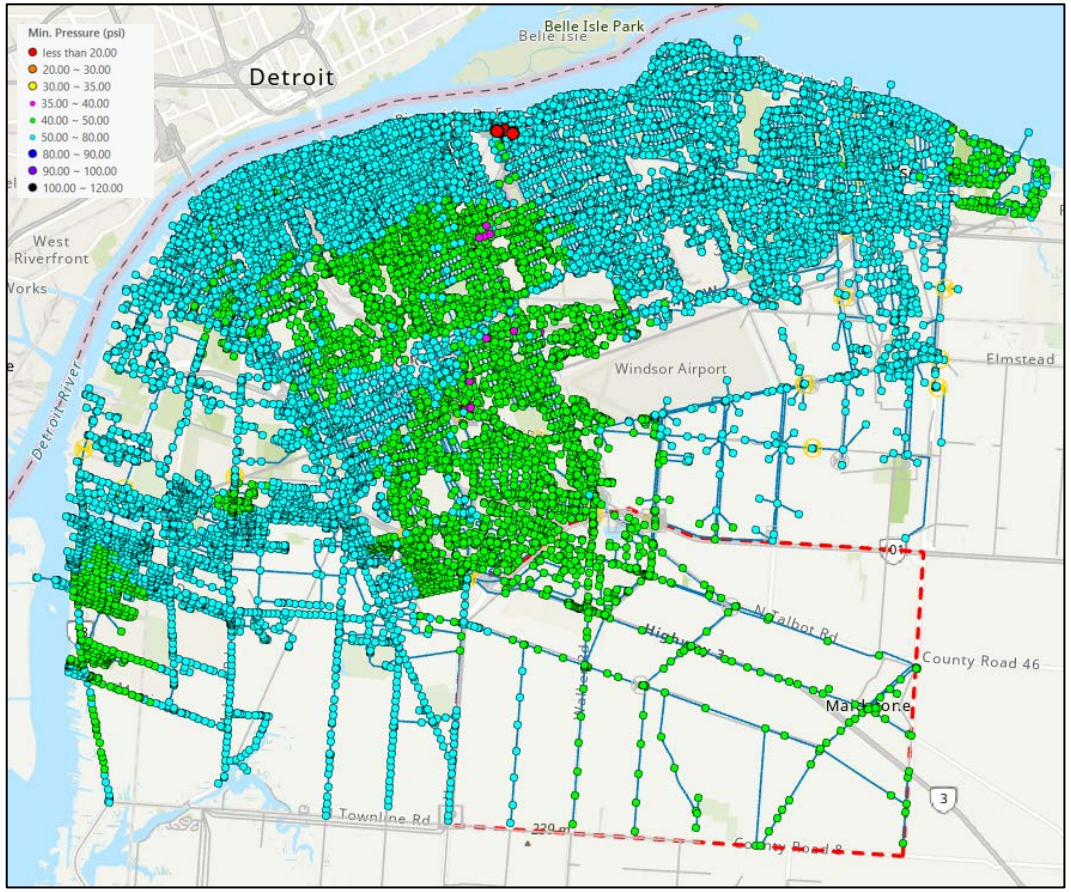
Location 2 – Proposed Off-Site Upgrades

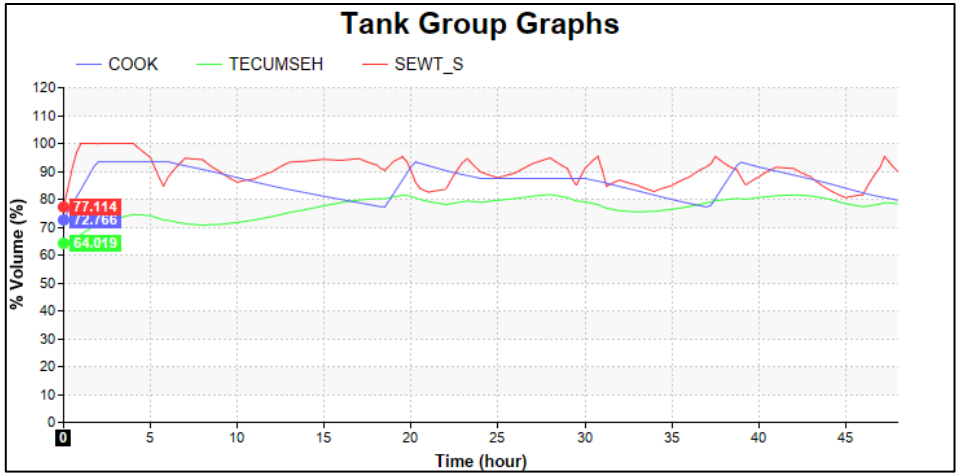




Location	Original Size (mm)	Proposed Size (mm)	Approximate Length (m)
Provincial Rd	600	900	150
Provincial Rd to Walker Rd	300	600	241
Walker Rd (Ducharme St to N Talbot Rd)	300	400	953
N Talbot Rd (Walker Rd to Tumbleweed Cres)	300	400	1,180

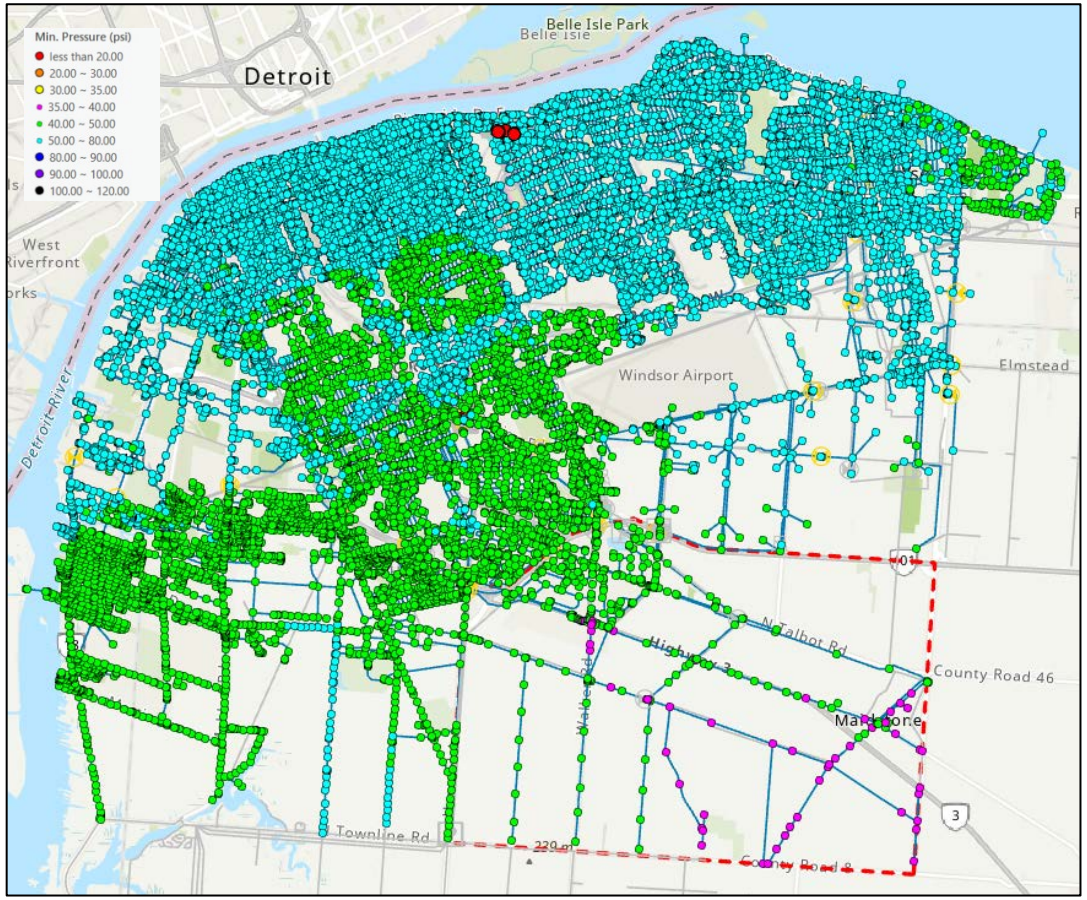
Location 2 – Ex. MDD + Upgrades

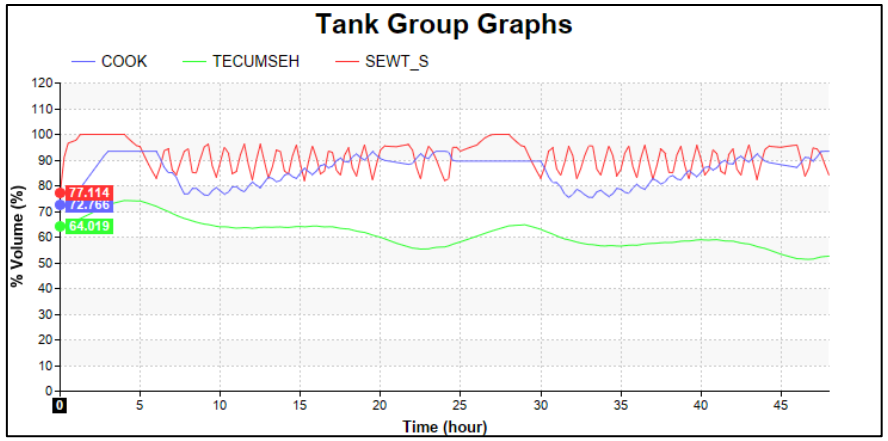




- Existing MDD + Upgrades
- CCFM active
- WM11 active
- All 2023 WSMP infrastructure recommendations are active
- SEWT operating between 80 – 100% full → in line with the operating range of other tanks
- Pressures > 40 psi in Windsor or Tecumseh (same as before upgrades)

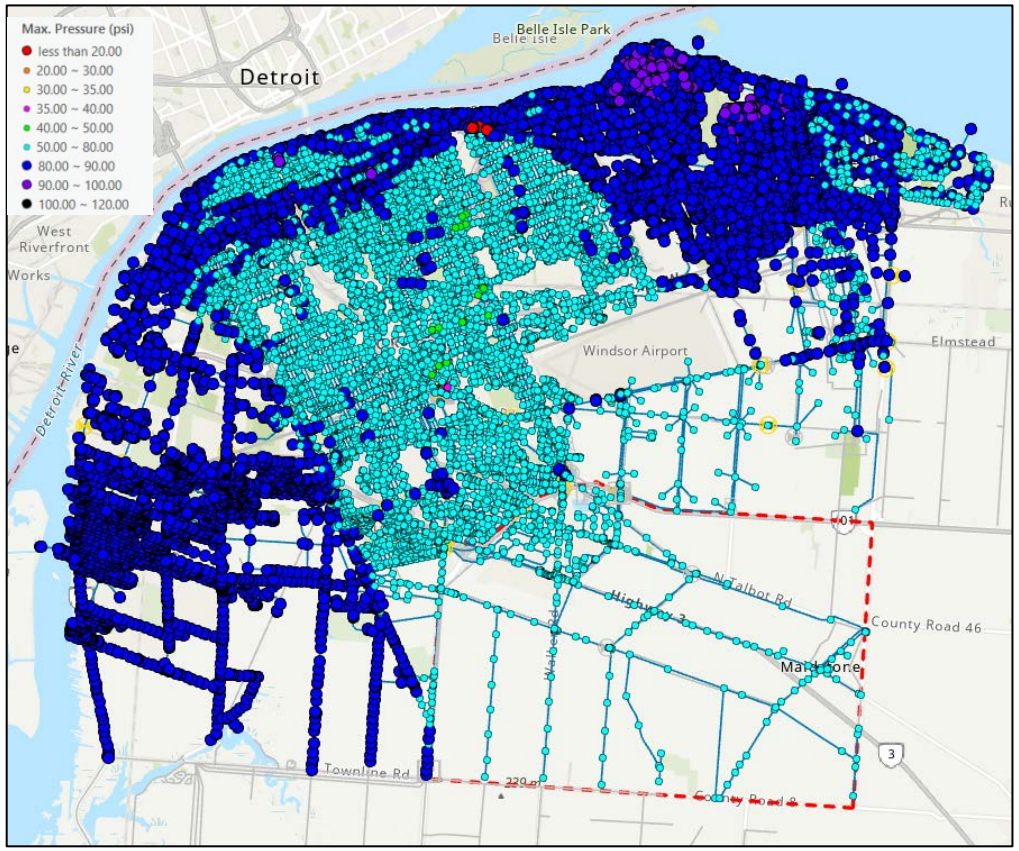
Location 2 – 2049 MDD + Upgrades

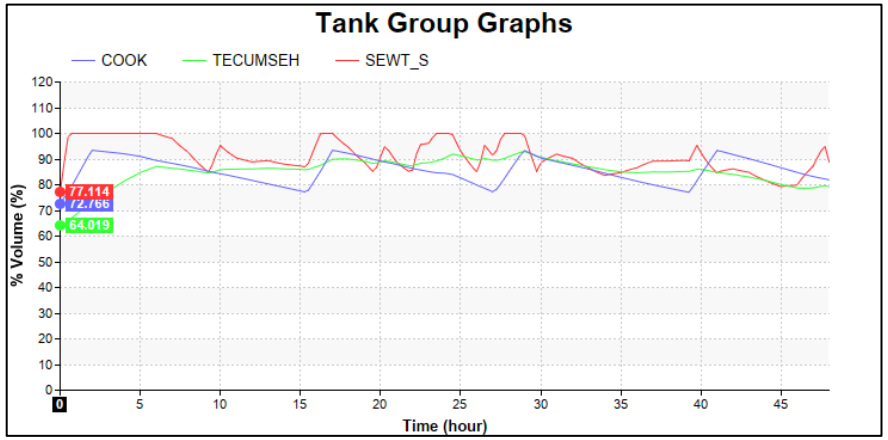




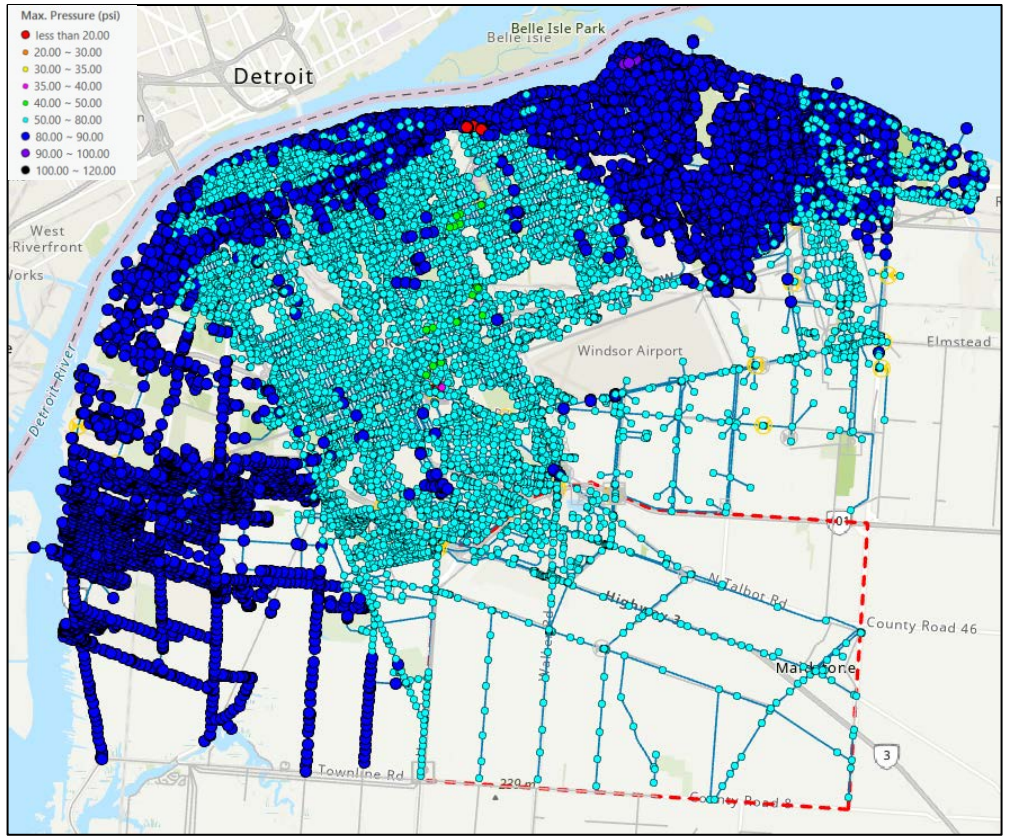
- 2049 MDD + Upgrades
- Low pressures resolved in Windsor
- Tecumseh levels decreasing
- SEWT levels oscillate frequently between 80-100% → may be optimized with new pump controls

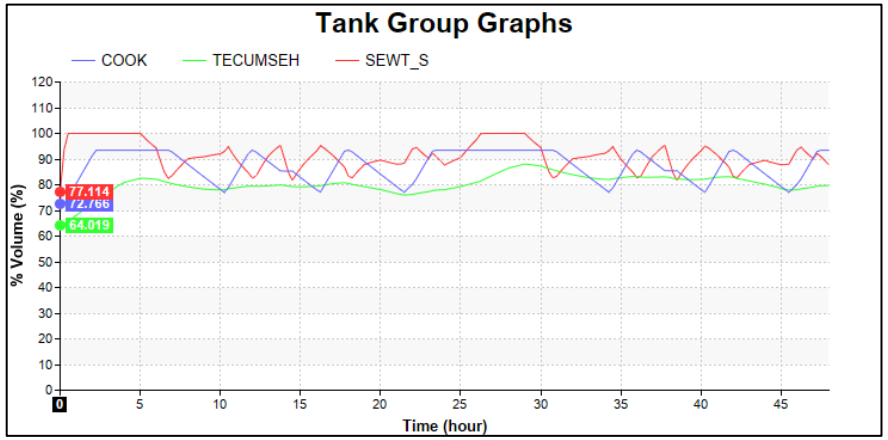
Location 2 – Ex. ADD + Upgrades



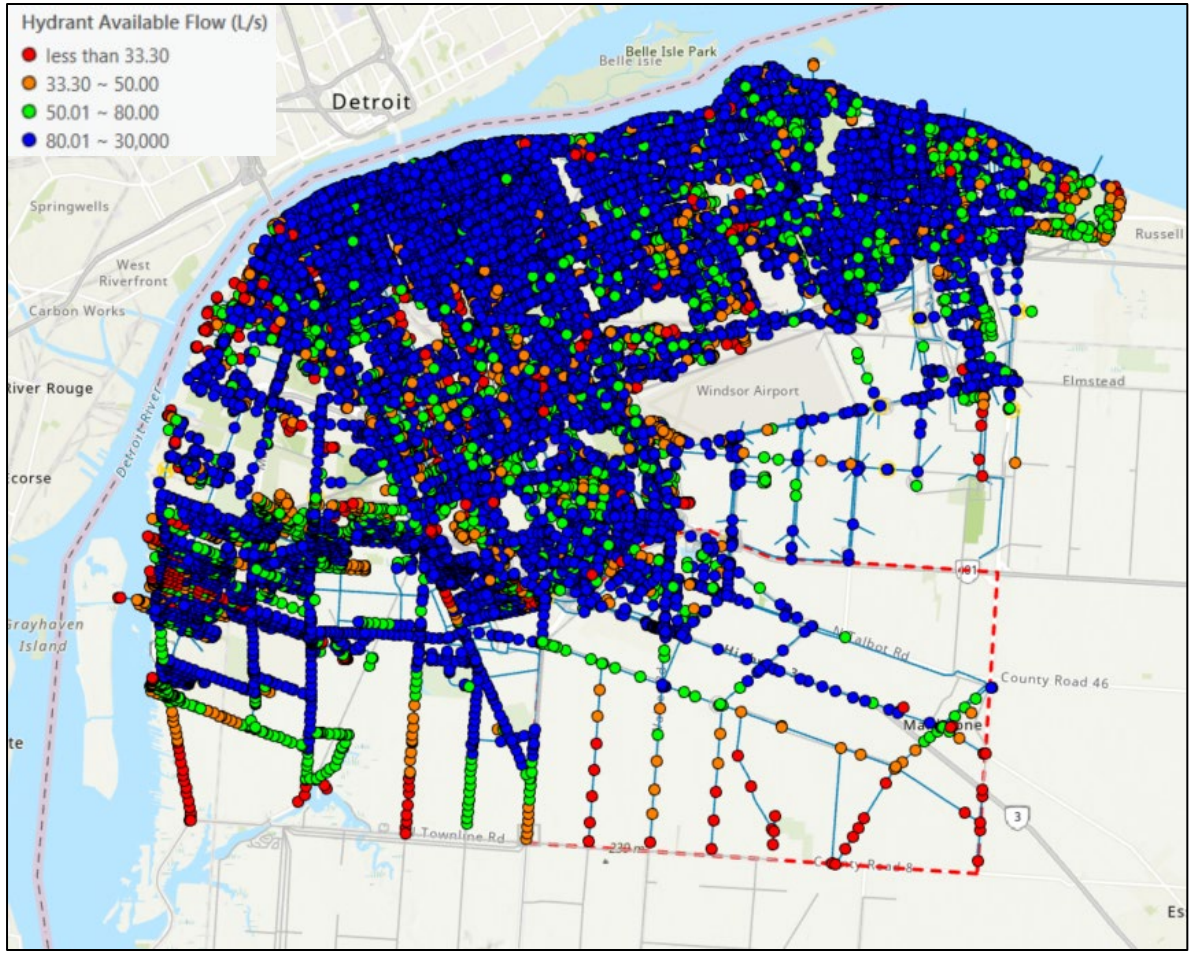


Location 2 – 2049 ADD + Upgrades



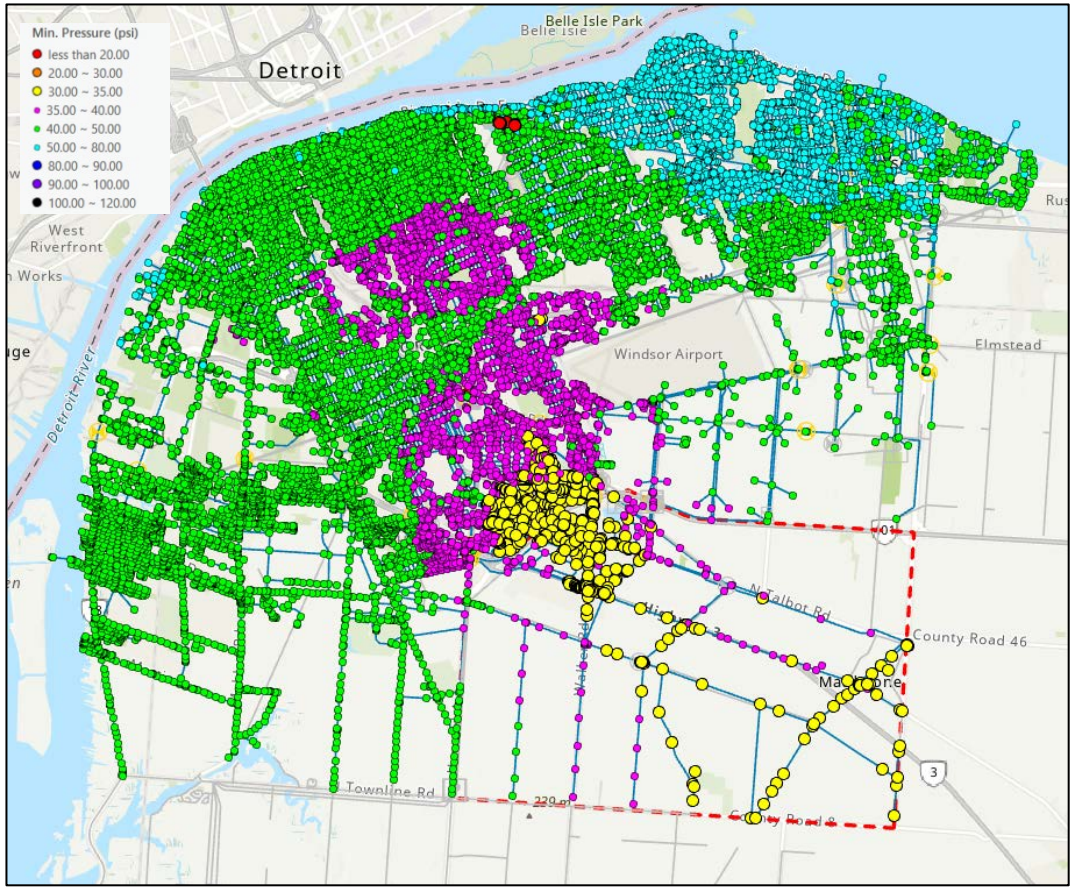


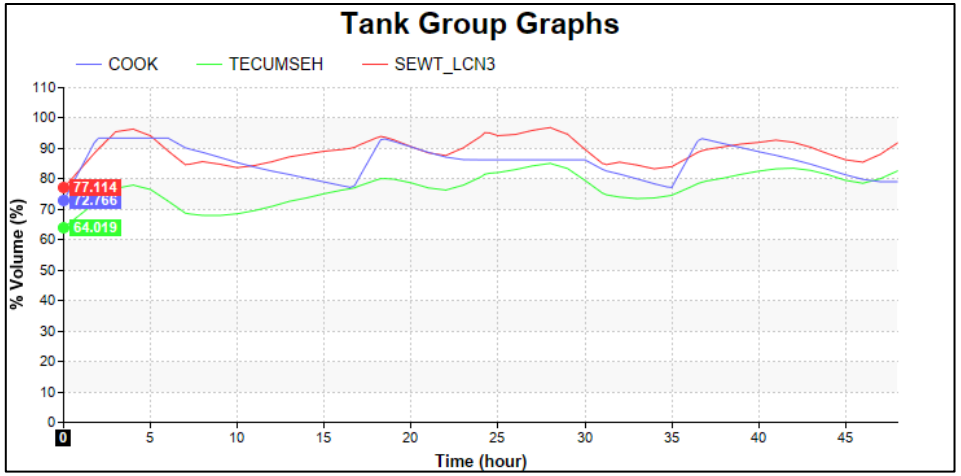
Location 2 – 2049 MDD + FF



- Network includes proposed upgrades
- Hydrant available flow at a residual pressure of 20 psi
- Available hydrant flow: 0.98 L/s to 10,388 L/s
- Majority of locations with fire flow < 33.3 L/s are found in dead-end watermains

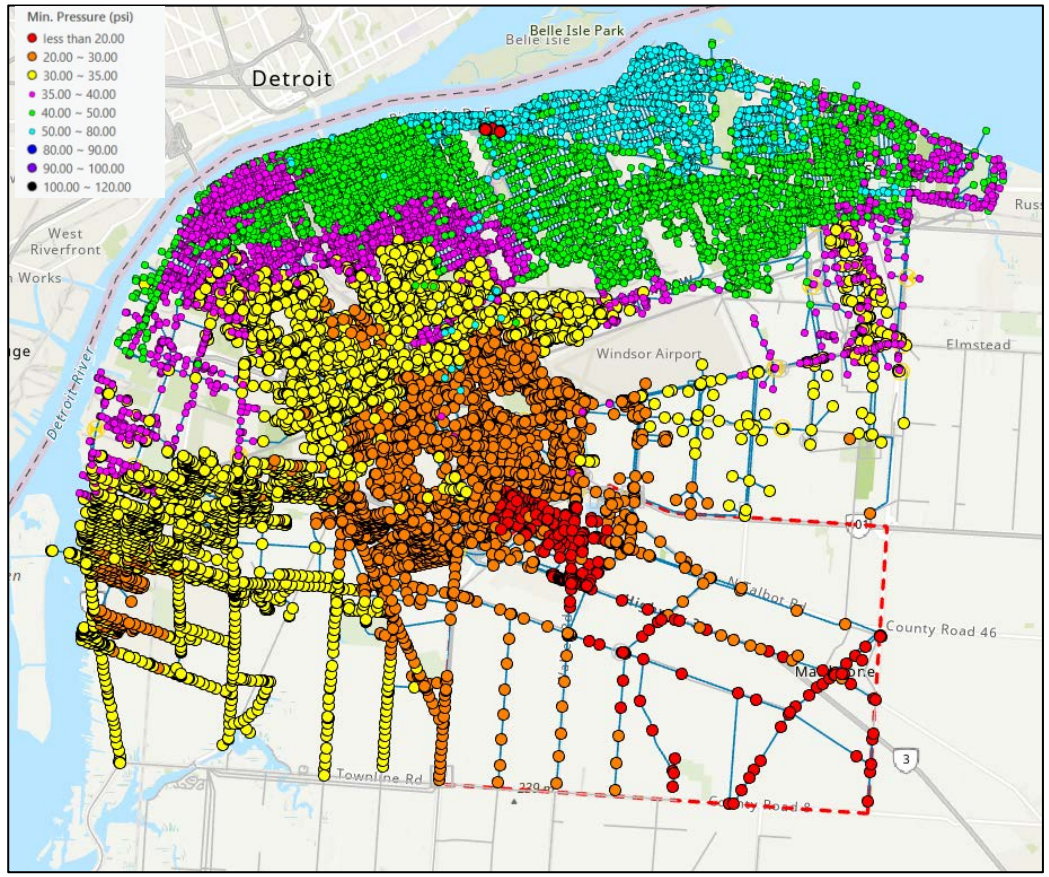
Location 3 – Ex. MDD

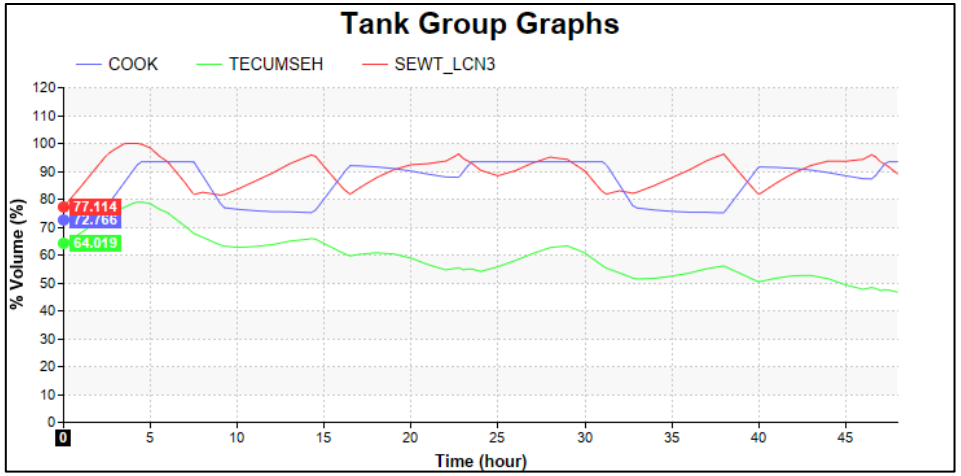




- Existing MDD
- CCFM active
- WM11 active
- All 2023 WSMP infrastructure recommendations are active
- Low pressures exist → Upgrades required

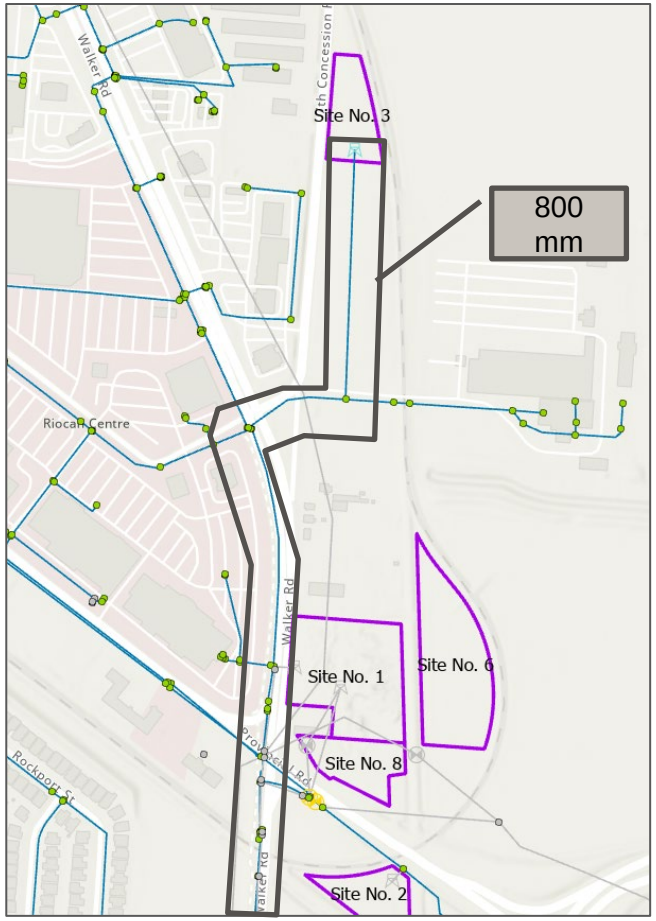
Location 3 – 2049 MDD

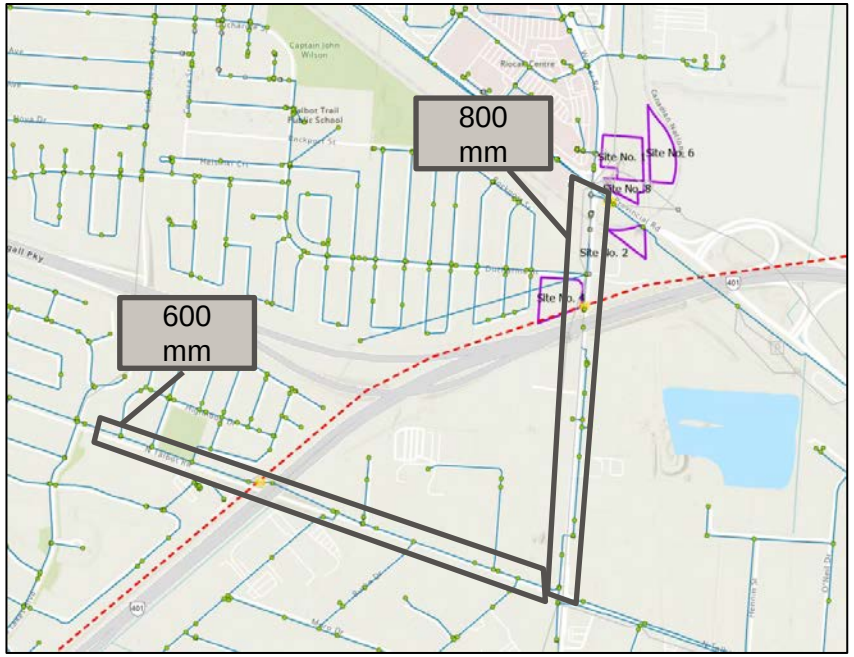




- Existing MDD
- CCFM active
- WM11 active
- All 2023 WSMP infrastructure recommendations are active
- Low pressures exist → Upgrades required

Location 3 – Proposed Off-Site Upgrades

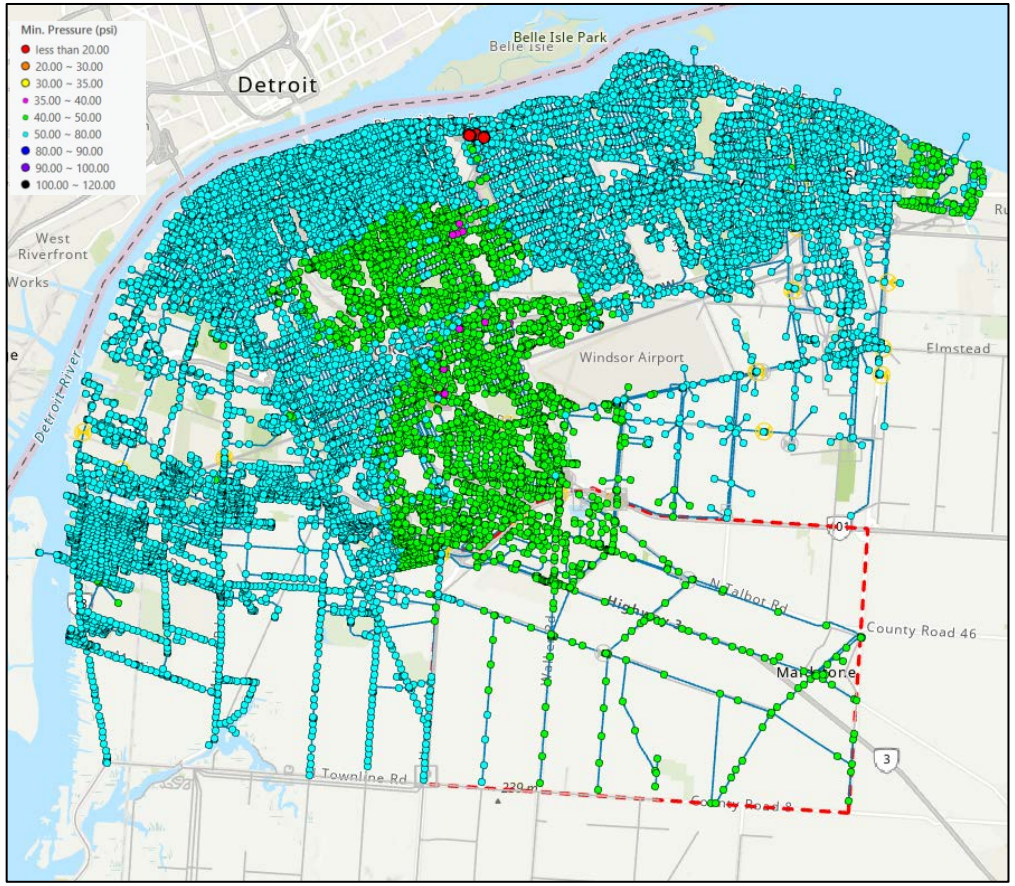


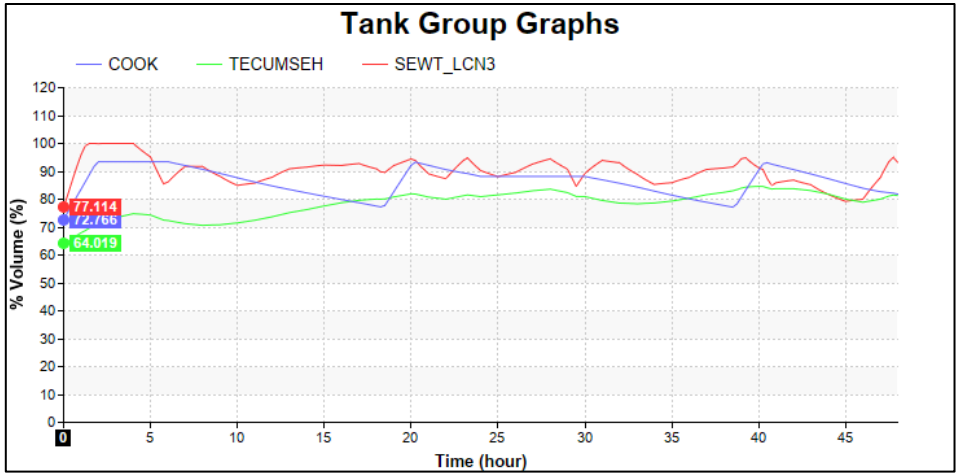


- Tank can connect to 300 mm on Walker Rd or to 300 mm on side road
- Connecting to side road for now since Walker connection will require works through private property

Location	Original Size (mm)	Proposed Size (mm)	Approximate Length (m)
Walker Rd (north of Provincial Rd to SEWT)	300	800	761
Walker Rd (from Provincial Rd to N Talbot Rd)	300	800	1,222
N Talbot Rd (Walker Rd to Sixth Concession Rd)	300	600	1,554

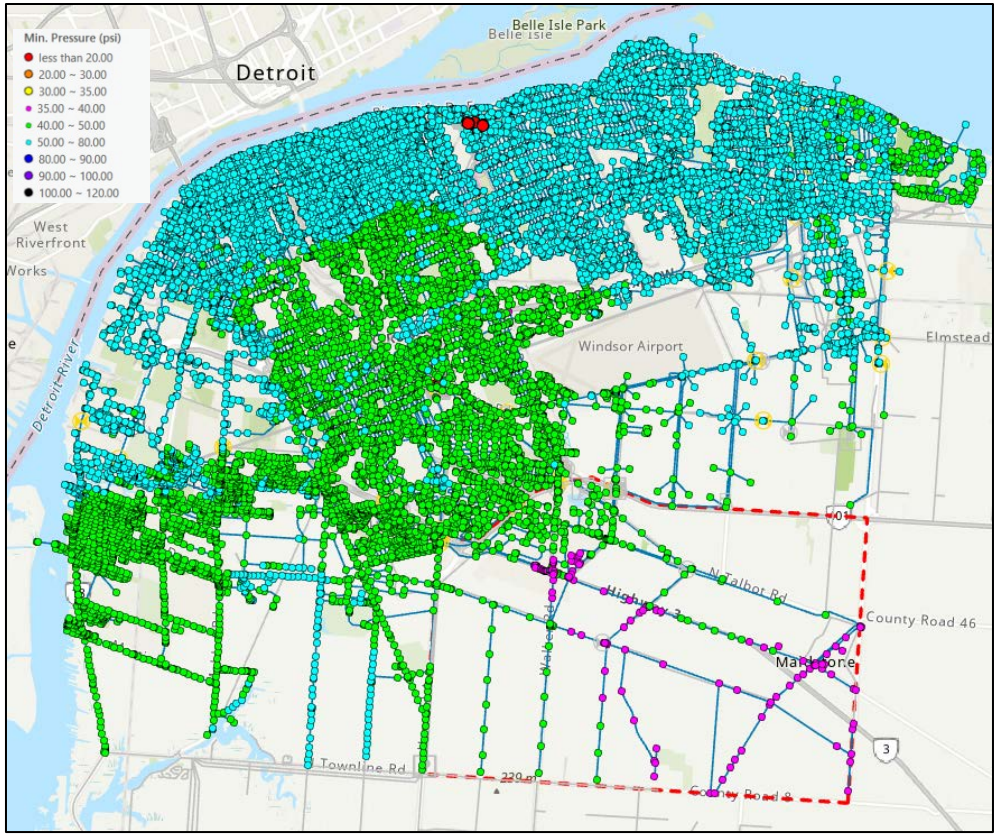
Location 3 – Ex. MDD + Upgrades

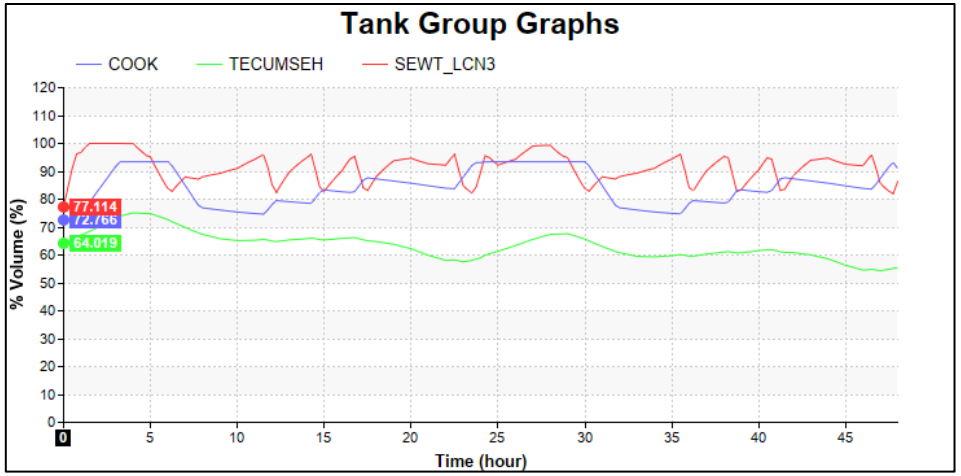




- Existing MDD + Upgrades
- CCFM active
- WM11 active
- All 2023 WSMP infrastructure recommendations are active
- SEWT operating between 80 – 100% full → in line with the operating range of Cook (slightly higher)
- Low pressure areas are resolved

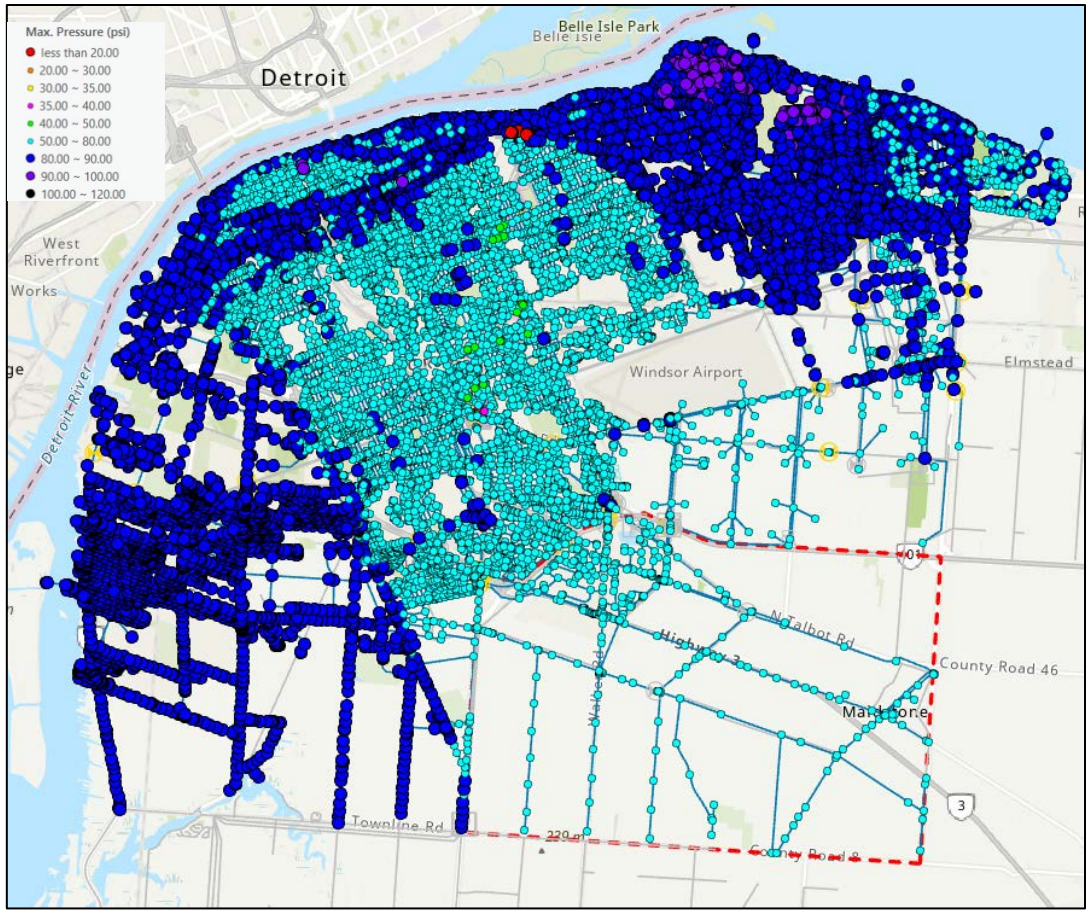
Location 3 – 2049 MDD + Upgrades

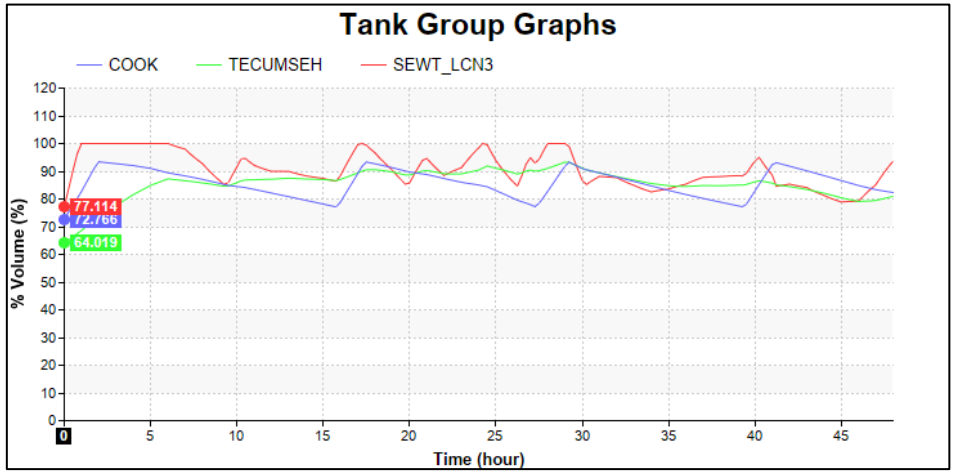




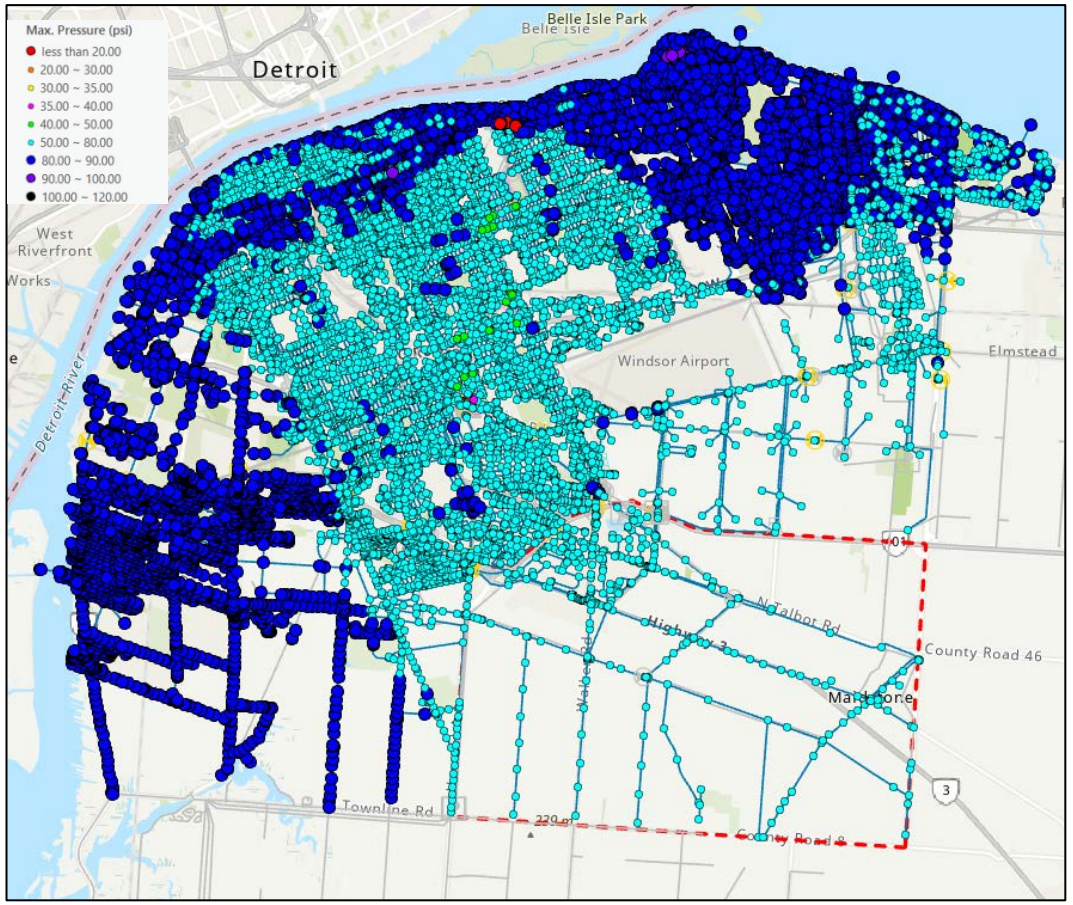
- 2049 MDD + Upgrades
- Low pressures resolved in Windsor
- Tecumseh area still experiencing low pressures
- Water levels Tecumseh ET show decreasing trend which may be resolved through secondary pressure zone and/or control optimization

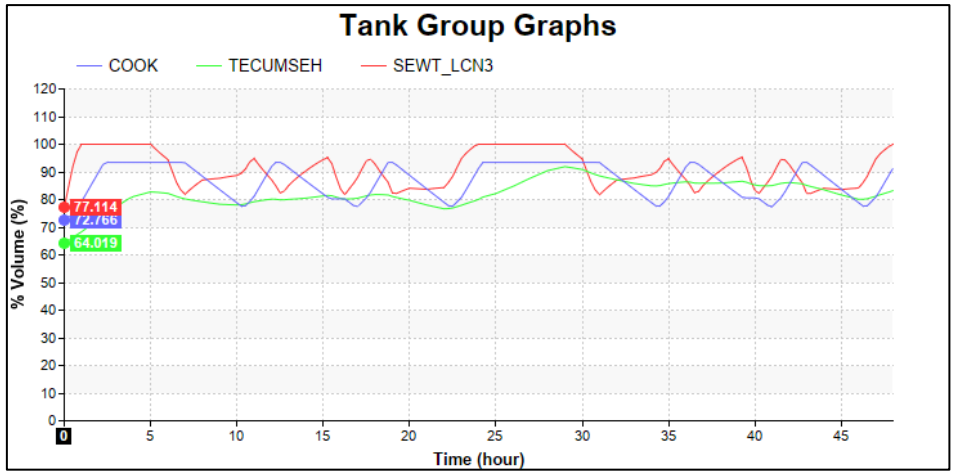
Location 3 – Ex. ADD + Upgrades



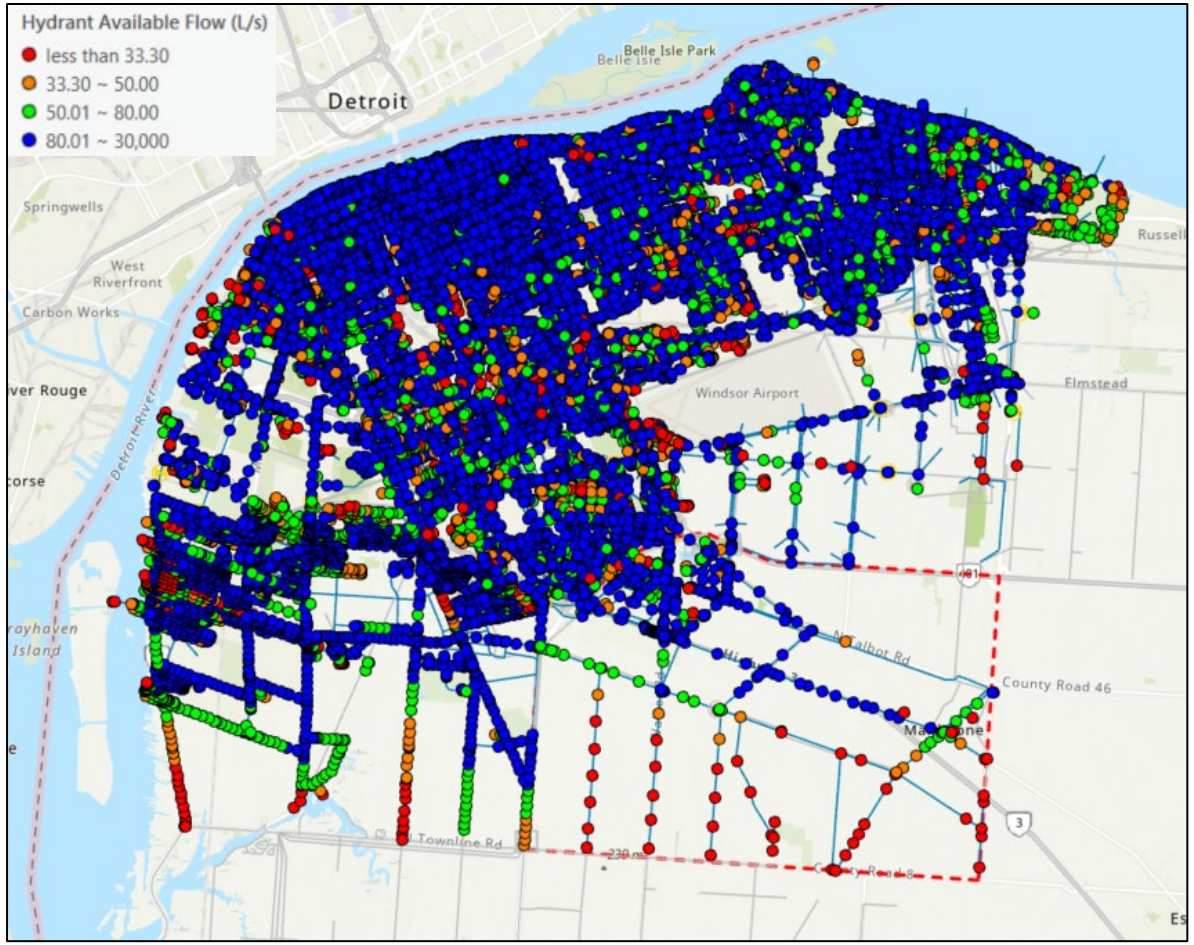


Location 3 – 2049 ADD + Upgrades



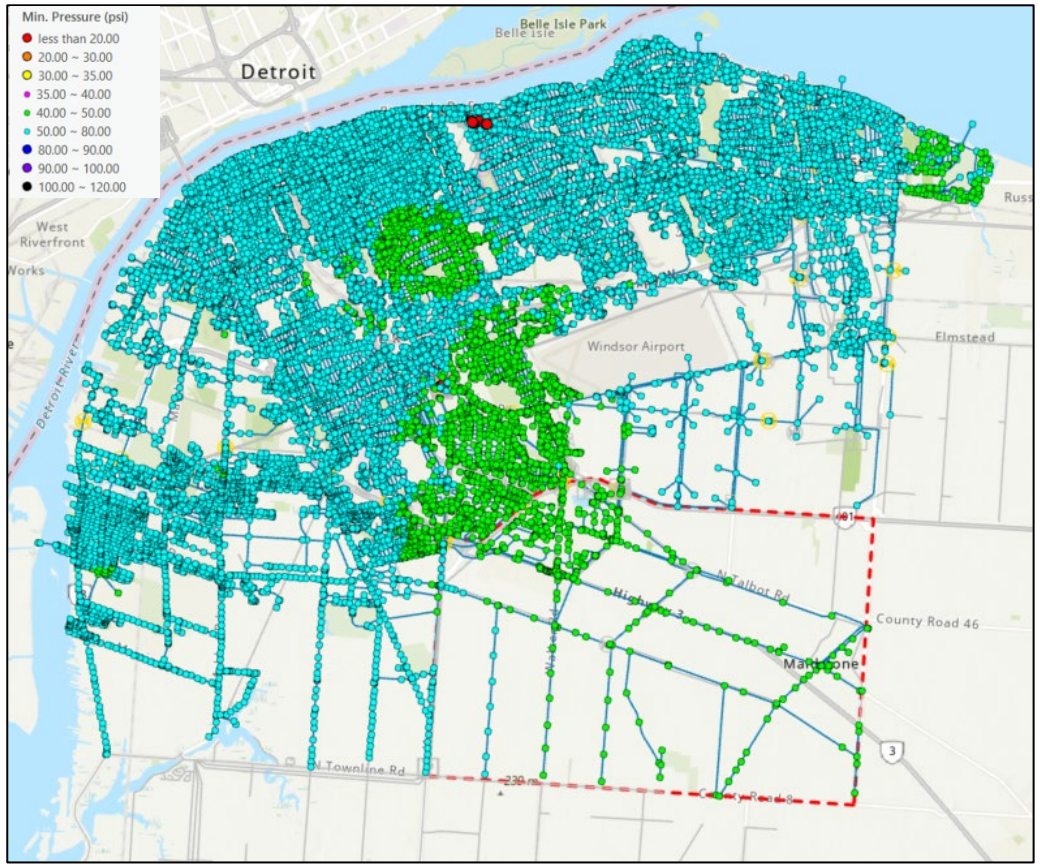


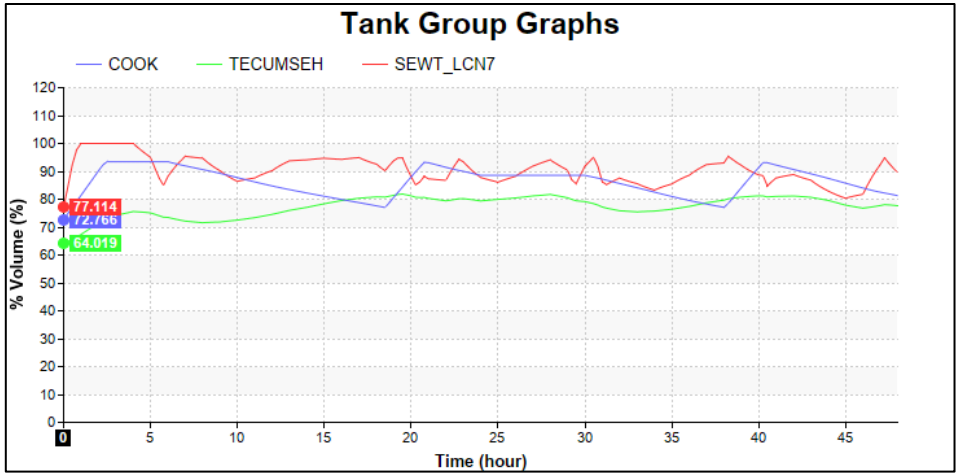
Location 3 – 2049 MDD + FF



- Network includes proposed upgrades
- Hydrant available flow at a residual pressure of 20 psi
- Available hydrant flow: 0.93 L/s to 4,803 L/s
- Majority of locations with fire flow < 33.3 L/s are found in dead-end watermains

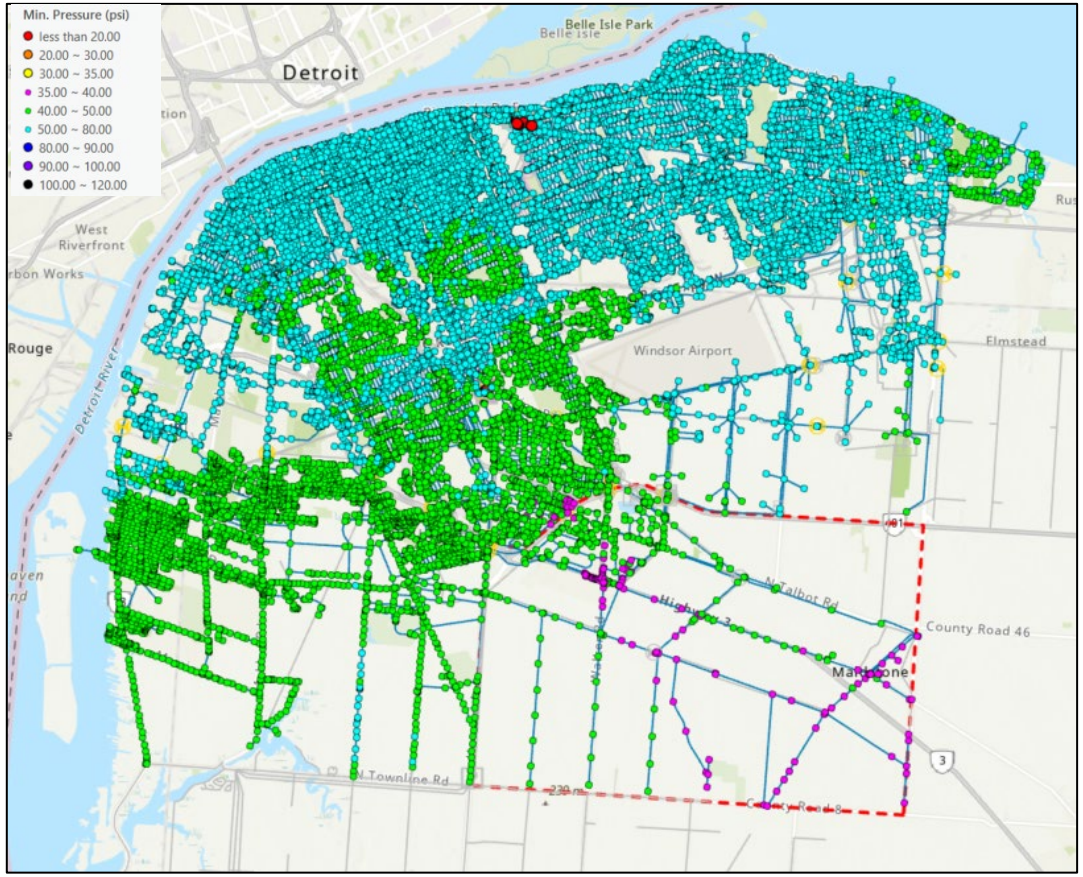
Location 7 – Ex. MDD

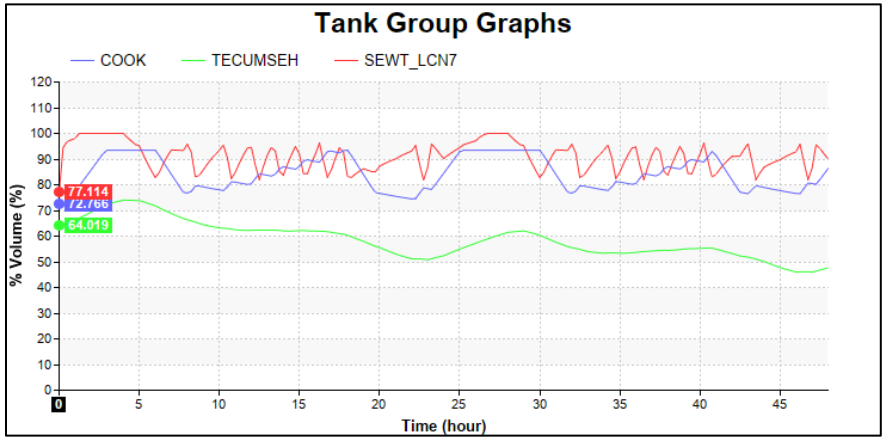




- Existing MDD
- CCFM active
- WM11 active
- All 2023 WSMP infrastructure recommendations are active
- Pressures > 40 psi

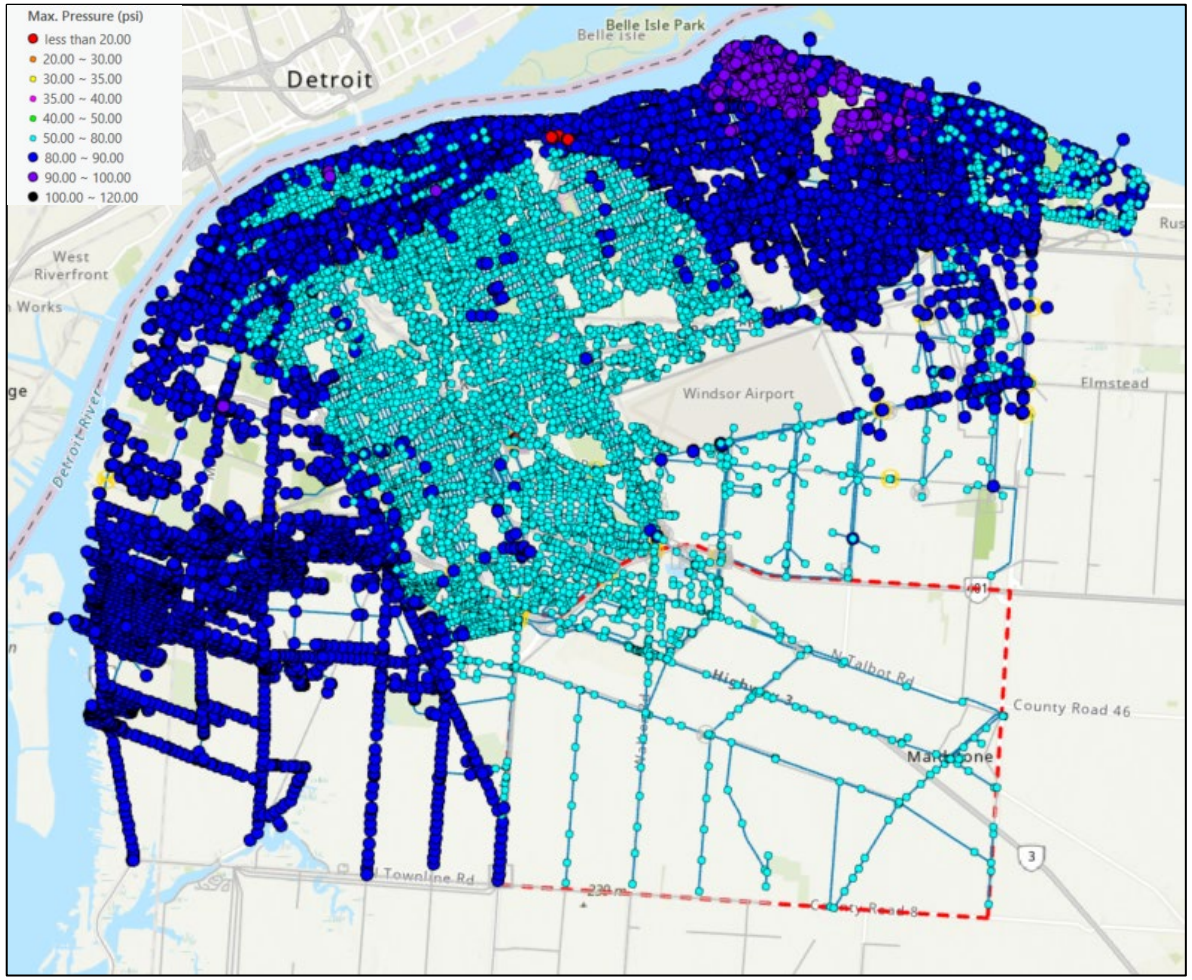
Location 7 – 2049 MDD

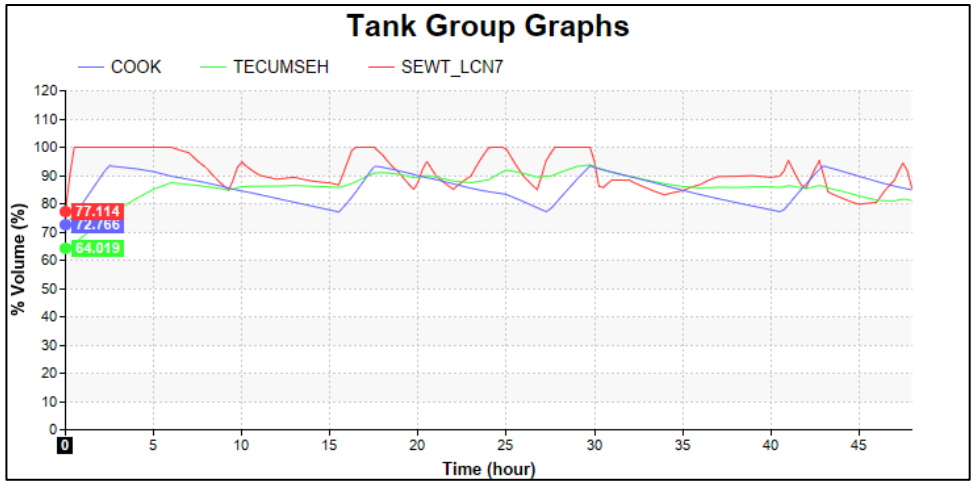




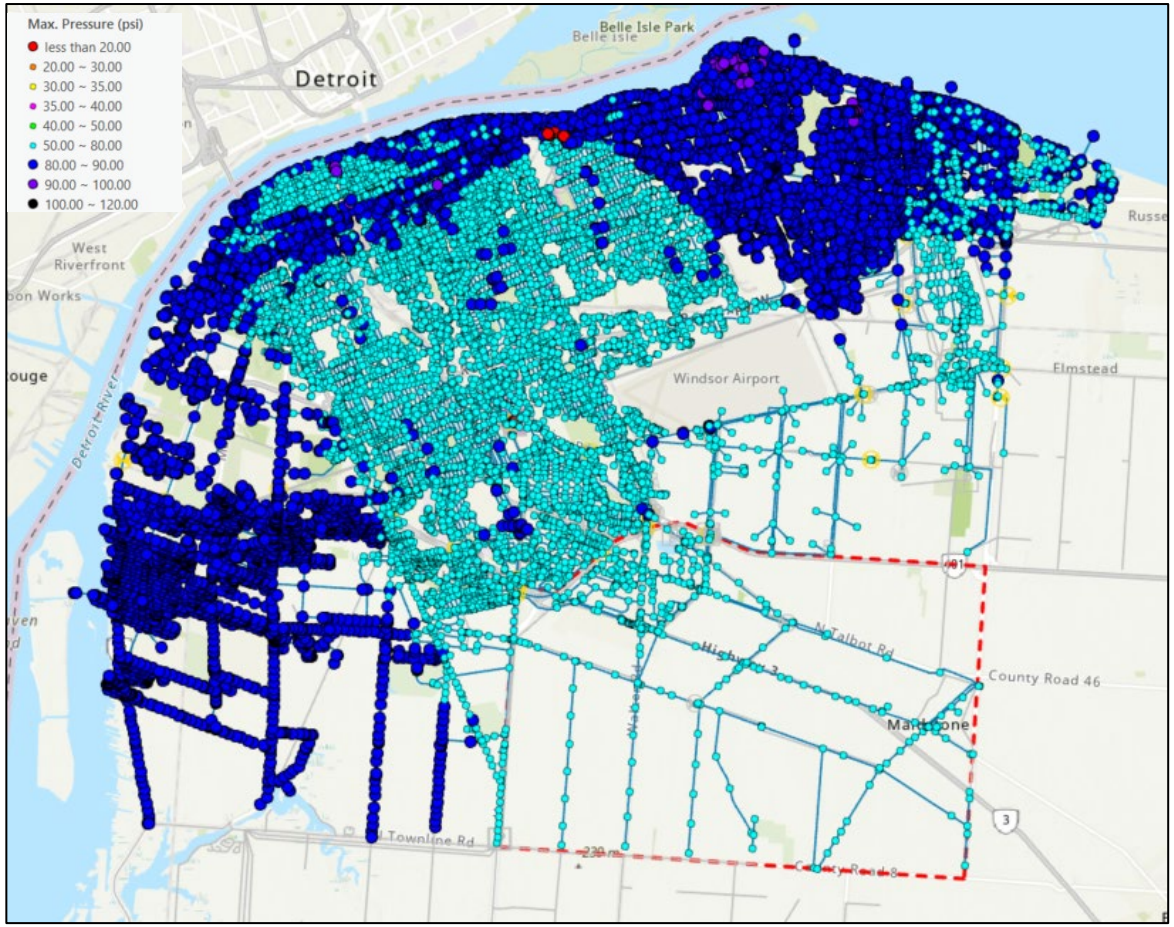
- 2049 MDD
- CCFM active
- WM11 active
- All 2023 WSMP infrastructure recommendations are active
- Decreasing trend in Tecumseh ET water levels
- SEWT water levels oscillating frequently → may be optimized with pump controls

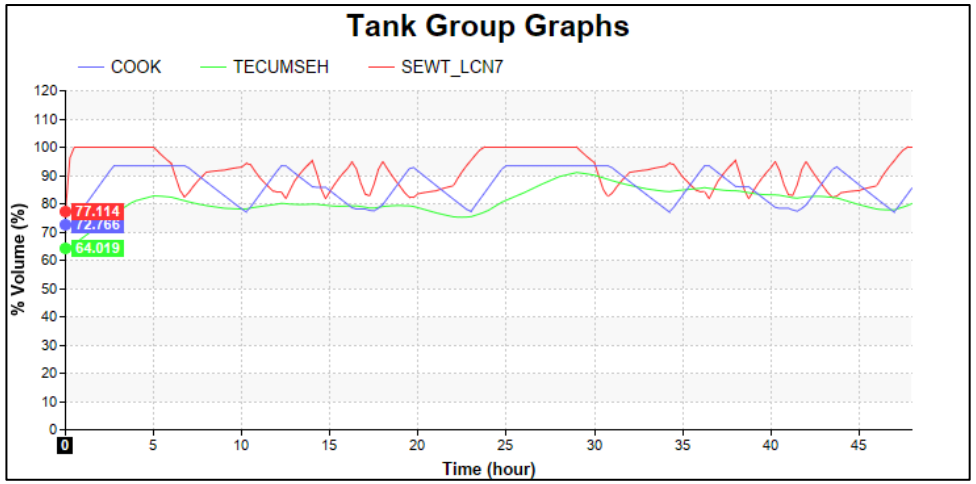
Location 7 – Ex. ADD



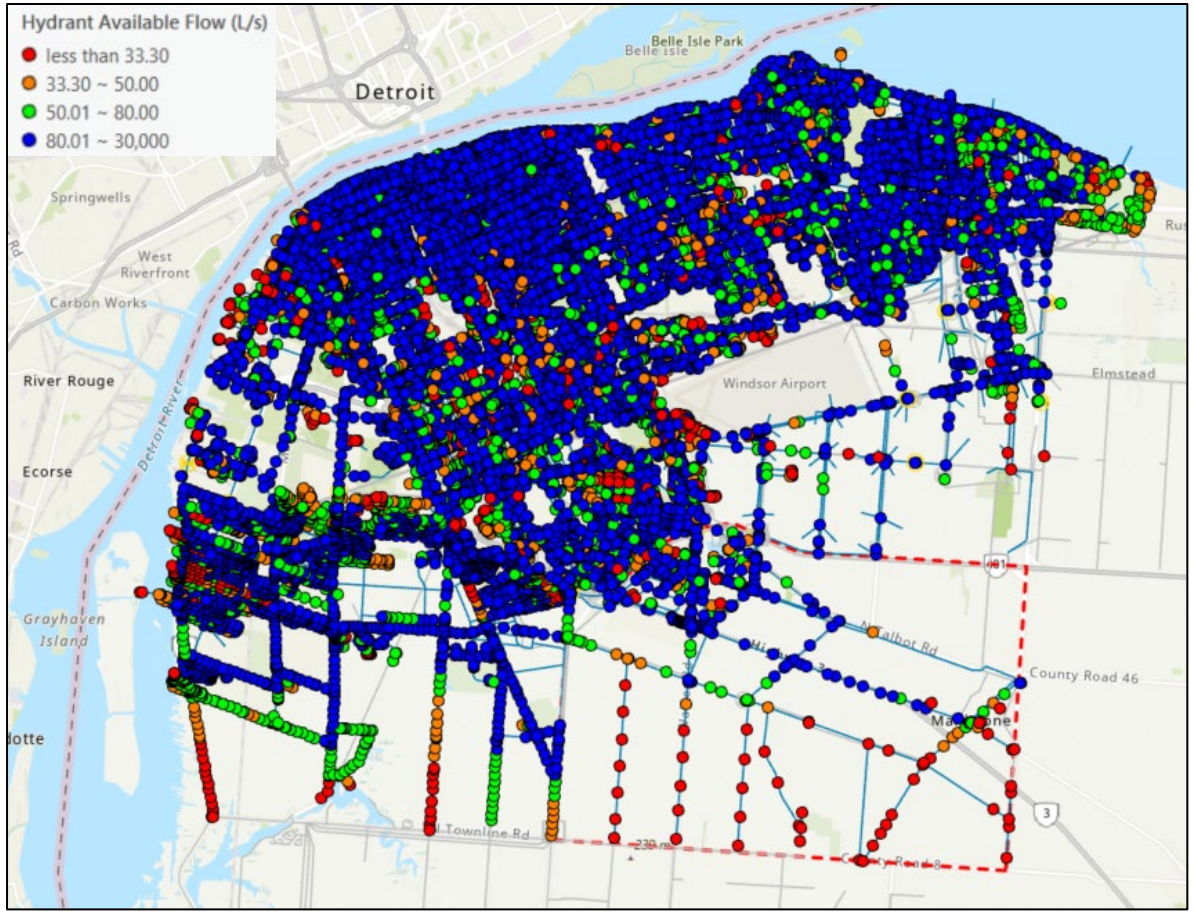


Location 7 – 2049 ADD





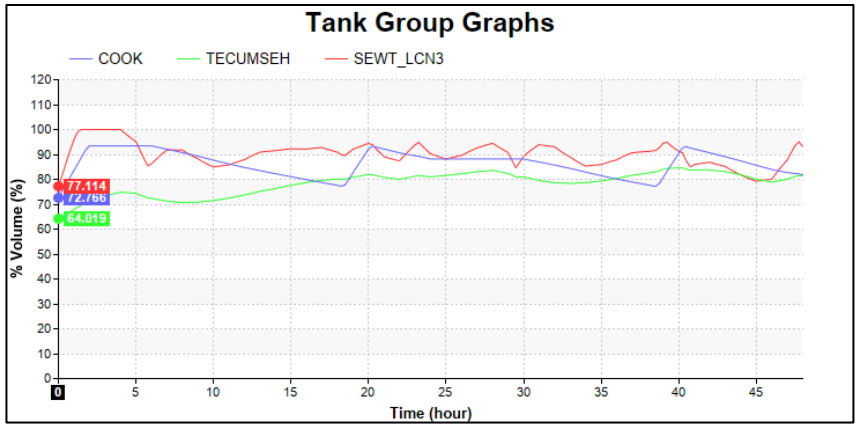
Location 7 – 2049 MDD + FF



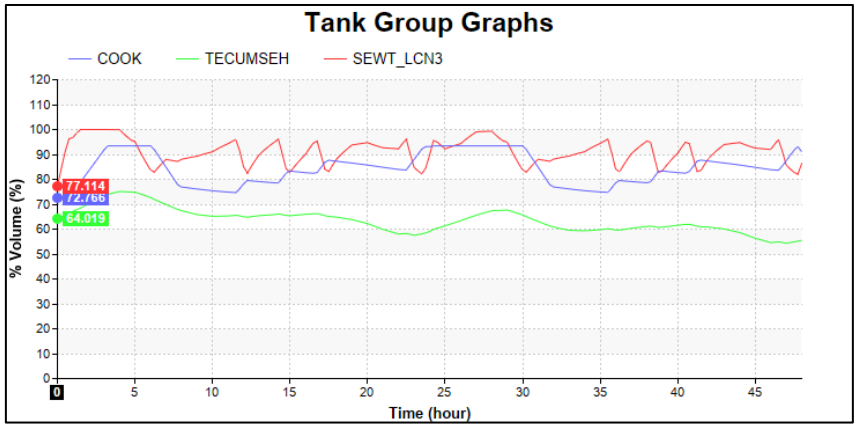
- Network includes proposed upgrades
- Hydrant available flow at a residual pressure of 20 psi
- Available hydrant flow: 0.91 L/s to 7,651 L/s
- Majority of locations with fire flow < 33.3 L/s are found in dead-end watermains

Location 3 – MDD Controls Optimized

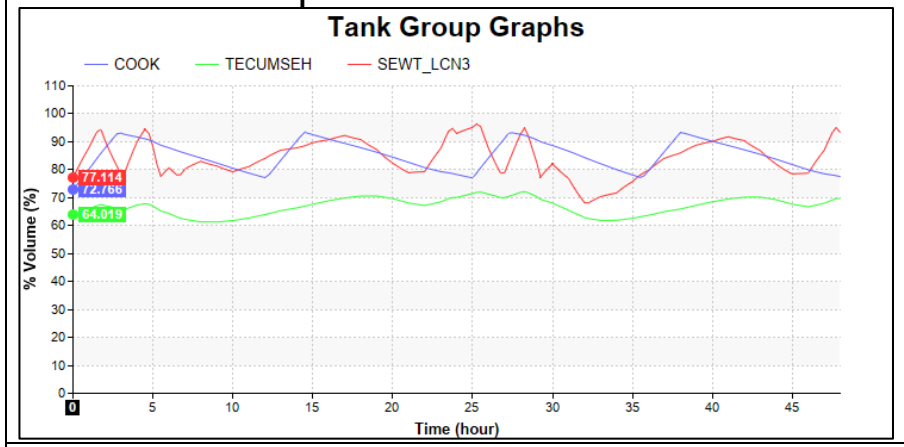
Ex MDD – original controls



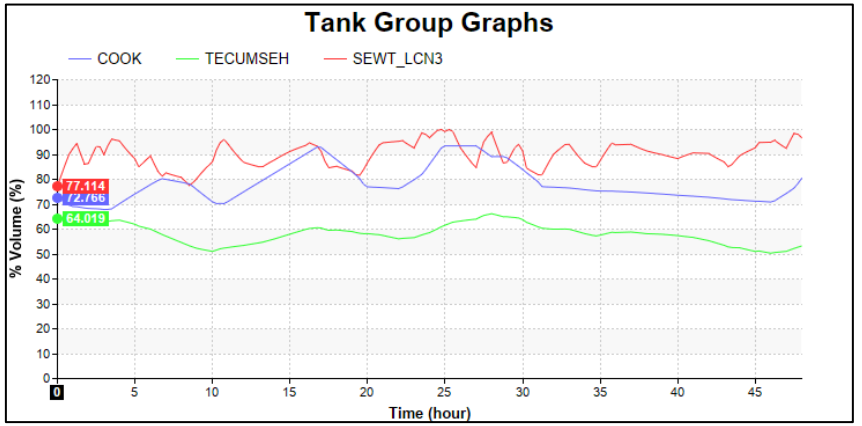
2049 MDD – original controls



Ex MDD – updated controls

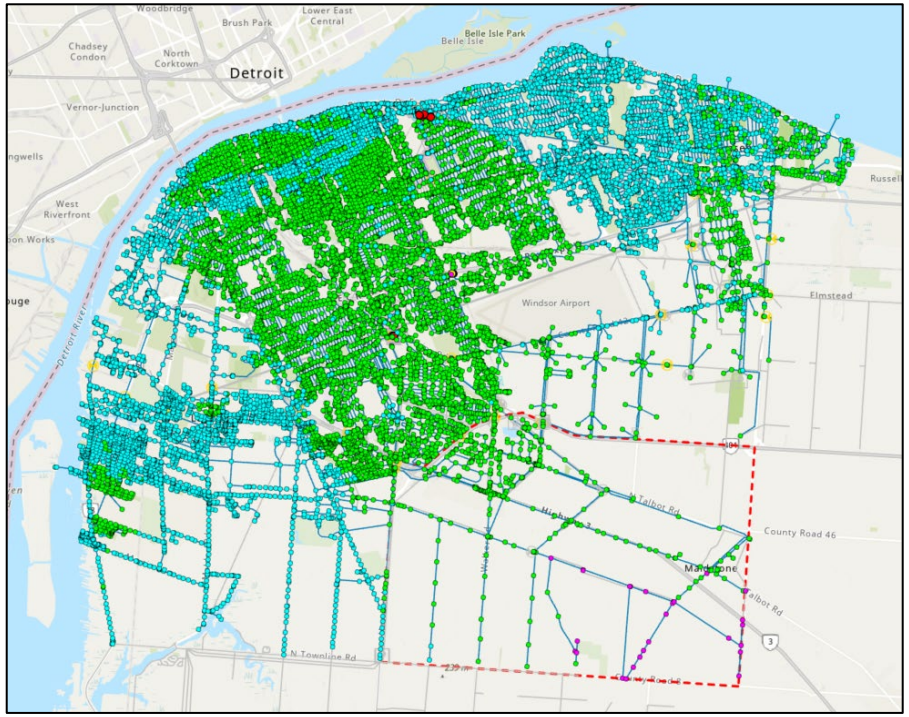


2049 MDD – updated controls

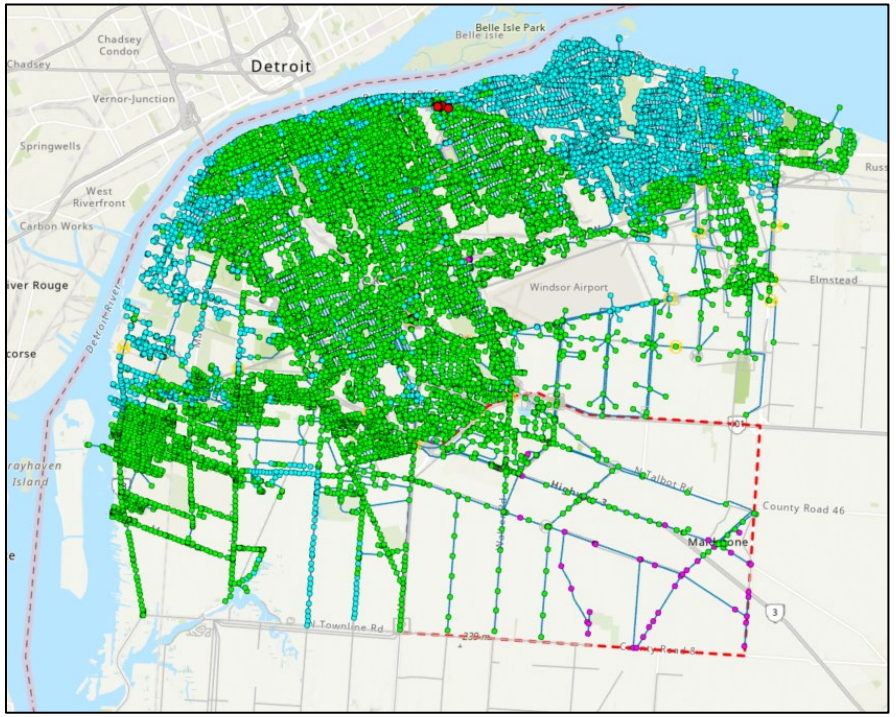


Location 3 – MDD Controls Optimized

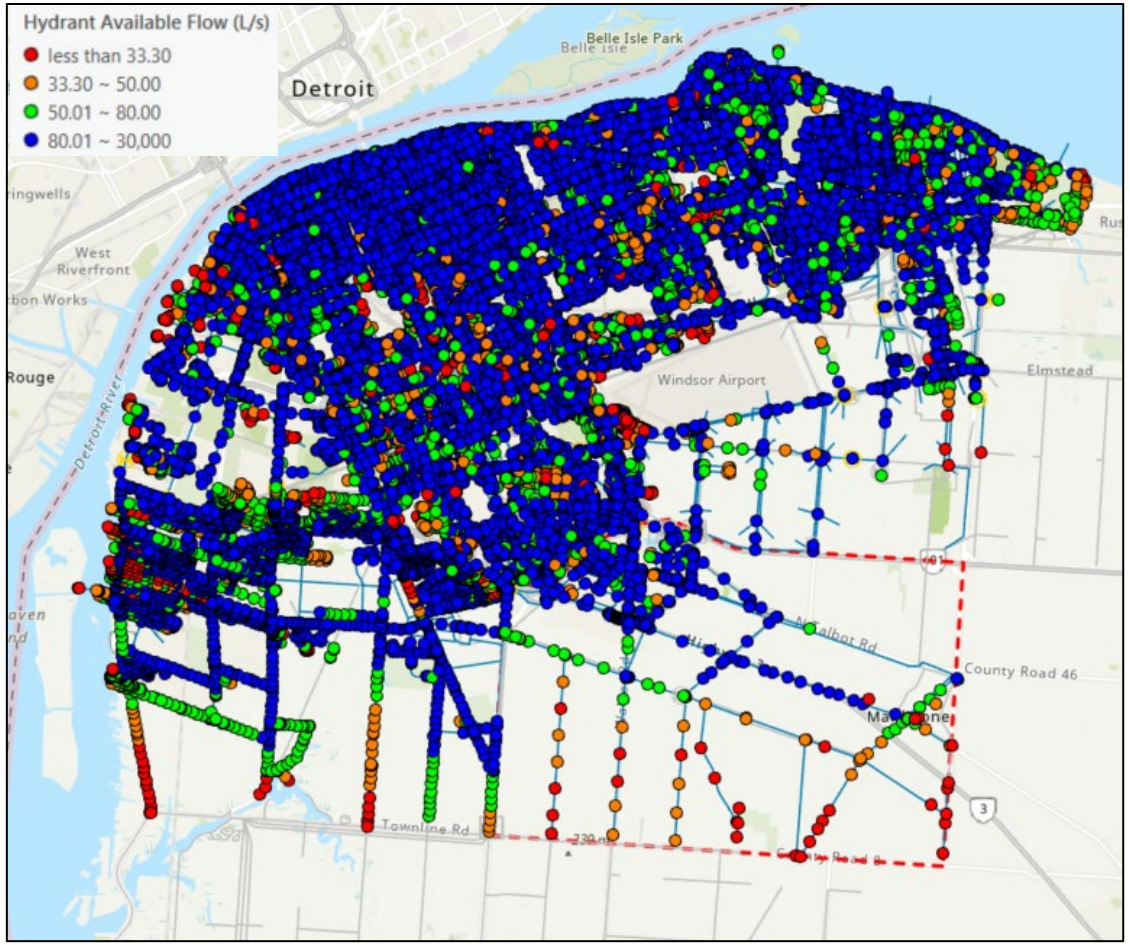
Ex. MDD



2049 MDD



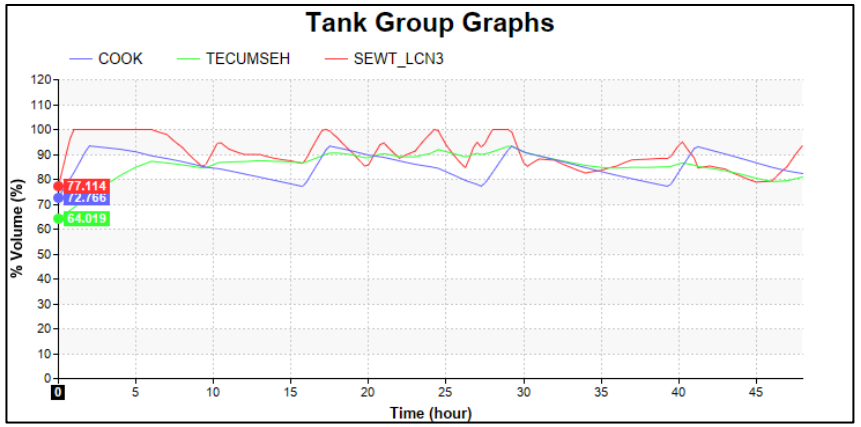
Location 3 (Controls Optimized) – 2049 MDD + FF



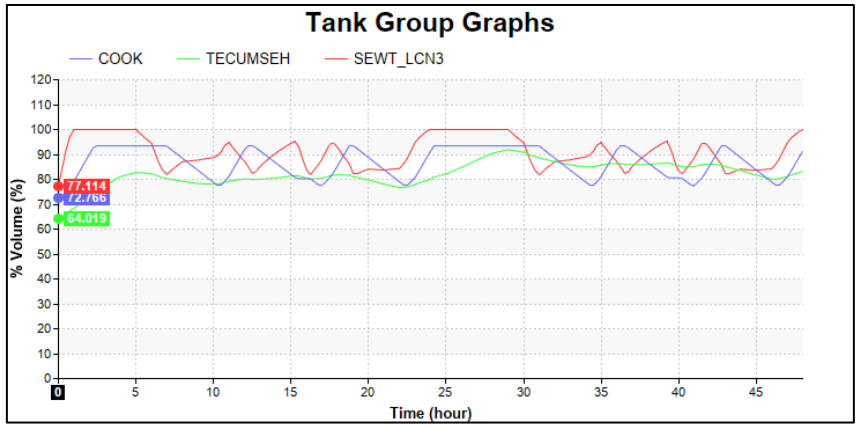
- Network includes proposed upgrades
- Hydrant available flow at a residual pressure of 20 psi
- Available hydrant flow: 0.96 L/s to 4,023 L/s
- Majority of locations with fire flow < 33.3 L/s are found in dead-end watermains

Location 3 – ADD Controls Optimized

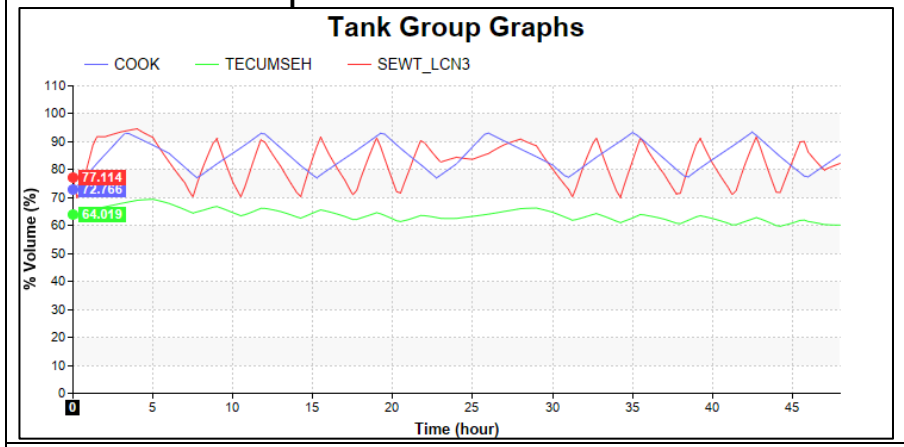
Ex ADD – original controls



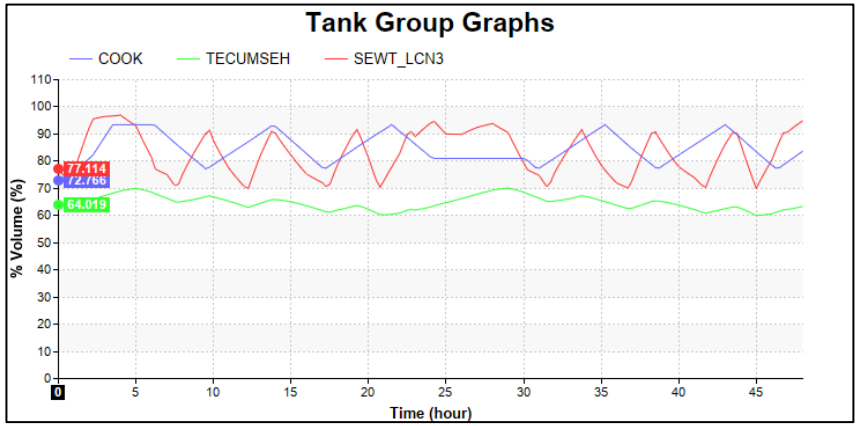
2049 ADD – original controls



Ex ADD – updated controls

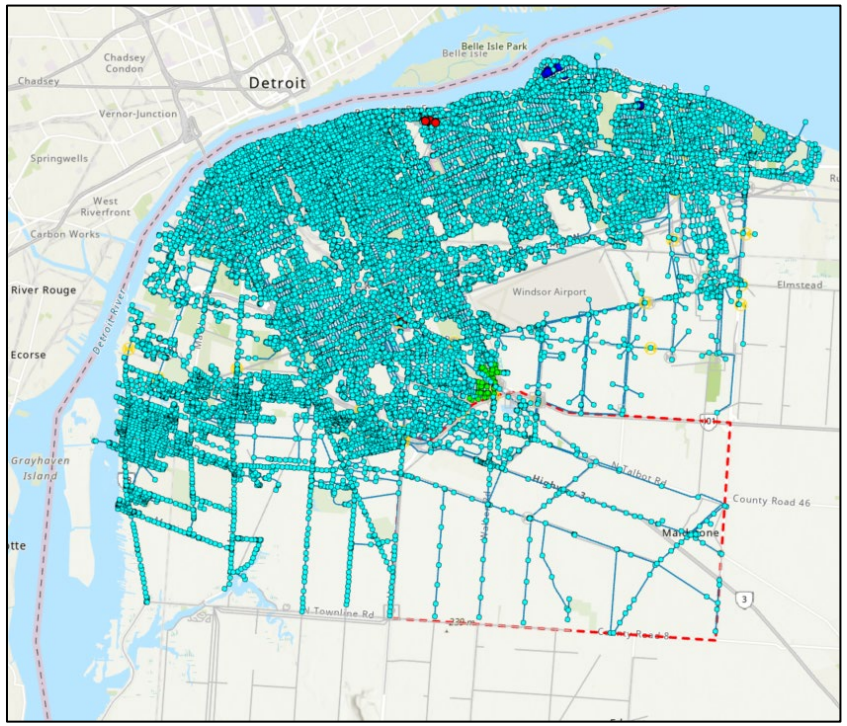


2049 ADD – updated controls

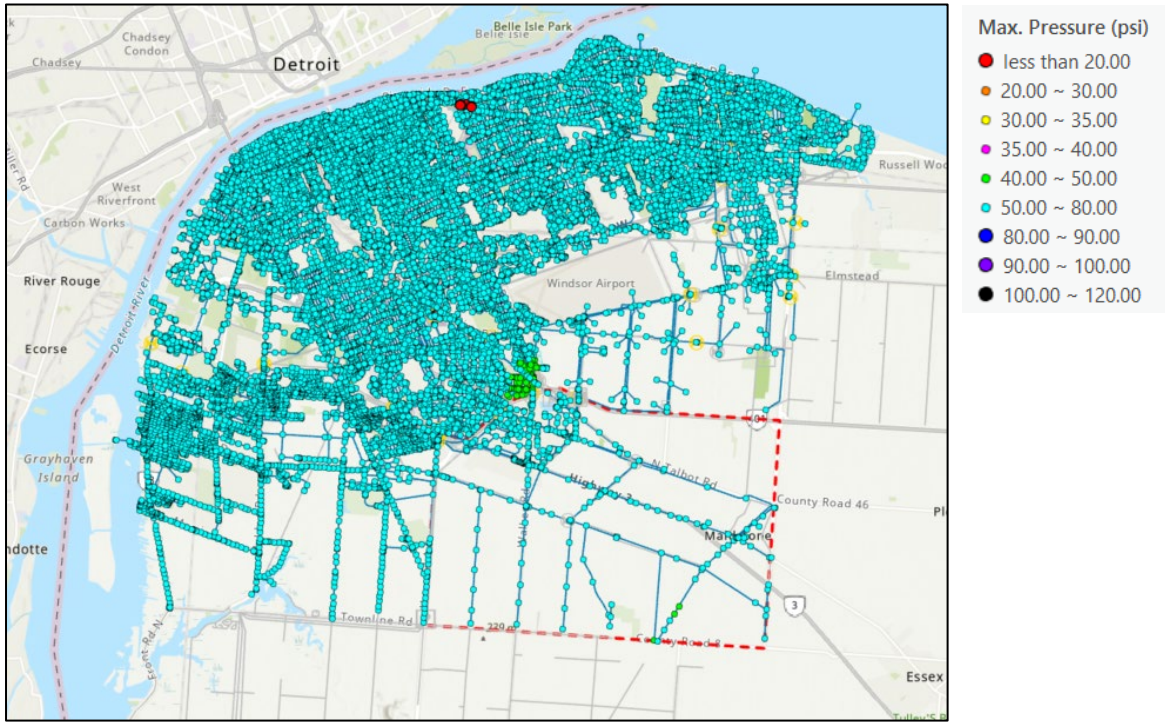


Location 3 – ADD Controls Optimized

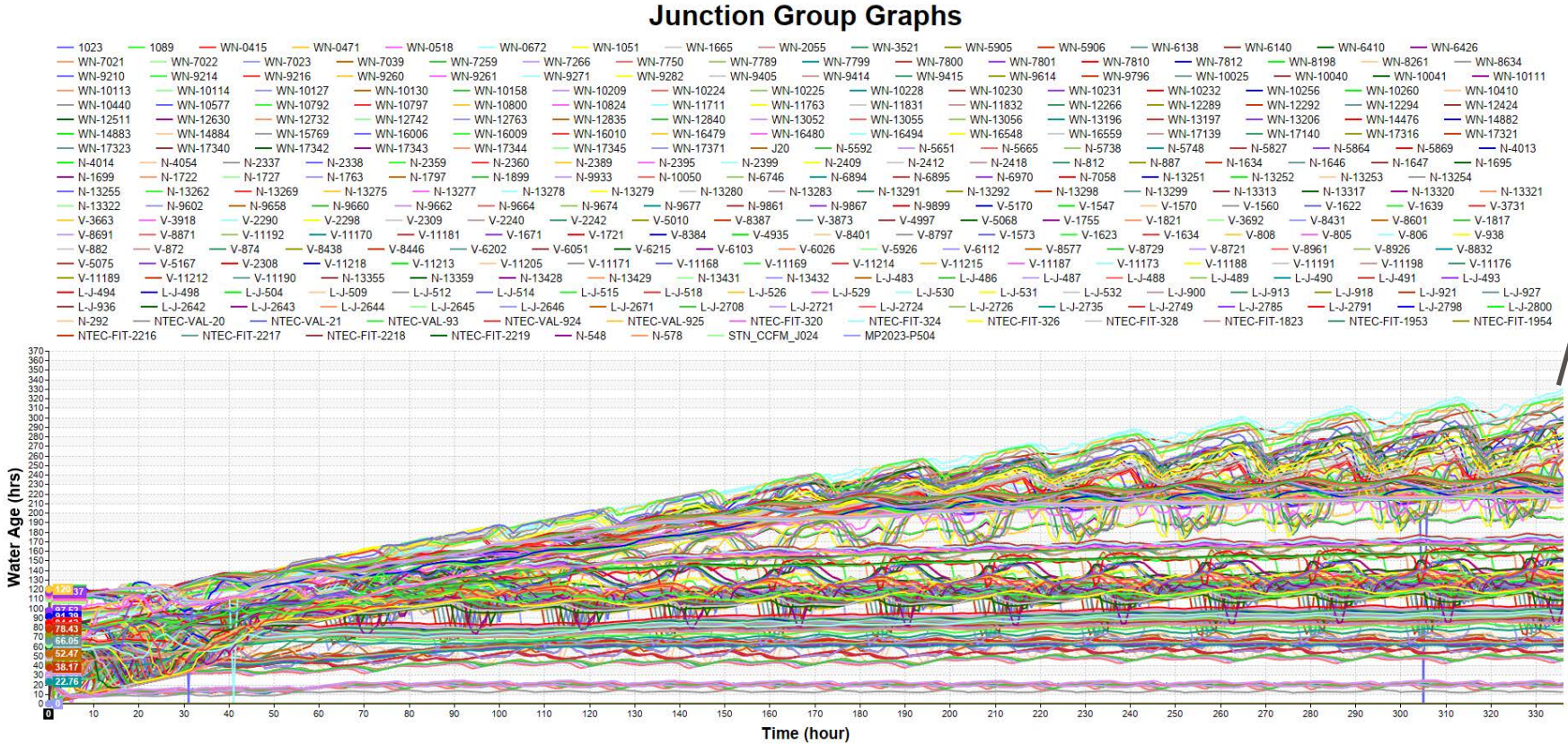
Ex. ADD



2049 ADD



Water Age – Existing ADD Baseline (MP)

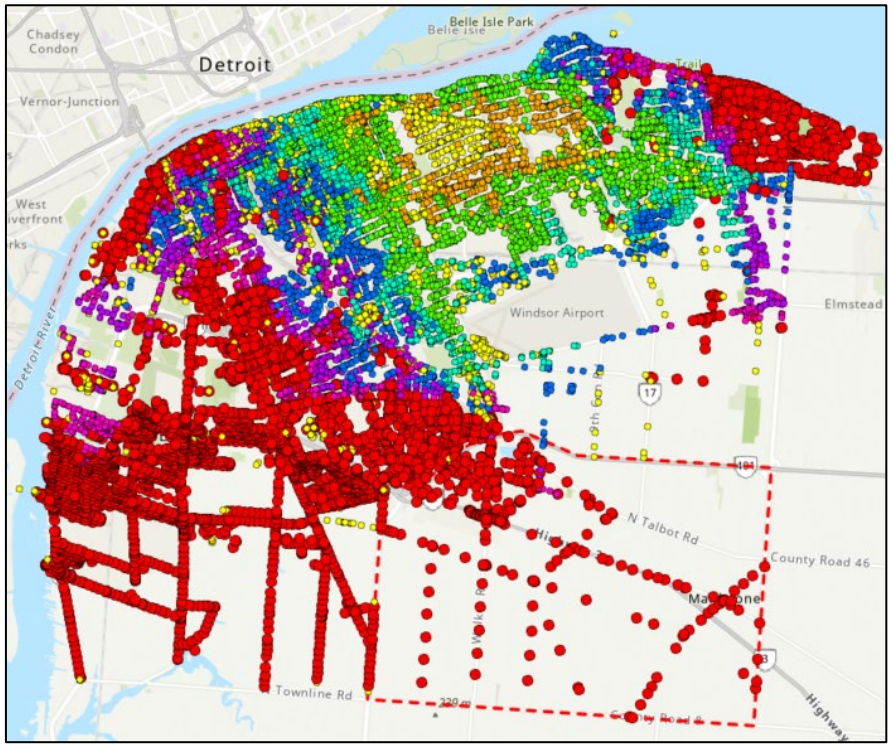


Some of the higher water age junctions still don't plateau after 14 days

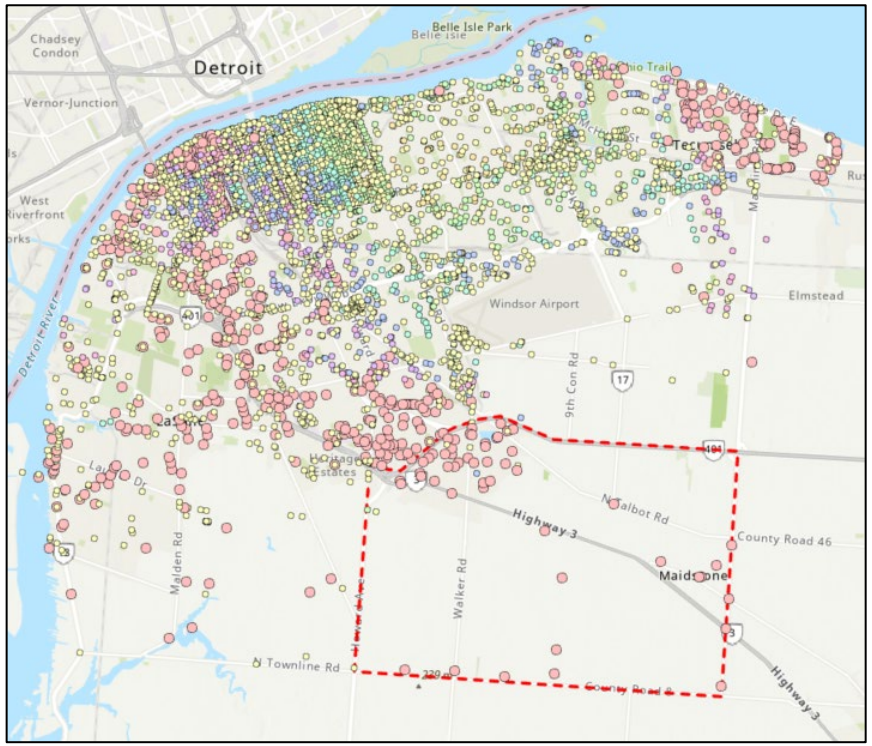
- Ran 14-day simulation
- Water age ranges from 0.6 hrs to > 413 hrs

Sample nodes across system

Water Age – Existing ADD Baseline (MP)



Dead end nodes removed

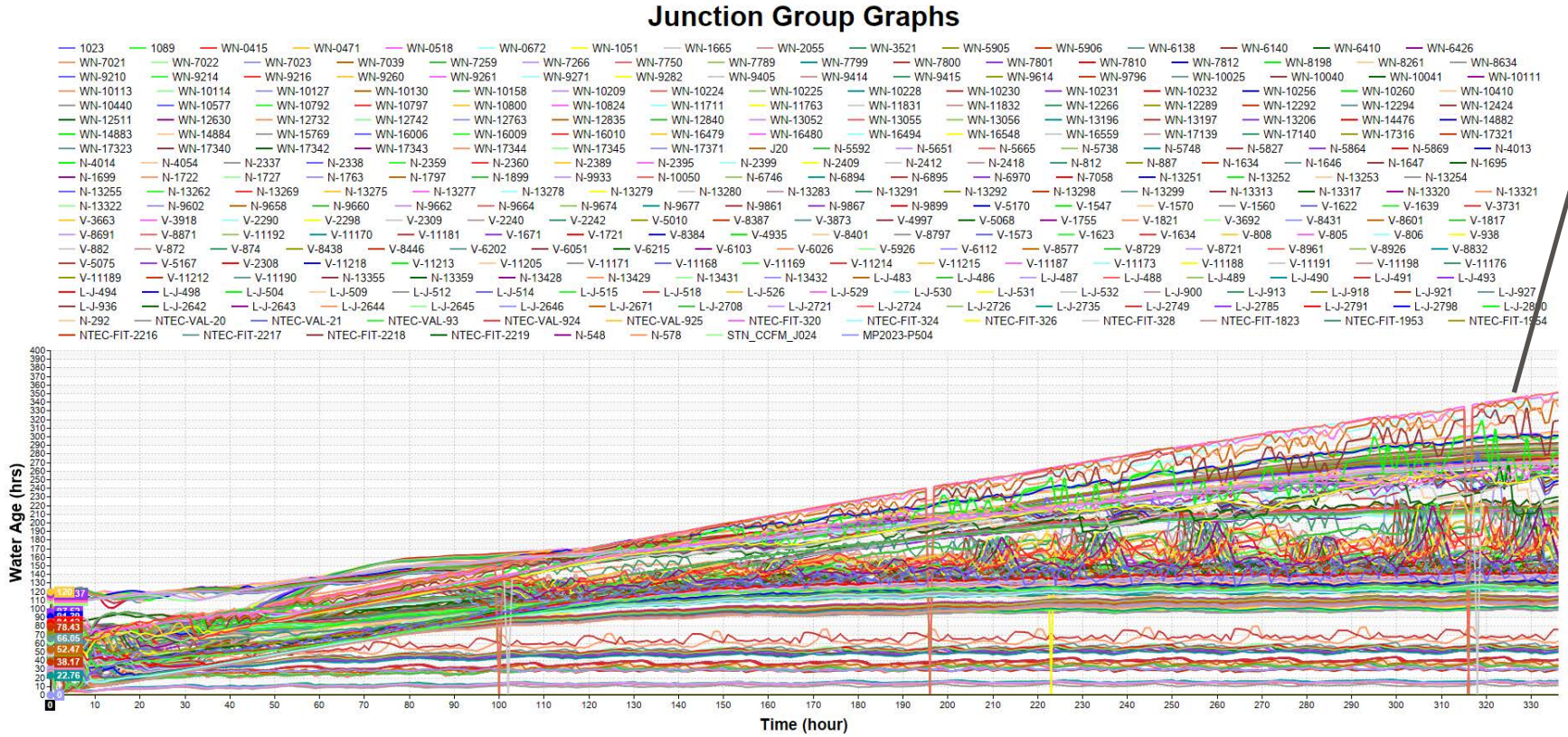


Dead end nodes only

5 days = 120 hr
8 days = 192 hr
Large amount of existing system has water age > 8 days

Average taken from hour 250 - 336

Location 3 SEWT Water Age - Ex. ADD

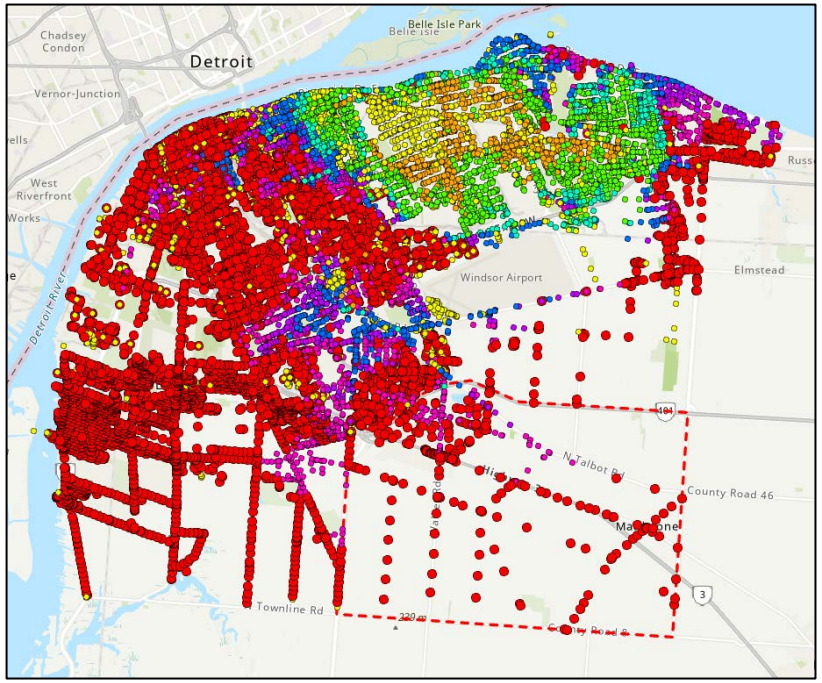


Some of the higher water age junctions still don't plateau after 14 days

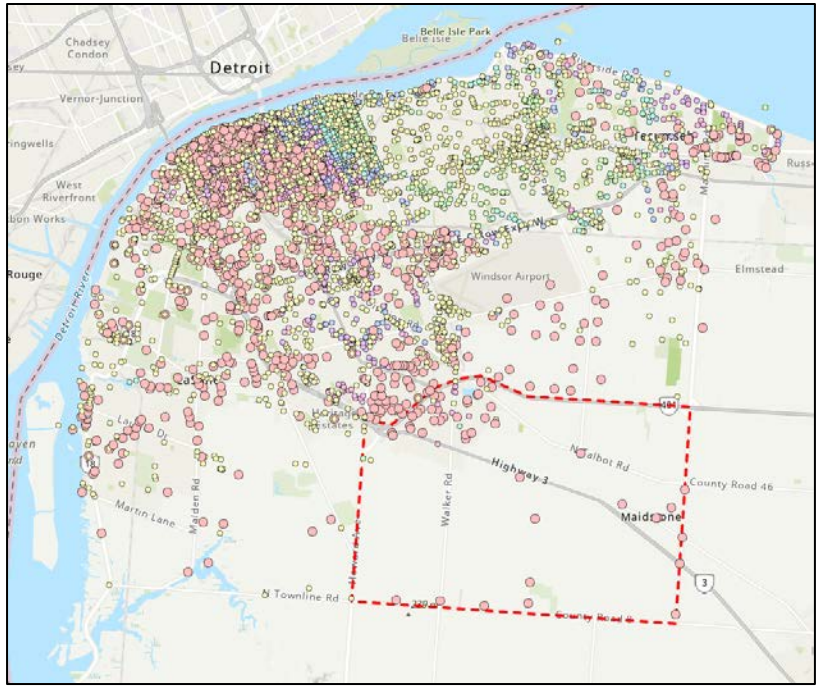
- Ran 14-day simulation
- Water age ranges from 1.1 hrs to > 353 hrs

Sample nodes across system

Location 3 SEWT Water Age - Ex. ADD



Dead end nodes removed

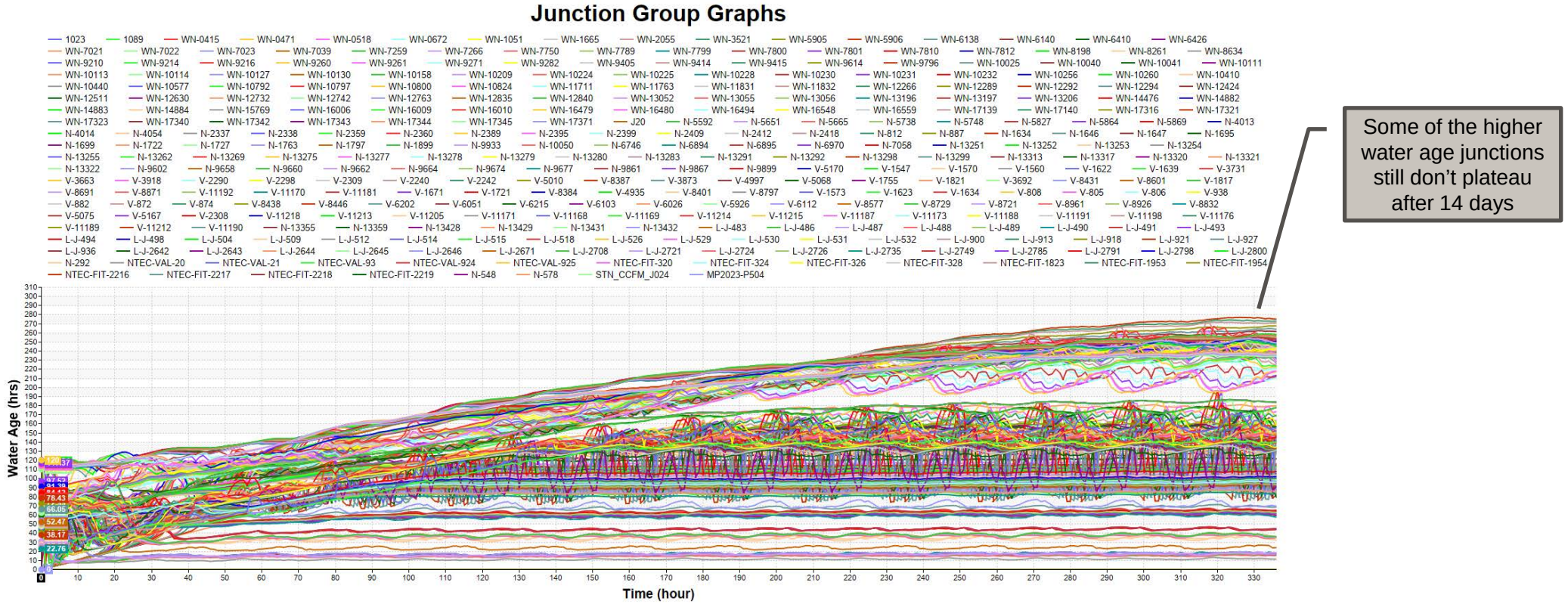


Dead end nodes only

- *5 days = 120 hr*
- *8 days = 192 hr*
- System seems to follow same general trends as baseline existing
- Slight improvements in northeast area
- Some areas have higher water age in the north and centre

Average taken from hour 250 - 336

Location 3 SEWT Water Age - 2049 ADD

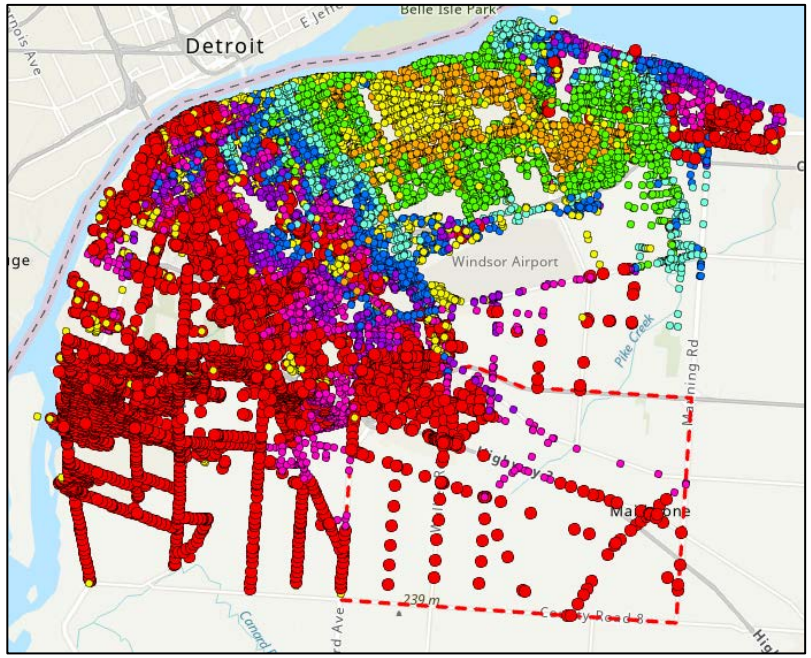


Some of the higher water age junctions still don't plateau after 14 days

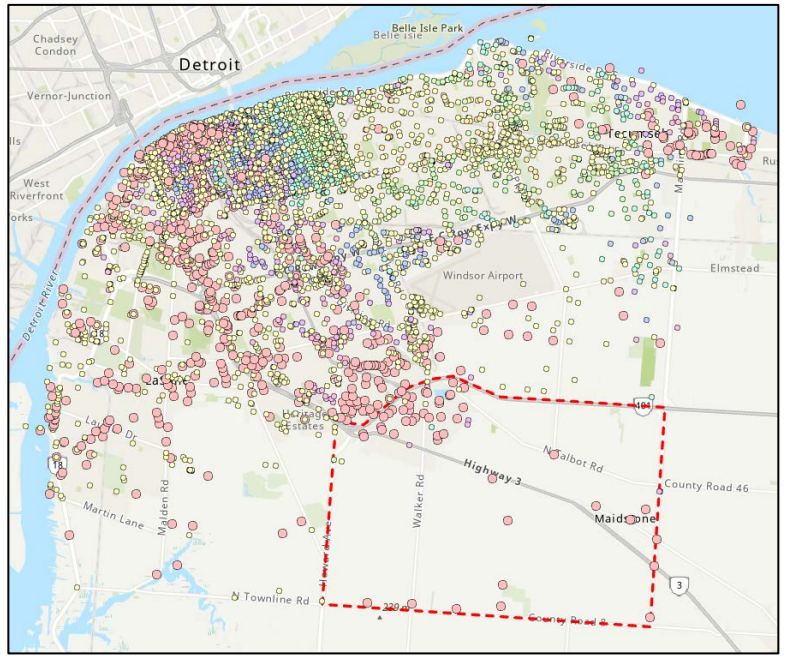
- Ran 14-day simulation
- Water age ranges from 0.6 hrs to > 413 hrs

Sample nodes across system

Location 3 SEWT Water Age - 2049 ADD



Dead end nodes removed



Dead end nodes only

- *5 days = 120 hr*
- *8 days = 192 hr*
- Majority of the system is comparable to baseline results

Average taken from hour 250 - 336

Stantec

Memo

To: Christopher Manzon, P.Eng.
ENWIN Utilities Ltd. 4545 Rhodes Dr
Windsor, Ontario N8W 5T1 Phone: (519) 251-7300, ext. 295

From: Gillian Wilton, M.E.Sc., P.Eng.
Jasmin Sidhu, P.Eng.
Stantec Consulting Ltd.
2555 Ouellette Avenue, Suite 100
Windsor, Ontario N8X 1L9
Phone: (226) 704-3060

Project/File: 165620304

Date: January 30, 2026

Reference: Elevated Water Tower Schedule B – Municipal Class Environmental Assessment Technical Memorandum No. 4 – Water Modelling – Addendum #1

Hello Chris,

Please see Technical Memorandum No. 4 – Addendum #1 for the Elevated Water Tower, Schedule 'B' Municipal Class Environmental Assessment (MCEA). This Technical Memorandum covers the updated hydraulic water modelling carried out for the new proposed elevated storage tank, specifically pertaining to the selected site location (location 3).

1 Introduction

Technical Memo (TM) No. 4 was previously submitted by Stantec on June 2, 2025. This memo covered the modelling analysis that was carried out to evaluate the location options for the proposed new Southerly Elevated Water Tower (SEWT). The SEWT was listed as an infrastructure upgrade recommendation from the Windsor Utilities Commission (WUC) Water System Master Plan (WSMP) 2023 Update. The existing Hanna ET is currently used as a control of the high lift pumping at the Water Treatment Plant (WTP) and is scheduled to be decommissioned by 2027 and replaced with a new SEWT. The SEWT is proposed to provide water supply to Windsor water distribution system, particularly throughout South Windsor.

Since the submission of TM No. 4, feedback has been provided from ENWIN regarding the recommended upgrades to support the SEWT location alternatives. Additionally, the location alternatives have been evaluated to select a preferred site. As part of TM No. 3, all eight locations were evaluated based on the following criteria, which include the previously documented modelling results:

- Proximity and ease of connection to trunk watermain;
- Site access;
- Available pressure and fire flows in the distribution system;
- Proximity to drainage outlet;
- Impacts on adjacent land uses during construction;
- Proximity to residential areas;

- Zoning requirements;
- Property ownership; and,
- Overall cost (land acquisition, site work, and watermain improvements).

The results of the site alternative evaluation determined that Site No. 3, located at 4450 7th Concession Rd, is the preferred location for the proposed SEWT. The site evaluation and selection of the preferred site was carried out in accordance with the Municipal Class Environmental Assessment (Class EA) process and documented in the Project File Report.

ENWIN, who serves as the community's integrated water supply system operator under contract with the WUC, has since acquired the lands of location 3 to move forward with for the implementation of the SEWT. Therefore, updated modelling was required to further refine the watermain upgrades (if any) to support the operation of the SEWT at location 3.

The objectives of this TM Addendum include:

- Update the provided City-wide all-pipe InfoWater Pro hydraulic model to include any proposed watermain upgrades that were not captured by the previous modelling (see **Section 2.4.1**);
- Update the provided City-wide all-pipe InfoWater Pro hydraulic model to operate as a dual-pressure zone system with south Tecumseh operating as an independent pressure zone (see **Section 2.4.2**);
- Complete hydraulic model extended period simulations for the following scenarios: 2021 and 2049 Average Day (i.e., Minimum Hour and Average Day), 2021 and 2049 Maximum Day (i.e., Maximum Day, Peak Hour, and Fire Flow);
- Identify if any watermain upgrades or operational changes are required to support the SEWT and overall system pressures.

2 Modelling Approach

2.1 Serviceability Criteria

The same serviceability criteria used for TM No.4 (June 2, 2025) is used for the modelling analysis presented in this addendum. The serviceability requirements for the system with respect to system pressures and velocities are specified in the Windsor Utilities Commission Design and Guidelines & Specifications for Water Main and Water Service Installation (November 2022) and the Ministry of the Environment, Conservation, and Parks (MECP) Design Guidelines for Drinking-Water Systems (2023). These serviceability criteria are to be achieved under all conditions (existing and future) and are in line with the criteria considered in the 2023 WUC WSMP. The serviceability criteria used for this assessment are as follows:

- Minimum acceptable pressure – 275 kPa (40 psi);
- Maximum acceptable pressure – 550 kPa (80 psi);
- Minimum acceptable pressure under Fire Flow conditions – 140 kPa (20 psi); and,
- Maximum acceptable velocity – 2 m/s.

2.2 Scenario Evaluation

The City-wide InfoWater Pro model (version 2025.4.1) was used to complete the hydraulic modelling assessment for SEWT location 3. This evaluation builds on the model used for the analysis documented in TM No.4 (June 2, 2025). Each scenario evaluated is run under a 48-hour extended period simulation (EPS).

The following model scenarios were carried out to assess the hydraulic performance of SEWT location 3:

- 2021 (Existing) Average Day Demand (ADD);
- 2021 (Existing) Maximum Day Demand (MDD) / Peak Hour Demand (PHD);
- 2049 ADD;
- 2049 MDD/PHD; and,

2049 Maximum Day Demand plus Fire Flow (MDD+FF).

Pressures, velocities, and headlosses through the pipe network were assessed against the acceptable serviceability criteria to determine if any additional off-site infrastructure upgrades are required.

2.3 Model Assumptions

The following assumptions were applied to the hydraulic model, which are largely consistent with the assumptions carried out for the previously modelling work documented in TM No. 4 (June 2, 2025):

- The proposed tank sizing of 8 ML per the 2023 WUC WSMP was carried forward;
- Top water level was maintained at 225.40 m to match the TWL of the Tecumseh ET;
- Low water level was set to 211.28 m, which was assumed based on the TWL, manufacturer tank dimensions, proposed operating range, and local ground elevations;
- Initial tank level was set to ~80% full;
- The following C-factors were applied to new/upgraded pipes:
    - 100 for 150 mm;
    - 110 for 200 to 250 mm;
    - 120 for 300 to 600 mm;
    - 130 for sizes greater than 600 mm;
- All proposed 2023 WUC WSMP infrastructure projects, including the central corridor feedermain (CCFM) were active for modelled scenarios with the new SEWT; and,
- The model was updated to reflect south Tecumseh operating as an independent secondary pressure zone (described in **Section 2.4.2**).

2.4 Model Updates

2.4.1 7th Concession Rd Watermain

In addition to including all proposed 2023 WUC WSMP infrastructure projects (including the CCFM), the InfoWater Pro model was also updated to include a new proposed watermain on 7th Concession Rd, per request of ENWIN. This watermain is 900 mm and will run along 7th Concession Rd from Provincial Rd (where it will connect to a 1,050 mm watermain) to Division Rd (where it will connect to a 900 mm watermain). This new watermain is approximately 1.7 km in total length. It is assumed that the SEWT will tie-in to this new watermain directly. **Figure 2-1** shows the alignment of the 7th Concession Rd watermain.

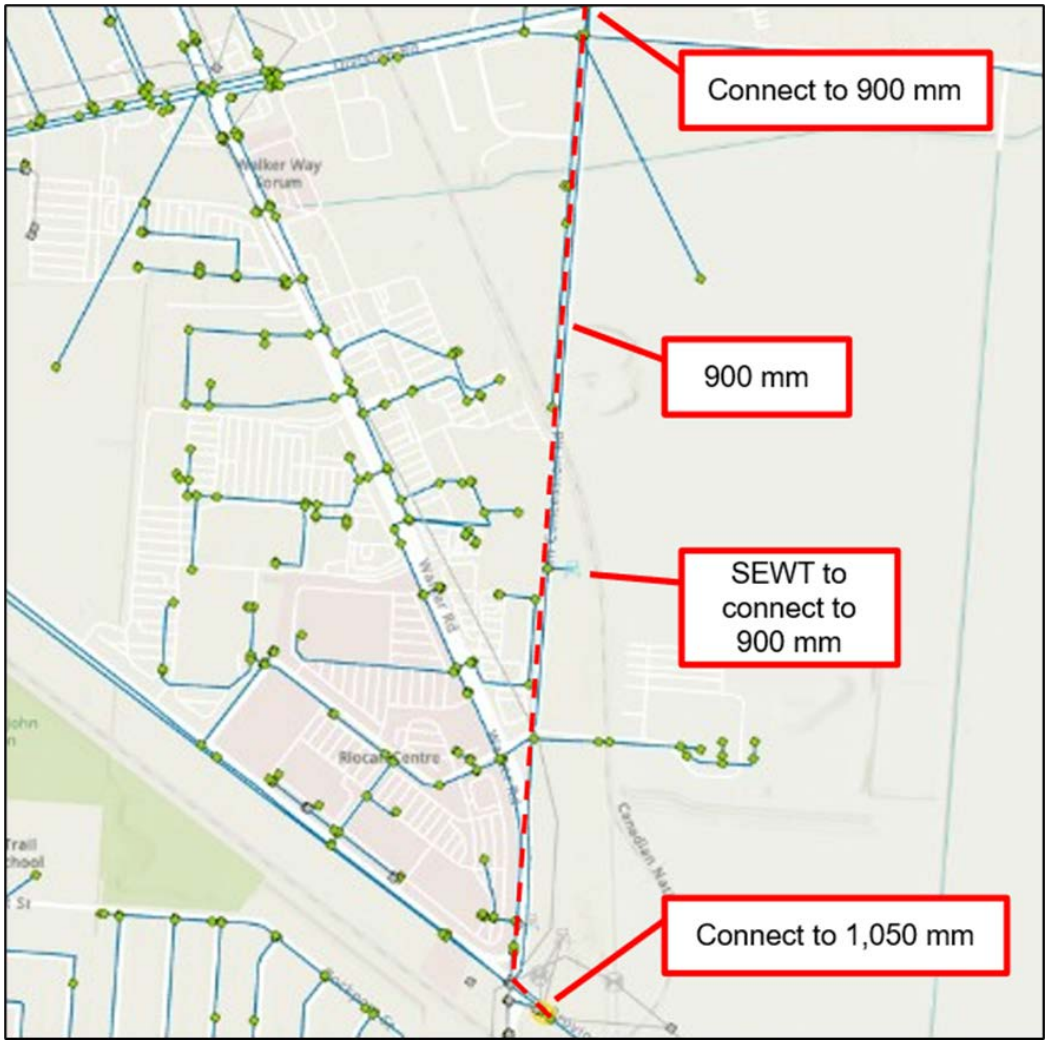


Figure 2-1: 7th Concession Rd Watermain Alignment

2.4.2 Division Rd Watermain Twinning

An additional model update was related to the infrastructure on Division Rd. As part of additional ongoing work, there are upgrades planned for this area. These upgrades include an interconnect between the two twinned 600 mm and 750 mm mains on Division Rd, at Turner Rd. The reason for this interconnect is so these two mains can function hydraulically closer to a 900 mm since this length of pipe (approximately 200 m) connects a 1,050 mm watermain and a 900 mm watermain. It was also confirmed with ENWIN that the 750 mm watermain on Division Rd (from Turner Rd to Riberdy Rd) is to be constructed with an inner diameter of 600 mm. Therefore, the sizing of this watermain was updated in the model to reflect the planned inner diameter. The Division Rd model updates are shown in **Figure 2-2.**

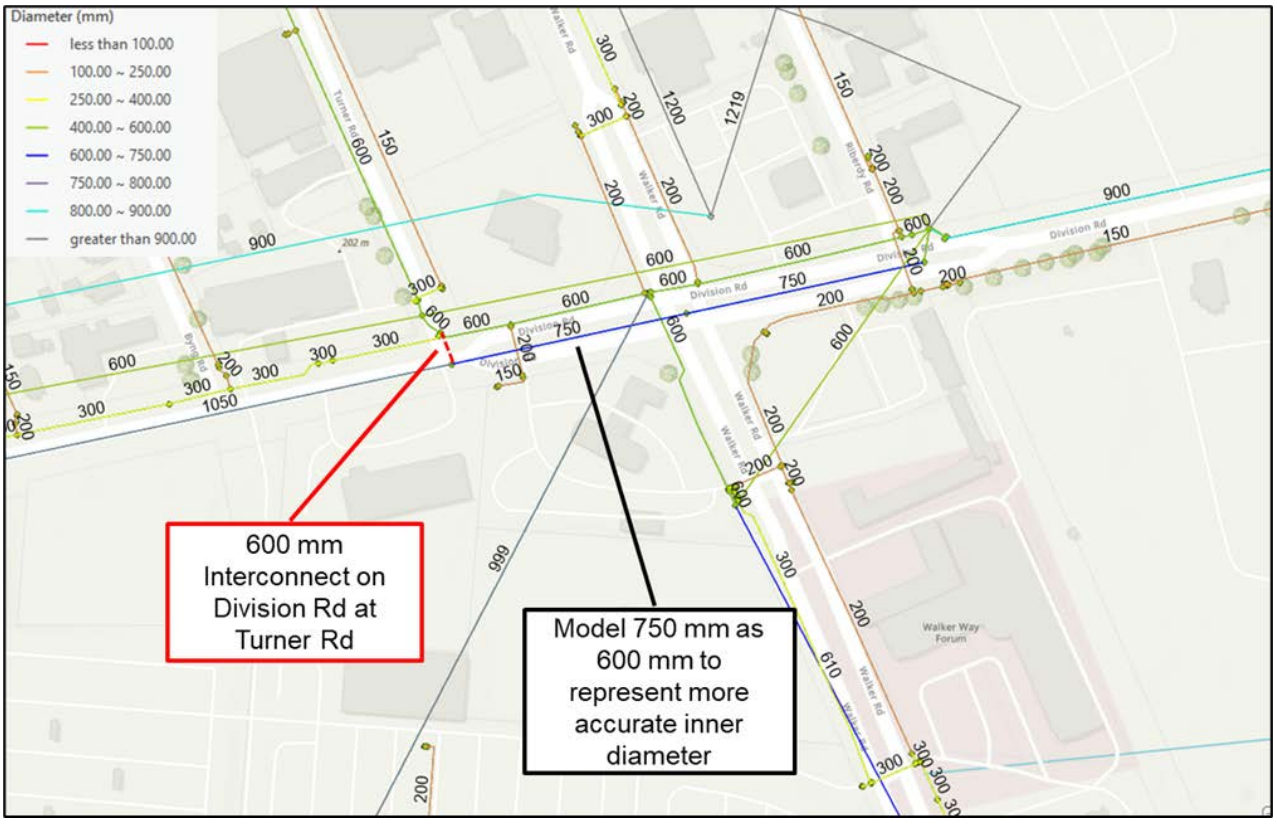


Figure 2-2: Division Rd Model Updates

2.4.3 Secondary Pressure Zone

One recommendation made in TM No. 4 (June 2, 2025) was to operate the Windsor system with two pressure zones, as the system is currently operating under one pressure zone. The results from the completed pressure zone boundary analysis (PZBA) determined that pressures within South Tecumseh are expected to be less than 40 psi, even with the addition of the SEWT. The PZBA determined that South Tecumseh is a constrained area, due to the topography. Therefore, it was recommended to create a new pressure zone for South Tecumseh so that pressures can be adequately boosted to meet minimum pressure requirements. It was noted that this recommendation was in line with the conclusions and recommendations presented in the

Tecumseh 2018 WSMP. The approximate boundary of the proposed secondary pressure zone is shown in **Figure 2-3**.



Figure 2-3: Proposed Secondary Pressure Zone Boundary

Since it was not yet confirmed if this secondary pressure zone would be created, the approach taken for the result evaluation for TM No. 4 was to simply ignore the low pressures within the identified secondary pressure zone boundary. Based on discussions with ENWIN, it was of interest to complete the modelling for SEWT location 3 with the model updated to include the proposed secondary pressure zone. It should be noted that the boundary of this secondary pressure zone is preliminary. For the purpose of this analysis, the secondary pressure zone boundary was selected to follow the south Tecumseh municipal boundary. This preliminary pressure zone boundary is in line with the results of the PZBA and the Tecumseh 2018 WSMP recommendations. Since this analysis will only consider solutions that involve Windsor (WUC) owned infrastructure and will not rely on adjacent municipalities, the south Tecumseh municipal boundary was decided to be a reasonable boundary for preliminary use. Should the secondary pressure zone be created in

the system, a study should be carried out by the town of Tecumseh to evaluate the proper extents of this boundary.

To operate South Tecumseh as a secondary pressure zone, boundary valves were set to closed. A dummy booster pump was added along an existing 600 mm watermain on Provincial Rd, near the zonal boundary (**Figure 2-4**) to represent a future booster pump station that would supply the secondary pressure zone. For the purpose of this analysis, theoretical design point pump curves were used for each scenario evaluated. These pump curves were based on the model demands in South Tecumseh (accounting for pattern peaks) and head required to maintain adequate pressures. A summary of the dummy pump theoretical design points is shown in **Table 2-1**. In addition to the proposed pressure zone boundaries, the booster pump station sizing should also be reviewed and further assessed as part of separate detailed studies.

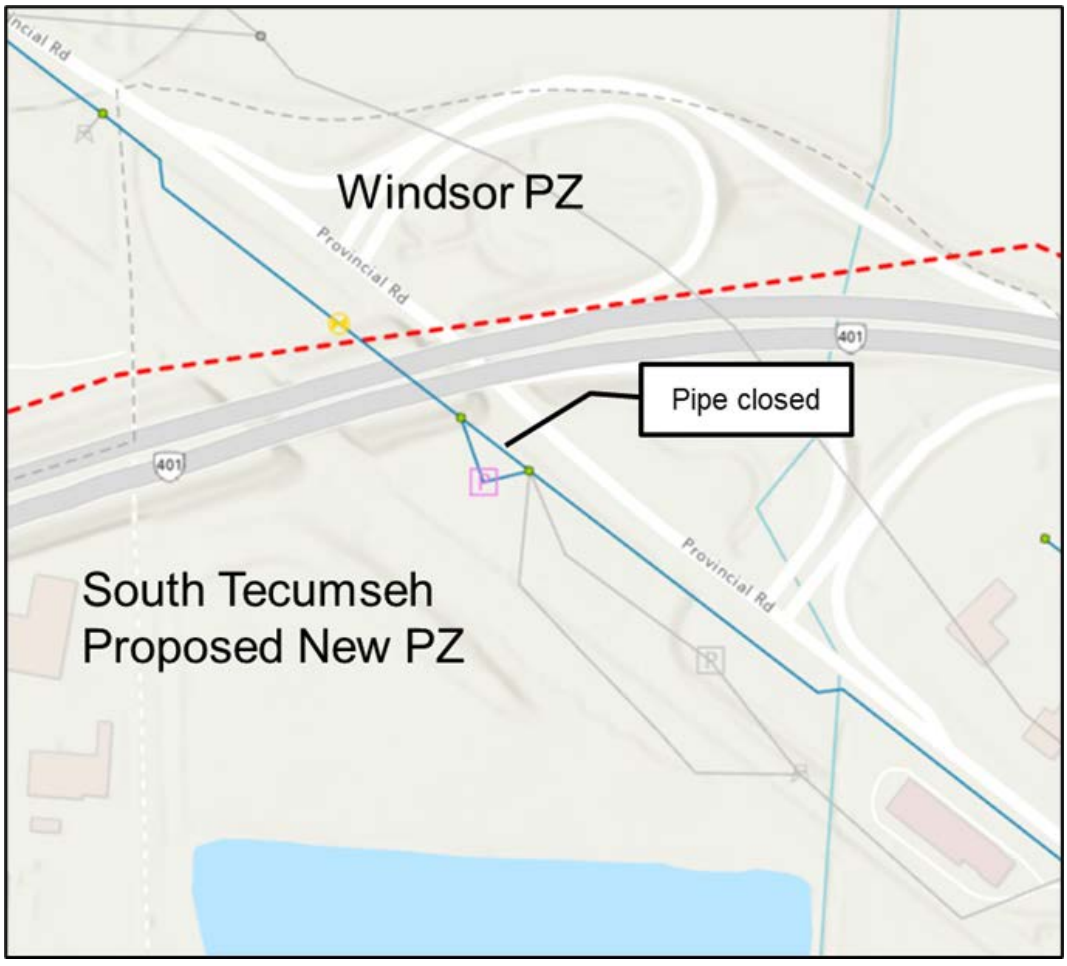


Figure 2-4: Secondary Pressure Zone Dummy Booster Pump Location

Table 2-1: Secondary Pressure Zone Dummy Booster Pump Theoretical Design Points

Scenario	Flow (L/s)	Head (m)
Ex. ADD	24.9	3
Ex. MDD	38.8	10
2049 ADD	176.6	5
2049 MDD	396.4	25

3 Results

3.1 Baseline Controls

The results were first evaluated using original model controls for the AJ Brian, JF Cook, and George Ave pumps. These controls were documented in TM No. 4 (June 2, 2025) and were based off the original controls from the 2023 WUC WSMP model. These were the same base controls used for the preliminary evaluation of the SEWT location alternatives in TM No. 4. The controls at JF Cook pump #2 were slightly modified under existing MDD to better represent variable frequency drive (VFD) conditions for this pump under the demand set (and applied pattern). The remaining scenarios did not require this control modification and were left as is. The original model controls are summarized in **Table 3-1**. The model results using original model controls (baseline controls), are presented in the following sub sections of this TM Addendum.

Table 3-1: Original Model Controls

Pump No.	Ex. ADD	Ex. MDD	2049 ADD	2049 MDD
AJ Brian Pump #1/5	ON when Cook below 5.0 m OFF when Cook above 6.0 m	ON when Cook below 5.0 m OFF when Cook above 6.0 m	ON when Cook below 5.0 m OFF when Cook above 6.0 m	ON when Cook below 5.0 m OFF when Cook above 6.0 m
AJ Brian Pump #2	ON when Cook below 5.0 m OFF when Cook above 6.0 m Setting = 0.950 at time = 0.00 hr	ON when Cook below 5.0 m OFF when Cook above 6.0 m Setting = 0.950 at time = 0.00 hr	ON when Cook below 5.0 m OFF when Cook above 6.0 m	ON when Cook below 5.0 m OFF when Cook above 6.0 m
AJ Brian Pump #3	ON when Tecumseh below 7.0 m OFF when Tecumseh above 8.0 m	ON when Tecumseh below 7.0 m OFF when Tecumseh above 8.0 m	Setting = 0.970 when Tecumseh below 9.9 m OFF when Tecumseh above 10.5 m	Setting = 0.970 when Tecumseh below 9.9 m OFF when Tecumseh above 10.5 m

Pump No.	Ex. ADD	Ex. MDD	2049 ADD	2049 MDD
AJ Brian Pump #4	ON when SEWT below 12.0 m OFF when SEWT above 13.5 m	ON when SEWT below 12.0 m OFF when SEWT above 13.5 m	Setting = 0.990 at time = 0.00 hrs	Setting = 0.990 at time = 0.00 hrs
George Ave Pump #1	Setting = 0.900 at time = 0.00 hr	Setting = 0.900 at time = 0.00 hr	Setting = 0.800 when SEWT below 12.0 m OFF when SEWT above 13.5 m	Setting = 0.8 when SEWT below 13.5 m OFF when SEWT above 14.0 m
George Ave Pump #2	-OFF	OFF	ON when Tecumseh below 9.0 m OFF when Tecumseh above 12.0 m	OFF
George Ave Pump #3	ON when Tecumseh below 9.5 m OFF when Tecumseh above 11.5 m	ON when SEWT below 9.5 m OFF when SEWT above 11.5 m	ON when SEWT below 9.5 m OFF when SEWT above 11.5 m	ON when SEWT below 9.5 m OFF when SEWT above 11.5 m
JF Cook Pump #1	OFF	OFF	ON when SEWT below 11.6 m OFF when SEWT above 13.5 m	ON when SEWT below 11.6 m OFF when SEWT above 13.6 m
JF Cook Pump #2	OFF	ON at Clock time 20 OFF at Clock time 0	ON when SEWT below 11.5 m OFF when SEWT above 13.2 m	ON when SEWT below 11.5 m OFF when SEWT above 13.5 m
JF Cook Pump #3	ON at time 0 AM Setting = 0.823 at Clock time 6	Closed at time 0 AM Setting = 0.823 at Clock time 6	ON when SEWT below 11.5 m OFF when SEWT above 13.5 m	ON when SEWT below 11.6 m OFF when SEWT above 13.6 m

3.1.1 MDD/PHD – Base Infrastructure

The model updates, presented in **Section 2.4**, were first evaluated under MDD/PHD scenarios to determine if further off-site upgrades are required to support the SEWT. The results under existing (2021) MDD/PHD found that the minimum pressures throughout the system generally ranged from 40 to 80 psi. The lowest pressures were observed directly northwest of the proposed secondary pressure zone boundary. However, the lowest pressures were all above 40 psi (minimum acceptable pressure, per serviceability criteria).

Therefore, these results indicate that under existing conditions, adequate system pressures are achieved without the need for further off-site upgrades.

Under 2049 MDD/PHD conditions, it was found that the minimum pressures throughout the system generally ranged from 37 to 80 psi. Similar to existing conditions, the lowest pressures were observed directly northwest of the proposed secondary pressure zone boundary. However, unlike the existing condition results, the minimum pressures are lower than 40 psi (minimum acceptable pressure) under 2049 conditions. These low pressures are limited to the Southwood Lakes neighbourhood area (bound by the proposed secondary pressure zone boundary, Dougall Pkwy, and Howard Ave). Although this elevated area consistently experiences lower pressures and may benefit from inclusion in a new secondary pressure zone, it was left within the primary pressure zone since this area is included in the Windsor municipal boundary (i.e., the proposed secondary pressure zone is to contain and be serviced by only Tecumseh owned infrastructure for the purpose of this assessment).

Therefore, to address this low-pressure area, further off-site upgrades may be required to better satisfy serviceability criteria under 2049 conditions. The modelling results are included with this TM Addendum as **Appendix A**.

3.1.2 Proposed Off-Site Upgrades

The maximum headloss in feedermains (watermains 600 mm or greater) were evaluated under 2049 MDD conditions to determine if any system constraints exist as a result of the proposed location. The headloss per kilometer results for watermains 600 mm or greater are shown in **Appendix A**. These results show that higher headlosses are experienced on Howard Ave and Provincial Rd. These higher headlosses are generally under 5 m/km. However, they could contribute to the system constraints in the area, particularly as a result of Howard Ave since the higher headloss on Provincial Rd is mainly contained within the proposed secondary pressure zone boundary.

The 2049 MDD maximum headlosses were also evaluated in all watermains surrounding location 3 and the identified low-pressure area). These results are also shown in **Appendix A.** The total watermain headloss results further confirm that higher headlosses are experienced on Howard Ave, with headlosses up to approximately 14 m/km experienced in a 150 mm watermain on Howard Ave.

Per discussion with ENWIN, it was decided that upgrades along Howard Ave were not ideal for the area. Instead, it was of interest to add 300 mm watermains along 6th Concession Rd to create a continuous watermain from Provincial Rd to N Talbot Rd, as a means to reduce headlosses to the Southwood Lakes neighbourhood. The proposed watermains include:

140 m of 300 mm on 6th Concession Rd, connecting to the 1,050 mm on Provincial Rd and the 200 mm on 6th Concession Rd; and,

850 m of 300 mm on 6th Concession Rd, connecting to the 200 mm on 6th Concession Rd (at Holburn St) and the 300 mm on 6th Concession Rd (at N Talbot Rd).

The alignment for this proposed off-site upgrade is shown in **Figure 3-1**.

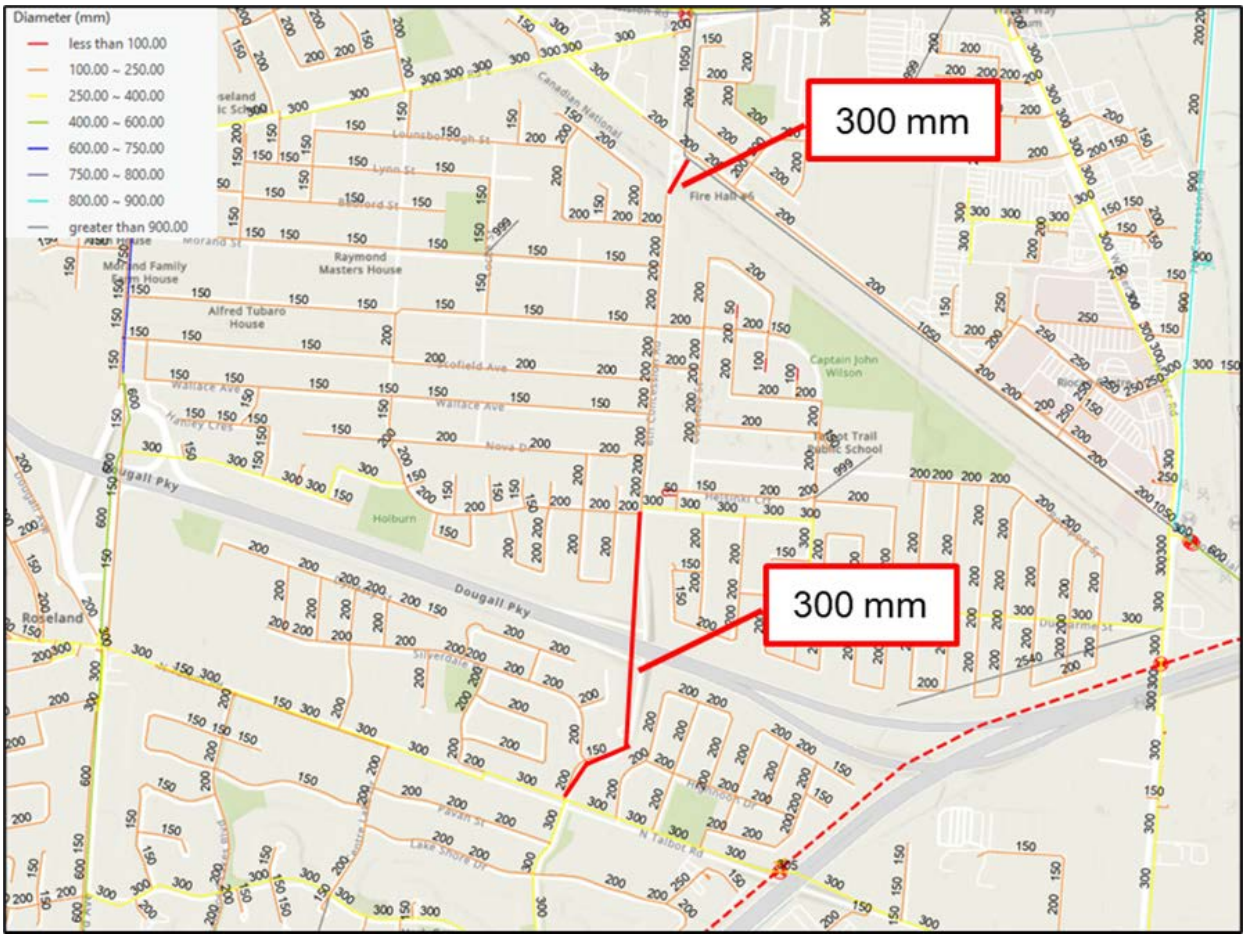


Figure 3-1: Proposed Off-Site Watermain Upgrade Extent

3.1.2.1 ADD & MDD/PHD Results

The off-site upgrades were included in the InfoWater Pro model and were modelled using the baseline model controls documented in **Table 3-1**. The results under ADD experienced similar results between existing (2021) and 2049 conditions. The maximum pressures throughout the system ranged from 50 to 100 psi, with the highest pressures experienced along the extremities of the system. Although the pressures exceed 80 psi (maximum acceptable pressure per serviceability criteria), MECP guidelines specify that maximum pressures in the distribution system should not exceed 100 psi, which is satisfied by these results. When looking at the tank levels throughout the EPS run, the results indicate that the SEWT may be overfilling at times during the simulation (as indicated by a flat line at 100% full for an extended duration). Therefore, pump controls should be optimized to result in more hydraulically optimal tank operations, which may also assist in the observed maximum system pressures.

The MDD/PHD results under existing (2021) and future (2049) conditions experience minimum pressures ranging from 40 to 80 psi. Meaning, the proposed off-site upgrades are able to resolve the previously identified low pressures within the Southwood Lakes neighbourhood. Therefore, the minimum pressures under existing and future conditions satisfy the specified design criteria. The model results are included in Appendix A.

Similar to the ADD results, the tank level results show that the SEWT is potentially overfilling during certain durations throughout the EPS run. Additionally, under 2049 MDD/PHD conditions, the fill-drain cycle of the SEWT was notably rapid (around 2 hours for most cycles), which is not hydraulically optimal. The Tecumseh elevated tower (ET) was also observed to be slowly decreasing in level (draining). This further confirms the rationale to complete pump control optimization for the modelling scenarios.

It should be noted that the pumps at AJ Brian and George Ave are controlled by pressure sensors where the pumps at JF Cook are controlled manually. Pump control optimization in the model will be completed to result in more hydraulically optimal operating conditions for the tanks, such that the results reflect those experienced under ideal conditions. However, changes to the pump controls must ultimately be discussed with Operations staff.

3.1.2.2 MDD+FF Results

The off-site upgrades were evaluated under 2049 MDD+FF to assess the available hydrant flow throughout the City's water distribution system. The model results are shown in **Appendix A**. These results show that the available fire flow at a residual pressure of 20 psi is generally greater than 80 L/s (4,800 L/min) throughout the system. It is noted that majority of junctions that experience fire flows less than 33 L/s (2,000 L/min) are found in dead-end watermains or within South Tecumseh, which is consistent with the previous modelling results documented in TM No. 4 (June 2, 2025). Therefore, there is no major area identified in the City's water distribution system that has limited availability for fire flows.

3.2 Optimized Controls

The controls for the pumps in the City's water distribution system were re-evaluated so they could be adjusted for optimized tank hydraulic performance. As noted in Section 3.1.2.1 and Section 3.1.2.2, the SEWT is overfilling at certain time periods and Tecumseh ET is slowly draining. The pump controls of all pumping facilities (AJ Brian, George Ave, and JF Cook) were reviewed and the optimized pump controls are summarized in **Table 3-2**. The results from the InfoWater Pro hydraulic model, using the optimized pump controls are presented in the following sub sections. As mentioned in Section 3.1.2.1, the proposed optimized controls are preliminary and are used to represent results under ideal conditions. Changes to the pump controls must be discussed with Operations staff. Controls used for levels in the SEWT will be further discussed with Operations staff during detailed design.

Table 3-2: SEWT Location 3 Optimized Pump Controls

Pump No.	Ex. ADD	Ex. MDD	2049 ADD	2049 MDD
AJ Brian Pump #1/5	ON when Cook below 5.0 m OFF when Cook above 6.0 m	ON when Cook below 5.0 m OFF when Cook above 6.0 m	ON when Cook below 5.0 m OFF when Cook above 6.0 m	ON when Cook below 5.0 m OFF when Cook above 6.0 m
AJ Brian Pump #2	ON when Cook below 4.0 m OFF when Cook above 5.0 m	ON when Cook below 4.0 m OFF when Cook above 5.0 m	ON when Cook below 4.0 m OFF when Cook above 5.0 m	ON when Cook below 5.0 m OFF when Cook above 6.0 m
AJ Brian Pump #3	ON when Tecumseh below 9.0 m OFF when Tecumseh above 10.5 m	ON when Tecumseh below 9.0 m OFF when Tecumseh above 9.8 m	ON when Tecumseh below 9.0 m OFF when Tecumseh above 10.5 m	ON when Tecumseh below 8.0 m OFF when Tecumseh above 9.0 m
AJ Brian Pump #4	ON when SEWT below 10.0 m OFF when SEWT above 13.0 m	ON when SEWT below 11.0 m OFF when SEWT above 13.5 m	ON when SEWT below 10.0 m OFF when SEWT above 13.0 m	ON when SEWT below 12.0 m OFF when SEWT above 13.4 m
George Ave Pump #1	OFF	OFF	OFF	ON when Tecumseh below 8.0 m OFF when Tecumseh above 10.0 m
George Ave Pump #2	ON when Tecumseh below 9.5 m OFF when Tecumseh above 10.0 m	ON when Tecumseh below 9.5 m OFF when Tecumseh above 10.0 m	ON when Tecumseh below 9.5 m OFF when Tecumseh above 11.5 m	Setting = 0.90 when Tecumseh below 9.0 m OFF when Tecumseh above 10.0 m
George Ave Pump #3	OFF	OFF	OFF	OFF
JF Cook Pump #1	OFF	OFF	OFF	ON when SEWT below 11.5 m OFF when SEWT above 13.6 m

Pump No.	Ex. ADD	Ex. MDD	2049 ADD	2049 MDD
JF Cook Pump #2	OFF	OFF	OFF	ON when SEWT below 12.0 m OFF when SEWT above 14.0 m
JF Cook Pump #3	ON when SEWT below 11.0 m OFF when SEWT above 13.5 m	Setting = 0.9 when SEWT below 11.0 m OFF when SEWT above 13.0 m	ON when SEWT below 11.0 m OFF when SEWT above 13.5 m	ON when SEWT below 11.0 m OFF when SEWT above 13.0 m

3.2.1 ADD & MDD/PHD Results – Optimized Controls

The optimized controls were run in the InfoWater Pro model, in addition to the 6th Concession Rd proposed off-site upgrade. Similar to the results with baseline controls, the ADD maximum pressure result trends are generally the same under existing (2021) and 2049 conditions. The maximum pressures range from 40 to 80 psi, with the lowest pressures (40 to 50 psi) surrounding the northwest boundary of the future secondary pressure zone. The remainder of the system experiences maximum pressures of 50 to 80 psi. These results fall within the maximum acceptable pressure criteria (80 psi maximum pressure). Therefore, the optimized controls improved the overall system maximum pressures. The tank level results with optimized controls also show improved results. Previously the SEWT was overfilling at certain time periods for both existing (2021) and 2049 conditions. With the optimized controls, the SEWT does not overfill during existing (2021) or 2049 conditions, and experiences reasonable fill-drain cycles. The ADD optimized control results are included in **Appendix A**.

The MDD minimum pressure results under existing (2021) and 2049 conditions are similar when compared to the baseline control results. The minimum pressures range from 40 to 80 psi, satisfying minimum pressure criteria. Therefore, the optimized controls maintain adequate system pressures. The tank results under MDD are also improved since the Tecumseh ET is no longer draining and shows a steady fill-drain profile. The SEWT is also no longer overfilling and shows improved fill-drain cycles. Therefore, the optimized controls help improve the system operating conditions.

The system watermains were evaluated for maximum headloss and velocity. The maximum headloss results show approximately the same headloss along Howard Avenue, since upgrades were not proposed here. The headloss along Howard Ave was generally less than 5 m/km, with the exception of one 150 mm watermain at Howard and Havens Dr which experienced a headloss of approximately 19 m/km. Headloss of approximately 7 m/km was introduced on 6th Concession Rd via the recommended off-site upgrade. However, this watermain does not contribute to significant headloss in the area. Therefore, with the proposed off-site upgrades and optimized controls, the headlosses within the previously identified low pressure area are not greatly changed from conditions without upgrades or optimized controls. However, the headlosses are not identified to be significant.

The maximum velocity results showed that no watermains in the system exceeded 2 m/s under 2049 MDD conditions, satisfying the serviceability criteria.

The optimized control results are included in **Appendix A**.

3.2.2 MDD+FF Results – Optimized Controls

The InfoWater Pro model was run under MDD+FF for 2049 conditions, applying the off-site upgrades and optimized controls. The results (shown in **Appendix A**) determined that the system could generally achieve fire flows greater than 80 L/s (4,800 L/min) at a residual pressure of 20 psi. Similar to the baseline control results, the instances of available fire flow less than 30 L/s (2,000 L/min) are largely experienced in dead end watermains or in South Tecumseh. Therefore, there is no major area identified in the City's water distribution system that is expected to have limited availability for fire flows.

4 Water Age

A water age analysis was completed in order to assess the high-level impact on overall water age within the distribution system with the addition of the new SEWT. In InfoWater Pro, a water age analysis computes the amount of time that water has been in the network at each node throughout an extended period simulation, based on a single point source. This water age analysis was simulated under existing baseline ADD conditions, over a time period of 14 days (336 hours) and assuming the initial quality setting of all nodes to be 0 hrs. The baseline results are those under present day conditions and do not consider the CCFM or the new SEWT (Hanna ET is still active). Monitoring nodes across the distribution system were selected to be along looped watermains and provide a good geographic representation of the zone.

Appendix A shows the temporal evolution of water age at these at these nodes, with overall water age results presented in **Table 4-1**. Based on these results, the following findings were made:

- Under existing ADD with existing (baseline) infrastructure in-place, average water age across the distribution system ranges from 0.6 hrs to in excess of 12.2 days. This average was taken from timestep 250 hrs to 336 hrs (last 86 hours of the run time). Since the water age is not reached at some locations in the system after 14 days, the average water age in the system, according to the InfoWater Pro results, is expected to be greater than 14 days. Given the simplified nature of InfoWater Pro's water age simulator, which does not account for additional points of rechlorination and/or mixing that may occur within a distribution system (as is the case for the WUC system), this is considered to be a qualitative proxy of actual system water age that should be used for relative comparison purposes only.
- Under existing ADD with proposed off-site infrastructure in-place and the new SEWT at location 3, average water age across the distribution system ranges from 1.0 hrs to in excess of 12.2 days (likely greater than 14 days). Overall, the water age is approximately the same when compared to existing baseline, with the minimum average water age slightly increased. Therefore, it is anticipated that a new SEWT at location 3 should not negatively impact overall system water age. Under 2049 ADD with proposed off-site infrastructure in-place and the new SEWT at Location 3, the average water age across the distribution system ranges from 0.5 hrs to in excess of 12.2 days (likely greater than 14 days). Overall, this is similar to results observed under existing ADD with existing (baseline) infrastructure in-place. Although there is a slight reduction in the minimum average water age, the maximum average water age is consistent with that experienced under existing baseline. It should also be noted that the proposed SEWT is anticipated to include rechlorination and mixing at the tower

to help assist in improved water quality. Therefore, it is anticipated that a new SEWT at location 3 should not negatively impact overall system water age.

Table 4-1: Water Age Comparison

	Minimum Average Water Age (hrs)	Maximum Average Water Age (hrs)
Ex ADD (Existing Baseline)[1]	0.6	293 (12.2 days)
Ex ADD (SEWT Location 3)[2]	1.0	293 (12.2 days)
2049 ADD (SEWT Location 3)[2]	0.5	293 (12.2 days)

Notes:

1. Baseline refers to present-day conditions with existing infrastructure (i.e., no SEWT or CCFM and Hanna ET are active).
2. Results include SEWT location 3 active, all 2023 WUC WSMP recommendations active (including CCFM), the 7th Concession Rd new watermain, and all proposed off-site upgrades.
3. Minimum and maximum water age results refer to the minimum and maximum average results where the average was taken from 250 hrs to 336 hrs. Average was taken from 250 hrs to 336 hrs.

5 Conclusions

A water network analysis was performed with InfoWater Pro modelling software. The selected SEWT location (location 3) and additional proposed off-site infrastructure upgrades were added to the City's existing water model (including latest CCFM works) to determine if serviceability criteria can be met. Four scenarios were built in the model: Existing ADD, Existing MDD, 2049 ADD, and 2049 MDD which were derived from existing model scenarios. All built scenarios include 2023 WUC WSMP infrastructure recommendations and new planned watermains, as identified by ENWIN (7th Concession Rd and Division Rd). Based on the results presented herein, the following conclusions and recommendations are made:

- An 8 ML tank with top water level of 225.4 m was found to be sufficient to support the storage requirements;
- As per the 2018 Tecumseh WSMP, it is recommended that a secondary pressure zone be created to service the low-pressure area in South Tecumseh. As the primary constraint in this part of the distribution system is due to topography, a new pressure zone (complete with a booster pumping station and inter-boundary isolation valves) will allow HGLs/pressures to be adequately boosted to satisfy pressure requirements;
- Watermain upgrades are required on 6th Concession Rd (990 m of 300 mm watermain) to support system pressures with the SEWT at location 3, particularly for 2049 conditions;
- With the proposed adjusted pump controls, the system can operate hydraulically optimally and maintain adequate system pressures; and,
- Water age in the system was found to be similar to the results observed under existing ADD with existing (baseline) infrastructure in-place. Therefore, a new SEWT at location 3 should not negatively impact overall system water age.

Reference: Elevated Water Tower Schedule B – Municipal Class Environmental Assessment Technical Memorandum No. 4 – Water Modelling – Addendum #1

These conclusions recommendations are based on the modelling results completed as part of this memo. Further hydraulic modelling should be carried out during the detailed design phase of this project to verify these conclusions and recommendations.

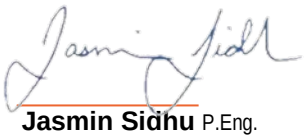
If you have any questions or concerns, please contact the undersigned.

Thank you,

Stantec Consulting Ltd.



Gillian Wilton M.E.Sc., P.Eng.
Water Resources Engineer
Gillian.Wilton@stantec.com



Jasmin Sidhu P.Eng.
Senior Water Resources Engineer
Jasmin.Sidhu@stantec.com

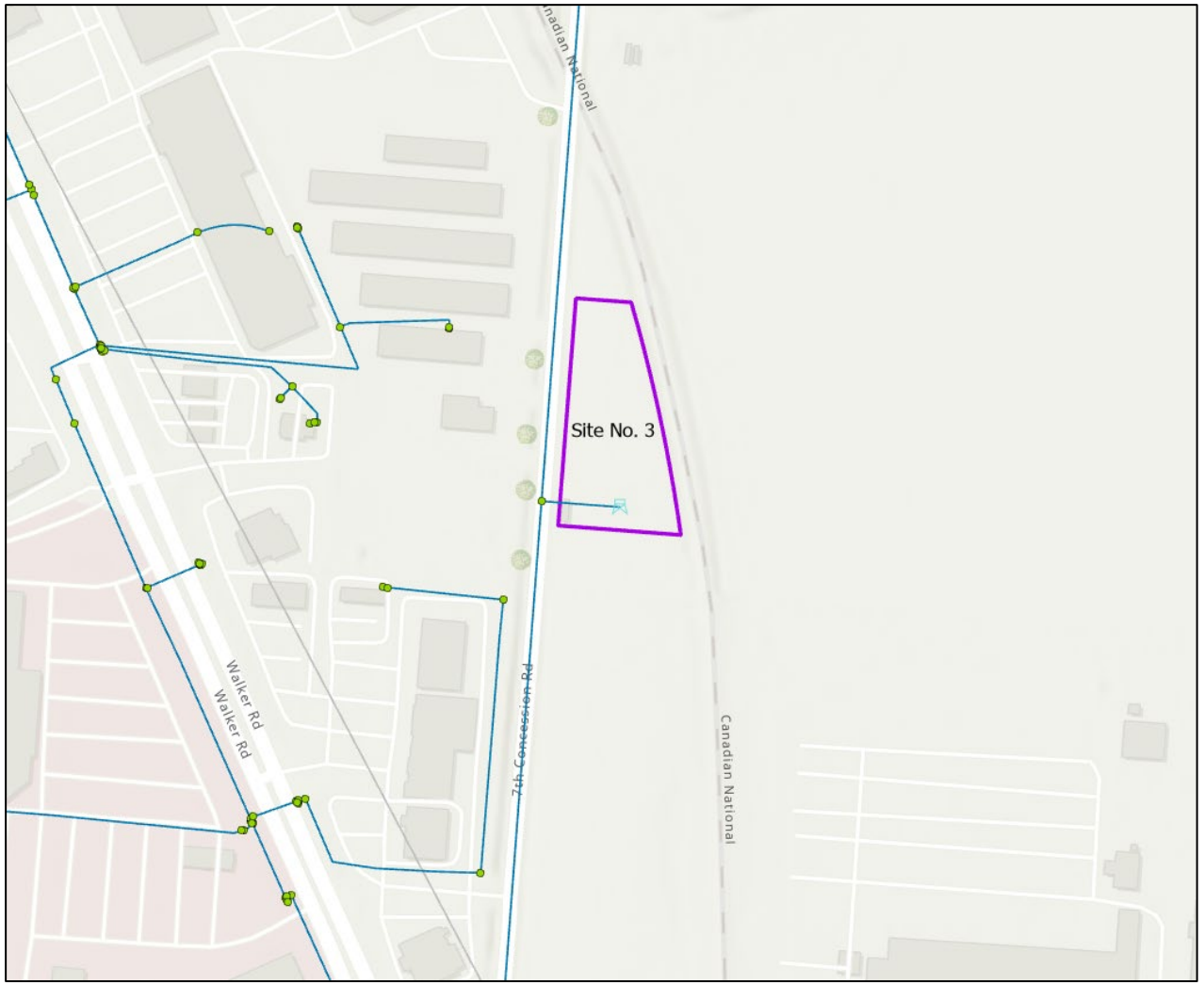
Attachment: Technical Memorandum No. 4 – Addendum #1

Appendix A – Model Results

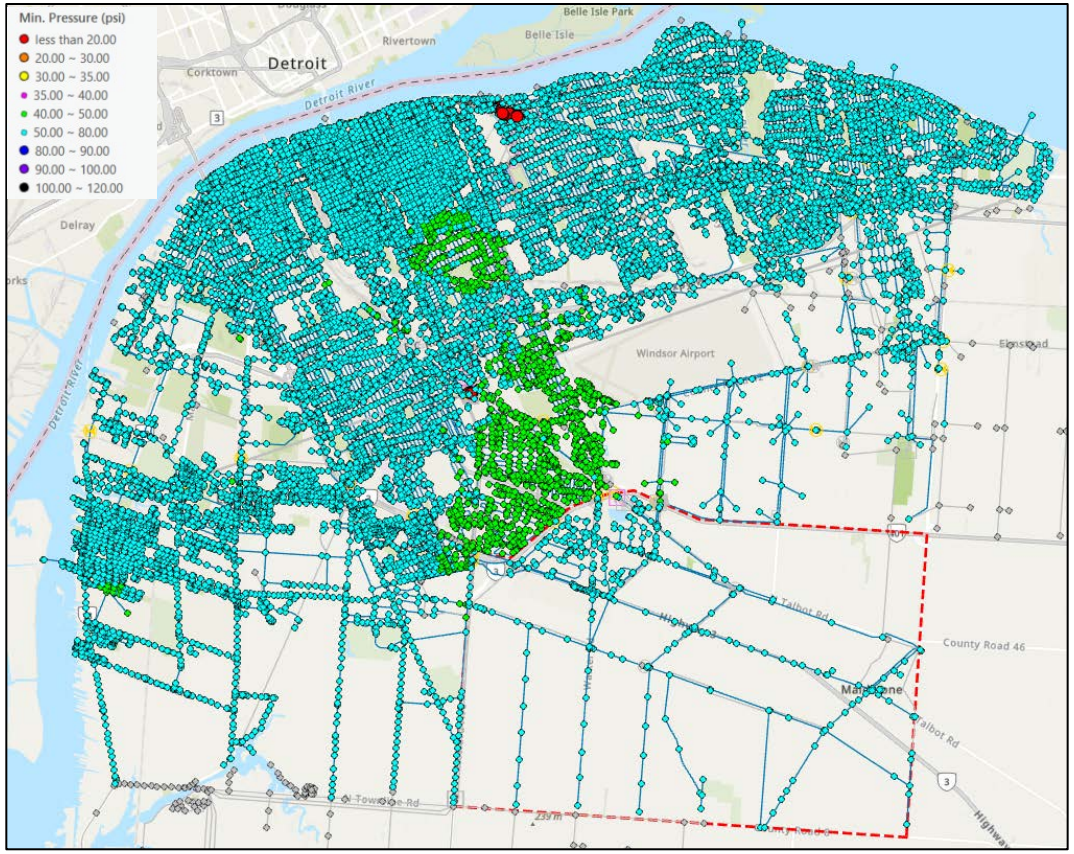
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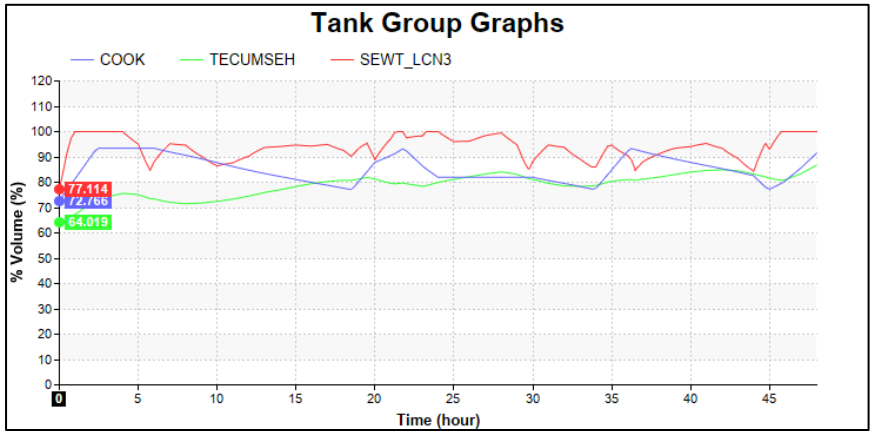
ENWIN SEWT Modelling Results

TM No.4 Addendum



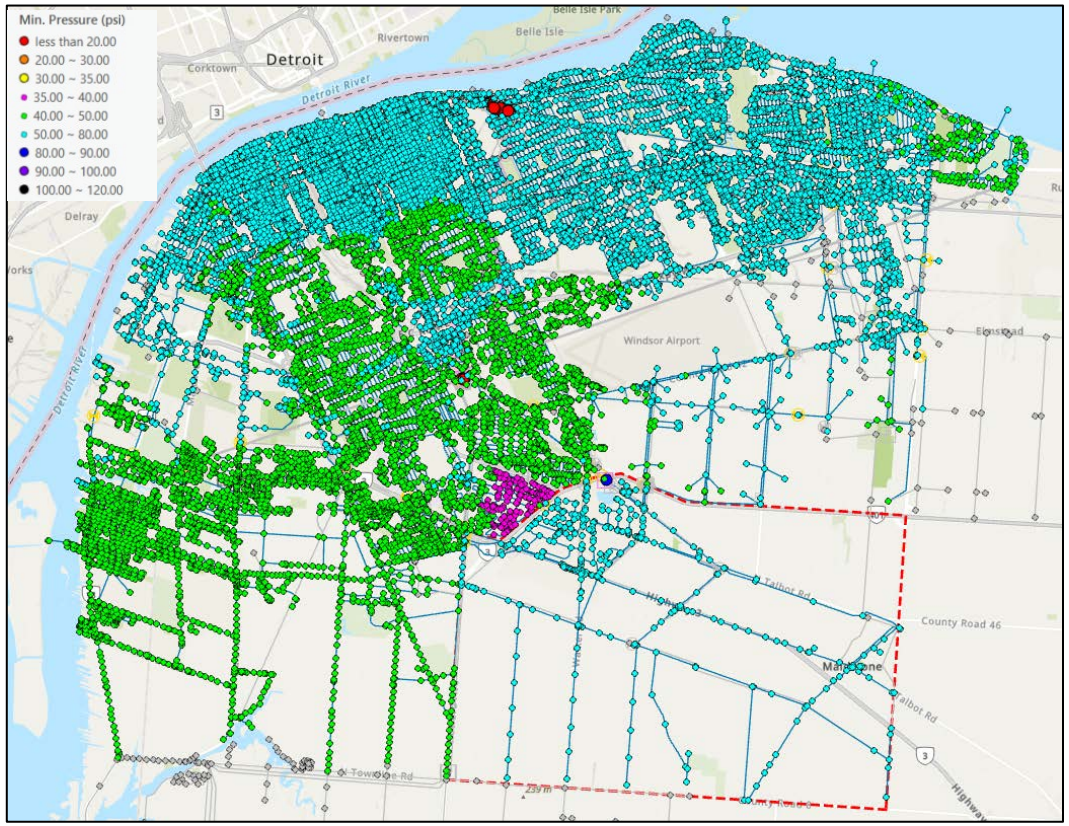
Location 3 – Ex. MDD

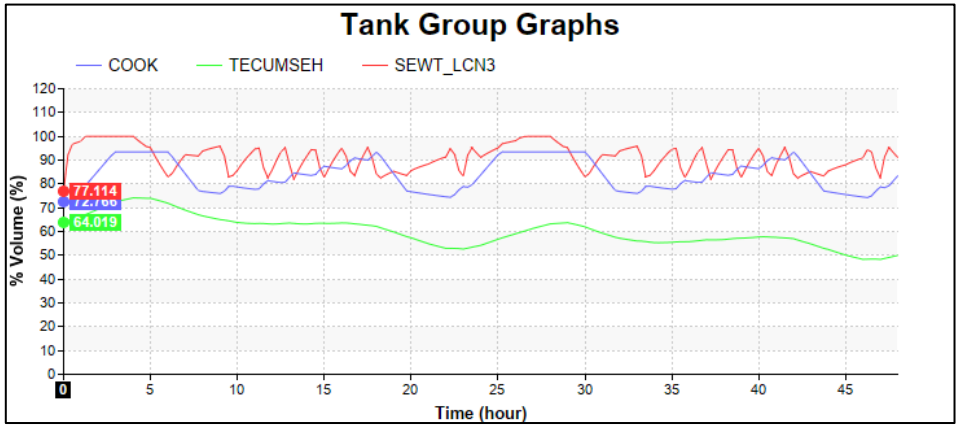




- Existing MDD
- CCFM active
- WM11 active
- All 2023 WSMP infrastructure recommendations are active
- 7th Concession Rd watermain active
- South Tecumseh valved as secondary PZ
- PZ dummy BP active

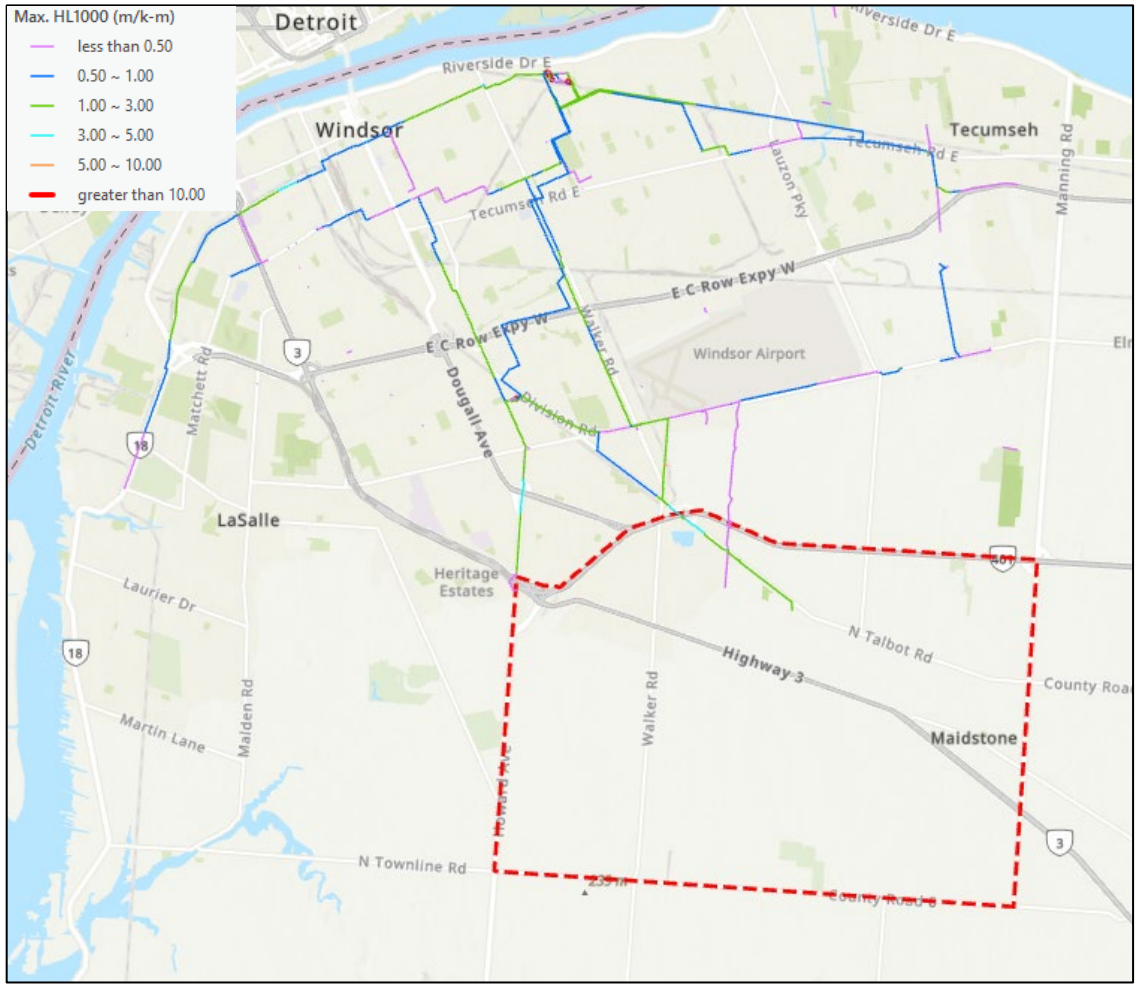
Location 3 – 2049 MDD



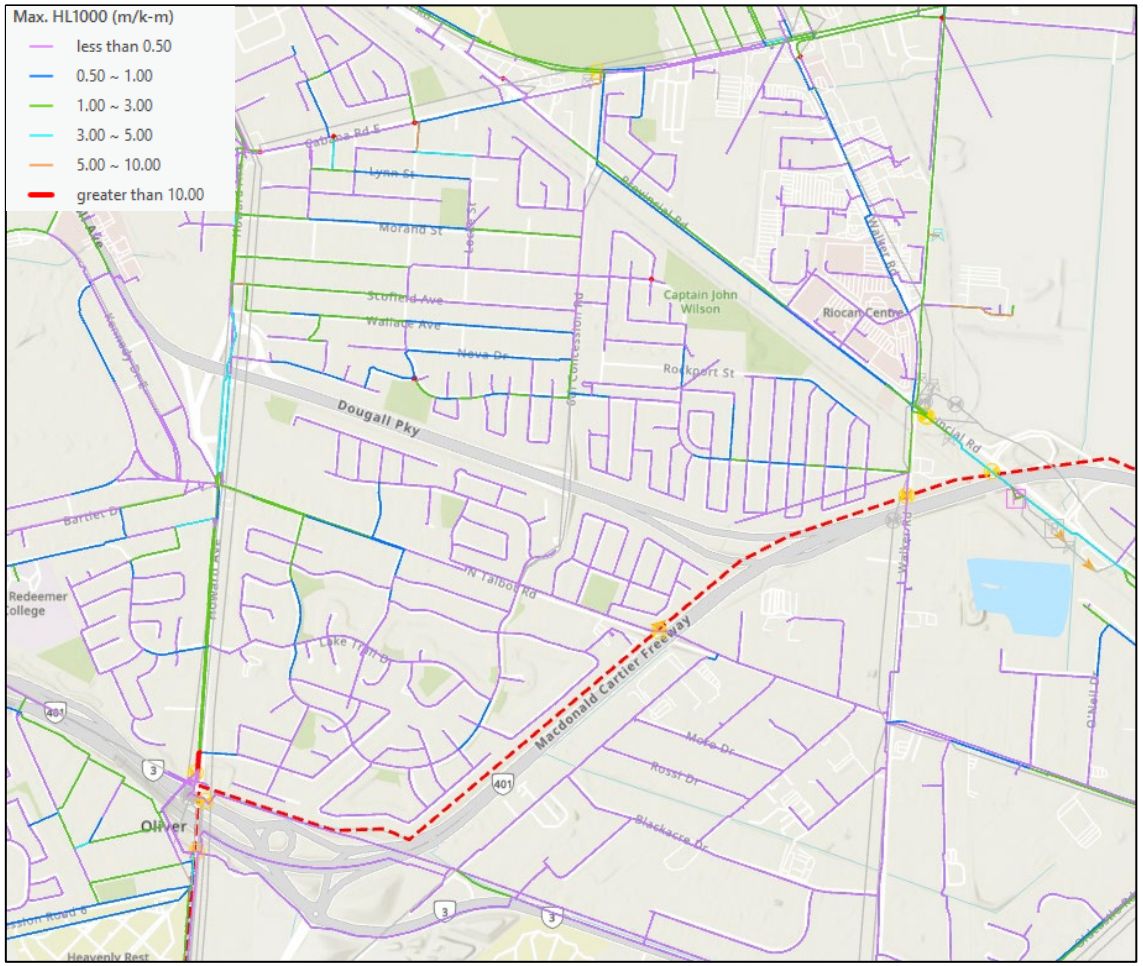


- Existing MDD
- CCFM active
- WM11 active
- All 2023 WSMP infrastructure recommendations are active
- 7th Concession Rd watermain active
- South Tecumseh valved as secondary PZ
- PZ dummy BP active → new design point for 2049 MDD
- Low pressures exist → Upgrades required

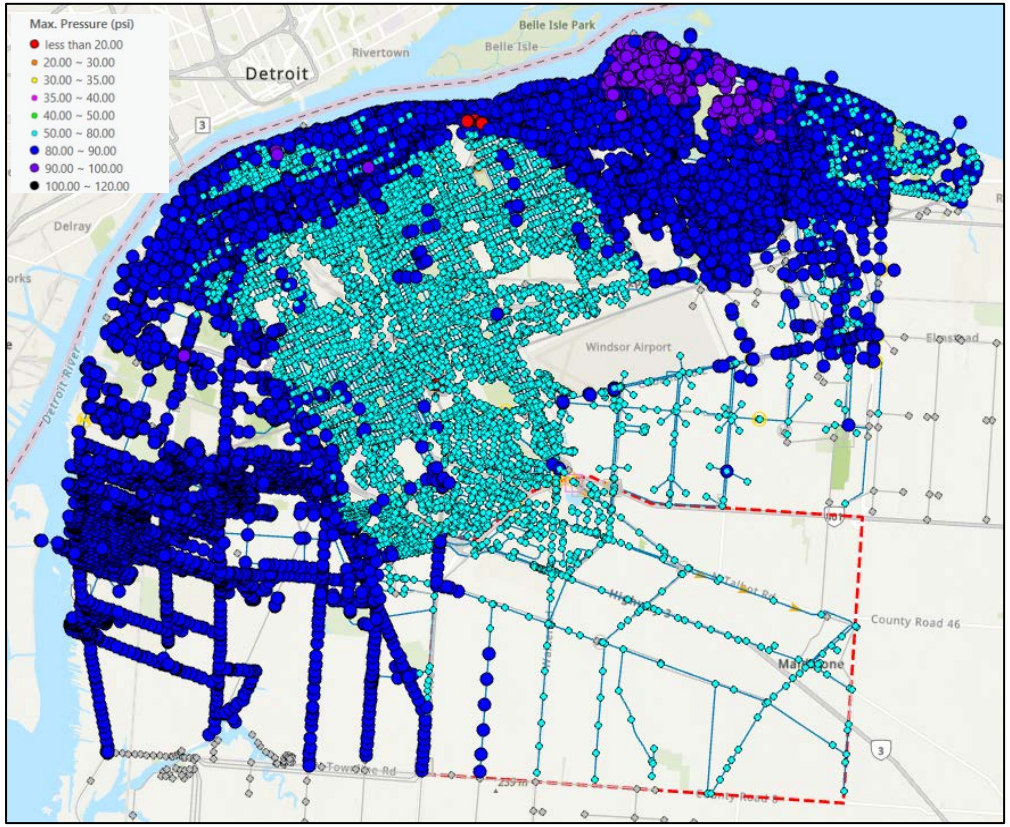
Location 3 – 2049 MDD Maximum Headloss (m/km) in Watermains 600 mm or Greater

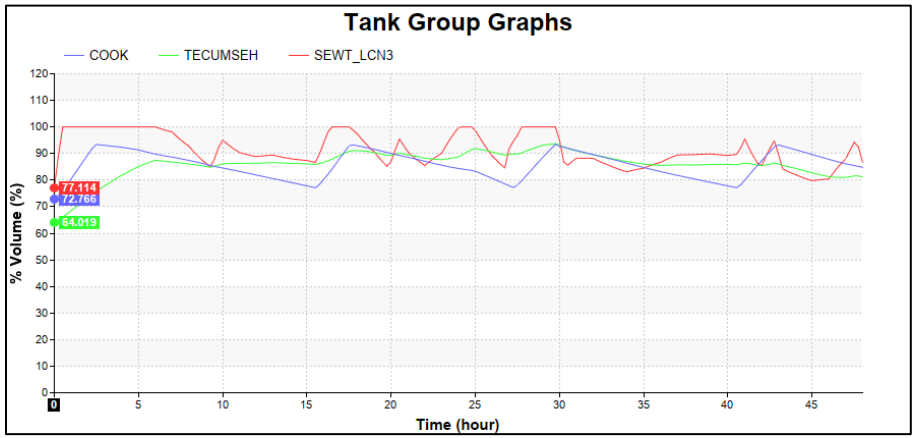


Location 3 – 2049 MDD Maximum Headloss (m/km) Surrounding Location 3 and Low-Pressure Area



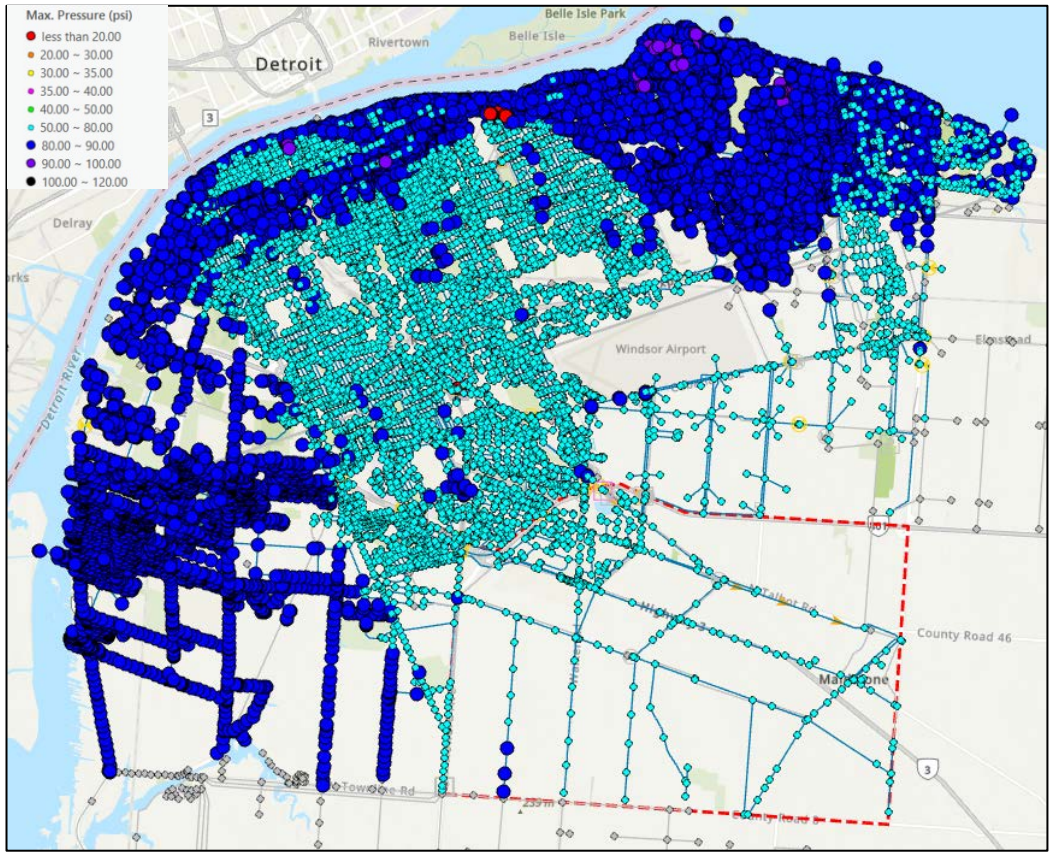
Location 3 – Ex. ADD + Upgrades

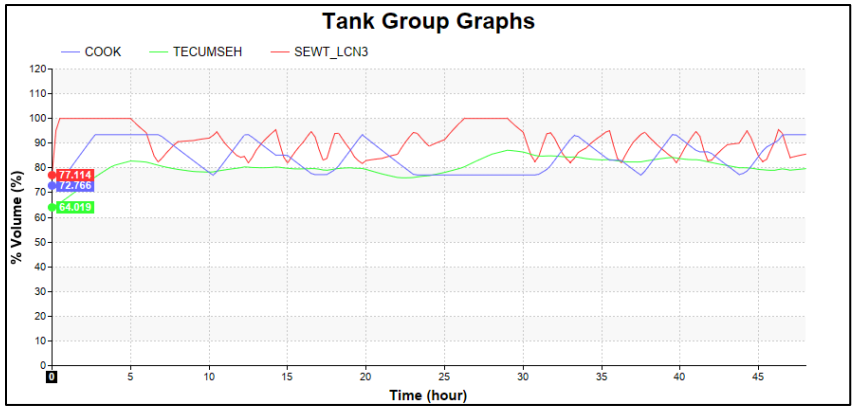




- Existing MDD + Upgrades
- All 2023 WSMP infrastructure recommendations are active
- CCFM active
- WM11 active
- 7th Concession Rd watermain active
- Secondary PZ dummy pump active

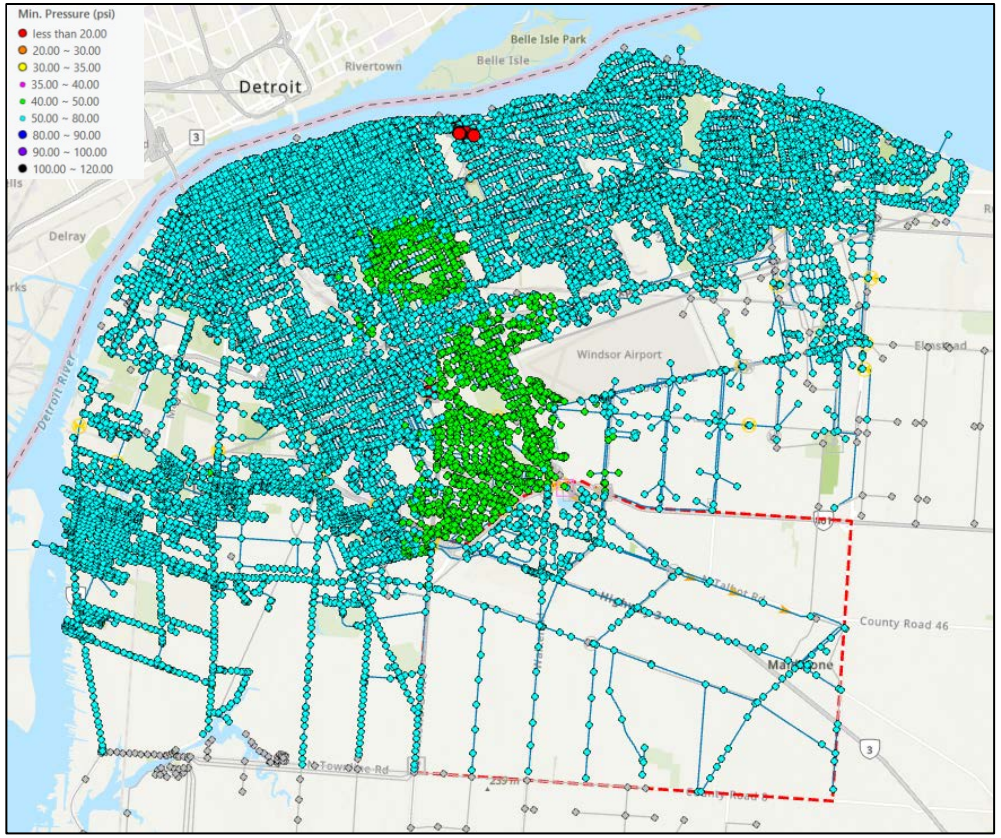
Location 3 – 2049 ADD + Upgrades

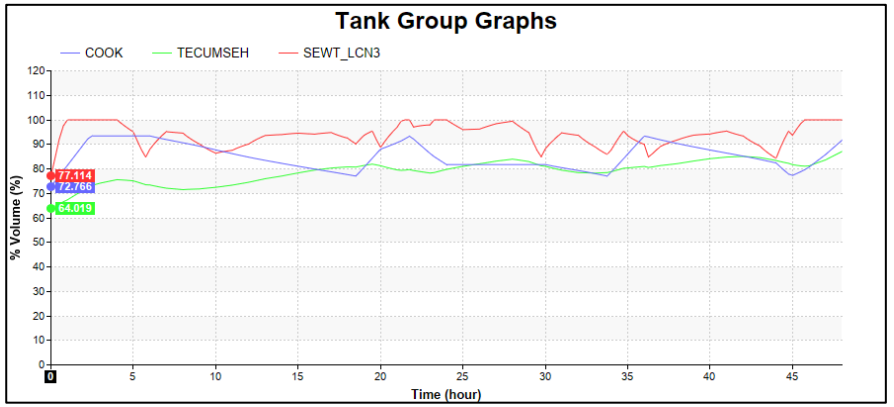




- 2049 MDD + Upgrades
- All 2023 WSMP infrastructure recommendations are active
- CCFM active
- WM11 active
- 7th Concession Rd watermain active
- Secondary PZ dummy pump active

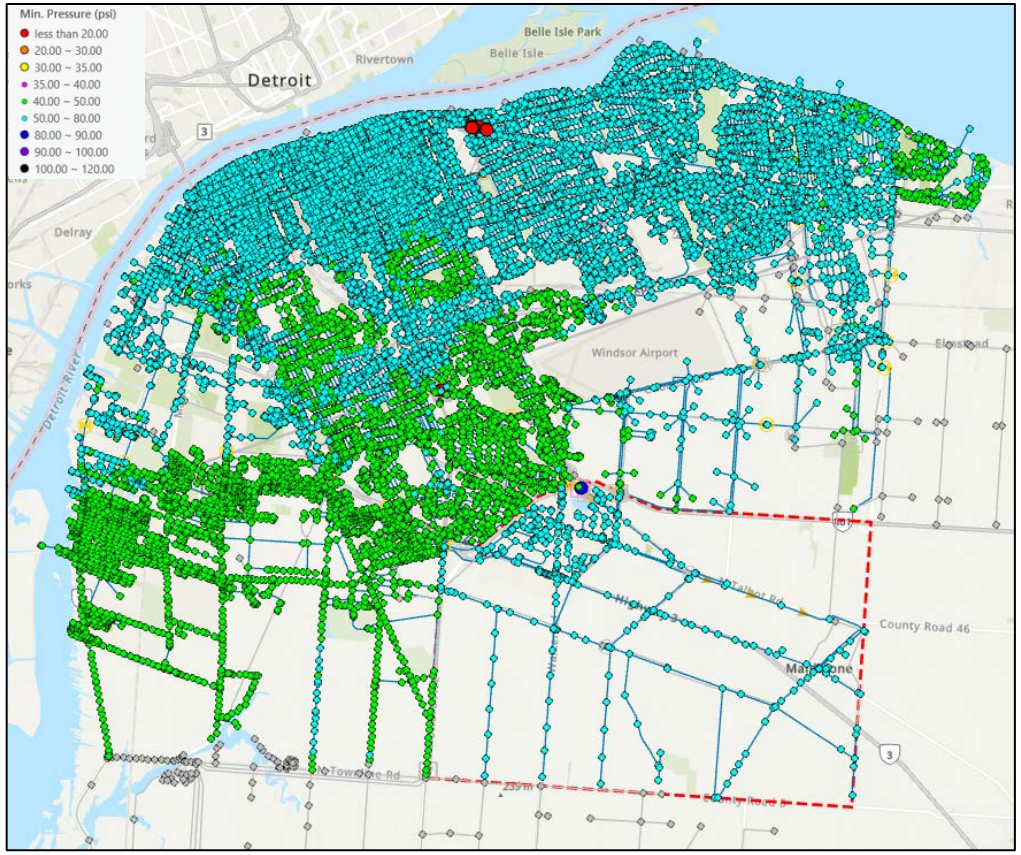
Location 3 – Ex. MDD + Upgrades

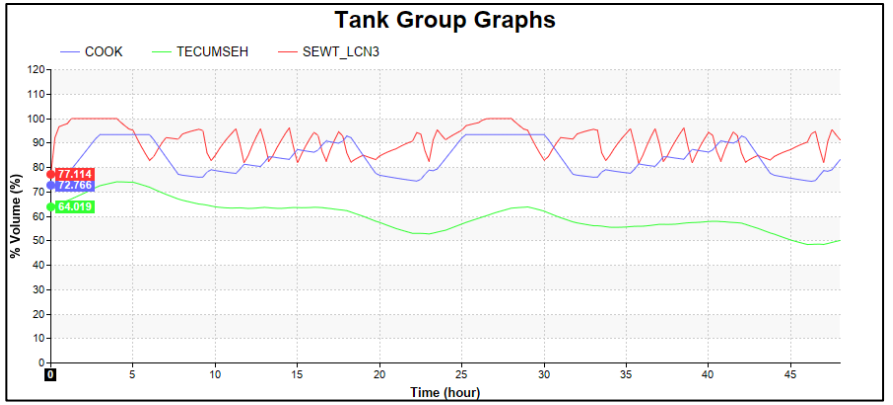




- Existing MDD + Upgrades
- CCFM active
- WM11 active
- All 2023 WSMP infrastructure recommendations are active
- Secondary PZ dummy pump active
- SEWT operating between 80 – 100% full → in line with the operating range of Cook (slightly higher)
- Low pressure areas are resolved

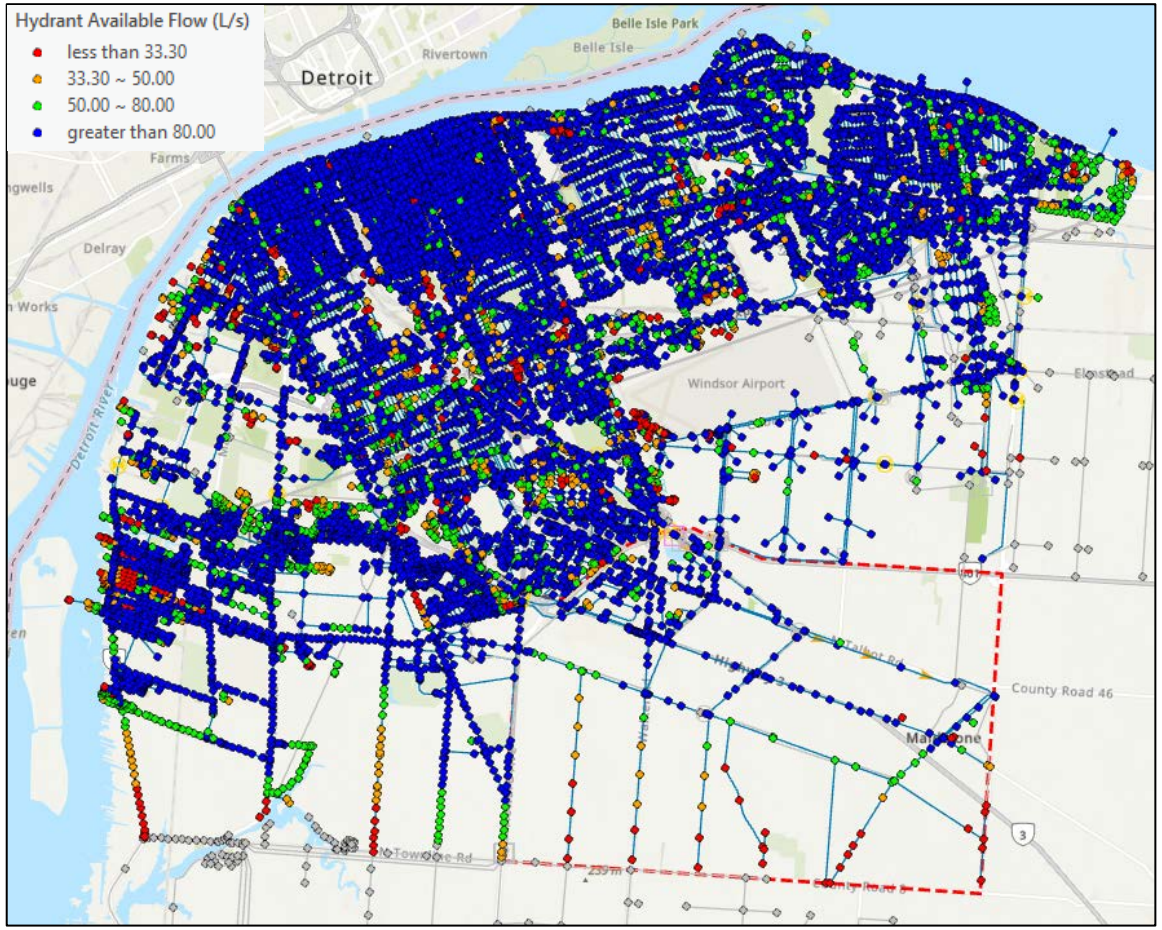
Location 3 – 2049 MDD + Upgrades





- 2049 MDD + Upgrades
- Secondary PZ dummy pump active
- Low pressures mostly resolved in Windsor
- Minor instances of pressures marginally less than 40 psi just outside of secondary pressure zone boundary
- Water levels Tecumseh ET show decreasing trend which may be resolved through control optimization

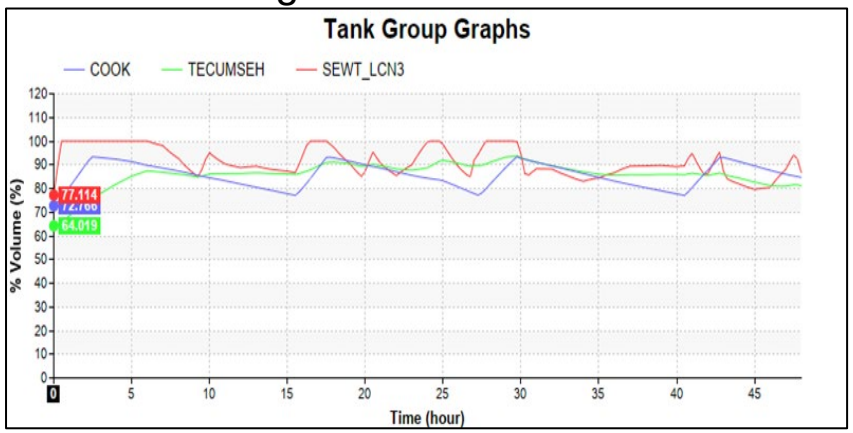
Location 3 + Upgrades – 2049 MDD + FF



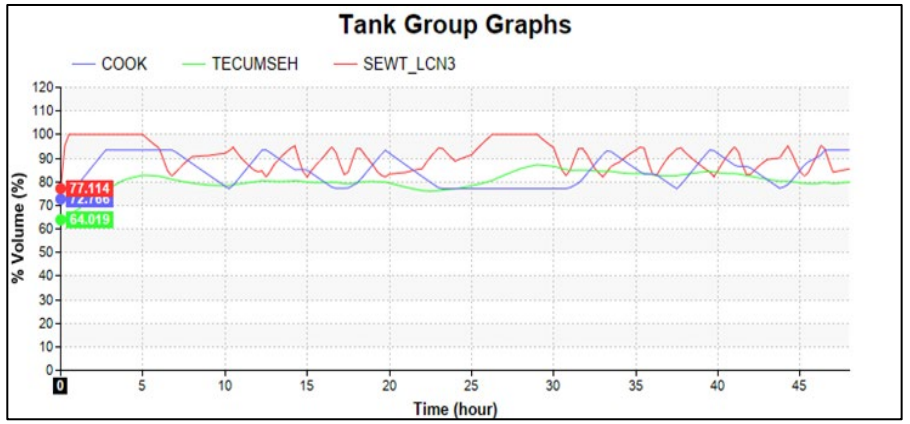
- Network includes proposed upgrades
- Secondary PZ dummy pump active
- Hydrant available flow at a residual pressure of 20 psi
- Available hydrant flow generally > 80 L/s throughout the system
- Fire flow < 30 L/s are largely found in dead-end watermains

Location 3 – ADD Controls Optimized

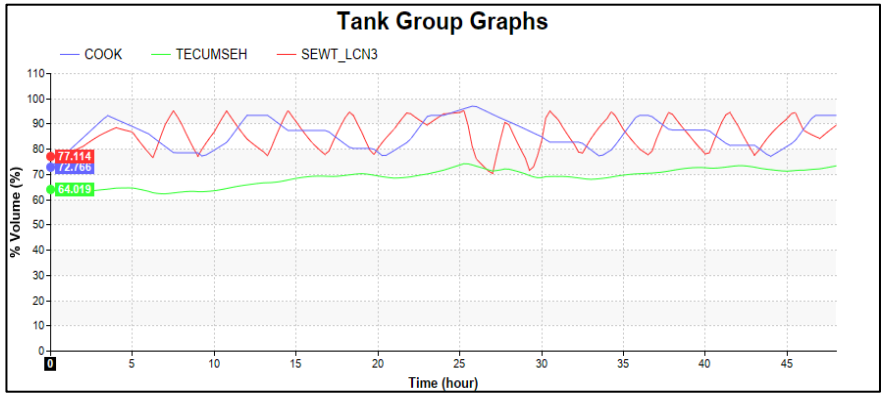
Ex ADD – original controls



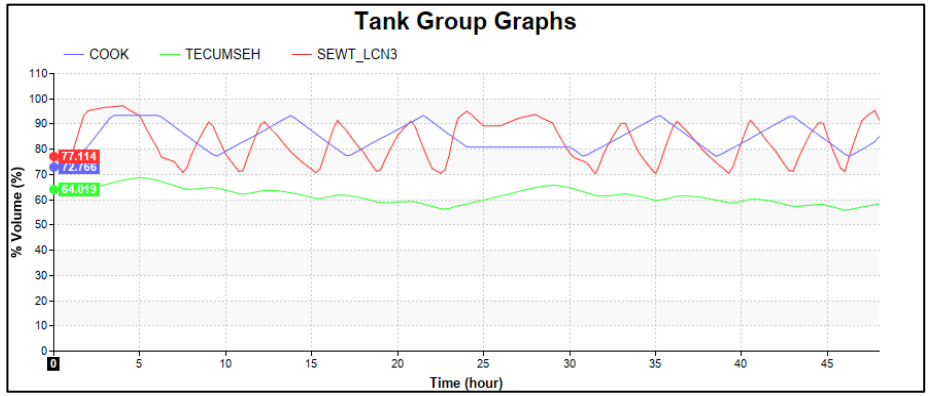
2049 ADD – original controls



Ex ADD – updated controls



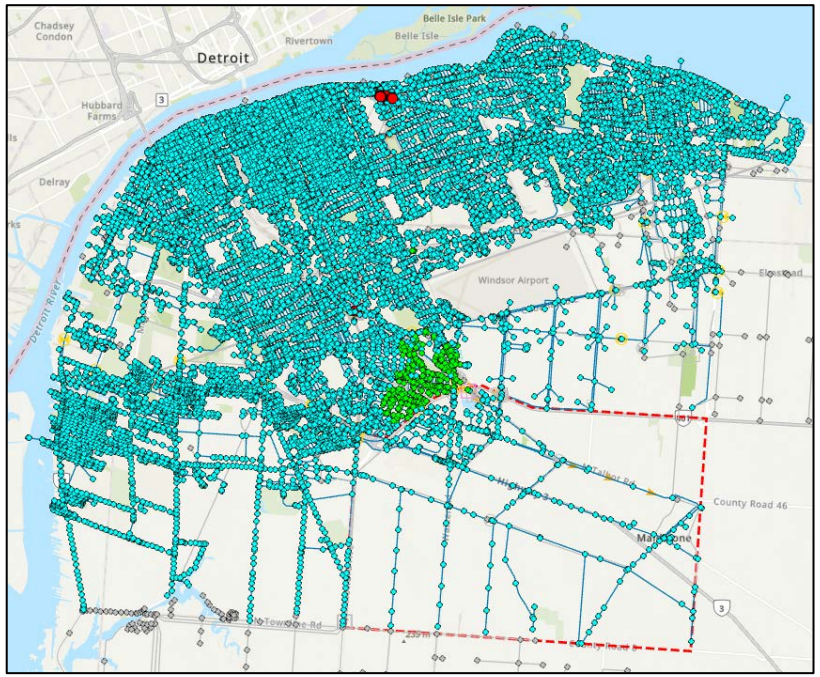
2049 ADD – updated controls



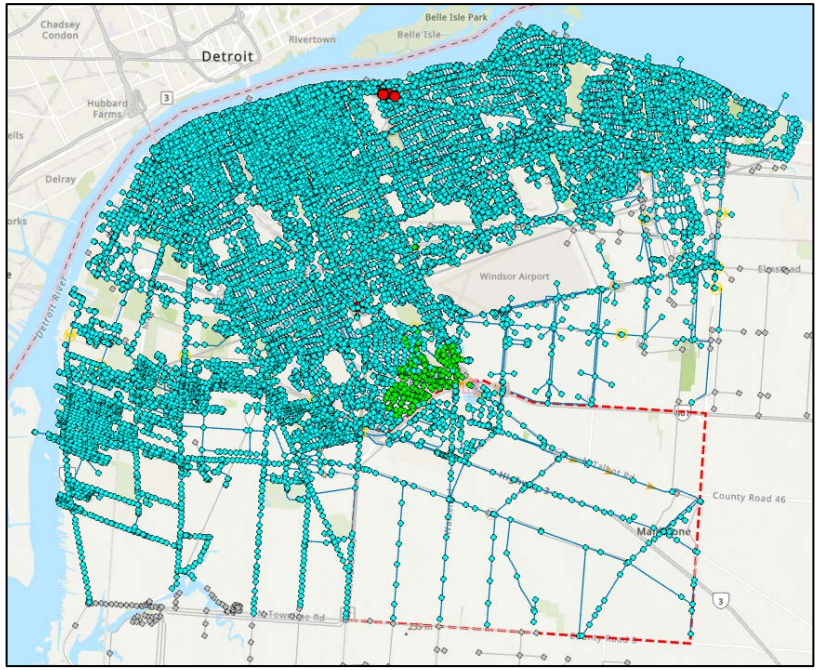
* Upgrades applied

Location 3 – ADD Controls Optimized

Ex. ADD



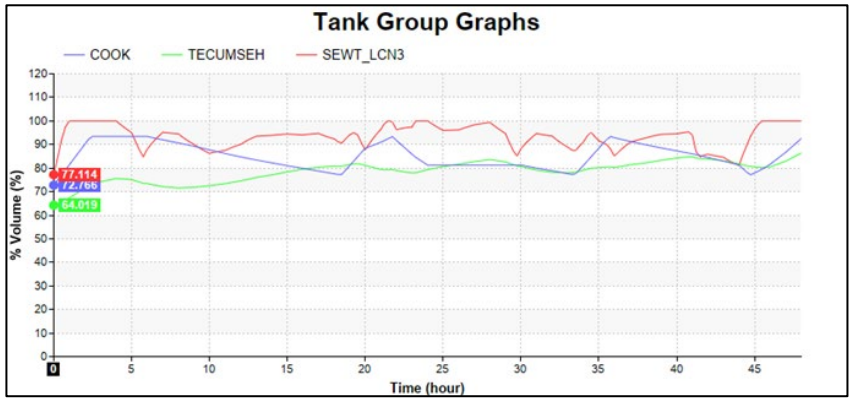
2049 ADD



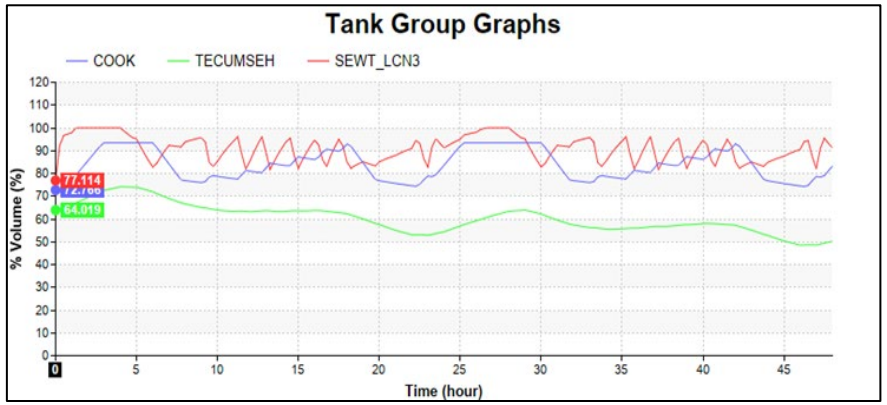
* Upgrades applied

Location 3 – MDD Controls Optimized

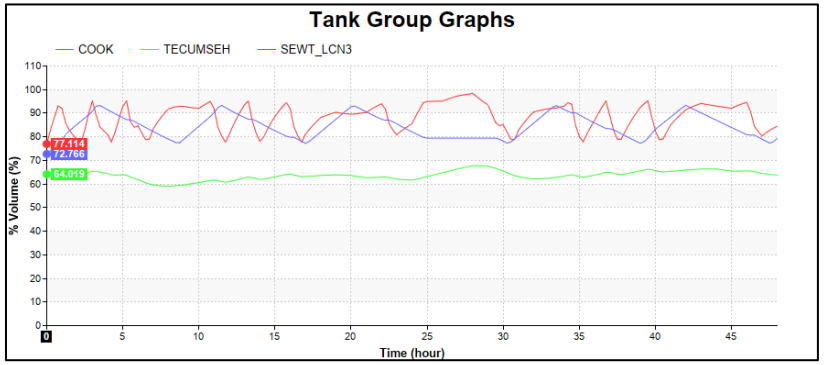
Ex MDD – original controls



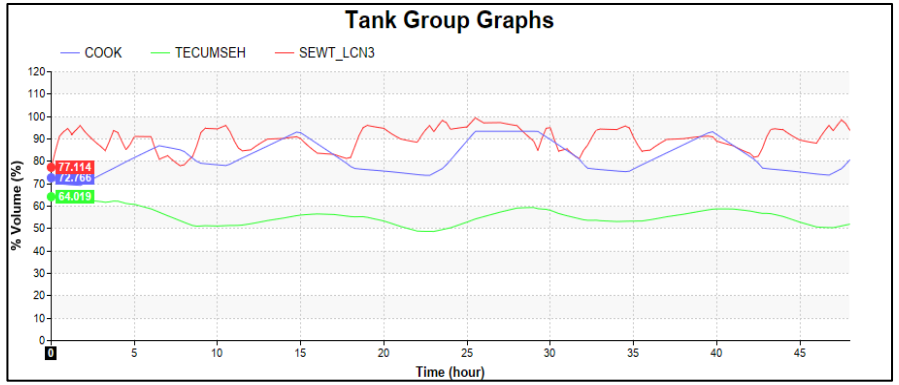
2049 MDD – original controls



Ex MDD – updated controls



2049 MDD – updated controls

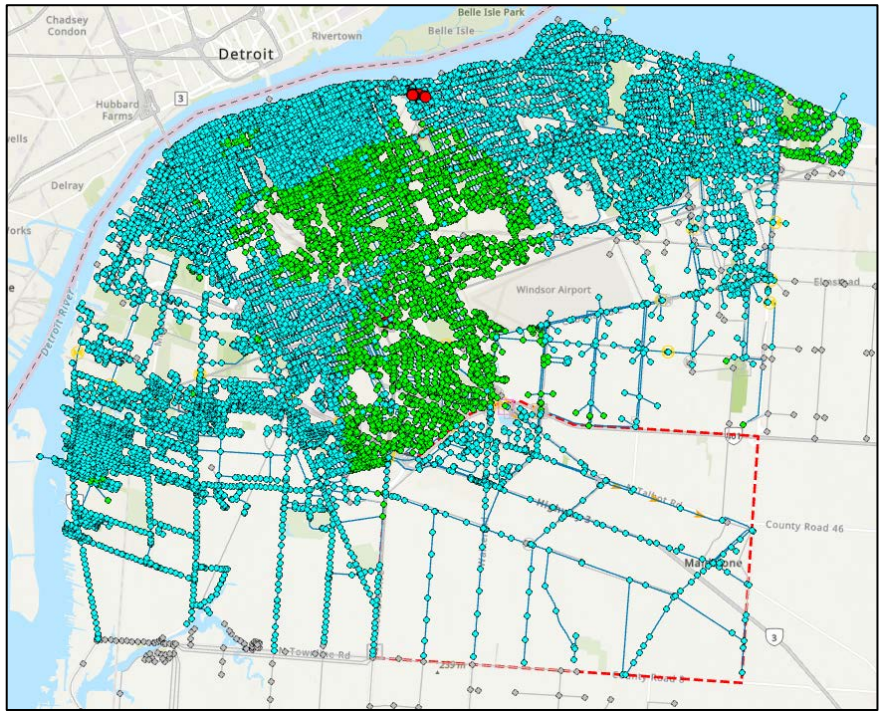


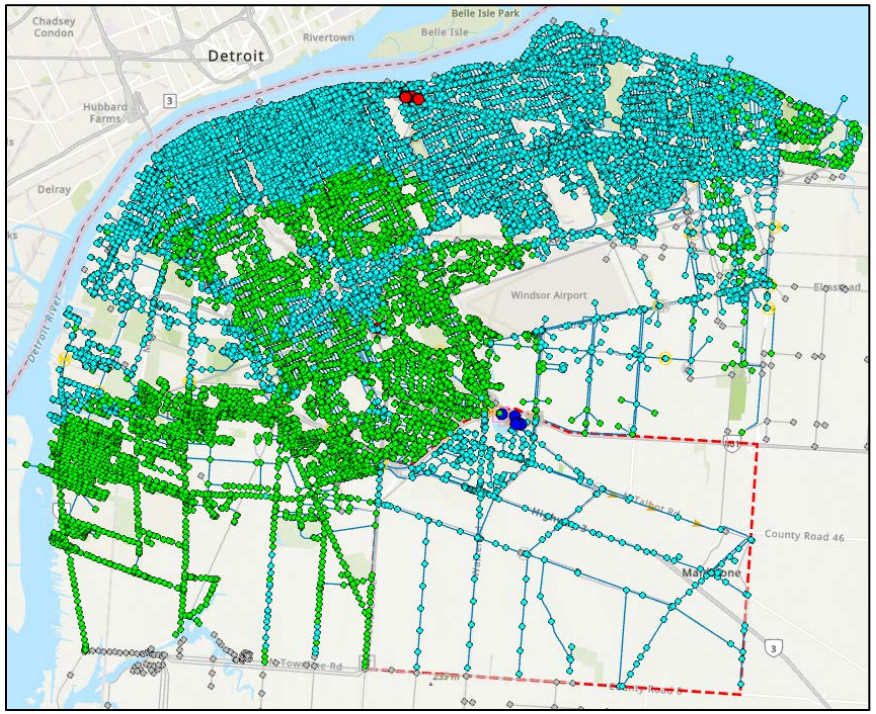
* Upgrades applied

Location 3 – MDD Controls Optimized

Ex. MDD

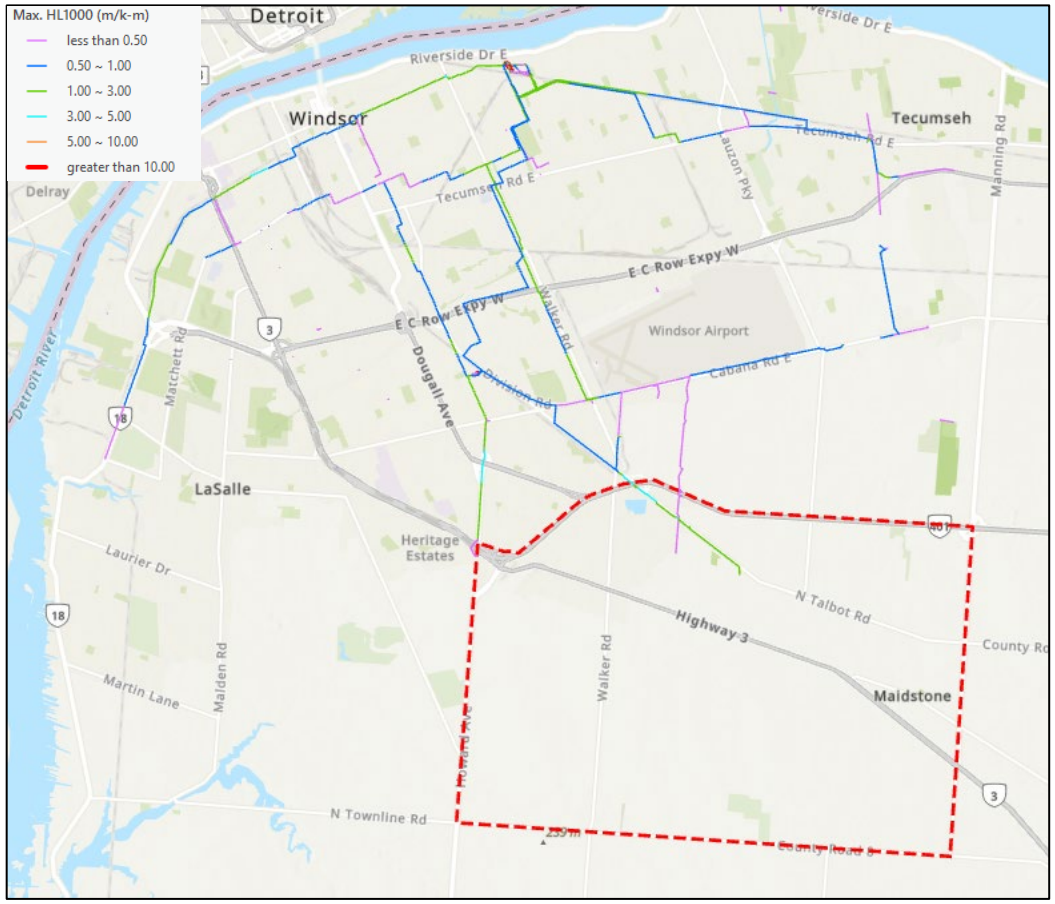
2049 MDD



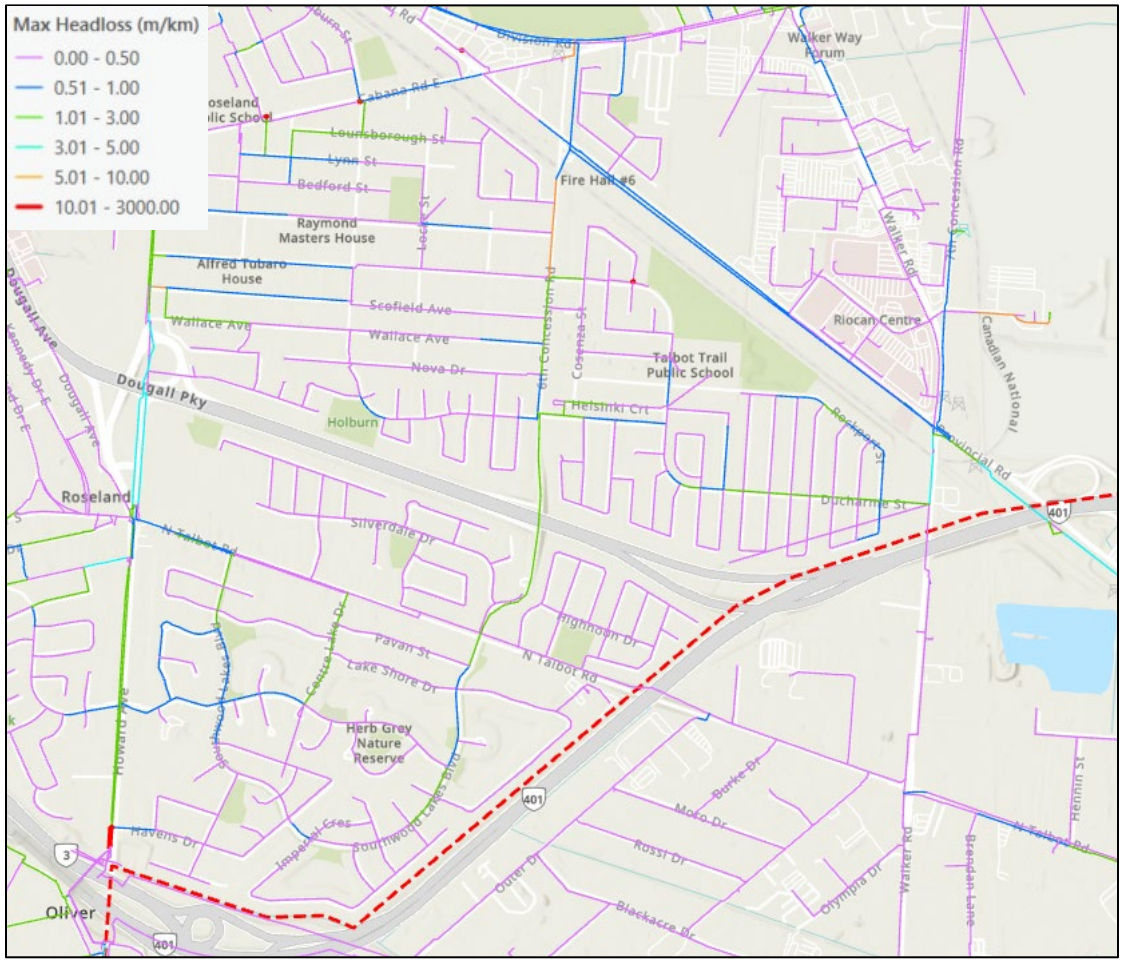


* Upgrades applied

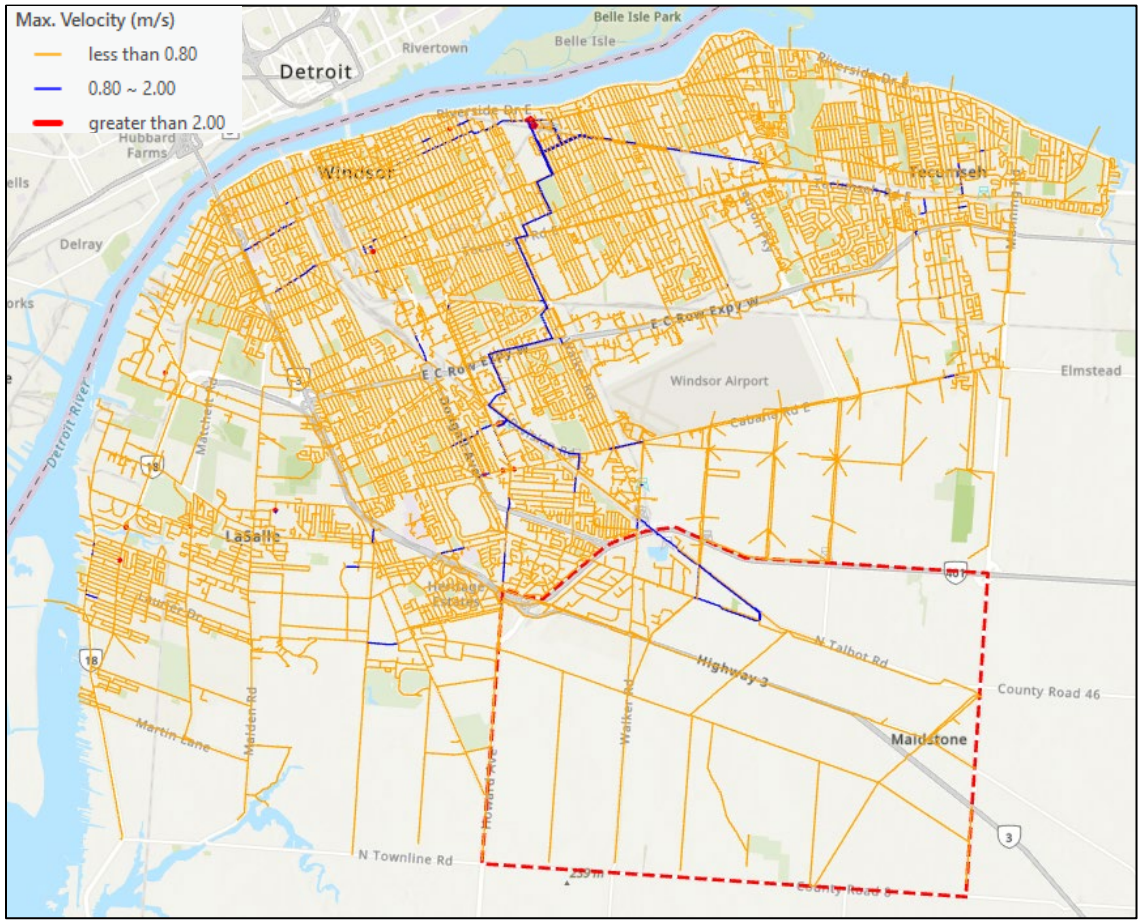
Location 3 – 2049 MDD + Upgrades (Controls Optimized) Maximum Headloss (m/km) in Watermains 600 mm or Greater



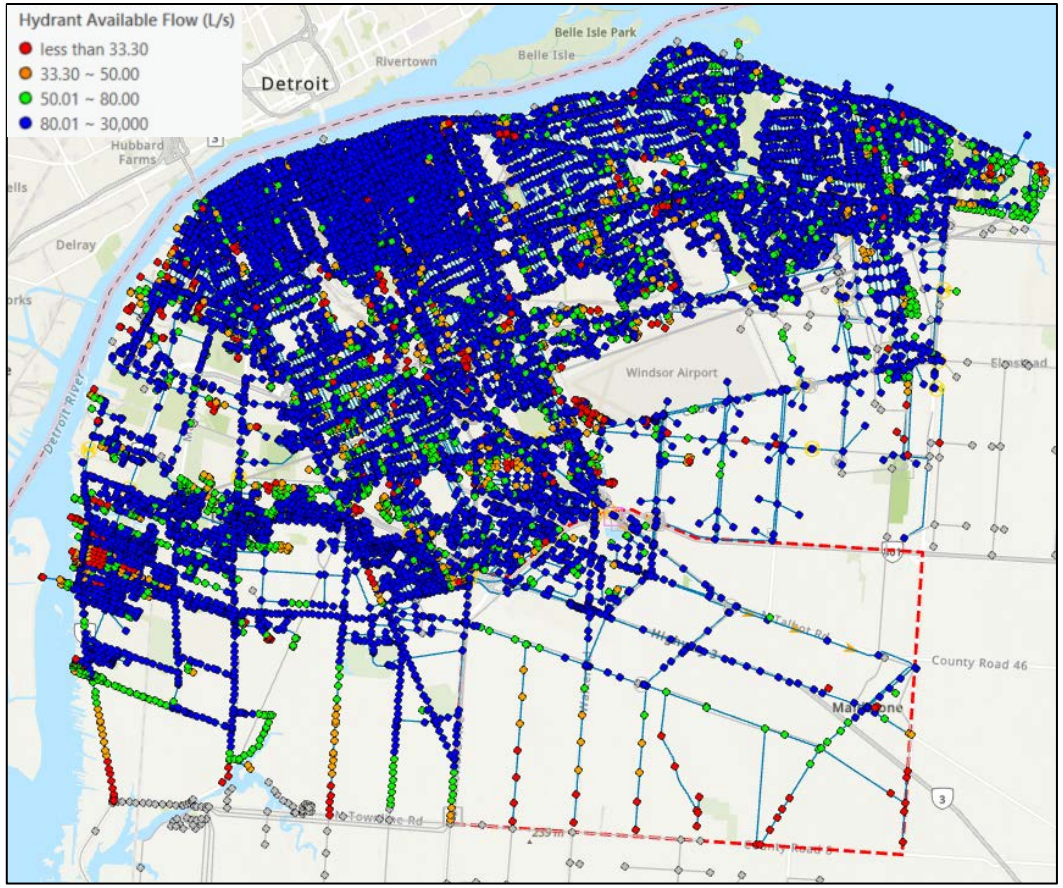
Location 3 – 2049 MDD + Upgrades (Controls Optimized) Maximum Headloss (m/km) Surrounding Location 3 and Low-Pressure Area



Location 3 – 2049 MDD + Upgrades (Controls Optimized) Maximum Velocity (m/s)



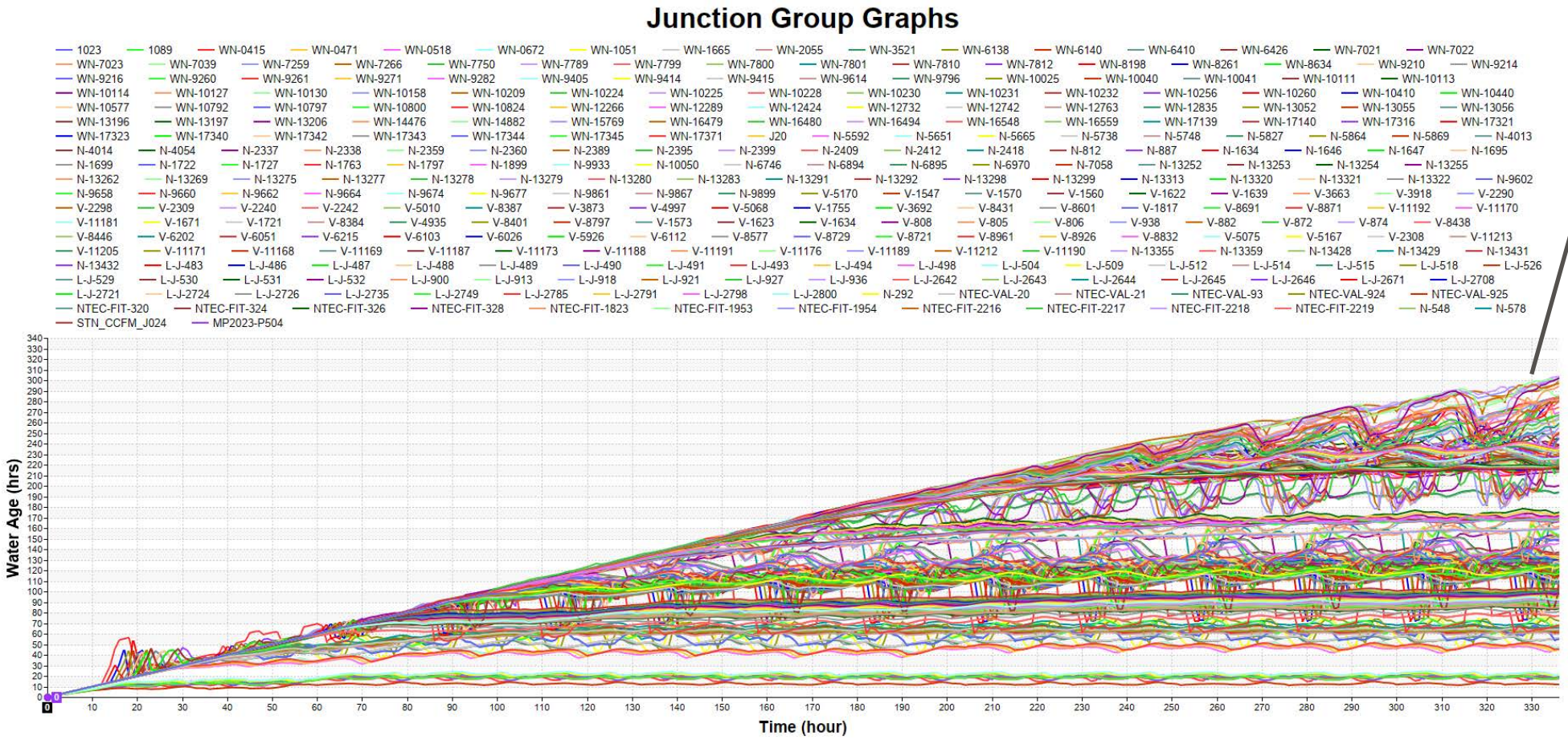
Location 3 (Controls Optimized) – 2049 MDD + FF



- Network includes proposed upgrades
- Hydrant available flow at a residual pressure of 20 psi
- Available hydrant flow generally > 80 L/s throughout the system
- Fire flow < 30 L/s are largely found in dead-end watermains

* Upgrades applied

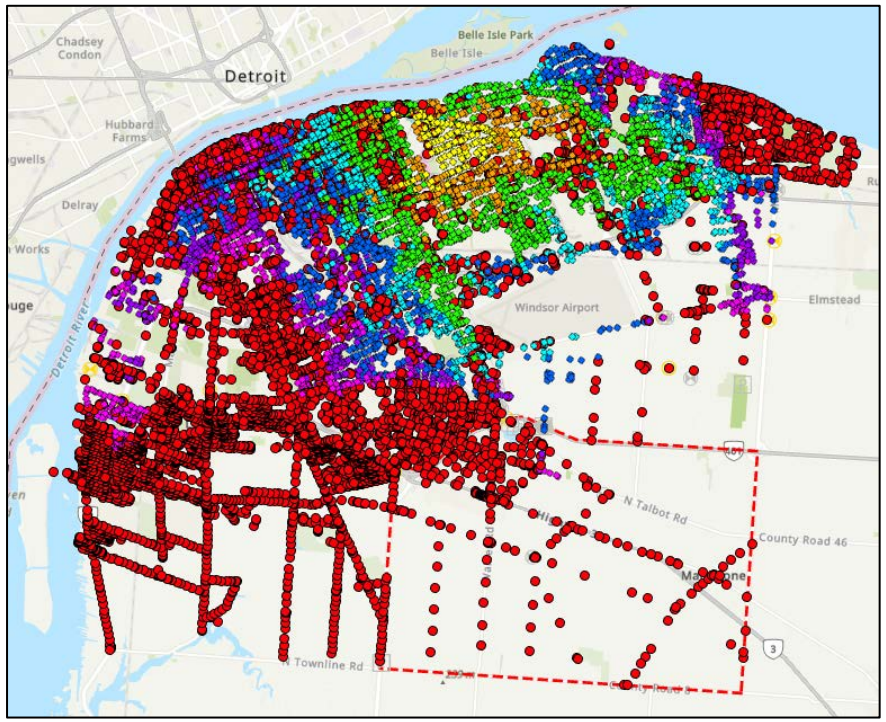
Water Age – Existing ADD Baseline (MP)



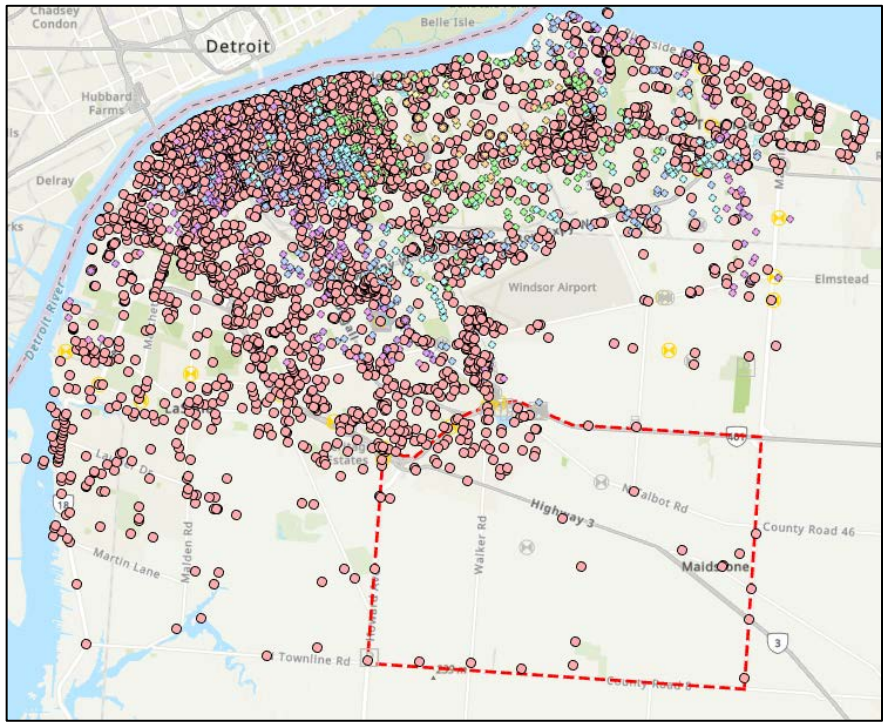
Some of the higher water age junctions still don't plateau after 14 days

Sample nodes across system

Water Age – Existing ADD Baseline (MP)



Dead end nodes removed

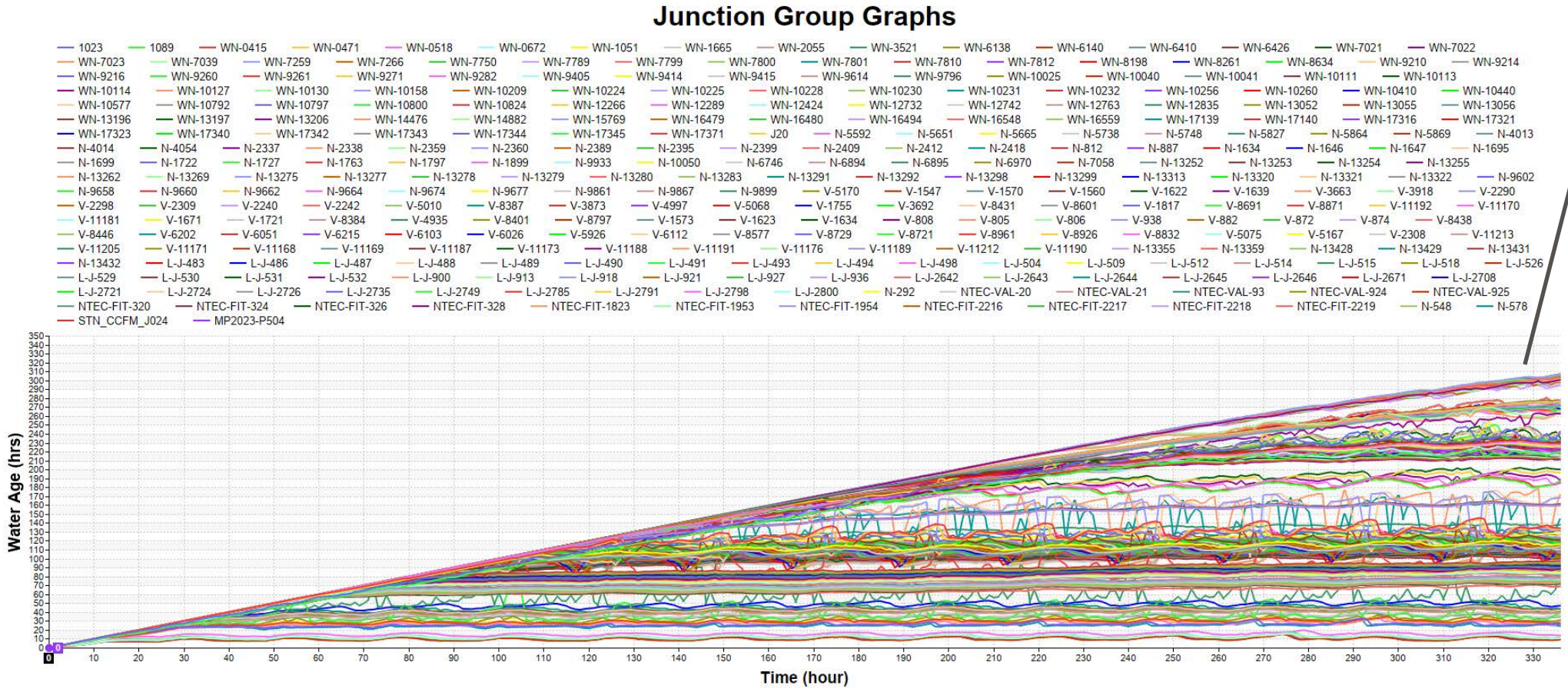


Dead end nodes only

5 days = 120 hr
8 days = 192 hr
Large amount of existing system has water age > 8 days

Average taken from hour 250 - 336

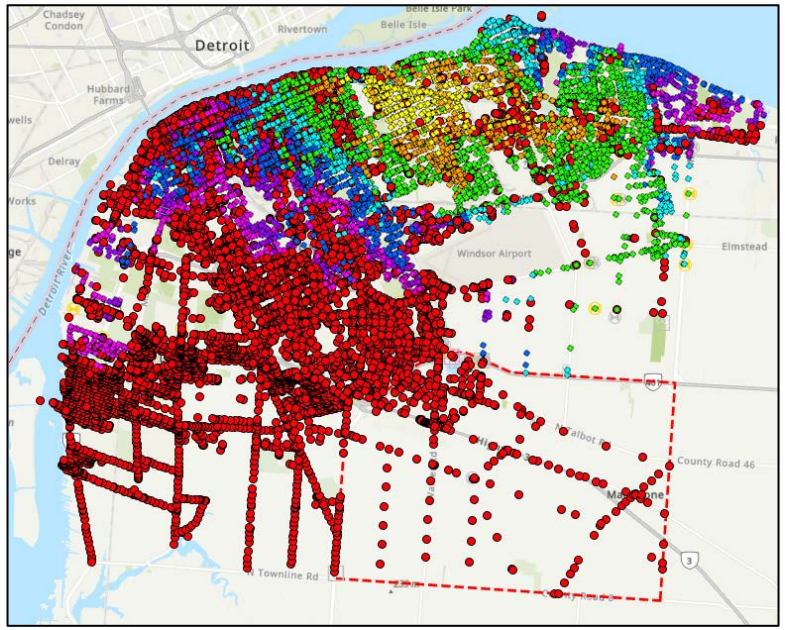
Location 3 SEWT Water Age - Ex. ADD



Some of the higher water age junctions still don't plateau after 14 days

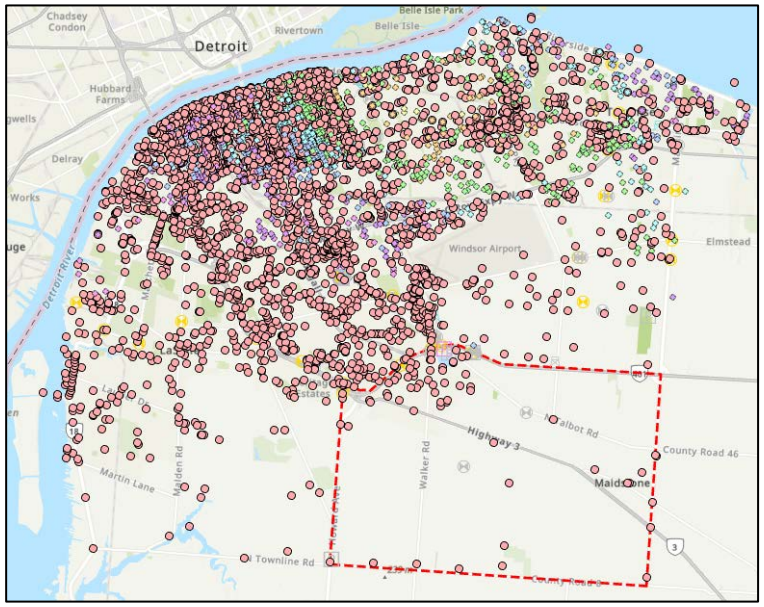
Sample nodes across system

Location 3 SEWT Water Age - Ex. ADD



Ave. Water Age (hrs)
- less than 24.00
- 24.00 ~ 48.00
- 48.00 ~ 96.00
- 96.00 ~ 120.00
- 120.00 ~ 150.00
- 150.00 ~ 170.00
- 170.00 ~ 192.00
- greater than 192.00

Dead end nodes removed



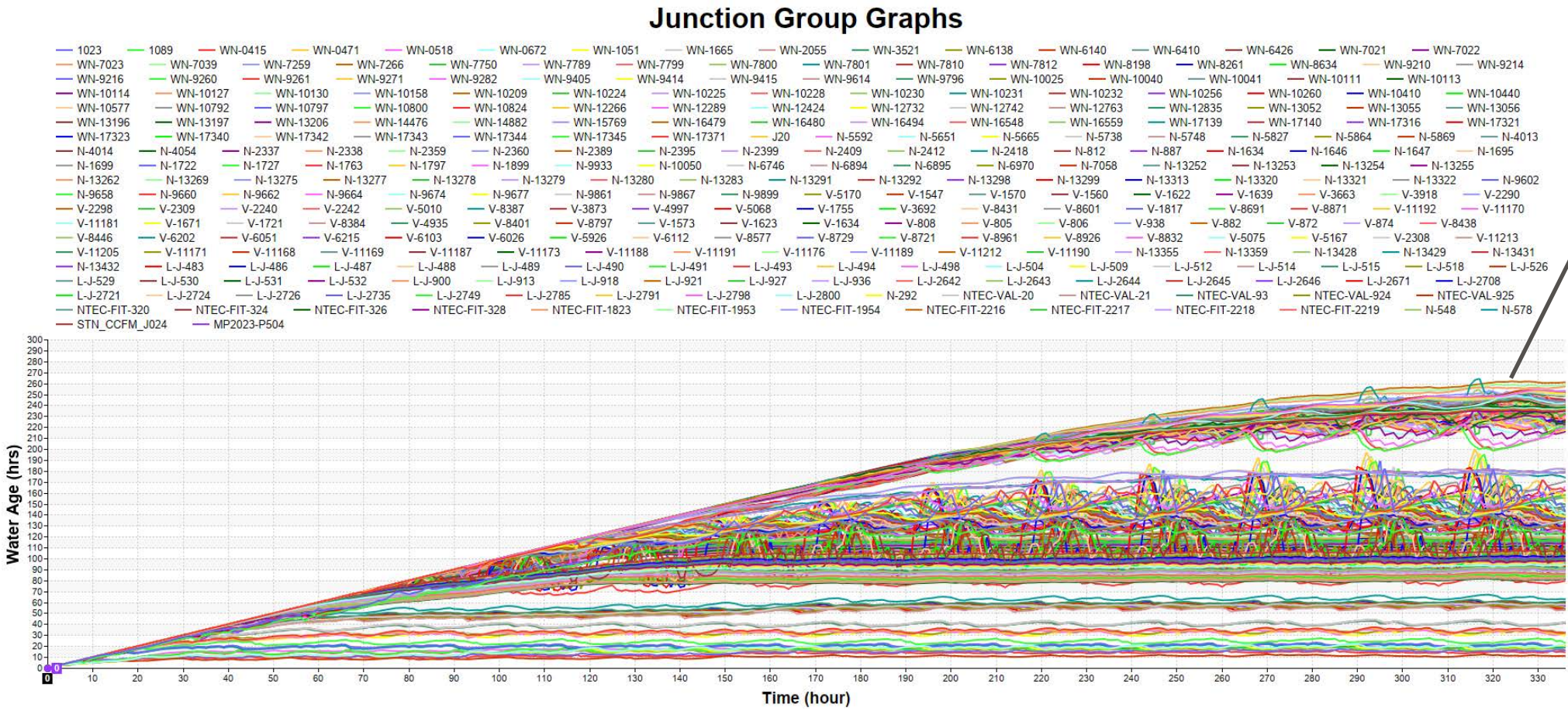
Ave. Water Age (hrs)
- less than 24.00
- 24.00 ~ 48.00
- 48.00 ~ 96.00
- 96.00 ~ 120.00
- 120.00 ~ 150.00
- 150.00 ~ 170.00
- 170.00 ~ 192.00
- greater than 192.00

Dead end nodes only

- *5 days = 120 hr*
- *8 days = 192 hr*
- System seems to follow same general trends as baseline existing
- Improvements in northeast area
- Some areas have higher water age in the system centre

Average taken from hour 250 - 336

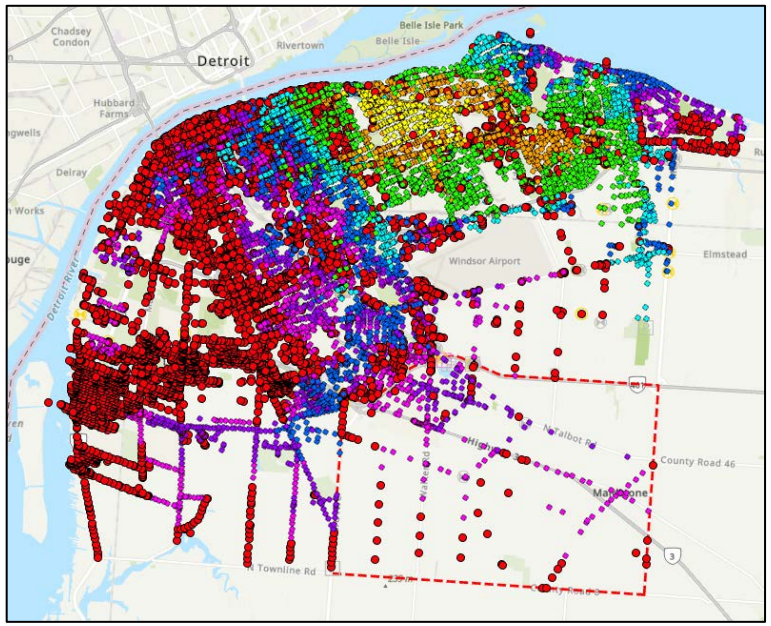
Location 3 SEWT Water Age - 2049 ADD



Some of the higher water age junctions still don't plateau after 14 days

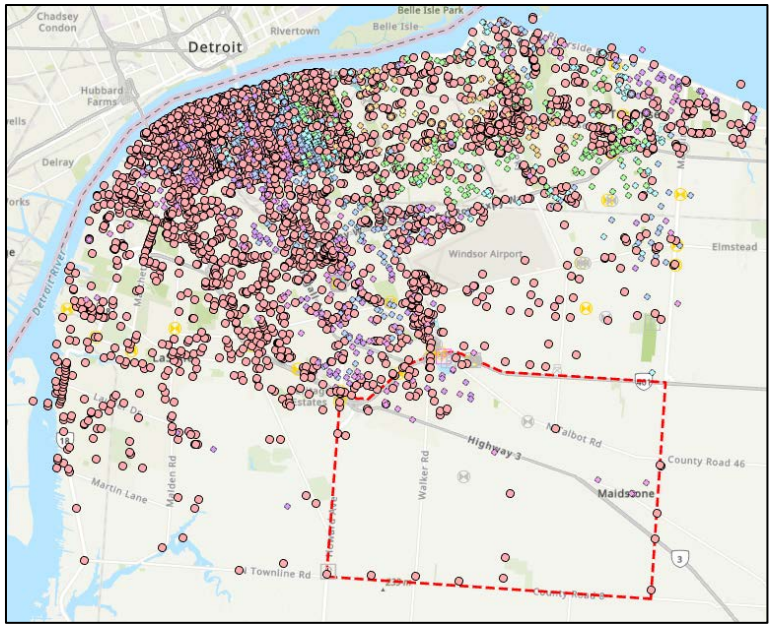
Sample nodes across system

Location 3 SEWT Water Age - 2049 ADD



Ave. Water Age (hrs)
- less than 24.00
- 24.00 ~ 48.00
- 48.00 ~ 96.00
- 96.00 ~ 120.00
- 120.00 ~ 150.00
- 150.00 ~ 170.00
- 170.00 ~ 192.00
- greater than 192.00

Dead end nodes removed



Ave. Water Age (hrs)
- less than 24.00
- 24.00 ~ 48.00
- 48.00 ~ 96.00
- 96.00 ~ 120.00
- 120.00 ~ 150.00
- 150.00 ~ 170.00
- 170.00 ~ 192.00
- greater than 192.00

Dead end nodes only

- *5 days = 120 hr*
- *8 days = 192 hr*
- Decreased water age in the northeast and the centre of system

Average taken from hour 250 - 336

To:	Christopher Manzon, P.Eng. ENWIN Utilities Ltd. 4545 Rhodes Dr Windsor, Ontario N8W 5T1 Phone: (519) 251-7300, ext. 295	From:	Alexandre Mineault-Guitard, P.Eng. Michael Georgalas, PE (AZ, HI, NV, NM, UT) Stantec Consulting Ltd. 2555 Ouellette Avenue, Suite 100 Windsor, Ontario N8X 1L9 Phone: (226) 704-3060
Project/File:	165620304	Date:	January 22, 2026

Reference: Elevated Water Tower Schedule B – Municipal Class Environmental Assessment – Technical Memorandum No. 5 – Transient Modelling

Hello Chris,

Please see Technical Memorandum No. 5 for the Elevated Water Tower, Schedule 'B' Municipal Class Environmental Assessment (MCEA). This Technical Memorandum covers the hydraulic transient water modelling carried out to identify any impacts and constraints of the existing water distribution system pertaining to the addition and construction of the new proposed elevated storage tank.

If you have any questions or concerns, please contact the undersigned.

Thank you,

STANTEC CONSULTING LTD.

Alexandre Mineault-Guitard ing., P.Eng. (ON)
Water Resources Engineer
Phone: (613) 725-5532
alexandre.mineault-guitard@stantec.com

Georgalas, Michael
Digitally signed by Georgalas, Michael
Date: 2026.01.22 09:58:17 -07'00'

Michael Georgalas PE (AZ, HI, NV, NM, UT)
Principal, Senior Hydraulics Engineer
Phone: (520) 545-7445
michael.georgalas@stantec.com

Attachment: Technical Memorandum No. 5

1 Introduction

The Windsor Utilities Commission (WUC) owns the integrated water supply system that provides water to the City of Windsor, the Town of LaSalle, and the Town of Tecumseh. ENWIN Utilities Ltd. (herein ENWIN) serves as the community's integrated water supply system operator under contract with WUC. The water system draws water from the Detroit River and water is pumped into the distribution system with high lift pumping systems at both the AJ Brian Pumping Station (PS) and the George Avenue PS. The system relies on treated water storage, which is provided by Reservoirs D and G at the Albert H. Weeks Water Treatment Plant (WTP), and the distribution storage provided at the JF Cook Reservoir and PS, the Hanna St Elevated Storage Tank (herein Hanna ET), and the Tecumseh Elevation Storage Tank. **Figure 1** provides an overview of the distribution system.

The WUC is proposing to construct a new Southerly Elevated Water Tower (SEWT), as recommended in the WUC Water System Master Plan (WSMP) 2023 Update. The existing Hanna ET is scheduled to be decommissioned by 2027 and replaced by the new SEWT. The SEWT is proposed to service the southeast portion of the service area with adequate pressure and velocity, while maintaining water quality in the distribution system.

The Central Corridor Feedermain (CCFM) is a new dedicated feedermain which is in design and will extend from AJ Brian PS to JF Cook Reservoir and PS, and continue southeast of JF Cook along Division Rd to the intersection at Cabana Rd E. The CCFM will be proceeding to construction in phases next year, which is integral to the function of the proposed SEWT. This new dedicated feedermain to JF Cook Reservoir will address reservoir supply issues and pressure problems in the southeast area of Windsor, while servicing the future needs of the Towns of Lasalle and Tecumseh, and the development areas around the Windsor airport. Stantec are currently in the process of completing the hydraulic analysis and the transient analysis associated with the CCFM.

The objectives of this technical memorandum (TM) No. 5 are as follows:

1. Develop a City-wide hydraulic transient model, based on the updated InfoWater Pro hydraulic model developed and discussed as part of Technical Memorandum No. 4 – Water Modelling (TM No. 4) of this project.
2. Examine the water hammer behaviours within the distribution network with the proposed SEWT and identify the probable hydraulic transient head envelope (maximum and minimum transient hydraulic grade lines) of the system and resulting pressures.
3. Recommend high-level recommendations on system improvements regarding transient mitigation measures, as may be warranted, as part of the Elevated Water Tower Environmental Assessment (EA) process.

Reference: **Elevated Water Tower Schedule B – Municipal Class Environmental Assessment – Technical Memorandum No. 5 – Transient Modelling**

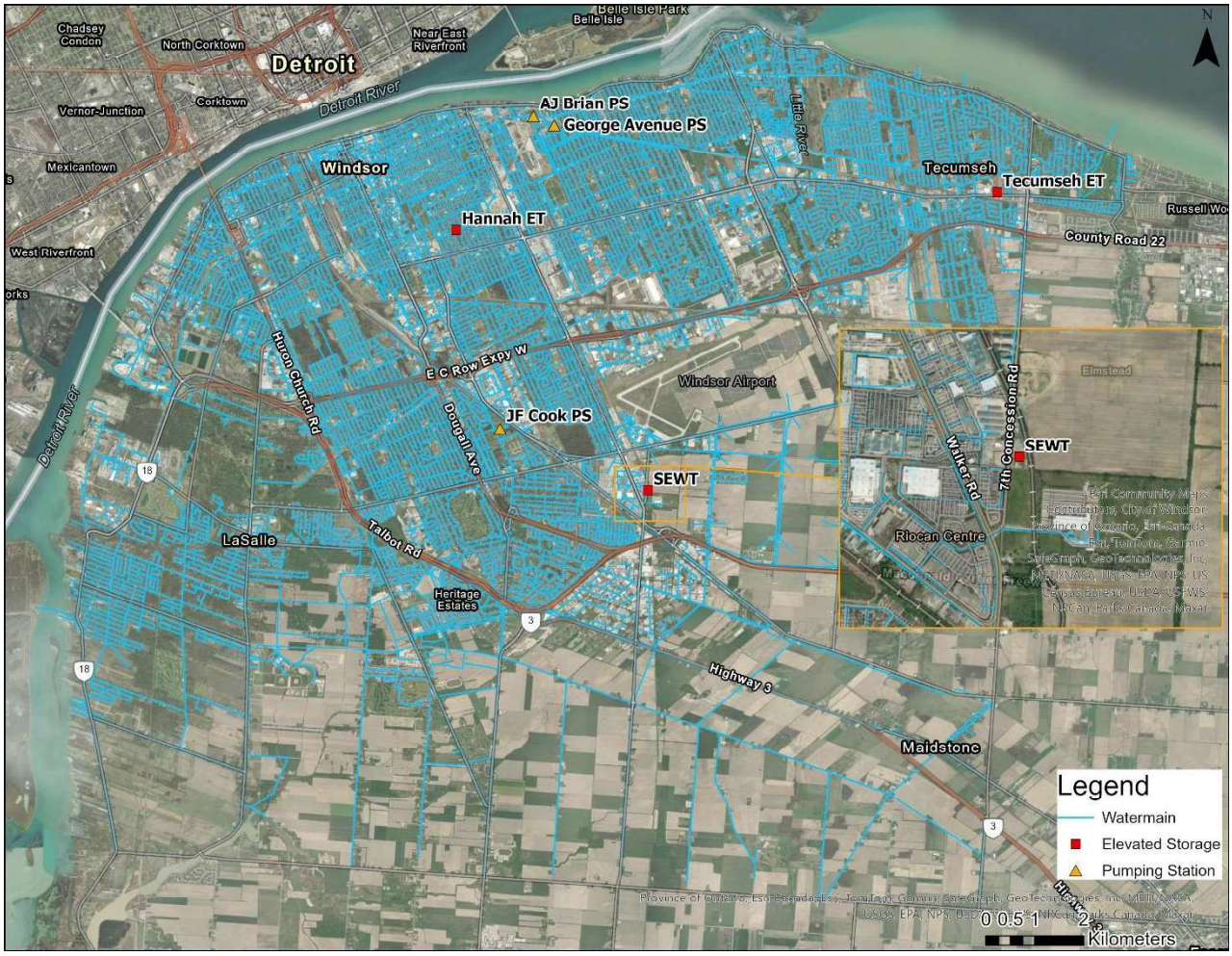


Figure 1: Study Area Overview

The hydraulic analysis in relation to the proposed SEWT was documented in a separate document (TM No. 4) as part of a previous phase of this project. The key information and outcomes of TM No. 4, setting the basis for this analysis, are summarized below.

- There are three (3) parallel pumps at JF Cook PS (i.e., Pump #1, Pump #2, and Pump #3). Under existing conditions, Pump #3 is set to provide additional supply on a timed approach. Pumps #1 and #2 are designed to provide additional supply to the distribution system, during peak demand conditions.

- Under future conditions with the proposed SEWT, Pump #4 at AJ Brian PS is first turned on when levels in SEWT are dropping. Then, Pumps #1 and 3 at JF Cook PS are turned on when SEWT levels keep dropping. However, it should be noted that when all above-mentioned pumps are active, the pumps at JF Cook PS are the main contributors, in terms of flows, to SEWT.

- The recommended size for the new SEWT, as documented in the 2023 WSMP, is 8 ML. This tank size was carried over in this analysis. The proposed tank top water level (TWL) and low water level (LWL) are 217.38 m and 225.40 m, respectively. The LWL corresponds to the one used to model the "south tank" as part of the 2023 WSMP. The proposed TWL matches the existing Tecumseh ET.

- Infrastructure upgrades (watermain upsizing), in addition to the ones identified as part of 2023 WSMP which were previously integrated in the updated hydraulic model, were identified to improve the system operation and adequately service the distribution for the preferred location for the new SEWT (referred to Location #3, as shown in **Figure 1**). The infrastructure upgrades, as listed below, were included in the current transient analysis:

    - Walker Rd, north of Provincial Rd to SEWT: Upsizing the existing 300 mm dia. pipe to 800 mm dia. (761 m)

    - Walker Rd, Provincial Rd to N Talbot Rd: Upsizing the existing 300 mm dia. pipe to 800 mm dia. (1,222 m)

    - N Talbot Rd, Walker Rd to 6th Concession Rd: Upsizing the existing 300 mm dia. pipe to 600 mm dia. (1,5542 m)

2 Transient Model Construction

The software used for this transient analysis was OpenFlows HAMMER (herein HAMMER), distributed by Bentley Systems. The InfoWater Pro model developed as part of TM No. 4 was used as the basis for the development of the HAMMER hydraulic transient model. Upon its import into HAMMER, a skeleton of the distribution network was developed by removing smaller watermains, dead-end watermains, and watermains that do not provide a significant impact of the network's behaviour. This is completed to speed up computational time of the transient model. A tool (Skelebrator Skeletonizer) is available in HAMMER to skeletonize the distribution network, which includes various processes. The general methodology used to skeletonize the transient model is presented below.

- **Step 1**: Parallel Pipe Merging: the first step of the skeletonization process was to remove parallel pipes. This process identifies and removes one of the pipes in parallel with shared start and stop nodes. The tool adjusts pipe properties (roughness or diameter) to account for removed pipes, while maintaining constant headloss. For this study, pipe roughness was adjusted.

- **Step 2**: Series Pipe Merging: the second step was to combine pipes in series into a single equivalent pipe, provided they are not connected to another pipe. The tool allows the user to define how pipes are removed and demands distributed. For this study, only pipes of equal diameter were merged. This step was repeated, for each diameter, until all applicable pipes were combined.

- **Step 3**: Branch Trimming: the next step was to remove short dead-end links and reallocates demands from removed junctions to the start of the branch. This recursive process continues until all applicable branches are trimmed, ensuring the network's hydraulic behaviour remains unaffected.

- **Step 4**: Smart Pipe Removal: lastly, this process removes small diameter pipes while maintaining network connectivity and important elements like pumps and valves. The algorithm identifies elements that can be removed to ensure network integrity. For this project, the process was focused on smaller pipes (less than 600 mm diameter), to maintain larger transmission mains in the model.

The steps outlined above are iterative and may need to be repeated several times to ensure that all candidate pipes are identified and processed. The skeletonization process reduced the distribution network from 36,291 pipes and 33,850 nodes to 2,042 pipes and 1,339 nodes, as shown in

Figure 2.

Following skeletonization, the hydraulic grade line (HGL) and pressures at nodes, and flow along larger transmission mains were compared at selected locations between the skeletonized model and the hydraulic model (TM No. 4). This comparison verified that the hydraulic conditions were maintained throughout the network. As a result, sufficient confidence was established in the transient model, allowing subsequent analyses to proceed.

Reference: **Elevated Water Tower Schedule B – Municipal Class Environmental Assessment – Technical Memorandum No. 5 – Transient Modelling**

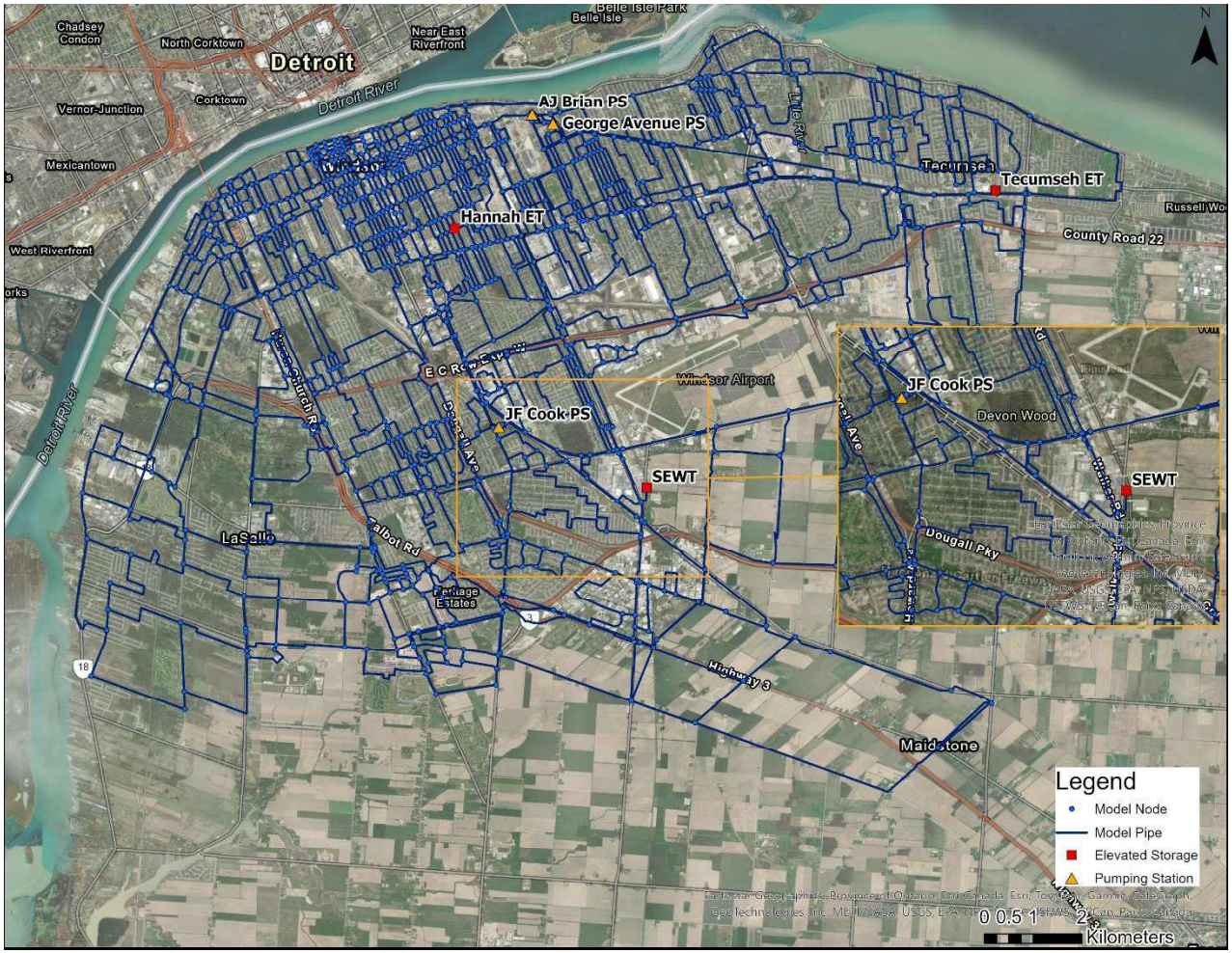


Figure 2: Transient Model Schematic

2.1 Model Development

2.1.1 Wave Speed

Wave speed or celerity is a characteristic of the pipe that indicates the speed of a pressure wave propagating through different materials and pipe diameters. The wave speed, denoted “c”, is a function of the density of the fluid, the Young's modulus of elasticity of the pipe material, as well as the pipe’s wall thickness. Pipe wave speeds were calculated using the ”Wave Speed Calculator” provided as part of the modelling software. An analysis was completed to identify the wave speeds for various pipe materials and diameter combinations. Available data show that PVC pipes represent 54% of the distribution network (based on pipe length), while the second most predominant pipe material is cast iron with about 20%. There are also about 12% of the distribution network without material information. For pipes with missing material information, pipes up to 900 mm in diameter were assumed to be cast iron, and pipes with larger diameter than 900 mm were assumed as concrete. The values used in this analysis are listed in **Appendix A**.

2.1.2 Pump and Motor Inertia

Another important parameter to define in the hydraulic model is the pump inertia. The inertia of a pump is the resistance to change in angular velocity as it rotates around its shaft. This is an important consideration in assessing the impacts of sudden pump starts and stops. Larger pumps generally have a large inertia, which means they take longer to stop in the event of a power failure (sudden stop). Similarly, they take longer to start, and run at full speed.

Pump and motor inertia is a function of the pump’s speed, the head gain induced by the pump, the operating flow, as well as the pump’s efficiency. Based on information available, namely the pump curves (refer to **Figure 3**) extracted from the hydraulic model, as well as the pump speed extracted from the 2009 AECOM Planning Level Hydraulic Transient Analysis, the pump and motor inertia for the pumps at the JF Cook PS was calculated as 345 N m^2.

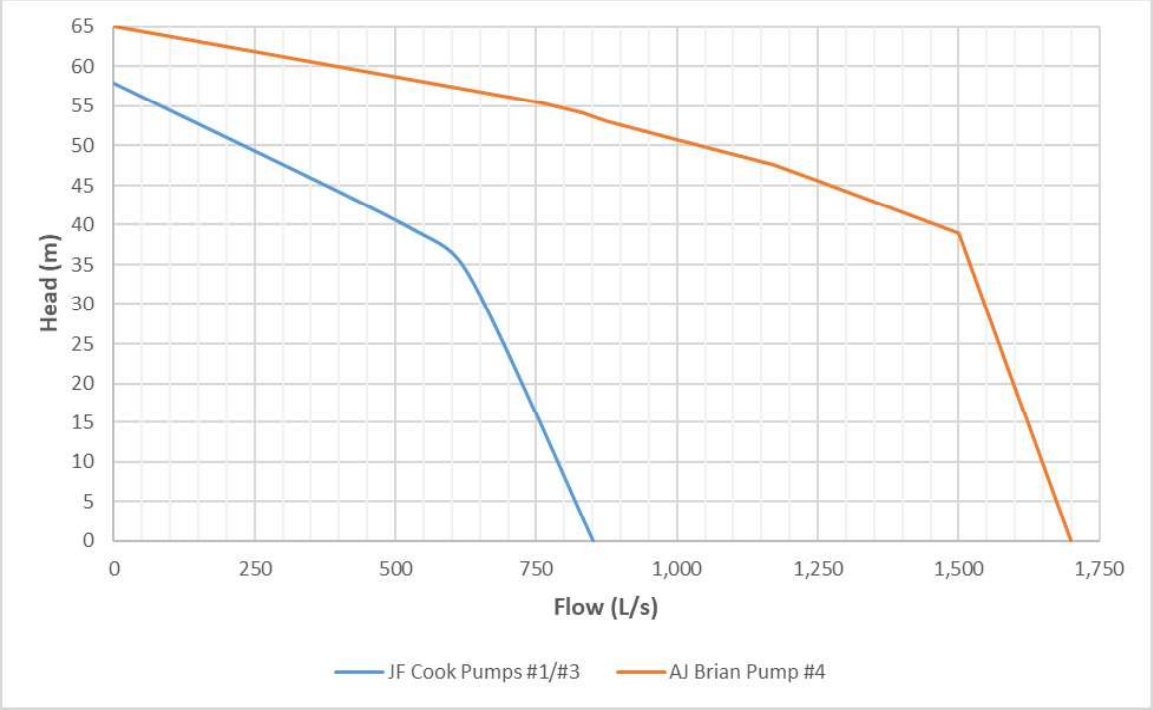


Figure 3: Pump Curves

2.2 Model Assumptions

The following assumptions were used in this analysis:

- The transient analysis was completed under 2049 maximum day demands (MDD), representing the maximum anticipated flows in the distribution network under future conditions. The 2049 MDD flows are as follows:
    - Windsor: 156.8 MLD
    - Lasalle: 43.0 MLD
    - Tecumseh: 59.6 MLD
    - Total: 259.4 MLD
- Given the distance (+/- 6.5 km) between JF Cook PS and AJ Brian PS, it was assumed that a power failure would not affect both facilities simultaneously. Therefore, a power failure scenario at JF Cook PS was considered in this transient analysis, given the pumps at JF Cook PS are contributing to most of the flow getting to SEWT. For instance, modelling results suggest that under a typical SEWT fill cycle, the maximum flow going in the tank is approximately 460 L/s, with approximately 390 L/s (85%) coming from the contribution of JF Cook PS. A power failure at AJ Brian PS was not considered in this analysis.

- The pump control logic (refer to **Table 1**) considered in this analysis was carried over from TM No. 4.

- **Table 1** also present the initial condition of the various pumps during the transient analysis. It is unlikely that only the pumps feeding SEWT would be in operation while the pumps feeding Tecumseh ET would be inactive. Hydraulic results (refer to TM No. 4), under both average day and maximum day demands, suggest that at least one pump would be active in servicing Tecumseh ET, while the pumps at JF Cook are in operation. Nonetheless, this scenario was assessed in the transient analysis as it could potentially lead to the worst transient conditions propagating from JF Cook PS.

Table 1: Pump Control Logic and Initial Conditions

Pumping Facility	Pump ID	Control	Model Initial Conditions
JF Cook PS	Pump #1	• Open when SEWT level is lower than 11.5 m; and • Closed when SEWT level is above 13.6 m.	***Pump On***
	Pump #2	Standby	N/A
	Pump #3	• Open when SEWT level is lower than 11.0 m; and • Closed when SEWT level is above 13.0 m.	***Pump On***
AJ Brian PS	Pump #1	• Open when JF Cook Res level is lower than 5.0 m; and • Closed when JF Cook Res level is above 6.0 m.	Pump Off
	Pump #2	• Open when JF Cook Res level is lower than 5.0 m; and • Closed when JF Cook Res level is above 6.0 m.	Pump Off
	Pump #3	• Open when Tecumseh ET level is lower than 8.0 m; and • Closed when Tecumseh ET level is above 9.0 m.	Pump Off
	Pump #4	• Open when SEWT level is lower than 12.0 m; and • Closed when SEWT level is above 13.4 m.	***Pump On***
	Pump #5	• Open when JF Cook Res level is lower than 5.0 m; and • Closed when JF Cook Res level is above 6.0 m.	Pump Off
Georges Avenue PS	Pump #1	• Open when Tecumseh ET level is lower than 8.0 m; and • Closed when Tecumseh ET level is above 10.0 m.	Pump Off
	Pump #2	• Open when Tecumseh ET level is lower than 9.0 m; and • Closed when Tecumseh ET level is above 10.0 m.	Pump Off
	Pump #3	Standby	N/A

- The power failure scenario at JF Cook PS was assessed under the following initial conditions at the elevated storage facilities.
    - Proposed SEWT: Initial Water Level of 10.90 m (HGL of 222.18 m).
    - Existing Tecumseh ET: Initial Water Level of 10.05 m (HGL of 223.26 m).
- Various minimum allowable transient pressures were considered for this study. At minimum, complete vacuum conditions (-14.2 psi or -100.1 kPa, full vacuum, vapour pressure or cavitation) are to be avoided within a distribution network. As such, a minimum transient pressure criterion of half vapour pressure (-7.1 psi or -50 kPa) was initially considered. Additional minimum transient pressure criteria were assessed, namely minimum pressure objectives of 0 psi (atmospheric conditions) and 20 psi were considered. The latter would maintain 20 psi, under normal operating conditions, which is an industry standards value to prevent potential infiltration of contaminants within the distribution network, which could lead to water quality deterioration.

- On the other hand, for the maximum transient pressure criterion, the objective was set to 100 psi (700 kPa) to prevent household plumbing damage, given the water services connected to the water distribution network.

3 Transient Analysis

3.1 Steady-State Analysis

First, the transient model was run under steady-state conditions under operating conditions listed in **Section 2.2**. Model results indicate that the pumps at JF Cook PS provide 1,286 L/s (643 L/s @ 31.6 m per pump), while Pump #4 at AJ Brian PS provides 1,455 L/s @ 40.0 m. The HGL from JF Cook PS to the proposed SEWT, along the length of the CCFM, Division Rd and Provincial Rd, is displayed in **Figure 4**.

The HGL and pressures at nodes, and flow along larger transmission mains were compared at selected locations between the steady-state transient model and the hydraulic model (TM No. 4) to validate that the hydraulic conditions were well replicated.

3.2 Transient Analysis Scenarios

A variety of changes in operating conditions can generate transient events. Pump start-up and shut-down, as well as valve operation can generate transient events. However, the scenario that typically creates the "worst case" condition is the sudden stop of the pumps due to power failure at the pumping station, also referred to as a "pump trip". For the purposes of this EA study, only a pump trip scenario was considered, as it would lead to the worst-case conditions. For this analysis, no control valves were assumed at the proposed SEWT. Operation of such valve was thus not considered.

The system was analyzed without surge mitigation measures, to evaluate the worst-case condition (i.e., unprotected system). If the transient pressure design criteria are not met with an unprotected system, high-level recommendations on transient mitigation measures will be discussed. As discussed in **Section 2.2**, a power failure scenario at JF Cook PS was considered in the transient analysis, given that the pumps at JF Cook PS are the main contributors to control the levels in the proposed SEWT. Transient analysis scenarios considered in this study are listed in **Table 2**.

Table 2: Transient Analysis Scenarios

Scenario	Transient Event	Mitigation Measures
#1	Power Failure / Pump Trip at AJ Brian PS (2 duty pumps on)	Unprotected System
#2	Power Failure / Pump Trip at AJ Brian PS (2 duty pumps on)	Hydropneumatic Tank at AJ Brian PS

The transient model was run for 300 seconds (5 minutes), with changes in the steady-state condition occurring 10 seconds following the start of the simulation. For the power failure (pump trip) scenario, the pumps were configured to have a sudden stop 10 seconds after the start of the simulation.

Reference: **Elevated Water Tower Schedule B – Municipal Class Environmental Assessment – Technical Memorandum No. 5 – Transient Modelling**

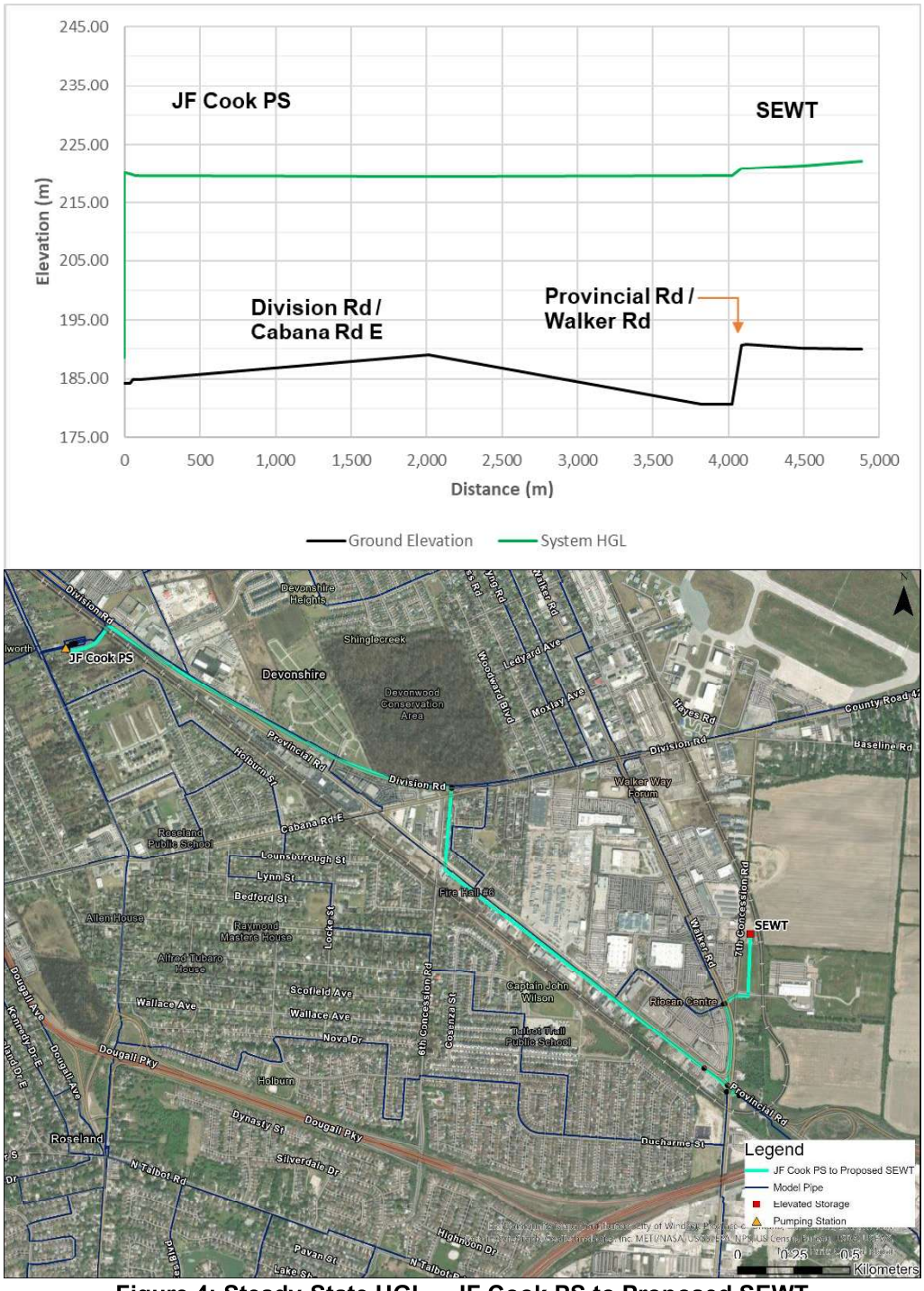


Figure 4: Steady-State HGL – JF Cook PS to Proposed SEWT

3.3 Transient Analysis Results

3.3.1 Transient Scenario #1 (Unprotected System)

The sudden pump trip at JF Cook PS, with both duty pumps in operation, induced a downsurge that propagated downstream of the pumping station. Results presented in **Figure 6** show that minimum pressures remain greater than 0 psi under a pump trip scenario in most of the distribution network. However, a pump trip would result in sub-atmospheric (<0 psi) conditions at a few locations in the vicinity of JF Cook PS, as shown by red nodes on **Figure 6.** Furthermore, minimum pressures less than 20 psi (identified in orange in **Figure 6**) would occur under a pump trip scenario in a radius of +/- 10 km of JF Cook PS. Such pressures would be sustained for approximately 5-10 seconds at a few model nodes, **Figure 5** showing examples for nodes 1099 and N-2866. The location of such nodes is shown in **Figure 6**.

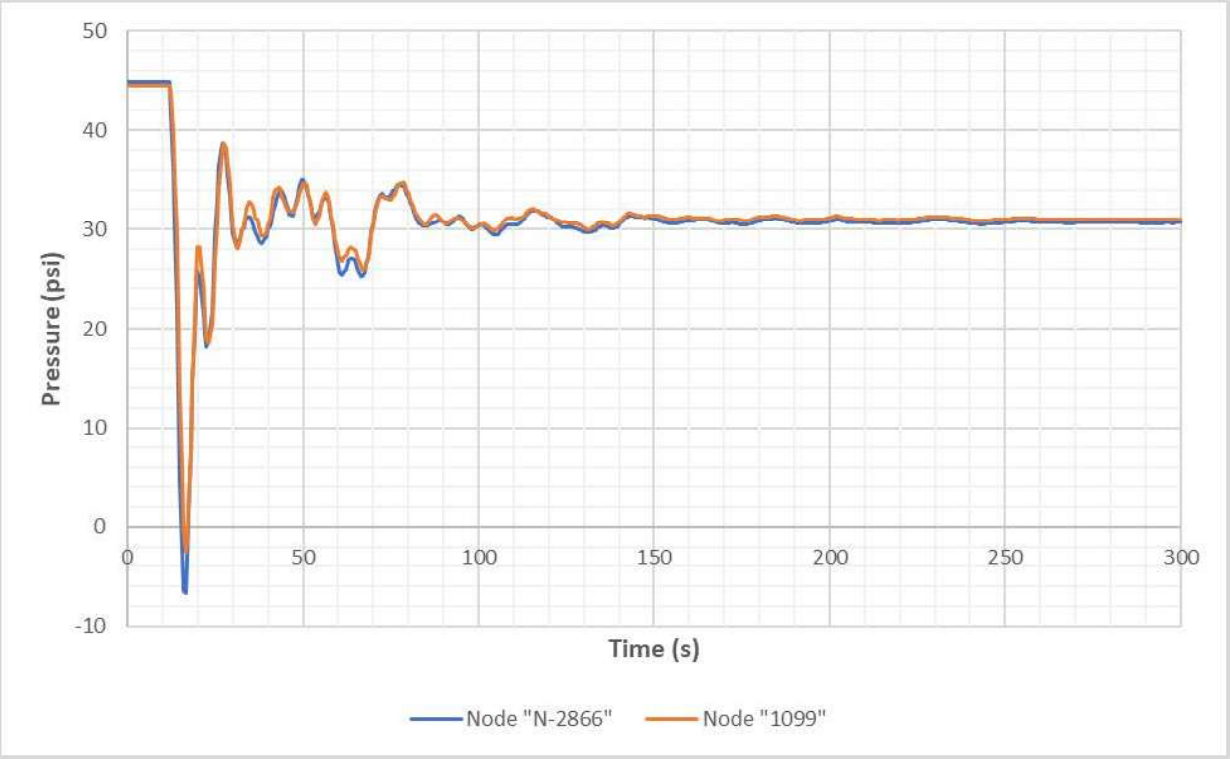


Figure 5: Pressures under Pump Trip Scenario at JF Cook PS at Nodes 1099 and N-2866

The maximum transient pressure within the distribution network under this scenario is 77 psi (refer to **Figure 7**), meeting the maximum transient pressure criterion. Model results indicate full vacuum conditions would not occur under a sudden pump trip of the pumps at JF Cook PS, but that pressures less than 20 psi, including sub-atmospheric pressures at some locations, would be observed. Typically, 20 psi should be maintained, under normal operating conditions, within a distribution network to prevent untreated water seeping in the distribution network, leading to water quality risk.

Reference: Elevated Water Tower Schedule B – Municipal Class Environmental Assessment – Technical Memorandum No. 5 – Transient Modelling

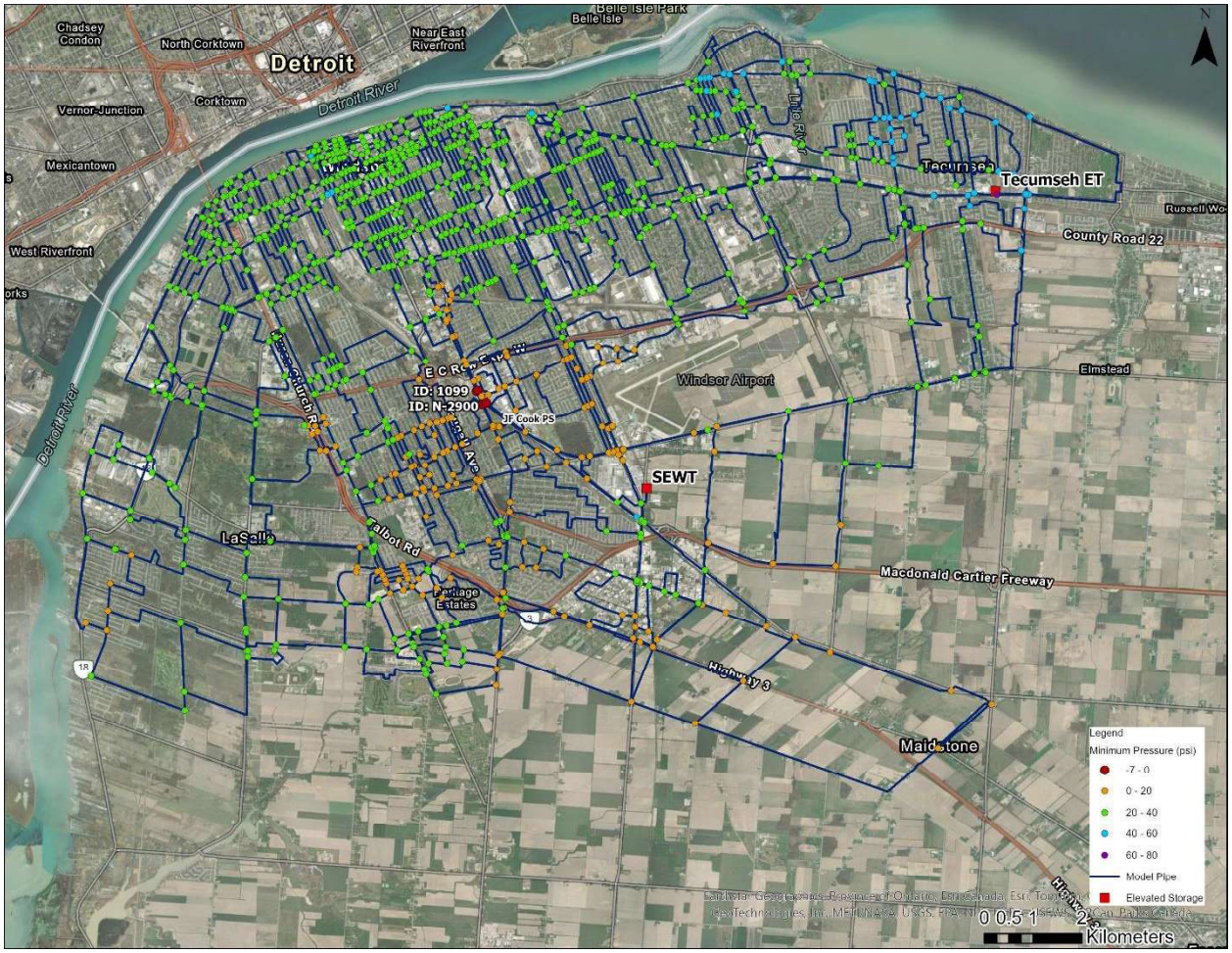


Figure 6: Minimum Transient Pressure under Pump Trip Scenario at JF Cook PS

Reference: **Elevated Water Tower Schedule B – Municipal Class Environmental Assessment – Technical Memorandum No. 5 – Transient Modelling**

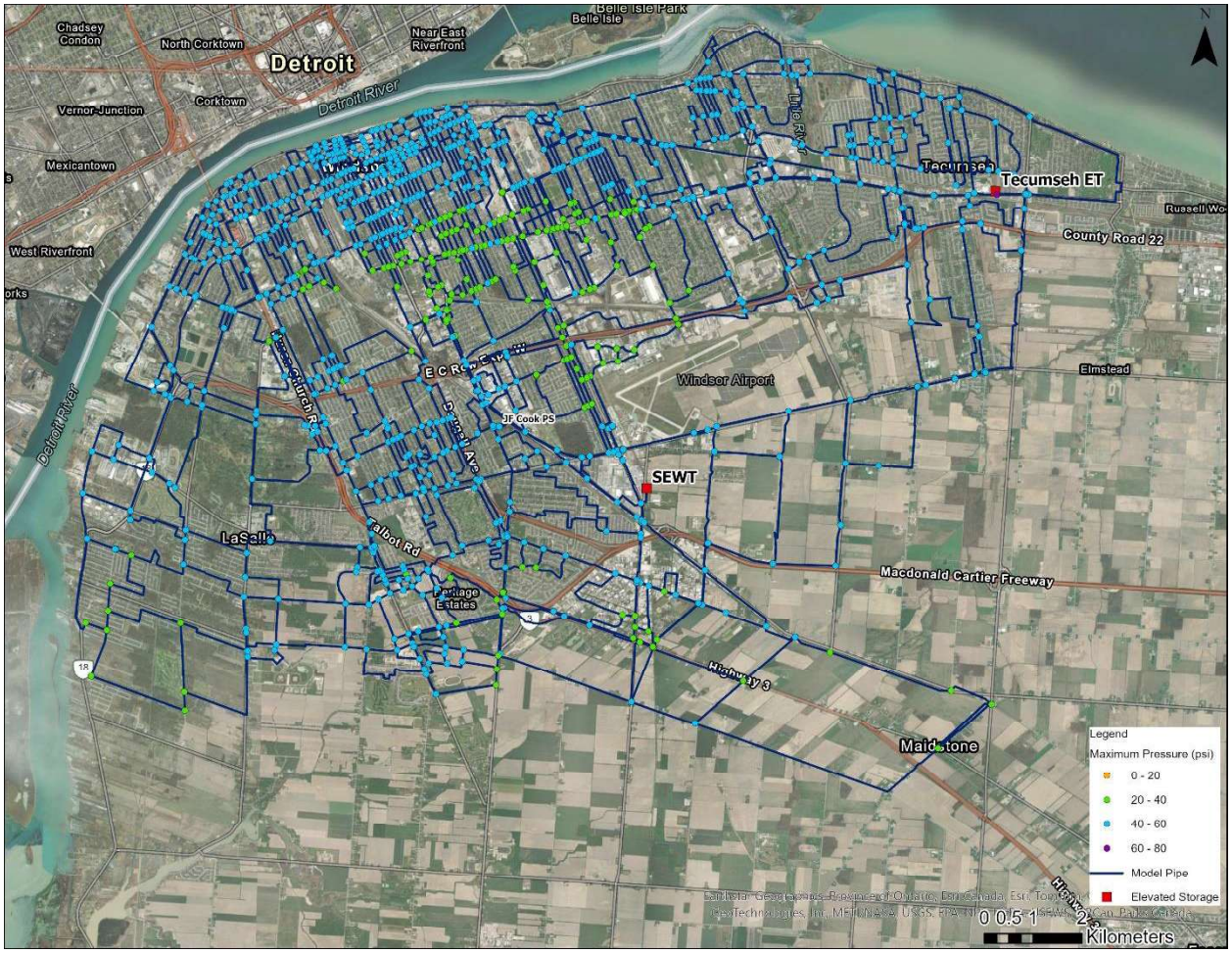


Figure 7: Maximum Transient Pressure under Pump Trip Scenario at JF Cook PS

3.3.2 Transient Scenario #2 (Protected System)

There are technical options to mitigate lower pressures under a transient event. A few options are presented in **Table 3**, highlighting advantages and disadvantages for all. Preliminary considerations suggest a hydropneumatic tank would represent the preferred transient mitigation option. Hydropneumatic tanks are efficient to stabilize pressure fluctuations and to absorb excess pressure during transient events. Additionally, they are typically much smaller than a standpipe, as well as having the advantage to be more subtle (standpipe lead to aesthetic concern when constructed within urban boundaries). Furthermore, standpipes require further hydraulic and water quality evaluations, as they would be integrated to the overall distribution network. Additional considerations on which option would be the most practical for the proposed SEWT would need to be assessed and confirmed during preliminary and detail design stages.

Table 3: Potential Transient Mitigation Options

Transient Mitigation Measure	Description	Advantages	Disadvantages
Standpipe	Elevated reservoir connected to the water distribution network, with typically much greater height than diameter.	• Help stabilize pressure fluctuations by providing a buffer that absorbs excess pressure during transient events. • Relatively simple design and lower cost compared to other measures.	• Standpipes require significant vertical space, which might be a constraint in some networks. • Required volume is typically much greater compared to hydropneumatic tanks. • Aesthetic concerns from the community depending on the location. • Sizing and volumetric turnover of stored water need to be hydraulically evaluated to prevent water quality issues.
Flywheel	A flywheel increases the pump's moment of inertia, which helps to increase the pump's stoppage time.	• Simple concept (compared to other mitigation measures) and effective to increase pump inertia. • Work well for smaller networks, but can be effective for longer network with low static head (i.e., where surge tanks would be excessively large).	• Design challenges/limitations. • Flywheels can be large and require significant space. • High start-up current/energy need.
Hydropneumatic Tank	Tank that holds water and air under pressure. The compressed air creates a cushion that can absorb pressure (upsurge) or apply pressure (downsurge).	• Very efficient to control water hammer. • By reducing pressure spikes, these tanks protect pumps, valves, and other components from damage. • Stabilize pressure fluctuations by absorbing excess pressure during transient events and releasing it when needed.	• The installation of hydropneumatic tanks can be expensive. • While they reduce overall maintenance, hydropneumatic tanks themselves require regular inspections and maintenance to ensure optimal performance. • Requires a compressor.

Preliminary analysis indicates that a 71.0 m^3 (18,760 US gal) tank, with an initial air volume of 40.0 m^3 and a 1.25 safety factor, would maintain distribution system pressures greater than 20 psi (minimum of +/- 21 psi) under a pump trip scenario at the pumping facility (refer to **Figure 8**). However, it should be noted that a tank of 12.5 m^3 (3,305 US gal) with an initial air volume of 5.0 m^3 would maintain minimum pressures greater than 10 psi, showing the impact of the minimum transient pressure criterion on the tank size.

Reference: **Elevated Water Tower Schedule B – Municipal Class Environmental Assessment – Technical Memorandum No. 5 – Transient Modelling**

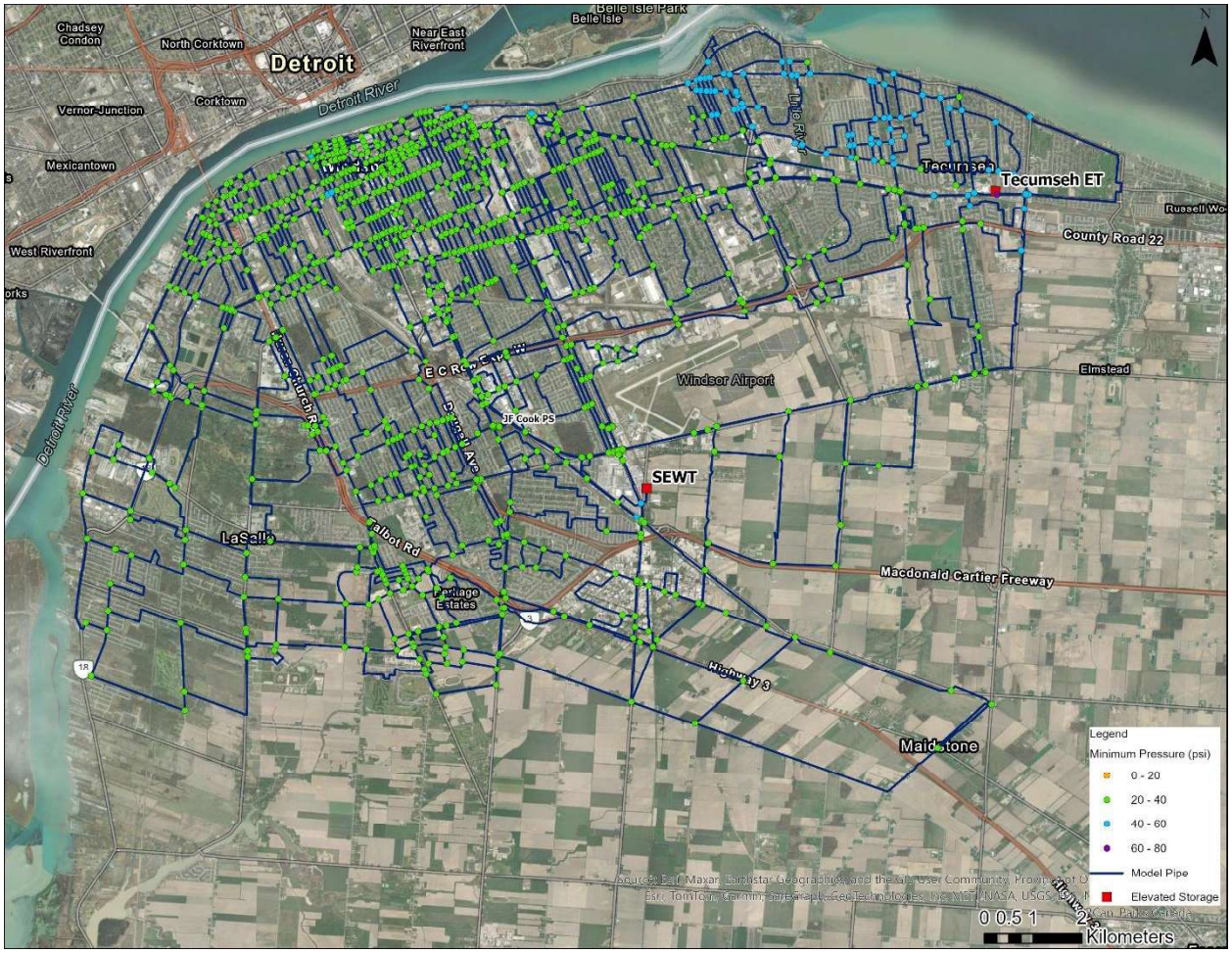


Figure 8: Minimum Transient Pressure under Pump Trip Scenario at JF Cook PS (with Hydropneumatic Tank)

4 Conclusions and Recommendations

A transient analysis was conducted to examine the transient behaviours within the Windsor water distribution network, associated with the proposed Southerly Elevated Water Tower (SEWT), as recommended in the WUC Water System Master Plan (WSMP) 2023 Update. This analysis was based on the anticipated hydraulic conditions documented in Technical Memorandum No. 4 (TM No. 4) from a previous phase of the project. The main assumptions, results, and observations from the transient analysis are summarized below.

Assumptions

- The transient analysis was completed under 2049 maximum day demands (MDD), representing the maximum anticipated flows in the distribution network under future conditions.

- The wave speed values carried in this analysis were based available data regarding pipe material and pipe size.

- The pumps at JF Cook PS are the main contributors to control the levels in the proposed SEWT, with assistance from Pump #4 at AJ Brian PS. Given the distance between these two facilities (+/- 6.5 km), it was assumed that a power failure would not affect both facilities simultaneously. Therefore, a power failure scenario at JF Cook PS was considered in this transient analysis.

- Under normal conditions, Pumps #1 and 3 at JF Cook PS are set to maintain levels in the proposed SEWT, with Pump #2 on standby. Pump #4 at AJ Brian PS is also operated based on the levels in the proposed SEWT. As such, the power failure scenario at JF Cook PS was assessed under a scenario where these pumps only, are in operation.

- The power failure scenario at JF Cook PS was assessed under the following initial conditions at the elevated storage facilities.
    - Proposed SEWT: Initial Water Level of 10.90 m (HGL of 222.18 m).
    - Existing Tecumseh ET: Initial Water Level of 10.05 m (HGL of 223.26 m).

Modelling Results

- Without transient mitigation measures, full vacuum conditions (-14.2 psi or -100.1 kPa) would not occur under a sudden pump trip of the pumps at JF Cook PS. However, minimum pressures less than 20 psi, including sub-atmospheric pressures (<0 psi), would be observed. Typically, 20 psi should be maintained under normal operating conditions within a distribution network to prevent untreated water seeping in the distribution network, leading to water quality risk.

Reference: Elevated Water Tower Schedule B – Municipal Class Environmental Assessment – Technical Memorandum No. 5 – Transient Modelling

Recommendations

- It is recommended to identify the minimum transient pressure criterion to meet, as the size and characteristics of transient mitigation measures will depend on the desired level of protection (e.g., preventing sub-atmospheric pressure (<0 psi) or maintaining 20 psi).

- Preliminary considerations suggest that a hydropneumatic tank would provide the required transient protection, as it efficiently stabilizes pressure fluctuations by absorbing excess pressure during transient events and releasing it when needed. Additionally, it is typically much smaller than a standpipe. Hydraulic and water quality evaluations are necessary for standpipes to ensure there are no water quality issues, as it would be integrated to the overall distribution network. Further analysis during the preliminary and detailed design stages is required to identify the optimal option.

    - Preliminary investigations identified that a 71.0 m^3 (18,760 US gal) tank, with an initial air volume of 40.0 m^3, would maintain pressures greater than 20 psi (minimum pressure of +/- 21 psi) in the distribution system under a pump trip scenario at the pumping facility.
    - However, results show that a tank of 12.5 m^3 (3,305 US gal) with an initial air volume of 5.0 m^3, would maintain distribution system pressures above 10 psi under a same event, highlighting how the minimum transient pressure criterion influences tank sizing.
    - Further exploration of transient mitigation measures is recommended during the preliminary and detailed design stages of the proposed SEWT.

Stantec

Memo

To:	ENWIN Utilities Ltd. (Windsor)	From:	Alexandre Mineault-Guitard, Fletcher McKenzie and Mike Georgalas Stantec Consulting Ltd. (Ottawa)
Project/File:	165620271	Date:	October 10, 2025

Reference: ENWIN CCFM and Distribution System - Transient Analysis

1 Introduction

The Windsor Utilities Commission (WUC) owns and operates the water supply system that provides treated water to the City of Windsor, the Town of LaSalle, and the Town of Tecumseh. The WUC is proposing to construct a new Central Corridor Feedermain (CCFM) from the Albert H. Weeks WTP campus, specifically from the AJ Brian Pump Station (AJ Brian PS) to the JF Cook Reservoir and Booster Pumping Station (JF Cook Res & BPS). The objective of the CCFM is to increase transmission main capacity as recommended in the Windsor Water System Master Plan (WMP), as well as enabling the JF Cook Reservoir to be filled and emptied simultaneously, which cannot be completed under existing conditions.

As WUC's agent for this assignment, ENWIN Utilities Ltd. (ENWIN) retained Stantec Consulting Ltd. (Stantec) to provide detailed engineering design, phase planning, tender period services, as well as services during and post-construction for the CCFM.

The currently proposed CCFM alignment includes four (4) phases, shown in **Figure 1-1** and described below. Phases 1 to 3 will connect AJ Brian PS to JF Cook Res & BPS, while Phase 4 will extent east of JF Cook Res & BPS towards Cabana Rd.

- **Phase 1**: From Milloy St to north of the Canadian Pacific Railway (CPR) corridor.
- **Phase 2**: From north of the CPR corridor to JF Cook Res & BPS.
- **Phase 3**: From AJ Brian PS to Milloy St.
- **Phase 4**: JF Cook Res & BPS to Cabana Rd.

The purpose of this memorandum is to document the hydraulic transient analysis completed to assess the needs for transient mitigation measures to protect the distribution network from undesirable transients. As such, the objectives of the transient analysis are to use a computer simulation to:

1. Examine the water hammer behaviours of the proposed CCFM system and identify the probable hydraulic transient head envelope (maximum and minimum transient hydraulic grade lines) of the system and resulting pressures.
2. Recommend transient mitigation measures, as may be warranted.
3. Provide a commentary regarding design limits, timings, and operating parameters for the pumps, and valves, as may be needed.

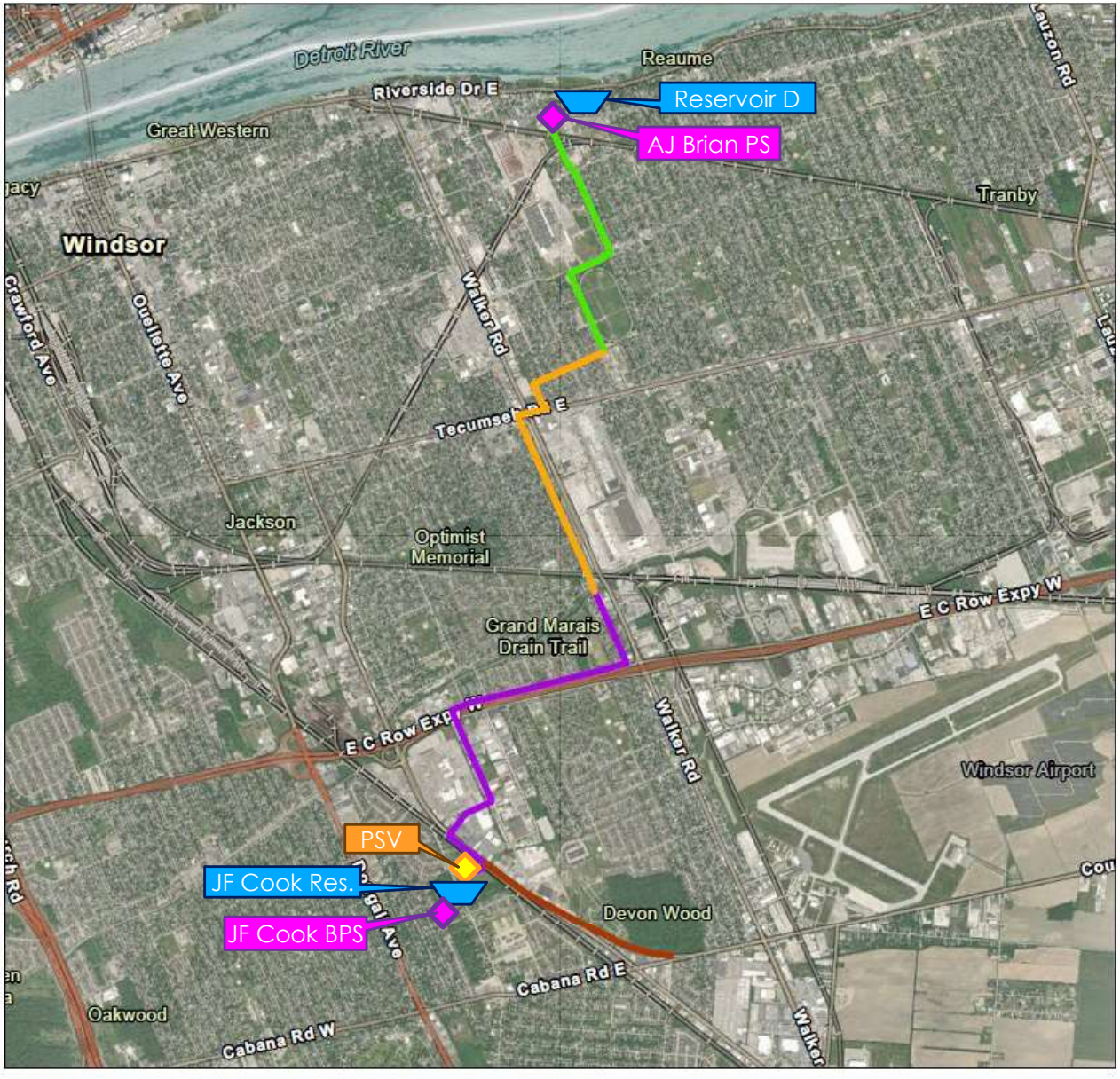


Figure No.
1-1

Title
Proposed CCFM Phasing and Alignment

Client/Project
ENWIN Utilities Ltd.
ENWIN CCFM

Project Location
Windsor, Ontario

N

0 250 500
Meters
(At original document size of 8.5x11)
1:50,000

Legend

Name

- Phase 1 (2024)
- Phase 2 (2025)
- Phase 3 (2026)
- Phase 4 (2027)



Notes
1. Coordinate System: NAD 1983 UTM Zone 17N

Stantec

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

The analysis and design for pumps and the CCFM feedermain were documented in a technical memorandum (TM#1) as part of a previous phase of this project. The key outcomes of the technical memorandum, setting the basis for this analysis, are summarized below.

- For a proposed feedermain diameter of 1,200 mm, a flow of 1,500 L/s satisfies the maximum acceptable velocity target of < 2 m/s. A design flow of 1,500 L/s flow was thus considered for the purpose of sizing proposed high lift pumping upgrades/modifications at AJ Brian PS.

- A pressure reducing valve (PRV) / pressure sustaining valve (PSV) is needed along the CCFM at the JF Cook Reservoir to maintain flow and pressure in the distribution system, as well as manage pump flow and pressure. A PSV setting of 59 psi within the CCFM (51 psi at ground level) was identified to maintain appropriate operation (sustainable levels and fill-drain cycles) of JF Cook Reservoir. Furthermore, the preliminary sizing of the PSV resulted in a diameter of 1,050 mm. However, following discussion with valve suppliers, a valve of 600 mm dia. was recommended. As such, both valves will be accessed in this analysis.

- To maintain minimum pressures greater than 20 psi within the CCFM feedermain when pumps at AJ Brian PS are not in operation, connections are needed between the distribution network to the CCFM feedermain to provide backpressure. Two (2) connections were identified, one close to AJ Brian PS, and another close to the proposed PSV), each preliminary sized at 100 mm diameter. At each connection, a valve will be installed, to allow flow to the CCFM when the pressure within the feedermain falls below 30 psi. These connections were not considered in the transient analysis.

- Three (3) additional interconnections, from the CCFM to the to the existing network, are planned along the CCFM. Such connections, listed below, include a check valve allowing unidirectional flow from the CCFM to the local distribution system on an as-needed basis.

    - To the 600 mm feedermain on Turner Rd;

    - To the 900 mm feedermain on Franklin St; and

    - To the 1,050 mm feedermain on Chandler St.

The transient analysis was divided into three (3) assessments, as follows:

- Assessment #1: CCFM Phases 1 to 3 (AJ Brian PS to JF Cook Res & BPS); and

- Assessment #2: CCFM Phase 4 (downstream of JF Cook Res & BPS to Cabana Rd).

- Assessment #3: Distribution System (downstream of AJ Brian PS and George Ave. PS)

The CCFM transmission system has two pumps at AJ Brian PS (HLP1 and HLP5) that are hydraulically separated from the distribution system and pump directly to the JF Cook Reservoir (with the exception of the unidirectional flow connections with check valves listed above). The remaining duty pumps at the AJ Brian PS (HLP2, HLP3, HLP4) directly supply the distribution system (HLP3 and HLP4 via the North Header and HLP2 via the South Header) and are controlled by levels in the elevated storage towers. The CCFM system, AJ Brian PS, and JF Cook Reservoir and BPS are shown schematically in **Figure 1-2**, below.

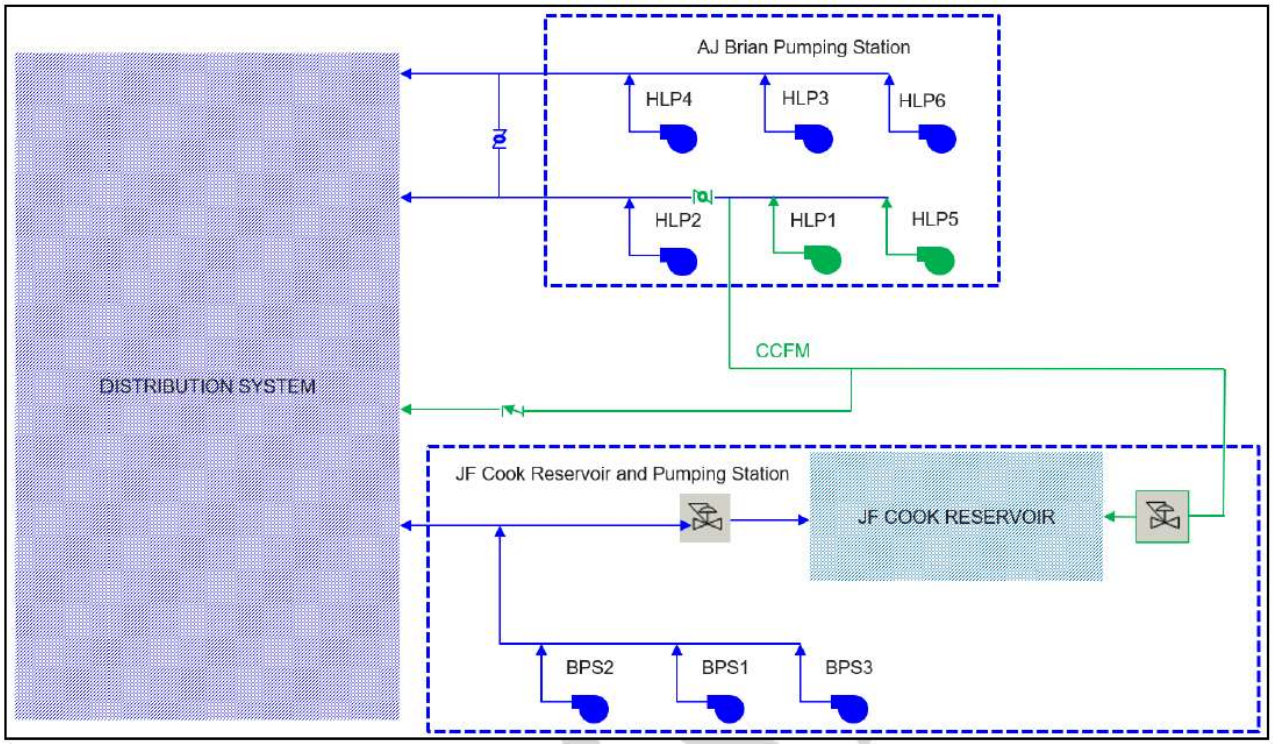


Figure 1-2: CCFM Pump Supply System Schematic (AJ Brian PS to JF Cook Reservoir & PS)

The George Avenue Pump Station is approximately ½ km away from the AJ Brian PS, and they are both supplied by the Albert H. Weeks WTP campus. There are two (2) duty pumps at the George Avenue PS, controlled by levels in the Tecumseh Elevated Tower (ET).

As listed above, Assessment #1 evaluated the hydraulic transient conditions within the CCFM feedermain only. Assessment #2 analyzed the conditions within the water distribution network, downstream of JF Cook Res & BPS. Specifically, Assessment #2 evaluated the impacts of CCFM Phase 4 on hydraulic transient conditions within the distribution network. Assessment #3 analyzed the conditions within the overall distribution system downstream of AJ Brian and George Ave. pump stations.

2 Transient Model Construction

The software used for this transient analysis was OpenFlows HAMMER (herein HAMMER), distributed by Bentley Systems. Data used to develop the hydraulic model are as follows:

- InfoWater Pro Hydraulic Model: The InfoWater Pro model developed as part of TM#1 was used as the basis for the development of the HAMMER hydraulic transient model. Notable information extracted from the InfoWater Pro model includes nodes' location and elevation; pipes' length, diameter and roughness; pump's curves and setpoints; and reservoirs' volume and operating levels.
- Design Drawings: Design drawings were used to confirm pipes' alignment, crossings' locations, as well as proposed watermains inverts.

Figure 2-1 shows a schematic of the transient model for CCFM Phases 1 to 3 (Assessment #1), while **Figure 2-2** provides a longitudinal profile of the feedermain. As shown, there are several crossings (other utilities, rail tracks or creek) along the CCFM, which are captured in the model.

For Assessment #2 and #3, a skeleton of the distribution network was developed by removing smaller watermains, dead-end watermains, and watermain that do not provide a significant impact of the network's behaviour. This is completed to speed up computational time of the transient model. A tool (Skelebrator Skeletonizer) is available in HAMMER to skeletonize the distribution network. The skeletonization process reduced the distribution network from 36,291 pipes and 33,850 nodes to 2,042 pipes and 1,339 nodes. A schematic of the transient model for Assessment #2 is shown in **Figure 2-3**.

2.1 Model Development

Wave speed or celerity is a characteristic of the pipe that indicates the speed of a pressure wave propagating through different materials and pipe diameters. The wave speed, denoted "c", is a function of the density of the fluid, the Young's modulus of elasticity of the pipe material, as well as the pipe's wall thickness. Pipe wave speeds were calculated using the "Wave Speed Calculator" provided as part of the modelling software. An analysis was completed to identify the wave speeds for various pipe materials and diameter combinations. Available data show that PVC pipes represent 54% of the distribution network (based on pipe length), while the second most predominant pipe material is cast iron with about 20%. There is also about 12% of the distribution network without material information. For pipes with missing material information, pipes up to 900 mm in diameter were assumed to be cast iron, and pipes with larger diameter than 900 mm were assumed as concrete. The values used in this analysis are listed in **Appendix B.**

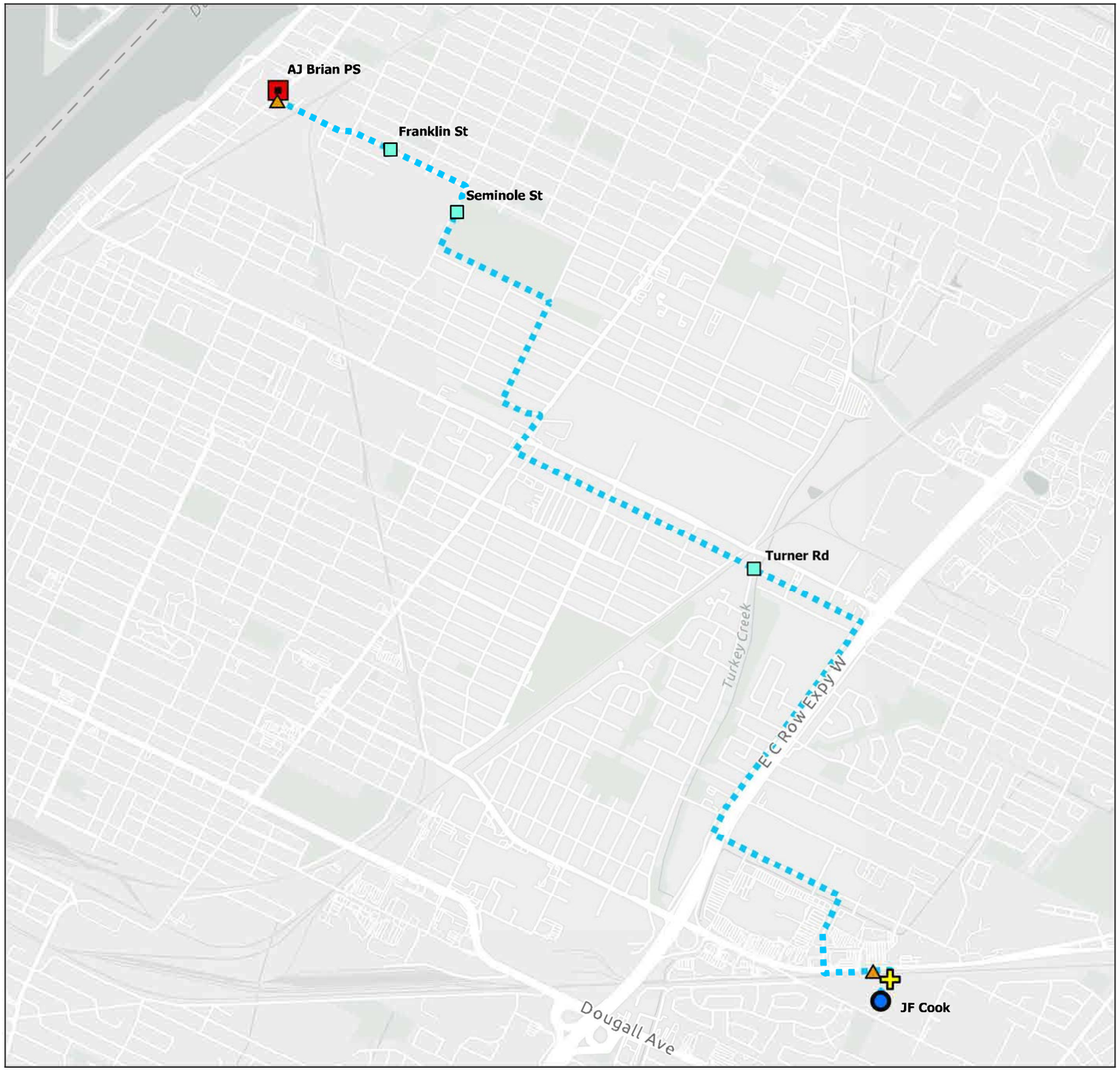


Figure No.
2-1

Title
CCFM Phases 1 to 3 Transient Model Schematic

Client/Project
ENWIN Utilities Ltd.
ENWIN CCFM

Project Location
Windsor, Ontario

0 250 500 Meters
(At original document size of 8.5x11)
1:35,000

Legend

Name
- Phase 1 (2024); Phase 2 (2025); Phase 3 (2026)
- PSV
- Connection for Backpressure
- Interconnection to Distribution Network
- Pumping Station
- Reservoir



Notes
1. Coordinate System: NAD 1983 UTM Zone 17N

Stantec

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Reference: ENWIN CCFM - Transient Analysis

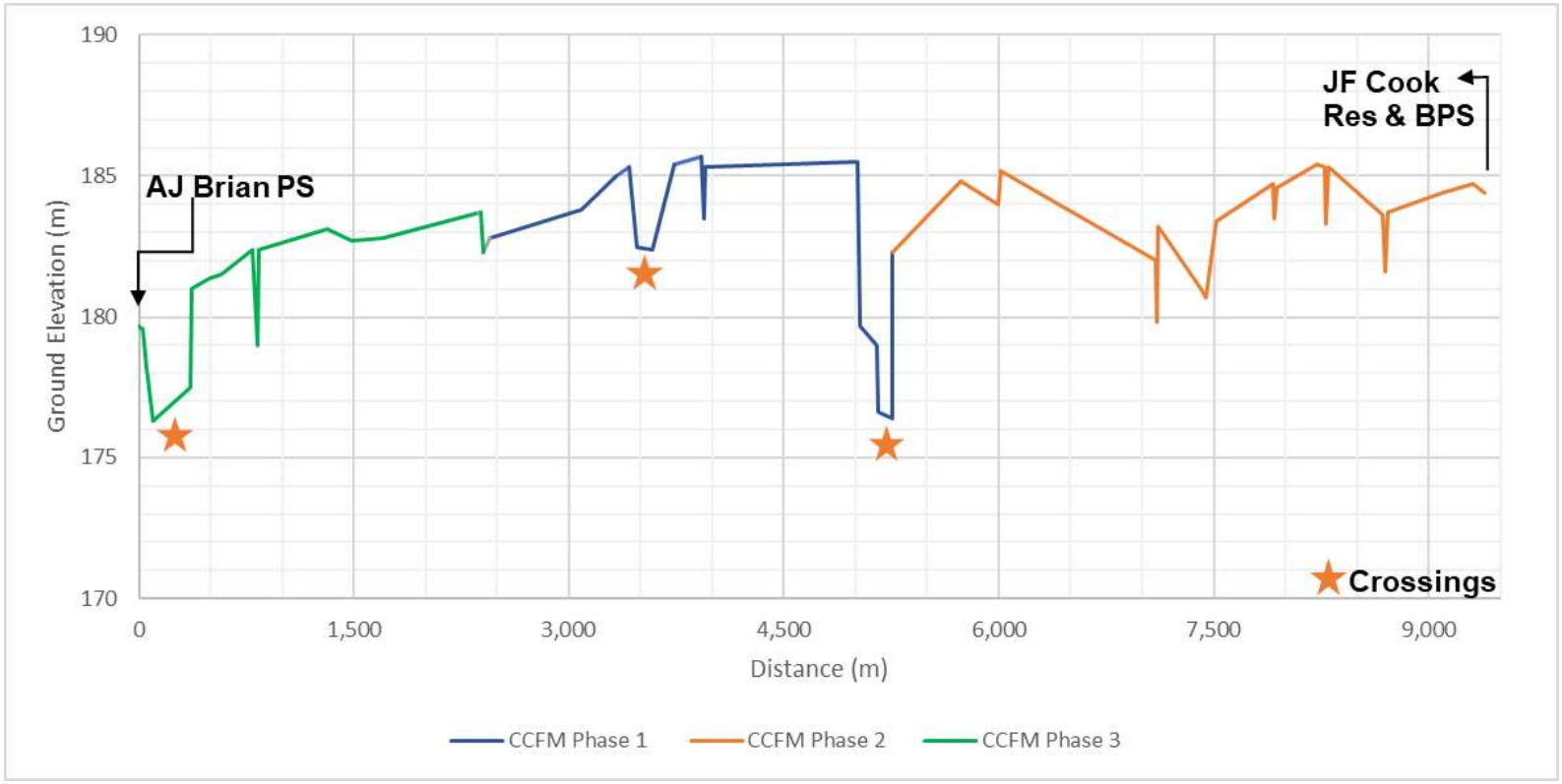


Figure 2-2: CCFM Phases 1 to 3 Alignment (Assessment #1)

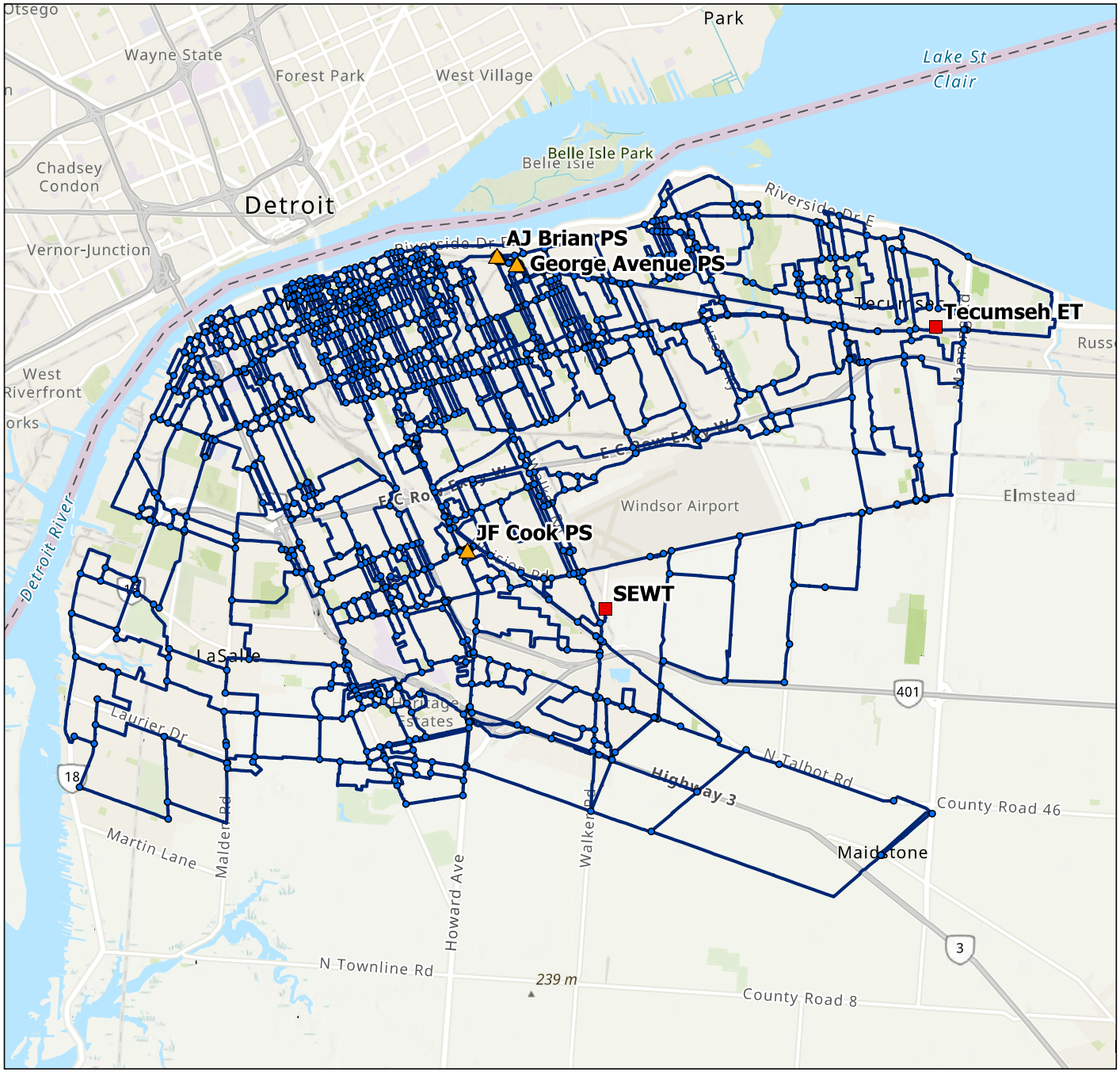


Figure No.
2-3

Title
CCFM Phase 4 Transient Model Schematic

Client/Project
ENWIN Utilities Ltd.
ENWIN CCFM

Project Location
Windsor, Ontario

N

0 1,000 2,000
Meters

(At original document size of 8.5x11)
1:130,000

Legend

- Pumping Station
- Elevated Storage
- Model Node
- Model Pipe



Notes
1. Coordinate System: NAD 1983 UTM Zone 17N

Stantec

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2.1.1 CRITICAL TIME

The critical time is the time it takes for a pressure wave generated by a change in steady-state conditions to travel from one end of the pipeline to the other end and then back. It is determined by doubling the length of the pipeline and dividing this value by the wave speed, as shown in the equation below, where t_c is the critical time(s), L is the length of the pipeline (m), and c is the pressure wave speed or celerity (m/s). The critical time calculated for the CCFM is shown in **Table 1**. The critical time is useful when evaluating surge mitigation measures to develop an initial estimate of the time needed to accomplish a change in steady-state conditions to limit the magnitude of hydraulic transients generated by the change.

$$t_c = \frac{2L}{c}$$

Table 1: Critical Time – CCFM and Distribution System

Section	Length (m)	Diameter (mm)	Wave Speed (m/s)	Critical Time (s)
CCFM (Phases 1 to 3)	9,338	1,200	903	20.7
CCFM (Phase 4)	4,826	800-1,200	291-947	10.9
AJ Brian PS discharge to George Ave PS discharge	660	1,050	905	1.46

2.1.2 PUMP AND MOTOR INERTIA

Another important parameter to define in the hydraulic model is the pump inertia. The inertia of a pump is the resistance to change in angular velocity as it rotates around its shaft. This is an important consideration in assessing the impacts of sudden pump starts and stops. Larger pumps generally have a large inertia, which means they take longer to stop in the event of a power failure (sudden stop). Similarly, they take longer to start and run at full speed.

Pump and motor inertia is a function of the pump's speed, the head gain induced by the pump, the operating flow, as well as the pump's efficiency. Based on information available, the pump and motor inertia for the pump at the various facilities were calculated. At AJ Brian PS, the pump and motor inertia for the dedicated CCFM pumps (i.e., HLP1 and HLP5) is 47 kg*m^2. For AJ Brian Pumps HLP2, HLP3, and HLP4, the combined pump and motor inertia is 44 kg*m^2. The George Avenue Pumps (HLP1 and HLP3) were estimated to have a combined pump and motor inertia of 80 kg*m^2.

The pump and motor inertia for the pumps at the JF Cook BPS was calculated as 23 kg*m^2.

2.1.3 PRESSURE SUSTAINING VALVE

The PSV along the CCFM feedermain was modelled as a "Pressure Sustaining Valve" model element in HAMMER. A hydraulic grade line (HGL) of 226 m, translating to a pressure of 59 psi, was used as the setting for the valve element. HAMMER has the ability to adjust the valve opening of the PSV dynamically during a transient analysis. An "Opening Rate Coefficient" and "Closure Rate Coefficient" must be entered for the PSV to model the valve in this manner. The units for these coefficients are percent change of the opening per second per metre of HGL difference between the control valve setting and the calculated pressure at the previous time step ("%/sec/m"). In the absence of field data or manufacturer information, sensitivity analyses were conducted to identify an appropriate value for the opening and closing rate coefficients. Further details on the opening and closing rate coefficients used in this analysis are provided in **Section 3**.

2.2 Model Assumptions

The following assumptions were used in this analysis:

General Notes

- Pump start-up and shut-down scenarios were evaluated assuming that only one (1) of the duty pumps will be operated (i.e., pumps would not be turned on or off simultaneously). However, power failure scenarios were assessed assuming all duty pumps are in operation.

Assessment #1: CCFM Phases 1 to 3 (AJ Brian PS to JF Cook Res & BPS)

- Two (2) duty pumps (designed to operate at 750 L/s @ total dynamic head of 57 m per pump) are assumed at AJ Brian PS. Pumps were modelled using the "Design Point" pump definition type in HAMMER.
- The upstream boundary condition of the CCFM model is the Reservoir D HGL. The Reservoir's HGL was set such that an HGL of 181.3 m was achieved under the modelled flows at the suction side of the CCFM pumps at AJ Brian PS, the expected HGL under normal operating conditions.
- The downstream boundary condition of the CCFM model are the expected water levels (LWL of 188.4 m; HWL of 190.4 m) at the JF Cook Reservoir.
- At this design stage, there is a provision that the CCFM transmission mains could either be constructed using concrete (CPP) or steel. Typical wave speeds in concrete and steel pipes are somewhat comparable (+/- 900-1,000 m/s). As such, transient events of similar magnitude would be expected with both materials. The transient analysis was completed assuming concrete pipes for the CCFM.
- Variable frequency drives (VFDs) were assumed for the CCFM pumps at AJ Brian PS. Ramp-up and ramp-down time for pumps are discussed in **Section 4.1**.

- It is proposed to use manually operated fire hydrants as air release valves along the CCFM. Given that this would require manual operation, which would not be completed during a transient event, no air release valves were considered in the modelling exercise.

- The maximum allowable transient pressure within the transmission main is considered as 175 psi. This value represents the working pressure rating of the concrete pipe designed to AWWA C304, which is a conservative approach as it does not consider allowance for recurring and occasional transient pressures. However, maximum pressures at the proposed interconnections to the existing distribution network (see **Section 1**) will be reported to assess potential high pressures going into the distribution system.

- On the other hand, various minimum allowable transient pressures were considered. A minimum transient pressure criterion of 20 psi was first considered, aligned with the client's preference of maintaining 20 psi within the CCFM. Secondly, an additional minimum pressure objective of 0 psi (atmospheric conditions) was evaluated. This was completed to assess the sizing of the required mitigation measures to meet various minimum pressure objectives, as maintaining a higher minimum pressure under transient events will lead to bigger mitigation measures.

- For recurring pump operations (start-up and shut-down), a pressure change, defined as the difference between the surge and the final steady-state pressures, objective of 20 psi was set.

<u>Assessment 2: CCFM Phase 4</u>

- The transient analysis was completed under 2049 maximum day demands (MDD), representing the maximum anticipated flows in the distribution network under future conditions. The 2049 MDD flows are as follows:
    - Windsor: 156.8 MLD
    - Lasalle: 43.0 MLD
    - Tecumseh: 59.6 MLD
    - Total: 259.4 MLD

- The transient analysis was completed with the future Southerly Elevated Water Tower (SEWT), as recommended in the WUC Water System Master Plan (WSMP) 2023 Update, with the existing Hanna St Elevation Storage Tank decommissioned.

- Given the distance (+/- 6.5 km) between JF Cook PS and AJ Brian PS, it was assumed that a power failure would not affect both facilities simultaneously. Therefore, a power failure scenario at JF Cook PS was considered in this transient analysis, given the pumps at JF Cook PS are contributing to most of the flow getting to SEWT. For instance, modelling results suggest that

under a typical SEWT fill cycle, the maximum flow going in the tank is approximately 460 L/s, with approximately 390 L/s (85%) coming from the contribution of JF Cook PS.

- The power failure scenario at JF Cook PS was assessed under the following initial conditions at the elevated storage facilities.
    - Proposed SEWT: Initial Water Level of 10.90 m (HGL of 222.18 m).
    - Existing Tecumseh ET: Initial Water Level of 10.05 m (HGL of 223.26 m).
- The assessment was completed considering a hydropneumatic tank (a.k.a. surge tank) of 12.5 m^3 (3,302 US gal) tank, with an initial air volume of 5.0 m^3, at JF Cook PS. This tank was preliminary identified from the transient analysis completed as part the SEWT Schedule B Municipal Class Environmental Assessment project (Stantec, Draft report submitted April 29, 2025), to maintain distribution system pressures above 10 psi under a pump trip scenario at JF Cook PS.
- **Table 2** also present the initial condition of the various pumps during the transient analysis. It is unlikely that only the pumps feeding SEWT would be in operation while the pumps feeding Tecumseh ET would be inactive. Nonetheless, this scenario was assessed in the transient analysis as it could potentially lead to the worst transient conditions propagating from JF Cook PS because additional pumps on at AJ Brian and George Ave. BPS would help react to the downsurge in the distribution system with increased flow.

Reference: ENWIN CCFM - Transient Analysis

Table 2: Pump Control Logic and Initial Conditions (Assessment #2)

Pumping Facility	Pump ID	Control	Model Initial Conditions
JF Cook PS	Pump #1	• Open when SEWT level is lower than 11.5 m; and • Closed when SEWT level is above 13.6 m.	***Pump On***
	Pump #2	Standby	N/A
	Pump #3	• Open when SEWT level is lower than 11.0 m; and • Closed when SEWT level is above 13.0 m.	***Pump On***
AJ Brian PS	Pump #1	• Open when JF Cook Res level is lower than 5.0 m; and • Closed when JF Cook Res level is above 6.0 m.	Pump Off
	Pump #2	• Open when JF Cook Res level is lower than 5.0 m; and • Closed when JF Cook Res level is above 6.0 m.	Pump Off
	Pump #3	• Open when Tecumseh ET level is lower than 8.0 m; and • Closed when Tecumseh ET level is above 9.0 m.	Pump Off
	Pump #4	• Open when SEWT level is lower than 12.0 m; and • Closed when SEWT level is above 13.4 m.	***Pump On***
	Pump #5	• Open when JF Cook Res level is lower than 5.0 m; and • Closed when JF Cook Res level is above 6.0 m.	Pump Off
	Pump #6	Standby	N/A
Georges Avenue PS	Pump #1	• Open when Tecumseh ET level is lower than 8.0 m; and • Closed when Tecumseh ET level is above 10.0 m.	Pump Off
	Pump #2	• Open when Tecumseh ET level is lower than 9.0 m; and • Closed when Tecumseh ET level is above 10.0 m.	Pump Off
	Pump #3	Standby	N/A

Assessment #3: Distribution System (Downstream of AJ Brian PS and George Avenue PS)

- Three (3) duty pumps at AJ Brian and two (2) duty pumps at George Avenue PS. Pumps were On, modelled using multi-point definition type in HAMMER.
- The upstream boundary condition for AJ Brian PS and George Avenue PS is the WTP Clearwell (Reservoir D) HGL. The Reservoir's HGL was set at 182.3 m, which is the expected HGL under normal operating conditions.
- The downstream boundary conditions are the Southerly Elevated Water Tower (SEWT) and the Tecumseh ET both with an initial HGL of 220 m (level=8 m)
- Based on a follow-up meeting with ENWIN on September 18th, 2025, after the initial draft of this study was submitted, ENWIN indicated there is no room for surge mitigation equipment at George Ave. PS, therefore surge mitigation equipment would need to be located at AJ Brian PS. Two optional locations at AJ Brian PS were looked at based on discussion with ENWIN:
    - Option 1: Tank located between the North and South Header just west of the AJ Brian PS (13-17 m connecting to both North and South Header)
    - Option 2: Tank located in separate building north of the North Header Pipeline (~27 m to North Header; ~50 m to South Header)

3 Steady State Analysis

3.1 Assessment #1 (CCFM Phases 1 to 3)

First, the transient model was run under steady-state conditions under envisioned operating conditions. Model results indicate that the CCFM pumps at AJ Brian PS provide 1,497 L/s (748.5 L/s @ 57.5 m per pump). Note that the pumps are operating slightly off their operating point listed in **Section 2.2**, hence resulting in slightly different flow rates. The hydraulic grade line (HGL) along the length of the CCFM is displayed in **Figure 3-1**.

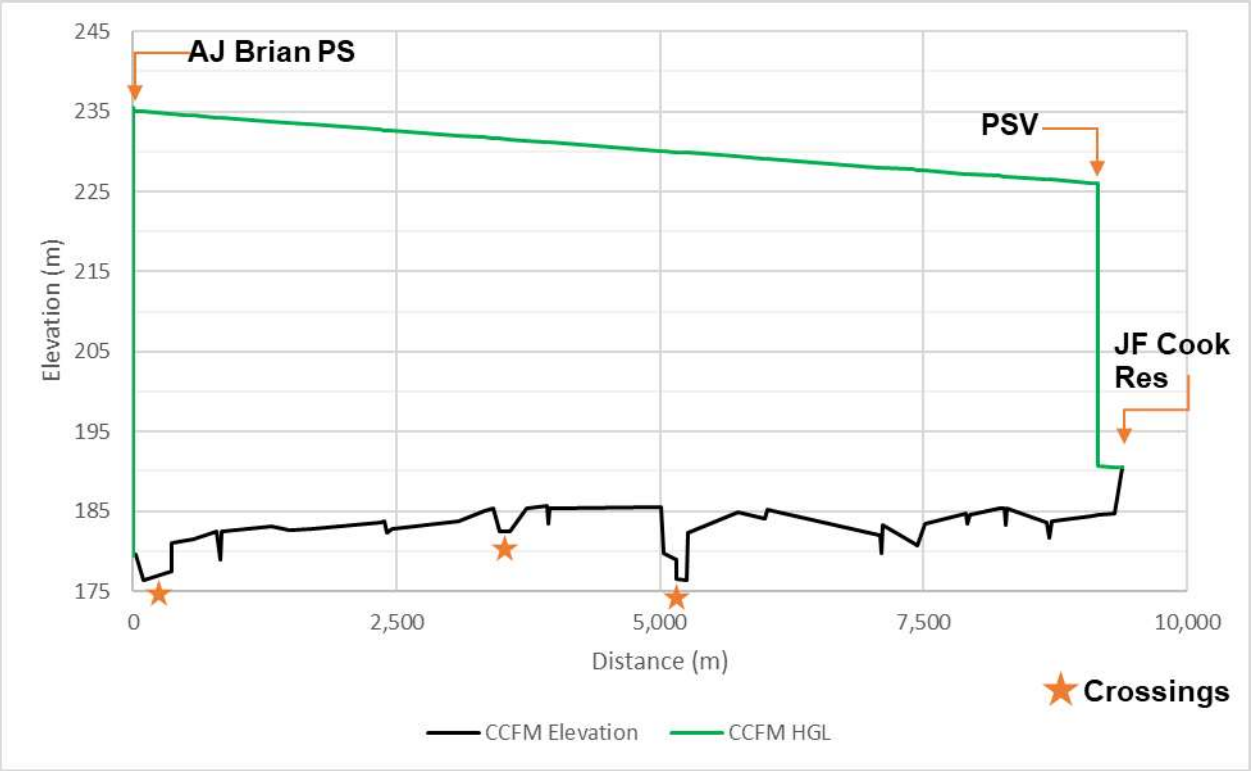


Figure 3-1: Steady-State HGL – CCFM Phases 1 t o3

Based on modelling results, the 1,050 mm dia. PSV would be 79% closed under steady-state conditions @ 1,749 L/s. This suggests that the valve may be oversized for the design flow, leaving little room for valve adjustments (i.e., up to 100% closed) to maintain the targeted 226 m HGL under varying flow conditions (pump start, pump stop, pump trip, etc.). For instance, modelling results suggest the recommended 600 mm dia. PSV would be 36% closed under the same flow conditions. It is thus recommended to consider the 600 mm dia. PSV. This size was carried forward in subsequent analyses.

A sensitivity analysis was conducted to identify the appropriate opening/closing rate coefficient for the 600 mm dia. PSV. Good design practices are to use four (4) to ten (10) times the critical time as the minimal valve opening and closing time to minimize hydraulic transient pressures. An opening/closing rate coefficient of 0.02 “%/sec/m” was identified through sensitivity analysis. This rate fully closes (i.e., from 36% close to 100% close) the PSV in about 110 seconds (about 0.58%/sec), as shown in **Figure 3-2**, which is about five times the critical time of the CCFM feedermain (as shown in **Table 1**). This rate coefficient was thus carried forward in subsequent analyses.

Reference: ENWIN CCFM - Transient Analysis

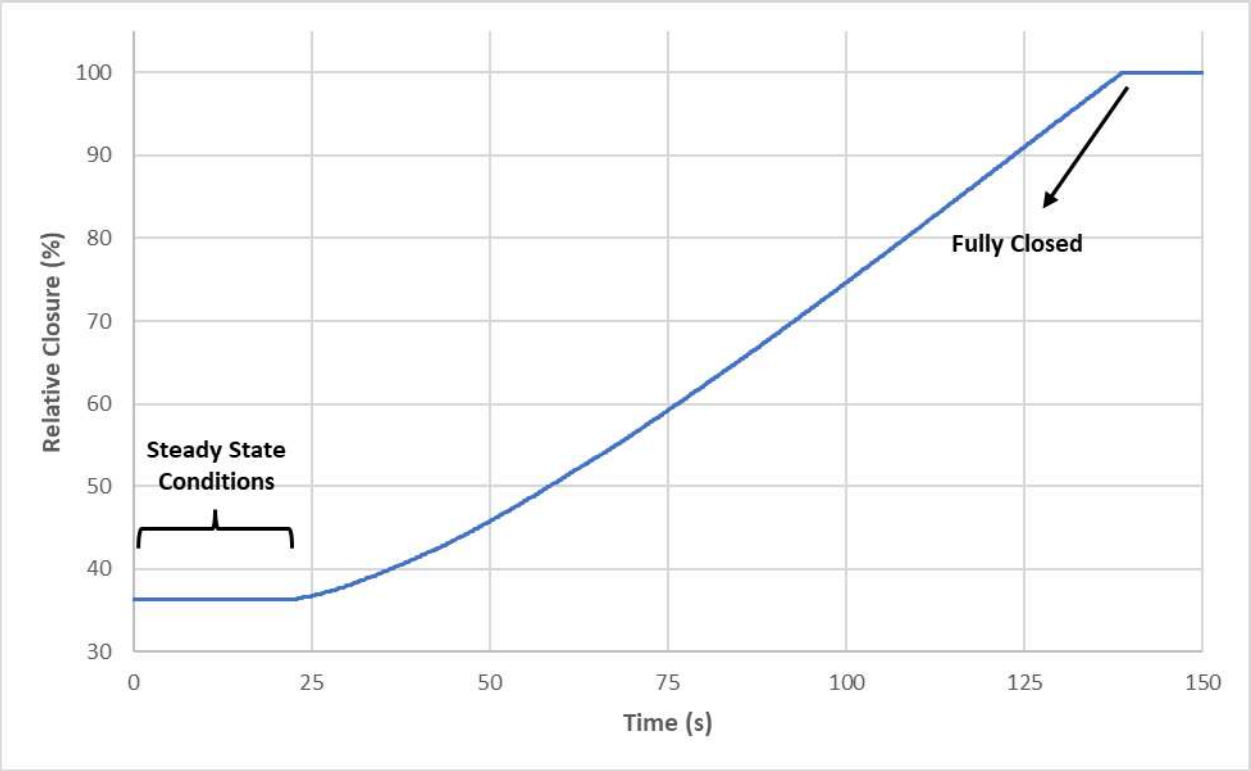


Figure 3-2: 600 mm dia. PSV closing rate

3.2 Assessment #2 (CCFM Phase 4)

Model results indicate that without the CCFM Phase 4 pipeline, the pumps at JF Cook BPS provide 1,189 L/s (594.5 L/s @ 35.7 m per pump), while Pump #4 at AJ Brian PS provides 1,449 L/s @ 40.1 m. The hydraulic grade line (HGL) from JF Cook BPS to the proposed SEWT, along Howard Avenue to Sarah Court, Nova Drive, Barton Street, Ducharme Street and then north along Walker Road is displayed in **Figure 3-3**.

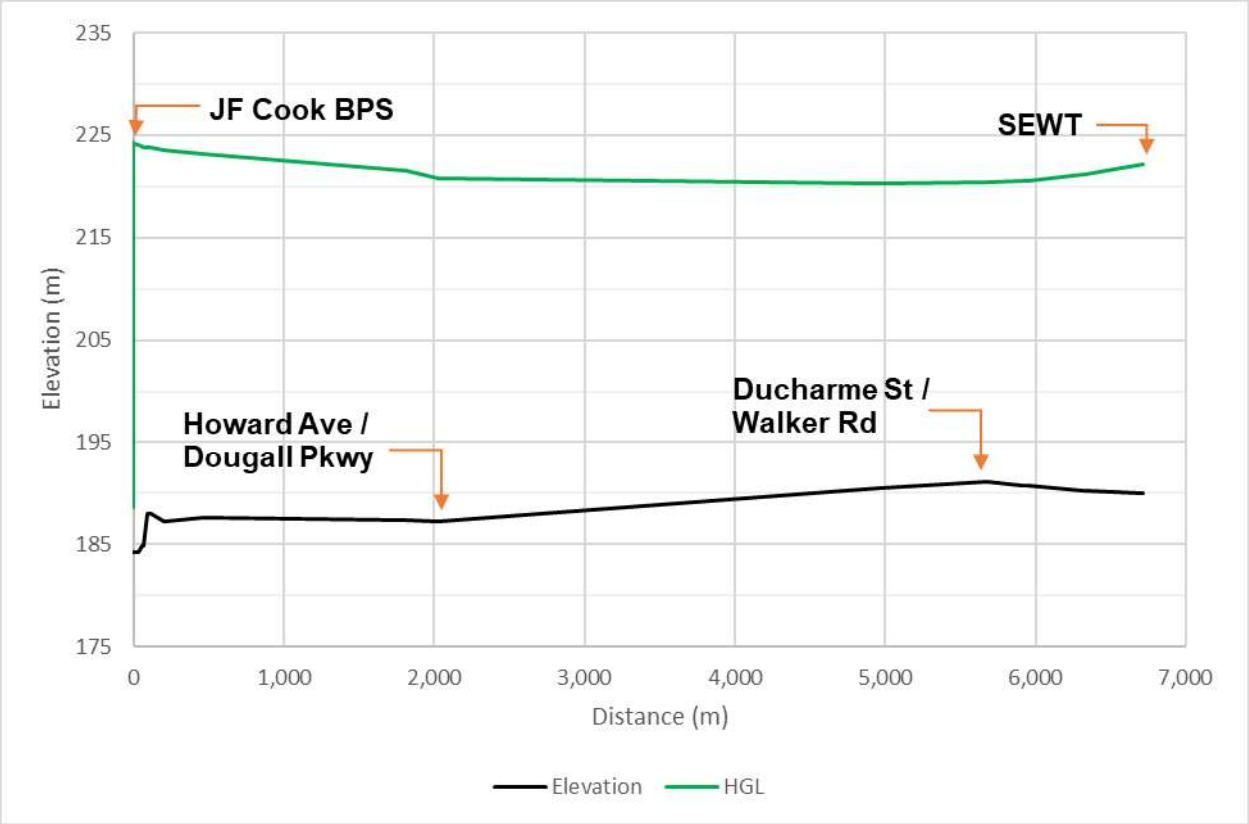


Figure 3-3: Steady-State HGL – JF Cook BPS to Proposed SEWT (along CCFM Phase 4)

The model indicates that with the CCFM Phase 4 pipeline, the pumps at JF Cook BPS provide 1,286 L/s (643 L/s @ 31.7 m per pump), while Pump #4 at AJ Brian PS provides 1,466 L/s @ 39.7 m. The hydraulic grade line (HGL) from JF Cook BPS to the proposed SEWT, along the length of the CCFM, Division Rd and Provincial Rd, is displayed in **Figure 3-4**.

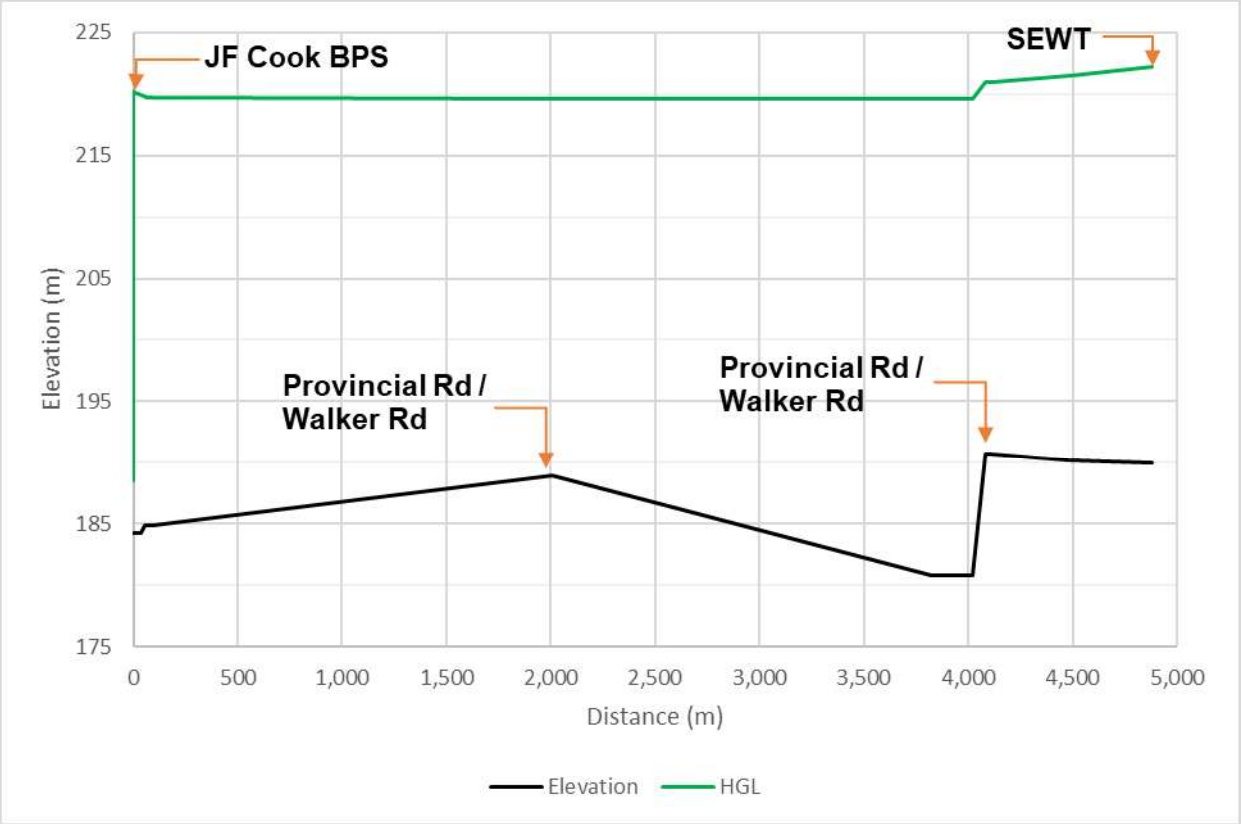


Figure 3-4: Steady-State HGL – JF Cook BPS to Proposed SEWT (along CCFM Phase 4)

3.3 Assessment #3 (Distribution System downstream of AJ Brian PS and George Avenue PS)

Model results indicate that with all duty pumps on at AJ Brian PS, AJHLP2 provides 605 L/s @ 58.4 m along the 1,050 mm pipe going south, AJHLP3 provides 594 L/s @ 56.9 m and AJHLP4 provides 728 L/s @ 55.8 m for a total of 1,927 L/s from the AJ Brian PS. The George Avenue PS provides 2,053 L/s (1,027 L/s from GAHLP1 and GAHLP2 @ 52.6 m per pump). The hydraulic grade line (HGL) from AJ Brian PS to the proposed SEWT, along Central Ave, Walker Road and Turner Road to the SEWT is displayed in **Figure 3-5**.

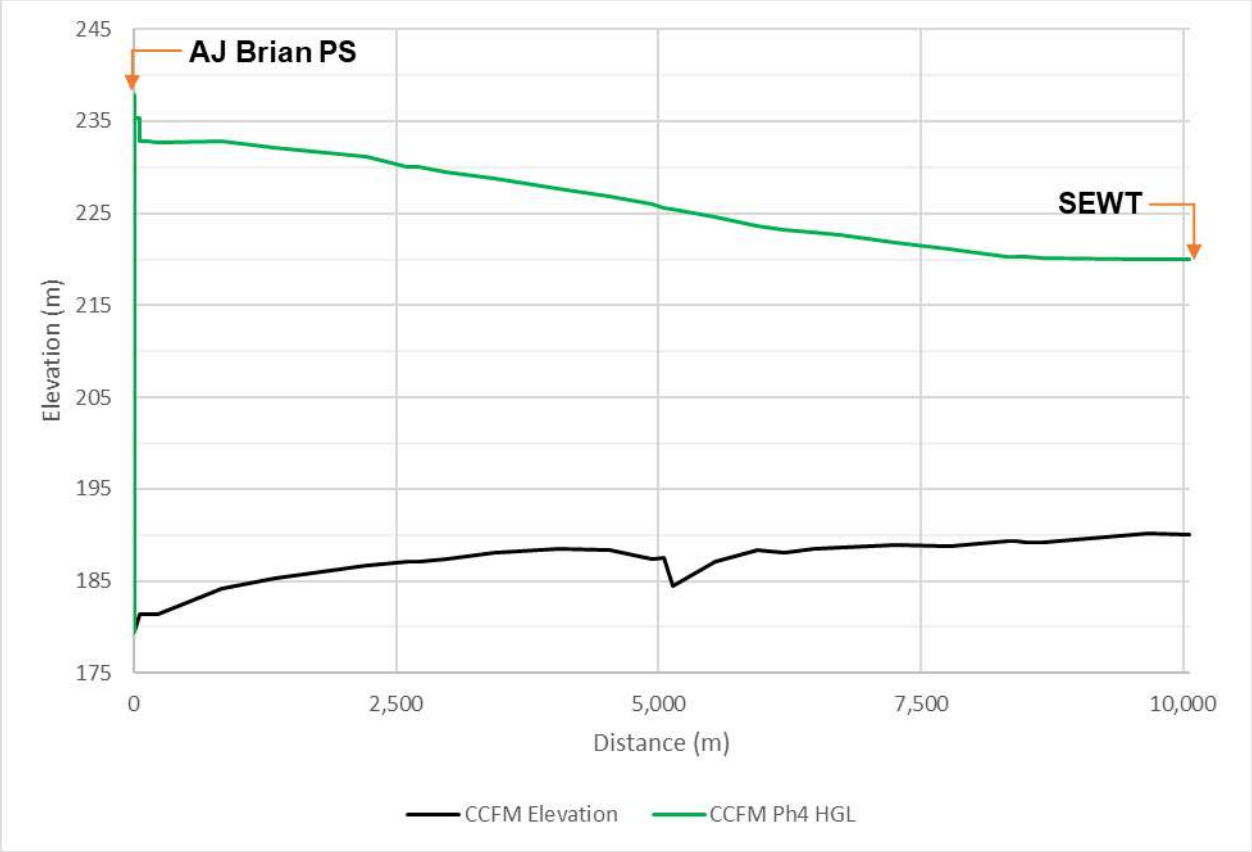


Figure 3-5: Steady-State HGL – AJ Brian PS to Proposed SEWT

4 Transient Analysis

4.1 Transient Analysis Scenarios

A variety of changes in operating conditions can generate transient events. Good design practices are to use four (4) to ten (10) times the critical time as the minimal pump ramp-up and ramp-down time to minimize hydraulic transient pressures. As such, pump start-up and shut-down scenarios were also analyzed to provide recommendations on pump operation. For normal pump start-up or shut-down at the AJ Brian PS, 165 seconds ramp times were considered, approximately eight (8) times the critical time (refer to **Table 1**). However, the scenario that typically creates the “worst case” condition is the sudden stop of the pumps due to power failure at the pumping station, also referred to as “pump trip”.

Transient scenarios analyzed are summarized in

Table 3. The system was first analyzed without surge mitigation measures. This was completed to evaluate the worst-case scenarios (i.e., unprotected system). If design criteria were not met under an unprotected system, additional scenarios would be assessed to identify transient mitigation measures. For this project, hydropneumatic tanks are recommended to manage adverse transient conditions. Such tanks hold water and air under pressure. The compressed air creates a cushion that can absorb pressure (upsurge) or apply pressure (downsurge).

Transient scenarios were run for up to 600 seconds (10 minutes), with changes in steady-state condition occurring 10 seconds following the start of the simulation. For power failure (pump trip) scenarios, the pumps were configured to have a sudden stop 10 seconds after the start of the simulation. For normal pump start-up or shut-down, changes in pump operation were also set 10 seconds after the start of the simulation.

A range in minimum transient pressure objective for occasional transient events (such as pump trips) was evaluated to show impact on the size of the required surge tank. On the higher end, a 20-psi minimum transient pressure objective may be desirable but not practical or even possible in some systems. On the lower end, it is generally undesirable to have full vacuum conditions in a pump trip event, because although most commercially available buried pressure pipe can withstand full vacuum conditions, if the full vacuum persists for enough time to create a vapor pocket, the returning upsurge can collapse this vapor pocket and result in cavitation that can cause damage to and or failure of piping and appurtenances. A minimum pressure objective of half of full vacuum (-7 psi) down to -10 psi may also be acceptable for some systems, for example if the negative pressure is localized and for a short duration. In the event of negative pressure conditions, contaminants could be pulled into the system through flooded air vacuum vaults or groundwater through leaks, etc. If the volume of contaminants is small, the residual chlorine in the pipeline could disinfect it. If the potential for contaminant intrusion is more significant, a boil water advisory may be necessary after a pump trip event.

The transient pressure objectives for this study ranged from 20 psi down to half of full vacuum pressure (-7 psi). The transient pressure objective of 10 psi is different for Assessment #2 because this transient scenario is an update of the analysis evaluated in the report titled “Elevated Water Tower Schedule B – Municipal Class Environmental Assessment – Technical Memorandum No. 5 – Transient Modelling”, henceforth referred to as TM#5. The 20 psi and 0 psi objectives came from the previous analyses, TM#1 and TM#5.

Based on a follow up meeting with ENWIN on 9/18/2025, it was determined that there is no available space at George Ave. PS for surge mitigation equipment and therefore Scenario 3E was added to evaluate two alternative surge tank locations at AJ Brian PS.

Table 3: Transient Analysis Scenarios

Assessment	Scenario	Transient Event	Notes
Assessment #1: CCFM Phases 1 to 3	1A	Power Failure / Pump Trip (2 pumps on)	Unprotected System
	1B	Power Failure / Pump Trip (1 pump on)	Unprotected System
	1C	Power Failure / Pump Trip (2 pumps on)	Hydropneumatic Tank at AJ Brian PS (20 psi objective)
	1D	Power Failure / Pump Trip (2 pumps on)	Hydropneumatic Tank at AJ Brian PS (0 psi objective)
	1E	Normal Pump Shut-down	Hydropneumatic Tank at AJ Brian PS
	1F	Normal Pump Start-up	Hydropneumatic Tank at AJ Brian PS
Assessment #2: CCFM Phase 4	2A	Power Failure / Pump Trip (2 pumps on)	Hydropneumatic Tank at JF Cook PS – **Without** CCFM Phase 4 (10 psi objective)
	2B	Power Failure / Pump Trip (2 pumps on)	Hydropneumatic Tank at JF Cook PS – **With** CCFM Phase 4 (10 psi objective)
Assessment #3: AJ Brian & George Ave. PS Power Failure	3A	Power Failure / Pump Trip (5 pumps on)	Unprotected System
	3B	Power Failure / Pump Trip (5 pumps on)	Hydropneumatic Tanks at AJ Brian PS and George Ave. PS (20 psi objective)
	3C	Power Failure / Pump Trip (5 pumps on)	Hydropneumatic Tanks at AJ Brian PS and George Ave. PS (0 psi objective)
	3D	Power Failure / Pump Trip (5 pumps on)	Hydropneumatic Tank at AJ Brian PS (0 psi objective)
	3E	Power Failure / Pump Trip (5 pumps on)	Hydropneumatic Tank at AJ Brian PS (-7 psi objective)

4.2 Transient Analysis Results

Results from the transient analysis are summarized in the following sections. First, **Section 4.2.1** presents results of transient scenarios for Assessment #1 (CCFM Phases 1 to 3). Secondly, **Section 4.2.2** presents results of transient scenarios for Assessment #2 (Downstream of JF Cook BPS). Finally, **Section 4.2.3** presents results of transient scenarios for Assessment #3. Note that detailed modelling results for all scenarios are listed in **Appendix A**.

4.2.1 ASSESSMENT 1 – CCFM BETWEEN AJ BRIAN PS AND JF COOK RESERVOIR

4.2.1.1 Unprotected System

Scenario 1A - Power Failure / Pump Trip (2 pumps on)

The sudden pump trip, with both CCFM pumps in operation, under Scenario 1A induced a downsurge that propagated downstream of the AJ Brian PS towards JF Cook Reservoir. Results indicate that complete vacuum conditions occurred under Scenario 1A, which do not comply with the minimum transient pressure criterion. **Figure 4-1** shows the pressure versus time at the highest point along the CCFM under Scenario 1A (station 5,012 m). As shown, full vacuum conditions occur, intermittently, over a 50 seconds period following the pump trip.

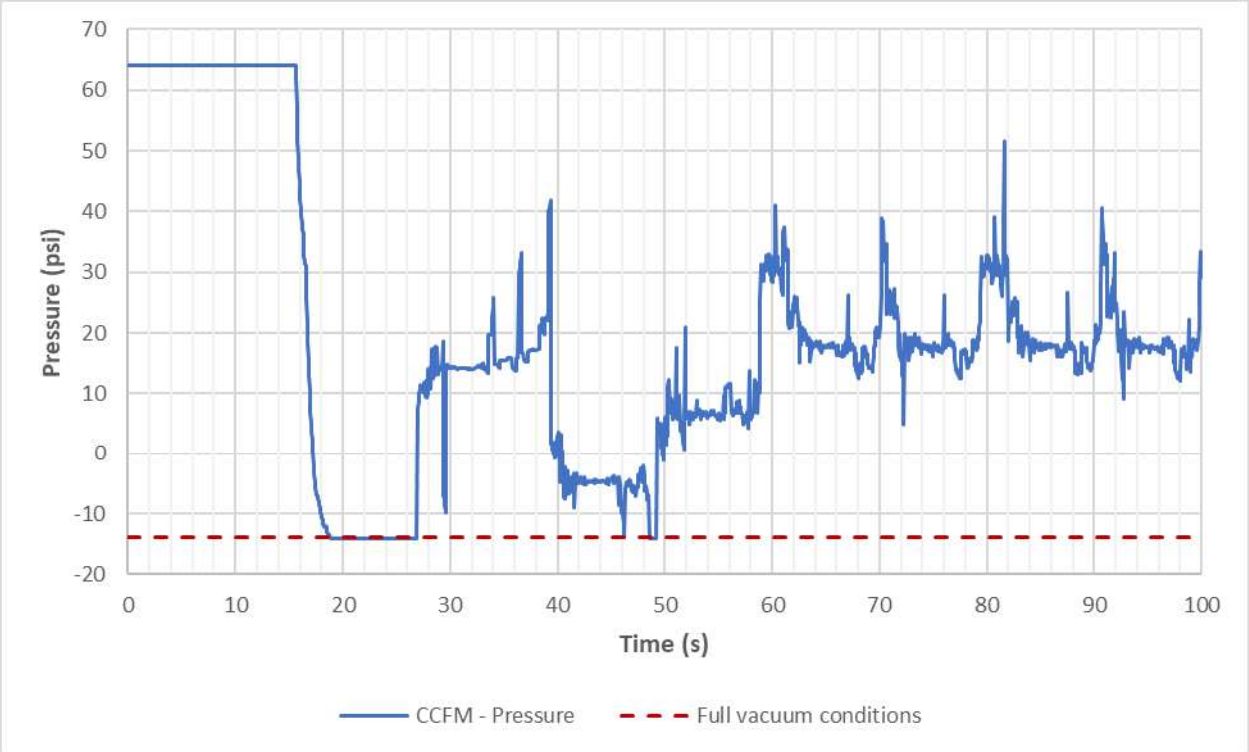


Figure 4-1: Pressure Versus Time under 2 Pumps Trip Scenario (Scenario 1A)

On the other hand, the maximum transient pressure (85 psi) in the CCFM is lower than the maximum transient pressure criterion. Furthermore, the maximum transient pressure at an interconnection to the existing distribution network is estimated at 80 psi (Franklin St), thus no excessive pressure is anticipated to propagate to the distribution network.

Scenario 1B - Power Failure / Pump Trip (1 pump on)

Results (**Figure A2**) from the sudden pump trip, with only one CCFM pump in operation, under Scenario 1B indicate complete vacuum conditions occurred (refer to **Figure 4-2**) immediately following the pump trip, which do not comply with the minimum transient pressure criterion. The maximum transient pressure (76 psi) along the CCFM is lower than the maximum transient pressure criterion.

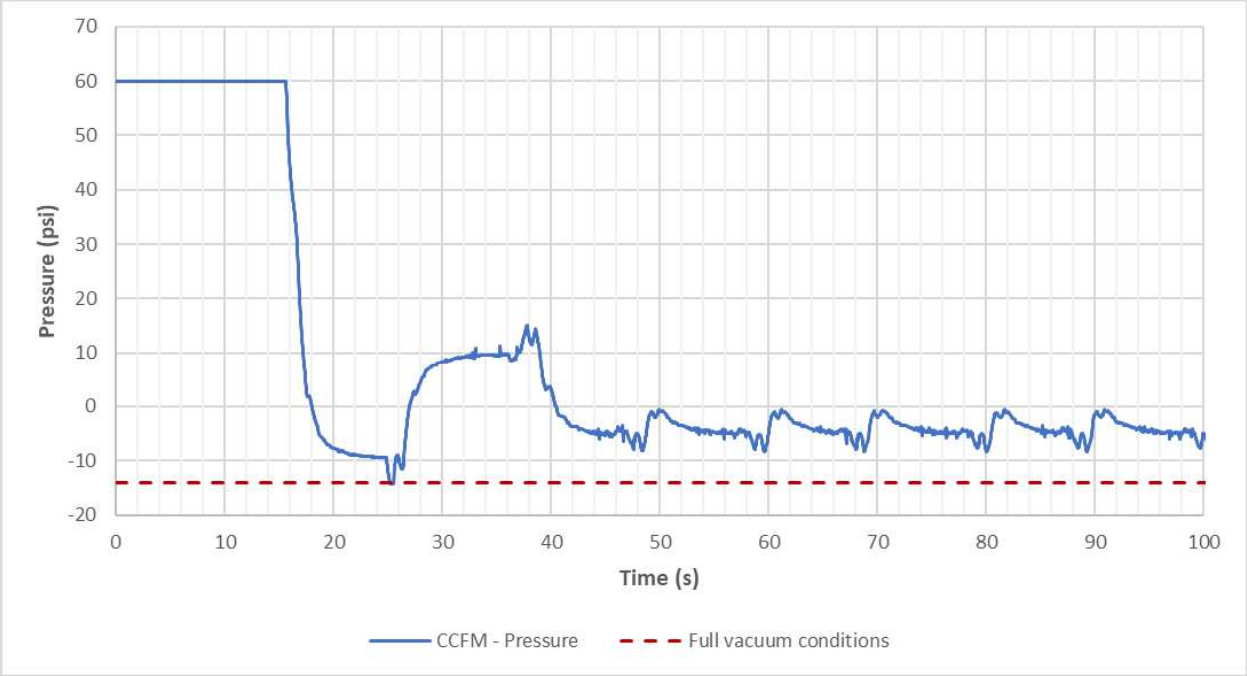


Figure 4-2: Pressure Versus Time under 1 Pump Trip Scenario (Scenario 1B)

Results from Scenario 1A and 1B demonstrate the need for transient mitigation measures to avoid full vacuum conditions under a power failure scenario at AJ Brian PS.

4.2.1.2 Protected System

For this project, hydropneumatic tanks are recommended to meet the minimum transient pressure objective. The hydropneumatic tank is modelled as a "sealed hydropneumatic tank" element in HAMMER. For modelling Assessment #1 (CCFM Phases 1 to 3) the hydropneumatic tank will be connected the proposed CCFM (1,200 mm dia.), downstream of HLP1/HLP5 pumps (at AJ Brian PS), considering a 1,050 mm dia. outlet pipe from the tank.

Scenario 1C - Power Failure / Pump Trip (2 pumps on; 20 psi objective)

Under Scenario 1C, a hydropneumatic tank was added to the model, immediately downstream of the CCFM pumps at AJ Brian PS. For this scenario, the hydropneumatic tank was sized to maintain 20 psi within the CCFM, under the worst-case transient event, namely a pump trip while both CCFM duty pumps are in operation. Results, as shown in **Figure 4-3,** suggest that an initial gas volume of 350 m^3, which expands to a maximum volume of 571 m^3, maintained a minimum pressure of about 24 psi within the CCFM under Scenario

1C. As such, a minimum tank volume of 714 m^3 (189,000 US gal) is recommended for the hydropneumatic tank, using a safety factor of 1.25. This safety factor was used throughout the analysis, considering the uncertainty of how the PSV will modulate under a transient event. Furthermore, the maximum transient pressure in the CCFM is 91 psi under Scenario 1C. As illustrated in **Figure 4-3**, minimum (20 psi) and maximum pressure criterion are met under Scenario 1C.



Figure 4-3: Minimum Transient Pressure – CCFM – Scenario 1C

Scenario 1D - Power Failure / Pump Trip (2 pumps on; 0 psi objective)

Under Scenario 1D, a hydropneumatic tank at AJ Brian PS was sized to maintain atmospheric conditions (greater than 0 psi) within the CCFM, under a pump trip scenario while both CCFM duty pumps are in operation. Results suggest that an initial gas volume of 80 m^3 would maintain a minimum pressure of approximately 5 psi within the CCFM under Scenario 1D. Under the transient event, this initial gas volume would expand up to a maximum volume of 186.5 m^3. As such, a minimum tank volume of 233 m^3 (62,000 US gal) is recommended. This volume is approximately 67% smaller than the hydropneumatic tank needed to maintain greater than 20 psi along the CCFM under a pump trip scenario (Scenario 1C).

As shown in **Figure 4-4**, the minimum pressure in the CCFM is 5 psi with the 233 m^3 hydropneumatic tank. Furthermore, the maximum transient pressure in the CCFM is 90 psi under Scenario 1D. As such, minimum (0 psi) and maximum pressures criteria are met under Scenario 1D.

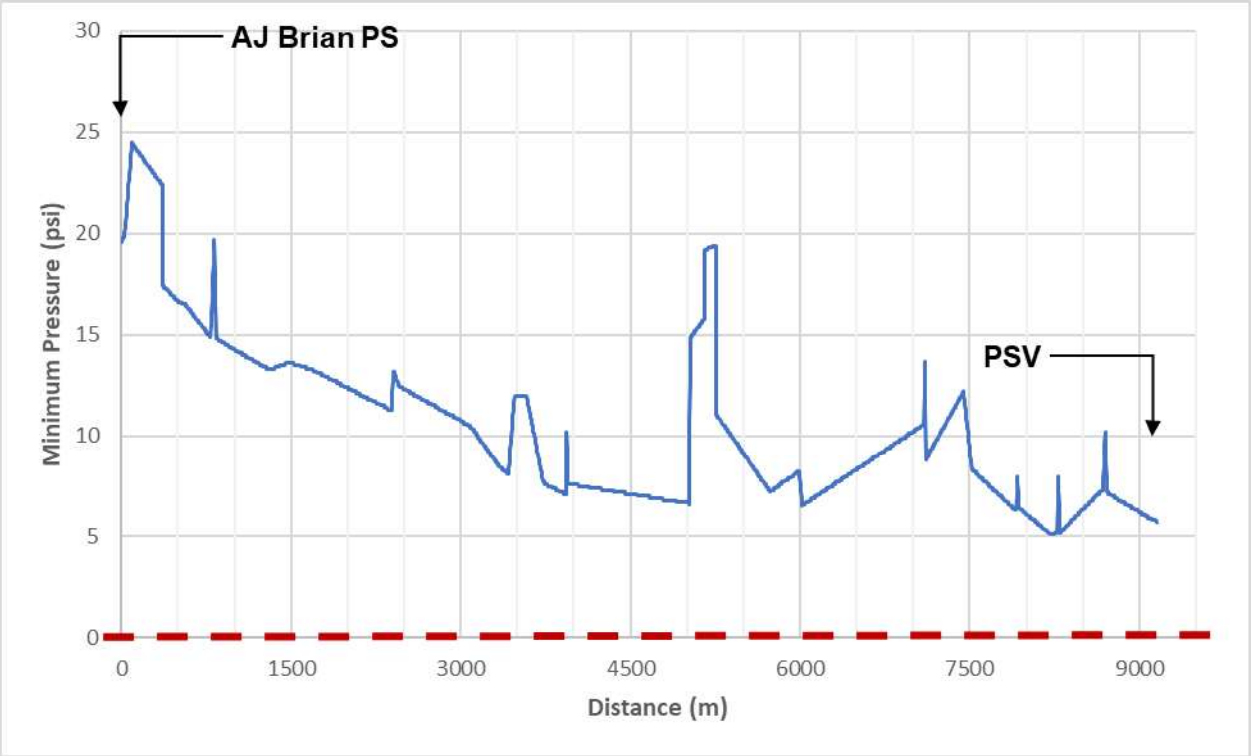


Figure 4-4: Minimum Transient Pressure – CCFM – Scenario 1D

Scenario 1E - Normal Pump Shut-down

A normal pump shut-down at the AJ Brian PS (Scenario 1E) was analyzed, with transient protections (i.e., hydropneumatic tank with an initial gas volume of 350 m^3). For this analysis, a ramp time of 165 seconds (8 times the CCFM's critical time) was used. Under a normal pump stop at the AJ Brian PS (Scenario 1E, Figure A5), a downsurge propagated downstream of the BPS. A minimum transient pressure of 33 psi occurred downstream of the BPS, which is 5 psi less than the steady-state condition with one pump off (i.e., 38 psi), as shown on **Figure 4-5**. As such, the pressure change under a recurrent pump shut-down is satisfied.

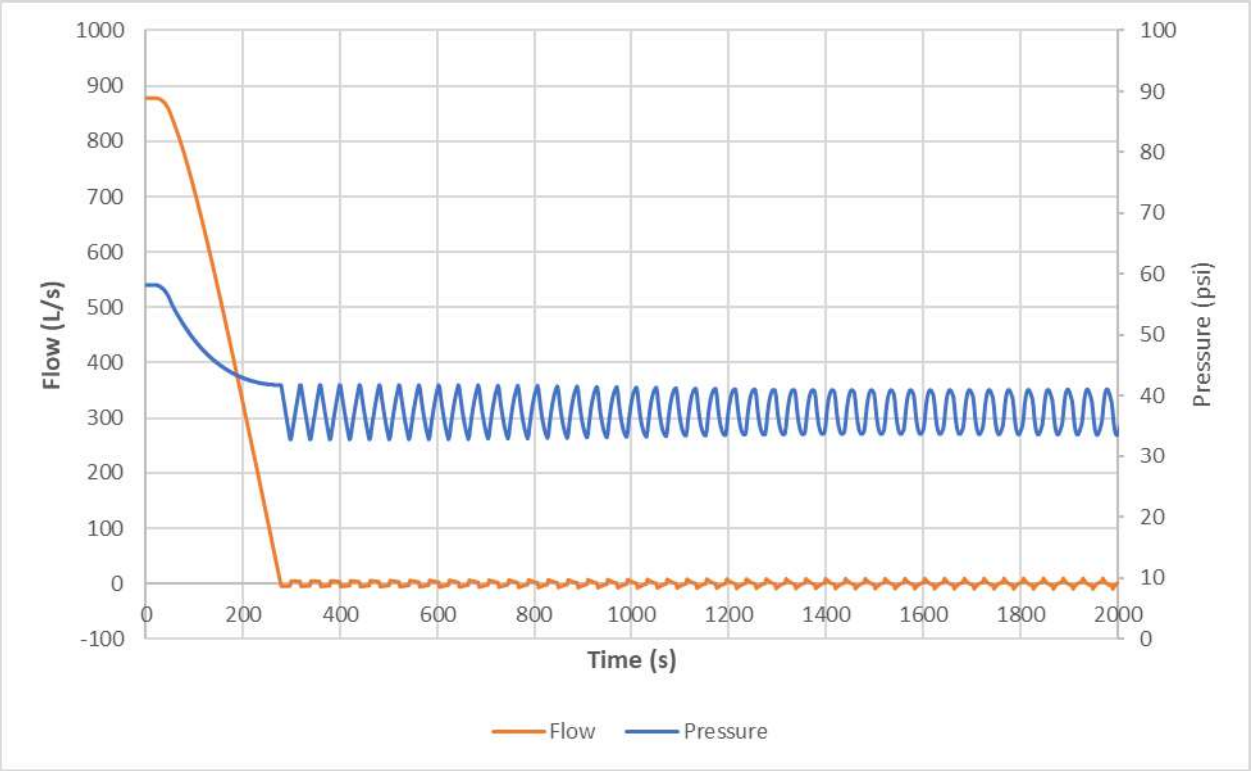


Figure 4-5: Normal Pump Shut-down – Pressure/Flow vs Time

Scenario 1F - Normal Pump Start-up

A normal pump start-up at the AJ Brian PS (Scenario 1F) was analyzed, with transient protections (i.e., hydropneumatic tank with an initial gas volume of 350 m^3). For this analysis, a ramp time of 165 seconds (8 times the CCFM's critical time) was used. Under a normal pump-start, an upsurge propagated downstream of the BPS. A maximum transient pressure of 93 psi occurred downstream of the BPS, which is 17 psi greater than the steady-state condition with one pump on (i.e., 76 psi). **Figure 4-6** shows the pressure and flow within the CCFM immediately downstream of AJ Brian PS following a normal pump start-up. As such, the maximum pressure change under a recurrent pump start-up is met.

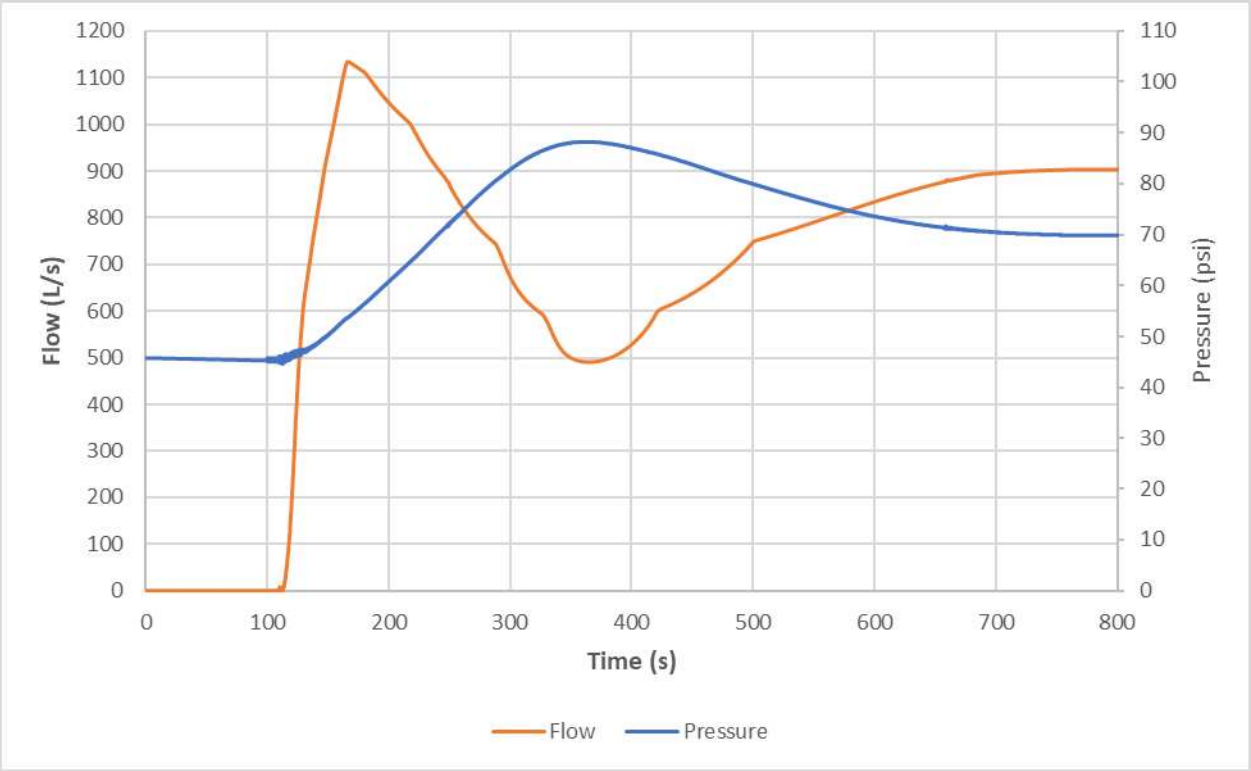


Figure 4-6: Normal Pump Start-up – Pressure/Flow vs Time

4.2.1.3 Summary

A transient analysis was completed to examine the transient behaviours of the proposed CCFM (Phases 1 to 3 or from AJ Brian PS to JF Cook Res) system and assess the need for fluid transient mitigation measures. The transient analysis was completed based on the proposed hydraulic conditions as documented in a technical memorandum (TM#1) as part of a previous phase of this project. Main assumptions, results and observations from the transient analysis are summarized below.

Assumptions

- A design flow of 1,500 L/s flow was thus considered for the purpose of sizing proposed high lift pumping upgrades/modifications at AJ Brian PS. Two (2) duty pumps (design to operate at 750 L/s @ total dynamic head of 57 m per pump) are assumed at AJ Brian PS.
- A pressure reducing valve (PRV) / pressure sustaining valve (PSV) is needed along the CCFM at the JF Cook Reservoir to maintain flow and pressure in the distribution system, as well as manage pump flow and pressure. A PSV setting of 59 psi within the CCFM (51 psi at ground level) was identified to maintain appropriate operation (sustainable levels and fill-drain cycles) of

JF Cook Reservoir. Furthermore, the preliminary sizing of the PSV resulted in a diameter of 1,050 mm.

- There is a provision that the CCFM transmission mains could either be constructed using concrete (CPP) or steel. Typical wave speeds in concrete and steel pipes are somewhat comparable (+/- 900-1,000 m/s). The transient analysis was completed assuming concrete pipes for the CCFM.
- Variable frequency drives (VFDs) were assumed for the CCFM pumps at AJ Brian PS.
- To maintain minimum pressures greater than 20 psi within the CCFM feedermain when pumps at AJ Brian PS are not in operation, two (2) connections between the CCFM feedermain and the distribution network were identified to provide backpressure. Two (2) connections, one close to AJ Brian PS, and another close to the proposed PSV), each preliminary sized at 100 mm diameter as part of TM#1. Along each connection, a valve will be installed, to allow flow to the CCFM when the pressure within the feedermain falls below 30 psi.
- Three (3) additional interconnections to the existing network are planned along the CCFM allowing unidirectional flow from the CCFM to the local distribution system with a check-valve on an as-needed basis. Those connections are along Turner Rd, Franklin St, and Seminole St.

Modelling Results

- Modelling results suggest that the 1,050 mm dia. PSV preliminary identified as part of TM#1 might be oversized. The PSV would be 79% closed under steady-state conditions @ 1,749 L/s, leaving little room for valve adjustments (i.e., up to 100% close) to maintain the targeted 226 m HGL under varying flow conditions (pump start, pump stop, pump trip, etc.). However, the 600 mm dia. PSV recommended by suppliers 36% close under the same flow conditions. It is thus recommended to install the 600 mm dia. valve. It should be noted that the closing/opening rate of the identified valve should be confirmed with field tests to validate whether the valve is reacting at a rate similar to what was assumed in this study (as discussed in **Section 3**).
- Without transient mitigation measures, full complete vacuum conditions occurred under sudden pump trip scenarios (with either one or two pumps in operations). To prevent such adverse conditions, a hydropneumatic tank is recommended at AJ Brian PS.
- Modelling results under Scenario 1C suggest that a 714 m^3 (189,000 US gal) hydropneumatic tank (initial gas volume of 350 m^3) would maintain more than 20 psi within the CCFM.
- Modelling results under Scenario 1D suggest that a 233 m^3 (62,000 US gal) hydropneumatic tank (initial gas volume of 80 m^3) would maintain more than 0 psi within the CCFM.

Recommendations

- A ramp time of 165 seconds, equivalent to eight (8) times the CCFM's critical time, is recommended for the CCFM pumps at AJ Brian PS.
- An opening/closing rate of approximately 0.58%/sec is recommended for the CCFM PSV. This rate would fully close (i.e., from 36% close, under steady state conditions, to 100% close) the PSV in about 110 seconds, which is about five (5) times the critical time of the CCFM feedermain.
- It is recommended that the closing/opening rate of the identified PSV should be confirmed with field tests to validate whether the valve is reacting at a rate similar to what was assumed in this study.
- Depending on the desired level of protection (i.e., the allowable minimum transient pressure within the CCFM), the following hydropneumatic tanks are recommended at AJ Brian PS to protect the CCFM (Phases 1 to 3) against adverse transient pressures.
    - Minimum transient pressure of 20 psi: 714 m^3 (189,000 US gal) tank, with an initial air volume of 350 m^3
    - Minimum transient pressure of 0 psi: 233 m^3 (62,000 US gal), with an initial air volume of 80 m^3

4.2.2 ASSESSMENT 2 – DOWNSTREAM OF JF COOK BPS

In May of 2025 Stantec evaluated the addition of the proposed Southerly Elevated Water Tower (SEWT) and decommissioning of the Hanna Street Elevated Storage Tank (Hanna ET) in TM#5. This analysis looked at a pump trip at the JF Cook BPS with the CCFM Phase 4 pipeline online and no transient mitigation and found that the resulting minimum distribution system pressure was -7 psi.

This analysis recommended the following options for transient mitigation at JF Cook BPS:

- Minimum transient pressure of 20 psi: 71.0 m^3 (18,760 US gal) tank, with an initial air volume of 40.0 m^3.
- Minimum transient pressure of 10 psi: 12.5 m^3 (3,305 US gal) tank, with an initial air volume of 5.0 m^3.

Assessment #2 will evaluate a pump trip at JF Cook BPS with the recommended 5.0 m^3 initial gas volume in the surge tank both **with** and **without** the CCFM Phase 4 pipeline, to determine the effects on the transient pressure results and maximum gas volume in the surge tank. Additionally, a lower initial gas volume will be evaluated to meet a 0-psi minimum pressure objective, consistent with Assessments #1 and #3.

4.2.2.1 Scenario 2A - Power Failure / Pump Trip (2 pumps on) – *Without* CCFM Phase 4

Scenario 2A - Power Failure / Pump Trip (2 pumps on)

Based on the previous analysis (TM #5 by Stantec) the hydropneumatic tank (a.k.a. surge tank) was modeled downstream of the JF Cook BPS with an initial gas volume of 5.0 m^3 and a connection pipe size of 75 mm, and the pump trip was run without the CCFM Phase 4 pipe. Phase 4 of the CCFM pipeline is planned to be installed in 2026, and therefore this scenario represents an emergency condition with this pipeline out of service. In this scenario, the surge tank gas volume expanded from 5 m^3 up to 12.3 m^3, approximately 2.5 times the initial volume. These results indicate that the 12.5 m^3 tank would be nearly empty under this transient event. A typical design is to have a 10-20% buffer above the maximum gas volume to maintain a wet seal and prevent the tank from fully emptying. However, based on discussions with surge tank manufacturers, an air-over-water type surge tank can fully empty, but would need to be designed for -5 psi minimum pressure and include a vacuum breaker valve, which would need to be coordinated with the surge tank manufacturer. The model results indicated that the tank maintained positive pressure in the distribution system, with a minimum pressure of 5 psi. A pump trip with all duty pumps on while the CCFM Phase 4 pipeline is out of service is considered a low probability event, and in this case the originally recommended tank size of 12.5 m^3 may be considered acceptable. Additionally, a scenario was run with 3.0 m^3 initial gas volume to evaluate the sensitivity of the surge tank sizing to meet a 0-psi objective. This scenario resulted in a minimum pressure of approximately 1 psi, and the surge tank gas volume expanded up to 8.5 m^3. Considering the low probability of this event, a smaller margin (e.g., 5%) could be used resulting in a 9 m^3 tank and meet a 0-psi objective.

4.2.2.2 Scenario 2B - Power Failure / Pump Trip (2 pumps on) – *With* CCFM Phase 4

Scenario 2B - Power Failure / Pump Trip (2 pumps on)

The surge tank was again modeled downstream of the JF Cook BPS (with 5.0 m^3 of initial gas volume and a connection pipe size of 75 mm) and the pump trip was run with the CCFM Phase 4 pipe active. In this scenario, because the SEWT is better connected to the JF Cook BPS with the CCFM Phase 4 pipe, SEWT reacts quicker to the dropping pressure with a higher outflow. This increase in transmissivity results in the gas expanding less compared to Scenario 2A (without the CCFM Phase 4). For this scenario, the gas expanded from 5 m^3 up to 9.6 m^3, less than two times the initial volume, which would result in a 12 m^3 tank size (allowing for the typical 10-20% buffer). It was found that with the CCFM Phase 4 pipe, the surge tank maximum gas volume was reduced by 2.7 m^3. The minimum pressure in the distribution system was approximately 10 psi, which was considered acceptable. **Figure 4-7** shows the difference in minimum pressure conditions with and without the CCFM Phase 4, and **Figure 4-8** shows a comparison of the surge tank gas volume expansion with and without the CCFM Phase 4 pipeline, and **Figure 4-9** shows the SEWT outflow comparison. It was found that to reduce the tank size and utilize a 0-psi minimum transient pressure objective, using 3.0 m^3 initial gas volume expanded up to 6.4 m^3, which would be an 8 m^3 tank size with the typical 20% buffer, and resulted in a minimum pressure of 6 psi. The results of Scenario 2A and 2B indicate that a 9 m^3 (2,380 US gallon) surge tank (3.0 m^3 initial gas volume and a 750 mm connection size) could meet the 0-psi objective with or without the CCFM Phase 4 pipeline in service and was considered acceptable.

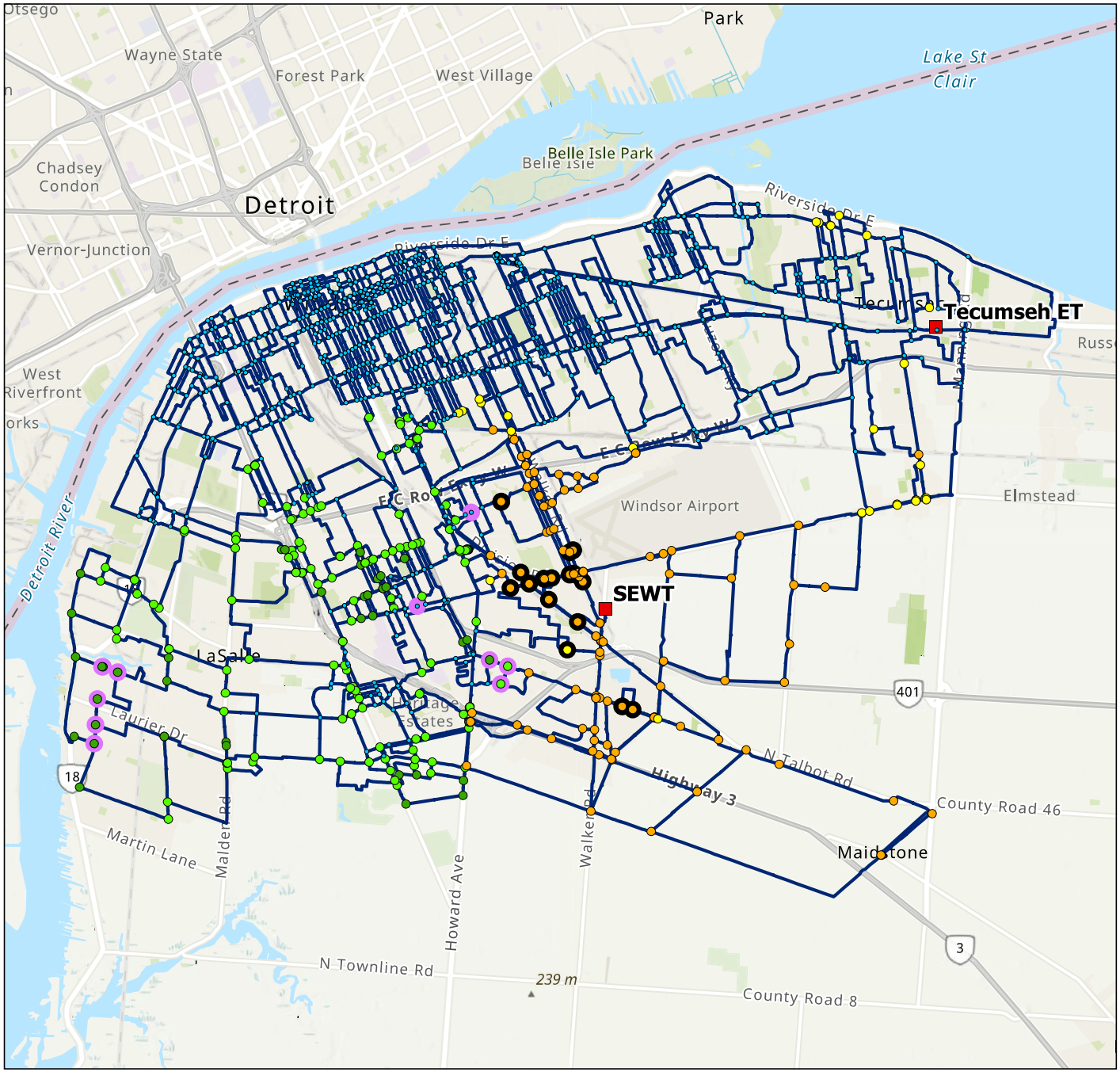


Figure No.
4-7

Title
Difference in Minimum Pressure CCFM Phase 4

Client/Project
ENWIN Utilities Ltd.
ENWIN CCFM

Project Location
Windsor, Ontario

N

0 1,000 2,000 Meters
(At original document size of 8.5x11)
1:130,000

Legend

Difference in pressure (psi)
- -10 - -5
- -5 - - 2.5
- -2.5 - 2.5
- 2.5 - 5
- 5 - 25

- Lower than 20 psi with CCFM
- Higher than 20 psi with CCFM
- Elevated Storage
- Model Pipe



Notes
1. Coordinate System: NAD 1983 UTM Zone 17N

Stantec

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

Reference: ENWIN CCFM - Transient Analysis

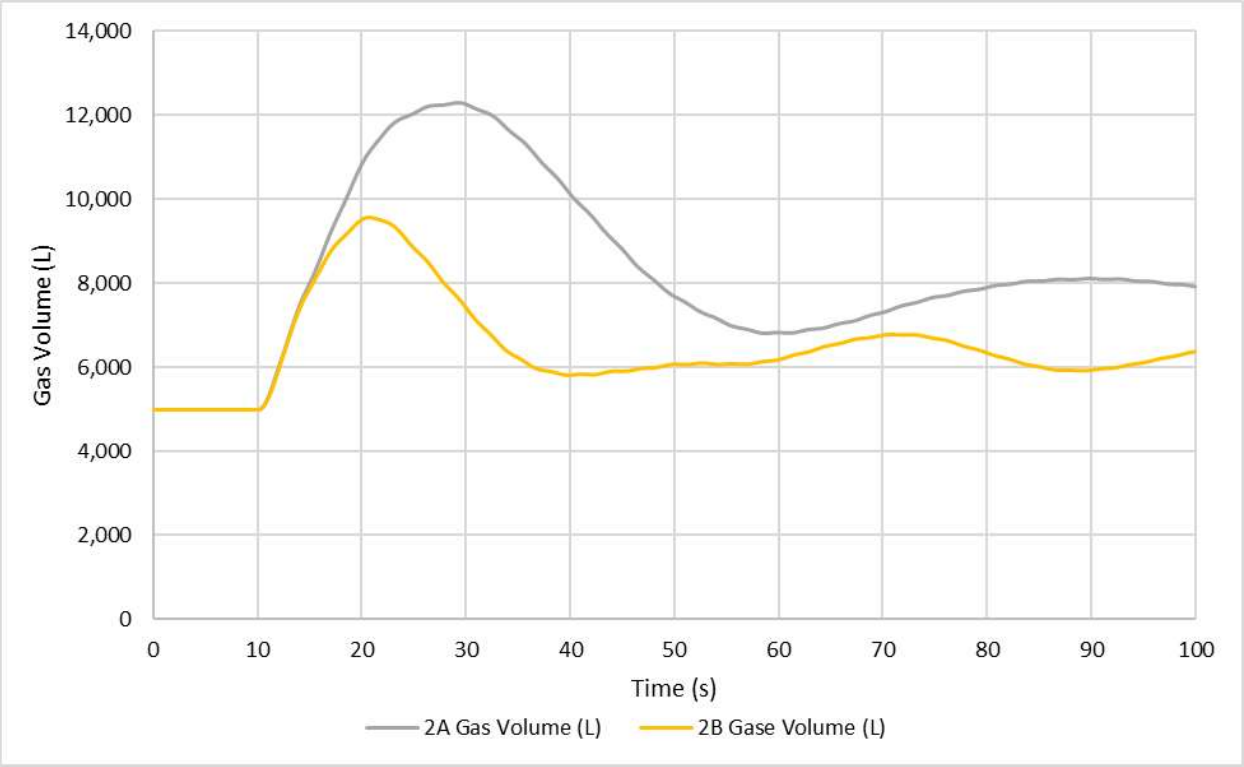


Figure 4-8: JF Cook BPS Surge Tank Gas Volume Difference/Comparison between Scenario 2A / 2B

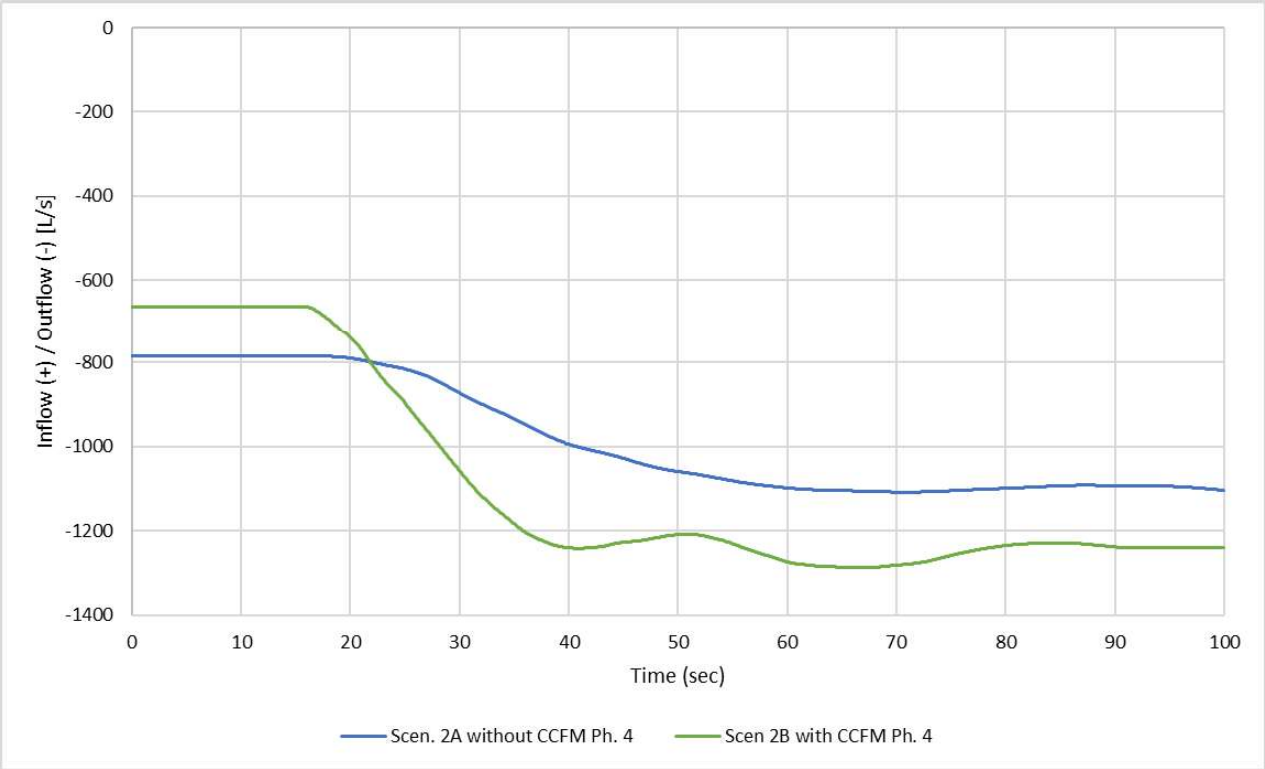


Figure 4-9: SEWT Outflow Difference/Comparison between Scenario 2A / 2B

4.2.2.3 Summary

A transient analysis was completed to examine the transient behaviours of the proposed CCFM (Phase 4 or from JF Cook Res to Cabana Rd.) system and assess the need for fluid transient mitigation measures. The transient analysis was completed based on the proposed hydraulic conditions as documented in a technical memorandum (TM#5) as part of a previous phase of this project. Main assumptions, results and observations from the transient analysis are summarized below.

<u>Assumptions</u>

- There is a hydropneumatic tank at the discharge of the JF Cook PS with an initial air volume of 5 m^3.
- The future Southerly Elevated Water Tower (SEWT) is in service, as recommended in the WUC Water System Master Plan (WSMP) 2023 Update, with the existing Hanna St Elevated Storage Tank decommissioned.
- A design flow of 1,286 L/s flow was considered assuming the CCFM Phase 4 pipeline is in service.

Modelling Results

- Modelling results suggest that the CCFM Phase 4 pipeline improves the effectiveness of the SEWT to mitigate surges resulting from a power failure at JF Cook by increasing the transmissivity between the PS and the elevated tank.
- With the CCFM Phase 4 pipeline, the surge tank maximum gas volume is 2.7 m^3 less than without the CCFM Phase 4 pipeline, which is due to the improved transmissivity to the SEWT and decrease in critical time due to the more direct connection provided by the CCFM Phase 4 pipe.
- Modelling results under Scenario 2B suggest that with the CCFM Phase 4 pipeline, a 12.5 m^3 surge tank could be utilized at JF Cook BPS for protecting the distribution system to the 10-psi minimum pressure objective.
- It was also found that to reduce the surge tank size, a 9.0 m^3 (2,380 US gallon) tank could be utilized at JF Cook BPS for protecting the distribution system to the 0-psi minimum pressure objective.

Recommendations

- Depending on the desired level of protection (i.e., the allowable minimum transient pressure within the distribution system), the following hydropneumatic tanks are recommended at JF Cook PS to protect the distribution system as well as the CCFM (Phase 4) against adverse transient pressures.
    - Minimum transient pressure of 20 psi: 71 m^3 (18,760 US gal) tank, with an initial air volume of 40 m^3 and connection size of 750 mm.
    - Minimum transient pressure of 0 psi: 9 m^3 (2,380 US gal), with an initial air volume of 3 m^3 and connection size of 750 mm.

4.2.3 ASSESSMENT 3 – PUMP TRIP AT AJ BRIAN PS AND GEORGE AVE. PS

4.2.3.1 Unprotected System

Scenario 3A - Power Failure / Pump Trip (5 pumps on)

Scenario 3A evaluated the AJ Brian and George Avenue pump stations operating with all duty pumps on at full speed and experiencing a pump trip with no transient mitigation. The minimum pressure for this scenario drops to full vacuum (-14.2 psi) within the distribution system which does not comply with the minimum transient pressure criterion. The minimum pressure along the profile from the AJ Brian PS to the SEWT for this scenario is shown in **Figure 4-10**.

Reference: ENWIN CCFM - Transient Analysis

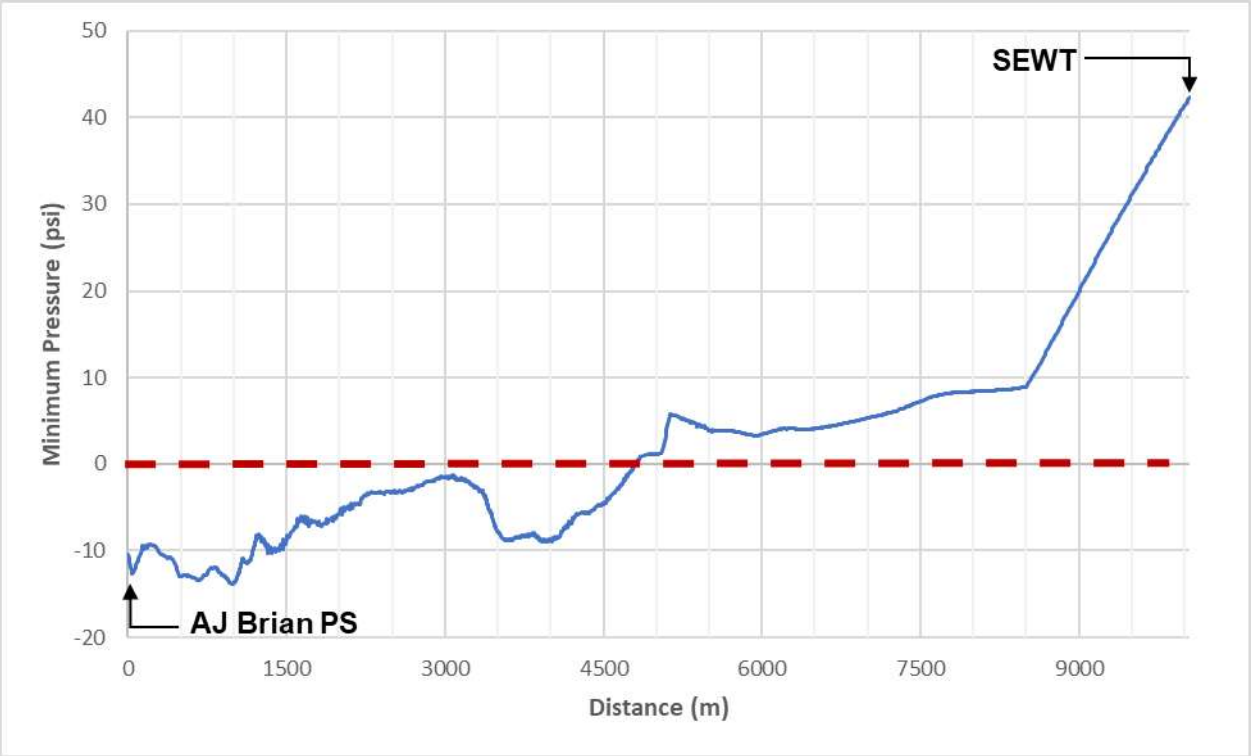


Figure 4-10: Minimum Transient Pressure – AJ Brian to SEWT – Scenario 3A

This scenario did not meet the minimum transient pressure goal of 0-psi and was therefore considered unacceptable. Full vacuum conditions occurred south of the AJ Brian PS, as well as in the western part of the system, shown below in **Figure 4-11**.

Reference: ENWIN CCFM - Transient Analysis

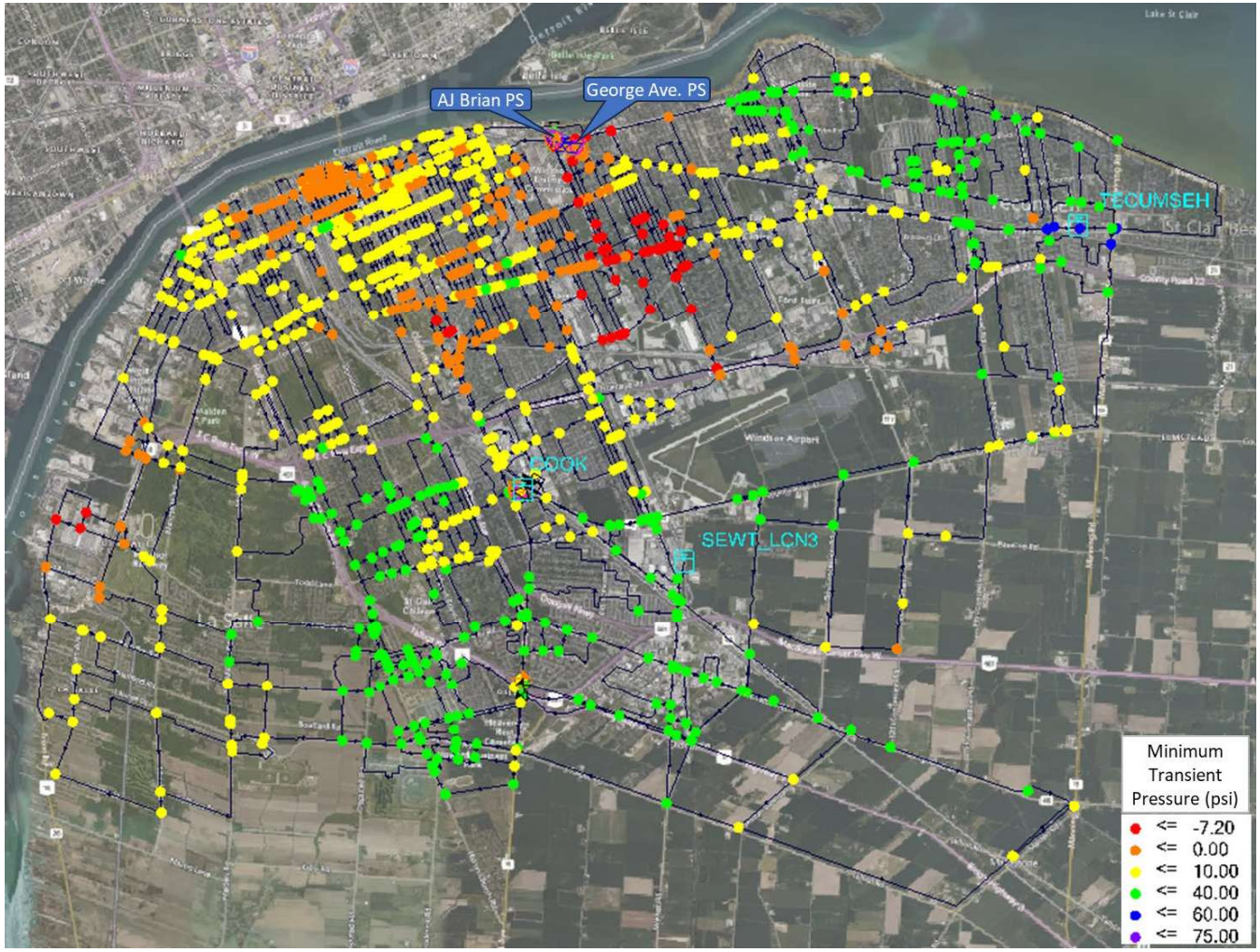


Figure 4-11: Power Failure with Three (3) Pumps at AJ Brian PS and Two (2) Pumps at George Ave. PS, No Mitigation

4.2.3.2 Protected System

Scenario 3B - Power Failure / Pump Trip with Surge Tanks at AJ Brian and George Ave. PS (5 pumps on with 20 psi objective)

Scenario 3B evaluated the AJ Brian and George Avenue pump stations experiencing a pump trip with hydropneumatic tanks at both AJ Brian and George Avenue pump stations. In this scenario, the AJ Brian and George Ave. surge tanks were each modeled directly in line (rather than with a branch connection) with the pump station discharge piping with an initial air volume of 50 m^3 and 750 mm connection pipe size. The connection pipe size of 750 mm was determined based on sensitivity testing, which found this size does not restrict outflow from the surge tanks. After the pumps trip, the air volume expands from 50 m^3 up to 114 m^3; therefore, accounting for a typical 10-20% buffer to keep a wet seal in the tank, the tank size would be approximately 143 m^3 (37,780 US gallons) at each pump station. This scenario resulted in a minimum distribution system pressure of approximately 6 psi. **Figure 4-12** shows the minimum pressure along the profile from the AJ Brian PS to the SEWT with the 143 m^3 tanks at both AJ Brian and George Ave PS.

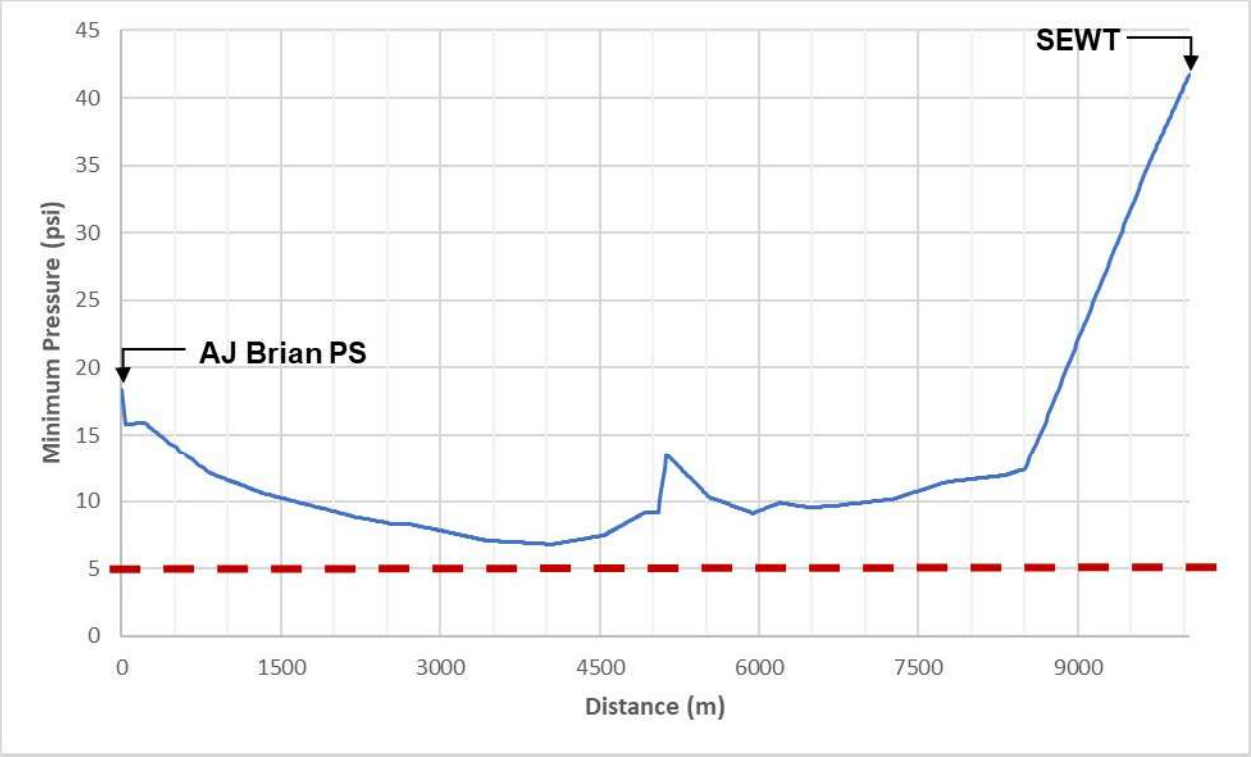


Figure 4-12: Minimum Transient Pressure – AJ Brian to SEWT – Scenario 3B

Next, to try to meet the objective of 20 psi minimum pressure, the surge tank initial gas volume was doubled to 100 m^3. The gas volume expanded up to 212 m^3 but the minimum pressure was not improved over 6 psi, with a final steady state pressure downstream of the pump station of approximately 14 psi. Therefore, 6 psi

is considered the practical limit to the minimum transient pressure for an occasional surge event because of the low final steady state pressure with all the AJ Brian and George Ave pumps off.

Scenario 3C - Power Failure / Pump Trip with Surge Tanks at AJ Brian and George Ave. PS (5 pumps on with 0 psi objective)

Scenario 3C evaluated the AJ Brian and George Avenue pump stations experiencing a pump trip with surge tanks at both AJ Brian and George Avenue pump stations. This scenario had an objective of 0 psi for the minimum transient pressure within the distribution system. The AJ Brian and George Ave distribution system tanks were each modeled with an initial air volume of 17 m^3 and 750 mm connection pipe size. The air volume expands from 17 m^3 up to +/- 44 m^3 at each tank after the pump trip event, therefore, accounting for the typical buffer, the tank size would be approximately 55 m^3 (14,530 US gallons) at each pump station. This scenario resulted in a minimum distribution system pressure of approximately 0.1 psi. **Figure 4-13** shows the minimum pressure along the profile from the AJ Brian PS to the SEWT with the 55 m^3 tanks at both AJ Brian and George Ave PS.

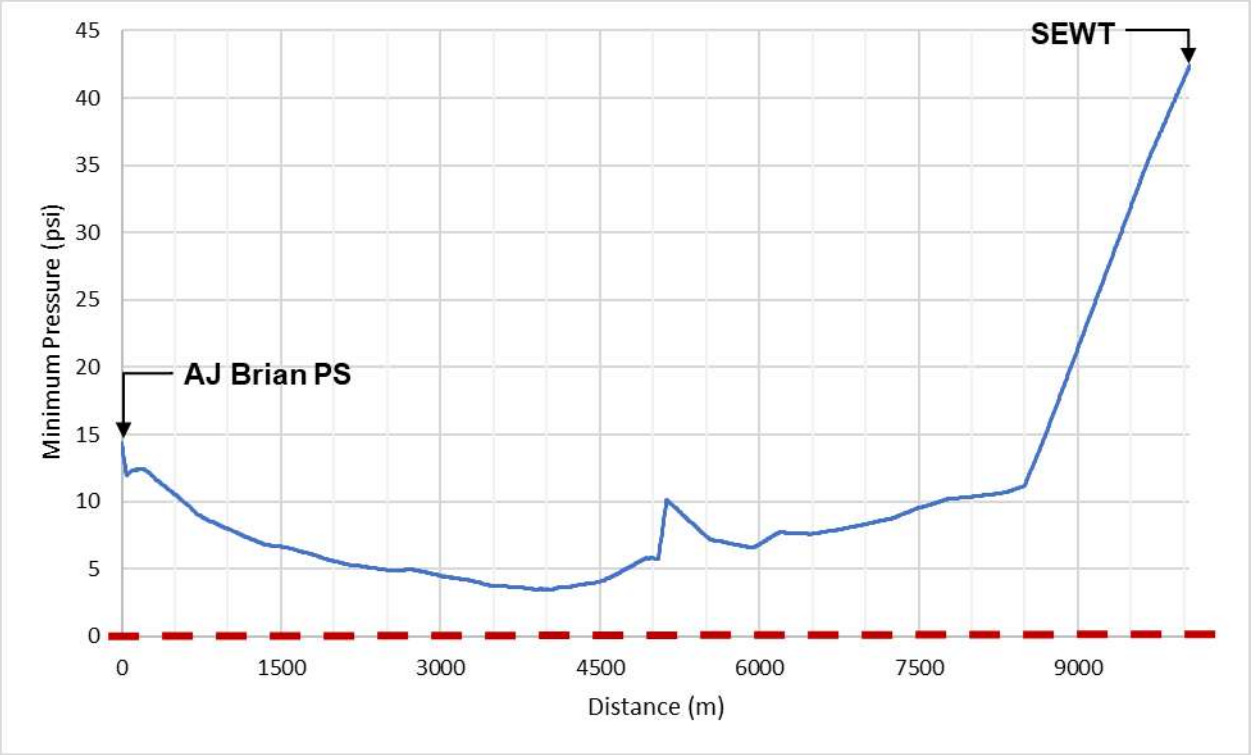


Figure 4-13: Minimum Transient Pressure – AJ Brian to SEWT – Scenario 3C

Scenario 3D - Power Failure / Pump Trip (5 pumps on with 0 psi objective)

Scenario 3D evaluated the AJ Brian and George Avenue pump stations experiencing a pump trip with a surge tank at AJ Brian PS only, connecting to the North Header from the PS. This scenario was aiming for a target of 0 psi for the minimum transient pressure within the distribution system. The AJ Brian tank was modeled using a 750 mm connection size with an initial air volume of 50 m^3 expanding up to 125 m^3, with the typical buffer would be a 150 m^3 (39,630 US gal). This scenario resulted in a minimum distribution system pressure of -6 psi, which does not meet the 0-psi objective. The location with the minimum pressure near the intersection of Seminole Street and Labadie Road drops from 67 psi down to -6 psi, a 73-psi pressure drop, shown in **Figure 4-14**.

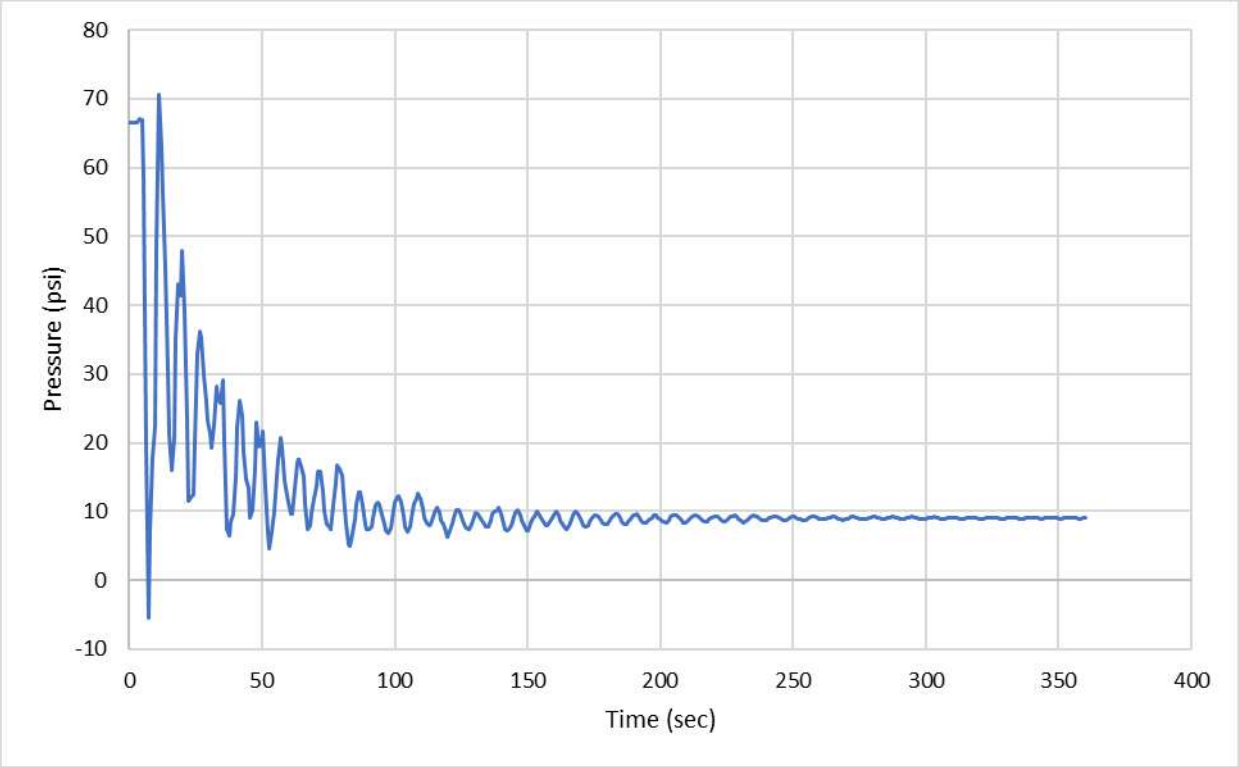


Figure 4-14: Minimum Transient Pressure Near Seminole Street and Labadie Road – Scenario 3D

This pressure drop occurs immediately following the pump trip event, which indicates that the downsurge from the unprotected pump station propagates too quickly for the surge tank at the other pump station to respond, given the approximately 1.5 seconds critical time between the two pump stations. Because the initial pressure drop occurs so quickly, it was not considered feasible to meet the 0-psi objective with a single surge tank to protect both pump stations. However, the negative pressure condition was localized and lasted for less than 1 second, and therefore this may be considered acceptable.

During a follow-up meeting between Stantec and ENWIN Staff on September 18th, 2025, ENWIN indicated there is no available space for a surge tank at the George Avenue PS. Because it was found that the 0-psi

objective was not possible without surge tanks at both PSs, the minimum pressure objective was revised to half of full vacuum (-7 psi) for the distribution system.

Scenario 3E - Power Failure / Pump Trip (5 pumps on with -7 psi objective)

Scenario 3E is an update to Scenario 3D after the meeting with ENWIN on September 18th, 2025. This scenario looks at two (2) alternative surge tank locations at AJ Brian PS provided by ENWIN, with a revised minimum pressure objective of -7 psi. The surge tank was first modeled with location Option 1: just west of the AJ Brian pump station building between the North and South headers using a 750 mm connection size and pipe connecting to both the North and South Headers (17 m connection length to each) with an initial air volume of 50 m^3. The surge tank air volume expanded up to a maximum of 124 m^3, which would be an approximate 150 m^3 tank (39,630 US gal). The minimum pressure with this surge tank location option was -5 psi. A 900-mm pipe connecting the surge tank to the North and South Headers was also evaluated, which improved the minimum pressure results by 1 psi (-4 psi minimum). The minimum pressure is improved over Scenario 3D because in that scenario the surge tank was only connected to the North Header.

Next location Option 2 was modeled with the surge tank north of the AJ Brian PS and 750 mm pipe (connection lengths of approximately 27 m to the North Header and 50 m to the South Header). It was found that for this scenario, the minimum pressure dropped to approximately -6 psi. Finally, the piping size from the surge tank to the North and South Headers was increased from 750 up to 900 mm (keeping the 750 mm surge tank connection size) and it was found that the minimum pressure was again improved by approximately 1 psi (-5 psi minimum). It was found that either location for the surge tank at AJ Brian met the revised pressure criteria of -7 psi, and the 900 mm piping connecting to the North and South Headers improved the minimum pressure by approximately 1 psi, which was considered minor. The negative pressure condition lasted for less than one (1) second and was localized to the 300 mm ductile iron near the intersection of Plymouth Drive and Tourangeau Road.

4.2.3.3 Summary

A transient analysis was completed to analyze the impact of a power failure at AJ Brian and George Avenue PS on the transient conditions within the water distribution network. Main assumptions, results and observations from the transient analysis are summarized below.

Assumptions

- The Hanna St Elevation Storage Tank is decommissioned.
- The Southerly Elevated Water Tower (SEWT) is in service with a hydraulic grade of 220 m,
- Given the short distance (+/- 0.6 km) between AJ Brian PS and George Avenue PS, it was assumed that a power failure would affect both facilities simultaneously.
- All duty pumps are operating at AJ Brian PS (3 pumps) and George Avenue PS (2 pumps) for a total of 5 pumps operating.

Reference: ENWIN CCFM - Transient Analysis

- Based on a meeting with ENWIN on 9/18/2025, surge mitigation will need to be located at the AJ Brian PS as there is no space available at George Ave PS.
- Due to the constraint of surge mitigation at AJ Brian only, the minimum transient pressure objective was revised to half of full vacuum (-7 psi).

Modelling Results

- Modelling results suggest that a pump trip at AJ Brian and George Avenue pump stations without surge mitigation results in full vacuum pressure (-14.2 psi) in the distribution system, which was considered unacceptable.
- Modelling results suggested that maintaining a minimum system pressure above 5 psi is likely not feasible based on the results of increasing initial air volumes without much improvement in minimum pressure. This is because the final steady state pressure with the AJ Brian and George Ave. pumps is just 14 psi.
- It was found that to maintain above 0 psi objective, surge tanks at each PS were required and the surge tank size was approximately 2.6 times larger at each PS for the 5-psi objective compared to the 0-psi objective.
- For surge mitigation at AJ Brian only, it was found that an approximate 150 m^3 surge tank (39,630 US gal) resulted in a minimum pressure ranging from -4 to -6 psi, depending on the location and pipe connection size. The negative pressure conditions lasted for less than one second localized in the 300 mm ductile iron piping near the intersection of Plymouth Drive and Tourangeau Road.

Recommendations

Based on the follow-up meeting with ENWIN on 9/18/2025 and revised minimum transient pressure objective of -7 psi, the hydropneumatic tank size recommended at AJ Brian PS to protect the distribution system against adverse transient pressures is 150 m^3 (39,630 US gal) tank, with an initial air volume of 50 m^3 and 750 mm tank connection size.

It was found that both location Option 1 and 2 met the transient pressure objective but the results were more favorable with location Option 1, with the surge tank west of the AJ Brian PS in between the North and South Headers. In either location, the negative pressure conditions lasted less than one second and were localized to the 300 mm ductile iron near the intersection of Plymouth Drive and Tourangeau Road, which met the transient pressure criteria of -7 psi and were considered acceptable.

5 Recommendations and Conclusions

The purpose of this memorandum is to document the hydraulic transient analyses completed to assess the needs for transient mitigation measures to protect the distribution network from undesirable transients associated with the proposed CCFM system, JF Cook BPS, AJ Brian PS, and George Ave. PS.

First, a transient analysis was completed to examine the transient behaviours of the proposed CCFM (Phases 1 to 3 or from AJ Brian PS to JF Cook Res) system and assess the need for fluid transient mitigation measures. This analysis was referred to as Assessment #1 in this document. The transient analysis was completed based on the proposed hydraulic conditions as documented in a technical memorandum (TM#1). Main results and recommendations from Assessment #1 are summarized below.

- Without transient mitigation measures, full complete vacuum conditions occurred within the CCFM under sudden pump trip scenarios (with either one or two pumps in operations). To prevent such adverse conditions, a hydropneumatic tank is recommended at AJ Brian PS.
- Depending on the desired level of protection (i.e., the allowable minimum transient pressure within the CCFM), the following hydropneumatic tanks are recommended at AJ Brian PS to protect the CCFM (Phases 1 to 3) against adverse transient pressures.
    - Minimum transient pressure of 20 psi: 714 m^3 (189,000 US gal) tank, with an initial air volume of 350 m^3.
    - Minimum transient pressure of 0 psi: 233 m^3 (62,000 US gal) tank, with an initial air volume of 80 m^3.
- A ramp time of 165 seconds, equivalent to eight (8) times the CCFM's critical time, is recommended for the CCFM pumps at AJ Brian PS.
- An opening/closing rate of approximately 0.58%/sec is recommended for the CCFM PSV. This rate would fully close (i.e., from 36% close, under steady state conditions, to 100% close) the PSV in about 110 seconds, which is about five (5) times the critical time of the CCFM feedermain.
- It is recommended that the closing/opening rate of the identified PSV should be confirmed with field tests to validate whether the valve is reacting at a rate similar to what was assumed in this study.

Secondly, Assessment #2 was completed to analyze the impact of the CCFM Phase 4 on the transient conditions within the water distribution network, downstream of JF Cook Res & BPS. The transient analysis was completed with the future Southerly Elevated Water Tower (SEWT), as recommended in the WUC Water System Master Plan (WSMP) 2023 Update, and the existing Hanna St Elevation Storage Tank decommissioned. Additionally, the 12.5 m^3 surge tank at JF Cook BPS (recommended as part of TM#5 by Stantec in May of 2025) was assumed to be active. Main results and recommendations from Assessment #2 are summarized below.

- Modelling results suggest that the CCFM Phase 4 pipeline improves the effectiveness of the SEWT in responding to down surges resulting from a power failure at JF Cook by increasing the transmissivity between the PS and the elevated tank.
- Scenario 2A results indicate that without the CCFM Phase 4 pipeline, the gas volume expands from 5 m^3 up to approximately 12.3 m^3 at the JF Cook BPS surge tank; and the minimum pressure is approximately 5 psi.
- Results with the CCFM Phase 4 pipeline under Scenario 2B indicate the tank maximum gas volume is reduced by 2.7 m^3 and the distribution system minimum pressure increases to 10-psi.

Finally, Assessment #3 was completed to evaluate a pump trip at both AJ Brian PS and George Ave PS and analyze the impact within the overall water distribution network. The transient analysis was completed with the SEWT active and the existing Hanna St Elevation Storage Tank decommissioned, as well as an initial gas volume of 3 m^3 at the JF Cook BPS surge tank. Additionally, based on a meeting with ENWIN on 9/18/2025, it was determined that the surge tank needed to be located at AJ Brian PS, and would connect to both the North and South Headers. Two options for locating the surge tank were provided by ENWIN: Option 1 is just west of the AJ Brian PS in between the North and South Headers and Option 2 is in a separate building to the north of the AJ Brian PS. Based on this meeting and the preliminary results, the minimum pressure objective was revised to half of full vacuum pressure (-7 psi). The main results and recommendations from Assessment #3 are summarized below.

- Modelling results suggest that a pump trip at AJ Brian and George Avenue pump stations without surge mitigation results in full vacuum pressure (-14.2 psi) in the distribution system, which was considered unacceptable.
- Modelling results suggested that maintaining a minimum system pressure above 5 psi is likely not feasible based on the results of increasing initial air volumes without much improvement in minimum pressure. This is because the final steady state pressure with the AJ Brian and George Ave. pumps is just 14 psi.
- It was found that to maintain above 0 psi objective, surge tanks at each PS were required and the surge tank size was approximately 2.6 times larger at each PS for the 5-psi objective compared to the 0-psi objective.

- For surge mitigation at the AJ Brian PS only:
  - It was found that an approximate 150 m^3 surge tank (39,630 US gal) with 750 mm connection pipe size at location Option 1 resulted in a minimum pressure of -5 psi and location Option 2 resulted in a minimum pressure of -6 psi, which meets the transient pressure objective for the distribution system of -7 psi and was considered acceptable.
  - The negative pressure conditions last for less than one second and are localized in the 300 mm ductile iron pipe near the intersection of Tourangeau Road and Plymouth Drive.

STANTEC CONSULTING LTD.



Alexandre Mineault-Guitard ing., P.Eng.
Water Resources Engineer
Phone: (613) 725-5532
alexandre.mineault-guitard@stantec.com



Fletcher McKenzie PE (CO, MA, NY)
Senior Hydraulics Engineer
Phone: (212) 330-6116
fletcher.mckenzie@stantec.com



Michael Georgalas PE (AZ, HI, NM)
Principal, Senior Hydraulics Engineer
Phone: (520) 545-7445
michael.georgalas@stantec.com

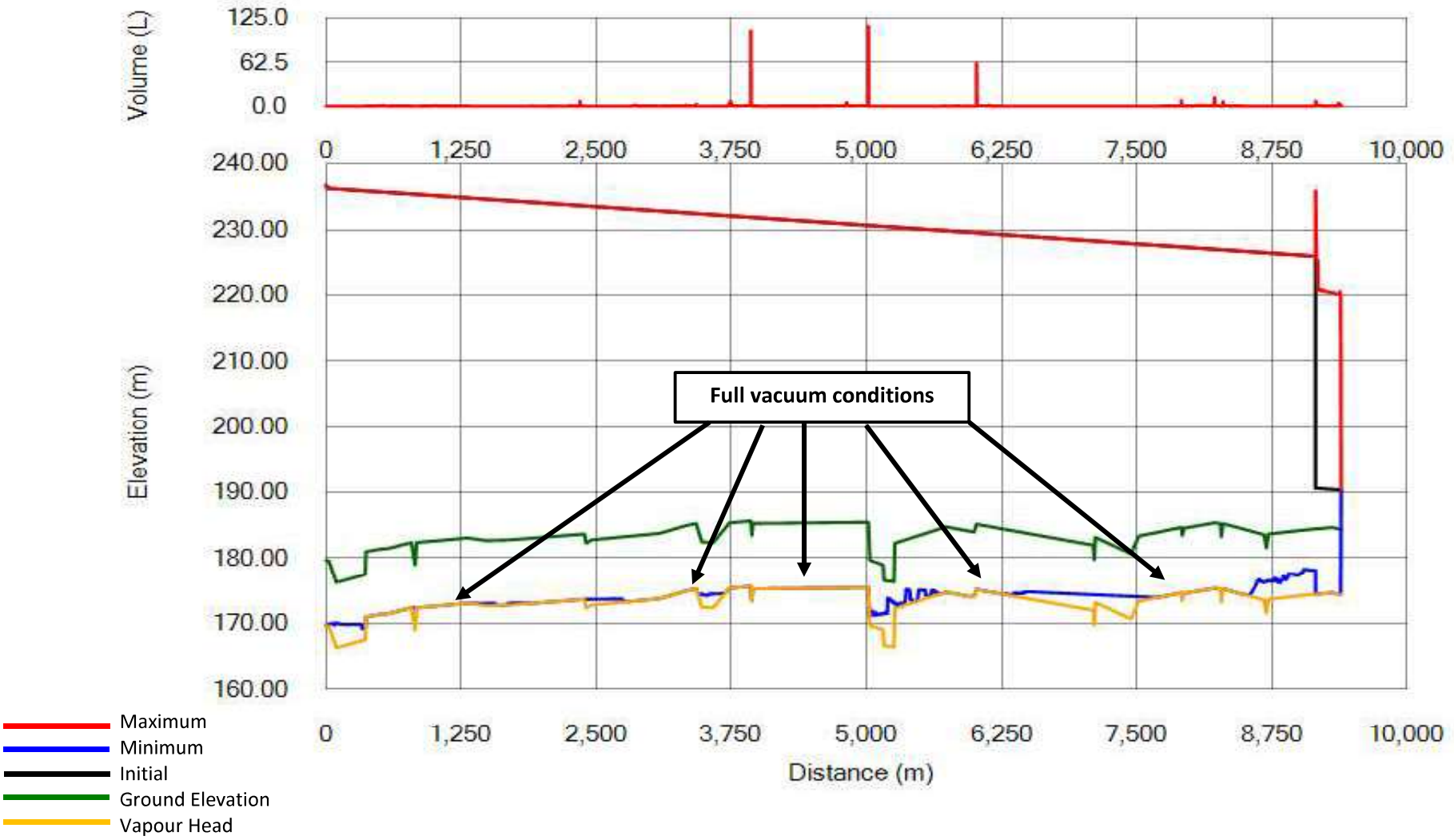


Figure No

A1

Title

Transient Scenario #1a: Hydraulic Grade Line and Air Volume under Power Failure / Pump Trip (2 Pumps) - Unprotected System

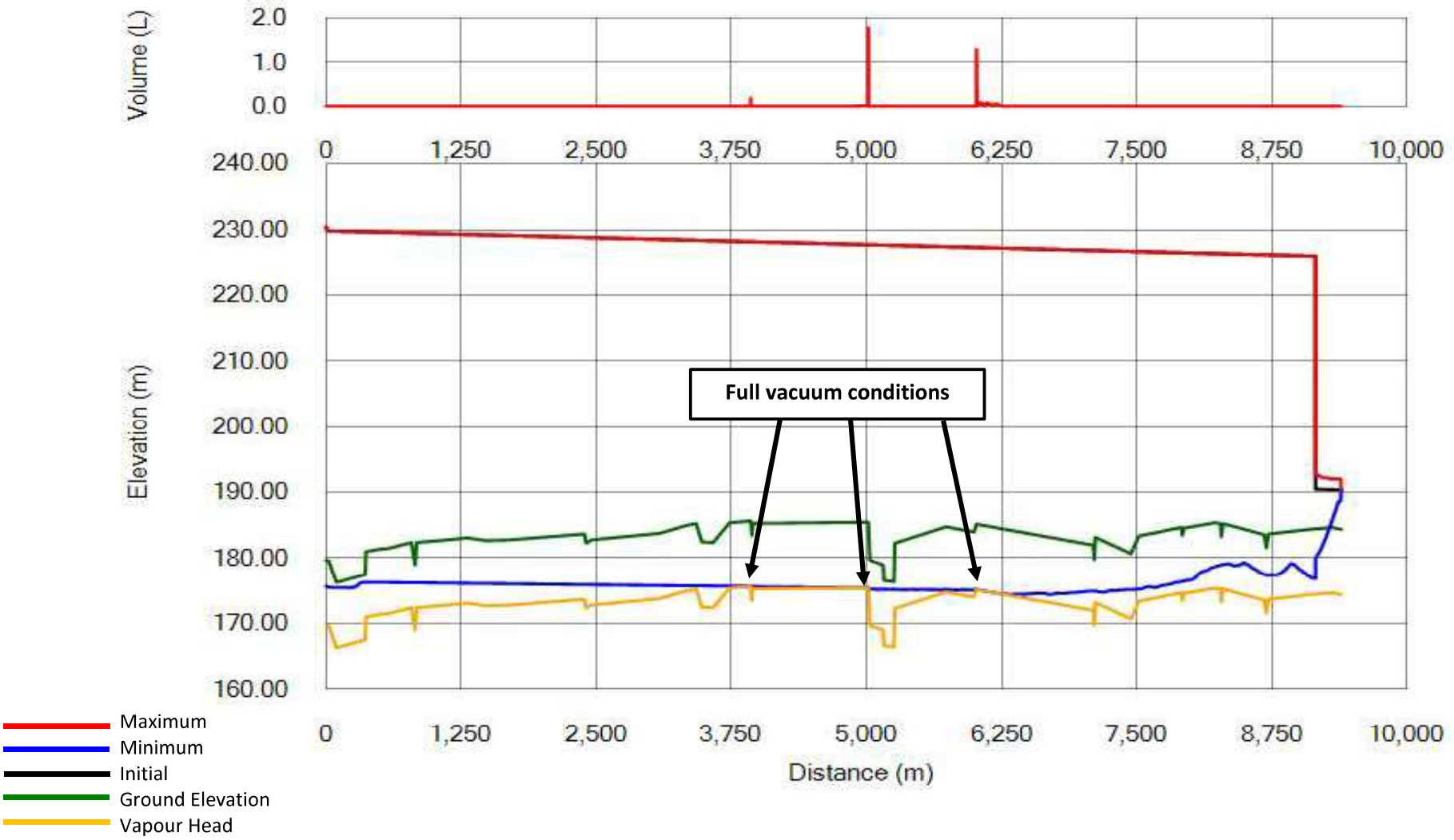


Figure No

A2

Title

Transient Scenario #1b: Hydraulic Grade Line and Air Volume under Power Failure / Pump Trip (1 Pump) - Unprotected System

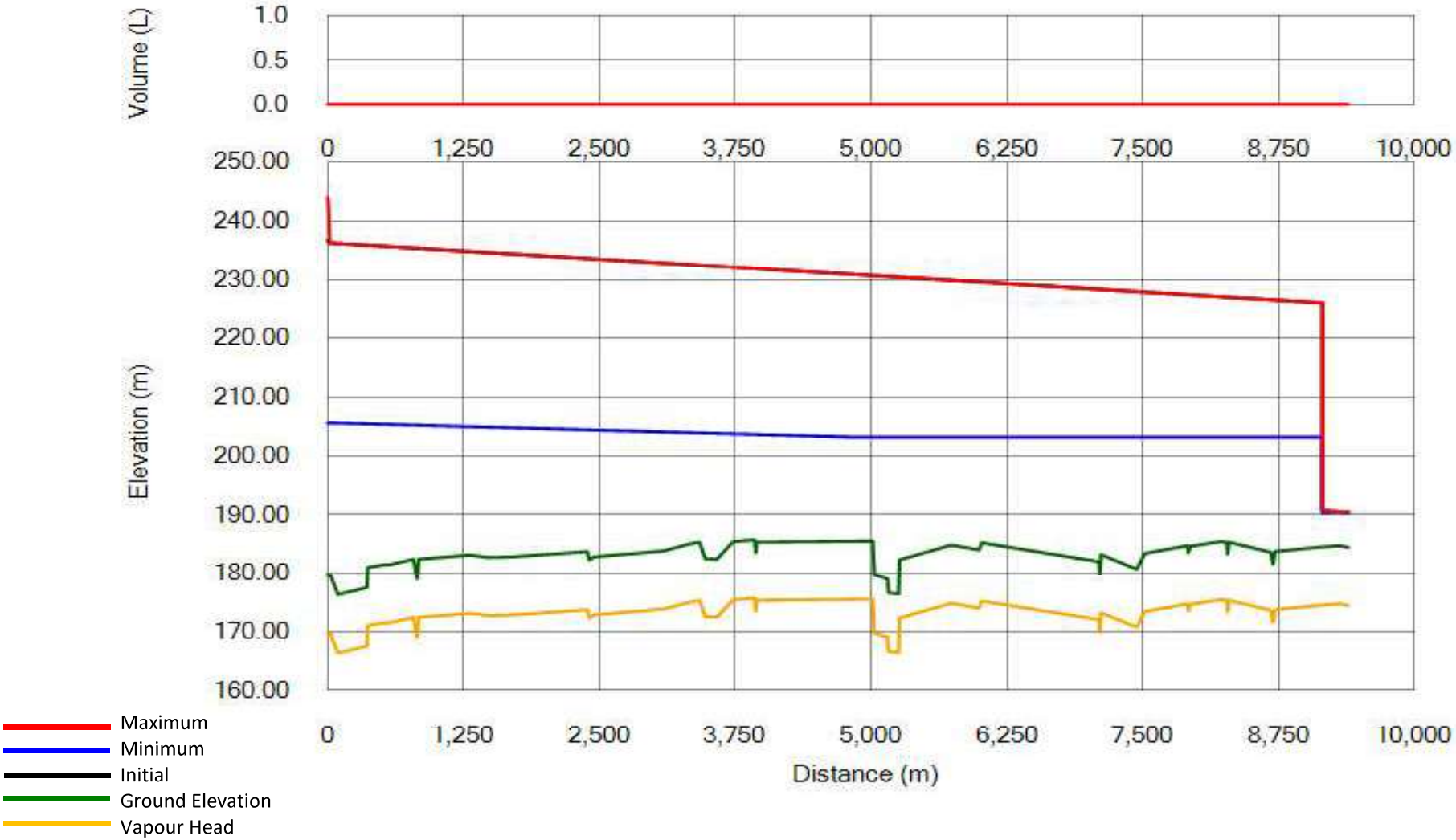


Figure No

A3

Title

Transient Scenario #1c: Hydraulic Grade Line and Air Volume under Power Failure / Pump Trip (2 Pumps) - Hydropneumatic Tank (sized to maintain 20 psi)

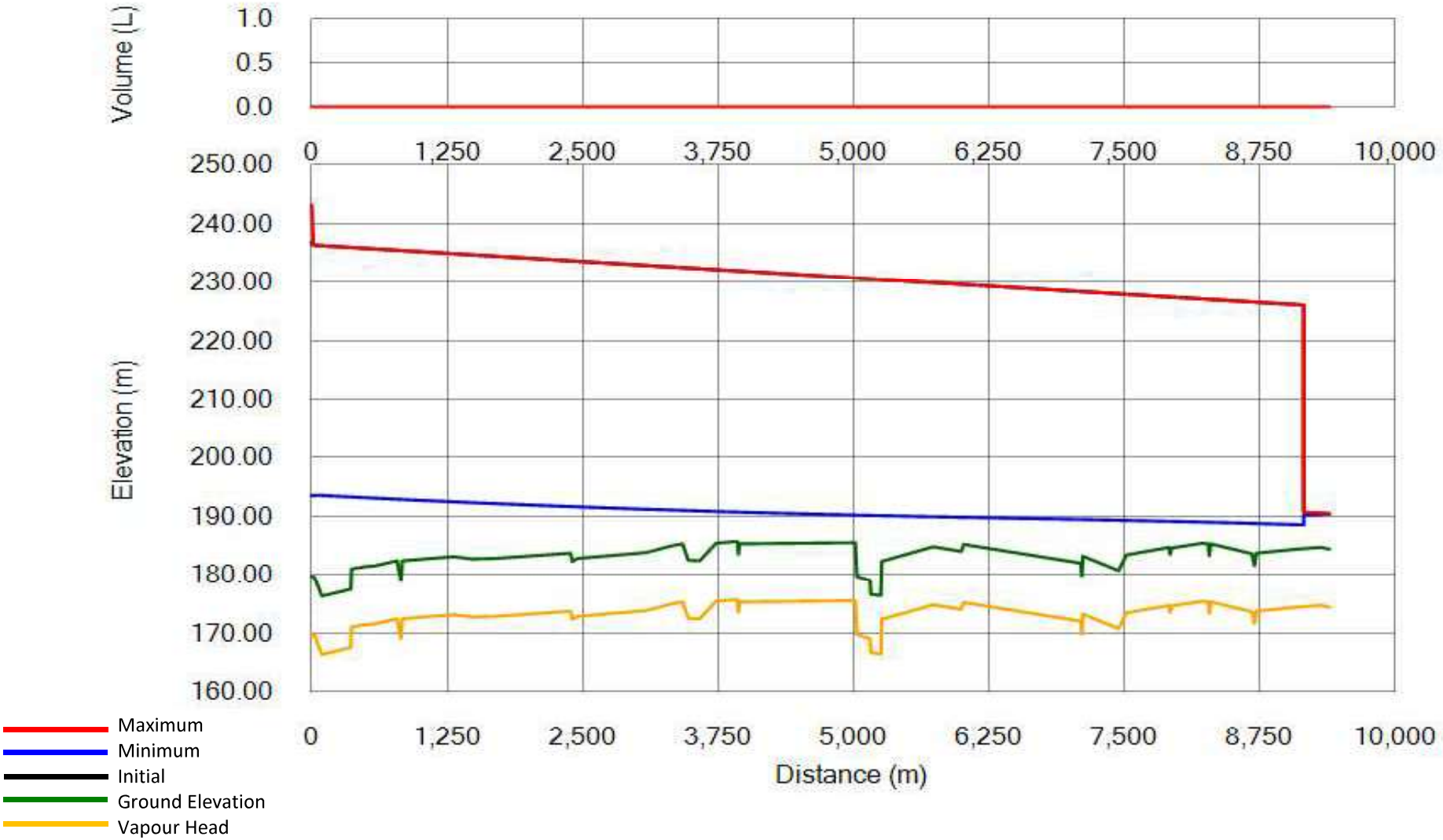


Figure No

A4

Title

Transient Scenario #1d: Hydraulic Grade Line and Air Volume under Power Failure / Pump Trip (2 Pumps) - Hydropneumatic Tank (sized to maintain 0 psi)

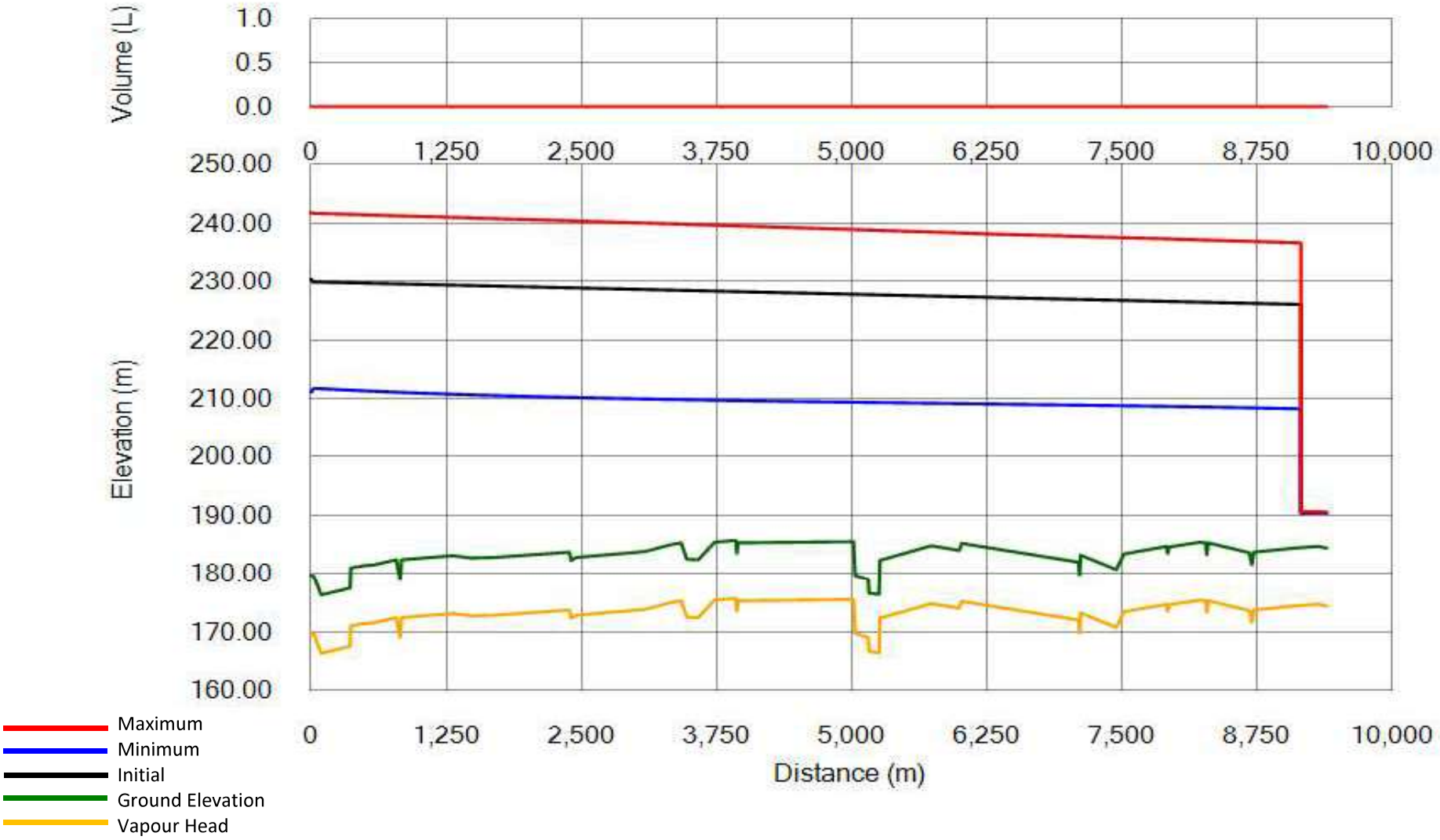
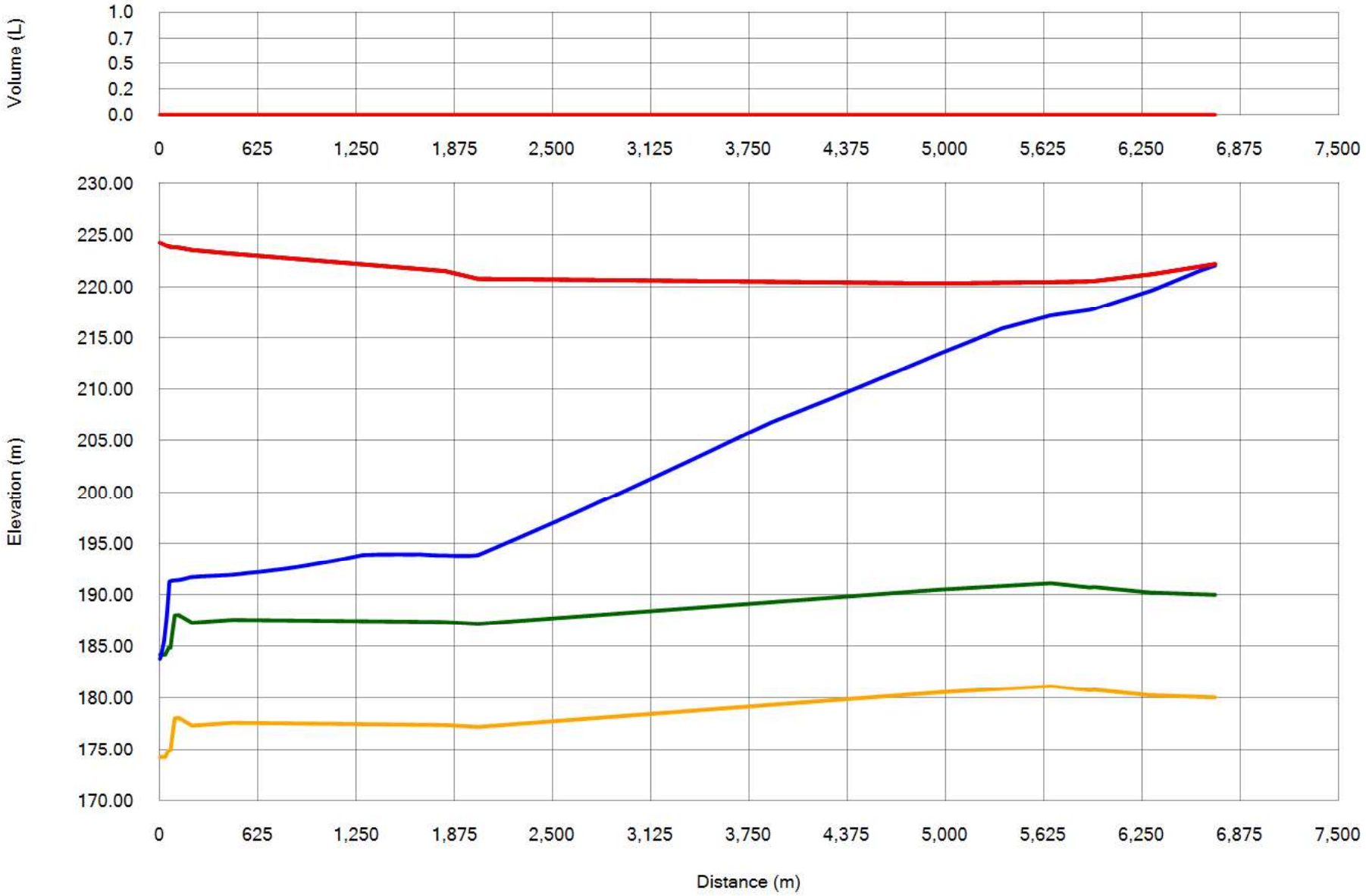


Figure No

A5

Title

Transient Scenario #1e/f: Hydraulic Grade Line and Air Volume under Normal Pump Stop/Start - with Hydropneumatic Tank



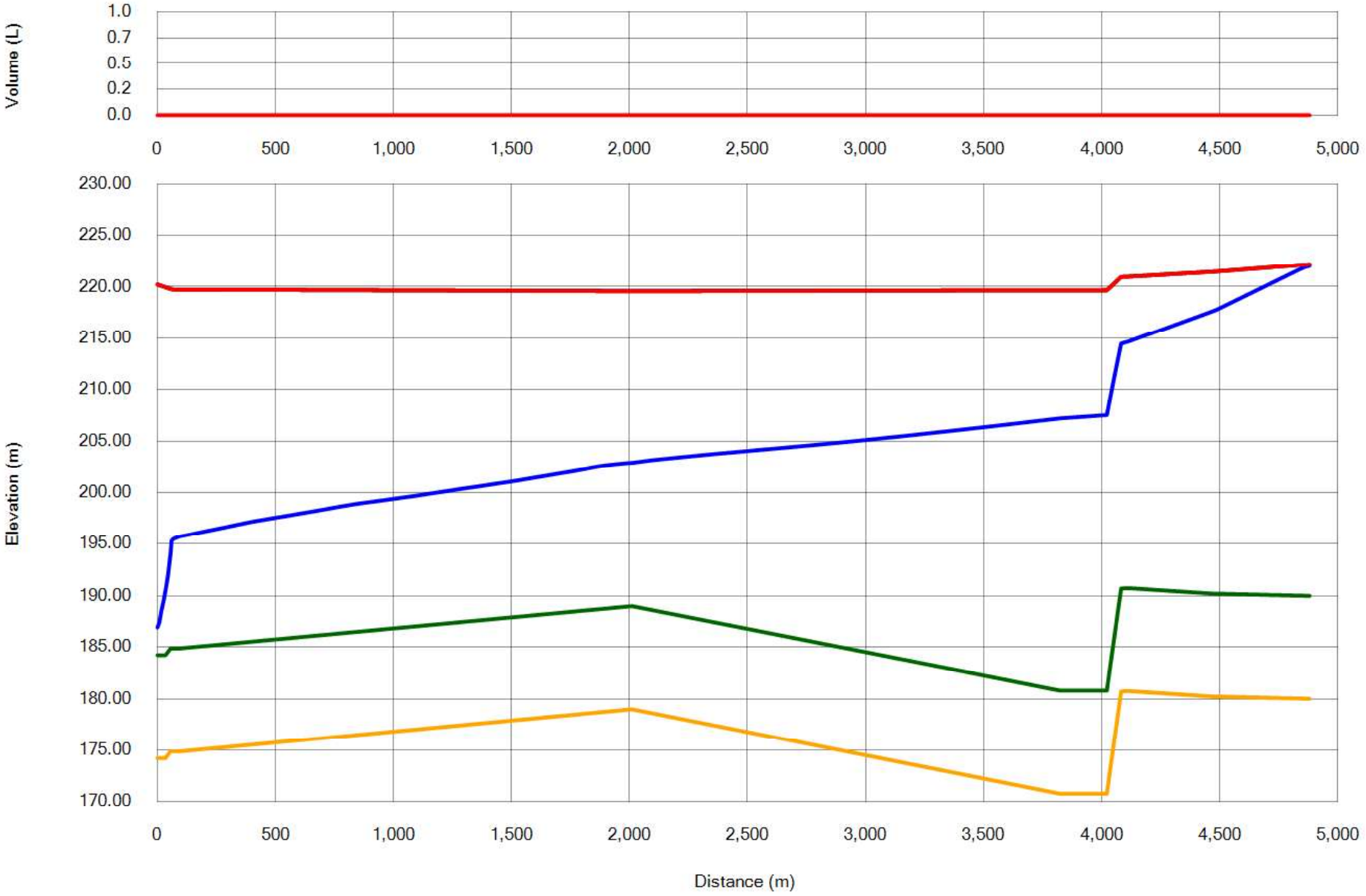
Maximum
Minimum
Initial
Ground Elevation
Vapour Head

Title

Transient Scenario #2a Hydraulic Grade Line and Air Volume from JF Cook BPS to SEWT with Two (2) JF Cook BPS pump trip and No CCFM Ph. 4

Figure No

A6



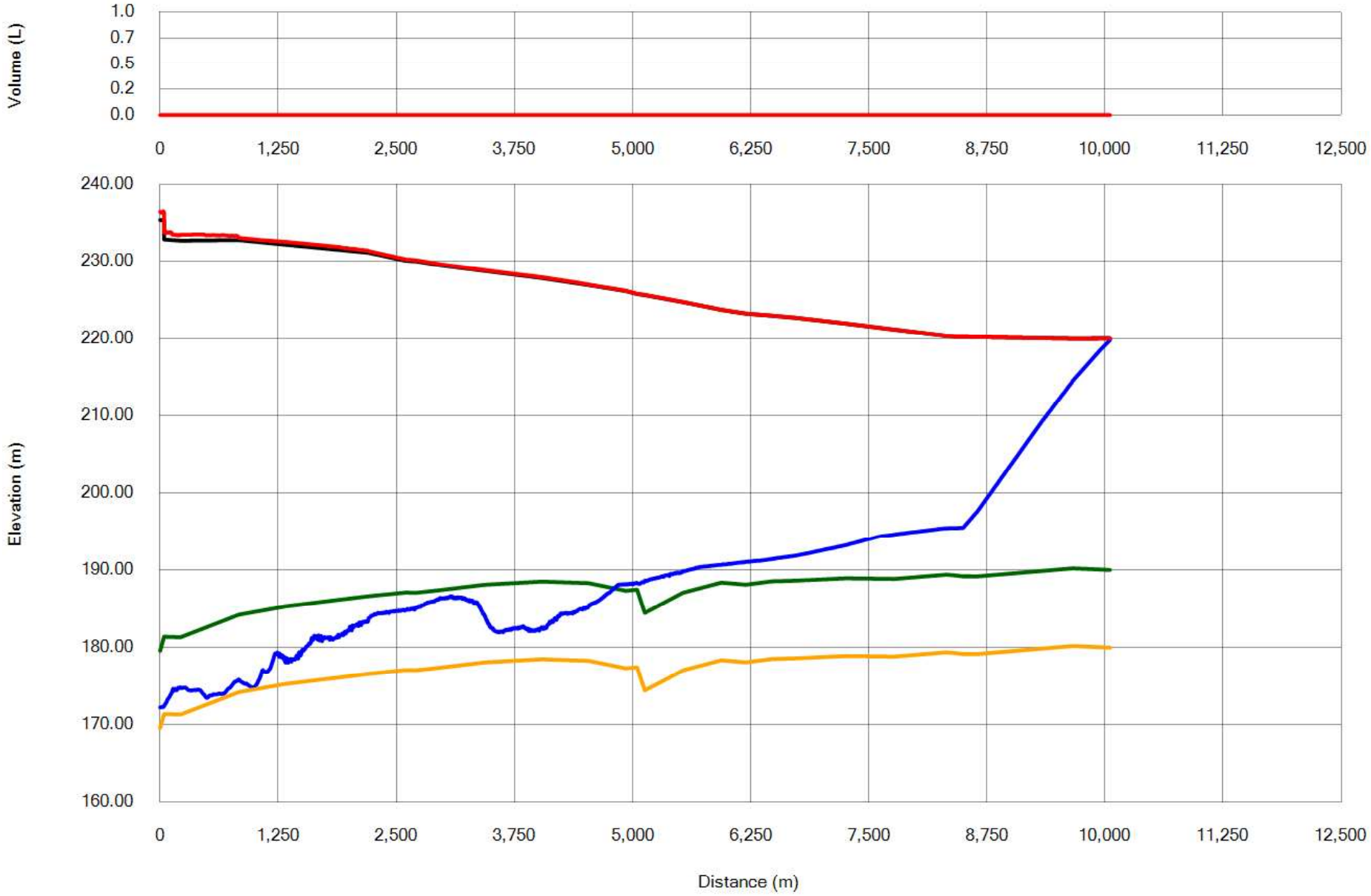
Maximum
Minimum
Initial
Ground Elevation
Vapour Head

Title

Transient Scenario #2b: Hydraulic Grade Line and Air Volume from JF Cook BPS to SEWT with Two (2) JF Cook BPS pump trip and with CCFM Ph. 4

Figure No

A7

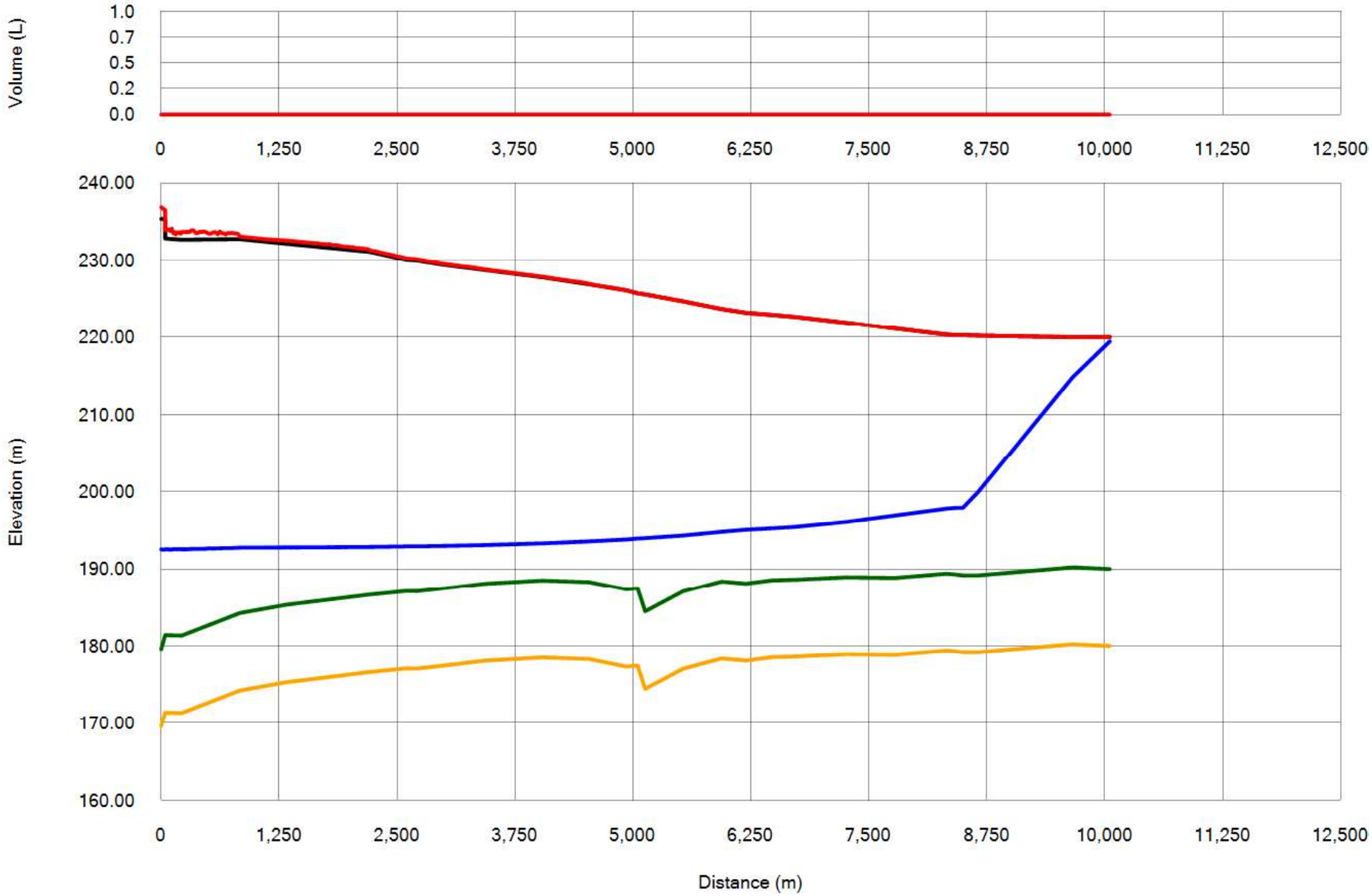


Title

Transient Scenario #3a: Hydraulic Grade Line and Air Volume from AJ Brian PS to SEWT with Three (3) AJ Brian and Two (2) George Avenue Pump Trip with No Transient Mitigation

Figure No

A8

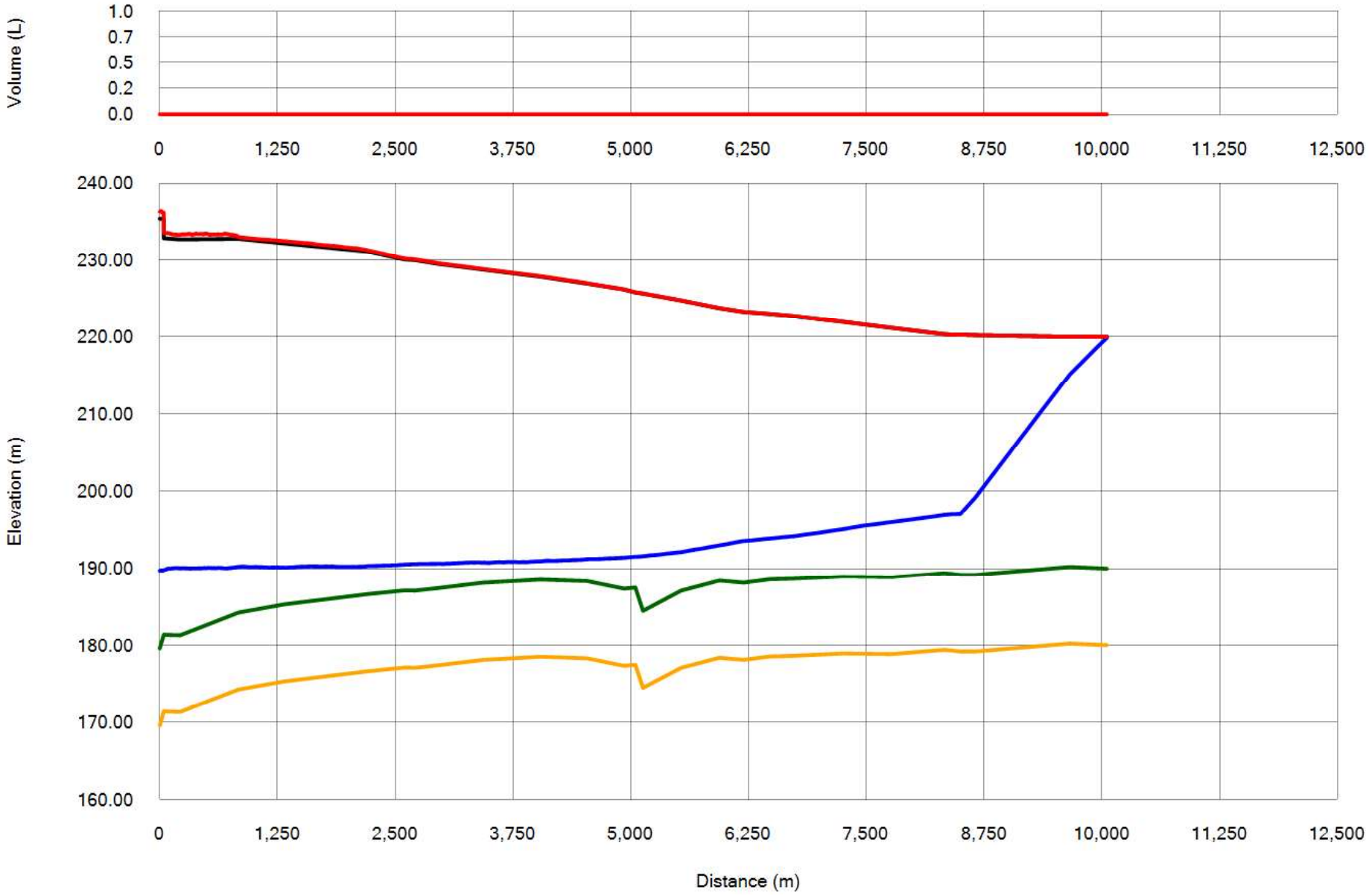


Title

Transient Scenario #3b: Hydraulic Grade Line and Air Volume from AJ Brian PS to SEWT with Three (3) AJ Brian and Two (2) George Avenue Pump Trip with Hydropneumatic Tank (sized to maintain 20 psi)

Figure No

A9

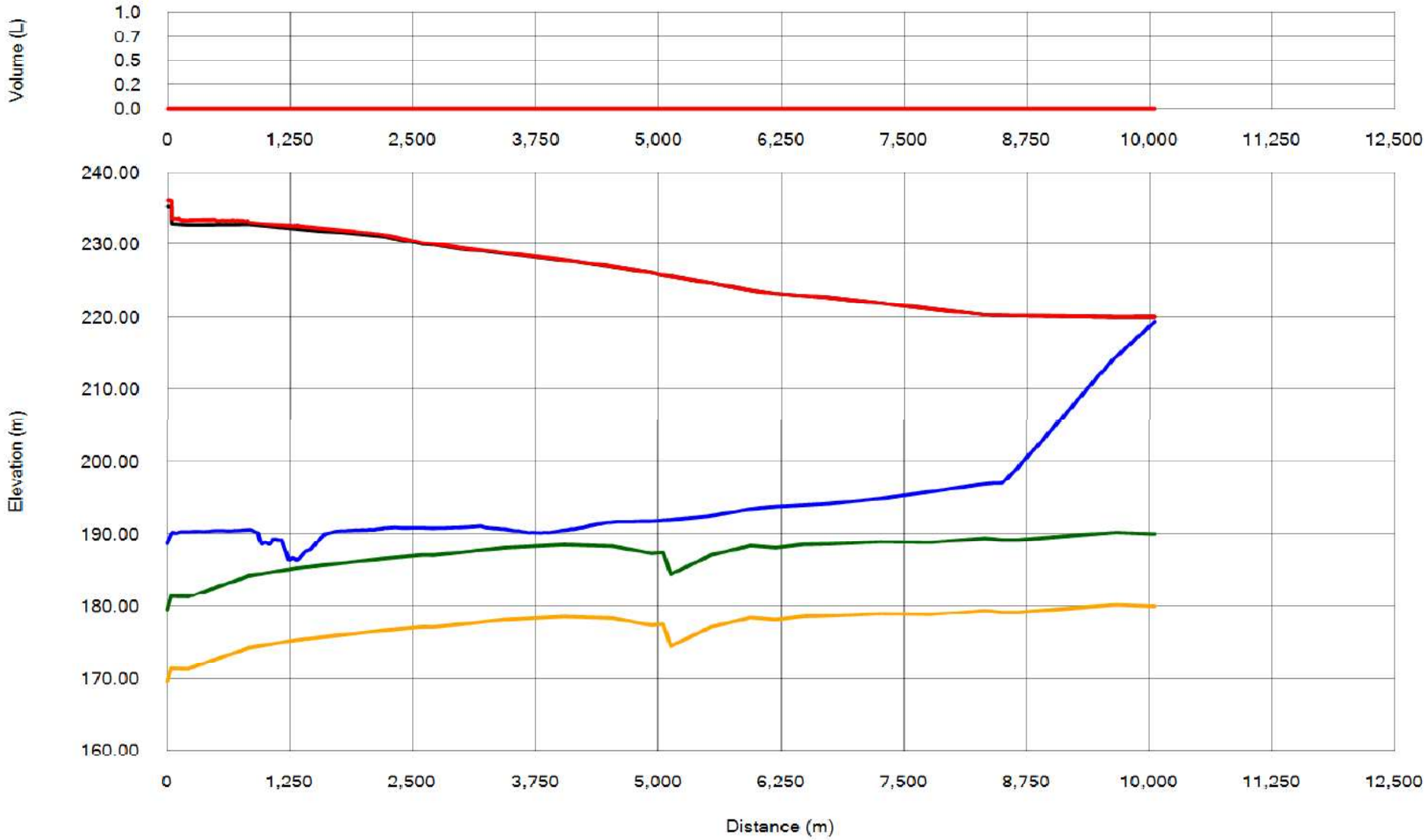


Title

Transient Scenario #3c: Hydraulic Grade Line and Air Volume from AJ Brian PS to SEWT with Three (3) AJ Brian and Two (2) George Avenue Pump Trip with Hydropneumatic Tank (sized to maintain 0 psi)

Figure No

A10



Maximum
Minimum
Initial
Ground Elevation
Vapour Head

Title

Transient Scenario #3d: Hydraulic Grade Line and Air Volume from AJ Brian PS to SEWT - Three (3) AJ Brian and Two (2) George Ave Pump Trip with 150 m^3 Hydropneumatic Tank at AJ Brian PS

Figure No

A11

165620271 - ENWIN CCFM - Transient Analysis

Material	Diameter (mm)	Wave Speed (m/s)
Cast Iron	150	1237
	200	1192
	250	1156
	300	1127
	350	1102
	400	1076
	450	1051
	500	1030
	550	1030
	600	994
	750	960
	800	902
	900	908
	1050	904
	1800	850
Concrete	200	1029
	300	918
	350	874
	400	899
	450	908
	500	906
	600	903
	750	906
	800	899
	900	903
	1050	905
	1200	903
	1500	903
	1800	961
Ductile Iron	150	1339
	200	1309
	250	1284
	300	1263
	350	1245
	400	1226
	450	1222
	500	1190
	600	1160
	750	1133
	900	1122
	1050	1084
PVC	150	380
	200	376
	250	392
	300	360
	335	358
	350	327
	400	310
	450	293
	500	293
	550	280
	600	293
	750	291
	800	291
	900	291
	1050	309
	1200	290
	1500	286

Appendix D Field Investigations

1. Natural Heritage Report
2. Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes
3. Stage 1 Archaeological Assessment Report
4. Phase I Environmental Site Assessment Report
5. Phase II Environmental Site Assessment Report

Enwin Utilities Elevated Water Tower Project: Natural Heritage Report

Final Report

September 23, 2025

Prepared for:
Enwin Utilities

Prepared by:
Stantec Consulting Ltd.

Project/File:
165620304

Stantec

Limitations and Sign-off

The conclusions in the Report titled Enwin Utilities Elevated Water Tower Project: Natural Heritage Report are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

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Prepared by: Reeves, Brent Digitally signed by Reeves, Brent Date: 2025.09.23 13:51:40 -04'00'
Signature

Brent Reeves, B.A. Hon
Environmental Consultant
Printed Name and Title

Reviewed by: _____
Signature

Andrew Taylor, B.Sc.
Senior Ecologist.
Printed Name and Title

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Appendix D Eastern Foxsnake Fact Sheet
Appendix E Butler's Gartersnake Fact Sheet

Acronyms / Abbreviations

ANSI	Area of Natural and Scientific Interest
ERCA	Essex Region Conservation Authority
EA	Environmental Assessment
ESA	Endangered Species Act, 2007 (Ontario)
LIO	Land Information Ontario
MNRF	Ontario Ministry of Natural Resources and Forestry
NHIC	Natural Heritage Information Centre
OBBA	Ontario Breeding Bird Atlas
OIA	Ontario Insect Atlas
OMA	Ontario Mammal Atlas
ORAA	Ontario Reptile and Amphibian Atlas
PPT	Precipitation
PSW	Provincially Significant Wetland
SAR	Species at Risk
SARO	Species at Risk in Ontario
SOCC	Species of Conservation Concern

1 Introduction

Stantec was retained by Enwin Utilities Ltd. (Enwin) on behalf of the Windsor Utilities Commission (WUC) to undertake a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for a new elevated water tower and associated distribution and transmission system. The existing water tower has limited operational flexibility and unable to efficiently maintain acceptable system pressures and water quality to service future growth and increased water system demands from the south and southeastern parts of the service area.

1.1 Project Overview

The Project consists of a proposed 8,000 m^3 Southerly Elevated Water tower to be constructed in the Municipality of Windsor.

The targeted Project Location is on 4450 Concession Road #7. There are no known permanent structures on the existing property. The Municipality of Windsor's mapping identifies the property as "Lot 15."

The Project Site is defined as a reclaimed irregularly shaped property with grasses routinely mowed. The northern limit is defined by a CN Rail line and a dry depression that feeds into a tributary of the 7th Concession Drain. The eastern limit was delineated by the same CN Rail line and tributary with an active agricultural field growing corn beyond the rail tracks. The southern limit was delineated by the commercial / private property owned by the Windsor Christian Fellowship and the western limit was determined by Concession Road #7. The non-regulated 7th Street Drain runs parallel to 7th Concession on the west side of the road. The Project Site is shown in Figure 1, Appendix A. This *Natural Heritage Baseline Report* provides the results of the desktop review and field investigation undertaken on July 18, 2025, providing information on Species at Risk (SAR) and their habitats and designated natural heritage features. General mitigation measures are also provided.

2 Background Review

2.1 Background Information Sources

A variety of background documents and sources of information were consulted to obtain records of natural heritage features within the Study Area. The desktop background review was completed within a 1-kilometer Study Area, surrounding the Project Site. Field studies focused within the Project Site. Records of SAR and provincially rare species, occurrences of amphibians, reptiles, birds and mammals, Provincially Significant Wetlands (PSWs), Areas of Natural and Scientific Interest (ANSIs), and fish and fish habitat data were obtained from the following sources:

- The Natural Heritage Information Centre (NHIC; MNRF 2024a)
- Land Information Ontario (LIO; MNRF 2024b)
- Fisheries and Oceans Canada (DFO) Aquatic Species at Risk Map (DFO 2024)
- Ontario Reptile and Amphibian Atlas (ORAA; Ontario Nature 2021)
- Ontario Mammal Atlas (OMA; Dobbyn 1994)
- Ontario Breeding Bird Atlas (OBBA; Cadman et al. 2007)
- Ontario Insect Atlas (OIA; Toronto Entomologists' Association 2024)
- eBird Online Database (eBird 2024)
- iNaturalist Online Observations (iNaturalist 2024)
- Essex Region Conservation Authority's (ERCA) Public Interactive Mapping Tool (ERCA 2024)

2.2 Results of Background Review

2.2.1 Terrestrial Natural Features

The Project falls within the Niagara section of the Deciduous Forest Region (Rowe 1972). Vegetation communities in the area have been greatly altered by anthropogenic activities (predominantly clearing and draining of land for agricultural purposes) and very few woodlots remain in this region. Most of the lands (>90%) have been converted to agricultural use, mainly tile-drained row crop fields.

The Project is situated within a reclaimed meadow where gravel has been deposited. The grasses within the footprint are routinely mowed. An active agricultural field is situated to the immediate east, and commercial properties exist to the west. There are no wetlands within 30 meters of the Project Site. Sporadic hedgerows exist on the north and east perimeters of the project footprint.

Terrestrial Species of Conservation Concern

Species of Conservation Concern (SOCC) are those species that are provincially rare (S1-S3 ranked species) or designated special concern on the Species at Risk in Ontario (SARO) list. Threatened and endangered species are discussed in Section 2.2.2. Status rankings (S-ranks) for wildlife are based on the number of occurrences in Ontario and have the following meanings:

- S1: critically imperiled; often fewer than 5 occurrences
- S2: imperiled; often fewer than 20 occurrences
- S3: vulnerable; often fewer than 80 occurrences
- S4: apparently secure; uncommon but not rare
- S#B: breeding status rank
- S#N: Non-breeding status rank

Based on a review of background information, 13 SOCC have records within or near the Study Area, as shown in Table 2.1. The potential for SOCC to be present in the Study Area is limited by habitat suitability and availability; therefore, species listed in Table 2.1 may not be present in the Study Area.

Table 2.1 Terrestrial Species of Conservation Concern in the Vicinity of the Study Area

Common Name	Scientific Name	S-Rank	Provincial Status (SARO Status)	Source
Birds				
Barn Swallow	*Hirundo rustica*	S4B	SC	OBBA
Common Nighthawk	*Chordeiles minor*	S4B	SC	OBBA
Wood Thrush	*Hylocichla mustelina*	S4B	SC	NHIC
Eastern Wood-pewee	*Conotpus virens*	S4B	SC	NHIC, OBBA
Peregrine Falcon	*Falco peregrinus*	S4	SC	OBBA
Reptiles & Amphibians				
Snapping Turtle	*Chelydra serpentina*	S4	SC	Ontario Nature 2021
Midland Painted Turtle	*Chrysemys picta marginata*	S4	SC	ORAA
Northern Map turtle	*Graptemys geographica*	S3	SC	ORAA, iNaturalist
Eastern Musk Turtle	*Sternotherus odoratus*	S3	SC	ORAA

Common Name	Scientific Name	S-Rank	Provincial Status (SARO Status)	Source
Insects				
Duke's Skipper	*Euphyes dukesi*	S2		MNRF 2024a, Toronto Entomologists' Association 2024
Monarch	*Danaus plexippus*	S2N, S4B	SC	Toronto Entomologists' Association 2024
Plants				
Climbing Prairie Rose	*Rosa setigera*	S2S3	SC	MNRF 2024a
Shumard Oak	*Quercus shumardii*	S3		NHIC

2.2.2 Terrestrial Species at Risk

For this report, SAR species that are listed as endangered or threatened under the provincial ESA. The ESA was created to protect SAR and their habitats in Ontario. Endangered, threatened, and extirpated species listed on (SARO list automatically receive legal protection from harm or harassment under the ESA. In addition to species protection, the ESA prohibits damage or destruction of habitat for endangered or threatened species. The habitat of a given species is classified as either general habitat protection or regulated habitat protection (i.e., defined under regulation).

Twenty SAR were identified in the background review as having records within or near the Study Area, as shown in Table 2.2. The potential for SAR to be present in the Study Area is limited by habitat suitability and availability; therefore, species listed in Table 2.2 may not occur in the Study Area.

Table 2.2 Terrestrial Species at Risk in the Vicinity of the Study Area

Common Name	Scientific Name	Provincial Status (SARO Status)	Source
Birds			
Barn Swallow	*Hirundo rustica*	Special Concern	Cadman et al. 2007
Bobolink	*Dolichonyx oryzivorus*	Threatened	MNRF 2024a; Cadman et al. 2007
Eastern Meadowlark	*Sturnella magna*	Threatened	MNRF 2024a; Cadman et al. 2007
Bank Swallow	*Riparia riparia*	Threatened	OBBA
Chimney Swift	*Chaetura pelagica*	Threatened	OBBA
Red Headed Woodpecker	*Melanerpes erythrocephalus*	Endangered	NHIC, OBBA
Yellow-breasted Chat	*Icteria virens*	Endangered	OBBA
Short-eared Owl	*Asio flammeus*	Threatened	OBBA

Common Name	Scientific Name	Provincial Status (SARO Status)	Source
Reptiles			
Eastern Foxsnake	*Pantherophis gloydi*	Endangered	MNRF 2024a; Ontario Nature 2021
Butler's Gartersnake	*Thamnophis butleri*	Endangered	NHIC, ORAA
Blanding's Turtle	*Emydoidea blandingi*	Endangered	ORAA 2020
Five-lined Skink	*Plestiodon fasciatus*	Endangered	ORAA
Massasauga	*Sistrurus catenatus*	Endangered	ORAA
Mammals			
Little Brown Myotis	*Myotis lucifugus*	Endangered	Dobbyn 1994
Northern Myotis	*Myotis septentrionalis*	Endangered	Dobbyn 1994
Eastern Small-footed Myotis	*Myotis leibii*	Endangered	Dobbyn 1994
Tri-coloured Bat	*Perimyotis subflavus*	Endangered	Dobbyn 1994
Eastern Red Bat	*Lasiurus borealis*	Endangered	COSEWIC 2023
Hoary Bat	*Lasiurus cenereus*	Endangered	COSEWIC 2023
Silver-haired Bat	*Lasionycteris noctivagans*	Endangered	COSEWIC 2023

2.2.3 Fish and Fish Habitat

There are no regulated watercourses or constructed drains within the Project Site (MNRF 2024b; ERCA 2024). The 7th Street Drain that runs parallel to the west side shoulder of 7th Concession is considered an unregulated Class F drain with intermittent flow. A tributary on the north and east sides of the Study Area is also predominately dry but has potential for intermittent flow connects to the 7th Concession Drain, another unregulated Class F drain.

3 Field Studies

3.1 Methods

A habitat assessment was completed for the Project to identify whether suitable habitat to support each of the potential SAR species was present in the Project Site, including a search for plant SAR and SOCC. A field visit was completed on July 18, 2025, to characterize existing conditions.

3.2 Results

3.2.1 Vegetation and Land Cover

The southern limit of the Project Site is defined by a gravel laneway buttressed on one side with concrete blocks. The property to the south of the laneway is privately owned and was not surveyed. A slight depression (road ditch) runs parallel to the paved two-lane Concession Road #7 delineating the western limit. The road ditch becomes non-existent at the north end and is populated with grasses that have been mowed. Commercial properties with mowed grass are identified on the west side of Concession Road #7. The north limit is defined by a shallow depression with vegetation comprised of secondary grasses including fescues, cattails, grape vine, milkweed and traces of invasive *Phragmites*. A sparsely treed hedgerow runs along the eastern limit as a buffer between the Study Area and the agricultural field. *Phragmites*, willow and dogwood shrubs were observed within this hedgerow. The Study Area itself is comprised of densely packed gravel with secondary grasses intermixed in the north and secondary grasses and fescues in the southern half. The entirety of the Study Area was observed as routinely mowed. No SAR vegetation including Butternut (*Juglans cinerea*) or Kentucky Coffee Tree (*Gymnocladus dioicus*) was observed.

3.2.2 Fish and Fish Habitat

There was no water observed within the 7th Street Drain on the western limit of the Study Area or associated with the tributary of the 7th Concession Drain during the July 18, 2025, field survey. Essex Region Conservation Authority (ERCA) did not identify any fish habitat or SAR to be associated with the 7th Street Drain or the tributary of the 7th Concession Drain.

3.2.3 Reptile Habitat: Eastern Foxsnake

Records of Eastern Foxsnake (*Pantherophis gloydi*) were identified in the background review (NHIC 2025; Ontario Nature 2025). The Carolinian population of the Eastern Foxsnake is listed as an endangered species under Ontario's ESA. The recently revised habitat definitions under the ESA includes a dwelling-place, such as a den, nest or other similar place, that is occupied or habitually occupied by one or more members of a species for the purposes of breeding, rearing, staging, wintering or hibernating, and the immediately surrounding area. For Eastern Foxsnake, this could include those areas used for nesting, hibernation, and communal shedding and basking.

According to the COSEWIC Status Report on the Eastern Foxsnake (COSEWIC 2008), the main habitat for this species in Essex County (Essex-Kent Regional Population) consists of unforested, early successional habitat. Within the Project Site, the majority of suitable habitat occurs in hedgerows, forest edges or along drainage ditches. The most important components of Eastern Foxsnake habitat include the following:

- hibernation sites – most likely hibernacula within the project area would include foundations of houses or barns, along box culverts or piles of rock that extend underground
- egg laying (oviposition) sites – including rotting logs, brush piles or other organic compost
- shedding and basking (thermoregulation) sites – within the project area this would include concrete (e.g. box culverts) or large rocks. Brush piles or habitat with a dense thatch layer also aid in thermoregulation

The presence of supporting features within these habitats generally increases the likelihood of Eastern Foxsnake occurrences. Supporting features would include, but are not limited to: brush piles, branch prunings, rotting logs, log piles, stone piles, concrete, box culverts, large rocks, abandoned farm machinery and stone foundations.

The perimeter of the Study Area was inspected by a walking survey on July 18, 2025, during the time of day when snakes become active due to thermoregulation. No snakes were observed during the July 18, 2025, survey. The depression and shoulder along the western limit of the Study Area contained significant piles of concrete rubble and refuse that may be suitable for basking activities associated with Butler's Gartersnake and/or Eastern Foxsnake. Additionally, concrete jersey barriers were observed in location to demarcate the southern limit and may provide potential for basking.

Based on the above assessment, there is low potential for Eastern Foxsnake to be present within the west side roadside ditch.

3.2.4 Reptile Habitat: Butler's Gartersnake

Records of Butler's Gartersnake (*Thamnophis butleri*) were identified in the background review (NHIC 2025; Ontario Nature 2025). Butler's Gartersnake is listed as an endangered species under Ontario's Endangered Species Act, 2007 (ESA).

According to the COSEWIC Status Report on the Butler's Gartersnake (2016), the main habitat for this species in Essex County (Essex-Kent Regional Population) consists of unforested, early successional habitat. Within the Project Site, the majority of suitable habitat occurs in hedgerows, tall grasses in open fields with seasonally wet areas, small marshes and shrubby areas or along drainage ditches.

The most important components of Butler's Gartersnake habitat include the following:

- hibernation sites – most likely hibernacula within the project area would include crayfish burrows or burrows made by small animals, or old foundations or piles of rock that extend underground
- Shelter sites – within the project area would include concrete rubble or large rocks

The perimeter of the Study Area was inspected by a walking survey on July 18, 2025, during the time of day when thermoregulation would occur. No snakes were observed during the July 18, 2025, survey. The depression and shoulder along the western limit of the Study Area contained significant piles of concrete rubble and refuse that may be suitable for basking activities associated with Butler's Gartersnake but no crayfish burrows were identified. Additionally, concrete jersey barriers were observed in location to demarcate the southern limit and may provide potential for basking. Based on the above assessment, there is low potential for Butler's Gartersnake to be present within the west side roadside ditch.

3.2.5 Other SAR/SOCC

No SAR or SOCC insects or plants were observed.

Based on field observations and the lack of protective tree cover, the Study Area at 4450 Concession Road #7 does not provide suitable habitat for bats. No suitable trees or snags existed to provide roosting habitat for bats. Foraging areas exist elsewhere in the near vicinity.

No potential breeding pools for amphibians were observed during the inspection. There may be potential for amphibian breeding and turtle nesting associated with the two drains during spring months when intermittent flows are possible. However, due to the urban environment, lack of habitat connectivity and the lack of adequate water flow in the Class F drains, it is unlikely that Blanding's Turtle would be found within the Study Area.

There was no suitable habitat within the Project Site for Bobolink or Eastern Meadowlark, which need open grassland or hayfields.

4 Recommendations

Natural heritage features within the Project Site were limited to an agricultural field, roadside ditches and a sparce hedgerow. Other natural heritage features including unregulated Class F drains are set back from the Project Site and not expected to be affected by the Project.

No SAR were identified within the Project Site, but there is potential for Eastern Foxsnake and Butler's Gartersnake within the road edges and agricultural field edges. However, no features that would provide protected habitat under the ESA (nesting sites, hibernacula) were observed. As such, authorization or permitting requirements under the ESA are not anticipated. Mitigation for Eastern Foxsnake and Butler's Gartersnake is included below.

4.1 Mitigation Measures

While natural heritage features were limited, the following general mitigation measures are recommended to reduce impacts to wildlife in the Project Site.

- Avoid construction activities with the potential to remove migratory bird habitat, such as vegetation clearing, to the extent possible during the breeding season, which is generally from April 1 to August 31 in southern Ontario (Government of Canada 2021). Should vegetation clearing activities be unavoidable during this window, a program should be implemented to reduce and avoid impacts to migratory birds and their nests. This program should include preventative and mitigation measures but may also include avoidance of clearing during key sensitive periods and in key locations. Additionally, nesting sweeps may be conducted by a qualified avian specialist within 48 hours of necessary clearing.
- If wildlife is encountered during construction, personnel are required to move away from the animal and provide reasonable time for the animal to move off the construction site.
- In some instances, handling wildlife may be required, such as the movement of an animal to outside of harm's way, or the transportation of an injured animal to an authorized wildlife rehabilitator; however, this activity should occur under the direction of a professional with knowledge of wildlife handling.

The following steps will be undertaken to reduce to risk of the Project on Eastern Foxsnake:

- Exclusionary snake fencing is recommended to be erected around the Project Site prior to construction activities. Suitable wildlife exclusion fencing is recommended to be installed as per the guidance outlined in the MNRF's *Best Practices Technical Note: Reptile and Amphibian Exclusion Fencing* (MNRF 2013) (Appendix B)
- A daily survey of the isolated work area (i.e., prior to construction each day) will occur to ensure no snakes have entered the area.

- Vegetation brushing or removal must be limited to the smallest impact possible and must be completed while air temperatures are above 10°C (active period) or between October 15 and March 15 (hibernation period).
- If vegetation clearing activities are required during the active season for Eastern Foxsnake (April 1 to November 30), qualified personnel are recommended to be present at the Project Site. The qualified personnel will canvas the Project Site prior to vegetation clearing activities to look for signs of Eastern Foxsnake and/or habitat features (e.g., hibernacula) and ensure that the heavy equipment operators are aware of potentially sensitive sites. The qualified personnel will oversee the excavation and search overturned substrate for snakes and/or other disturbed animals.
- During the active period for Eastern Foxsnake and Butler's Gartersnake (April 1 to November 30), the contractor will perform a thorough visual search of the Project Site and construction machinery and equipment before work commences each day. In the event that reptiles are encountered, work at that location will stop and/or the equipment will remain idle until the species' have left the area of their own accord.
- Disturbance to brush piles and/or logs will be avoided wherever possible. If brush or log piles must be moved or disturbed, they will first be inspected for Eastern Foxsnake and/or other reptiles. Unoccupied piles will be relocated by no more than a few meters. If Eastern Foxsnake and/or other reptiles are found to be present, the vegetation will not be disturbed.
- Eastern Foxsnake and/or other reptiles (including snakes basking on access roads) will be avoided and individuals will not be killed, harmed or harassed.
- If required, handling of Eastern Foxsnake and/or other reptiles will follow the guidance outlined in the *Ontario Species at Risk Handling Manual: For Endangered Species Act Authorization Holders* (MNRF Undated) (Appendix C).
- Factsheets will be provided to all construction staff to assist in identification of Eastern Foxsnake. All observations of Eastern Foxsnake and/or other SAR will be reported to the MECP and/or NHIC within 48 hours of the observation (Appendix D)

The following construction mitigation measures are recommended to protect fish and fish habitat in surface water features in the Study Area (outside of the Project Site):

- Implement project-specific temporary Erosion and Sediment Control (ESC) measures prior to starting work.
- Monitor and maintain ESC measures, as required. Controls are to be removed only after the soils of the construction area have stabilized and vegetation cover has re-established.
- Stabilize materials requiring stockpiling (fill, topsoil, etc.) and keep a safe distance (> 30 m) from surface water features.
- Keep additional ESC materials available on site to provide a contingency supply in the event of an emergency.
- Wash, refuel and/or service equipment a minimum of 30 m from surface water features to reduce the risk of deleterious substances from entering the features. Check machinery regularly for fluid leaks.

- Develop a clean equipment protocol to prevent the spread of highly invasive species such as Phragmites.
- Develop a Spill Management Plan and have it on site for implementation in the event of an accidental spill. Keep an emergency spill kit on site.

5 Closure

Stantec prepared this Enwin Utilities Elevated Water Tower Project: Natural Heritage Report in support of a Class EA. Species at risk were not observed during Stantec's July 18, 2025, field studies within the Project Site. There is potential for habitat for two species at risk, Eastern Foxsnake and Butler's Gartersnake, along the road and agricultural field edges within the Project Site.

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Appendices

Appendix A Figures

Figure 1 Natural Heritage Features



Stantec

Legend

Site Parcels

FOR REFERENCE ONLY

0 30 60 metres

1:461 (At original document size of 22x34)

Notes

1. Coordinate System: WGS 1984 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2018.
3. Orthoimagery © First Base Solutions, 2018. Imagery Date, 2019.
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This drawing is for preliminary and conceptual purposes only. It is not intended for construction, permitting, or final design decisions. All dimensions, layouts, and features shown are approximate and subject to change.

Project Location
Windsor, Ontario

165620304 REVA
Prepared by HR on 2025-09-18

Client/Project
ENWIN Utilities Ltd.

Figure No.
1A

Title
Natural Heritage Assessment - Study Area

C:\Users\HRINDL~1\AppData\Local\Temp\arcA22\165620304_Proposed Tower Layout.mxd Revised: 2025-09-18 By: hrindlbacher

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Appendix B Best Practices Technical Note: Reptile and Amphibian Exclusion Fencing

SPECIES AT RISK BRANCH
BEST PRACTICES TECHNICAL NOTE

REPTILE AND AMPHIBIAN EXCLUSION FENCING

Version 1.1

July 2013



Ministry of Natural Resources

Ontario

July 2013

Ontario Ministry of Natural Resources
Species at Risk Branch

Recommended Citation:
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Cover illustration: Photograph by Matthew J. Aresco, Conservation Director, Nokuse Plantation

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Document History

Revision Number	Revision Date	Summary of Changes	Originated	Reviewed	Authorized
1.1	**June, 2013**	**Pre-publishing edits**	**June, 2013**	**June, 2013**	**June, 2013**

REPTILE AND AMPHIBIAN EXCLUSION FENCING - BEST PRACTICES -

The purpose of this guidance document is to provide an overview of proven design and installation techniques for reptile and amphibian exclusion fencing. Though this document points to site and species-specific design requirements, it is important to recognize that every situation is different. This guidance is not meant to replace site-specific advice obtained from local MNR staff or experienced exclusion fencing contractors. Moreover, exclusion fences are only effective when well planned, properly constructed, and maintained.

Exclusion fencing seeks to eliminate access to specific areas where activities that could harm animals are occurring (e.g. active aggregate operations, construction sites, and roads). The selection and installation of exclusion fencing can present some challenges, particularly if multiple species are being excluded. For example, some reptiles and amphibians are able to dig under fencing while others can climb over. Some may also take advantage of burrows dug by other animals. To maintain effectiveness, the bottom of the fence should be buried or secured firmly to the ground and minimum height recommendations (Table 1) are considered.

Exclusion fence design should consider the target species as well as those that might be unintentionally impacted. Fencing material should not pose a risk of entanglement or permit individuals to pass underneath or between openings. Landscape features such as topography and substrate need to be considered as they may constrain fencing design.

Including plans for fencing in advance of a project can increase efficiency and fence effectiveness. For example, long-term road projects that will include a permanent sound barrier could design the sound barrier such that it also meets the specifications of the required exclusion fence.

EFFECTIVE FENCE CHARACTERISTICS

The fence burial and height recommendations listed in Table 1 below have been compiled from scientific literature, established management practices, and practitioner best advice. These are general recommendations and at times other specifications may be more appropriate. For instance, in areas where the substrate does not permit fence burial, weighing down the fence with heavy items (e.g. sand bags) or backfilling may be acceptable. Where needed, speak with your local MNR staff or experienced exclusion fencing contractor to develop site-specific plans.

If multiple species are being excluded from the same area, and the species-specific fencing specifications differ, the uppermost minimum height and greatest depth recommendation should be used (Table 1). If you are excluding both Blanding's Turtle and Gray Ratsnake, for example, the exclusion fence should be a minimum of 2 m tall (see Gray Ratsnake section below for additional details).

Exclusion fences should be installed prior to emergence from hibernation. A survey of the enclosed/secluded area should be conducted immediately following fence installation to ensure that no individuals have been trapped on the wrong side of the fence.

Table 1. Recommended burial depth and height requirements of exclusion fencing for reptiles and amphibians. Recommended height is the height of the fence after it has been installed including the buried components and any installed overhangs or extended lips.

SPECIES	RECOMMENDED DEPTH OF FENCE BURIED (cm) *	RECOMMENDED HEIGHT OF FENCE (cm) **
Turtles – general	10 – 20	60
Eastern Musk Turtle, Wood Turtle	10 – 20	50
Massasauga, Eastern Hog-nosed Snake, Butler's Gartersnake, Queensnake	10 – 20	60
Gray Ratsnake & Eastern Foxsnake	10 – 20	200
Fowler's Toad	10 – 20	50
Snakes - general	10 – 20	100
Common Five-lined Skink	10 – 20	unknown
Salamanders	10 – 20	30

*** does not include the 10 cm horizontal lip that should extend outward an additional 10 – 20 cm (see Figure 2)**
**** the height of fencing has been provided as an approximate. Fencing materials may in fact not be available in proportions that would allow for these precise measurements. It is most effective, if the height and burial depth recommendations are met.**

DURATION OF ACTIVITIES & DEGREE OF ANTICIPATED DISTURBANCE

The type of disturbance, the proximity to disturbance, and the planned fence longevity are factors that influence which type of exclusion fence is most effective. For short-term activities (i.e. 1 to 6 months) such as minor road repairs, a light-duty geotextile fence is appropriate. Longer term or permanent fencing projects, however, require more durable materials such as – heavy-duty geotextile, wood, concrete, woven-wire, sheet metal, vinyl panels, or galvanized mesh.

GEOTEXTILE FENCES

Geotextile fences (e.g. silt fences) come in many types and qualities. They can be very effective for the temporary exclusion of reptiles and amphibians. For the purposes of this document, temporary use ranges from a few months up to 2-3 years. Winter weather is generally damaging to geotextile materials and the cost of maintenance over the long-term should be considered during the planning phase. Depending upon the quality, geotextile can be resistant to UV degradation and the bio-chemical soil environment.

Light-duty Geotextile Fencing:

Light-duty geotextile fencing is made of nylon material and is typically purchased with wooden stakes pre-attached at 2 m to 3 m intervals (Plate 1). It can also come without pre-attached stakes. Light-duty geotextiles are largely intended for projects with shorter durations of only a few months in duration and up to one season.

Geotextile fencing with nylon mesh lining should be avoided due to the risk of entanglement by snakes.

To use light-duty geotextile fencing:

- Fencing fabric is effective if attached to wooden, heavy plastic or metal stakes using heavy-duty wire staples or tie-wire (Figure 2).
- Secure the fence on posts that are placed at 2 m to 3 m apart. If using the greater recommended distance between posts, additional maintenance may be required to maintain effectiveness.
- Securely drive the stakes into the ground to a recommended depth of 30 cm. The fencing fabric should be buried to the recommended specifications in Table 1 and back-filled with soil.
- For snakes, supporting posts should be staked on the activity side (e.g. on the side facing the aggregate stock pile or the road - Figure 2).
- Light-duty geotextile fences are not effective where rocks or other hard surfaces prevent proper anchoring of fence posts and burial of the fence fabric.
- Light-duty geotextile fences are not effective where a large amount of concentrated run-off is likely or to cross streams, ditches or waterways without specific modifications.
- Contact your local MNR staff or experienced exclusion fencing contractor for advice and recommendations.
- See general best practices section below for additional details.

Generally, light-duty geotextile fences are not effective if they exceed 1 metre in height unless purposely manufactured for greater height (e.g. stakes placed at closer intervals or cross braces). If greater height is required consider using heavy duty geotextile, hardware cloth or other fencing materials.

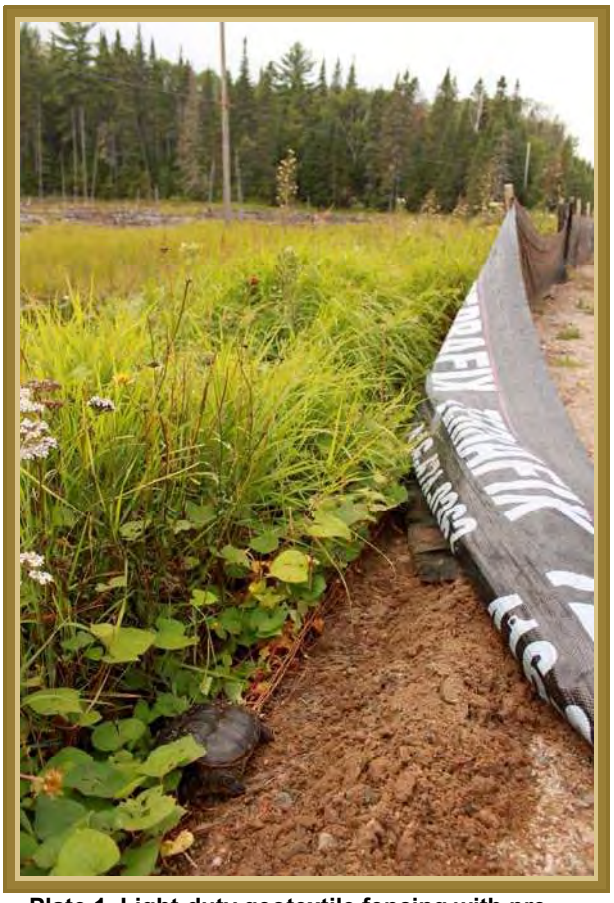


Plate 1. Light-duty geotextile fencing with pre-attached wooden stakes used to exclude turtles from a road as seen on a regular maintenance check (photo credit: Brad Steinberg).

Heavy-duty Geotextile Fencing:

Heavy-duty geotextile fencing is typically constructed of a thick felt-like fabric. It may also be called ‘double row’ or ‘trenched’ fencing. For support, this fencing uses a woven wire fence (e.g. chain link) or some other structure (Plate 2). It is recommended that a minimum density of 270R or equivalent woven geotextile fabric is used.

Heavy-duty geotextile material can be effective for up to 2 or 3 years with proper maintenance. This type of fencing can be damaged by small mammals chewing through or torn by heavy debris (e.g. tree branches). Therefore, it may be best suited to turtles, which are less likely to take advantage of holes or tears in the fabric. If

used to exclude snakes or other animals, more maintenance may be required.

Heavy-duty geotextile fencing:

- The wire fence should be installed on the activity side to prevent animals from leveraging and climbing into the exclusion area while allowing the animal to escape if they find themselves on the wrong side (Figure 2).
- Geotextile fences across streams, ditches or waterways should have case-specific modifications.
- Contact your local MNR staff or experienced exclusion fencing contractor for advice.
- See light-duty geotextile section above and general best practices below for additional details.



Plate 2. Example of a heavy-duty geotextile fencing used to exclude snake species (photo credit: Jeremy Rouse).

HARDWARE CLOTH FENCES

Hardware cloth (also known as galvanized mesh or Birdscreen) is durable, cost effective and useful for excluding reptiles and amphibians. The fence should be made of heavy galvanized hardware cloth with a ¼ inch mesh. For fences intended to exclude small snakes, a ⅛ inch mesh may be more effective. In contrast, fencing intended to exclude turtle species can have a larger mesh size (e.g. ½ inch). Larger mesh may have a longer lifespan as it is constructed from a thicker material compared to smaller mesh sizes.

To use hardware cloth fencing:

- Secure the fence on posts placed a recommended 2.5 m apart with the stakes on the activity side (Figure 2).
- Pull the mesh taught and staple or secure with screws and a metal stripping to prevent the mesh from being ripped when pressure is applied.
- Installing a top rail or folding the mesh over a taut smooth wire reduces tearing (Plates 3 and 4).
- An outward facing lip installed on the species side ensures that snakes and amphibians are unable to climb or jump over the fence (Figure 2; Plate 4)
- Tears can be mended with 18-gauge galvanized wire.
- See general best practices section below for additional details.



Plate 3. Example of a galvanized mesh fencing used for the long-term exclusion of snakes and turtles from the adjacent highway (photo credit: Megan Bonenfant).



Plate 4. Long-term to permanent exclusion fencing using galvanized mesh with over-hanging lip to prevent animals from climbing or jumping over (photo credit: Megan Bonenfant).

WOOD LATH SNOW FENCING

In certain circumstances, wood lath snow fencing can be effective at excluding turtles. This fencing is typically constructed from soft wood slats that have been woven together with 13-gauge wire and is then attached to steel fence posts which have been driven into the ground.

Wood lath fencing is cost effective and can easily be laid down during the winter to prevent damage. The durability of the material, however, is not meant for very long-term use (e.g. more than 3 years), unless regular maintenance occurs.

To use wood lath snow fencing:

- The fencing should be attached to heavy plastic or metal stakes using heavy-duty wire staples or tie-wire.
- The stakes are recommended to be placed at 2 to 3 m intervals and securely driven into the ground 30 cm or more.
- Wood lath snow fencing across streams, ditches or waterways should have case-specific modifications.
- Wood lath snow fencing lends itself well to being combined with other types of material to ensure complete exclusion.
- See general best practices section below for additional details.



Plate 5. Example of a wood lath snow fencing used to exclude turtles (photo credit: Karine Beriault).

EXCLUSION FENCING FOR GRAY RATSNAKE AND EASTERN FOXSNAKE

Gray Ratsnake and Eastern Foxsnake are the largest snakes in Ontario - reaching nearly 2 m in length. They are also excellent climbers. For this reason, fencing intended to exclude either of these species has additional recommended design specifications.

- The fence should be at least 2 m high.
- The material on the species side (Figure 2) should be smooth to prevent the snakes from climbing into the excluded area.
- Stakes should be on the activity side of the fence (Figure 2).
- Due to the increase in fence height, it is valuable to decrease the distance between posts or install diagonal braces.
- See general best practices section below for additional details.

CONCRETE, SHEET METAL & VINYL WALLS

Concrete, metal or vinyl walls can stand alone or be combined with woven wire or chain link fences. They are durable, require minimal maintenance and are effective in excluding target species from high risk areas and guiding them to crossing structures or other desired locations (Plates 6 and 7). This fence type is comprised of a continuous vertical face of concrete, metal or vinyl sheeting with no gaps. Concrete walls can be installed as either pre-cast sections or pour directly in place.



Plate 6. Stand-alone continuous concrete wall used to exclude salamander species installed as pre-cast forms (photo credit: Steven Roorda).



Plate 7. Pre-formed vinyl sheeting fence intended to exclude salamanders for a construction site (photo credit: Herpetosure Ltd.)

The wall height depends upon the target species, but they are usually between 45 and 60 cm tall and buried 25 cm. Concrete, metal or vinyl exclusion fencing is most appropriate for salamanders, skinks, small snakes, and small turtles. For large turtle species, a chain link fence can be installed directly on top of the concrete wall for complete exclusion.

HABITAT CONNECTIVITY

Habitat connectivity is the connectedness between patches of suitable habitat or the degree to which the landscape facilitates animal movement. Exclusion fencing installed along roads or other large projects can effectively reduce or eliminate habitat connectivity for animals. In these scenarios, exclusion fencing should be considered with eco-passages in order to maintain connectivity. Fencing in isolation should be viewed as a temporary method to reduce mortality until species movement can be restored. Where eco-passages are not feasible they should be identified for consideration with any future road work or development to improve connectivity.

During the installation of fencing with an eco-passage, it is important that the fencing sits flush with the passage to ensure that

there are no gaps where animals can squeeze through.



Plate 7. A wood turtle travelling through a dry eco-passage. Ecopassages such as this help to ensure the long-term connectivity of seasonal habitat for this and other reptile and amphibian species (photo credit: Amy Mui).

GENERAL BEST PRACTICES:

- To deter digging, bury the fence 10 cm down with an additional 10 cm horizontal lip (Figure 2).
- Backfill and compact soil along the entire length on both sides of the fence (Figure 2).
- Once the fence is installed, a survey should be done to ensure that no individuals have been trapped inside (speak with MNR for survey advice).
- Exclusion fencing intended to exclude snakes should have the stakes installed on the activity side (opposite the normal requirement for sediment control fencing) to prevent snakes from using the stakes to maneuver over the fencing.
- For snakes and toads, the fence should have an overhanging lip on the species side (Figure 2).
- Fences should be inspected after spring thaw and at regular intervals throughout the active season, especially following heavy rain events. This is particularly important for geotextile fences. Any damage that affects the integrity of the fence (e.g. tears, loose edges, collapses, etc.) should be fixed promptly.
- Tall or woody vegetation on the species side of the fence should be managed if there is a risk that it may enable the animals to climb over. This is most important during spring and fall. Proceed cautiously to not harm animals protected plant species during vegetation removal.
- When installing an eco-passage, fencing or exclusion walls should be used as a guiding system to direct animals to passage openings.
- Natural screens such as trees or shrubs can help to reduce road access and can be combined with fencing to provide protection of individuals from predation.
- Install fences with a turn-around at the ends furthest from the wetland habitat and at any access areas to assist in redirecting animals away from any fence openings (Figure 1).
- Curving the ends of the fencing inward (i.e. away from the road or construction site) may help to reduce access to these locations. The ends may also be tied off to natural features on the landscape such as trees or rock cuts.

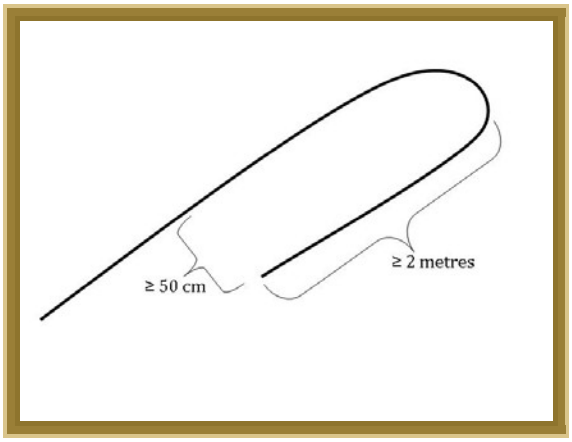


Figure 1. Diagram of the ends of the fence designed to curve inward in order to direct animals away from the area of exclusion.

WATER MOVEMENT & DRAINAGE

- In areas where surface water run-off may erode a soil-based backfill, consider using rocks or sand bags. Ensure these materials cannot be used by animals to climb over the fence.
- Where possible, minimize the number of water crossings: when necessary, it should occur where flow is minimal.
- Fence posts in waterways or areas prone to seasonal flooding should be driven rather than dug – unless following established best practices.
- Fencing should be placed above the high water mark anticipated for high water events such as spring freshet or periods of heavy or continuous rainfall.

TOPOGRAPHY:

- Fence posts should be closer together in undulating topography.
- Fences installed on slopes have a different effective height depending upon whether the animal will be approaching from the up or down slope. The fence height can be adjusted accordingly.

Improvements or questions regarding exclusion fencing can be brought to the local MNR Species at Risk Biologist or other MNR staff.

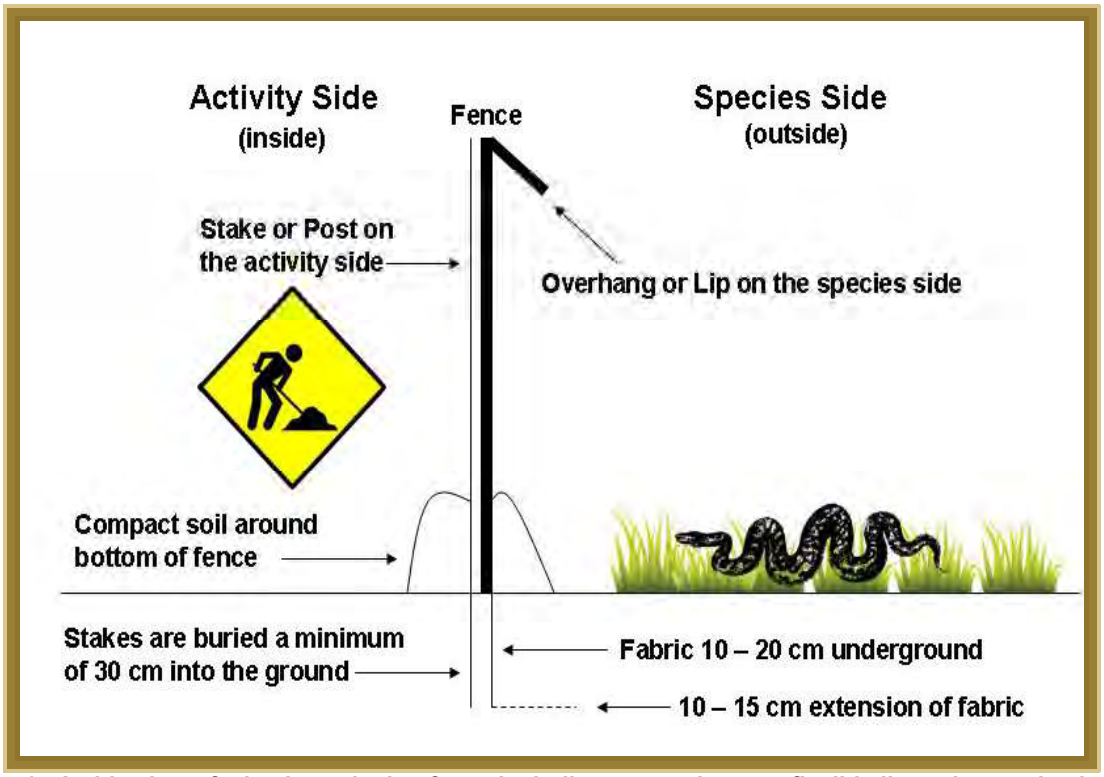


Figure 1. A side view of a basic exclusion fence including an overhang or flexible lip to deter animals from climbing or jumping over the fence. Placement of the stake on the Activity Side or on the inside of excluded area is also illustrated. This is particularly important for snake species which may use the stakes to maneuver over the fence.

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For additional information:

Visit the species at risk website at
ontario.ca/speciesatrisk
Contact your MNR district office
Contact the Natural Resources Information Centre
1-800-667-1940
TTY 1-866-686-6072
mnr.nric.mnr@ontario.ca
ontario.ca/mnr

Appendix C Ontario Species at Risk Handling Manual: For Endangered Species Act Authorization Holders

Ontario Species at Risk Handling Manual: For Endangered Species Act Authorization Holders

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Introduction

Ontario's *Endangered Species Act, 2007* (ESA) protects endangered and threatened species and their habitats.

Ontario is home to over 30,000 species, about 200 of which are considered at risk. Roughly 40 per cent of the species at risk in Canada are found in Ontario.

Activities that would harm individual species at risk or their habitats are prohibited by the ESA, unless they are authorized under the act. Authorizations include permits, stewardship agreements and exemption agreements.

This manual is designed to provide guidance to those whose authorization under the ESA may require the capture, relocation, handling, and/or transport of species at risk.

Enclosed is both a DVD presentation and CD of this manual which are also available from your Ministry of Natural Resources (MNR) District Office.

For additional information and assistance with species identification, please consult MNR *Ontario Species at Risk Quick Reference Guide*, or email: esa.permits.agreements@ontario.ca.

Visit our wesite **ontario.ca/speciesatrisk** for more general information about all Ontario's species at risk.

1. Safe Handling of Turtles

1.1 Materials

a) The following materials are required for the handling, capture, temporary safe keeping and transport of turtles:

» Large plastic bin and lid with air holes, a large bucket or a cloth/burlap bag. Ensure both sides of the container/bag and the lid are well marked with “live animal”. See section 1.5 to determine when it is appropriate to use a specific type of container.

» Thick work gloves

» Thermometer

» SAR Notification/Contact Schedule

» SAR Encounter Reporting Form

» Broom or broom handle with small paint brush roller attached to end.

b) Equipment must be maintained on each job site.

1.2 Safety considerations

a) Generally, there is little risk associated with handling turtles. However, all turtles can scratch and bite, and work gloves should be worn to help avoid minor injuries.

b) Snapping, Spiny Softshell and Eastern Musk Turtles cannot completely retract into their shell and are more likely to bite in defence. These species should be handled more cautiously and as follows:

I. **Always keep your hands as close to the back of the turtle’s shell as possible, and always behind the midpoint of the shell**. These species have a considerable reach above their shells. Snapping Turtles can reach the midpoint of the shell, and in some cases Spiny Softshell Turtles and Eastern Musk Turtles can almost reach the back of their shell.



II. Always maintain a safe distance between the front of the turtle and other people.

c) Snapping and Spiny Softshell Turtles have a powerful and painful bite that is likely to bruise and may break the skin. However, it will almost never break bone. The damage inflicted by a Snapping Turtle bite is greatly exaggerated (such as being able to bite a boat oar or golf club in half). Forcing a Snapping Turtle to bite hard implements may result in an injury to the turtle. Wearing gloves will significantly reduce the risk of injury from these turtles.

d) If bitten by a turtle, remain calm and allow the turtle to relax and let go on its own. Pulling away from the turtle may cause further injury to you or the turtle.

e) Always wash your hands after handling a turtle. Turtles (and many other animals, including humans) carry potentially harmful bacteria in their gut. Although it is possible to contract salmonella from handling turtles, there are few reported cases of contracting these bacteria from wild turtles. Cases of salmonella poisoning from turtles are almost always limited to pet turtles, since these captive turtles are forced to live in the same small space that they defecate in.

1.3 Capture and handling of turtles

Safely handle, move or capture a turtle by following these steps:

a) Always handle turtles carefully and slowly, yet firmly. Rough handling may cause injury or stress to the turtle and/or the developing eggs and may cause the turtle to be more defensive (increased biting and scratching).

b) With the exception of very small individuals, always handle turtles with both hands. Turtles are good at freeing themselves with a bit of wiggling, kicking, clawing and biting, and a good grip is essential to ensure no harm comes to you or the turtle.

c) Never pick up a turtle by the tail. This can dislocate bones throughout the tail and is extremely painful for the turtle. For larger, heavier turtles this may result in dislocation of bones in the spinal cord as well.

d) Wear gloves when handling turtles to minimize risk from scratches and bites. If gloves are not available, handle turtles with clean hands that are free of insect repellent, antibacterial hand sanitizer, sunscreen, etc.

e) **Painted, Map, Wood, Blanding's and Spotted Turtles:** Pick up these species using both of your hands, one on each side of the shell, between the front and back legs.



f) **Snapping Turtle:** Always wear gloves when handling a Snapping Turtle and always keep your hands behind the midpoint of the top or sides of the turtle's shell. To pick up a Snapping Turtle:

I. Hold it by the back of the shell, placing your thumbs on the top of the shell and your fingers in the hind leg pockets (the space between the upper shell and the hind legs). Your hands will be at approximately 5 and 7 o'clock.



II. Or use one hand to hold the base of the tail near the shell and slide your second hand under the turtle to support its weight. Lift the turtle using the hand underneath the turtle. Never pick up a turtle by the tail.



III. Or you can move it by guiding it into a pail or garbage can with a broom.



IV. It is important to get a good, strong hold on the turtle's shell as the force that is exerted by the turtle snapping may result in an unexpected release. A good grip will ensure that both the turtle and the handler remain safe and uninjured.

g) **Eastern Musk Turtle:** Pick up Eastern Musk Turtles by the back of the shell. This turtle species can be held with one hand, as long as you ensure that you have a good grip.



h) **Spiny Softshell:** Always wear gloves when handling a Spiny Softshell, and always keep your hands well behind the midpoint of the top or sides of the turtle's shell. To pick up a Spiny Softshell turtle:

I. Use both hands, one on each side of the shell, as close as possible to the back legs.



II. Or place one hand under the turtle between its back legs (in the middle to balance its weight) and the other hand, also from behind, on the top of the turtle's shell (close to the back).

i) Turtles can be difficult to capture. If a turtle escapes or heads for cover, let it disperse on its own, ensuring it is safe from harm before allowing activities to continue. If continuing activities poses a threat to the turtle, postpone activities for up to 24 hours to allow the turtle to disperse. If it is not possible to leave the area for 24 hours, have a Qualified Member relocate the individual. Do not disturb any natural cover under which the turtle has retreated. If necessary, contact MNR for further direction using the SAR Notification/ Contact Schedule.

1.4 Moving turtles out of harm's way (distances under 50 metres)

a) If it is necessary to move a turtle more than 50 metres, refer to section 1.6 on turtle relocation.

b) Turtles should only be moved when they are in imminent, unavoidable danger.

c) If possible, allow the turtle to move on its own by walking toward the turtle in the direction that you want it to move. This will not work for Snapping Turtles, as they often turn to face a potential threat head-on rather than running away. If the turtle does not move on its own, you may have to pick it up and move it (see section 1.3).

d) When moving a turtle a short distance, such as across a road, move the turtle in the direction that it was heading, regardless of what the habitat looks like. These animals often make intentional movements to specific areas, and if you put them back where they started they may simply turn around and start their journey again. If it is not clear which direction the turtle was headed, move the turtle to the closest suitable habitat that will not be disturbed. In this case, suitable habitat includes a water body or the vegetation/forest at the edge of the road allowance, disturbed area or clearing.

e) If possible, release the turtle near a retreat site (somewhere the animal can seek shelter from the elements and avoid predators, such as water or dense vegetation) to allow it to take cover. Do not release it in the open where it could be exposed to inclement weather, extreme sunlight or predators.

1.5 Temporary safe keeping and transportation of turtles

a) You are responsible for this animal. Remember, once you have put it in a container, it depends on you to keep it safe and at the right temperature.

b) Always create air holes in the lid of a container prior to placing an animal in the container.

c) If the turtle will be in captivity for **less than one hour**, place the turtle in a cloth or burlap bag, a large bucket or a large plastic bin with a lid that has adequate air holes. Cloth or mesh bags should not be used for snapping turtles as they can become tangled and strangle themselves. Always use large plastic bins or large buckets for snapping turtles.

d) If the turtle will be in captivity for **more than one hour**, avoid the use of cloth or burlap bags. For adults, use a large plastic bin or bucket with a lid that has adequate air holes and a small amount of water (no more than an inch deep). Ensure that the turtle is not fully submerged, as it will drown if it cannot breathe. For hatchlings and juveniles, use an appropriately sized container with a lid that has air holes and line the bottom of the container with wet towels or paper towels. Never transport small juveniles or hatchlings in water.



e) It is extremely important to monitor the air temperature regularly in the container to ensure it **never exceeds 30°C or drops below 5°C**. Never leave the container in direct sunlight or in a closed vehicle parked in the sun, as this will cause the turtle to overheat and could be fatal.

f) Never put more than one turtle in a container or bag at a time, especially in the case of Snapping Turtles. This will help to minimize stress and prevent injury to the turtles.

g) Once the turtle is in the container or bag, ensure that the lid is secure or that the bag is tied tightly.

h) **Never leave the container or bag unattended** in an unsecured location (e.g., side of road).

i) If using a bag, ensure that it is in a secure location where it cannot fall if the turtle moves the bag. The movement of a turtle within a bag can easily cause the bag to fall off of a table.

j) Do not offer the turtle any food. Turtles do not have to eat as often as mammals, and it is no problem for a turtle in temporary captivity to go a few days without food.

k) Turtles should be checked periodically (every hour should suffice). Hatchlings are especially susceptible to dehydration and must be carefully monitored during transport.

1.6 Relocation of turtles

a) A turtle should only be relocated if the destruction of its habitat is unavoidable or if it is not possible to release it at the capture location.

b) Transport and release the turtle within one hour of capture in order to minimize stress on the animal.

c) Turtles should not be relocated during their over-wintering season. This varies depending on the species and location, but is generally from October to May. If you are unsure whether you should relocate the turtle or take it to a wildlife custodian, contact MNR for further direction using the SAR Notification/ Contact Schedule.

d) If it is not possible to relocate the turtle due to the time of year (October to May) or other conditions, transport the turtle to a wildlife custodian per the SAR Notification/Contact Schedule.

e) **Turtles should never be moved more than 250 metres** from the location where they were found. Only move a turtle as far as necessary to avoid potential harm to the turtle, and avoid moving turtles more than 125 metres unless absolutely necessary. If it is not possible to relocate the turtle within 250 metres of the capture location, contact MNR for further direction using the SAR Notification/Contact Schedule.

f) If hatchlings are found and must be relocated, move them to the nearest permanent body of water. Never place hatchlings directly into water. Release the turtle at the shoreline of the appropriate habitat (see below). The turtle may or may not choose to enter the water; do not force it.

g) Whenever possible, release the turtle in the same water body where it was found and in the same type of natural habitat as the capture site. To determine if the habitat is of the same type, consider the water depth, water current, substrate type (mud, rock, etc.) and vegetation type (cattails vs. lily pads vs. aquatic vegetation).

h) If possible, release the turtle near a retreat site (somewhere the animal can seek shelter from the elements and avoid predators, such as water or dense vegetation) to allow it to take cover. Do not release it in the open where it could be exposed to inclement weather, extreme sunlight or predators.

i) To release the turtle, gently pick up the turtle (per section 1.3) from the container and set it down in the new location. To release a Snapping Turtle or Spiny Softshell Turtle, you may wish to tip the container on its side and allow the turtle to move out on its own. Allow the turtle to disperse on its own at this new location.

1.7 Injured turtles

a) Use the methods outlined in section 1.3 to handle injured turtles whenever possible. If those methods are not applicable due to the turtle's injuries, use a shovel or other flat object to pick up the turtle. Ensure that any injured areas are supported.

b) Place the turtle in a large plastic bin or large bucket with a lid that has air holes. Darkness helps to reduce stress to the turtle. Do not place anything else in the container with the turtle, including water or other turtles.

c) Thoroughly wash your hands after handling injured turtles.

d) Immediately transport the turtle to a veterinarian or wildlife custodian per the SAR Notification/Contact Schedule, in order to increase its chances of survival.

2. Safe Handling of Snakes

2.1 Materials

a) The following personal protective equipment should be worn when working with Massasauga rattlesnakes:

» High-ankle hiking or rubber boots

» Thick pants (jeans) or baggy pants

» Leather work gloves

b) The following materials are required for the handling, capture, temporary safe keeping and transport of snakes:

» Pail, large garbage can or bucket (1 metre deep) with air holes in the lid. Ensure both the side of the container and the lid are well marked “live animal” or “caution rattlesnake”.

» A snake bag (for non-venomous species only). A snake bag must be cloth. (A pillowcase works well.) Plastic and non-breathable materials are not appropriate. Ensure the bag is well marked “live animal”.

» Broom or broom handle with small paint brush roller holder attached to end. Never use “snake pinchers”.

» Thermometer

» SAR Notification/Contact Schedule

» SAR Encounter Reporting Form

c) Equipment must be maintained on each job site.

2.2 Safety considerations

a) **The Massasauga is the only venomous snake in Ontario.**

The venom is an adaptation for hunting and is used to kill prey (primarily small rodents).

As a defence mechanism, Massasaugas may also bite when threatened, at which time they may or may not release venom. Camouflage, rattling and retreating are their primary defensive strategies, and they generally bite as a last resort.

Their maximum striking distance is about half of their body length. Generally, your safety zone is yourheight plus 50 centimetres away from the snake. (This accounts for the snake’s striking distance to you if you fall.)

A Massasauga bite is generally not deadly. Only two people have ever died from a Massasauga bite in Ontario. Neither person received medical attention, and both cases were almost 50 years ago.

If you are bitten by a Massasauga, remain calm and seek medical attention immediately. Do not apply a tourniquet or try to suck out the venom. Never try to capture the snake to take it to the hospital; if you were bitten by a venomous snake in Ontario, we know it was a Massasauga. Have someone else drive you safely.

b) **Never under any circumstances pick up a Massasauga rattlesnake**. Massasaugas occur in very specific regions of the province, and if you are well outside of those regions it should be safe to handle any native snake you find. If you are working within a region where Massasaugas may occur, never pick up a snake unless you are absolutely certain that it is not a Massasauga.

c) All other Ontario snakes are non-venomous and harmless. Despite being harmless, many of Ontario’s snakes will put on defensive displays to intimidate potential predators. These include:

I. Rearing up, hissing and striking.

II. Eastern Hog-nosed Snakes will flatten out their necks like cobras, hiss loudly and pretend to strike (although their mouths remain closed).

III. Eastern Foxsnakes, Milksnakes, Gray Ratsnakes and Eastern Hog-nosed Snakes sometimes vibrate their tails to imitate a rattlesnake. If their tails come into contact with rocks, dry leaves, or some other medium, they can produce a buzzing sound like that of a rattlesnake. Combined with their blotchy pattern, this mimicry is often very effective at fooling humans.

d) Holding the snake properly (see section 2.4) will significantly reduce stress to the snake and the likelihood that it will try to bite in self-defence.

2.3 Capture and handling of the Massasauga rattlesnake

Safely move a Massasauga by following these steps:

a) Put on personal protective equipment (per section 2.1).

b) Clear the area of unnecessary bystanders to lessen the stress on the animal.

c) Determine your plan for capture to anticipate where the snake may move or retreat as well as any potential hazards you may encounter.

d) If capturing injured snakes, avoid touching or manipulating injured areas.

e) Tip the 1-metre-deep pail on its side.

f) Use the broom to position the snake near the pail.

g) Gently and slowly guide the snake into the pail, being careful not to push the snake too hard or lift if off the ground. Never pin a Massasauga or use tools that constrict or pinch the snake. Quick, abrupt movements are threatening to the snake and may also cause it to make quick movements in an attempt to escape.



h) Be patient and gentle with the snake. Gravid (pregnant) females are carrying live young, and rough handling may cause damage to the developing snakes.

i) Once the snake is in the pail, slowly tip the pail upright and secure the lid.



j) Snakes can be difficult to capture. If a snake escapes or heads for cover, let it disperse on its own, ensuring it is safe from harm before allowing activities to continue. If allowing activities to continue is not safe for the snake, postpone activities for up

to 24 hours to allow the snake to disperse. If it is not possible to leave the area for 24 hours, have a Qualified Member relocate the individual. Do not disturb any natural cover under which the snake has retreated. If necessary, contact MNR for further direction using the SAR Notification/Contact Schedule.

2.4 Capture and handling of non-venomous snakes

a) If you are uncomfortable handling large, non-venomous snakes with your hands, you can use the above method for capturing venomous snakes (section 2.3). However, it is much easier to capture most non-venomous snakes using your hands. Some of the smaller species, such as the Butler's Gartersnake, are almost impossible to capture with a stick and a pail.

b) If you elect to use thick gloves, be very careful not to squeeze the snake too hard, as you can crush internal organs and kill it. Do not use gloves to capture small snakes, as the risk of accidentally crushing them is too high.

c) Clear the area of unnecessary bystanders to lessen the stress on the animal.

d) Determine your plan for capture to anticipate where the snake may move or retreat and to anticipate any potential hazards you may encounter.

e) Never grab the snake behind the head or grip the snake tightly in order to restrain it. This may injure or scare the snake, cause it to struggle and encourage it to bite in self-defence.

f) Always support the snake's body with both hands and never pick up a snake only by the tail. Holding a snake only by the tail can result in dislocated bones or other serious injury to the snake.

g) To capture a large snake (more than 30 centimetres in length):

I. Gently grab it by the back of the body to prevent it from getting away.



II. Holding the snake by the back end while it is still on the ground, slide your other hand underneath the snake to support its weight and lift it up. Do not lift if off the ground by the tail.

III. As soon as the snake is off the ground, continue to support its weight by keeping both hands under the snake, with one hand about a third of the way back and one hand about two thirds of the way back along the snake's body.



IV. As the snake tries to move forward, reposition the hand from the back of the snake to the front of the snake, and continue to rotate your hands between the front and back of the snake to allow it to continue to crawl through your hands. Calm and slow movements will help the snake relax and make it move more slowly.

V. Often a snake will stop moving once it no longer feels threatened. If the snake continues to move rapidly after a minute or so, you can try holding the back end of the snake more firmly to prevent it from continuing to move forward. Continue to support the unrestricted front half of the snake with your other hand.

h) To capture a small snake (less than 30 centimetres in length):

I. Grasp the snake gently but firmly with one or both hands. It may be necessary to gently restrain it against the ground with your hands initially to prevent it from escaping. Never use a stick, snake hook or any other object to pin a snake.



II. Hold the back end of the snake in one hand and support the front of the snake with your fingers or your second hand. Allowing the snake's front end to remain free helps the snake remain calm.



III. For very small snakes, hold the snake in the palm of your hand using your thumb or fingers to gently apply only enough pressure to prevent the snake from wiggling free.

i) Snakes can be difficult to capture. If a snake escapes or heads for cover, let it disperse on its own, ensuring it is safe from harm before allowing activities to continue. If continuing activities poses a threat to the snake, postpone activities for up to 24 hours to allow the snake to disperse. If it is not possible to leave the area for 24 hours, have a Qualified Member relocate the individual. Do not disturb any natural cover under which the snake has retreated. If necessary, contact MNR for further direction using the SAR Notification/ Contact Schedule.

2.5 Moving a snake out of harm's way (distances under 50 metres)

a) If it is necessary to move a snake more than 50 metres, refer to section 2.7 on snake relocation.

b) Snakes should only be moved when they are in imminent, unavoidable danger.

c) If possible, allow the snake to move on its own by walking toward the snake in the direction that you want it to move. If the snake does not move on its own, you will have to pick it up and move it (see section 2.4). Unlike most snake species, Massasaugas may not

move away when you walk toward them. Rather, they often adopt a defensive position (coiled), hold their ground and rattle (asking you to go the other way). To encourage a Massasauga to move away on its own, give it lots of space and observe it from a distance (ideally so the snake cannot see you).

d) When moving a snake out of harm's way, such as across a road, move the snake in the direction that it was heading, regardless of what the habitat looks like. These animals often make intentional movements to specific areas, and if you put them back where they started they will simply turn around and start their journey again. If it is not clear which direction the snake was headed, move it to the closest habitat that will not be disturbed. In this case, suitable habitat includes a rock pile or other cover that the snake can retreat under, or the vegetation at the edge of the road allowance, disturbed area or clearing.

e) If possible, release the snake near a retreat site (somewhere the animal can seek shelter from the elements and avoid predators: loose rocks, logs, rock crevices or dense vegetation) to allow it to take cover upon release. Do not release the snake in the open where it could be exposed to inclement weather, extreme sunlight or predators.

2.6 Temporary safe keeping and transportation of snakes

a) You are responsible for this animal. Remember, once you have put it in a container, it depends on you to keep it safe and at the right temperature.

b) Always use a pail, large garbage can or bucket (at least 1 metre deep) with adequate air holes in the lid for Massasaugas. Ensure the lid is properly secured, and always create the air holes before putting the snake in the container.

c) If using a snake bag:

I. **Make sure it is properly closed**. To close the snake bag, gather the material at the opening together in one hand and run your other hand down the bag to ensure that the snake is in the bottom. Twist the neck of the bag and tie it into a tight knot. Never rely on a drawstring, as snakes can wiggle out of tight holes. When tying a snake bag, make sure the snake remains in the bottom of the bag so it does not get tangled in the part you are tying.



II. **Make sure it is in a secure location** where it cannot fall if the snake moves the bag. The movement of a snake within a bag can easily cause the bag to fall off of a table.

III. If transporting the snake or holding it for a longer time (over an hour), the closed snake bag should be placed in a well-ventilated hard container (such as plastic tub) for added protection.

d) It is extremely important to monitor the air temperature regularly in the container or around the snake bag to ensure it **never exceeds 30°C or drops below 5°C**. Never leave the container or snake bag in direct sunlight or in a closed vehicle parked in the sun, as this will cause the snake to overheat and could be fatal.

e) **Never leave the container or snake bag unattended** in an unsecured location (e.g., side of road).

f) Do not offer the snake any food. Snakes do not have to eat as often as mammals, and it is no problem for a snake in temporary captivity to go a few days without food.

2.7 Relocation of snakes

a) A snake should only be relocated if the destruction of its habitat is unavoidable or if it is not possible to release it at the capture location.

b) Snakes should not be relocated during their over-wintering season. This varies depending on the species and location, but is generally from October to May. If you are unsure whether you should relocate the snake or take it to a wildlife custodian, contact MNR for further direction using the SAR Notification/Contact Schedule.

c) If it is not possible to relocate the snake due to the time of year (October to May) or other conditions, transport the snake to a wildlife custodian per the SAR Notification/Contact Schedule.

d) Transport and release the snake within one hour of capture in order to minimize stress on the animal.

e) **Snakes should never be moved more than 250 metres** from the location where they were found. Only move a snake as far as necessary to avoid potential harm to the snake, and avoid moving snakes more than 125 metres unless absolutely necessary. If it is not possible to relocate the snake within 250 metres of the capture location, contact MNR for further direction using the SAR Notification/Contact Schedule.

f) Release the snake in the same type of natural habitat as the capture site. If this is not possible, contact MNR for further direction using the SAR Notification/Contact Schedule.

g) If possible, release the snake near a retreat site (somewhere the animal can seek shelter from the elements and avoid predators: loose rocks, logs, rock crevices or dense vegetation) to allow it to take cover upon release. Do not release the snake in the open where it could be exposed to inclement weather, extreme sunlight or predators.

h) To release the snake from a pail, gently tip the pail onto its side, remove the lid, back away from the pail and allow the snake to leave on its own. If necessary, use the broom to gently guide the snake out of the pail or gently tip the pail on an angle to slide the snake out of the pail.



i) To release a non-venomous snake from a bag, untie the bag, gently tip the bag by holding one of the bottom corners (make sure you are not holding the snake) and gently slide the snake onto the ground.



2.8 Injured snakes

a) If dealing with an injured Massasauga, ensure compliance with all instructions and safety considerations provided in sections 2.1-2.3.

b) If the methods of handling snakes that are outlined in section 2.3 or 2.4 are not applicable due to the snake's injuries, use a shovel or other flat object to pick up the snake. Ensure that any injured areas are supported.

c) Place the snake in a large plastic bin or bucket with a lid that has air holes (the darkness helps to reduce stress to the snake). You can place newspaper in the container to provide cover for the snake and help to reduce its stress. Do not place anything else in the container with the snake or offer it any food.

d) Thoroughly wash your hands after handling injured snakes.

e) Immediately transport the snake to a veterinarian or wildlife custodian per the SAR Notification/Contact Schedule, in order to increase its chances of survival.

Snakes

3. Safe Handling Of The Five-lined Skink

3.1 Materials

a) The following materials are required for the handling, capture, temporary safe keeping and transport of Five-lined Skinks:

» Small plastic container with a lid that has air holes. Ensure the container and the lid are well marked "live animal".

» Thermometer

» SAR Notification/Contact Schedule

» SAR Encounter Reporting Form

b) Equipment must be maintained on each job site.

3.2 Capture and handling of Five-lined Skinks

a) There is no risk associated with handling Five-lined Skinks. They may bite, but this will not cause any substantial injury – they have small mouths and tiny teeth.

b) Safely handle, move or capture a Five-lined Skink by following these steps:

I. Always handle Five-lined Skinks gently and slowly. Rough handling may cause injury or stress to the animal. Skinks can drop their tail as an anti-predator defence and may do so if they feel threatened, even if they are not being held by the tail.

II. **Never grab or pick up a Five-lined Skink by the tail**. This may cause the skink to drop its tail (even if you are being gentle) and can be detrimental to the survival of the animal.

III. Do not pick up Five-lined Skinks by the body; exerting too much pressure by accident can result in internal injury.

IV. Capture a skink by cupping your hands over the skink while it is on the ground. (You have to be quick!)

V. Carefully close your hand(s) around the skink to pick it up. Note that they can fit through small holes between your fingers.

c) Always wash your hands after handling any wildlife.

3.3 Moving a Five-lined Skink out of harm's way (distances under 25 metres)

a) If it is necessary to move a skink more than 25 metres, refer to section 3.5 on Five-lined Skink relocation.

b) Five-lined Skinks should only be moved when they are in imminent, unavoidable danger.

c) If possible, allow the skink to move on its own by walking toward the skink in the direction that you want it to move. Skinks are fast and tend to hide whenever possible. If the skink continues to seek shelter within the area where work is taking place, it will have to be picked up and moved (see section 3.5).

d) When moving a skink out of harm's way, such as across a road, move the skink in the direction that it was heading, regardless of what the habitat looks like. These animals often make intentional movements to specific areas, and if you put them back where they started they will simply turn around and start their journey again. If it is not clear which direction the skink was headed, move the skink to the closest suitable habitat that will not be disturbed. In this case, suitable habitat includes rocks or other cover objects that the skink can retreat under.

e) If possible, release the Five-lined Skink near a retreat site, which is somewhere the animal can seek shelter from the elements and avoid predators (vegetation, rocks, logs or leaf litter). Do not release it in the open where it could be exposed to inclement weather, extreme sunlight or predators.

3.4 Temporary safe keeping and transportation of Five-lined Skinks

a) You are responsible for this animal. Remember, once you have put it in a container, it depends on you to keep it safe, moist and at the right temperature.

b) Keep Five-lined Skinks in a small container with a lid that has air holes. Always create the air holes before putting the skink in the container.

c) Skinks can move very quickly and may try to escape before the lid is on the container. Be careful that the skink does not get crushed when you place the lid on the container.

d) It is extremely important to monitor the air temperature regularly in the container to ensure it **never exceeds 30°C or drops below 5°C**. Never leave the container in direct sunlight or in a closed vehicle parked in the sun, as this will cause the animal to overheat and could be fatal.

f) **Never leave the container unattended** in an unsecured location (e.g., side of road).

3.5 Relocation of Five-lined Skinks

a) A Five-lined Skink should only be relocated if the destruction of its habitat is unavoidable or if it is not possible to release it at the capture location.

b) Transport and release the skink within one hour of capture in order to minimize stress on the animal.

c) Five-lined Skinks should not be relocated during their over-wintering season, which is generally from October to May. If you are unsure whether you should relocate the skink or take it to a wildlife custodian, contact MNR for further direction using the SAR Notification/Contact Schedule.

d) If it is not possible to relocate the skink due to the time of year (October to May) or other conditions, transport it to a wildlife custodian per the SAR Notification/Contact Schedule.

e) Five-lined Skinks should never be moved more than 100 metres from the location where they were found. Only move a skink as far as necessary to avoid potential harm to the skink, and avoid moving skinks more than 50 metres unless absolutely necessary. If it is not possible to relocate the animal within 100 metres of the capture location, contact MNR for further direction using the SAR Notification/Contact Schedule.

f) Always release Five-lined Skinks in the same type of natural habitat as the capture site.

g) If possible, release Five-lined Skinks near a retreat site, which is somewhere the animal can seek shelter from the elements and avoid predators (vegetation, rocks, logs or leaf litter). Do not release them in the open where they could be exposed to inclement weather, extreme sunlight or predators.

h) To release Five-lined Skinks, remove the lid and gently tip the container onto its side and allow the animal to leave on its own. If necessary, gently tip the container on an angle to slide the animal out.

3.6 Injured Five-lined Skinks

a) Use the methods outlined in section 3.2 to handle injured skinks whenever possible. If those methods are not applicable due to the skink's injuries, use a shovel or other thin, flat object to pick up the skink. Ensure that any injured areas are supported.

b) Place the Five-lined Skink in a small container with a lid that has air holes. Always create the air holes before putting the skink in the container.

c) Newspaper or paper towels may be added to the container to give the skink something to hide in. Do not place water, other skinks, food or anything else in the container with the skink.

d) Thoroughly wash your hands after handling injured skinks.

e) Immediately transport the skink to a veterinarian or wildlife custodian per the SAR Notification/Contact Schedule, in order to increase its chances of survival.

Five-lined Skink

4. Safe Handling of Amphibians

Important Note: Many amphibian species absorb oxygen through their skin as well as breathing with lungs; some species rely completely on their skin for respiration. If their skin dries out, they can suffocate. Therefore, careful handling of amphibians (especially salamanders) includes ensuring that their skin is kept moist.

4.1 Materials

a) The following materials are required for the handling, capture, temporary safe keeping and transport of amphibians:

- A pail, bucket or large plastic bin with a lid that has air holes (for frogs). Ensure both the side of the container and the lid are well marked “live animal”.
- Plastic kitchen-style container lined with paper towel (needs to be wet when used) with a lid that has air holes (for salamanders and toads). Ensure both the side of the container and the lid are well marked “live animal”.
- Thermometer
- SAR Notification/Contact Schedule
- SAR Encounter Reporting Form
- Net (optional)

b) Equipment must be acquired and maintained on each job site.

4.2 Capture and handling of salamanders, toads and frogs

Note: Eastern Newts have toxins in their skin and some salamanders may release a white, mildly toxic substance from their skin and tail. If ingested, these toxins may cause mild nausea. There is no risk associated with handling Ontario’s amphibians, provided you wash your hands afterwards. Toads will not give you warts.

Safely handle, move or capture a salamander, toad or frog by following these steps:

a) Always make sure your hands are clean and free of insect repellent, antibacterial hand sanitizer, sunscreen, etc. Amphibians have very wet, porous skin through which they absorb oxygen and other compounds. Harmful chemicals (such as bug repellent) are quickly absorbed through an amphibian’s skin and can cause serious damage to the animal.

b) If possible, wet your hands before picking up salamanders in order to avoid drying out their skin. Some species rely completely on their skin for respiration. If their skin dries out, they can suffocate and die. You can also ensure dampness is maintained by picking up some wet soil with the salamander.



c) Keep handling times to a minimum as oil produced by human skin can easily clog amphibian pores, causing suffocation in some species.

d) Always handle amphibians gently and slowly. Rough handling may cause injury or stress to the animal. Salamanders can drop their tail as an anti-predator defence, and may do so if they feel threatened (even if you are not holding them by the tail).

e) Never grab or pick up a salamander by the tail. This may cause the salamander to drop its tail (even if you are being gentle) and can be detrimental to the survival of the animal.

f) Capture a **frog or toad** using a net or pick it up with your hands by:



I. Cupping your hands over the frog or toad while it is on the ground. (You have to be quick!)

II. Closing your hand(s) to create a “cage” around the animal and picking it up. Note that they are slippery and can fit through small holes between your fingers.

III. If it is necessary to identify the species after picking it up, carefully allow it to partially crawl out of your hand between your thumb and forefinger and then gently tighten your grip around its back legs (near its waist), holding onto both back legs. Support its front legs with your other hand.



g) Pick up a **salamander or newt** by scooping it up in one or two hands and then closing your hands to create a “cage”. Note that these animals are slippery and can fit through small holes between your fingers.



h) Use a net, container or your hands to catch frog tadpoles or salamander larvae. A net is easiest.

4.3 Moving amphibians out of harm's way (distance under 25 metres)

a) If it is necessary to move an amphibian more than 25 metres, refer to section 4.5 on amphibian relocation.

b) Amphibians should only be moved when they are in imminent, unavoidable danger.

c) Salamanders do not move large distances and will tend to hide whenever possible. If there is the need to move a salamander, you will have to pick it up and move it (refer to section 4.2).

d) If possible, allow a frog and a toad to move on its own by walking toward it in the direction that you want it to move. If the frog or toad does not move on its own, you will have to pick it up and move it (see section 4.2).

e) When moving an amphibian out of harm's way, such as across a road, move it in the direction that it was heading, regardless of what the habitat looks like. These animals often make intentional movements to specific areas and if you put them back where they started they will simply turn around and start their journey again. If it is not clear which direction the animal was headed, move it to the closest suitable habitat that will not be disturbed. Suitable habitat includes: any shoreline habitat in the case of frogs; leaf litter, rocks or logs in a vegetated/forested area that the animal can hide under in the case of salamanders; any cover, such as rocks or vegetation, in the case of toads.

4.4 Temporary safe keeping and transportation of amphibians

a) You are responsible for this animal. Remember, once you have put it in a container, it depends on you to keep it safe, moist and at the right temperature.

b) Make sure that all containers that will be housing amphibians are thoroughly washed and rinsed and do not contain any soap or chemical residue.

c) Keep **frogs** in a pail, bucket or large plastic bin with a lid that has adequate air holes. Always create the air holes before putting the animal in the container. Fill the container with less than one inch of water. Frogs should never be fully submerged, or they will drown.

d) Keep **toads** in a pail, bucket, large plastic bin or plastic kitchen-style container with a lid that has adequate air holes. Always create the air holes before putting the animal in the container. Line the bottom of the container with wet paper towels.



e) Keep **salamanders** in a plastic kitchen-style container with a lid that has adequate air holes. Line the bottom of the container with wet paper towels.



f) Keep **newts and mudpuppies** in a pail, bucket, large plastic bin or plastic kitchen-style container with a lid, and fill the container with water. Replace water twice daily to ensure proper aeration, as these animals breathe through gills (like fish).

g) It is extremely important to monitor the air temperature regularly in the container to ensure it **never exceeds 25°C or drops below 5°C**. Never leave the container in direct sunlight or in a closed vehicle parked in the sun, as this will cause the animal to overheat and could be fatal.

h) **Never leave the container unattended** in an unsecured location (e.g., side of road).

4.5 Relocation of amphibians

a) Amphibians should only be relocated if the destruction of their habitat is unavoidable, or if it is not possible to release the animal at the capture location.

b) Transport and release it within one hour of capture in order to minimize stress on the animal.

c) Amphibians should not be relocated during their over-wintering season. This varies depending on the species and location, but is generally from October to May. If you are unsure whether you should relocate the animal or take it to a wildlife custodian, contact MNR for further direction using the SAR Notification/ Contact Schedule.

d) If it is not possible to relocate the animal due to the time of year (October to May) or other conditions, transport it to a wildlife custodian per the SAR Notification/Contact Schedule.

e) **Amphibians should never be moved more than 100 metres** from the location where they were found. Only move the amphibian as far as necessary to avoid potential harm to the amphibian, and avoid moving amphibians more than 50 metres unless absolutely necessary. If it is not possible to relocate the animal within 100 metres of the capture location, contact MNR for further direction using the SAR Notification/Contact Schedule.

f) Release amphibians as close as possible to the capture site.

g) Always release frogs and larvae in the same water body where they were found, or in the same type of natural habitat as the capture site.

h) Release salamanders and toads in the same type of natural habitat as the capture site.

i) If possible, release frogs, toads and salamanders near a retreat site, which is somewhere the animal can seek shelter from the elements and avoid predators (vegetation, rocks, logs or leaf litter in the case of salamanders; water or vegetation in the case of frogs). Do not release them in the open where they could be exposed to inclement weather, extreme sunlight or predators.

j) To release frogs, toads and salamanders, remove the lid and gently tip the container onto its side and allow the animal to leave on its own. If necessary, gently tip the container on an angle to slide the animal out of the container.

4.6 Injured amphibians

a) Use the methods outlined in section 4.2 to handle injured amphibians whenever possible. If those methods are not applicable due to the animal's injuries, use a shovel or other thin, flat object to pick up the animal. Ensure that any injured areas are supported.

b) Place the amphibian in a small container with a lid that has air holes and line the bottom of the container with wet paper towels. Always create the air holes before putting the animal in the container.

c) Newspaper or paper towels may be added to the container to give the amphibian something to hide in. Do not place water, other animals, food or anything else in the container with the individual.

d) Thoroughly wash your hands after handling injured amphibians.

e) Immediately transport the injured animal to a veterinarian or wildlife custodian per the SAR Notification/Contact Schedule, in order to increase its chances of survival.

Amphibians

5. Safe Handling of Birds

The protocol for handling birds is based on the size of the birds you may encounter.

Small Birds: e.g., Loggerhead Shrike, Prothonotary Warbler, Whip-poor-will

Large Birds: e.g., King Rail, Least Bittern, Peregrine Falcon

5.1 Materials

a) The following materials are required for the handling, capture, temporary safe keeping and transport of birds:

- Sturdy cardboard box or large plastic bin and lid with air holes. Ensure both sides of the box/ container and the lid are well marked with “live animal”.
- Sheet or blanket large enough to cover a large bird
- Thick work gloves
- Safety glasses
- Thermometer
- Digital camera (optional)
- MNR Notification/Contact Schedule
- SAR Encounter Reporting Form

b) Equipment must be acquired and maintained on each job site.

5.2 Safety considerations

a) Generally, there is little risk associated with handling birds. However, some species can scratch or bite, and work gloves should be worn to help avoid minor injuries. Safety glasses are recommended for larger birds, especially the Least Bittern.

b) Always wash your hands after handling a bird. In addition, cloths, blankets and containers used to hold or transport birds should be washed with soap and water after each use. Discard a cardboard box after using it to hold or transport a bird.

5.3 Capture and handling of birds

a) The first consideration is to determine if the bird needs handling. It may be that the bird is healthy and can fly away. To find out, approach the bird slowly and wave your arms to make it fly or move away. Ensure that the direction in which the bird will fly is clear and free of obstruction. If this occurs (i.e., bird flies away), there is no need to proceed further with trying to catch it. If it doesn’t fly and instead crouches down or wobbles, indicating that it can’t fly, then it may be injured or a young bird not yet capable of flight.

c) Determine if it is a small or large bird from the list above. If possible, take a picture of the bird so that it can be identified without having to reopen the container.



d) **Small birds:** Use your bare or gloved hands, or the cloth or blanket, if that is more appropriate. Place your hands or the cloth/blanket over the bird around its body and over its wings to keep it from escaping. Gently pick it up and place it in the cardboard box or the large plastic bin. If it attempts to escape, work it towards a corner and attempt capture again.

e) **Large birds:** Use gloves and safety goggles for protection. Take the cloth or blanket and throw it over the bird to keep it from escaping. Use both hands to clasp the body of the bird through the cloth and gently restrain it. Pick up the bird, including the cloth, and place it all in the cardboard box/plastic bin. Free the bird from the cloth, remove the cloth, and then place the cover on the box.

If the bird jabs or bites at you during capture, use your gloved hand to fend off the attacks. Ensure it does not get close to your eyes if you are not wearing glasses.

f) Always handle birds carefully and gently, yet firmly. Birds may at any time struggle in an attempt to escape.



g) Never pick up a bird by the legs alone. Always support the body by grasping it around the wings.



5.4 Moving and releasing young birds or recovered birds

a) If the bird is a young bird incapable of long flight, it may be that its parents are nearby. Check around the site where the bird was found for the parents. If you locate parents, the young bird should be moved to a nearby tree, bush or ledge where the parents can attend to it and feed it. The location should be close to the parents and removed from danger. Watch the bird for 15 minutes and see if a parent attends to it.



b) In other cases, the captured bird may recover in the container and begin struggling to escape. In this case, you may wish to try releasing it in a natural habitat near where it was found. Place it in a location where it has shelter from the elements and can avoid predators. Allow it to move into cover. Do not release it in the open where it could be exposed to inclement weather, extreme sunlight or predators.

5.5 Temporary safe keeping and transportation of birds

a) You are responsible for this bird. Remember, once you have put it in a container, it depends on you to keep it safe and at the right temperature.

b) Always create air holes in the sides or lid of the box or container prior to placing the bird in it.



c) Place the box in a sheltered environment, preferably in the dark or semi-dark. This will quiet the bird down and let it rest.

d) Contact one of the MNR staff indicated on the SAR Notification/Contact Schedule. Ask for instructions on how to care for the bird. Send a picture of the bird if necessary.

e) It is extremely important to monitor the air temperature regularly in the container to ensure it **never exceeds 30°C or drops below 15°C**. Never leave the container in direct sunlight or in a closed vehicle parked in the sun, as this could cause the bird to overheat and could be fatal.

f) Never put more than one bird in a container at a time, especially raptors (Peregrine Falcon).

g) Once the bird is in the container, ensure that the lid is secure.

h) **Never leave the container unattended** in an unsecured location (e.g., side of road) or on the edge of a car seat.

i) Do not offer the bird any food or water unless instructed to do so following consultation with MNR staff on the SAR Notification/Contact Schedule.

j) Birds should be checked periodically (every hour should suffice). Young birds are especially susceptible to dehydration and must be carefully monitored during transport.

5.6 Evaluation and disposition of captured birds

a) Contact the MNR staff person listed on the SAR Notification/Contact Schedule immediately. Inform him or her of the capture and holding of the bird and ask for advice on the next steps.

b) It may be useful to take a picture of the bird for identification purposes. Send the photo to the MNR staff person or another person as requested.

c) You may be asked by the staff person to take the bird to a wildlife custodian.

5.7 Injured birds

a) If the bird is injured, immediately request and follow instructions given by the MNR staff person listed on the SAR Notification/Contact Schedule.

b) If so instructed, immediately transport the bird to a veterinarian or wildlife custodian per the SAR Notification/Contact Schedule, in order to increase the chances of the bird's survival.

6. Reporting Species at Risk Encounters

a) Contact MNR to report the occurrence (including dead animals) within the period of time set out in the permit or agreement, or within 24 hours if not stipulated. Report injured animals to MNR immediately.

b) Complete and submit the SAR Encounter Reporting Form, which includes the following information:

I. Name of Qualified Member

II. Contact number of Qualified Member

III. Date and time of the encounter

IV. Detailed location of the encounter (with lat-long or UTM coordinates, if possible). To obtain coordinates without a GPS, zoom into the area using Google Maps, right click on the location and select “what’s here?” from the right-click menu. The coordinates (in decimal degrees) will be provided to you in the Google Maps search bar.

V. Species encountered, with photo documentation, when possible. For assistance with species identification, see MNR’s *Ontario Species at Risk Quick Reference Guide*. Detailed species accounts can be found at **www.ontarionature.org/atlas** or the “Species Guides” at **www.torontozoo.com/AdoptAPond**.

VI. Action taken

Risk Encounters

7. Handling and Transporting Dead Animals

Dead species at risk that are encountered should be reported to the MNR as soon as possible. It is possible that the Ministry will request that the individual be stored and/or transported to the MNR.

Many researchers are currently studying the genetics of wild populations in Ontario, and genetic materials extracted from dead animals can make a valuable contribution to this research.

Examining a dead animal may provide important information about the cause of death or threats affecting the population.

If the MNR asks to see the species at risk and it is not possible to transport it on the same day it was found, the specimen should be stored in a freezer.

7.1 Materials

a) The following materials must be used for the handling and transport of dead species at risk:



I. A plastic resealable bag or plastic kitchen-style container with a tight lid with label “dead SAR for transport to MNR”

II. Permanent, water-resistant marker for labelling the bag or container with additional information, such as the date and location

III. Latex gloves or thick work gloves that can be washed

IV. Cooler with cold ice packs, if possible

V. SAR Notification/Contact Schedule

VI. SAR Encounter Reporting Form

7.2 Safety Considerations

Always wear gloves or wash your hands after handling any dead animal. Turtles (and many other animals) carry potentially harmful bacteria in their gut. Handling dead, rotting animals may also expose you to bacteria that can make you sick.

Handle a dead Massasauga with extreme caution

I. The snake’s venom is still a serious biohazard even after the snake is dead.

II. Never handle a dead Massasauga with your hands. Use a broom or sticks to place it into a container with a secure lid (not a bag).

III. Although unlikely, nerves can trigger the Massasauga’s bite reflex even after the snake is dead.

IV. In some situations, it can be very difficult to confirm that a snake is dead. For example, extreme shock can make a snake appear dead for several minutes until it slowly regains its senses. Unless you can confirm that the Massasauga is dead, always treat it as though it is alive and never place any part of your body within its potential strike range (approximately half of the snake’s body length).

Dead Animals

7.3 Handling a dead animal

a) Always make sure that an animal is actually dead before handling or capturing it. In some situations, live animals can easily be mistaken for being dead:

I. Extreme shock can make a reptile or amphibian motionless and appear dead for several minutes until it slowly regains its senses.

II. Air temperature controls the metabolism, and therefore the activity level, of reptiles and amphibians. If an over-wintering snake or turtle is encountered, it will only be 4 or 5°C and may be so inactive that it will appear dead. Very cold animals in the spring or fall may also be very inactive and appear dead until closely examined.

III. Eastern Hog-nosed Snakes sometimes play dead as a defensive strategy to deter predators. This display includes rolling onto their back with their mouth gaping open and tongue hanging out, regurgitating food or defecating and emitting a foul smell. It is very difficult to determine if this species is actually dead without manipulating the snake and carefully inspecting it. If you flip the snake onto its belly, it will often roll back over and continue to play dead.

7.4 Temporary storage of dead animals

a) Place the dead animal in a plastic resealable bag or container with a tight lid that will not leak. Always use a thick container with a secure lid for Massasauga rattlesnakes.

b) Do not place anything else in the container with the animal.

c) Label the container with “dead SAR for transport to MNR” as well as the date, location and name of the observer.

d) Place the bag or container in a freezer as soon as possible. If a freezer is not immediately available, place it in a cool place, preferably a cooler with ice packs.

e) If the animal cannot be delivered to MNR on the same day that it was found, place it in a freezer until it can be delivered to MNR.

8 Appendices

Appendix I - Definitions

Species at Risk (SAR) Notification/Contact Schedule:
A contact list provided by the Ministry of Natural Resources District Office to be used when immediate guidance is required concerning species at risk (SAR) encounters. This list will include Ministry of Natural Resources staff as well as local veterinarians and wildlife custodians.

Species at Risk (SAR) Encounter Reporting Form:
A reporting form provided by Ministry of Natural Resources that must be completed any time that a species at risk (SAR) is encountered.

Qualified Member:
An individual who has received training by, in consultation with, or in a manner approved by Ministry of Natural Resources to capture, handle, move and relocate species at risk (SAR).

Appendix II - References

Ontario Ministry of Natural Resources, Parry Sound and Sudbury District. *Draft Turtle and Snake Capture and Relocation Protocol For Hwy 69/400 ESA Authorization Requirements.*
Revised January 19, 2011.

Parks Canada. *The Eastern Massasauga Rattlesnake Stewardship Guide: A Resource and Field Guide for Living with Rattlesnakes in Ontario*, Parks Canada, pp 84.

Karch, Mandy. 2008. *Standard Turtle Handling Practices and Protocols*. Prepared for the Ontario Ministry of Natural Resources and the Ontario Multi-species Turtles At Risk Recovery Team. 2008.

Unless otherwise noted, all photographs are credited to Jason Mortlock.

Appendix III - Equipment and Materials Checklist

The following materials must be acquired and maintained on each job site, and are required for the handling, capture, temporary safe keeping and transport of species at risk:

All Species (including for dead animals)

- ❑ Thermometer
- ❑ Plastic resealable bag or plastic kitchen-style container with a tight lid with label “dead SAR for transport to MNR”
- ❑ Permanent, water-resistant marker for labelling bag or container with additional information, such as the date and location
- ❑ Latex gloves or thick work gloves that can be washed
- ❑ SAR Notification/Contact Schedule (from MNR District Office – see Appendix IV)
- ❑ SAR Encounter Reporting Form (See Appendix V)

Additional Materials for Turtles

- ❑ Large plastic bin or bucket and lid with air holes, with both sides of the container and lid marked “live animal”
- ❑ Cloth/burlap bag with both sides marked “live animal”
- ❑ Broom or broom handle with small paint brush roller attached to end

Additional Materials for Snakes

- ❑ Pail, large garbage can or bucket with air holes in the lid, with side of the container and lid marked “live animal”
- ❑ A cloth snake bag (e.g., pillowcase) for non-venomous species only, marked “live animal”

For Massasaugas:

- ❑ Pail, large garbage can or bucket (1 metre deep) with air holes in the lid, with side of the container and lid marked “caution rattlesnake”
- ❑ Broom or broom handle with small paint brush roller holder attached to end

Additional Protective Gear to be Worn When Working in or near Massasauga Habitat

- ❑ High-ankle hiking or rubber boots
- ❑ Thick pants (jeans) or baggy pants
- ❑ Leather work gloves

Additional Material for Skinks

- ❑ Plastic kitchen-style container and lid with air holes, marked “live animal”

Additional Materials for Amphibians (Salamanders, Newts, Mudpuppies, Frogs, Toads)

- ❑ Pail, bucket or large plastic bin with a lid that has air holes (for frogs), both side of container and lid marked “live animal”
- ❑ Plastic kitchen-style container and lid with air holes, marked “live animal”
- ❑ Paper towels (to be moistened and put in plastic kitchen-style container)
- ❑ Net (optional)

Additional Materials for Birds

- ❑ Sturdy cardboard box or large plastic bin and lid with air holes, with both sides of box/container and lid marked “live animal”
- ❑ Sheet or blanket large enough to cover a large bird
- ❑ Safety glasses
- ❑ Digital camera (optional)

Appendix IV - SAR Notification/Contact Schedule

Appendix V - SAR Encounter Reporting Form

Appendix D Eastern Foxsnake Fact Sheet

SPECIES AT RISK FACTSHEET
EASTERN FOXSNAKE



Image Reference: Ron Gould, MNRF



Image Reference: Allen Woodliffe, MNRF

Ontario MINISTRY OF TRANSPORTATION MINISTÈRE DES TRANSPORTS

Stantec

- Found only in the Great Lakes region, along the shorelines of Lake Erie and Lake Huron.
- The Lake Erie population is found in the Essex-Kent and Haldimand-Norfolk counties.
- Is Endangered and protected by the *Endangered Species Act*.

Identification

- Length: 30-170 cm (12-67 inches). One of Ontario's largest snakes.
- Color: Shiny, rusty orange head and a golden to light brown body with dark blotches.
- Underbelly: Light yellow and black.

Where?

- Frequently found in drainage canals, meadows, hedgerows, barns, and woodland edges.
- May seek shelter in parked machinery equipment.
- Basks on roads, rock piles and/or concrete structures.
- May hide in brush/log piles or under rotting logs.
- Foxsnakes are good swimmers and have been recorded swimming over 2 km.

When?

- Is most likely to be seen in spring and summer (April to November).
- In fall (September to October), snakes head to communal overwintering sites (called hibernacula), which are in deep cracks in bedrock, small animal burrows, canals, and human-made features.

What Can We Do?

- Inspect machinery/equipment daily (during active season: April 15 to November 1). For equipment that is stored on-site, inspect for snakes thoroughly each morning before equipment is started. Look carefully because snakes may be well concealed.
- During ditching and grading, limit disturbance and avoid piling dirt in natural vegetation.
- Inspect brush piles/logs – Whenever possible, brush/log piles should not be disturbed. If a brush/log pile must be moved or disturbed, it should first be carefully examined. When brush/log piles are moved, they should be relocated within a few meters.
- Timing Windows – Removal of non-woody vegetation should NOT be conducted in April, May, October, or November because at this time of year, snakes are not able to quickly flee areas of disturbance due to the cool weather.
- Be aware of snakes basking on roadways.
- Do NOT handle, chase, or harass a snake.
- Report snake observations to the Ministry of Natural Resources and Forestry (MNRF).

If you encounter this species, contact the MNRF immediately:
Aylmer District MNRF
(519) 773-9241

Appendix E Butler's Gartersnake Fact Sheet

Butler's Gartersnake

- This snake is found in four separate locations in southwestern Ontario.
- Populations may occur in Windsor-Sarnia, Skunk's Misery (Middlesex-Lambton Counties), the Luther Marsh, and Parkhill.
- Is **Endangered**, and protected by the Ontario *Endangered Species Act*.
- Feeds almost exclusively on earthworms.

Identification

- Length: 25-57 cm (10-22 inches). It is one of Ontario's smallest snakes.
- Colour: Black or brown with three yellow stripes (one down the back and one on either side).
- Similar in appearance to Eastern Gartersnake and Eastern Ribbonsnake but can be distinguished by the location of the yellow stripes along the sides of its body.



Where?

- Found in open areas such as prairies, old fields, drainage ditches, wetlands and small bodies of water.
- Can be found in urban/industrial areas.
- Basks on rock piles and under artificial objects such as roofing shingles and boards.

When?

- Is most likely to be seen in spring and summer (March to October).
- In fall (September to October), snakes head to communal overwintering sites (called hibernacula) in small mammal or crayfish burrows.

What Can You Do?

A Tree Clearing Plan to protect Species at Risk (SAR) has been prepared and approved by the Ministry of the Environment, Conservation and Parks for Enbridge's Sarnia Industrial Line Reinforcement Project: DOW to Bluewater. Site specific requirements include:

- Conduct tree removing during the Butler's Gartersnake inactive period, November 1 – February 28.
- In the event of an incidental encounter with a SAR, a minimum operating distance of 30 m must be maintained to allow the species to disperse on its own. Injured or deceased SAR are to be kept at an appropriate temperature and transported to a wildlife rehabilitation facility.
- Protect identified candidate hibernacula features and remove trees by hand within 30 m of these features.
- Stake the tree removal area to avoid expanding the footprint.
- Limbs and brush will be removed from site (no grubbing).
- Conduct work under frozen ground conditions if possible, restrict wheeled vehicles to existing roadways or mats, use tracked vehicles for tree clearing.
- Pre-existing fallen logs (i.e., 8 inches in diameter or larger) or other large woody debris and decaying materials may be cut up and removed using equipment provided a qualified biologist is on site to inspect them before their removal.
- Do **NOT** handle, chase or harass a snake.



Photo reference: Allen Woodliffe, Ministry of Natural Resources and Forestry

If you encounter this species, contact the Enbridge Inspector immediately

Ontario

Ministry of Tourism, Culture and Sport

Programs & Services Branch
401 Bay Street, Suite 1700
Toronto ON M7A 0A7

Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes

A Checklist for the Non-Specialist

The **purpose of the checklist** is to determine:

- if a property(ies) or project area:
  - is a recognized heritage property
  - may be of cultural heritage value
- it includes all areas that may be impacted by project activities, including – but not limited to:
  - the main project area
  - temporary storage
  - staging and working areas
  - temporary roads and detours

Processes covered under this checklist, such as:

- *Planning Act*
- *Environmental Assessment Act*
- *Aggregates Resources Act*
- *Ontario Heritage Act* – Standards and Guidelines for Conservation of Provincial Heritage Properties

Cultural Heritage Evaluation Report (CHER)

If you are not sure how to answer one or more of the questions on the checklist, you may want to hire a qualified person(s) (see page 5 for definitions) to undertake a cultural heritage evaluation report (CHER).

The CHER will help you:

- identify, evaluate and protect cultural heritage resources on your property or project area
- reduce potential delays and risks to a project

Other checklists

Please use a separate checklist for your project, if:

- you are seeking a Renewable Energy Approval under Ontario Regulation 359/09 – separate checklist
- your Parent Class EA document has an approved screening criteria (as referenced in Question 1)

Please refer to the Instructions pages for more detailed information and when completing this form.

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Project or Property Name

Windsor Utilities Commission Elevated Water Tower - Class Environmental Assessment

Project or Property Location (upper and lower or single tier municipality)

4450 7th Concession Road, Windsor Ontario

Proponent Name

Hannah Rindlisbacher

Proponent Contact Information

Hannah.Rindlisbacher@stantec.com

Screening Questions

	Yes	No
1. Is there a pre-approved screening checklist, methodology or process in place?	☐	☑

If Yes, please follow the pre-approved screening checklist, methodology or process.

If No, continue to Question 2.

Part A: Screening for known (or recognized) Cultural Heritage Value

	Yes	No
2. Has the property (or project area) been evaluated before and found **not** to be of cultural heritage value?	☐	☑

If Yes, do **not** complete the rest of the checklist.

The proponent, property owner and/or approval authority will:

- summarize the previous evaluation and
- add this checklist to the project file, with the appropriate documents that demonstrate a cultural heritage evaluation was undertaken

The summary and appropriate documentation may be:

- submitted as part of a report requirement
- maintained by the property owner, proponent or approval authority

If No, continue to Question 3.

	Yes	No
3. Is the property (or project area):		
a. identified, designated or otherwise protected under the *Ontario Heritage Act* as being of cultural heritage value?	☐	☑
b. a National Historic Site (or part of)?	☐	☑
c. designated under the *Heritage Railway Stations Protection Act*?	☐	☑
d. designated under the *Heritage Lighthouse Protection Act*?	☐	☑
e. identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office (FHBRO)?	☐	☑
f. located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?	☐	☑

If Yes to any of the above questions, you need to hire a qualified person(s) to undertake:

- a Cultural Heritage Evaluation Report, if a Statement of Cultural Heritage Value has not previously been prepared or the statement needs to be updated

If a Statement of Cultural Heritage Value has been prepared previously and if alterations or development are proposed, you need to hire a qualified person(s) to undertake:

- a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts

If No, continue to Question 4.

Part B: Screening for Potential Cultural Heritage Value

	Yes	No
4. Does the property (or project area) contain a parcel of land that:		
a. is the subject of a municipal, provincial or federal commemorative or interpretive plaque?	☐	☑
b. has or is adjacent to a known burial site and/or cemetery?	☐	☑
c. is in a Canadian Heritage River watershed?	☐	☑
d. contains buildings or structures that are 40 or more years old?	☐	☑

Part C: Other Considerations

	Yes	No
5. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area):		
a. is considered a landmark in the local community or contains any structures or sites that are important in defining the character of the area?	☐	☑
b. has a special association with a community, person or historical event?	☐	☑
c. contains or is part of a cultural heritage landscape?	☐	☑

If Yes to one or more of the above questions (Part B and C), there is potential for cultural heritage resources on the property or within the project area.

You need to hire a qualified person(s) to undertake:

- a Cultural Heritage Evaluation Report (CHER)

If the property is determined to be of cultural heritage value and alterations or development is proposed, you need to hire a qualified person(s) to undertake:

- a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts

If No to all of the above questions, there is low potential for built heritage or cultural heritage landscape on the property.

The proponent, property owner and/or approval authority will:

- summarize the conclusion
- add this checklist with the appropriate documentation to the project file

The summary and appropriate documentation may be:

- submitted as part of a report requirement e.g. under the *Environmental Assessment Act, Planning Act* processes
- maintained by the property owner, proponent or approval authority

Instructions

Please have the following available, when requesting information related to the screening questions below:

- a clear map showing the location and boundary of the property or project area
  - large scale and small scale showing nearby township names for context purposes
- the municipal addresses of all properties within the project area
- the lot(s), concession(s), and parcel number(s) of all properties within a project area

For more information, see the Ministry of Tourism, Culture and Sport's Ontario Heritage Toolkit or Standards and Guidelines for Conservation of Provincial Heritage Properties.

In this context, the following definitions apply:

- **qualified person(s)** means individuals – professional engineers, architects, archaeologists, etc. – having relevant, recent experience in the conservation of cultural heritage resources.
- **proponent** means a person, agency, group or organization that carries out or proposes to carry out an undertaking or is the owner or person having charge, management or control of an undertaking.

1. Is there a pre-approved screening checklist, methodology or process in place?

An existing checklist, methodology or process may already be in place for identifying potential cultural heritage resources, including:

- one endorsed by a municipality
- an environmental assessment process e.g. screening checklist for municipal bridges
- one that is approved by the Ministry of Tourism, Culture and Sport (MTCS) under the Ontario government's Standards & Guidelines for Conservation of Provincial Heritage Properties [s.B.2.]

Part A: Screening for known (or recognized) Cultural Heritage Value

2. Has the property (or project area) been evaluated before and found not to be of cultural heritage value?

Respond 'yes' to this question, if all of the following are true:

A property can be considered not to be of cultural heritage value if:

- a Cultural Heritage Evaluation Report (CHER) - or equivalent - has been prepared for the property with the advice of a qualified person and it has been determined not to be of cultural heritage value and/or
- the municipal heritage committee has evaluated the property for its cultural heritage value or interest and determined that the property is not of cultural heritage value or interest

A property may need to be re-evaluated, if:

- there is evidence that its heritage attributes may have changed
- new information is available
- the existing Statement of Cultural Heritage Value does not provide the information necessary to manage the property
- the evaluation took place after 2005 and did not use the criteria in Regulations 9/06 and 10/06

Note: Ontario government ministries and public bodies [prescribed under Regulation 157/10] may continue to use their existing evaluation processes, until the evaluation process required under section B.2 of the Standards & Guidelines for Conservation of Provincial Heritage Properties has been developed and approved by MTCS.

To determine if your property or project area has been evaluated, contact:

- the approval authority
- the proponent
- the Ministry of Tourism, Culture and Sport

3a. Is the property (or project area) identified, designated or otherwise protected under the *Ontario Heritage Act* as being of cultural heritage value e.g.:

i. designated under the *Ontario Heritage Act*

- individual designation (Part IV)
- part of a heritage conservation district (Part V)

Individual Designation – Part IV

A property that is designated:

- by a municipal by-law as being of cultural heritage value or interest [s.29 of the *Ontario Heritage Act*]
- by order of the Minister of Tourism, Culture and Sport as being of cultural heritage value or interest of provincial significance [s.34.5]. **Note**: To date, no properties have been designated by the Minister.

Heritage Conservation District – Part V

A property or project area that is located within an area designated by a municipal by-law as a heritage conservation district [s. 41 of the *Ontario Heritage Act*].

For more information on Parts IV and V, contact:

- municipal clerk
- Ontario Heritage Trust
- local land registry office (for a title search)

---

ii. subject of an agreement, covenant or easement entered into under Parts II or IV of the *Ontario Heritage Act*

An agreement, covenant or easement is usually between the owner of a property and a conservation body or level of government. It is usually registered on title.

The primary purpose of the agreement is to:

- preserve, conserve, and maintain a cultural heritage resource
- prevent its destruction, demolition or loss

For more information, contact:

- Ontario Heritage Trust - for an agreement, covenant or easement [clause 10 (1) (c) of the *Ontario Heritage Act*]
- municipal clerk – for a property that is the subject of an easement or a covenant [s.37 of the *Ontario Heritage Act*]
- local land registry office (for a title search)

---

iii. listed on a register of heritage properties maintained by the municipality

Municipal registers are the official lists - or record - of cultural heritage properties identified as being important to the community.

Registers include:

- all properties that are designated under the *Ontario Heritage Act* (Part IV or V)
- properties that have not been formally designated, but have been identified as having cultural heritage value or interest to the community

For more information, contact:

- municipal clerk
- municipal heritage planning staff
- municipal heritage committee

---

iv. subject to a notice of:

- intention to designate (under Part IV of the *Ontario Heritage Act*)
- a Heritage Conservation District study area bylaw (under Part V of the *Ontario Heritage Act*)

A property that is subject to a **notice of intention to designate** as a property of cultural heritage value or interest and the notice is in accordance with:

- section 29 of the *Ontario Heritage Act*
- section 34.6 of the *Ontario Heritage Act.* **Note**: To date, the only applicable property is Meldrum Bay Inn, Manitoulin Island. [s.34.6]

An area designated by a municipal by-law made under section 40.1 of the *Ontario Heritage Act* as a **heritage conservation district study area**.

For more information, contact:

- municipal clerk – for a property that is the subject of notice of intention [s. 29 and s. 40.1]
- Ontario Heritage Trust

---

v. included in the Ministry of Tourism, Culture and Sport's list of provincial heritage properties

Provincial heritage properties are properties the Government of Ontario owns or controls that have cultural heritage value or interest.

The Ministry of Tourism, Culture and Sport (MTCS) maintains a list of all provincial heritage properties based on information provided by ministries and prescribed public bodies. As they are identified, MTCS adds properties to the list of provincial heritage properties.

For more information, contact the MTCS Registrar at registrar@ontario.ca.

3b. Is the property (or project area) a National Historic Site (or part of)?

National Historic Sites are properties or districts of national historic significance that are designated by the Federal Minister of the Environment, under the *Canada National Parks Act*, based on the advice of the Historic Sites and Monuments Board of Canada.

For more information, see the National Historic Sites website.

3c. Is the property (or project area) designated under the *Heritage Railway Stations Protection Act*?

The *Heritage Railway Stations Protection Act* protects heritage railway stations that are owned by a railway company under federal jurisdiction. Designated railway stations that pass from federal ownership may continue to have cultural heritage value.

For more information, see the Directory of Designated Heritage Railway Stations.

3d. Is the property (or project area) designated under the *Heritage Lighthouse Protection Act*?

The *Heritage Lighthouse Protection Act* helps preserve historically significant Canadian lighthouses. The Act sets up a public nomination process and includes heritage building conservation standards for lighthouses which are officially designated.

For more information, see the Heritage Lighthouses of Canada website.

3e. Is the property (or project area) identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office?

The role of the Federal Heritage Buildings Review Office (FHBRO) is to help the federal government protect the heritage buildings it owns. The policy applies to all federal government departments that administer real property, but not to federal Crown Corporations.

For more information, contact the Federal Heritage Buildings Review Office.

See a directory of all federal heritage designations.

3f. Is the property (or project area) located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?

A UNESCO World Heritage Site is a place listed by UNESCO as having outstanding universal value to humanity under the Convention Concerning the Protection of the World Cultural and Natural Heritage. In order to retain the status of a World Heritage Site, each site must maintain its character defining features.

Currently, the Rideau Canal is the only World Heritage Site in Ontario.

For more information, see Parks Canada – World Heritage Site website.

Part B: Screening for potential Cultural Heritage Value

4a. Does the property (or project area) contain a parcel of land that has a municipal, provincial or federal commemorative or interpretive plaque?

Heritage resources are often recognized with formal plaques or markers.

Plaques are prepared by:

- municipalities
- provincial ministries or agencies
- federal ministries or agencies
- local non-government or non-profit organizations

For more information, contact:

- municipal heritage committees or local heritage organizations – for information on the location of plaques in their community
- Ontario Historical Society's Heritage directory – for a list of historical societies and heritage organizations
- Ontario Heritage Trust – for a list of plaques commemorating Ontario's history
- Historic Sites and Monuments Board of Canada – for a list of plaques commemorating Canada's history

4b. Does the property (or project area) contain a parcel of land that has or is adjacent to a known burial site and/or cemetery?

For more information on known cemeteries and/or burial sites, see:

- Cemeteries Regulations, Ontario Ministry of Consumer Services – for a database of registered cemeteries
- Ontario Genealogical Society (OGS) – to locate records of Ontario cemeteries, both currently and no longer in existence; cairns, family plots and burial registers
- Canadian County Atlas Digital Project – to locate early cemeteries

In this context, adjacent means contiguous or as otherwise defined in a municipal official plan.

4c. Does the property (or project area) contain a parcel of land that is in a Canadian Heritage River watershed?

The Canadian Heritage River System is a national river conservation program that promotes, protects and enhances the best examples of Canada's river heritage.

Canadian Heritage Rivers must have, and maintain, outstanding natural, cultural and/or recreational values, and a high level of public support.

For more information, contact the Canadian Heritage River System.

If you have questions regarding the boundaries of a watershed, please contact:

- your conservation authority
- municipal staff

4d. Does the property (or project area) contain a parcel of land that contains buildings or structures that are 40 or more years old?

A 40 year 'rule of thumb' is typically used to indicate the potential of a site to be of cultural heritage value. The approximate age of buildings and/or structures may be estimated based on:

- history of the development of the area
- fire insurance maps
- architectural style
- building methods

Property owners may have information on the age of any buildings or structures on their property. The municipality, local land registry office or library may also have background information on the property.

Note: 40+ year old buildings or structure do not necessarily hold cultural heritage value or interest; their age simply indicates a higher potential.

A building or structure can include:

- residential structure
- farm building or outbuilding
- industrial, commercial, or institutional building
- remnant or ruin
- engineering work such as a bridge, canal, dams, etc.

For more information on researching the age of buildings or properties, see the Ontario Heritage Tool Kit Guide Heritage Property Evaluation.

Part C: Other Considerations

5a. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) is considered a landmark in the local community or contains any structures or sites that are important to defining the character of the area?

Local or Aboriginal knowledge may reveal that the project location is situated on a parcel of land that has potential landmarks or defining structures and sites, for instance:

- buildings or landscape features accessible to the public or readily noticeable and widely known
- complexes of buildings
- monuments
- ruins

5b. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) has a special association with a community, person or historical event?

Local or Aboriginal knowledge may reveal that the project location is situated on a parcel of land that has a special association with a community, person or event of historic interest, for instance:

- Aboriginal sacred site
- traditional-use area
- battlefield
- birthplace of an individual of importance to the community

5c. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) contains or is part of a cultural heritage landscape?

Landscapes (which may include a combination of archaeological resources, built heritage resources and landscape elements) may be of cultural heritage value or interest to a community.

For example, an Aboriginal trail, historic road or rail corridor may have been established as a key transportation or trade route and may have been important to the early settlement of an area. Parks, designed gardens or unique landforms such as waterfalls, rock faces, caverns, or mounds are areas that may have connections to a particular event, group or belief.

For more information on Questions 5.a., 5.b. and 5.c., contact:

- Elders in Aboriginal Communities or community researchers who may have information on potential cultural heritage resources. Please note that Aboriginal traditional knowledge may be considered sensitive.
- municipal heritage committees or local heritage organizations
- Ontario Historical Society's "Heritage Directory" - for a list of historical societies and heritage organizations in the province

An internet search may find helpful resources, including:

- historical maps
- historical walking tours
- municipal heritage management plans
- cultural heritage landscape studies
- municipal cultural plans

Information specific to trails may be obtained through Ontario Trails.

Stage 1 Archaeological Assessment: Enwin Water Tower Environmental Assessment

Part of Lot 15, Concession 7, Geographic Township of Sandwich, former Essex County, now City of Windsor, Ontario

November 21, 2025

Prepared for:
Enwin Utilities Ltd.
4545 Rhodes Drive
Windsor, Ontario N8W 5T1

Prepared by:
Stantec Consulting Ltd.
400-1305 Riverbend Road
London, Ontario N6K 0J5

Licensee: Sarah Henderson, MA
Licensee Number: P394
Project Information Form Number: P394-0142-2025
Project/File: 165620304

ORIGINAL REPORT

Stantec

Limitations and Sign-off

The conclusions in the Report titled Stage 1 Archaeological Assessment: Enwin Water Tower Environmental Assessment are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from Enwin Utilities Ltd. (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided to applicable authorities having jurisdiction and others for whom the Client is responsible, Stantec does not warrant the services to any third party. The report may not be relied upon by any other party without the express written consent of Stantec, which may be withheld at Stantec's discretion.

Reviewed by: Digitally signed by Hoskins, Patrick Date: 2025.11.21 12:21:32 -05'00'

Approved by: Digitally signed by Carmichael, Tracie Date: 2025.11.21 12:41:28 -05'00'

Patrick Hoskins, MA	Tracie Carmichael, BA, B.Ed.
Project Archaeologist	Principal, Practice Leader

Executive Summary

Stantec Consulting Ltd. (Stantec) was retained by Enwin Utilities Ltd. (the Client) to complete a Stage 1 archaeological assessment in advance of a Schedule 'C' Municipal Class Environmental Assessment (Class EA) for the Enwin Water Tower property (the Project). The study area for the Project comprises approximately 0.89 hectares, located on part of Lot 15, Concession 7, Geographic Township of Sandwich, former Essex County, now City of Windsor, Ontario. The Stage 1 archaeological assessment was undertaken in the preliminary planning and design process for the Class EA of the Project under the Ontario *Environmental Assessment Act* (Government of Ontario 1990a).

The Stage 1 archaeological assessment, consisting of background research and a property inspection, was completed under Project Information Form number P394-0142-2025, issued to Sarah Henderson, MA, by the Ministry of Citizenship and Multiculturalism (the MCM). The property inspection was conducted on August 8, 2025, by Darren Kipping, MA (P422).

The Stage 1 archaeological assessment determined that the entire study area retains low to no archaeological potential due to previous disturbance. Thus, in accordance with Section 1.3.2 and Section 7.7.4 of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **Stage 2 archaeological assessment is not required for portions of the study area with low to no archaeological potential.**

Full and detailed recommendations are provided in the body of the report.

The MCM is asked to review the results presented and enter this report into the *Ontario Public Register of Archaeological Reports*.

The Executive Summary highlights key points form the report only; for complete information and findings, the reader should examine the complete report.

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Project Personnel

Licensed Archaeologist	Sarah Henderson, MA (P394)
Project Manager	Hannah Rindlisbacher
Licensed Field Director	Darren Kipping, MA (P422)
Report Writer	Kierra Dickau, M.Sc.
GIS Analyst	Holly Long
Quality Review	Patrick Hoskins, MA (P415)
Independent Review	Tracie Carmichael, BA, B.Ed.

Acknowledgements

Proponent Contact	Christopher Manzon, P.Eng. – Director of Engineering (Water)
Ministry of Citizenship and Multiculturalism	Robert von Bitter – Archaeological Data Coordinator

1 Project Context

1.1 Development Context

Stantec Consulting Ltd. (Stantec) was retained by Enwin Utilities Ltd. (the Client) to complete a Stage 1 archaeological assessment in advance of a Schedule 'C' Municipal Class Environmental Assessment (Class EA) for the Enwin Water Tower property (the Project) (Figure 1). The study area for the Project comprises approximately 0.89 hectares, located on part of Lot 15, Concession 7, Geographic Township of Sandwich, former Essex County, now City of Windsor, Ontario (Figure 2).

The Stage 1 archaeological assessment was undertaken in the preliminary planning and design process for the Class EA of the Project under the Ontario *Environmental Assessment Act* (Government of Ontario 1990a).

1.1.1 Objectives

In compliance with the provincial standards and guidelines set out by the Ministry of Citizenship and Multiculturalism (the MCM) in the 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), the objectives of the Stage 1 archaeological assessment are to:

- Provide information about the study area's geography, history, previous archaeological fieldwork, and current land conditions.
- Evaluate the study area's archaeological potential, which will support recommendations for Stage 2 survey for the property.
- Recommend appropriate strategies for Stage 2 survey.

To meet these objectives, Stantec archaeologists:

- Reviewed relevant archaeological, historical, and environmental literature pertaining to the study area.
- Reviewed the land use history of the study area, including pertinent historical maps.
- Examined the MCM's Ontario Archaeological Sites Database to determine the presence of registered archaeological sites in and around the study area.
- Queried the MCM's Ontario Public Register of Archaeological Reports to identify previous archaeological assessments completed within, and within 50 metres of, the study area.
- Completed a property inspection of the study area by a licensed archaeologist.

Permission to enter the study area was granted by the Client.

1.2 Historical Context

"Contact" is typically used as a chronological benchmark when discussing Indigenous archaeology in Canada and describes the interaction between Indigenous and European nations. There is no definitive moment of contact and the understanding of when Indigenous and European nations first began to influence one another is evolving with new study of archaeological and historical evidence, and from Indigenous oral tradition and history. Contact in what is now the Province of Ontario is broadly assigned to the 16th century (Loewen and Chapdelaine 2016).

1.2.1 Pre-Contact Indigenous Resources

It has been demonstrated that Indigenous people began occupying southern Ontario as the Laurentide glacier receded, as early as 11,000 years ago (Ellis and Ferris 1990:13). Much of what is understood about the lifeways of these Indigenous peoples is derived from archaeological evidence and ethnographic analogy. In Ontario, Indigenous culture prior to the period of contact with European peoples has been distinguished into archaeological periods based on observed changes in material culture. These archaeological periods are largely based on observed changes to formal lithic tools, and separated into the Early Paleo, Late Paleo, Early Archaic, Middle Archaic, Late Archaic, and Terminal Archaic periods. Following the advent of ceramic technology in the Indigenous archaeological record, archaeological periods are separated into the Early Woodland, Middle Woodland, and Late Woodland periods, based primarily on observed changes in formal ceramic decoration. It should be noted that these archaeological periods do not necessarily represent specific cultural identities but are a useful paradigm for understanding changes in Indigenous culture through time. The current understanding of Indigenous archaeological culture is summarized in Table 1, based on Ellis and Ferris (1990). The provided time periods are based on the "Common Era" calendar notation system, i.e., Before Common Era (BCE) and Common Era (CE).

Table 1: Generalized Cultural Chronology for Essex County

Archaeological Period	Characteristics	Time Period	Comments
Early Paleo	Fluted Projectiles	9000 – 8400 BCE	Spruce parkland/caribou hunters
Late Paleo	Hi-Lo Projectiles	8400 – 8000 BCE	Smaller but more numerous sites
Early Archaic	Kirk and Bifurcate Base Points	8000 – 6000 BCE	Slow population growth
Middle Archaic	Brewerton-like Points	6000 – 2500 BCE	Environment similar to present
Late Archaic	Narrow Points	2500 – 1800 BCE	Increasing site size
	Broad Points	1800 – 1500 BCE	Large chipped lithic tools
	Small Points	1500 – 1100 BCE	Introduction of bow hunting
Terminal Archaic	Hind Points	1100 – 950 BCE	Emergence of true cemeteries
Early Woodland	Meadowood Points	950 – 400 BCE	Introduction of pottery
Middle Woodland	Couture Corded Pottery	400 BCE – 500 CE	Increased sedentism
	Riviere au Vase Phase Pottery	500 – 800 CE	Seasonal hunting and gathering

Late Woodland	Younge Phase Pottery	800 – 1200 CE	Incipient agriculture
	Springwells Phase Pottery	1200 – 1400 CE	Agricultural villages
	Wolf Phase Pottery	1400 – 1550 CE	Earth worked villages, warfare

Between 9000 and 8000 BCE, Indigenous populations were sustained by hunting, fishing, and foraging and lived a relatively mobile existence across an extensive geographic territory. Despite these wide territories, social ties were maintained between groups. One method of maintaining social ties was through gift exchange, evident through exotic lithic material documented on many sites (Ellis 2013:35-40).

By approximately 8000 BCE, evidence exists and becomes more common for the production of ground-stone tools such as axes, chisels, and adzes. These tools are believed to be indicative specifically of woodworking. This evidence can be extended to indicate an increase in craft production and arguably craft specialization. This latter statement is also supported by evidence, dating to approximately 7000 BCE of ornately carved stone objects which would be laborious to produce and have explicit aesthetic qualities (Ellis 2013:41). This is indirectly indicative of changes in social organization which permitted individuals to devote time and effort to craft specialization. As described above, since approximately 8000 BCE, the Great Lakes basin experienced a low-water phase, with shorelines significantly below modern lake levels (Stewart 2013: Figure 1.1.C). It is presumed that the majority of human settlements would have been focused along these former shorelines. At approximately 6500 BCE the climate had warmed considerably since the recession of the glaciers and the environment had grown more similar to the present day. By approximately 4500 BCE, evidence exists from southern Ontario for the utilization of native copper, i.e., naturally occurring pure copper metal (Ellis 2013:42). The recorded origin of this material along the north shore of Lake Superior indicates the existence of extensive exchange networks across the Great Lakes basin.

At approximately 3500 BCE, the isostatic rebound of the North American plate following the melt of the Laurentide glacier had reached a point which significantly affected the watershed of the Great Lakes basin. Prior to this, the Upper Great Lakes had drained down the Ottawa Valley via the French-Mattawa River valleys. Following this shift in the watershed, the drainage course of the Great Lakes basin had changed to its present course. This also prompted a significant increase in water-level to approximately modern levels (with a brief high-water period); this change in water levels is believed to have occurred catastrophically (Stewart 2013:28-30). This change in geography coincides with the earliest evidence for cemeteries (Ellis 2013:46). By 2900 to 2500 BCE, the earliest evidence exists for the construction of fishing weirs (Ellis *et al.* 1990: Figure 4.1; Stevens 2004). Construction of these weirs would have required a large amount of communal labour and are indicative of the continued development of social organization and communal identity. The large-scale procurement of food at a single location also has significant implications for permanence of settlement within the landscape. This period is also marked by further population increase and by 1500 BCE evidence exists for substantial permanent structures (Ellis 2013:45-46).

By approximately 950 BCE, the earliest evidence exists for populations using ceramics. Populations are understood to have continued to seasonally exploit natural resources. This advent of ceramic technology correlated, however, with the intensive exploitation of seed foods, such as goosefoot and knotweed, as well as mast, such as nuts (Williamson 2013:48). The use of ceramics implies changes in the social

organization of food storage as well as in the cooking of food and changes in diet. Fish also continued to be an important facet of the economy at this time. Evidence continues to exist for the expansion of social organization (including hierarchy), group identity, ceremonialism (particularly in burial), interregional exchange throughout the Great Lakes basin and beyond, and craft production (Williamson 2013:48-54).

By the Late Woodland period there was a distinctive cultural occupation in southwestern Ontario, including Essex, Kent, and Lambton counties. The primary Late Woodland occupants of this area were populations described by archaeologists as Western Basin Tradition. Murphy and Ferris (1990:189) indicate that these people had ties with populations in southeastern Michigan and northwestern Ohio and represent an *in situ* cultural development from the earlier Middle Woodland groups. The Western Basin Tradition seems to have been centred in the territory comprising the eastern drainage basin of Lake Erie, Lake St. Clair, and the southern end of Lake Huron. The Western Basin Tradition is divided up into four phases based on differences in settlement and subsistence strategies and pottery attributes: Riviere au Vase, Younge, Springwells, and Wolf.

By approximately 550 CE, evidence emergences for the introduction of maize into southern Ontario. This crop would have initially only supplemented Indigenous people's diet and economy (Birch and Williamson 2013:13-14). Maize-based agriculture gradually became more important to societies and by approximately 900 CE permanent communities emerge which are primarily focused on agriculture and the storage of crops, with satellite locations oriented toward the procurement of other resources such as hunting, fishing, and foraging. By approximately 1250 CE, evidence exists for the common cultivation of historical Indigenous cultigens, including maize, beans, squash, sunflower, and tobacco. The extant archaeological record demonstrates many cultural traits similar to historical Indigenous nations (Williamson 2013:55).

1.2.2 Post-Contact Indigenous Resources

At the turn of the 16th century, the study area is documented to have been occupied by the Western Basin Tradition archaeological culture. Following the turn of the 17th century, the region of the study area is understood to have been within the territory of the Fire Nation, an Algonkian group occupying the western end of Lake Erie. It is argued, however, that the *Atawandaron* (Neutral) expanded extensively westward, displacing the Fire Nation (Lennox and Fitzgerald 1990: 418-419). It is debated whether the Fire Nation was descendent from the archaeologically described Western Basin Tradition, or if they migrated into the western part of Lake Erie, displacing a previous Indigenous culture (Murphy and Ferris 1990:193-194). Historians understand that the displaced Fire Nation moved across the St. Clair and Detroit Rivers into what is modern-day lower Michigan, and their populations are synonymous with the later Kickapoo, Miami, Potawatomi, Fox, and Sauk (Heidenreich 1990: Figure 15.1). Bkejwanong (Walpole Island) First Nation oral tradition states that the Three Fires (a political confederacy constituted of the Potawatomi, Ojibwa, and Ottawa) have occupied the delta of the St. Clair River and the surrounding region continually for thousands of years (Walpole Island First Nation [WIFN] no date [n.d.]). In 1649, the Seneca and the Mohawk led a campaign into southern Ontario and dispersed the resident populations, and the Seneca used the lower Great Lakes basin as a prolific hinterland for beaver hunting (Heidenreich 1978; Trigger 1978:345).

By 1690, Ojibwa-speaking people had begun to displace the Seneca from southern Ontario. The Indigenous economy, since the turn of the 18th century, focused on fishing and the fur trade, supplemented by agriculture and hunting (Konrad 1981; Rogers 1978). The study area falls within the traditional territory of the WIFN, the Aamjiwnaang (Sarnia) First Nation (Aamjiwnaang First Nation), the Wiiwkwedong and Aazhoodena (Kettle Point and Stony Point) First Nation (Lytwyn 2009), the Deshkaan Ziibing Anishinaabeg (Chippewas of the Thames First Nation), and Caldwell First Nation. Some populations of Wyandot (an Indigenous population of historically amalgamated Petun and Huron-Wendat individuals) also had moved to the region of Lake St. Clair at the turn of the 18th century and resided with the Three Fires (Tooker 1978:398).

In Essex County, and specifically in the Windsor region, a splinter group of Ottawa settled in the area (CRM Group Limited *et al*. 2005:2-14 to 2-15). The surviving populations of the Huron and Petun were also settling in the Windsor region as the Wyandot, exhibiting continuities with their 16th and 17th century predecessors from the Midland and Blue Mountain regions (Garrad 2014; Steckley 2014). Given the amalgamated nature of the Wyandot people (sometimes one of the contributing Indigenous peoples was recognized over another), the Wyandot were known as Huron in the Windsor region (Garrad 2014:16-54). Therefore, the Wyandot settlement in the Windsor region is commonly referred to as the “Huron Village” and related place names survive in Windsor today, such as Huron Church Road (but also note Wyandotte Street). A 1749 French map of the Detroit River region (Chaussegros de Léry 1752) depicts Ottawa and Huron villages on the waterfront of the Windsor region (Figure 3).

Despite the dispersal and movement of Indigenous groups throughout southern Ontario during the 17th and 18th centuries, archaeologically they can be characterized by continuity with their pre-contact Indigenous counterparts. These peoples still maintained a Late Woodland archaeological culture, albeit with some features of European material culture. While there was cultural and social change occurring due to contact with European colonial powers, there was equally a definite persistence of Indigenous socio-cultural practices since these groups were not so profoundly affected by European contact that they left their former lifeways behind (Ferris 2009).

In the middle of the 18th century, the Chippewa were located on the south shores of Lake Huron, the east shores of Georgian Bay, and on the west end of Lake Ontario. Indigenous peoples and their communities continued to play a large role in the occupation of the study area and its environs. Under British administration in the 19th century, the various Indigenous groups were divided into separate bands. The Anishinaabe included the western Algonquian peoples, among them the Chippewa and the Ottawa. Until the 18th century, the central Algonquian-speaking peoples, including the Potawatomi, were located in the Michigan Peninsula (Blackbird 1887).

Regardless of the differentiation among these groups in Euro-Canadian sources, there was a considerably different view by Indigenous groups concerning their self-identification during the first few centuries of European contact. These peoples relied upon kinship ties that cut across European notions of nation identity (Bohaker 2006:277-283). Many of the British-imposed nation names such as Chippewa, Ottawa, Potawatomi, or Mississauga artificially separated how self-identified Indigenous peoples’ classified themselves; these groups were culturally and socially more alike than contemporary European documentation might indicate (Bohaker 2006:1-8).

Following the American Revolutionary War, Britain (the Crown) focused on the settlement of European immigrants into what became the province of Upper Canada in 1791. To enable widespread settlement, the Crown entered into a series of treaties with Indigenous peoples (Government of Canada n.d.). One of the earliest treaties involving lands located near the study areas was made on May 19, 1790 (Figure 4). Originally identified as the Detroit Treaty, the chiefs of the Ottawa, Chippewa, Potawatomi, and Huron nations and representatives of the Crown established a vast tract of land,

> "…beginning at the mouth of Catfish Creek, commonly called Rivière au Chaudière on the North Side of Lake Erie being the Western extremity of a Tract purchased by His said Majesty from the Messesagey Indians in the year One Thousand Seven Hundred and Eighty Four and from thence running Westward along the border of Lake Erie and up the Streight to the mouth of a river known by the name of Channail Ecarté to the first fork on the south side, then due east line until it intersects the Rivière à la Tranche, and up the said Rivière à la Tranche to the Thousand Seven Hundred and Eighty Four, then following the Western boundary of said tract being a due South direction until it strikes the mouth of said Catfish Creek or otherwise Rivière au Chaudière being the first offset;
>
> Reserving a Tract beginning at the Indian Officers Land at a small run near the head of the Island of Bois Blanc and running upwards along the border of the Streight to the beginning of the French Settlement above the head of the Petite Isle au D'Inde; then a due East line seven miles and then South so many miles as will intersect another East line run from the mouth of said Run or Gully near the head of said Island of Bois Blanc:
>
> And another Tract beginning at the mouth of Rivière au Jarvais commonly called Knagg's Creek, running up along the border of the Streight to the Huron Church and one hundred and twenty arpents in depth…"
>
> (Government of Canada 2025)

Today, this treaty is identified as Treaty Number 2 or the McKee Treaty. A plaque erected by the Historic Sites and Monuments Board of Canada further identifies this treaty as *McKee's Purchase*. A commemorative plaque located in Blenheim Memorial Park in Blenheim, Ontario reads:

> "In May 1790 Alexander McKee, Deputy Agent of the British Indian Department, and the principal chiefs of the Ottawa, Potawatomi, Chippewa and Wyandot negotiated a treaty whereby the British Crown acquired title to what is now southwestern Ontario. This treaty completed the process begun with Niagara treaties of 1781 and 1784, with the result that most of the Ontario peninsula was soon opened to British and Loyalist settlement."
>
> (Government of Canada 2010)

Caldwell First Nation were not part of the negotiations or signing of Treaty Number 2 (McKee's Purchase) and, therefore, were not able to secure rights and benefits from the treaty (Caldwell First Nation 2021). Without a treaty, Caldwell First Nation's traditional territory remained in possession of private and government interests until November 2020, when Caldwell First Nation received land designation from the Crown and established a Reserve for their community (Caldwell First Nation 2021).

In addition to the above, a map from the *History of the Windsor Border Region* (Lajeunesse 1960) depicts several Indigenous sites and trails documented in Essex County during the late 18th century (Figure 5). The study area falls north of Trail A, which is also known as Talbot Road, an early path bisecting the county which is visible on many early survey maps (Lajeunesse 1960: xxxix). The accuracy to which the proximity of the study area can be associated to these trails is marginal, however, even a general association to these trails and sites is significant for the historical importance of the study area's locations within Essex County.

The nature of Indigenous settlement size, population distribution, and material culture shifted as European settlers encroached upon Indigenous territory. However, despite this shift,

> "written accounts of material life and livelihood, the correlation of historically recorded villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity to…systems of ideology and thought."
>
> (Ferris 2009:114)

As a result, Indigenous peoples have left behind archaeological resources throughout the region which show continuity with past peoples, even if they have not been explicitly recorded in Euro-Canadian documentation.

1.2.3 Euro-Canadian Resources

In 1791, the Provinces of Upper Canada and Lower Canada were created from the former Province of Quebec by an act of British Parliament. At this time, Colonel John Graves Simcoe was appointed as the Lieutenant Governor of Upper Canada and was tasked with governing the new province, directing its settlement, and establishing a constitutional government modelled after that of Britain. In 1792, Simcoe divided Upper Canada into 19 counties consisting of previously settled lands, new lands opened for settlement and lands not yet acquired by the Crown. These new counties stretched from Essex in the west to Glengarry in the east.

The first French settlers arrived in the Detroit-Windsor area in 1701 when the Sieur De Lamothe Cadillac and roughly 100 military and civilian personnel established Fort Pontchartrain on the Detroit side of the Detroit River (Fuller 1972:6-8). The French settlement remained on the Detroit side until 1748 when the Jesuit mission to the Huron (or Wyandot) was established on the south shore near the foot of the present-day Huron Church Road and the Ambassador Bridge. Fort Pontchartrain surrendered to the British in 1760 and remained under British control until 1796, although it was officially a part of the United States from 1783 onwards. During this period, the settlement continued to grow but remained predominantly French. The area across the river (now in present-day Windsor) from Fort Pontchartrain (later to become Detroit) was called "Petite côte" and served the agricultural needs of the fort (Archives of Ontario 2014). The street pattern of the City of Windsor still reflects the French method of agricultural land division; for example, the long narrow parcels fronting the river where the "Petite côte" was located (Morrison 1954:3-4). In 1796, the original townsite of Sandwich was established to accommodate new immigrants of both French and British origin from the United States who wished to remain under British rule following

American occupation of Detroit. This constituted the first urban settlement in what is now the City of Windsor and the first significant migration of English-speaking people into the Windsor area (Neal 1909:86-87).

Essex County was originally part of the District of Hesse, which in 1792 was renamed the Western District. On January 1, 1800, in the *Act for the Better Division of the Province*, the townships of Rochester, Mersea, Gosfield, Maidstone, Sandwich, and Malden were created as part of the County of Essex. The townships of Essex County were surveyed by Patrick McNiff, Abraham Iredell, and Thomas Smith (Clarke 2010).

As the area began to attract more Euro-Canadian interest, Patrick McNiff was assigned to survey and organize the area into a township, also to be named Sandwich. His survey of the township was completed in 1793. The form of the concessions noted as “Petite côte” was dictated by the land divisions already used by the French farmers in the “Petite côte” area, in what was to become Concession 1 Petite Côte. In fact, on his original township map where he measured the Concession 1 lots, Patrick McNiff notes that “on my measuring the farms in front from No. 1 to No. 154 found their division Lines to run in the very irregular manner they appear on the Plan” (McNiff 1956). Thomas Ridout, Surveyor General, alongside James Grant Chewett the Deputy Surveyor General, completed a survey of the township further inland from the concessions labeled as “Petite côte” (Ridout 1826). The study area for this project falls within the land surveyed by Ridout and Chewett. No landowner is indicated on Lot 15, Concession 7, nor are their many landowners indicated in the surrounding area as settlement of the township had not yet extended this far inland (Figure 6) (Ridout 1826).

By the mid-1850s, the community of Windsor became more established and grew large enough to compete with the adjacent community of Sandwich for important industrial development. For example, the Great Western Railway chose Windsor over Sandwich as its termination point in 1854. The arrival of the railway also allowed for the foundation of Walkerville, the third oldest settlement that is now part of the City of Windsor. In 1857, Hiram Walker established his distillery in the downtown area of Windsor where the Great Western Railway first met the waterfront (Morrison 1954:26).

1.2.3.1 19th Century Settlement

In 1858, both Windsor and Sandwich were incorporated as towns (Morrison 1954:42). In 1861, the Township of Sandwich was subdivided into the Townships of Sandwich West, Sandwich East, and Sandwich South (Neal 1909:12). However, many landowners are not listed within the more urban portions of both the1877 *Map of Essex County, Ontario* (Figure 7 illustrates a portion of the 1877 map as it relates to the study area) or the 1881 *Map of Sandwich Township* (Figure 8 illustrates a portion of the 1881 map is it relates to the study area) (Walling 1877; Belden & Co. 1881). Table 2 outlines the listed landowners on each of the two maps according to their respective study areas. The Little River is not identified on the 1877 map, but is identified on the 1881 map, however the course of the river is significantly different in modern mapping due to constructed embankments which altered the original course. The Essex County historical atlas of 1881 documents a total population of 36,258 for Essex County at that time (Belden & Co. 1881:8). Of the total population, 25,303 settlers lived in rural settings, while 10,955 lived in urban settings (Belden & Co. 1881:8).

Table 2: Landowners Illustrated on Historical Mapping of Sandwich Township

Concession	Lot	1877 Map Landowner	Structures	1881 Map Landowner	Structures
7	15	Joseph Langlois	Homestead	None listed	None listed

Other than historical roadways and the occasional homestead, no structures are indicated within the immediate vicinity of the study area. Hotels, churches, mills, and schoolhouses, as well as the Great Western Railway line, are identified on both historical maps.

In discussing 18th and 19th century historical mapping it must be remembered that many historical county atlases were produced primarily to identify factories, offices, residences, and landholdings of subscribers and were funded by subscription fees. Landowners who did not subscribe were not always listed on the maps (Caston 1997:100), as is the case with the 1881 Belden & Co. mapping. As such, structures were not necessarily depicted or placed accurately (Gentilcore and Head 1984). Further, review of historical mapping has inherent accuracy difficulties due to potential error in georeferencing. Georeferencing is conducted by assigning spatial coordinates to fixed locations and using these points to spatially reference the remainder of the map. Due to changes in “fixed” locations over time (e.g., road intersections, road alignments, shorelines, etc.), errors/difficulties of scale and the relative idealism of the historical cartography, historical maps may not translate accurately into real space points. This may provide obvious inconsistencies during historical map review.

1.2.3.2 Aerial Imagery

Aerial imagery from as early as 1954 depicts a shift in the surrounding landscape from a predominately agricultural community with defined city limits, to an expansive and highly populated city with agricultural lands still remaining along the outskirts (Figure 9). The 1954 photo shows a predominately agricultural landscape south of Highway 2 and east of Highway 98 (Walker Road) (University of Toronto 2025). Portions of the City of Windsor can be seen extending along the major transportation routes. The Pere Marquette Railway is labeled running from downtown Windsor south along the eastern edge of the study area. The Ontario portion of the Pere Marquette Railway, a Michigan based company, was constructed from Windsor to St. Thomas in the early 20th century and therefore does not appear on historical mapping (St. Thomas Public Library 2018, Keefe 2020). The study area appears to still be agricultural land, however with the railway cutting it off from the remainder of the lot and leaving such a small portion between the rail line and the 7th Concession, it is likely that it succumbed to scrubland. By 2004, industrial and commercial construction has covered the majority of the landscape west of the 7th Concession and along Walker Road (Google 2025). The study area can be seen as superficially disturbed as it appears to be a gravel or dirt lot, with non-permanent fixtures such as transport trucks and shipping containers. The 2005 aerial photo shows a similar environment however there are significantly more transport trucks and other structures visible within the study area (Google 2025). Additionally, the property immediately south of the study area appears to have been superficially disturbed as well, though no permanent structures are visible. By 2016, use of the dirt lot within the study area seems to have diminished though there are still a transport trucks parked within the lot (Google 2025). All lands west of the 7th Concession are now part of a shopping center and other commercial structures. The lot immediately south of the study area

which had been previously superficially disturbed had since been abandoned and left to naturalize. The railway is visible throughout all aerial photographs and is still currently an active rail line.

1.2.3.3 Heritage Properties

A query of the City of Windsor's Municipal Heritage Register found no heritage properties within 300 metres of the study area (City of Windsor 2024).

1.3 Archaeological Context

1.3.1 The Natural Environment

The study areas are situated in the St. Clair Clay Plains physiographic region, as identified by Chapman and Putnam (1984). This region is described as:

> Adjoining Lake St. Clair in Essex and Kent County Counties and the St. Clair River in Lambton County are extensive clay plains covering 2,270 square miles. The region is one of little relief, lying between 575 and 700 feet a.s.l. [175 to 213 metres above sea level], except for the moraine at Ridgetown and Blenheim which rises 50 to 500 feet higher [15 to 175 metres]… Glacial Lake Whittlesey, which deeply covered all of these lands, and Lake Warren which subsequently covered nearly the whole area, failed to leave deep stratified beds of sediment on the underlying clay till except around Chatham, between Blenheim and the Rondeau marshes, and in a few other smaller areas. Most of Lambton and Essex Counties, therefore, are essentially till plains smoothed by shallow deposits of lacustrine clay which settled in the depressions while the knolls were being lowered by wave action.
>
> (Chapman and Putnam 1984:147)

Potable water is the single most important resource for any extended human occupation or settlement and since water sources in southwestern Ontario have remained relatively stable over time, proximity to drinkable water is regarded as a useful index for the evaluation of archaeological site potential. In fact, distance to water is one of the most used variables for predictive modeling of archaeological site location in Ontario. The closest water source appears to be a tributary of the Little River approximately 460 metres to the north, however this tributary follows roadways which likely means the watercourse had been altered to follow manmade drainage ditches within the right-of-way's (ROWs) of the municipal roads. The main branch of the Little River lies 3.3 kilometres to the east of the study area.

The Little River flows into the Detroit River approximately 9.5 kilometres north-northeast of the study area as it empties from the base of Lake St. Clair. However, a portion of the Detroit River is located eight kilometres to the northwest of the study area. Use of the Detroit River has evolved over time from being a transportation route used by early Indigenous inhabitants and Euro-Canadian explorers and settlers, to an industrial power source to support the early mills of the area, to a commercial shipping route, and finally to a water course used for recreational purposes throughout the 20th and 21st centuries.

Soils within the study area are Brookston Clay loam (Richards *et al.* 1949). Brookston clay loam is an almost level soil with poor natural drainage, and few stoney inclusions. Generally, the soil is satisfactory for forage crops such as alfalfa or clovers. Artificial drainage allows for cash crops, especially beans and grains to be grown with greater success.

1.3.2 Registered Archaeological Sites and Surveys

In Canada, archaeological sites are registered within the Borden system, a national grid system designed by Charles Borden in 1952 (Borden 1952). The grid covers the entire surface area of Canada and is divided into major units containing an area that is two degrees in latitude by four degrees in longitude. Major units are designated by uppercase letters. Each major unit is subdivided into 288 basic unit areas, each containing an area of 10 minutes in latitude by 10 minutes in longitude. The width of basic units reduces due to the earth's curvature as one moves north. In southern Ontario, each basic unit measures approximately 13.5 kilometres east-west by 18.5 kilometres north-south. In northern Ontario, adjacent to Hudson Bay, each basic unit measures approximately 10.2 kilometres east-west by 18.5 kilometres north-south. Basic units are designated by lowercase letters. Individual sites are assigned a unique, sequential number as they are registered (Borden 1952). The MCM issues these sequential numbers and maintains the *Ontario Archaeological Sites Database*. The study area is located within Borden block AbHr.

Information concerning specific site locations is protected by provincial policy and is not fully subject to the *Freedom of Information and Protection of Privacy Act* (Government of Ontario 1990b). The release of such information in the past has led to looting or various forms of illegally conducted site destruction. Confidentiality extends to media capable of conveying location, including maps, drawings, or textual descriptions of a site location. The MCM will provide information concerning site location to the party or an agent of the party holding title to a property or a licensed archaeologist with relevant cultural resource management interests.

An examination of the MCM's *Ontario Archaeological Sites Database* identified two registered archaeological sites within one kilometre of the study area, no registered archaeological sites were identified within 50 metres of the study area (Government of Ontario 2025a). The sites are summarized in Table 3.

Table 3: Registered Archaeological Sites within One Kilometre of the Study Area

Borden Number	Site Name	Cultural Affiliation	Site Type
AbHr-59	None listed	Middle Woodland	Findspot
AbHr-56	None listed	Early Archaic, Post-Contact	Scatter

A query of the *Ontario Public Register of Archaeological Reports* identified two previous archaeological survey within 50 metres of the study area, summarized in Table 4 and described below (Government of Ontario 2025b).

Table 4: Archaeological Reports within 50 metres of the Study Area

Company	Report Title	Project Information Form (PIF) number	Year
Cultural Resource Management (CRM) Group Ltd.	*Stage 1: Archaeological Assessment Report Sandwich South Master Servicing Report East Pelton Secondary Plan Parts of Lots 13 to 16, Concession 7 Geographic Township of Sandwich East City of Windsor, County of Essex, Ontario*	P109-0104-2019	2019
CRM Group Ltd.	*Stage 2 Property Assessment: Riverbend Heights, Part of Lots 15 and 16, Concession 7 Geographic Township of Sandwich East, City of Windsor County of Essex, Ontario*	P109-0107-2020	2020

In 2019, CRM Group Ltd. completed a Stage 1 archaeological assessment on behalf of Dillon Consulting Ltd. in support of a proposed residential, commercial, and institutional development, the East Pelton Secondary Plan (CRM Group Ltd. 2019). Background research determined that a significant portion of the Stage 1 study area had been previously assessed, but those assessments recommended that much of the area retained archaeological potential and were recommended for Stage 2 assessment. Therefore, with the exception of the footprints of existing structures, the entire study area was recommended for Stage 2 archaeological assessment (CRM Group Ltd. 2019). This project does not overlap with the study area for the current report.

In 2020, CRM Group Ltd. completed a Stage 2 archaeological assessment of a portion of the study area defined by the above 2019 assessment (CRM Group Ltd. 2020). This assessment was completed on behalf of Riverbend Heights as part of the East Pelton Secondary Plan and included a 48.3-hectare parcel along the 7th Concession. One indigenous artifact, an Early Archaic Brewerton point, was identified during pedestrian survey (CRM Group Ltd. 2020). The findspot was assigned Borden number AbHr-56 and was recommended for Stage 3 archaeological assessment. The remainder of the study area was not cleared for development until after the Stage 3 assessment is completed. The archaeological site falls within one kilometre of the current study area. This project does not overlap with the study area for the current report.

1.3.3 City of Windsor Archaeological Management Plan

The City of Windsor's *Archaeological Master Plan Study Report* (CRM Group Limited *et al*. 2024) discusses the City of Windsor's general archaeological context. As of 2005, outlined in the first iteration of the Archaeological Management Plan (AMP), archaeologists had registered 23 archaeological sites within the city limits or within the immediate vicinity (CRM Group Limited *et al*. 2005). That number as increased since the publishing of the 2005 AMP, but the new statistic is not listed in the 2024 AMP. Additionally, the authors of the archaeological management plan recognize that several poorly documented sites exist and there are many sites still to be documented, especially since the majority of the archaeological studies discussed in the archaeological management plan maps are concentrated along the Detroit River or in southwest Windsor (CRM Group Limited *et al*. 2005:3-1 to 3-23). Based on mapping in the updated archaeological management plan, the study area falls into an area designated as having archaeological

potential, as with most of the land immediately east of the 7th Concession (CRM Group Limited *et al*. 2024: Figure 3).

1.4 Existing Conditions

The study area for the Project consists of approximately 0.89 hectares located on part of Lot 15, Concession 7, Geographic Township of Sandwich, former Essex County, now City of Windsor, Ontario. The study area is an overgrown, disturbed dirt and gravel lot, with scrubland around the perimeter, within the ROW and banks of the railway.

2 Field Methods

Prior to the start of the Stage 1 archaeological assessment, the Client provided Stantec with a map of the study area for the Class EA of the Project. The mapping from the Client was geo-referenced by Stantec's Geographical Information Systems (GIS) team and a digital file (i.e., a shape file) was created of the study area. The digital file of the study area was uploaded to ArcGIS Field Maps powered by ESRI, customized by Stantec for archaeological survey and assessment, for digital data recording in the field. Data was recorded in the field on a handheld mobile device paired with a Trimble R1 Global Navigation Satellite System (GNSS) receiver to an accuracy of less than one metre.

Initial background research compiled information concerning registered and/or potential archaeological resources within the study area. A property inspection was conducted on August 8th, 2025, by Darren Kipping, MA (P422) under Project Information Form number P394-0142-2025, issued to Sarah Henderson, MA, by the MCM. The property inspection involved spot-checking the entirety of the study area to identify the presence or absence of features of archaeological potential in accordance with Section 1.2 of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

During the Stage 1 assessment the weather was warm and sunny, and the field, weather, and lighting conditions were suitable for the identification and recovery of archaeological resources. At no time were field, lighting, or weather conditions detrimental to the identification of features of archaeological potential. The photography from the Stage 1 archaeological assessment is presented in Section 7.1 and confirms that the requirements for a Stage 1 archaeological assessment were met, as per Section 1.2 and Section 7.7.2 Standard 1 of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Figure 10 illustrates photo locations from the Stage 1 archaeological assessment of the study area.

The property inspection identified packed gravel and asphalt that had been overgrown (Photos 1 to 8). The entire study area (100%) has been identified as previously disturbed.

3 Analysis and Conclusions

Archaeological potential is established by determining the likelihood that archaeological resources may be present within a study area. Stantec applied archaeological potential criteria commonly used by the MCM (Government of Ontario 2011) to determine areas of archaeological potential within the study area. These variables include proximity to previously identified archaeological sites, distance to various types of water sources, soil texture and drainage, glacial geomorphology, elevated topography, and the general topographic variability of the area. However, it is worth noting that extensive land disturbance can eradicate archaeological potential (Government of Ontario 2011).

Potable water is the single most important resource for any extended human occupation or settlement and since water sources in Ontario have remained relatively stable over time, proximity to drinkable water is regarded as a useful index for the evaluation of archaeological site potential. In fact, distance to modern water is one of the most used variables for predictive modeling of archaeological site locations. Distance to modern or ancient water sources is generally accepted as the most important determinant past human settlement patterns and considered alone, may result in a determination of archaeological potential. However, any combination of two or more other criteria, such as well-drained soils or topographic variability, may also indicate archaeological potential.

As discussed above, distance to water is an essential factor in archaeological potential modeling. When evaluating distance to water it is important to distinguish between water and shoreline, as well as natural and artificial water sources, as these features affect site location and type to varying degrees. The MCM categorizes water sources in the following manner:

- Primary water sources: lakes, rivers, streams, and creeks.
- Secondary water sources: intermittent streams and creeks, springs, marshes, and swamps.
- Past water sources: glacial lake shorelines, relic river or stream channels, cobble beaches, and shorelines of drained lakes or marshes.
- Accessible or inaccessible shorelines: high bluffs, swamp or marshy lake edges, and sandbars stretching into marsh.

As stated in Section 1.3.1, the closest water source appears to be a tributary of the Little River approximately 460 metres to the north, however this tributary follows roadways which likely means the watercourse had been altered to follow manmade drainage ditches within the right-of-way's (ROWs) of the municipal roads. The main branch of the Little River lies 3.3 kilometres to the east of the study area. Ancient and/or relic tributaries of other primary and secondary water sources may have existed but are not identifiable today and are not indicated on historical mapping.

Soil texture can also be an important determinant of past settlement, usually in combination of other factors such as topography. As stated previously, Brookston Clay loam would have been satisfactory for early agriculture but would benefit greatly from artificial drainage infrastructure.

A review of the MCM's *Ontario Archaeological Sites Database* identified two registered archaeological sites within one kilometre of the study area (Government of Ontario 2025a).

Archaeological potential can also be extended to areas of early Euro-Canadian settlement, including places of military or pioneer settlements; early transportation routes; and properties listed on the municipal register or designated under the *Ontario Heritage Act* (Government of Ontario 1990c) or property that local histories or informants have identified with possible historical events, activities, or occupations. No heritage properties or early settlements are within the study area, however Essex County has been occupied as early as the 18th century by Euro-Canadian immigrants. The 1877 Map of Essex County illustrates a fully settled Sandwich Township including the rapidly spreading city limits of Windsor and multiple railways and historic roadways (Walling 1877). By 1881, several villages had been established further inland from the Detroit River to support a continuous growing population (Belden 1881).

Aerial imagery from 2004, 2005, and 2016 show the study area undergoing extensive disturbance through use as a lot for storage containers and transport trucks. Gravel and asphalt were placed in order to support the heavy equipment. Following the abandonment of the property, it was left to be overgrown.

The Stage 1 property inspection determined that the entire study area has been subject to previous disturbance, supported by aerial photography which illustrates that the property had turned into a gravel and asphalt lot by at least the early 2000's. Remaining portions of an asphalt laneway and expanses of gravel beneath the overgrowth can be in the photo documentation from the property inspection.

4 Recommendations

The Stage 1 archaeological assessment determined that the entire study area retains low to no archaeological potential due to previous disturbance. Thus, in accordance with Section 1.3.2 and Section 7.7.4 of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **Stage 2 archaeological assessment is not required for any portions of the study area (Figure 10).**

The MCM is asked to review the results presented and to accept this report into the *Ontario Public Register of Archaeological Reports*.

5 Advice on Compliance with Legislation

In accordance with Section 7.5.9 of the MCM's 2011 Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011)*, the following standard statements are a required component of archaeological reporting and are provided from the MCM's 2011 Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

This report is submitted to the Minister of Citizenship and Multiculturalism as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c. O.18 (Government of Ontario 1990c). The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Citizenship and Multiculturalism, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* (Government of Ontario 1990c) for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the *Ontario Public Register of Archaeological Reports* referred to in Section 65.1 of the *Ontario Heritage Act* (Government of Ontario 1990c).

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990c). The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990c).

The *Funeral, Burial and Cremation Services Act,* 2002, S.O. 2002, c.33 (Government of Ontario 2002), requires that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Public and Business Delivery Services and Procurement.

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7 Images

7.1 Photos

Photo 1: Previously disturbed gravel lot, facing south



Photo 2: Previously disturbed gravel lot, facing south-southeast



Photo 3: Previously disturbed, evidence of asphalt, facing southeast



Photo 4: Previously disturbed gravel lot, facing west



Photo 5: Previously disturbed gravel lot, facing northeast



Photo 6: Previously disturbed gravel lot, facing north



Photo 7: Previously disturbed gravel and asphalt lot, facing northwest



Photo 8: Previously disturbed gravel and asphalt lot, facing north-northeast



Photo 9: Previously disturbed gravel lot with residence, facing southeast

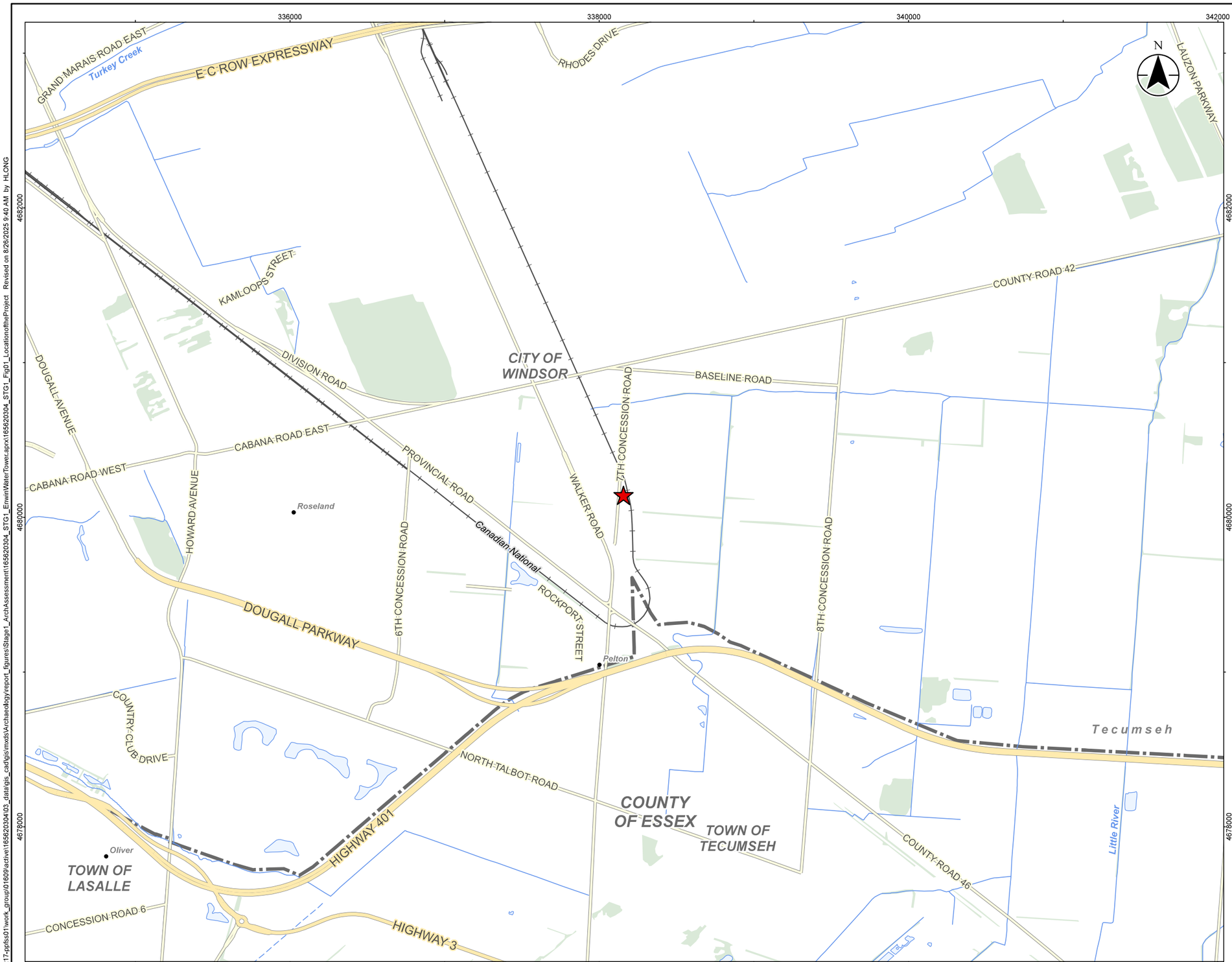


Photo 10: Previously disturbed gravel laneway, facing east



8 Maps

Maps of the study area for the Stage 1 archaeological assessment follow on succeeding pages.



Stantec

Legend

- Project Location
- Expressway / Highway
- Major Road
- Railway
- Watercourse (Intermittent)
- Watercourse (Permanent)
- Municipal Boundary - Lower Tier
- Municipal Boundary - Upper Tier
- Waterbody
- Wooded Area

0 0.5 1 km

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Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Contains information licensed under the Open Government Licence – Ontario, and the Open Government Licence - Canada, accessed 2025.



Project Location
Windsor, Ontario

165620304 REVA
Prepared by HLONG on 2025-09-15
Technical Review by BC on 2025-08-22

Client/Project
ENWIN UTILITIES LTD.
STAGE 1 ARCHAEOLOGICAL ASSESSMENT: ENWIN WATER TOWER ENVIRONMENTAL ASSESSMENT

Figure No.
1

Title
Location of the Project

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Stantec

Legend

- Study Area
- Constructed Drain
- Railway

0 25 50 m

1:1,500 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Contains information licensed under the Open Government Licence – Ontario, and the Open Government Licence - Canada, accessed 2025.
3. Orthoimagery provided by Maxar, Microsoft.



Project Location
Windsor, Ontario

165620304 REVA
Prepared by HLONG on 2025-09-23
Technical Review by BC on 2025-08-22

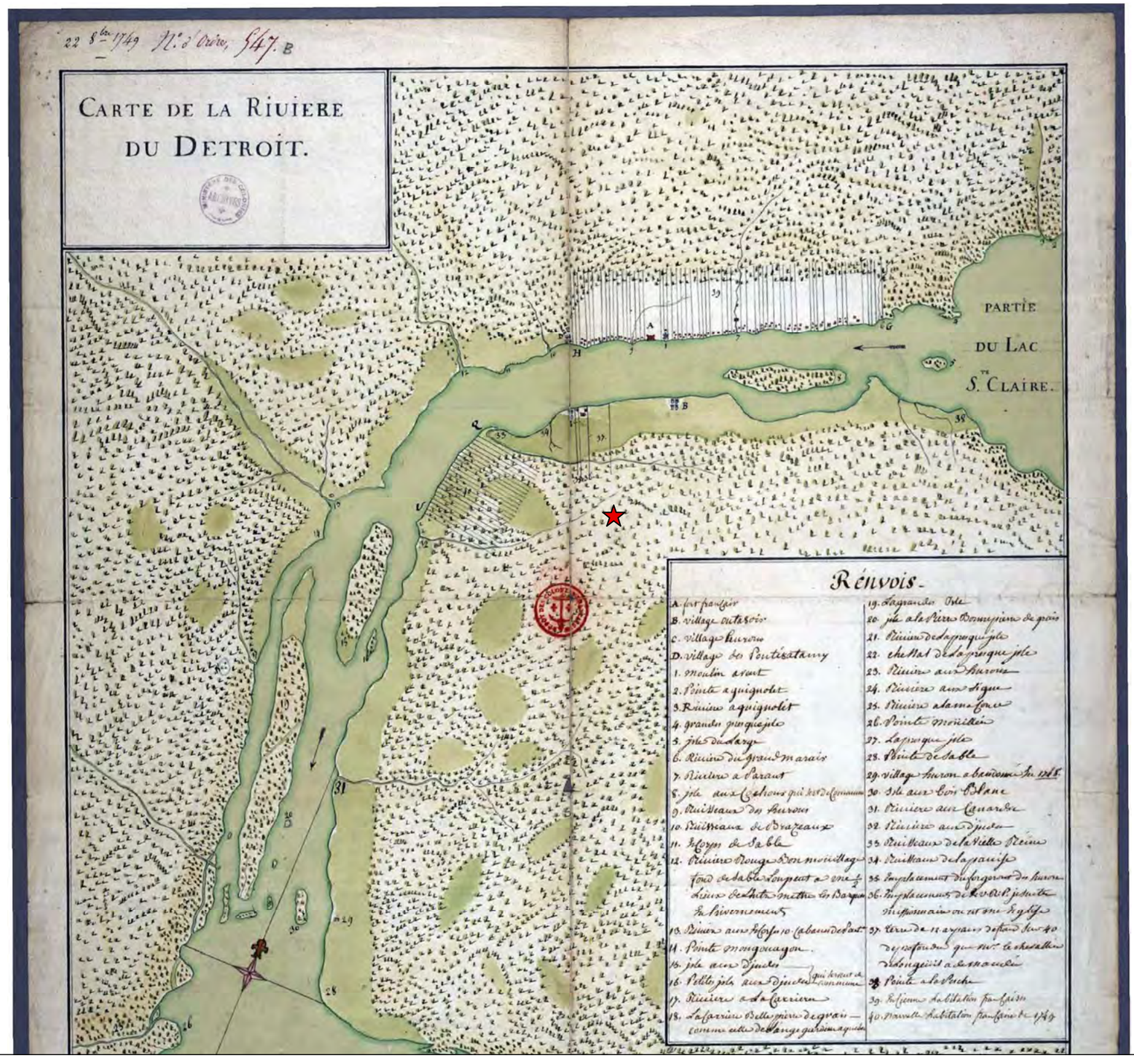
Client/Project
ENWIN UTILITIES LTD.
STAGE 1 ARCHAEOLOGICAL ASSESSMENT: ENWIN WATER TOWER ENVIRONMENTAL ASSESSMENT

Figure No.
2

Title
Location of the Study Area

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Stantec

Legend

Project Location - Approximate

Figure Not to Scale

Notes

1. Reference: Chaussegros de Lery, Gaspar-Joseph, 1752, Carte de La Riviere du Detroit depuis de le Lac Erie jusques au Lac S. Claire, Department of Marine, Paris.



Project Location
Windsor, Ontario

165620304 REVA
Prepared by HLONG on 2025-09-15
Technical Review by BC on 2025-08-22

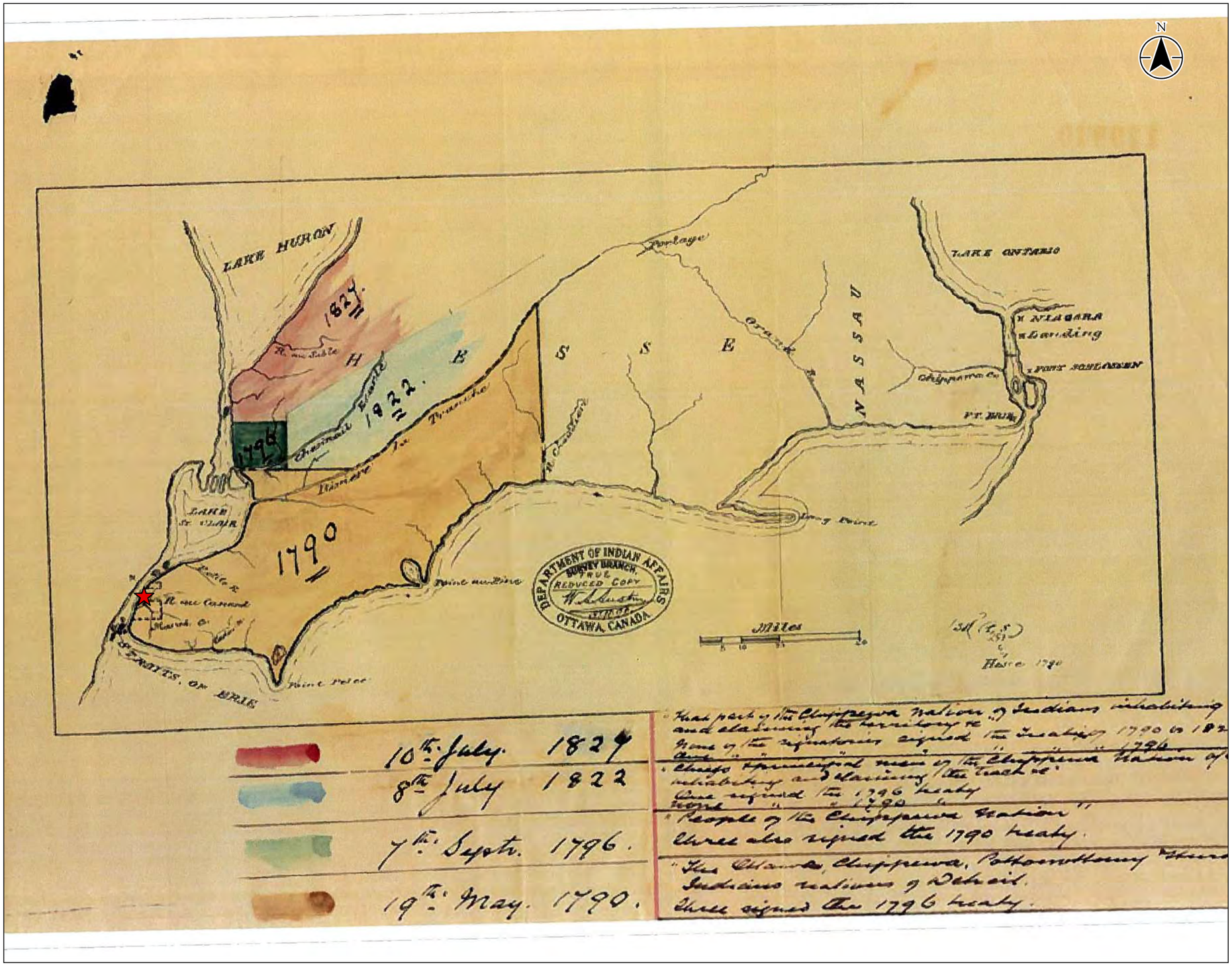
Client/Project
ENWIN UTILITIES LTD.
STAGE 1 ARCHAEOLOGICAL ASSESSMENT: ENWIN WATER TOWER ENVIRONMENTAL ASSESSMENT

Figure No.
3

Title
Portion of the 1749 Map of the Detroit River

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Stantec

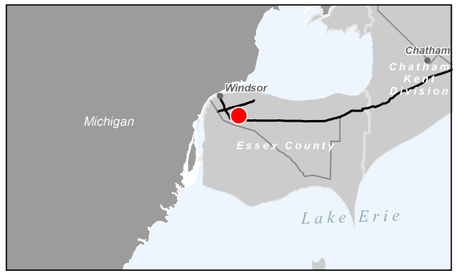
Legend

★ Project Location - Approximate

Figure Not to Scale

Notes

1. Reference: Government of Canada, n.d.a. Map of Treaty Areas in Upper Canada, Ottawa: Department of Indian Affairs, Survey Branch.



Project Location Windsor, Ontario	165620304 REVA Prepared by HLONG on 2025-09-15 Technical Review by BC on 2025-08-22

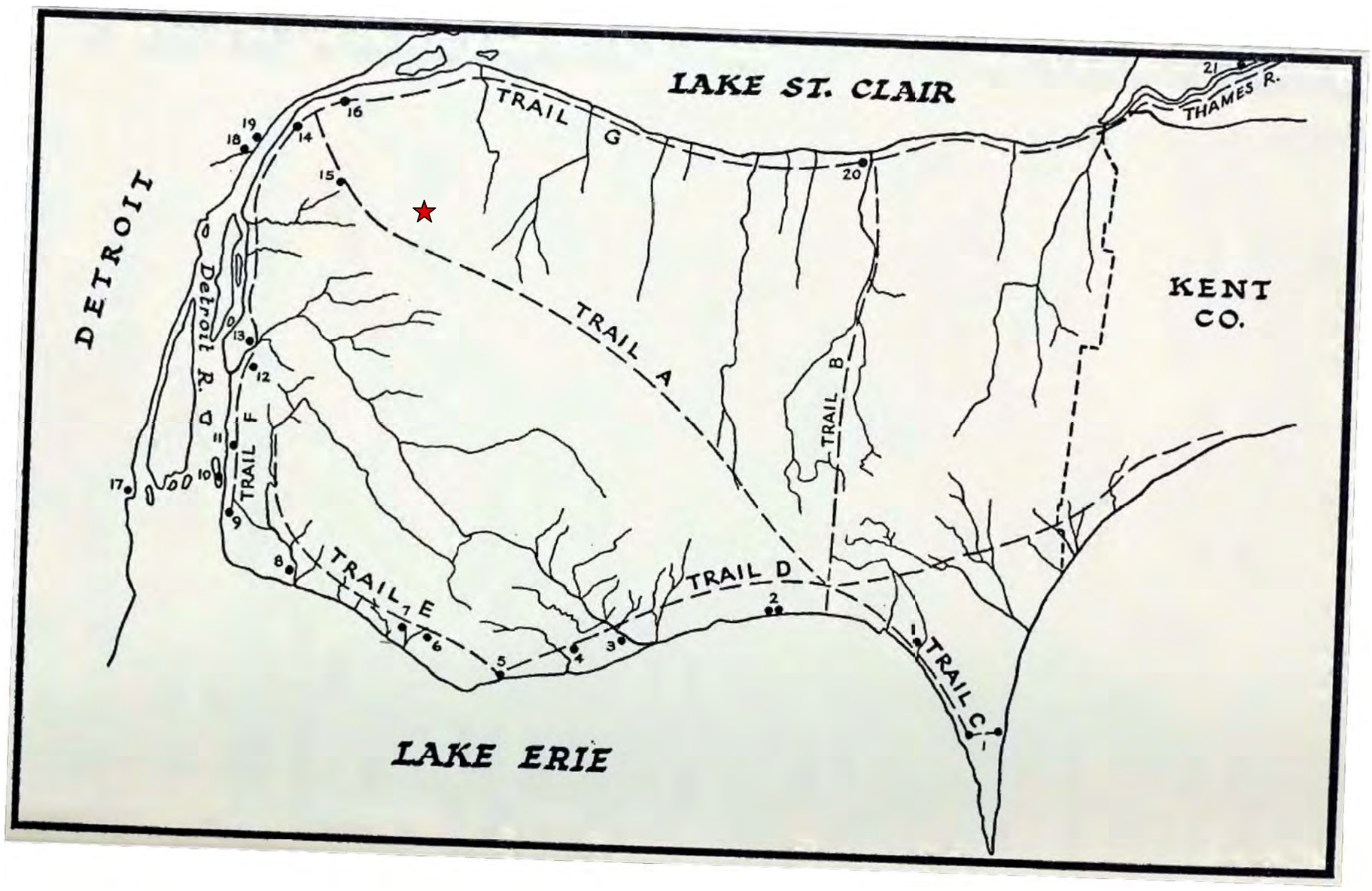
Client/Project
ENWIN UTILITIES LTD.
STAGE 1 ARCHAEOLOGICAL ASSESSMENT: ENWIN WATER TOWER ENVIRONMENTAL ASSESSMENT

Figure No.
4

Title
Map of Treaty Areas of Upper Canada

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N

Stantec

Legend

★ Project Location - Approximate

Indigenous Places Found in Essex County and Vicinity

1. Village, cornfields, and portage, Point Pelee (plan by Iredell 1799)
2. Two Indigenous entrenchments, Gosfield Township (plan by McNiff 1794)
3. Village on Cedar Creek, entrenched, Gosfield Township
4. Village, Colchester, South Township
5. Indigenous encampment, Colchester Township (McNiff 1794)
6. Village and mound, Daniel Wright farm, Colchester Township
7. Several mounds, Colchester Township
8. Village, Big Creek (plan by Iredell 1796)
9. Former village of the Hurons abandoned in 1748 (map by Chaussegros de Léry, fils, 1749)
10. Camping site used by all tribes, Bois Blanc Island
11. Village above Fort Malden (McNiff's map of 1790)
12. Huron village, Anderdon Township (McNiff 1790)
13. Cornfields, Anderdon Township (McNiff 1790)
14. Huron village, Huron Church Line
15. Burial mound, Huron Church Line and Third Concession, Sandwich West Township (excavated by W.J. Wintemberg for National Museum of Canada 1936)
16. Ottawa village and cemetery, Louis Avenue, Windsor (Chaussegros de Léry 1754)
17. Huron village, Brownstowe, Wayne County, Michigan
18. The great mound at the mouth of the Rouge River, Wayne County, Michigan
19. Circular mound and several smaller mounds at old Fort Wayne
20. Indigenous village, Ruscom River, Rochester Township (plan by Col. Burwell 1823)
21. Chippewa town reported by Major E.B. Littlehales in 1793

Indigenous Trails and Paths

- **A.** Talbot Road, through the county from beyond Wheatley to Sandwich (shown on McNiff's map of 1791)
- **B.** From Lake Erie to Lake St. Clair, following the Ruscum River (Burwell's map 1823)
- **C.** From Point Pelee to Talbot Road
- **D.** Lake Erie trail connecting shoreline settlements
- **E.** From Lake Erie shoreline to Amherstburg area
- **F.** River shore path, now Highway 18
- **G.** River and lake shoreline to the Thames River and eastward, followed by Governor Simcoe in 1793

Figure Not to Scale

Notes

1. Reference: Lajeunesse, Ernest J. 1960. The Windsor Border Region: Canada's Southernmost Frontier. The Champlain Society. Toronto: University of Toronto Press.



Project Location
Windsor, Ontario

165620304 REVA
Prepared by HLONG on 2025-09-15
Technical Review by BC on 2025-08-22

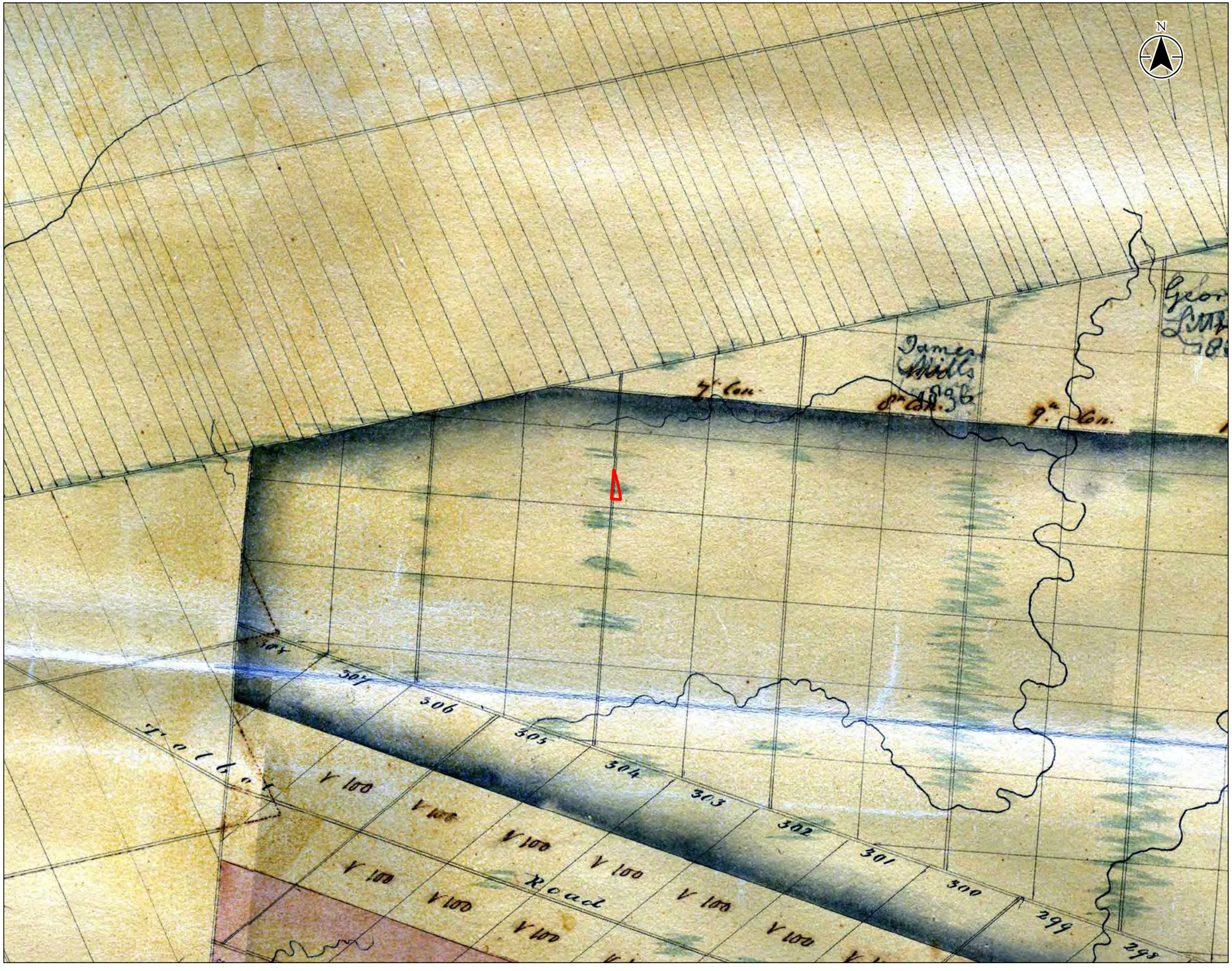
Client/Project
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STAGE 1 ARCHAEOLOGICAL ASSESSMENT: ENWIN WATER TOWER ENVIRONMENTAL ASSESSMENT

Figure No.
5

Title
Documented Indigenous Activity in Essex County

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Stantec

Legend

Study Area - Approximate

Figure Not to Scale

Notes

1. Reference: Ridout, Thomas, 1826, *Plan of the Township of Sandwich, County of Essex – F 501-1-0-0-32*. Surveyor General's Office, York. Map on file with the Elgin County Archives, part of the Archives of Ontario.



Project Location
Windsor, Ontario

165620304 REVA
Prepared by HLONG on 2025-09-23
Technical Review by BC on 2025-08-22

Client/Project
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STAGE 1 ARCHAEOLOGICAL ASSESSMENT: ENWIN WATER TOWER ENVIRONMENTAL ASSESSMENT

Figure No.
6

Title
Portion of the 1826 Plan of a Portion of Sandwich Township

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Stantec

Legend

Study Area - Approximate

Figure Not to Scale

Notes

1. Reference: Walling, H.F. 1877. Map of Essex County, Ontario, R.M. Tackabury.

Project Location Windsor, Ontario	165620304 REVA Prepared by HLONG on 2025-09-23 Technical Review by BC on 2025-08-22

Client/Project

ENWIN UTILITIES LTD.
STAGE 1 ARCHAEOLOGICAL ASSESSMENT: ENWIN WATER TOWER ENVIRONMENTAL ASSESSMENT

Figure No.

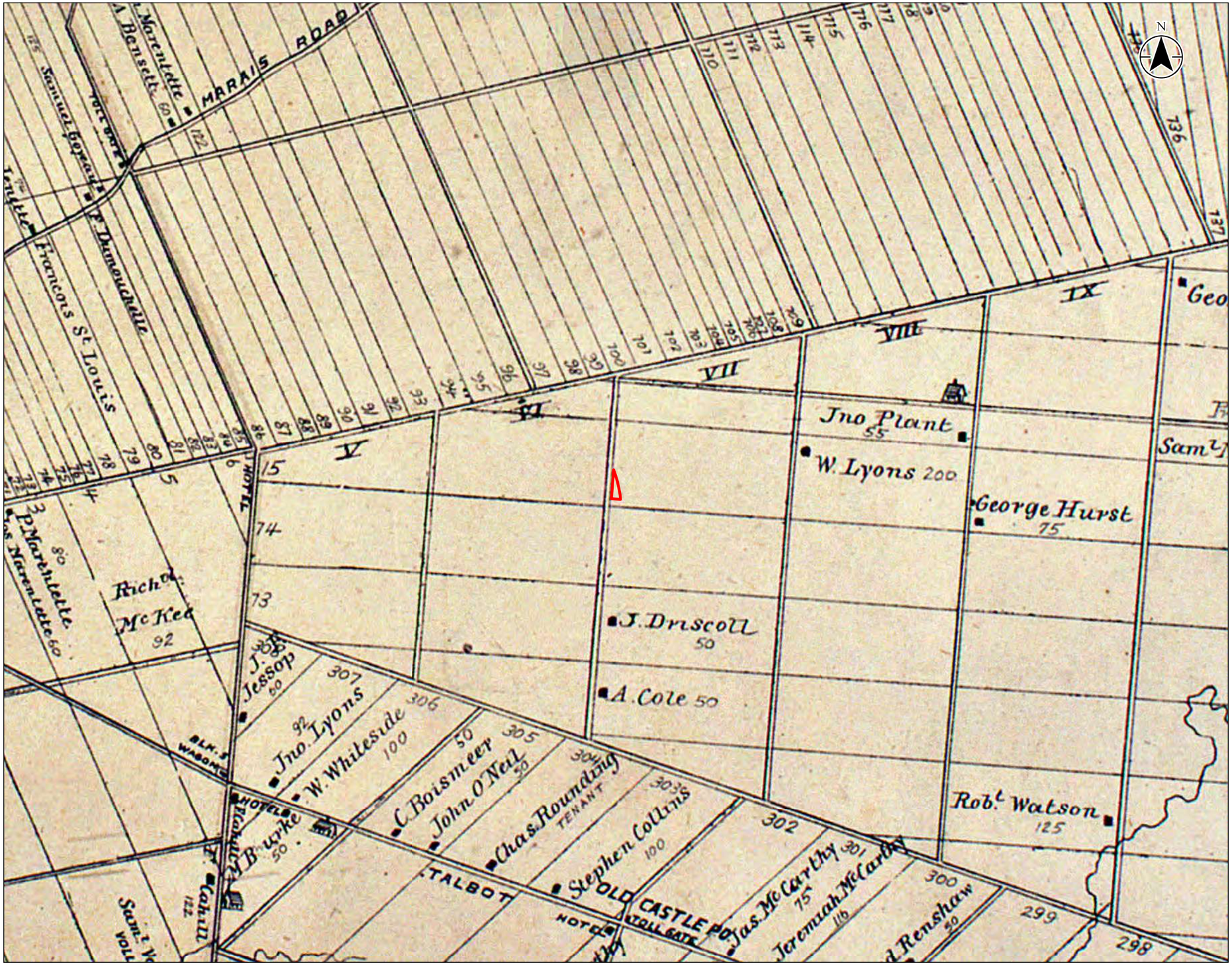
7

Title

Portion of the 1877 Map of Essex County

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Stantec

Legend

Study Area - Approximate

Figure Not to Scale

Notes

1. Reference: Belden, H. and Co. 1881. Essex Supplement in Illustrated Historical Atlas of the Dominion of Canada. Toronto: Belden and Co.



Project Location
Windsor, Ontario

165620304 REVA
Prepared by HLONG on 2025-09-23
Technical Review by BC on 2025-08-22

Client/Project
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STAGE 1 ARCHAEOLOGICAL ASSESSMENT: ENWIN WATER TOWER ENVIRONMENTAL ASSESSMENT

Figure No.
8

Title
Portion of the 1881 Map of Sandwich Township

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Stantec

Legend

Study Area - Approximate

Figure Not to Scale

Notes

1. Reference: University of Toronto, 2025, 1954 Air Photos of Southern Ontario, Plate 423824, Accessed electronically: https://mdl.library.utoronto.ca/collections/air-photos/1954-air-photos-southern-ontario/index Last accessed: August 21, 2025.
Google. 2025. Google Earth Imagery. Digital platform, version 7.3.6.9345. Google LLC 2022. Last accessed August 22, 2025.



Project Location
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165620304 REVA
Prepared by HLONG on 2025-09-23
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Figure No.
9

Title
Aerial Imagery of Study Area

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Stantec

Legend

- Study Area
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required
- Archaeology Photo Log
- Railway
- Constructed Drain

0 25 50 m

1:1,250 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Contains information licensed under the Open Government Licence – Ontario, and the Open Government Licence - Canada, accessed 2025.
3. Orthoimagery provided by Maxar, Microsoft.



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Figure No.
10

Title
Stage 1 Archaeological Assessment Results

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9 Closure

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential archaeological resources associated with the identified property.

All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report and are based solely on the scope of work described in the report, the limited data available and the results of the work. The conclusions are based on the conditions encountered by Stantec at the time the work was performed. Due to the nature of archaeological assessment, which consists of systematic sampling, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire property.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities, or claims, howsoever arising, from third party use of this report. We trust this report meets your current requirements. Please do not hesitate to contact us should you require further information or have additional questions about any facet of this report.

PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

4450 7TH CONCESSION ROAD, WINDSOR, ONTARIO

Prepared For:

Enwin Utilities Ltd.
4545 Rhodes Drive, Windsor, ON, N8W 5T1
t +1.519.251.7300

Project Number:

2501G038.1000

Prepared By:

Sertas Group Limited
4510 Rhodes Drive, Windsor, ON N8W 5K5
t +1.519.822.3442

Date Submitted:

September 7, 2025

Distribution List

Enwin Utilities Ltd. – 1 copy (electronic)
Sertas Group Limited – 1 copy

Revision History

Date	Rev. No.	Description	Prepared By	Approved By
September 7, 2025	0	First Submission	Paige Sarafin	Clay Sereres

Signature Page

Prepared By	Approved By
	
Paige Sarafin, MSc., EPt Senior Environmental Specialist *E: paige.sarafin@sertas.ca* *M: 519.981.2724*	**Clayton Sereres, P.Geo., ENV SP** Director – Environmental *E: clay.sereres@sertas.ca* *M: 519.563.9118*

I Clayton Sereres, P.Geo., QP_{ESA}, by the signature provided above, certify that I carried out the Phase One ESA and concur with the findings, conceptual site model and conclusions of the report. Paige Sarafin helped prepare this Phase One ESA under the supervision of Clayton Sereres, P.Geo., Qualified Person for ESAs (QP_{ESA}) as defined by O. Reg. 153/04

This report has been prepared specifically for **Enwin Utilities Ltd.,** the authorized user. Third parties using this plan or making decisions based on it do so at their own risk.

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Executive Summary

Sertas Group Limited ("Sertas") was retained by Enwin Utilities Ltd. (Client) to conduct a Phase One Environmental Site Assessment (ESA) of 4450 7th Concession Road in Windsor, Ontario (the Phase One Property, hereinafter also referred to as the Site).

This investigation has been undertaken as part of due diligence for the potential sale of the Site and is anticipated to also serve in lieu of an Assessment of Past Uses (APU) for future excess soil removal activities. A change from the current land use of commercial to community (utility infrastructure) would be acceptable, therefore, at this time, the filing of a Record of Site Condition (RSC) in accordance with Ontario Regulation 153/04 (O. Reg. 153/04) under the Environmental Protection Act, Part XV.1 – Records of Site Condition, is not being pursued.

The Site consists of two (2) adjoining commercial parcels: Parcel A (4450 Concession 7) and Parcel B (no municipal address assigned), both legally described as portions of Part W 1/2 Lot 15, Concession 7, Sandwich East, City of Windsor.

Together the Site forms a triangular shaped parcel consisting of grassed areas and what appears to be compacted fill with gravel and areas with remnants of concrete, or asphalt. An entrance is located along the western boundary. There is evidence that a building may have previously existed on-site, as small footings and concrete blocks were observed in certain areas. There was a 1960 domestic well record noted within the southwest corner of the Site; however, there was no visual observation of this well during the Site reconnaissance on July 24, 2025.

The Phase One ESA was completed in general accordance with the requirements of O.Reg. 153/04 Record of Site Condition, with the exception of interviews, as no response was received from the Site owner to the email questionnaire at the time of the investigation however this was not deemed necessary to meet the objectives of this Phase One or impede the investigation. The assessment was also carried out in accordance with the Terms of Reference outlined in the Sertas–Enwin Purchase Order, signed July 2025.

Based on a review of information from the records review, the first developed use of the Site was prior to 1947 for mixed agricultural and residential use.

The Phase One ESA identified Potentially Contaminating Activities (PCAs) at the Site and within the Phase One Study Area, specifically:

- 3 PCAs on the Phase One Property contributing to 3 APECs
- 5 PCAs from the Phase One Study Area contributing to 2 APECs
- 2 PCAs were determined not to contribute to APECs within the Phase One Study Area due to factors such as their location being transgradient to the Site, their distance from the Site, or their lack of environmental significance.

Based on the findings of this Phase One, the APECs are as follow:

APEC	Location of APEC	PCA	COPC	Media Potentially Impacted
APEC 1 Storage of Vehicles	Entire Project Area	52. Storage, maintenance, fueling and repair of equipment, vehicles, and material used to maintain transportation systems	Metals, As, Sb, Se, Hg, EC, SAR, pH, PAHs, PHCs, VOCs	Soil & Groundwater
APEC 2 Importation of Fill	Entire Project Area	30. Importation of Fill of Unknown Quality and Quantity	Metals, As, Sb, Se, Hg, EC, SAR, pH, PAHs, PHCs, BTEXs	Soil
APEC 3 Waste Generator	Southern Portion of Site	Other. Waste Generator - crankcase oils and lubricants	Metals, As, Sb, Se, Hg, EC, SAR, pH, BTEX, PHCs	Soil & Groundwater
APEC 4 Railway Tracks	Eastern Property Boundary	46. Rail Yards, Tracks and Spurs	Metals, As, Sb, Se, Hg, EC, SAR, pH, PHCs, VOCs, PAHs, PCBs	Soil & Groundwater
APEC 5 Westerly PCAs	Western Property Boundary	Other. Contractor Yard 49. Salvage Yard, including automobile wrecking Other. Cooking Oil Spill 10. Commercial Autobody Shops	Metals, As, Sb, Se, Hg, EC, SAR, pH, PHCs VOCs	Soil & Groundwater

Based on the findings of the Phase One ESA, APECs have been identified at the Site, therefore, a Phase Two ESA would be required prior to filing a RSC. However, given that this assessment was conducted for due diligence purposes and to develop a preliminary understanding of Site conditions for excess soil planning purposes, it is recommended that a Phase II ESA still be completed but in accordance with CSA Standard Z769 to further assess soil and groundwater conditions at the Site.

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Appendix B – ERIS Report
Appendix C – Correspondence with Regulators
Appendix D – Aerial Photographs
Appendix E – Site Reconnaissance Photos
Appendix F – Table of Current and Past Uses and Chain of Title
Appendix G – Table of Potentially Contaminating Activities
Appendix H – Table of Areas of Potential Environmental Concern

1. INTRODUCTION

Sertas Group Limited ("Sertas") was retained by Enwin Utilities Ltd. (Client) to conduct a Phase One Environmental Site Assessment (ESA) of 4450 7th Concession Road in Windsor, Ontario (the Phase One Property, hereinafter also referred to as the Site).

This investigation has been undertaken as part of due diligence for the potential sale of the Site and is anticipated to also serve in lieu of an Assessment of Past Uses (APU) for future excess soil removal activities. A change from the current land use of commercial to community (utility infrastructure) would be acceptable, therefore, at this time, filing a Record of Site Condition (RSC) in accordance with Ontario Regulation 153/04 under the Environmental Protection Act, Part XV.1 – Records of Site Condition, is not being pursued.

1.1 Phase One Property Information

The Site is triangular shaped parcel consisting of topsoil, approximately two-thirds of the Site is covered with fill with gravel, and areas with remnants of concrete, or asphalt. An entrance is located along the western boundary. There is evidence that a building may have previously existed on-site, as small footings and concrete blocks were observed in certain areas. Located in the southeast corner of the Site is a residential trailer with a small area for parking and a garden.

Details about the location and identification of the Phase One Property, as well as the party who authorized this study, are presented in the table below. Figure 1 illustrates the Site's location, while Figure 2 shows its general layout at the time of the site reconnaissance.

Table 1-1 Phase One Property Information

	4450 Concession 7 (Parcel A)				Address N/A (Parcel B)	
Legal description	Part W1/2 Lot 15 Con 7 Sandwich East as in R1364716, S/T R1364716 Partially Released by CE1211889 Subject to an Easement as in R1262227 City of Windsor				Pt W 1/2 Lt 15 Con 7 Sandwich East as in R1295865; Windsor	
Paracel Identification Number	015600064				015600065	
Assessment Roll Number	373907016003700				373907016003800	
Municipal Address	4450 Concession 7				No Municipal Address	
Site Area	1.945 acres				0.247 acres	
Current Land Use	Commercial Use					
Proposed Land Use	Community Use					
UTM (NAD 83)	Zone:	17	Easting:	338,157	Northing:	4,680,138
Name of Current Owner	2463154 Ontario Inc.					
Current Occupants	Vacant except for a small residential trailer					
Current Zoning	M1.1					

1.2 Plan of Survey

A legal survey was not provided at this time; however, one is not considered necessary for the purposes of this investigation, which has been completed primarily for due diligence. The absence of a survey is not anticipated to impact the findings or conclusions of this assessment.

2. SCOPE OF WORK

The Phase One ESA was completed in accordance with the requirements of Ontario Regulation 153/04, under the Environmental Protection Act, and followed the scope of work outlined in Schedule D – Phase One Environmental Site Assessments. The purpose of the investigation was to evaluate the environmental condition of the subject property through a review of historical and current information, on-site observations, and supporting interviews.

The scope of work included the following components:

Records Review: A review of available historical and current environmental information pertaining to the site and surrounding area was conducted in accordance with Schedule D of O. Reg. 153/04. This included a review of aerial photographs, city and business directories, topographic maps, fire insurance plans (FIPs), previous environmental reports, and any relevant public records.

Regulatory Data Search: An environmental database report (EcoLog ERIS) was obtained for the site and surrounding 250 m radius. The report was reviewed for listings related to spills, waste disposal, underground/ aboveground storage tanks, PCB storage, and other potentially contaminating activities (PCAs). Where applicable, publicly accessible environmental records from provincial and municipal agencies were also reviewed to identify any environmental compliance issues or concerns.

Interviews: Efforts to contact past owners or occupants were made where feasible in accordance with Schedule D requirements. No response was received from the Site owner to the email questionnaire at the time of the investigation; however, this was not deemed necessary to meet the objectives of this Phase One or to impede the investigation.

Site Reconnaissance: A visual reconnaissance of the property and accessible surrounding lands was conducted by Sertas staff to identify any actual or potential environmental concerns, as required by O. Reg. 153/04. Observations included site surface conditions, any evidence of fill, staining, odours, storage areas, infrastructure, and potential off-site sources of impact.

Evaluation and Interpretation: The information gathered from the records review, regulatory data, interviews, and site reconnaissance was evaluated and interpreted by the Qualified Person (QP). The evaluation included identification of potentially contaminating activities (PCAs) and associated areas of potential environmental concern (APECs), and the development of a Conceptual Site Model (CSM), as outlined in Schedule D of the regulation. Any uncertainties in the available data were also addressed in the interpretation.

Reporting: A report was prepared in accordance with Schedule D of O. Reg. 153/04, documenting the following:

- A table of current and past uses of the Phase One Property
- A list of identified PCAs and associated APECs
- A Conceptual Site Model (CSM), including text and figures

- Conclusions regarding the environmental condition of the site
- Recommendations, if warranted, based on the findings

2.1 Qualified Person

The Phase One ESA was supervised by Clayton Sereres of Sertas Group, located at 4510 Rhodes Drive Unit 210, Windsor, Ontario. Mr. Sereres is a registered member of the Professional Geoscientists of Ontario under the Professional Geoscientists Act, 2000, has relevant experience overseeing environmental site assessments, and holds a valid certificate of registration. As such, he meets the requirements to be considered a Qualified Person for the purposes of conducting or supervising environmental site assessments in Ontario, in accordance with Section 5 of O. Reg. 153/04.

3. REVIEW OF RECORDS

Sertas obtained and reviewed records related to the Site and surrounding properties within the Phase One Study Area, in accordance with Schedule D (Phase One Environmental Site Assessments) of O. Reg. 153/04.

3.1.1 Phase One Study Area Determination

To define the Phase One Study Area, Sertas completed a preliminary records review to identify any factors that might justify expanding the study area beyond the minimum boundary required by O. Reg. 153/04.

No potential environmental concerns were identified during the preliminary review that would warrant an expansion of the Phase One Study Area. Therefore, the Phase One Study Area was defined to include all properties located wholly or partially within a 250-metre radius of the Site boundary, as required.

The extent of the Phase One Study Area is illustrated in Figure 2. Distances are measured from the nearest point of the Site boundary to the boundary of the property or feature in question and are approximate.

3.1.2 First Developed Use

Based on a review of information from the records review, the first developed use of the Site was prior to 1947 for mixed agricultural and residential use.

3.1.3 Chain of Title

A historical chain of title search was ordered by Sertas for both Parcels and can be viewed in Appendix F. A summary of chain of title information supplemented by other historical records is further described in Section 6.1.

3.1.4 Fire Insurance Plans

Fire Insurance Plans (FIPs) were reviewed from the Windsor Public Library Municipal Archives for the Site and the Phase One Study Area; however, no FIPs were available due to the historically rural nature of the area.

3.1.5 City Directories

City Directories were obtained from the City of Windsor Library for the Site and surrounding properties located within 250 m of the Site between 1960 and 2024.

The following PCAs were identified within the Phase One Study Area based on the city directory review. All other PCAs were located more than 150 m from the Site and are considered to be either down gradient, trans gradient, or sufficiently distant such that they pose a low risk to the Site. Accordingly, they are not summarized below.

Table 3-1 City Directory Summary

Address	Year(s)	Business Name	Type / Use
4340 Walker Rd	2012 - 2024	Petro-Canada	Gas Station / Fuel
4380 Walker Rd	2012 - 2024	Mr. Lube	Automobile Lubrication Service
4450 7th Concession Rd	2012 - 2017	East Side Auto Recycling WRHSE	Auto Recycling / Salvage
4405 7th Concession Rd	2017	J J Infrastructure Inc.	General Contractor

3.1.6 Previous Environmental Reports

No previous investigation reports were provided to Sertas by the Client.

3.2 Environmental Source Information

3.2.1 Other Government and Regulatory Documentation

Provincial and Federal environmental source information was evaluated though a review of available documents published by the Ministry of the Environment, Conservation and Parks (MECP); requests for information submitted to Technical Standards and Safety Authority (TSSA) made under the Freedom of Information (FOI) Act; and searches of provincial on-line registries and databases. The findings of the provincial and federal records review are summarized in the table below.

Table 3-2 Regulatory Database Information

MECP Environmental Site Registry	Link: Access Environment (gov.on.ca)
• Accessed: July 22, 2025 • Based on the ERIS database report and regulatory database search, no Environmental Compliance Approvals or Record of Site Conditions were found for the Site. • One (1) ECA was identified within the study area: ○ Costco Wholesale Canada Ltd., located at 4411 Walker Road South, for industrial sewage works (Approval No. 2038-7WBP6S).	
Technical Standards and Safety Authority (TSSA)	**Link: NA**
• Request sent: July 22, 2025 • A request was made to the TSSA for information regarding fuel storage at the site and adjacent properties within the study area. Based on a response obtained from the TSSA no fuels record were at the subject addresses.	
Federal Contaminated Sites Inventory	**Link: Geocortex Essentials**
• Accessed: July 22, 2025 • No federal contaminated sites are found within 250 m of the Site	
National Pollutant Release Inventory	**Link: National Pollutant Release Inventory Map - Canada.ca**
• Accessed: July 22, 2025 • No NPRI sites are located within 250 m of the Site.	

Copies of records and/or correspondence associated with the above-noted regulatory searches are provided in Appendix C.

3.2.2 Environmental Risk Information Services (ERIS)

Environmental information for the Phase One ESA Study Area was gathered from municipal, provincial, and federal sources. In addition, Sertas retained Environmental Risk Information Services (ERIS) to provide a comprehensive database report, which includes all records outlined in paragraph 7 of subsection 3(2) of O. Reg. 153/04. Some overlap may exist where Sertas independently searched the same databases.

ERIS is a national provider of site-specific environmental, and property use data, compiling records from government and private sources to identify potential environmental liabilities on and around a property.

A complete ERIS database report (25071700027) was obtained for the Site and is included in Appendix B.

ERIS Database Records Summary:

- ERIS Database Records within the Site: 1 listing
- ERIS Database Records within a 300 m radius: 129 listings

All database listings located more than 150 m from the Site were reviewed. However, they were considered to pose a low risk to the site, either due to their distance, down-gradient or trans-gradient location, or the low-risk nature of the activity. As such, they were not identified as PCAs and are not summarized below. In cases where a record located beyond 150 m is included in the summary, it was due to its potential relevance based on the type of activity, inferred migration pathway, or proximity to sensitive receptors.

The following PCAs were identified at the Site and within the Study Area based on the ERIS report review:

- At 4450 7th Concession Road, the Site was identified in 2019 as a registered waste generator for crankcase oils and lubricants.
- To the west of the Site (no municipal address), a domestic water supply well was installed in 1960. South of the Site, within adjacent agricultural land, a livestock/domestic water supply well was installed in 1959.
- At 4405 7th Concession Road, currently occupied by SKZ Landscaping Inc., the property was listed as an operator of pesticides, although no specific year or date range was provided; five related records were identified.
- At 4380 Walker Road, Mr. Lube has operated as a retail service station, offering oil changes and lubrication services since 2010.

- At 4450 Walker Road, the property was formerly occupied by East Side Auto Recycling Warehouse, which operated as an automobile wrecking and recycling yard from approximately 1971 into the 1990s. Later, the same address was occupied by Swiss Chalet, where a reported spill occurred in 2010 involving 800 litres of cooking oil released to ground due to a leaking container.

3.4 Physical Setting

3.4.1 Aerial Photographs

Aerial photographs of the Site and the Phase One Study Area were obtained and reviewed to evaluate the general development history of the property and its surroundings. The images included:

- 1947, 1952, 1985 and 1990 from the ERIS Historical Aerials.
- 2000, 2005, 2010, 2015, 2019, and 2024 from Essex Regional Conservation Authority (ERCA).

These photographs were examined to identify potential changes in land use and development patterns. While aerial imagery offers valuable historical insight, it does not capture continuous development; therefore, features of interest may have appeared or disappeared between available images. Additional aerial photographs from the 1960s, 1970s, 1980s, were ordered by Sertas, however they were still pending prior to completing this report. Based on the due diligence nature and supplemental historical records reviewed, Sertas doesn't believe the additional aerials will change the outcome of the report. Should significant findings from the three aerials become identified, Sertas will notify the Client and amend the current report. A review interval of approximately 10 years, based on availability and image resolution, was considered sufficient to characterize changes over time. In some instances, the scale of certain photographs limited detailed interpretation of on-site and nearby property use.

All aerial photographs reviewed are provided in Appendix D, and a summary of notable findings related to past or present uses and PCAs is presented below.

Table 3-3 Aerial Photographs

Date	Description
1947	• The Site appears to consist of undeveloped agricultural land, potentially associated with the adjacent property to the south. The land shows signs of tilling, with a line of trees observed along the western boundary. The most southern area appears to have a house and driveway. • The surrounding Study Area is primarily composed of undeveloped agricultural land, with areas of moderate tree coverage, a few scattered dwellings, and a railway track located to the east.
1952	• No significant changes were observed.
1985	• No significant changes were observed to the Site. • To the north of the Site is a densely wooded area, with agricultural land located further north.

	• To the east, the land is primarily undeveloped and used for agricultural purposes. • To the south, the area is also agricultural with the exception of one (1) structure. • To the west, the surrounding land remains undeveloped and agricultural in nature. • To the southwest, there is a large, triangular-shaped salvage yard. Further southwest, across the west side of Walker Road, is a drive-in movie theatre.
1990	• The Study Area has experienced a slight increase in development. Three (3) rectangular-shaped buildings were constructed to the west, which appear similar to current-day structures and are inferred to be used for storage. Additionally, a large property was developed to the southeast, likely corresponding to the current church. All other surrounding properties remain in a similar configuration to the previous year.
2000	• The Site contains truck trailers with the northern 2/3rd of the Site and the southern portion has a dwelling, grassed area, paved driveway and various items scattered/ stored across the property. • The north adjacent property has been cleared; further north, a dwelling is present, and some areas appear to be under construction. • To the east, the land remains in agricultural use. • To the south, the land is largely undeveloped agricultural area, although the adjacent church now includes a large parking lot. • To the southwest, the salvage yard appears slightly reduced in size compared to previous imagery. • Further to the southwest, on the west side of Walker Road, a large commercial plaza has been developed. • To the west, a commercial/industrial business is present with extensive outdoor storage, similar in configuration to present-day conditions.
2005	• The site has some truck trailer storage in the central portion. • To the south, construction activity is ongoing. • The southwest portion of the Study Area has been developed with a commercial plaza and gas station. • Further to the west and northwest, the area has been developed into large commercial properties with extensive parking lots.
2010	• No significant changes were observed from the previous year.
2015	• No significant changes were observed from the previous year.
2019	• Truck trailer storage is present along the eastern length of the Site.
2024	• The Site is vacant commercial land. • With the exception of a heavy equipment operator training facility to the northeast, no significant changes were observed from the previous year.

3.4.2 Geological and Hydrogeologic Characteristics

The general topography, hydrology, and geology of the Site and surrounding area were assessed based on a review of available background information and data, as referenced.

Table 3-4 Topography, Hydrology and Geology

Feature	Details
Approximate Elevation	190 - 192 metres above sea level (m.a.s.l.).
Site Topography	Relatively Flat
Native Surficial Deposits	Glaciolacustrine Silty Clay deposits – overlain by thin, discontinuous sand and gravel deposits
Bedrock	Dundee Formation composed of Limestone, Dolostone and Shale
Depth to Bedrock	62 - 63 metres based on historical well records
Nearest Water Body	The 7th Street Drain is located on the west and east side of 7th Concession Road. The Detroit River is located approximately 8.40 km north of the Site.
Inferred Direction of Regional Groundwater Flow	West towards the 7th Concession Road.
Surface Runoff	Surface water is directed to the drains along the roadway.

The ERIS Database report in Appendix B includes a topographic map (Ontario Base Map) covering the Site and Study Area.

3.4.3 Water Bodies and Areas of Natural Significance

Sertas conducted a review of available background information to determine whether any areas of natural significance, as defined under O. Reg. 153/04, are located on or within 30 metres of the Phase One Property. This review considered available mapping, land use designations, and environmental databases to identify features such as water bodies, Provincially Significant Wetlands (PSWs), Areas of Natural and Scientific Interest (ANSIs), and other designated natural features within or adjacent to the Phase One ESA Study Area. Relevant municipal and provincial planning documents were also consulted as part of this assessment.

A summary of findings from these sources is presented in the table below.

Table 3-5 Summary of Areas of Natural Significance

Feature	Present	Details
Is the Site located within 30 m of a water body	Yes	Drains were observed on both the east and west side of 7th Concession Road and east adjacent to the Site.
Is the Site located within 30 m of an Area of Natural Significance	No	NA
Is the Site located in whole or in part within a well head protection area or other designation for the protection of groundwater.	No	NA
Is the Site located Provincial Park/ Conservation Area	No	NA
MNFR Provincially Significant ANSI	No	NA

Significant Woodland	No	NA
Significant Wetland	No	NA

Based on the information review completed for the Site it is not within an area of natural significance and therefore would not be considered a sensitive site under O. Reg. 153/04.

3.4.4 Well Records

Based on a review of information and records from the preceding sections the following well records summary is provided:

- Located within the Site: 1 record of a domestic well installed in 1960 within the southwest corner of the Site. Depth at which water found was 210' and kind of water was noted to be sulphur. Note: there was no visual observation of this well during the Site reconnaissance.
- Located within the Study Area: 11 records with 16 listings.
    - One (1) for farming purposes
    - One (1) for domestic
    - Five (5) abandoned, and
    - The remainder for observation monitoring purposes.

4. INTERVIEWS

Interviews were attempted to be conducted by Sertas staff with individuals identified as having the most knowledge of the Site's current and historical use to support the identification of PCAs, potential contaminating migration pathways, and APECs. However, at the time of this investigation, Tim Ondejko, Broker at Royal LePage, had forwarded the inquiry and email questionnaire to the seller's agent; however, no response has been received to date. Should a response be provided that alters the findings of this investigation, the report will be amended accordingly.

5. SITE RECONNAISSANCE

Sertas conducted a site reconnaissance, to assess and evaluate both current and past uses, as well as any PCAs, on or under the Site. This assessment also extended, as far as practicable, to current and past uses and PCAs within the Phase One Study Area that could have impacted, or are currently affecting, the environmental condition of the Site.

Table 5-1 Site Reconnaissance Details

Date	July 24, 2025
Time	9:00 – 9:30 am
Weather Conditions	Sunny, 28 degrees Celsius
Sertas Representative	Paige Sarafin, MSc., EPt
QP_{ESA}	Under the supervision of Clayton Sereres

Key observations made during the site reconnaissance are summarized in the following subsections. Photographs of the Site and selected adjacent properties in the Phase One Study Area can be found in Appendix E.

5.1 Specific Observations at the Phase One ESA Property

Observation of Site conditions were made during the reconnaissance and are summarized below. Phae One Study Area conditions are mentioned where relevant.

5.1.1 Description of Interior Site Building Features

A small rectangular trailer was present on-site at the time of this investigation. No interior observations were made regarding its use or condition. It appears to be associated with residential activity and is not considered to impact the findings of this investigation.

5.1.2 Description of Exterior Site Features

The Site is comprised of grassed areas and what appears to be compacted gravel fill. Beneath the topsoil, approximately two-thirds of the Site contains fill with gravel, along with scattered remnants of concrete and asphalt. An entrance is present along the western boundary. Evidence of a former structure was noted on-site, including small footings and concrete blocks observed in various locations. Located in the southeast corner of the Site is a residential trailer with a small area for parking and a garden.

5.1.3 Description of General Site Features

Observations of the Site conditions made during the site reconnaissance are summarized below. Relevant Study Area conditions are also included where applicable.

Table 5-2 Ground Surface Conditions

Feature	Reported or observed	Details
Ground Surface	Yes	Beneath the areas of topsoil, approximately two-thirds of the Site is covered with fill with gravel, and areas with remnants of concrete, or asphalt.
Fill Materials	Yes	
Stained Surfaces	No	Not present on Site at the time of the Site reconnaissance.
Deterioration of Pavement	No	Not present on Site at the time of the Site reconnaissance, except for the remnants of former concrete and asphalt.
Stressed Vegetation	No	Not present on Site at the time of the Site reconnaissance.
Strong, Pungent, or Noxious Odors	No	Not present on Site at the time of the Site reconnaissance.

Table 5-3 Utilities and Underground Infrastructure

Feature	Reported or observed	Details
Building Structures	No	Not present on Site at the time of the Site reconnaissance.
Drains, Sumps, Oil/Water Separators, Sand Traps	No	Not present on Site at the time of the Site reconnaissance.
Utilities (Electricity/ Natural Gas)	Yes	Electricity lines are likely present within the adjacent roadway/ overhead.
Municipal Water Supply	Yes	Municipal water lines are likely present within the adjacent roadway.
Wastewater Disposal	No	Not present on Site at the time of the Site reconnaissance.
Septic Tank/ System	No	Not present on Site at the time of the Site reconnaissance.
Storm Water (catch basins, ditches, or storm sewers)	Yes	Drains were observed on both the east and west side of 7th Concession Road and east adjacent to the Site.
Pole Mounted Transformers	No	Not present on Site at the time of the Site reconnaissance.
Pad Mounted Transformers	No	Not present on Site at the time of the Site reconnaissance.
Generators	No	Not present on Site at the time of the Site reconnaissance.

Table 5-4 Storage and Containment Systems

Feature	Reported or observed	Details
Aboveground Storage Tanks (ASTs)	No	Not present on Site at the time of the Site reconnaissance.
Underground Storage Tanks (USTs)	No	Not present on Site at the time of the Site reconnaissance.

Unidentified Containers, Drums, Totes	No	Not present on Site at the time of the Site reconnaissance.
Polychlorinated Biphenyls (PCB) Storage	No	Not present on Site at the time of the Site reconnaissance.

Table 5-5 Hazardous Materials

Feature	Reported or observed	Details
Hazardous Substances	No	Not present on Site at the time of the Site reconnaissance. The only related record associated with the Site is identified in Section 3.2.2 with the Site being a registered waste generator for crankcase oils and lubricants associated with DMSS Trucking Inc which is believed to be a commercial company specializing in interstate cargo transport.
Hazardous Waste Management	No	Not present on Site at the time of the Site reconnaissance.

Table 5-6 Vehicle and Equipment Areas

Feature	Reported or observed	Details
Vehicle Storage and Maintenance Areas	Yes	Discussions with the Client indicated that vehicle storage, specifically truck trailers, previously occurred in the southern portion of the Site.
Hydraulic Equipment	No	Not present on Site at the time of the Site reconnaissance.

Table 5-7 Water and Waste Systems

Feature	Reported or observed	Details
Monitoring/ Observation Wells	No	Not present on Site or observed at adjacent properties at the time of the Site reconnaissance. See section 3.4.4 for further details on adjacent properties.
Potable Wells	Yes	Not observed during at the Site reconnaissance; however, there is a historical record of a domestic well in the southwest corner of the Site. See section 3.4.4 for further details on potable wells on adjacent properties.
Oil and Gas Wells	No	Not present on Site or observed at adjacent properties at the time of the Site reconnaissance.
Pits, Ponds, Lagoons	No	Not present on Site or observed at adjacent properties at the time of the Site reconnaissance.

Table 5-8 Transportation Infrastructure

Feature	Reported or observed	Details
Railway Lines or Spurs	Yes	Located off-site, to the east of the Site, the Essex Terminal Railway (ETR). An associated CN metal structure was also noted along the tracks to the northeast of the Site.

5.2 Potentially Hazardous Materials

Older buildings may contain a variety of hazardous materials commonly used in historical construction practices. A summary of such materials is provided below:

- **Polychlorinated Biphenyls (PCBs):** PCBs are synthetic compounds known for their chemical stability and were widely used in electrical equipment until the 1970s. The manufacture, processing, importation, and sale of PCBs have been prohibited in Canada since 1977.
- **Asbestos-Containing Materials (ACMs):** Asbestos is a fibrous mineral used in various construction materials. Friable asbestos, which can be crumbled by hand pressure, is commonly found in pipe and boiler insulation. Non-friable asbestos, which is more tightly bound (e.g., in tar, tile, or cement), is typically present in roofing materials, floor tiles, ceiling tiles, and asbestos cement products.
- **Lead:** Historically used in oil-based paints, solder, piping, roofing materials, and tank linings. The use of lead-based paints was phased out in Canada between 1976 and 1990. Deterioration or disturbance of these materials can create respirable lead-containing dust, posing a health risk.
- **Mercury:** Once found in batteries, thermostats, mirrors, paints, and certain light bulbs. Regulatory action in the early 1990s led to the elimination of mercury compounds in indoor latex paints.
- **Mould:** Mould growth may occur where there is sufficient moisture and an organic food source such as drywall, wallpaper, wood, or carpet.
- **Chlorofluorocarbons (CFCs):** Commonly used as refrigerants (e.g., Freon) in older HVAC systems. Canadian production ceased in 1993, and importation stopped in 1997. While existing systems may still contain CFCs, servicing must be done by licensed contractors to prevent atmospheric release.
- **Urea Formaldehyde Foam Insulation (UFFI):** Previously used as insulation sprayed into wall and ceiling cavities. Its use in residential construction was largely discontinued in the early 1980s.

A residential trailer was in the southeast corner of the property; however, it was not assessed as part of this investigation. No other buildings were present at the time of the Phase One

investigation as such potentially hazardous materials were not assessed as part of this investigation.

Please note that intrusive building materials testing to confirm the presence or absence of designated substances was not within the scope of this assessment.

5.3 Enhanced Investigation Site

An Enhanced Investigation Property, as defined in O. Reg. 153/04, includes any property that is, or has ever been, used in whole or in part for an industrial use (e.g., assembling, fabricating, manufacturing, processing, producing, storing, warehousing, or distributing goods or raw materials), or for a garage, bulk liquid dispensing facility, or dry-cleaning operation.

Based on site observations, the past commercial use of the site, and the information reviewed during this investigation, the Site is not an enhanced investigation property, therefore the requirements of subsection 13(4) of O. Reg. 153/04 do not apply, as no operations, materials, or equipment of the type specified were identified at the property.

5.4 Adjacent and Surrounding Land Uses

Sertas reviewed the current land uses of neighbouring properties from publicly accessible locations to assess possible environmental impacts to the Site that may arise from off-site operations. Properties surrounding the Site are summarized as follows:

Table 5-9 Summary of Adjacent Land Uses

Direction	Address	Land Use/ Occupant
North	4330 7th Concession Rd	Heavy Equipment Operator Training
East	No Municipal Address 4330 7th Concession Rd	Railway tracks Agricultural Use (Agricultural field)
South	4500 Walker Road	Agricultural or Other Use (Undeveloped)
West	4405 7th Concession Rd	Commercial/ Industrial Use (J&J Lepera Infrastructures Inc.)

6. REVIEW AND EVALUATION

6.1 Current and Past Uses

Based on the review of available historical records, Paracel A was inferred to be undeveloped Crown land prior to 1872. From 1872 to 1928, ownership transitioned through several private individuals, during which the property is inferred to have remained undeveloped and used for agricultural or rural purposes. Aerial photographs from 1947 and 1952 show the Site developed with a dwelling and driveway in the southern portion, with tree cover and a rectangular agricultural field in the central area. By 1959, Union Gas Company had obtained a right-of-way across the property. Under ownership by Frank and Cora Lyons (1959–1994), the Site appears to have remained rural, though aerial imagery from 1985 and 1990 indicates tree cover and agricultural activity had ceased, and a structure may have remained on the southern portion. Between 1996 and 2015, the Site was occupied by Ernesto Paul Delicata and used for truck trailer storage, as observed in aerial photographs showing trailers, paved areas, and stored materials, with the dwelling still present until approximately 2010. The 2015 and 2024 aerial photographs show the Site as vacant and gravel-covered, with localized grass growth. Based on the 2025 site reconnaissance, the northern two-thirds of the Site consist of compacted gravel fill with scattered remnants of concrete and asphalt, while the southeast corner contains a residential trailer, small parking area, and garden.

Based on the review of available historical sources, Parcel B was inferred to be Crown land prior to 1872 and has remained generally undeveloped throughout its history. From 1872 to 1963, the property was held by a series of private owners and is inferred to have been used for agricultural or other rural purposes. Aerial photographs from 1947 and 1952 show a dwelling and agricultural clearing on-site, with a Union Gas Company right-of-way established by 1959. Between 1963 and 1994, the Site remained undeveloped, with dense tree growth evident in 1985 and 1990 imagery. By 2000, the property was graveled in portions but continued to appear unused. Aerial photographs from 2015 to 2024, along with the current Site inspection, confirm the Site remains undeveloped, consisting primarily of gravel and overgrown topsoil areas.

The detail table of current and past uses of the Phase One Property can be found in Appendix G.

6.2 Potentially Contaminating Activity

Several PCAs were identified at the Site and within the Phase One Study Area, specifically:

- 3 PCAs on the Phase One Property
- 5 PCAs from the Phase One Study Area
- 2 PCA was determined not to contribute to APECs within the Phase One Study Area due to factors such as their location being transgradient to the Site, their distance from the Site, or their lack of environmental significance.

A list of all PCAs identified at the Site and within the Phase One Study Area are listed in Appendix H and shown on Figure 2.

6.3 Areas of Potential Environmental Concern

As per Ontario Regulation 153/04, an APEC is defined as an area on, in, or under a Phase One Property where contaminants may be present, based on the findings of a Phase One Environmental Site Assessment.

Based on Sertas' review of historical records and findings from the site reconnaissance, past and/or current activities, both on the Site and within the surrounding study area, have been identified as PCAs. These activities have resulted in the identification of APECs on the Site where one or more contaminants of potential concern (COPCs) may be present.

Table 6-1 Table of Areas of Potential Environmental Concern

APEC	Location of APEC	PCA	COPC	Media Potentially Impacted
APEC 1 Storage of Vehicles	Entire Site	52. Storage, maintenance, fueling and repair of equipment, vehicles, and material used to maintain transportation systems	Metals, As, Sb, Se, Hg, EC, SAR, pH, PAHs, PHCs, VOCs	Soil & Groundwater
APEC 2 Importation of Fill	Entire Site	30. Importation of Fill of Unknown Quality and Quantity	Metals, As, Sb, Se, Hg, EC, SAR, pH, PAHs, PHCs, BTEXs	Soil
APEC 3 Waste Generator	Southern Portion of Site	Other. Waste Generator - crankcase oils and lubricants	Metals, As, Sb, Se, Hg, EC, SAR, pH, BTEX, PHCs	Soil & Groundwater
APEC 4 Railway Tracks	Eastern Property Boundary	46. Rail Yards, Tracks and Spurs	Metals, As, Sb, Se, Hg, EC, SAR, pH, PHCs, VOCs, PAHs, PCBs	Soil & Groundwater
APEC 5 Westerly PCAs	Western Property Boundary	Other. Contractor Yard 49. Salvage Yard, including automobile wrecking Other. Cooking Oil Spill 10. Commercial Autobody Shops	Metals, As, Sb, Se, Hg, EC, SAR, pH, PHCs VOCs	Soil & Groundwater

The APECs identified at the Site are summarized in Appendix H and on Figure 3.

6.4 Conceptual Site Model

The Phase One Conceptual Site Model (CSM) was developed using the findings from the records review, site reconnaissance, and interviews completed to date, as outlined in the preceding sections of this report. The CSM presents a narrative summary supported by accompanying figures to illustrate the site conditions and potential environmental concerns.

6.5 Uncertainty or Absence of Information

There were no significant identified data gaps or uncertainties in any component of the Phase One ESA that would impact the accuracy or reliability of the conclusions, supporting tables, or the CSM presented in this report. Additional pending records from the above section 3.1.3 and 3.4.1 will be reviewed upon receipt and Sertas will notify the Client and amend the current report, if necessary.

7. CONCLUSIONS AND RECOMMENDATION

7.1 RSC Based on Phase One ESA Alone

Based on the findings of the Phase One ESA, APECs have been identified at the Site, therefore, a Phase Two ESA would be required prior to filing a RSC. However, given that this assessment was conducted for due diligence purposes and to develop a preliminary understanding of Site conditions for excess soil planning purposes, it is recommended that a Phase II ESA still be completed but in accordance with CSA Standard Z769 to further assess soil and groundwater conditions at the Site.

8. QUALIFICATIONS OF ASSESSORS

This Phase One ESA was conducted by Paige Sarafin, Senior Environmental Specialist at Sertas. Paige brings over 10 years of experience in Environmental Site Assessments across Ontario. She holds a Master of Science in Environmental Practice and a Bachelor of Environmental Studies. Paige has a strong command of environmental regulations, including CSA Standard Z768-01 (R2023), Ontario Regulation 153/04, and O. Reg. 406/19, ensuring compliance and technical accuracy in all phases of project execution.

This Phase One ESA was reviewed by Clayton Sereres, P.Geo., QP_{ESA}, Environmental Director at Sertas. Clayton has 9 years of experience in environmental consulting and 9 years with the federal government, with expertise spanning Phase One and Two Environmental Site Assessments, hazardous materials management, contaminant hydrogeology, environmental monitoring, and site remediation.

In his role at Sertas, Clayton is responsible for project oversight, quality assurance and quality control (QA/QC), health and safety management, and serves as the technical lead on numerous environmental projects. He is a Qualified Person as defined under Ontario Regulation 153/04, authorized to sign off on Phase One and Two ESAs, remediation reports, excess soil documentation, and Records of Site Condition (RSCs).

9. REFERENCES

- Canadian Standards Association (CSA), 2016. CSA Z768-01 (R2016): Phase I Environmental Site Assessment. Originally published November 2001; reaffirmed 2016.
- City of Windsor. Official Plan and Zoning Information. Available at: https://www.citywindsor.ca.
- Ontario Division of Mines, 1973. Drift Thickness Series, Windsor-Essex Area.
- Essex Region Conservation Authority (ERCA). Interactive Mapping Tool. Available at: https://www.erca.org.
- Ontario Ministry of Northern Development and Mines, 1994. Map P.3253: Quaternary Geology, Essex County Area (West Half).
- County of Essex. Official Plan Documents. Available at: https://www.countyofessex.ca.
- Ontario Environment Industry Association (ONEIA), 2021. Best Practices for Qualified Persons for Consideration with O. Reg. 406/19: On-Site and Excess Soil Management in Ontario. Version 2, January 11, 2021.
- Ontario Ministry of Natural Resources and Forestry (MNRF). Land Information Ontario (LIO) Mapping Portal. Available at: https://www.ontario.ca/page/land-information-ontario.
- Ontario Regulation 153/04 – *Records of Site Condition – Part XV.1 of the Environmental Protection Act.*
- Ontario Regulation 903 – *Wells.*

10. CLOSURE AND LIMITATIONS

This report is prepared exclusively for Enwin Utilities Ltd. to provide a Phase One ESA for the Site. The report is based on conditions during the site reconnaissance on July 24, 2025, supplemented by historical data. Third parties using this report or making decisions based on it do so at their own risk. Written authorization from Sertas is required for any third party relying on this report. Sertas assumes no responsibility for any damages or financial impacts resulting from third-party use.

Conclusions and recommendations are based on data collected during the Phase One ESA and reflect the conditions at the time of the site visit. Sertas is not obligated to update the report for events or information obtained after the Phase One ESA.

The findings rely on information provided by sources noted in the report, assumed to be accurate and factual. Sertas is not responsible for deficiencies or inaccuracies from omissions, misinterpretations, or fraudulent acts by others. The findings are based on professional judgment and the available data, considering the scope, budget, and schedule of the assessment. Historical records and background information were limited to readily accessible sources, generally focusing on properties within 250 meters of the Site unless otherwise noted.

Sertas makes no representations regarding the legal significance of its findings, or any legal matters discussed in this report, including property ownership or the application of laws. Regulatory compliance issues, subject to interpretation and change, should be reviewed with legal counsel. No intrusive investigations or sampling were performed, and this report should not be seen as a regulatory compliance audit or review.

FIGURES

LEGEND:

- PHASE ONE SITE BOUNDARY
- 250 m PHASE ONE STUDY AREA BUFFER
- RAIL TRACKS
- SURFACE DRAINAGE DITCH
- (C) COMMERCIAL USE
- (I) INDUSTRIAL USE
- (A) AGRICULTURAL USE
- (No.) PCA CONTRIBUTING TO APEC
- INFERRED GROUNDWATER FLOW

0 50 100m

SCALE: 1:4000

PCA Identifier	PCA
1	52. Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems
2	30. Importation of Fill Material of Unknown Quality
3	Other. Waste Generator
4	46. Rail Yards, Tracks and Spurs
5	Other. Contractor Yard
6	40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications
7	49. Salvage Yard, including automobile wrecking
8	Other. Cooking Oil Spill
9	10. Commercial Autobody Shops
10	28. Gasoline and Associated Products Storage in Fixed Tanks



NOTES:
THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH SERTAS' REPORT No. 2501E038.1000.

ALL LOCATIONS ARE APPROXIMATE.

ORIGINAL PAPER SIZE: 11 x 17.

REFERENCES:
MICROSOFT BING MAPPING, 2025 AERIALS. IMAGES ARE USED FOR ILLUSTRATION PURPOSES ONLY, AND NOT FOR MEASUREMENT PURPOSES.

ENWIN UTILITIES LTD.
4545 RHODES DRIVE
WINDSOR, ONTARIO, N9A 5T7

SERTAS
4510 RHODES DRIVE, UNIT 210
WINDSOR, ONTARIO, N8W 5K5
519-822-3442

DWN BY:	TMA
CHK'D BY:	CS
DATUM:	NAD83
PROJECTION:	UTM Zone 17
SCALE:	1:4000

PROJECT:
PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
VACANT PROPERTY
4550 7TH CONCESSION ROAD, WINDSOR, ONTARIO

TITLE:
SITE & SURROUNDING LAND USE PLAN

DATE:	SEPT. 18, 2025
PROJECT No:	2501E038.1000
REV No:	1
FIGURE No:	2

DATE PLOTTED: September 18, 2025 3:43:40 PM
FILE LOCATION: C:\Users\Umair\Sertas Group Limited\Windsor Project Files - Documents\03_Projects\PF_2025\02_Enviro\2501E038_Enwin_7th Conc. Water Tower\Phase 1000 - Phase One\07_CAD\02_Dwg_Files\2501E038.1000_F2.mxd.dwg

LEGEND:

- PHASE ONE SITE & APEC-1 / APEC-2 BOUNDARIES
- APEC-3 BOUNDARY
- APEC-4 BOUNDARY
- APEC-5 BOUNDARY
- RAIL TRACKS
- SURFACE DRAINAGE DITCH
- INFERRED GROUNDWATER FLOW

0 10 30 50m

SCALE 1:1000

APEC	PCA
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APEC 2 Importation of Fill	30. Importation of Fill of Unknown Quality and Quantity
APEC 3 Waste Generator	Other. Waste Generator
APEC 4 Railway Tracks	46. Rail Yards, Tracks and Spurs
APEC 5 Westerly PCAs	Other. Contractor Yard 49. Salvage Yard, including automobile wrecking Other. Cooking Oil Spill 10. Commercial Autobody Shops



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ENWIN UTILITIES LTD.
4545 RHODES DRIVE
WINDSOR, ONTARIO, N9A 5T7

SERTAS
4510 RHODES DRIVE, UNIT 210
WINDSOR, ONTARIO, N8W 5K5
519-822-3442

DWN BY: TMA
CHK'D BY: CS
DATUM: NAD83
PROJECTION: UTM Zone 17
SCALE: 1:1000

PROJECT:
PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
VACANT PROPERTY
4550 7TH CONCESSION ROAD, WINDSOR, ONTARIO

TITLE:
AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

DATE: JULY 29, 2025
PROJECT No: 2501E038.1000
REV No: 0
FIGURE No: 3

DATE PLOTTED: July 29, 2025 3:54:36 PM
FILE LOCATION: C:\Users\Vmak\Sertas Group Limited\Windsor Project Files - Documents\03_Projects\PF_2025\02_Enviro\2501E038_Enviro_7th Conc. Water Tower\Phase 1000 - Phase One\07_CAD\02_Dwg_Files\2501E038.1000_F3_rev1.dwg



NOTES:
THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH SERTAS' REPORT No. 2501E038.1000. ALL LOCATIONS ARE APPROXIMATE.

REFERENCES:
OPEN STREET MAP, ESRI 2025

ORIGINAL PAPER SIZE: 8½ x 11.

ENWIN UTILITIES LTD. 4545 RHODES DRIVE WINDSOR, ONTARIO, N9A 5T7	ENWIN	DWN BY: TMA CHK'D BY: CS DATUM: NAD83 PROJECTION: UTM Zone 17 SCALE: 1:20	PROJECT: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT VACANT PROPERTY 4550 7TH CONCESSION ROAD WINDSOR, ONTARIO	DATE: JULY 29, 2025 PROJECT No: 2501E038.1000
SERTAS 4510 RHODES DRIVE, UNIT 210 WINDSOR, ONTARIO, N8W 5K5	SERTAS		TITLE: KEY PLAN	REV No: 0 FIGURE No: 1

DATE PLOTTED: July 29, 2025 11:50:07 AM
FILE LOCATION: C:\Users\lindat\Sertas Group Limited\Windsor Project Files - Documents\03_Projects\PF_2025\02_Enviro\2501E038_Enwin_7th Conc. Water Tower\Phase 1000 - Phase One\07_CAD\02_Dwg_Files\2501E038.1000_F1.dwg

APPENDIX A

City of Windsor FIP, Historical Maps, City Directories

CITY DIRECTORY

Project Property:	*Phase One* *4450 7th Concession Rd* *Windsor,ON N8W 5V6*
Project No:	*2501E038.1000*
Requested By:	*Sertas Group Limited*
Order No:	*25071700027*
Date Completed:	*July 24, 2025*

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

July 24, 2025
RE: CITY DIRECTORY RESEARCH
4450 7th Concession Rd
Windsor,ON N8W 5V6

Thank you for contacting ERIS regarding our City Directory Search services. Our staff has conducted a reverse listing City Directory search to determine prior occupants of the subject site and adjacent properties. When searching a range of addresses, all civic addresses within that range found in the Directory are included.

Note: Reverse Listing Directories generally are focused on highly developed areas, while newly developed areas may be covered in the more recent years, older directories tend to cover only "central" parts of the city. To complete the search, we have either utilized the Toronto Reference Library, Library & Archives Canada and multiple digitized directories. While these do not claim to be a complete collection of all reverse listing city directories produced, ERIS has made every effort to provide accurate and complete information. ERIS shall not be held liable for missing, incomplete, or inaccurate information. If you believe there are additional addresses or streets that require searching, please contact us.

Search Criteria:

4300-END of 7th Concession Road

4320-4515 of Walker Road

Search Notes:

Search Results Summary

Data from 2012 to 2017 does not include residential information

Date	Source	Comment
2024	DIGITAL BUSINESS DIRECTORY	
2023	DIGITAL BUSINESS DIRECTORY	
2021	DIGITAL BUSINESS DIRECTORY	
2017	DIGITAL BUSINESS DIRECTORY	
2012	DIGITAL BUSINESS DIRECTORY	
2007	VERNONS	
2001	POLKS	
1997	POLKS	
1992	POLKS	
1986	BRESSERS	
1980	BRESSERS	
1974	MIGHTS	
1969	MIGHTS	
1965	MIGHTS	
1960	ACME WINDSOR DIRECTORY CO	

2024 7TH CONCESSION ROAD

SOURCE: DIGITAL BUSINESS DIRECTORY

4490 **OPEN BIBLE FAITH FELLOWSHIP**...*CHURCHES*

2024 WALKER ROAD

SOURCE: DIGITAL BUSINESS DIRECTORY

4320 **BURGER KING**...*RESTAURANTS*
4322 **VALUE VILLAGE**...*THRIFT SHOPS*
4324 **HOME SENSE**...*FURNITURE-DEALERS-RETAIL*
4328 **CORA**...*RESTAURANTS*
4330 **PLANET FITNESS**...*HEALTH CLUBS STUDIOS & GYMNASIUMS*
4339 **MICHAELS**...*CRAFT SUPPLIES*
4340 **PETRO-CANADA**...*SERVICE STATIONS-GASOLINE & OIL*
4371 **CROCKADOODLE**...*POTTERY*
4371 **DR E V RANJIT MEDICINE PRO CRP**...*CLINICS*
4371 **LOBLAWS PHARMACY**...*PHARMACIES*
4371 **MOBILE SHOP**...*CELLULAR TELEPHONES (SERVICES)*
4371 **SYLVAN LEARNING SATELLITE**...*TUTORING*
4371 **THEODORE-PRINGLE OPTL IN REAL**...*CLOTHING-RETAIL*
4371 **WESTERN UNION AGENT LOCATION**...*TAX RETURN PREPARATION & FILING*
4371 **WINE RACK**...*WINES-RETAIL*
4379 **BEST BUY**...*ELECTRONIC EQUIPMENT & SUPPLIES-RETAIL*
4380 **MR LUBE**...*AUTOMOBILE LUBRICATION SERVICE*
4387 **BULKBARN**...*GROCERIES*
4388 **GARDEN BUFFET**...*RESTAURANTS*
4388 **SLEEP COUNTRY CANADA**...*MATTRESSES*
4395 **MC DONALD'S**...*RESTAURANTS*
4411 **COSTCO PHARMACY**...*PHARMACIES*
4411 **COSTCO WHOLESALE**...*WHOLESALE CLUBS*
4411 **WIRELESS ETC**...*CELLULAR TELEPHONES (SERVICES)*
4450 **BOSTON PIZZA**...*PIZZA*
4450 **CO-OPERATORS**...*INSURANCE-GROUP*
4450 **CONNECT HEARING**...*HEARING IMPAIRED EQUIPMENT & SUPPLIES*
4450 **MONEY MART**...*PAYDAY LOANS*
4450 **PRESOTEA BUBBLE**...*COFFEE SHOPS*
4450 **PXO WINDSER**...*BEADS - WHOLESALE*
4450 **QUAN NGUYEN**...*INSURANCE*
4450 **QUESADA BURRITOS TACOS**...*RESTAURANTS*
4450 **STARBUCKS**...*COFFEE SHOPS*
4450 **SWISS CHALET ROTISSERIE/GRILL**...*RESTAURANTS*
4450 **TENKO SUSHI**...*RESTAURANTS*
4450 **WENDY'S**...*RESTAURANTS*
4450 **WESTERN UNION AGENT LOCATION**...*MONEY TRANSFER SERVICE*
4511 **STAPLES**...*OFFICE SUPPLIES*
4511 **STAPLES PRINT MARKETING**...*PRINTING CONSULTANTS*

2023 7TH CONCESSION ROAD

SOURCE: DIGITAL BUSINESS DIRECTORY

4490 **OPEN BIBLE FAITH FELLOWSHIP**...*CHURCHES*

2023 WALKER ROAD

SOURCE: DIGITAL BUSINESS DIRECTORY

73 total records. Part 1 of 2

4320 **BURGER KING**...*RESTAURANTS*
4320 **BURGER KING**...*FOODS-CARRY OUT*
4322 **VALUE VILLAGE**...*RETAIL SHOPS*
4322 **VALUE VILLAGE**...*THRIFT SHOPS*
4324 **HOME SENSE**...*FURNITURE-DEALERS-RETAIL*
4324 **HOME SENSE**...*INTERIOR DECORATORS DESIGN & CONSULTANTS*
4328 **CORA**...*RESTAURANTS*
4328 **CORA**...*BED & BREAKFAST ACCOMMODATIONS*
4330 **PLANET FITNESS**...*HEALTH CLUBS STUDIOS & GYMNASIUMS*
4339 **MICHAELS**...*CRAFT SUPPLIES*
4339 **MICHAELS**...*ARTS & CRAFTS-WHOLESALE*
4340 **PETRO-CANADA**...*SERVICE STATIONS-GASOLINE & OIL*
4340 **PETRO-CANADA**...*ENERGY MANAGEMENT SYSTEMS & PRODUCTS*
4371 **CROCKADOODLE**...*POTTERY*
4371 **DR E V RANJIT MEDICINE PRO CRP**...*CLINICS*
4371 **JOE FRESH**...*MEN'S CLOTHING & FURNISHINGS-RETAIL*
4371 **JOE FRESH**...*CLOTHING-RETAIL*
4371 **LOBLAWS PHARMACY**...*PHARMACIES*
4371 **MOBILE SHOP**...*CELLULAR TELEPHONES-EQUIPMENT & SUPLS*
4371 **MOBILE SHOP**...*CELLULAR TELEPHONES (SERVICES)*
4371 **REAL CANADIAN SUPERSTORE**...*GROCERS-RETAIL*
4371 **REAL CANADIAN SUPERSTORE**...*FRUITS & VEGETABLES & PRODUCE-RETAIL*
4371 **SYLVAN LEARNING OF WINDSOR**...*TUTORING*
4371 **SYLVAN LEARNING OF WINDSOR**...*EDUCATIONAL PROGRAMS*
4371 **SYLVAN LEARNING SATELLITE**...*EDUCATION CENTERS*
4371 **SYLVAN LEARNING SATELLITE**...*TUTORING*
4371 **THEODORE-PRINGLE OPTL IN REAL**...*OPTICAL GOODS-RETAIL*
4371 **THEODORE-PRINGLE OPTL IN REAL**...*OPTICIANS*
4371 **WESTERN UNION AGENT LOCATION**...*MONEY TRANSFER SERVICE*
4371 **WESTERN UNION AGENT LOCATION**...*MONEY ORDER SERVICE*
4371 **WINE RACK**...*LIQUORS-RETAIL*
4371 **WINE RACK**...*WINES-RETAIL*
4379 **BEST BUY**...*CELLULAR TELEPHONES (SERVICES)*
4379 **BEST BUY**...*ELECTRONIC EQUIPMENT & SUPPLIES-RETAIL*
4380 **MR LUBE**...*AUTOMOBILE LUBRICATION SERVICE*
4387 **BULKBARN**...*FOOD PRODUCTS (WHOLESALE)*
4387 **BULKBARN**...*GROCERS-RETAIL*
4388 **GARDEN BUFFET**...*RESTAURANTS*
4388 **SLEEP COUNTRY CANADA**...*MATTRESSES*
4395 **MC DONALD'S**...*RESTAURANTS*
4395 **MC DONALD'S**...*FOODS-CARRY OUT*
4411 **COSTCO PHARMACY**...*PHARMACIES*
4411 **COSTCO WHOLESALE**...*GROCERS-WHOLESALE*
4411 **COSTCO WHOLESALE**...*WHOLESALE CLUBS*
4411 **WIRELESS ETC**...*CELLULAR TELEPHONES-EQUIPMENT & SUPLS*
4411 **WIRELESS ETC**...*CELLULAR TELEPHONES (SERVICES)*
4450 **BOSTON PIZZA**...*PIZZA*
4450 **BOSTON PIZZA**...*FOODS-CARRY OUT*
4450 **CO-OPERATORS**...*INSURANCE-GROUP*
4450 **CO-OPERATORS**...*INSURANCE CONSULTANTS & ADVISORS*
4450 **CONNECT HEARING**...*EAR MOLDS & PROTECTIVE DEVICES*
4450 **CONNECT HEARING**...*HEARING IMPAIRED EQUIPMENT & SUPPLIES*
4450 **MONEY MART**...*PAYDAY LOANS*
4450 **MONEY MART**...*CHECK CASHING SERVICE*
4450 **PXO WINDSER**...*BEADS (WHOLESALE)*
4450 **QUAN NGUYEN**...*HEALTH SERVICES*
4450 **QUAN NGUYEN**...*INSURANCE*
4450 **QUESADA BURRITOS TACOS**...*FOODS-CARRY OUT*
4450 **QUESADA BURRITOS TACOS**...*RESTAURANTS*
4450 **STARBUCKS**...*COFFEE SHOPS*
4450 **STARBUCKS**...*COFFEE & TEA*
4450 **SWISS CHALET ROTISSERIE/GRILL**...*FOODS-CARRY OUT*
4450 **SWISS CHALET ROTISSERIE/GRILL**...*RESTAURANTS*
4450 **TENKO SUSHI**...*RESTAURANTS*
4450 **WENDY'S**...*FOODS-CARRY OUT*
4450 **WENDY'S**...*RESTAURANTS*
4450 **WESTERN UNION AGENT LOCATION**...*MONEY ORDER SERVICE*
4450 **WESTERN UNION AGENT LOCATION**...*MONEY TRANSFER SERVICE*

2023 WALKER ROAD

SOURCE: DIGITAL BUSINESS DIRECTORY

Part 2 of 2

4511 **RIOCAN REIT**...*REAL ESTATE MANAGEMENT*
4511 **STAPLES**...*OFFICE FURNITURE & EQUIP-MFRS*
4511 **STAPLES**...*OFFICE SUPPLIES*
4511 **STAPLES PRINT MARKETING**...*PRINTERS*
4511 **STAPLES PRINT MARKETING**...*PRINTING CONSULTANTS*

2021 7TH CONCESSION ROAD

SOURCE: DIGITAL BUSINESS DIRECTORY

4490 **OPEN BIBLE FAITH FELLOWSHIP**...*CHURCHES*

2021 WALKER ROAD

SOURCE: DIGITAL BUSINESS DIRECTORY

4320 **BURGER KING**...*FOODS-CARRY OUT*
4322 **VALUE VILLAGE**...*SECOND HAND STORES*
4322 **VALUE VILLAGE**...*SOCIAL SERVICE & WELFARE ORGANIZATIONS*
4324 **HOME SENSE**...*FURNITURE-DEALERS-RETAIL*
4324 **HOME SENSE**...*MAPPING SERVICES (WHLS)*
4328 **CORA**...*FOODS-CARRY OUT*
4328 **CORA**...*BED & BREAKFAST ACCOMMODATIONS*
4330 **PLANET FITNESS**...*HEALTH CLUBS STUDIOS & GYMNASIUMS*
4339 **MICHAELS**...*ARTS & CRAFTS-WHOLESALE*
4339 **MICHAELS**...*LEATHER GOODS-MANUFACTURERS*
4340 **ATM**...*AUTOMATED TELLER MACHINES*
4340 **PETRO-CANADA**...*ENERGY CONSERVATION PRODS-SVCS-SYSTEMS*
4340 **PETRO-CANADA**...*ALTERNATIVE FUELS*
4371 **COINSTAR**...*COIN & BILL COUNTING/SORTING SVC KIOSKS*
4371 **DR E V RANJIT MEDICINE PRO CRP**...*DENTISTS*
4371 **LOBLAWS PHARMACY**...*PHARMACIES*
4371 **MOBILE SHOP**...*CELLULAR TELEPHONES-EQUIPMENT & SUPLS*
4371 **MOBILE SHOP**...*CELLULAR TELEPHONES (SERVICES)*
4371 **REAL CANADIAN SUPERSTORE**...*GROCERS-RETAIL*
4371 **REAL CANADIAN SUPERSTORE**...*FRUITS & VEGETABLES & PRODUCE-RETAIL*
4371 **SYLVAN LEARNING SATELLITE**...*TUTORING*
4371 **SYLVAN LEARNING SATELLITE**...*EDUCATIONAL SERVICE-BUSINESS*
4371 **THEODORE-PRINGLE OPTL IN REAL**...*OPTICAL GOODS-RETAIL*
4371 **THEODORE-PRINGLE OPTL IN REAL**...*OPTICIANS*
4371 **WESTERN UNION AGENT LOCATION**...*MONEY ORDER SERVICE*
4371 **WINE RACK**...*LIQUORS-RETAIL*
4371 **WINE RACK**...*BARS*
4379 **BEST BUY**...*ELECTRONIC EQUIPMENT & SUPPLIES-RETAIL*
4379 **BEST BUY**...*CELLULAR TELEPHONES (SERVICES)*
4380 **MR LUBE**...*AUTOMOBILE REPAIRING & SERVICE*
4387 **BULK BARN**...*DELICATESSENS*
4387 **BULK BARN**...*HEALTH FOOD PRODUCTS-WHOLESALE*
4388 **GARDEN BUFFET**...*FOODS-CARRY OUT*
4388 **SLEEP COUNTRY CANADA**...*FURNITURE-DEALERS-RETAIL*
4395 **MC DONALD'S**...*FOODS-CARRY OUT*
4411 **COSTCO PHARMACY**...*PHARMACIES*
4411 **COSTCO TIRE CENTER**...*TIRE-DEALERS-RETAIL*
4411 **COSTCO WHOLESALE**...*GROCERS-WHOLESALE*
4411 **COSTCO WHOLESALE**...*HEARING AIDS*
4411 **WIRELESS ETC**...*CELLULAR TELEPHONES (SERVICES)*
4411 **WIRELESS ETC**...*CELLULAR TELEPHONES-EQUIPMENT & SUPLS*
4450 **ARAMESH DAY SPA**...*PATIO & DECK BUILDERS*
4450 **BOSTON PIZZA**...*HOTELS & MOTELS*
4450 **BOSTON PIZZA**...*FOODS-CARRY OUT*
4450 **CO-OPERATORS**...*FEDERAL GOVERNMENT CONTRACTORS*
4450 **CO-OPERATORS**...*INSURANCE-GROUP*
4450 **CONNECT HEARING**...*EXPORTERS (WHLS)*
4450 **CONNECT HEARING**...*HEARING AIDS*
4450 **MONEY MART**...*LOANS*
4450 **MONEY MART**...*CHECK CASHING SERVICE*
4450 **PXO WINDSER**...*BEADS (WHLS)*
4450 **QUAN NGUYEN**...*HEALTH SERVICES*
4450 **QUAN NGUYEN**...*INSURANCE*
4450 **QUESADA BURRITO**...*FOODS-CARRY OUT*
4450 **STARBUCKS**...*COFFEE SHOPS*
4450 **STARBUCKS**...*COFFEE & TEA*
4450 **SWISS CHALET ROTISSERIE/GRILL**...*FOODS-CARRY OUT*
4450 **TENKO SUSHI**...*FOODS-CARRY OUT*
4450 **WENDY'S**...*FOODS-CARRY OUT*
4450 **WESTERN UNION AGENT LOCATION**...*MONEY ORDER SYSTEMS*
4450 **WESTERN UNION AGENT LOCATION**...*MONEY ORDER SERVICE*
4511 **RIOCAN REIT**...*REAL ESTATE MANAGEMENT*
4511 **RIOCAN REIT**...*SHOPPING CENTERS & MALLS*
4511 **STAPLES**...*FEDERAL GOVERNMENT CONTRACTORS*
4511 **STAPLES**...*COPYING & DUPLICATING MACHINES & SUPLS*
4511 **STAPLES PRINT MARKETING SVC**...*VENDING MACHINES*
4511 **STAPLES PRINT MARKETING SVC**...*COMMERCIAL PRINTING NEC (MFRS)*

2017 7TH CONCESSION ROAD

SOURCE: DIGITAL BUSINESS DIRECTORY

4405 **J J INFRASTRUCTURE INC**...*NEW SINGLEFAMILY GENERAL CONTRS*

73 total records. Part 1 of 2

4320 BURGER KING...FULL-SERVICE RESTAURANTS
4322 VALUE VILLAGE...USED MERCHANDISE STORES
4324 HOME SENSE...FURNITURE STORES
4324 HOME SENSE...INTERIOR DESIGN SVCS
4326 BULK BARN FOODS...PACKAGED FROZEN FOOD MERCHANT WHOLS
4326 BULK BARN FOODS...GENERAL LINE GROCERY MERCHANT WHOLS
4328 CORA'S BREAKFAST LUNCH...BED&BREAKFAST INNS
4328 CORA'S BREAKFAST LUNCH...FULLSERVICE RESTAURANTS
4330 JYSK LINEN FURNITURE INC...ALL OTHER HOME FURNISHINGS STORES
4331 BOMBAY CO INC...FURNITURE STORES
4331 HOME OUTFITTERS...DEPARTMENT STORES, EXCEPT DISCOUNT
4331 HOME OUTFITTERS...FURNITURE STORES
4339 MICHAEL'S ARTS CRAFTS...HOBBY, TOY, & GAME STORES
4340 PETRO-CANADA...OTHER GASOLINE STATIONS
4340 SUNCOR ENERGY PRODUCTS...PLUMBING & HVAC CONTRS
4347 DESIGNER DEPOT...MEN'S CLOTHING STORES
4371 DRUGSTORE PHARMACY...PHARMACIES & DRUG STORES
4371 DRY CLEANER...DRYCLEANING & LAUNDRY SVCS
4371 DRY CLEANER...OTHER CLOTHING STORES
4371 GOOD LIFE FITNESS CLUB...FITNESS & RECREATIONAL SPORTS CENTERS
4371 GOOD LIFE FITNESS CLUB...DIET & WEIGHT REDUCING CENTERS
4371 GOODLIFE FITNESS CLUBS...DIET & WEIGHT REDUCING CENTERS
4371 HR BLOCK...TAX RETURN PREPARATION & FILING
4371 LOBLAW PHARMACY...PHARMACIES & DRUG STORES
4371 RANJIT'S MEDICAL CLINIC...FREESTANDING EMERGENCY MEDICAL CENTERS
4371 REAL CANADIAN SUPERSTORE...SUPERMARKETS & OTHER GROCERY STORES
4371 REAL CANADIAN SUPERSTORE...OPTICAL GOODS STORES
4371 REAL CANADIAN SUPERSTORE...FLORISTS
4371 WINE RACK...BEER, WINE, & LIQUOR STORES
4379 BEST BUY...RADIO, TV & OTHER ELECTRONICS STORES
4379 BEST BUY...FURNITURE MERCHANT WHOLS
4380 MR LUBE...AUTOMOTIVE OIL CHANGE & LUBRICATION SHOPS
4387 BULK BARN FOODS...SUPERMARKETS & OTHER GROCERY STORES
4387 SHOE CO...SHOE STORES
4388 GARDEN BUFFET...FULLSERVICE RESTAURANTS
4388 HOOTERS...FULLSERVICE RESTAURANTS
4388 HOOTERS...LIMITEDSERVICE RESTAURANTS
4388 HOOTERS OF WINDSOR...FULL-SERVICE RESTAURANTS
4395 MC DONALD'S...FULLSERVICE RESTAURANTS
4395 MC DONALD'S...LIMITEDSERVICE RESTAURANTS
4395 MC DONALD'S...FULL-SERVICE RESTAURANTS
4411 COSTCO...SUPERMARKETS & OTHER GROCERY STORES
4411 COSTCO...DISCOUNT DEPARTMENT STORES
4411 COSTCO WHOLESALE...OPTICAL GOODS STORES
4411 PROFESSIONAL WAREHOUSE DEMONST...ALL OTHER SUPPORT SVCS
4450 BOSTON PIZZA...LIMITEDSERVICE RESTAURANTS
4450 BOSTON PIZZA...FULL-SERVICE RESTAURANTS
4450 BOSTON PIZZA...FULLSERVICE RESTAURANTS
4450 CHUCK E CHEESE'S...FULL-SERVICE RESTAURANTS
4450 CHUCK E CHEESE'S...FULLSERVICE RESTAURANTS
4450 EAST SIDE AUTO RECYCLING WRHSE...USED MOTOR VEHICLE PARTS MERCHANT WHOLS
4450 FANTASTIC SAM'S...BEAUTY SALONS
4450 HERBAL MAGIC WEIGHT LOSS...ALL OTHER SPECIALTY FOOD STORES
4450 JOHNSON INC...INSURANCE AGENCIES & BROKERAGES
4450 MONEY MART...FINANCIAL TRANSACTION PROCESSING & CLEARING
4450 NEW BALANCE WINDSOR...OTHER CLOTHING STORES
4450 NEW BALANCE WINDSOR...SHOE STORES
4450 ONTARIO INSURANCE BROKERS LTD...INSURANCE AGENCIES & BROKERAGES
4450 ONTARIO MORTGAGE ACTION CTR...REAL ESTATE CREDIT
4450 QUESADA BURRITO...RESTAURANTS
4450 QUIZNOS...FULLSERVICE RESTAURANTS
4450 QUIZNOS...LIMITEDSERVICE RESTAURANTS
4450 SHILLINGTON ROWLANDS INSURANCE...INSURANCE AGENCIES & BROKERAGES
4450 SOURCE...RADIO, TV & OTHER ELECTRONICS STORES
4450 STARBUCKS...SNACK & NONALCOHOLIC BEVERAGE BARS

2017 WALKER ROAD
SOURCE: DIGITAL BUSINESS DIRECTORY

Part 2 of 2

4450 STARBUCKS...ALL OTHER SPECIALTY FOOD STORES
4450 SWISS CHALET ROTISSERIE/GRILL...LIMITEDSERVICE RESTAURANTS
4450 SWISS CHALET ROTISSERIE/GRILL...FULLSERVICE RESTAURANTS
4450 TENKO SUSHI...FULLSERVICE RESTAURANTS
4450 WENDY'S...FULLSERVICE RESTAURANTS
4450 WENDY'S...LIMITEDSERVICE RESTAURANTS
4450 WESTERN UNION...FINANCIAL TRANSACTION PROCESSING & CLEARING
4511 STAPLES...OFFICE SUPPLIES & STATIONERY STORES

2012 7TH CONCESSION ROAD

SOURCE: DIGITAL BUSINESS DIRECTORY

NO LISTING FOUND

2012 WALKER ROAD

SOURCE: DIGITAL BUSINESS DIRECTORY

4320	**BURGER KING**...*FULL-SERVICE RESTAURANTS*
4324	**HOMESENSE**...*INTERIOR DESIGN SVCS*
4324	**SILVER CREEK COML INTERIORS**...*NEW SINGLE-FAMILY GENERAL CONTRS*
4326	**BULK BARN FOODS**...*GENERAL LINE GROCERY MERCHANT WHOLS*
4328	**BAHAMA MAMMAS EUROPEAN TANNING**...*OTHER PERSONAL CARE SVCS*
4330	**JYSK LINEN & FURNITURE INC**...*ALL OTHER HOME FURNISHINGS STORES*
4331	**BOMBAY CO**...*FURNITURE STORES*
4331	**HOME OUTFITTERS**...*DEPARTMENT STORES, EXCEPT DISCOUNT*
4339	**MICHAELS ARTS & CRAFTS**...*HOBBY, TOY, & GAME STORES*
4340	**SUNCOR ENERGY PRODUCTS**...*PLUMBING & HVAC CONTRS*
4347	**DESIGNER DEPOT**...*DEPARTMENT STORES, EXCEPT DISCOUNT*
4371	**DRUGSTORE PHARMACY**...*PHARMACIES & DRUG STORES*
4371	**DRY CLEANERS & QUALITY SHOE**...*DRYCLEANING & LAUNDRY SVCS*
4371	**GOODLIFE FITNESS CLUBS**...*DIET & WEIGHT REDUCING CENTERS*
4371	**RANJIT'S MEDICAL CLINIC**...*FREESTANDING EMERGENCY MEDICAL CENTERS*
4371	**REAL CANADIAN SUPERSTORE**...*FLORISTS*
4371	**WINE RACK**...*BEER, WINE, & LIQUOR STORES*
4379	**BEST BUY CANADA LTD**...*RADIO, TV & OTHER ELECTRONICS STORES*
4380	**MR LUBE**...*AUTOMOTIVE OIL CHANGE & LUBRICATION SHOPS*
4387	**SHOE CO**...*SHOE STORES*
4388	**HOOTERS OF WINDSOR**...*FULL-SERVICE RESTAURANTS*
4395	**MC DONALD'S**...*FULL-SERVICE RESTAURANTS*
4411	**COSTCO WHOLESALE**...*DEPARTMENT STORES, EXCEPT DISCOUNT*
4411	**COSTOC WHOLESALE**...*OPTICAL GOODS STORES*
4411	**PROFESSIONAL WAREHOUSE DEMONST**...*ALL OTHER SUPPORT SVCS*
4450	**BOSTON PIZZA**...*FULL-SERVICE RESTAURANTS*
4450	**CHUCK E CHEESE**...*FULL-SERVICE RESTAURANTS*
4450	**EAST SIDE AUTO RECYCLING WRHSE**...*USED MOTOR VEHICLE PARTS MERCHANT WHOLS*
4450	**FANTASTIC SAM'S**...*BEAUTY SALONS*
4450	**HERBAL MAGIC**...*ALL OTHER SPECIALTY FOOD STORES*
4450	**MONEY MART**...*FINANCIAL TRANSACTION PROCESSING & CLEARING*
4450	**NEW BALANCE WINDSOR**...*SHOE STORES*
4450	**ONTARIO MORTGAGE ACTION CTR**...*REAL ESTATE CREDIT*
4450	**QUIZNO'S SUBS**...*FULL-SERVICE RESTAURANTS*
4450	**SHILLINGTON ROWLANDS INSURANCE**...*INSURANCE AGENCIES & BROKERAGES*
4450	**SOURCE BY CIRCUIT CITY**...*RADIO, TV & OTHER ELECTRONICS STORES*
4450	**STARBUCKS**...*SNACK & NONALCOHOLIC BEVERAGE BARS*
4450	**SWISS CHALET ROTISSERIE/GRILL**...*FULL-SERVICE RESTAURANTS*
4450	**WENDY'S**...*FULL-SERVICE RESTAURANTS*
4511	**STAPLES BUSINESS DEPOT**...*OFFICE SUPPLIES & STATIONERY STORES*

2007 7TH CONCESSION ROAD

SOURCE: VERNONS

71 Gaspar B N9J1T6 978-9588
(3) 80 Boismier K 734-7975

Seneca St

1420 Apartments
-- Myrte M N8W1A2 253-7693
-- Caron J N8W1A2 255-9886
(1) 1420 Willard S 973-3962
(1) 1420 Haviland S 971-9247
(2) 1516 Patterson M 258-7571
• 1518 Cassan D 962-6996
1536 Peczi L N8W1A3 253-6615
• 1538 Horvath R 962-0958
1545 Walsh E N8W1A4 253-9055
(1) 1635 Ganton B 258-0430
1643 Mai A N8W1A6 252-0578

Service Road B

9360 Apro Z 737-7417
(1) 9680 Desjardins S 737-9151
9760 Peiffer E 737-1871
9960 Fredericks M 737-6148
10040 Scaife L 737-6390

Settler's St

• 1104 Omole I 967-8150
1108 Brousseau C N9G2W7 967-9674
1112 Seip S N9G2W7 250-2046
(1) 1116 Banks L 967-9988
(1) 1124 Dyck J 962-3641
1128 Black K N9G2W7 966-2791
• 1132 Peng A 967-8779
• 1136 Allen N 254-4735
1144 Lagace M N9G2W7 250-1138
(3) 1148 Lee J 250-5258
(3) 1156 Carter J 967-9760
(3) 1160 Randhawa D 972-0506
(3) 1172 Polanco F 972-5332
(1) 1176 Alzner Y 967-8434
(3) 1180 Weeratunga N 250-1932
(3) 1184 Perera C 969-7330
• 1188 Vega R 962-4249
1204 Spence J N9G2W8 966-1698
(2) 1208 Charbonneau R 250-7396
(2) 1212 Gagnier L 972-7835
1216 Graham C N9G2W8 969-5816
(1) 1220 Spadafora J 967-8053
1224 Desrosier C N9G2W8 250-5576
(1) 1228 Dakin V 250-3895
1232 George W N9G2W8 966-7365
1252 Campeau D N9G2W8 250-4883
1256 Rodgers L N9G2W8 967-9492
1264 Schembri B N9G2W8 967-9846
• 1284 Moore G 251-1950
(1) 1288 Heaton A 967-9283
(1) 1292 Marcuz D 250-7238

SEVENTH CONCESSION RD

(2) 1650 Evon R 250-1638
X 4145 Acme Neon Signs (Windsor) Ltd N9A6J3 ▲972-9220
(2) 4185 FAHRHALL MECHANICAL CONTRACTORS LIMITED ▲969-7822
(3) -- Fahr Industrial Services Inc N9A6J3 ▲969-7827
4215 Mettler Toledo Inc N9A6J3 ▲250-6472
(3) -- Abell Pest Control Inc N9A6J3 ▲966-4707
(2) -- Clarke Tool & Mold Inc ▲972-7424
(1) -- SKZ Landscaping ▲972-0725
4225 Units
X E Oakwood Restoration Services N9A6J3 ▲966-5611
(3) -- Abell Pest Control Inc N9A6J3 ▲966-7967
(3) -- AJ Machine Inc N9A6J3 ▲972-6092
(2) -- Commercial Maintenance Services Inc ▲967-9000
(2) -- Complete Mobile Wash ▲966-5948
(2) -- Casagrande Granite & Marble Ltd ▲974-9321
(1) -- Signature Contractors ▲972-6472
4237 Namco Mold Finishing N9A6J3 ▲974-4860
X 4237 Specialty Flame Hardening Service N9A6J3 ▲250-7774

SHADETREE CRES 863

X 4237 Masfec Canada N9A6J3 ▲972-7155
4255 Detail & Design (2000) N9A6J3 ▲967-0440
4255 Signature Contractors N9A6J3 ▲972-6472
(2) -- Plumbing Now Inc ▲972-9876
(3) 4295 Southwest Supply Inc N9A6J3 ▲972-7872
(6) 4381 E-Z-Y Way Self Storage N9A6J3 ▲972-5491
(9) 4405 Ontario Water Products N9A6J3 ▲250-0595
X 4405 Form & Build Supply Inc N9A6J3 ▲256-9110
(2) -- SKZ Landscaping ▲250-1664
(1) -- Single Source Contracting Services Inc ▲251-0115
(1) -- Mcgregor Haulage Ltd ▲966-9584
X 4490 Windsor Christian Fellowship N9A6J3 ▲972-5977
X 4595 Southwest Supply Inc N9A6J3 ▲972-7872

SEVENTH ST

(1) 6001 Lepera J 972-5457

SEVILLE AVE

(1) 3101 Docherty J 735-2703

Sexton Side Rd

5450 Dworalschek J
(3) 5500 Ethier Serge Concrete & Paving Ltd

Seymour Blvd

128 Girmontie F 735-7282
129 D'Alessandro J 735-4899
(2) 1505 Grineau T 969-0497
1527 Dennison B N8W5M7 969-2021
1549 Knight T N8W5M7 966-6754
1571 Chase B N8W5M7 250-1725
1593 Pitt D N8W5M7 966-8560
1605 Melo M N8W5M7 250-5799
(1) 1623 Kwaitkowski S 972-5099
1641 Liang H N8W5M7 967-9379
1659 Scarel E N8W5M7 967-0408
(2) 1677 Matthews E 966-8634
(2) 1695 Parent A 966-8842

Seymour Cres

111 Badour M N8N4R6 979-2408
113 Herrmann F N8N4R6 979-4448
114 Mariani M N8N4R6 979-4808
116 Gungor B N8N4R6 735-9526
117 Mucciaccio J N8N4R6 735-7381
118 Gagnon R N8N4R6 979-2742
119 Dennison J N8N4R6 735-6337
120 Crowley C N8N4R6 979-9175
121 Marentette D N8N4R6 979-8500
122 Mastellotto J N8N4R6 735-5979
126 Caro S N8N4R6 735-7398
127 Mastronardi J N8N4R6 735-5921
131 Lam S N8N4R6 979-0216
(3) 132 Burnett S 979-7701
134 Weisenbacher I N8N4R6 979-7547
135 Lipari V N8N4R6 979-8843
136 Dordievski S N8N4X9 979-5106
137 Cantarutti P N8N4X9 735-5961
142 Ing R N8N4X9 979-6662
• 144 Hunter N 739-6153
146 Nantais A N8N4X9 735-1177
146 Volante F N8N4X9 735-1177
148 Fantuz A N8N4X9 735-9346
152 Cipolla P N8N4X9 979-5007
154 Dallu H N8N4X9 735-5178
156 Smith N N8N4X9 979-5366
158 Mancina T N8N4X9 979-7791
(2) 160 Chauvin J 979-0608
162 Filipovic S N8N4X9 735-1907
162 Vidal A N8N4X9 735-3340

Shadetree Cres

2007 WALKER ROAD

SOURCE: VERNONS

X 3895 Lunar Industrial Supplies N8W3T1 ▲969-9575
3898 Lucier W N8W3T2 250-0793
3898 Moody W N8W3T2 966-6199
-- Glass Master ▲969-4494
• 3900 Units
-- Dual-Pane Inc N8W3T3 ▲250-0799
-- Nancy Pattison's Dance World Inc N8W3T3 ▲966-2259
X -- Great Lakes Windows & Doors N8W3T3 ▲972-7055
X 3911 J & J Auto Sales&Service N8W3T4 ▲966-8813
X 3911 Ontario Stop-Rust N8W3T4 ▲969-6670
X 3911 R & R Auto Sales N8W3T4 ▲969-6670
3918 Digital Gateway N8W3T3 ▲966-6867
3918 Units
Rear Etna Cabinet & Woodwork Ltd N8W3T3 ▲966-8729
(1) -- Innopure ▲966-6545
3951 Greyhound Canada N8W3T4 ▲250-7662
3951 Cha-Co Trails N8W3T4 ▲966-2821
X 3951 Chatham Coach Lines N8W3T4 ▲966-3423
X 3957 TAMAR BUILDING PRODUCTS (1981) LTD ▲969-7060
(3) -- Windsor Siding & Moulding Mfg Ltd N8W3T4 ▲969-7060
(3) -- Hunter-Douglas Products N8W3T4 ▲969-7060
X 3966 Splendor Pools N8W3T3 ▲966-4434
X 3966 Splendor Spas N8W3T3 ▲966-4434
X 3990 Air Liquide Canada N8W3T3 ▲969-0610
(3) -- DTL Welder Repair Ltd N8W3T3 ▲972-5006
3991 Samanc N N8W3T4 969-1225
3998 Tim Hortons N8W3T3 ▲969-5854
X 4040 All Seasons Motel N8W3T5 ▲969-4260
4040-12A Ninkovic M N8W3T5 969-3837
4044 Apartments
-- MacKay B N8W3T5 250-5668
-- Harbocian D N8W3T5 969-9046
-- Heathennglon M N8W3T5 972-9365
22 Johnson W N8W3T5 969-2719
Trai Shpak R N8W3T5 250-8565
• 4044 Smeddle N 962-0536
• 4044 Desroches S 957-1251
• 4044 Allen B 966-3702
4050 Units
-- Walker Convenience N8W3T5 ▲250-4453
(3) -- Kovacs John N8W3T5 ▲966-8029
(3) -- Plumbing Now Inc N8W3T5 ▲972-9876
• -- Pakmail Windsor ▲250-3374
• -- Internet Auctions ▲254-3229
• -- FM Communications ▲972-5973
(7) 300 Phone Guide N8W3T5 ▲969-8555
X -- Lg Tv & Appliances-Fm Communications N8W3T5 ▲972-5973
X 4055 Fast As Flite N8W3T6 ▲972-7375
X 4055 Reimer Express Lines Ltd N8W3T6 ▲972-7375
X 4072 Appliance Shoppe The N8W3T5 ▲969-0152
X 4072 Lighting Boutique Inc The N8W3T5 ▲969-0152
(3) -- Belrock Construction N8W3T5 ▲967-8819
(1) -- Factory Appliance Service Windsor ▲966-5400
• -- Boutique Lighting ▲969-0152
(2) -- M & M Meat Shop ▲966-7737
(2) -- Creative Looks Family Hair Care ▲967-1932
(1) -- Simply H2O ▲967-1248
(1) -- Extreme Pita The ▲969-5079
(1) -- La-Z-Boy ▲972-4652
(1) -- Kazwear Swimwear ▲966-0983
4110 Bankroft Financial ▲967-8123
• 4110 Centennial Windows ▲966-6727

(2) 4114 Harmony Day Spa ▲966-2524
(1) 4118 Wyandotte Town Centre BIA ▲253-8826
(2) 4124 Phoenix Jewellers ▲972-3933
(2) -- Wrank Enterprise Inc ▲972-0557
(2) -- Canadian Tire Corporation Associate Stores ▲966-3650
X 4155 Modern Mold Inc N8W3T6 ▲966-4690
4165 Units
(7) -- Borex Precision Machining Inc N8W3T6 ▲250-5920
(7) -- Weldex Fabricating Inc N8W3T6 ▲250-5946
(7) -- U Ltimate Manufactured Systems Inc N8W3T6 ▲250-5950
(7) -- Ultimate Manufactured Systems Inc N8W3T6 ▲250-6399
(7) -- Millenium Global Marketing N8W3T6 ▲250-6399
X 4185 Tate Industrial Sales N8W3T6 ▲966-3210
4255 Brookfield Lepage Johnston Control N8W3T6 ▲967-9975
(3) -- The Shoe Company N8W3T6 ▲250-4339
(3) -- Pier 1 Imports N8W3T6 ▲250-1356
(1) -- Winners Merchants Inc ▲966-0260
(1) -- Silver Creek Commercial Interiors ▲250-1159
(1) 4326 Bulk Barn Foods ▲966-8403
(1) 4328 Bahama Mammas European Tanning ▲966-7091
(1) 4330 Jysk Linen & Furniture In ▲971-8014
(2) 4331 Home Outfitters ▲966-3550
(1) -- Bombay Company The ▲250-0302
(3) 4339 Michael's Arts And Crafts N8W3T6 ▲972-5488
(1) 4347 Designer Depot ▲972-9159
4371 Plaza
(2) -- Dry Cleaner The ▲250-9986
(2) -- Goodlife Fitness Clubs ▲966-9578
(2) -- Walker Square Family Care Centre ▲967-8659
(2) -- Drugstore Pharmacy ▲972-3904
(2) -- Wine Rack ▲972-6595
(2) -- Real Canadian Superstore The ▲972-8335
(1) -- Ranit E V Dr ▲254-6176
(1) -- Windsor After Hours Clinic ▲254-6176
(1) -- Clinic Eye Care ▲254-6176
(3) 4379 Best Buy Canada Ltd N8W3T6 ▲967-2070
(2) 4388 Hooters Of Windsor ▲966-2722
X 4395 McDonald's Restaurants N8W3T6 ▲972-1117
4411 In Store Focus N8W3T6 ▲972-8871
X 4411 COSTCO WHOLESALE ▲972-1899
(2) -- Costco-Rogers Kiosk ▲966-1328
X 4450 East Side Auto Recycling Warehouse N8W3T5 ▲969-6602
(2) -- Pre-Con Builders ▲966-6136
X EE MONEY MART ▲969-6136
(2) -- Ontario Mortgage Action Centre Ltd ▲250-6644
(1) -- Intertan Canada Ltd ▲250-4432
(1) -- Starbucks Coffee Company ▲250-0122
(1) -- Boston Pizza ▲250-7670
(1) -- New Balance Windsor ▲250-9511
(1) -- Wendy's ▲966-1507
(1) -- Shillington Rowlands Insurance Brokers Inc ▲967-1600
(1) -- Fantastic Sam's ▲967-8091
(1) -- Wendy's Restaurant Of ▲967-8467
(1) -- Herbal Magic ▲969-3338
X 4511 Staples Business Depot N8W3T6 ▲972-5127
X 4590 Peter's Auto Body Shop N8W5V6 ▲966-0331
4590 Jokic P N8W5V6 ▲972-0833
4610 Camm Construction Ltd N8W5V6

2001 7TH CONCESSION ROAD

SOURCE: POLKS

STREET NOT LISTED

2001 WALKER ROAD

SOURCE: POLKS



WALKER RD

FRONT AITKEN GROUP contr-staircase bldrs 972-6228
UPR Romanick Greg
UPR Romanick Brian
UPR Nolan Scott
3615 PALAZZI ORIENTAL RUGS 972-7174
3636 PALAZZI BROS CARPET & TILE LTD 969-3941
3663 ROBBINS AUTO SALES used car sls 972-6234
3666 TUFF-KOTE DINOL automotive rustproofing 969-1652
SANTINGS O K TIRE STORES tire dealers & auto repair 966-0422
3670 A TONY'S A B C BARBER SHOP 972-1481
AUTOCLUB PAINT & COLLISION auto b y repairing & painting 969-0600
B Vacant
3690 FRONT UNIVERSAL SCIENCE educational hobby goods 969-0751
BRAY'S AUTOMOTIVE new & rebuilt starters 966-3090
3691 CHAMPIONS ROADHOUSE restr 969-3533

+MELINDA INTERSEDTS

3702 Apartments
FRONT Vacant
RUSSEL METALS metal fabrication 250-3788
UPPER GREAT LAKES COMMUNICATIONS INC telecomms equip-sls & instln 250-1701
3703 A C C U STAFF RESOURCE SYSTEMS LTD personal servs 966-8888
3705 ACCU STAFF RESOURCE SYSTEMS LTD (addl sp)
3719 C A W LOCAL 1973 969-2120
3737 HANDI-TRANSIT 966-0930
3750 Units
1 BERRY BO PRODUCTIONS LIMITED graphic design 966-1060
2 CANADA POST-MAIL TRUCK SERVICING govt
3 S & A CONVENIENCE convenience store 966-9051
4 FIRST CHOICE STARTER & ALTERNATOR starter & alternat -repr 250-6677
3762 Units
A Vacant
B PROTECH AUTOMOTIVE auto repairing 966-4402
B VENTURE MOTORS auto dealers-used cars 972-5570
3767 Skowron Stanislaw & Mary 969-3710
Skowron Agata 969-3710
3775 AIRPORT MOTEL motels 969-3710
3790 Robinson Herbert L 969-8926
Robinson Donna J 969-8926
Robinson John E 969-8926
Robinson Virginia A 969-8926

+LEDYARD AV INTERSECTS

3803 BECKER MILK CO LTD THE convenience store 969-6620
3819 WEED MAN exterminators 969-4177
PEST MAN THE exterminators 969-7188

+AIRPORT RD INTERSECTS

3838 RED SAIL RESTAURANT & TAVERN 969-6921
3839 FASTENING HOUSE INC industrial fastners & tools 966-4966
3839 Vacant
3861 A T I BUILDING & MATERIALS INC stge
3864 Tomen Peter 969-1578
Tomen Norm 969-1578
3869 LEWIS INSUL-METAL SYSTEMS INC insulation contr 966-6611
3873 A T I BUILDING MATERIALS INC (div all-temp insulations inc) 966-3160
3895 LUNAR INDUSTRIAL SUPPLY LTD industrial tools-sales 969-9575
3898 Jones A
Pilon W

+MOXLEY AV INTERSECTS

3900 GREAT LAKES ENERGY PRODUCTS INC window & door sls & install 972-7055
B PATTISON'S NANCY DANCE WORLD 966-2259
BAY 2 PREFERRED DIE SERVICE INC 250-3832
3911 ONTARIO STOP-RUST INC auto undercoating 969-6670
R & R AUTO SALES INC 969-6670
J & J AUTO SERVICE & SLS 966-8813
3918 Renaud Elizabeth 966-9318
E T N A CABINETS cabinet makers 966-8729
3951 CHATHAM COACH LINES bus line 966-3423

WALKER RD

3955 WINDSOR SIDING & MOLDING MFG (1981) LTD 969-7060
3957 TAMAR BUILDING PRODUCTS (1981) LTD bldg sups 969-7060
TAMWIN HOLDINGS LTD business office 969-7060
3966 SPLENDOR POOL & SPA CO swimming pool contr 966-4434
3967 WAHL CLIPPER CORP OF CANADA LTD plastic injection 969-1480
3989 Vacant
3990 AIR LIQUIDE CANADA welding equip sls 969-0610
B Vacant
3991 CANADIANNA MOTOR HOTEL 969-3150
Samanc Nick & Persa 969-3150
3998 TIM HORTON'S DONUTS 969-5854
3999 Vacant 59

+DIVISION RD INTERSECTS

4040 ALL SEASONS MOTEL motels 969-4260
Pathak Vijay & Rani
4044 MAPLE TRAILER PARK mobile home pk 966-7678
Units
2-7 Not Verified (5 Apts)
8 Litster Richard & Teri 972-4688
9 Not Verified
10 Ryan Dennis
11 Harbocian David 969-9046
12 Dahle L
13-16 Not Verified (4 Apts)
17 Konkel Paul A
18 Williams Dave 967-0424
19-22 Not Verified (3 Apts)
4050 F M COMMUNICATIONS communication equip-sls & serv 972-5973
2 Under Constn
4055 REIMER EXPRESS LINES LTD freight shippers 972-7375
4072 LIGHTING BOUTIQUE lighting fixtures-sls 969-0152
4155 MODERN MOLD INC plastic injection molds 966-4690
4165 BOREX PRECISION MACHINING 250-5920
4185 TATE INDUSTRIAL SALES LTD coml indus parts whsl 966-3210
4255 CANADA POST CORP mail proc plant 972-2514
4411 COSTCO WHOLESALE wholesale-cash & carry
4450 EAST SIDE AUTO RECYCLING WAREHOUSE used car parts retl & whsl 969-6602
4511 STAPLES-BUSINESS DEPOT ofc sup-sls 972-5127

+LEGACY PARK INTERSECTS

+SEVENTH CONCESSION INTERSECTS

4590 PETER'S AUTO BODY SHOP repr shop 966-0331
FRONT Jokic Peter 966-7033
4610 Not Verified
4610 CAMLIN CONSTRUCTION LTD genl contr 972-0833
4611 FAMOUS PLAYERS SILVERCITY WINDSOR cinemas 966-6888
FAMOUS PLAYERS SILVERCITY-BUSINESS OFC 966-7455
NEW YORK FRIES-SILVER CITY CINEMA'S restrs 966-7455
PIZZA HUT-SILVERCITY CINEMA'S restrs 966-7455
TACO BELL-SILVERCITY CINEMA'S restrs 966-7455
FAMOUS CAFE-SILVER CITY CINEMAS coffee hse 966-7455
4616 Not Verified
4620 JAY'S SERVICE STATION gas sta 972-0900
4630 IRONEX ALUMINUM FENCING & RAILING alum fences & railings 253-2354
4680 ZUCCATO WOOD CRAFTS INC cabinet makers 966-2787
4690 HOLLAND AUTO SALES cars-buy-sell-trade 966-4000
Holland Hendrick 966-4000

+PROVINCIAL RD INTERSECTS

BUSINESSES 358 HOUSEHOLDS 106

WALLACE AV -FROM HOWARD AV EAST

515 Greaves James J 59
520 Naccarato Angela M 969-9793

+HANLEY CRESC INTERSECTS

530 Patterson Robert & Mae 966-3796
534 Singh Amrik & Inder 966-1794
Singh Michelle 972-7570
535 Lyons J Michael & Betty Anne 972-7570
Lyons William J 969-0369
540 Not Verified 969-0369

1997 7TH CONCESSION ROAD

SOURCE: POLKS

SEMINOLE cont'd

BECKER MILK CO LTD THE.. 945-8211
SERGIO'S OF WINDSOR..... 948-2472
+ *SEMINOLE INTERSECTS*
35
+ *TOURANGEAU INTERSECTS*
4195 Vacant
+ *ROSSINI BLVD INTERSECTS*
4258 ST JOSEPH'S (R C) CHURCH 945-1158
Hurley Rev Jack 945-1158
4285 SEMINOLE PUBLIC LIBRARY.. 945-6467
+ *BERNARD RD INTERSECTS*
4315 TREVI PIZZERIA RESTAURANT 948-4112
4320 LABOURERS LOCAL 625..... 944-3880
4395 TANGLES AND TALONS hair & beauty salon 974-6219
+ *FRACOIS RD INTERSECTS*
4409 PROLANN PROJECT PLANNING GROUP INC consit eng..... 944-7824
+ *ELLROSE AV INTERSECTS*
37
+ *ARTHUR AV INTERSECTS*
4675 BECKER MILK CO LTD THE.. 944-7703
BECKER'S GAS self-serv sta.. 944-7703
+ *PILLETTE RD INTERSECTS*
4727 Vincent Mark 945-2269
4729 ONTARIO SECONDARY SCH TEACHER'S FEDERATION 974-2228
UPPER ONTARIO PUBLIC SCHOOL TEACHER'S FEDERATION 945-2113
4740 Vacant
4741 Wannick Michael W 945-0916
4756 Deavey Gary W & Karen 945-4313
4770 Not Verified
4769 Reginella Peter & Margherita 948-1545
Reginella Ignazio 948-1545
4770 Groux Theresa 945-2980
4790 Larret Ed F 945-5026
4797 Mantha Raymond L & Beverley 944-1716
Mantha Denise J 944-1716
Mantha Raymond L Jr 944-1716
+ *OLIVE RD INTERSECTS*
4808 Rousseau Cecil F & Kathy 944-7944
Rousseau Matthew C 944-7944
4809 Mc Call David A & Mary
Todd Rose
4829 Heston William N
Rose Deanna M
4830 Morency Francis P & Sophie 948-0527
4850 Dabala Ethel
4851 Campeau Lauri S 948-0267
4869 Copland John W & Diana 944-6325
Copland Dwayne S 944-6325
Copland Angela L 944-6325
Copland Robert 944-6325
4870 Not Verified
4890 Doe Kevin F & Pat 948-3641
4891 Not Verified
+ *NORMAN RD INTERSECTS*
4908 Van Vessem Cornelius & Manna 944-0272
4934 Howey Joseph D 974-3572
4945 Miller Donald J 948-5175
4952 Not Verified
BUSINESSES 51 HOUSEHOLDS 99

SENECA -EAST FROM MOY AV TO WALKER RD FIRST NORTH OF TECUMSEH RD E
63
1400-1410 Not Verified (2 Hses)
1420 Apartments
1-10 Not Verified (7 Apts)
1430 Not Verified
+ *GLADSTONE INTERSECTS*
1516-1518 Not Verified (2 Hses)
1536 Peczi Lesley 253-6615
1538 Khan Ali N & Helga 253-9257
1545 Walsh Eliza 253-9055
Walsh Robert W 253-9055
+ *LINCOLN RD INTERSECTS*
1636 SENECA APARTMENTS
1 Jacobson Hayvey A 253-1017
2 Elder Nancy 253-1890
3 Hanson L F 971-0500
4 Not Verified
ns STODGELL PARK
1643 Not Verified
+ *WINDERMERE RD INTERSECTS*
+ *CHILVER RD INTERSECTS*
+ *KILDARE RD INTERSECTS*
+ *DURHAM PL INTERSECTS*
+ *TURNER INTERSECTS*
ST FRANCIS (CROATION) ROMAN CATHOLIC CHURCH side entrance
+ *WALKER RD INTERSECTS*
BUSINESSES 3 HOUSEHOLDS 20

SEVENTH CONCESSION RD -SOUTH-WEST FROM DIVISION RD FIRST EAST OF WALKER RD
59
+ *NUMBERS IRREGULAR*
4140 Lacount John W & Mildred 969-1334
Lacount Roberta A 969-1334
4215 A ARKO MECHANICAL INC heat contrs 250-0932
1 T & T MOULD FINISHING mould finishing 969-8694
ALLEN ANTHONY INDUSTRIES machine production welding 966-9583

SEVENTH CONCESSION RD cont'd

4120 Kiss John & Catherine 966-1989
4165 ACME NEON SIGNS (WINDSOR) 1981 LTD 972-9222
4185 FAHRHALL MECHANICAL CONTRACTORS LTD constr heating 969-7822
JOHN'S SERVICE GARAGE auto repair 969-7915
4178 Seguin Richard R & Debbie 972-0832
4255 PRECISE MOLD FINISHING mold finishing 972-5158
+ *RAILWAY TRACKS INTERSECTS*
4381 E-Z-Y WAY SELF STORAGE.. 972-5491
4405 UPPER TRICON ELECTRICAL-MECHANICAL 506026 ONTARIO LTD 250-0499
LOWER PRO-BID CONTRACTORS LTD 250-0499
4405 Vacant
4450 Rogers Carol
4330 O'Neil Ryan 966-2768
4490 WINDSOR CHRISTIAN FELLOWSHIP 972-5977
WINDSOR CHRISTIAN FELLOWSHIP-CHRISTIAN ACADEMY christian sch 972-5986
4595 MAGESTIC SUPPLIES LTD heating apparatus & appliance 972-7872
+ *WALKER RD INTERSECTS*
BUSINESSES 13 HOUSEHOLDS 5

SEYMOUR BLVD -FROM WOODWARD RD EAST
47
1505 Not Verified
1527 Gilmore Glyn D & Janet 966-8693
1549 Knight Trevor J & Susan 966-6754
1571 Not Verified
1593 Pitt Darrell L & Diane 966-6560
1605 Not Verified
1623 Stankovic Dragan & Elizabeth 966-0090
1641 Simon Attila J & Margit 966-1173
1659-1677 Not Verified (2 Hses)
1695 Dew Karzell A & Laurie 972-5082
HOUSEHOLDS 11

SHENANDOAH CRES -NORTH FROM PULBROOK RD TO STILLMEADOW RD
197
10130 Not Verified
10132 Davey Jo Anne M 979-8570
Davey Jenny L 979-8570
Davey Edward J 979-8570
10133 Azaizi Samir H & Nadia 979-0425
10135 Beshir Azeem U & Sultanta 735-4746
10140 Gouin Paul J
Gouin Allison
10142 Davis Windell & Sheila 735-5773
Grisch Mich A 735-5773
10143-10145 Not Verified (2 Hses)
10150 Graschner Elizabeth 735-2925
10152 Ang Claudi F & Teresita 735-1333
10170 Not Verified
10172 Darwich Sam 979-0433
10190 Pathak Kewa L 735-2743
10192 Turner Donald R & Sharon 735-7675
10210 Lewsaw George H & Bonnie 735-4933
Hind Jean N 735-4933
10212 Roy Jean-Marc & Donna 979-2646
Roy Jason M 979-2646
10230 Brown Melissa 735-2335
10232 Lalic George & Mandy 735-2048
10245 Madej Anna 735-3744
Madej Jack J 735-3744
10250 Ajimal Surjit S & Manjit 979-2237
Ajimal Narinder S 979-2237
10252 Speal Michelle M 979-4601
10255 Przybyslawska Richard & Grace 735-5406
Przybyslawska Ralph 735-5406
10265 Greatbanks Darren & Catherine 735-0681
10270 Stevenson Douglas W & Mary 735-2166
Stevenson Billy M 735-2166
10272 Vacant
10275 Not Verified
10285 Wnek Boleslaw & Grazyna 979-5838
10292 Zebeljan Veljko & Jovanka 735-6878
10295 Not Verified
10311 Brausa Colin H & Ann 735-0243
Brauss Richard W 735-0243
10312 Beatty Marlene G 735-0674
Beatty Leah M 735-0674
Beatty Janine M 735-0674
10317 Neal Raymond E 979-2516
NEAL RAYMOND E CHARTERED ACCOUNTANT chartered acct 979-2516
10318 Ali Hamid & Qudsia 979-0192
Ali Sarah S 979-0192
Ali Azam M 979-0192
10325 Stallborn Bernhard W & Marguerite 735-7839
10326 Craig William D & Pierrette 735-6938
10333 Jansen Edward R & Jessie 735-9636

1997 WALKER ROAD

SOURCE: POLKS

RANGE NOT LISTED

1992 7TH CONCESSION ROAD-A

SOURCE: POLKS

3800 APPLEWOOD CONSTRUCTION 944-6111
3812 SMITH SIGN CO 945-4551
3816 FLOWER GARDEN THE florists rct 945-9045
3831 ROUNDUP VARIETY THE 974-4467
3865 Apartments
BACKSTAGE HAIR DESIGNS hair cutting & styling 974-3154
101 Johnson Marie E [2]
201 Deneweth Linda L [5] 944-7960
202 Dominas Donnie P [5] 974-6692
202 Pare Sheryl A 974-6692
301 Not Verified
302 Marshall Linda L [5]
3883 HAIR OF THE DOG 945-9201
3899 Vacant
• AUBIN RD INTERSECTS
3905 MARIA'S CLEANERS CENTRE 948-4100
3909 MARIA'S LAUNDROMAT 948-4100
3919 GALLERY HAIR SHOP THE 945-0855
3921 QUICK T V SERVICE & REPAIR 945-5558
3930 TOP GUN VIDEO 974-9050
3933 KATHY'S KITCHEN 944-6330
3935 Vacant
3970 SEMINOLE BIG V DRUG STORE 945-2301
3983 SILVER'S TAVERN 948-3831
3985 DENNIS UNISEX HAIR STYLE 945-5378
• GEORGE INTERSECTS
4020 SEMINOLE APARTMENTS
1★Fields Tim
2 Fields Wayne [2] 945-7606
3 Gagnier Stan [5] 948-9324
4 Dumouchelle Madeline [4] 945-7042
5 Vacant
6 Moffett Ralph & Sandra [2] 945-8843
7 Morton Pamela J [5] 948-6026
8 Grenier Richd [2]
9 Fields Wendy S [9]+ 944-7408
10 Bruce Robt [9]+ 945-1415
11★Jefferies Eliz
4045 SCHWAB'S FINEST IN MEATS 945-3233
BECKER MILK CO LTD THE 945-8211
SERGIO'S OF WINDSOR 948-2472

35

4195 CARRIBEAN CENTRE THE 945-0213
• ROSSINI BLVD INTERSECTS
4258 ST JOSEPH'S (R C) CHURCH 945-1158
Hurley Jack Rev [3] 945-1158
Simms Paul Rev 945-1158
4285 SEMINOLE PUBLIC LIBRARY 945-6467
• BERNARD RD INTERSECTS
4315 TREVI PIZZERIA RESTAURANT 945-4112
4320 LABOURERS LOCAL 625 944-3880
4395 SERGEANT SECURITY SYSTEMS 974-4188
• FRACOIS RD INTERSECTS
4409 Vacant
• ELLROSE AV INTERSECTS

37

• ARTHUR AV INTERSECTS
4575 BECKER MILK CO LTD THE 944-7703
PETRO CANADA self-serv sta 944-7703
• PILLETTE RD INTERSECTS
4625 HAIR PATTERNS 948-3399
4627 Not Verified
4629 ONTARIO SECONDARY SCH TEACHER'S FEDERATION 974-2228
Upper ONTARIO PUBLIC SCHOOL TEACHER'S FEDERATION 945-2113
4640 FRANK'S BARBER SHOP 945-0995
4641★Wannick Michael ⊕ 945-0916
4656 Deabey Gary & Karen [2] ⊕ 945-4313
4669 Reginella Peter & Margherita [9]+ ⊕ 948-1545
Reginella Ignazio 948-1545
4670★Groux Theresa ⊕ 945-2980
Kani Monique 945-2980
Kani Kristofferson 945-2980

4790 Larret Edw F & Phyllis I [9]+ ⊕ 945-5026
4797 Mantha Raymond L & Beverley L [9]+ ⊕ 944-1716
Mantha Raymond D 944-1716
Mantha Denise J 944-1716
• OLIVE RD INTERSECTS
4808 Rousseau Cecil F & Kathy E [9]+ ⊕ 944-7944
4809★Mc Call David A & Mary M ⊕
4829 Charbonneau John L & Karen R [7] ⊕
4830 Morrisey Francis P & Sophie H [9]+ ⊕ 948-0527
4850 Dabola Ethel [2] ⊕
4851 Sauchuk Veronica [7] ⊕ 948-0421
4869 Copland John W & Diana J [9]+ ⊕ 944-6325
Copland John R Jr 944-6325
Copland Angela L 944-6325
Copland Robert 944-6325
4870 Howorth Steve R & Jean M [2] ⊕ 945-1286
4890 Doe Kevin F & Pat A [6] ⊕ 948-3641
4891 Sasso Eileen [9]+ ⊕ 948-1495
• NORMAN RD INTERSECTS
4908 Van Vessem Cornelius & Marina [3] ⊕ 944-0272
4934★Harris Brian D & Patty M ⊕ 944-2963
4945 Pouget Michael R & Alma M [2] ⊕
Mitchell Ralph W
4952 Garnett Gurney W [9]+ ⊕ 948-3214
Garnett Cathy 948-3214
93 HOUSEHOLDS
53 BUSINESSES

83

SENECA –EAST FROM MOY AV TO WALKER RD FIRST NORTH OF TECUMSEH RD E

1400 Not Verified
1410★Robinson Donald M 256-8510
1420 Apartments
★Barrette David 971-7767
2 Bradt Janet M [2]
3 Not Verified
4★Santarossa Robert & Brenda T 977-5787
5 Vacant
9★Michalewski
10★Mc Closkey
1430 Not Verified
1516 Not Verified
1518 Vacant
1536★Peczi Lesley 253-6615
1538 Khan Ali [9]+ ⊕
• GLADSTONE AV INTERSECTS
1545 Walsh Eliza [6] ⊕ 253-9055
Walsh Robert 253-9055
1636 SENECA APARTMENTS
1 Jacobson Harvey A [4] 253-1017
2 Lauzon Rita [9]+ 256-2493
3-1636 Vacant (2 Apts)
ns STODGELL PARK
• LINCOLN RD INTERSECTS
1643 Mino Russell & Rita C [7] ⊕ 252-0165
• WINDERMERE RD INTERSECTS
• CHILVER RD INTERSECTS
• KILDARE RD INTERSECTS
• DURHAM PL INTERSECTS
• TURNER INTERSECTS
ST FRANCIS (CROATION) ROMAN CATHOLIC CHURCH side entrance
15 HOUSEHOLDS
2 BUSINESSES

59

SEVENTH CONCESSION RD –SOUTH-WEST FROM DIVISION RD FIRST EAST OF WALKER RD

• NUMBERS IRREGULAR
Kiss John & Catherine [2] ⊕ 966-1989
4465 ACME NEON SIGNS WINDSOR LTD neon signs
CATTON SIGN MANUFACTURING LIMITED sign pntrs & mfrs 972-9222
Lacourse John W & Mildred [2] ⊕ 969-1334

1992 7TH CONCESSION ROAD-B

SOURCE: POLKS

SEVENTH CONCESSION RD –Contd

4485 FAIRHALL MECHANICAL CONTRACTORS LTD contr heating 969-7822
Rear JOHN'S SERVICE GARAGE auto repair 969-7915
Seguin Richard R & Debbie A [2] ⊕ 972-0632
4595 MAGESTIC SUPPLIES LTD heating & cooling 972-7872
• RAILWAY TRACKS INTERSECTS
4381 E-Z-Y WAY SELF STORAGE 972-5491
4405 TRICON ELECTRIC 250-0499
Rear PRO-BID CONTRACTORS sewer & water 250-8459
4450 Lyons Linda [2] ⊕ 969-2249
Lyons Lisa M 969-2249
Lyons Chris J 969-2249
4490 WINDSOR CHRISTIAN FELLOWSHIP 972-5977
• WALKER RD INTERSECTS
4 HOUSEHOLDS
8 BUSINESSES

47

SEYMOUR BLVD –EAST FROM BLISS RD TO RIBERDY RD SECOND SOUTH OF E C ROW AV

197

SHENANDOAH CRES –NORTH FROM PULBROOK RD TO STILLMEADOW RD

10130 Paese Peter F & Germaine R [9]+ ⊕ 735-3428
10132 Paese Santo & Anna [9]+ ⊕ 735-0590
10133 Csapo Edward [2]
10135 Csapo Leslie & Marta [3] ⊕
Csapo Robert
10140 Hewton Robt & Joanne [2] ⊕ 735-8505
10142★Griseh Sheila ⊕ 735-5773
Davis Windell 735-5773
10143 Presnell Judith [9]+ ⊕ 735-6928
Norris John 735-6928
10145★Chappus Jill 735-1236
10150 Greschner Karl & Elizabeth [9]+ ⊕ 735-2925
10152 Not Verified
10170 Peterson W Richd & Cynthia A [9]+ ⊕ 735-8384
Peterson Sherri L 735-8384
10172 Hooper Gail [6] ⊕ 735-6825
Hooper Gary 735-6825
10190 Pathak Kewa L & Neelam [4] ⊕ 735-2743
10192 Duncan Peter F & Florence [9]+ ⊕ 735-0640
10210 Lewsaw G H & Bonnie E [9]+ ⊕ 735-4933
Lewsaw Jeff 735-4933
Hind Jean 735-4933
10212 Roy Jean-Marc & Donna [4] ⊕ 979-2646
10230 Brown Dorene M [9]+ ⊕
Brown Scott
Brown Terry
10232 Cutic Ivan & Rose [5] ⊕ 735-9328
10245 Madej Ted & Anna [9]+ ⊕ 735-3744
Made Mark 735-3744
10250 Ajimal Surjit & Manjit [3] ⊕ 979-2237
10252 Luxford Philip & Julie [7] ⊕
10255 Przybyslwski Richard & Grace [2] ⊕ 735-5406
10265 Pabla Jarnail Singh & Paramjit Kaur [2] ⊕ 979-0299
10270 Stevenson Douglas & Mary [9]+ ⊕ 735-2166
Neveu Susan 735-2166
Neveu Billy 735-2166
10272 Sallows Mark & Wendy [5] ⊕ 979-3038
10275★Giesbrecht Mary ⊕ 979-3435
10285★Wnek Boleslaw & Grazyna ⊕ 979-5838
10292 Zebeljan Veljko & Jovanka [9]+ ⊕ 735 6878
Zebeljan Nancy 735-6578
10295 Barr Andrew & Rose [9]+ ⊕ 735-4428
Barr Katherine 735-4428
Barr Andrew Jr 735-4428

10311★Brauss Annmarie ⊕ 735-0243
Brauss John E 735-0243
Brauss Colin H 735-0243
10312 Beatty Marlene G [6] ⊕ 735-0674
Beatty Leagh 735-0674
Beatty Janine 735-0674
10317 Neal R [3] ⊕ 979-1092
10318★Ali Hamid & Qudsie ⊕ 979-0192
10325 Wiley Greg & Rochelle [2] ⊕ 979-1215
10326 Craig Wm D & Pierrette J [9]+ ⊕ 735-6938
10333 Jensen Edw R & Jessie [9]+ ⊕
Jensen Grace R
10334 Smith Darlene M [2]
Smith Danielle
10341 Kaminski Chris & Danuta [2] ⊕ 979-0235
10342 Demery Marie [3] ⊕
Demery Richard
Beke Milka
10349 Sanio Carlo & Ann [4] ⊕
10350 Quattrociocchi G [4] ⊕
10357 Sherwani Shemad & Marilyn [2] ⊕
10358 Webb Larry & Margi [9]+ ⊕ 735-6319
Webb Rachelle A 735-6319
Webb Mark 735-6319
10365 Higgison Wade R & Lillian H [7] ⊕ 735-8088
10366 Hemphill Robt R [2] ⊕ 735-7022
10373 Aletkar Ashok & Mohini [9]+ ⊕ 735-7036
Aletkar Charu 735-7036
10374 Dostie Paul & Carole [2] ⊕ 735-6441
10381 Lamarche Jacques P & Lucille H [5] ⊕ 735-0229
10382 Not Verified
10389 Ostoic Peter & Debbie A [9]+ ⊕ 735-1885
10390 Laskowski Tony & Shirley [3] ⊕ 735-9455
10399 Sharpe Robt & Janet [7] ⊕ 735-7432
10400 Duri L & Dagmar [9]+ ⊕ 735-5534
Duri Thomas L 735-5534
10405 Robertson James & Sheila [2] ⊕ 735-7620
10406 Not Verified
10409 Bhatt Kailesh & Joti [2] ⊕
10412 Malakoti Shamir & Aghdas [2] 735-6647
10415 Leparskas Thomas & Rose [3] ⊕ 979-2717
10418 Hillis Gerald & Carol [4] ⊕ 735-1886
10421 Pittell Jack W & Leslie A [9]+ ⊕
10424 Strang Dave & Suzanne [2] ⊕ 979-9694
10429★Mc Wade Tim O & Joanne M ⊕
Mc Wade Shamus
10430 Lamb Bill & Connie [5] ⊕ 735-8758
10435 Johnston Edward & Marilyn [4] ⊕
10436 Not Verified
10442 Doyon Pierre & Jacky [9]+ ⊕ 735-8136
10445 Logan Mary C [7] ⊕ 735-4287
Logan Shawn P 735-4287
Logan Shelly E 735-4287
10450 Black Mathew & Pamela [9]+ ⊕ 735-6998
Black Graham M 735-6998
10455 Murray Dale E & Lilly D [2] ⊕ 735-0664
10456 Wiebe Dave & Patti [2] ⊕ 979-1276
10462 Prestanski Wm & Patricia [5] ⊕ 735-8790
10468 Guner S [8] ⊕ 979-3047
10474★Chako Clara ⊕ 979-2352
10480 Szusz Joseph & June [9]+ ⊕ 735-9656
10488 Moffat John K & Janet [9]+ ⊕ 735-9869
10496 Perry Darlene [9]+ ⊕ 735-6789
Perry Suzie 735-6789
76 HOUSEHOLDS

1992 WALKER ROAD

SOURCE: POLKS

• AIRPORT RD INTERSECTS
3838 RED SAIL RESTAURANT LTD 969-6921
3839 HOME TECHNOLOGIES 972-8700
Rear ACTIVE CONTROL TECHNOLOGY consulting serv 972-8707
3861 ATI BUILDING & MATERIALS INC stge
3864 Tomen Peter [9]+ ⊕ 969-1578
Tomen Norm 969-1578
3869 LEWIS INSUL-METAL SYSTEMS INC insulation contr 966-6611
3873 A T I BUILDING MATERIALS 966-3160
3895 LUNAR INDUSTRIAL SUPPLY LTD 969-9575
3898 Bitzer Donald L & Donna E [2] 972-8882
• MOXLEY AV INTERSECTS
3900 PLAS-TEK MANUFACTURING CORP 966-7797
3911 ONTARIO STOP-RUST INC auto undercoating 969-6670
R & R AUTO SALES INC 969-6670
CRYSTAL AUTOMOTIVE automobile repairs 250-0452
Rear CORNELL AUTO SALES
3918-3940 Vacant (2 Hses)
3951 J I DENURE (CHATHAM) LTD bus line 966-2821
CHATHAM COACH LINES bus line 966-2821
3955 WINDSOR SIDING & MOLDING MFG (1981) LTD 969-7060
3957 TAMAR BUILDING PRODUCTS (1981) LTD bldg sups 969-7060
TAMWIN HOLDINGS LTD 969-7060
ALL-TYPE WINDOWS 969-6064
3966 SPLENDOR POOL & SPA CO swimming pool contr 966-4434
3967 WAHL CLIPPER CORP OF CANADA LTD 969-1480
3980 Vacant
3990 LAKE ERIE OXYGEN CANADA LIMITED welding equip sls 969-0610
STUART D A 966-1150
3991 CANADIANNA MOTOR HOTEL 969-3150
Samanc Nick & Persa [9]+ ⊕ 969-3150
Samanc Veronik 969-3150
3999 CHAN'S RESTAURANT 966-1070
• DIVISION RD INTERSECTS

59

4040 ALL SEASONS MOTEL 969-4260
★Pathak Vijay & Rani 969-4268
Ninkovic Milenko [5] 969-3837
4044 MAPLE TRAILER COURT 972-0004
TRAILERS
2 Vacant
3★Knox Tom A ⊕
4★Logan Marie
5 Not Verified
7 Wilson Richard & Margo [2] ⊕
8 Murdock Robt G [9]+ ⊕ 969-8614
10 Ryan Denny [8] ⊕ 966-7678
11 Not Verified
12 Dahyl Lyle [2]
13 Wigle Lanny H [2] ⊕
14 Not Verified
15 Heatherington Marie E [3] ⊕ 972-9365
16★Laidlaw John & Melisa
17 Vacant
18 Fitch Lewis [9]+ ⊕ 966-5425
19 Richards Jim [4] ⊕
21 Mabbett Ronald A [6] 966-0349
22 Johnson Walter I [4] ⊕ 969-2719
23★Heatherington M 972-3998
4050 F M COMMUNICATIONS 972-5973
Kovacs John & Susan [2] ⊕ 972-5973
4055 CANADIAN GREAT WESTERN EXPRESS LTD 966-0810
4072 LIGHTING BOUTIQUE THE 969-0152
4155 MODERN MOLD LTD mold mkrs plastic mould 966-4690
4165 DOUBLE "M" PLASTICS plastic moulds 966-7022
4185 TATE INDUSTRIAL SALES 966-3210
4255 GOVT OF CAN WINDSOR POST OFFICE

ws UNDER CONSTRUCTION
4450 EAST SIDE AUTO RECYCLING WIISE 969-6602
4590 PETER'S AUTO BODY SHOP 966-0331
Jokie Peter & Zorica Zisan [4] 966-7033
4610★Miller Tracey
4620 JAY'S SERVICE STATION 972-0900
Bhatt Kiran & Saryu [5] ⊕
4630 IRONEX ALUMINUM FENCING & RAILING MFG 253-2364
4665 Under Constn
4680 ZUCCATO WOODCRAFT INC 966-2787
4690 Mc Lean Danny J & Laurie A [4] 969-8310
• PROVINCIAL RD INTERSECTS
• PENN CENTRAL RAIL RD INTERSECTS
4785 Liddell Robert B & Jacqueline [3] 966-2943
4800 MICROMOLDS TOOL CO 966-7093
4810 RYDER TRUCK RENTALS LTD 969-4841
• TRAIN SERVICE ROAD
4820 CLOCK MACOO TREE NURSERY ETC 969-2727
Doorigan Peter C [9]+ ⊕ 969-2727
4845 Latouf Robt A & Patricia K [4]
• HWY 401 OVERPASSES
4880 TEAL INDUSTRIES car carriers & trk equip 737-6901
4921 POLLOCK RENTALS LTD jim pollock v pres & genl mgr 737-1987
CROTHERS LTD 737-7386
4949 ADVANCE METAL WORKS welding & fabricating 737-1171
4955 COLLAVINO INCORPORATED genl contrs 737-1216
PRESTRESSED SYSTEMS INC 737-1216
4960 MARSH FOOD SERVICES 737-6115
4961 ROCHELEAU HOME SERVICES 737-7729
4691 FIRST GENERAL SERVICE OF WINDSOR insurance repairs 737-7729
4971 APPCO APPLIANCE & REFGR SERV appliance repairs 737-1029
WINDSOR APPLIANCE & REFGR SERV hsehold appliance 253-4653
4980★Major Timothy T & Anita A
4980 Masse Laurent J & Rose Mary [6] ⊕ 737-6669
4995 POODLE SHOP THE 737-1155
5000 LANEX MFG INC 737-1088
5010 Not Verified
5020 COLE MOTION INCORPORATED hydraulic equip 737-6993
5025 SAFEWAY SELF STORAGE mini whse 737-1391
★Langille Lloyd G & Joyce A
5040 D & G TRUCK & TRAILER 737-7333
5085 SUN PARLOUR TRAILERS & MOBILE HOMES LTD trailer sls & serv 737-6503
5130 Vacant
5141 Miner Paul E & Joanne M [2] 737-7091
5151 Wilcox J Wayne & Sharon A [2] 737-1950
5163 HALLEWICK MECHANICAL LTD plmb htg contr 737-1401
★Hallewick Norman J & Marian ⊕
Mathias John
5166 Austin G Eileen [2] ⊕ 737-6243
Austin Catherine W 737-6243
Austin M Jane 737-6243
Jessop Mary C 737-6243
5175a Durocher Keith & Sherry [2] 737-1419
5175b Durocher Kevin & Debbie [2] 737-7168
5185 Banner Derrick I & Karen A [2] 737-1637
5188 MORTON WHOLESALE LTD 737-6961
• N TALBOT RD INTERSECTS
5215 KIRBY TOOL & MOLD INC plastic & die cast molds 737-1267
5300 OLDCASTLE SHELL serv gas bar 737-7414
SAM'S GAS BAR 737-7414

1986 7TH CONCESSION ROAD

SOURCE: BRESSERS

GE 264

35 John Maczyovski 326-2042
36 Peter Knelsen .84 328-7652
37 Gerry Legg .83 326-8218
38 H D Hillman 326-5595
39 Richard Edmondson 326-4858
41 E L Hartwick .79 326-4973
42 Jake Rempel — 326-0038
45 John L Peters .84 326-1368
46 Y Kairouz .84 326-2226
47 E Merritt ¤ 326-7212
48★APARTMENTS
-A A Tilson ¤ 326-2931
-B F Bathoes .84 326-6262
49 B MacVicar ¤ 326-7285
51 Norman Michaud .83 326-7351
53★APARTMENTS
-12L C Somerset .79 326-7597
54 George T Benson — 326-1967
55 Edna Bassile 326-4366
56 Roger Branco .82 326-1920
58 T Lange .84 322-2453
60 NP
63★APARTMENTS
S Merhe .79 326-8477
-2 NP
-UPPER Paula Petinga ¤ 326-3341
65 J Fratarcangeli 326-1055
67 M Matheson 326-4367
68★APARTMENTS
-UPPER NP
69 Wadah Daher 326-5330
70 Ken Lambier .84 326-7887
72 Tony Daher .84 326-0351
73 Ross Nicholson 326-2719
74 S Albury — 326-7800
L Jenner 326-4655
75 Wm Soulliere .83 326-0855
76 Gordon Demmans ¤ 326-7002
78 H S Monck 326-4713
79★APARTMENTS
-1 Adolfino Batista .82 326-1343
-3 NP
-2FLR A Harms 326-2210
-UPPER D Sowden ¤ 326-7535
81★APARTMENTS
-LOWER NP
-UPPER NP
82★APARTMENTS
-UPPER NP
83 NP
84 NP
86★APARTMENTS
-LOWER Donald C Church .83 326-8339
88★Salvation Army 326-4901
★Salvation Army ¤ 326-2195
★ Captain's Res 326-2195
89 C L Sudds ¤ 326-5821
★SUDDS HOWARD 326-9351
90 Bill Fast ¤ 326-6458
91 Marcel Beaulieu 326-3933
92 Adolfo Ribeiro 326-8202
93 Peter Duining — 326-1359
55 RESIDENCE 6 BUSINESS

SEVENTH

•BELLE RIVER

NOR 1AO

140 R A Hooper 728-1169
146 James Ogle 728-2063
150 N Dumontier 728-2045
153★APARTMENTS
-1 D Quenneville .83 728-3430
-2 Raymond Lesperance .83 728-3352
-3 G Lavoie .84 728-1092
-4 M L Taylor .80 728-2815
-5 C St Croix .80 728-2266
154 Barb&Mike Dupuis .83 728-1412
Mike&Barb Dupuis .83 728-1412
159★APARTMENTS
-A James Ghanam .84 728-1224
-B R Noel 728-2737
-C Jerome Noel .84 728-1514
166★TREPANIER'S ESSO SERVICE 728-2651
★TREPANIER'S ESSO SERVICE ¤ 728-1176
★ Trepanier J M Res 728-1176
173 NP
174 B Trepanier .83 728-2692
186 Wm Blanchette 728-2051
192 Herman Lebert .84 728-2863
220 Louis F Connoy .80 728-1854
NO # Gilbert Poisson 728-1255
19 RESIDENCE 2 BUSINESS

SEVENTH CONCESSION

•ANDERDON

NO # S Balogh .82 726-5309
NO # Phil Bezaire .81 737-6343
NO # Romeo Bezaire 726-6727
NO # O Coyle 726-6281
NO # Francis Coyle 726-5471
NO # L Giovanotto 726-9695
NO # Dennis Girard 726-6904
NO # Grant Golden 726-6743
NO # Hazen Imeson 726-6738
NO # Paul Kulke .80 726-5385
NO # Wyman E Laramie 726-6990
NO # Edward Mailloux 726-6503
NO # Clifford Morencie 726-8238
NO # Alex Russette 726-6049
NO # R Wall ¤ 975-2581
15 RESIDENCE

SEVENTH CONCESSION

•COLCHESTER NORTH

NO #★A F F Farms Ltd 738-3211
NO #★A&R AUTO DISMANTLERS ¤ 776-5540
NO # Roy Adams 738-2479
NO # John Apanasiewicz .84 776-5227
NO # Mike Bringas — 738-2883
NO # Larry Buchanan .79 738-4974
NO #★Essex County Landfill Site 776-7941
NO # A Giardini 776-7650
NO # J Gran — 776-8028
NO # Ralph Grondin Sr .84 726-5186
NO # Ralph Grondin Sr .79 726-6431
NO # Michael Hurtubise ¤ 776-7180
NO # Richard Hurtubise .79 738-5707
NO # Paul Marion 738-2090
NO # Richard Morand 738-2788
NO # K W Muldoon .83 776-5056
NO # Wm Nixon 776-8352

NO # R Pardy .81 776-8879
NO # Herman Reichert 738-6859
NO # S B Robinson .83 738-2628
NO # H Sturm .84 776-5919
NO # P van Vrouwerff 738-4516
NO # Martin R Wells — 738-4537
20 RESIDENCE 3 BUSINESS

SEVENTH CONCESSION

•GOSFIELD NORTH

NO #★Barnett Richard 776-7248
NO # Roy Barnett .80 776-8325
NO #★BARNETT VETERINARY SERVICES 776-7248
NO # Larry Mills .83 776-8704
2 RESIDENCE 2 BUSINESS

SEVENTH CONCESSN E

•LEAMINGTON

NO #★PURICH MEATS 326-3931
1 BUSINESS

SEVENTH CONCESSION

•MAIDSTONE

NOR 1KO

NO # Dave Coatsworth .84 727-6719
NO # A Dunn .80 723-4497
NO # Donald Laramie .83 723-4341
NO # Leonard McLean .81 727-8728
NO # Ronald Price .83 727-6735
NO # W Price .83 727-6729
NO # Frank Schulcz .80 723-4563
NO # Ron Willis .80 727-6118
8 RESIDENCE

SEVENTH CONCESSION

•MALDEN

L2 NP
L58 NP
L59 NP
L61 NP
L62 NP
L65★APARTMENTS
L Erwin Bernauer .84 736-2884
L71 NP
L80 NP
L82 NP
L84 NP
L85 NP
NO # G Balogh .80 726-6579
NO # Alfred Beadow .84 726-6239
NO # Pat Beadow .80 726-5410
NO # D Bezaire 736-2242
NO # Paul Bouchard 736-2598
NO #★C K L W Transmitter Station 736-4032
NO # Galliano Candusso 726-6711
NO # John Capela .84 736-3064
NO # Brad Carmichael 736-3396
NO # John G Cipkar 736-2265
NO # Paul Cipkar .82 736-7972
NO # Mrs Zuza G Cipkar 736-2252
NO # Robert Demers 736-6936
NO # G Deutschlander 736-2449
NO # Ralph Dufour 726-6592
NO # Elmer Feltham 736-3443
NO # Ronald French 736-2410
NO # David Gillan 726-6268
NO # R Goulin .79 736-6253
NO # Harold W Grant .84 736-2060
NO # Marvin Grant 736-2601
NO # Ellis Grondin 726-6457
NO # Donald Hickmott .81 736-7597
NO # Ola Imeson .84 736-4036
NO # Delmer Marontate .84 736-2280
NO # R Harold Martin .84 736-2453
NO # Aaron J McGuire .84 736-2253
NO # Thos McGuire .84 736-2961
NO # Dan Meloche ¤ 736-8217
NO # K Morency 736-6389
NO # Jon M Parks .84 736-4247
NO # Barry Purdie .84 736-2031
NO # G Quenneville 726-6062
NO # Stan Sapalski 726-6218
NO # Milfred I Sinasac 726-6232
NO #★St Albans Anglican Church 736-3489
NO # Gordon Thrasher 736-7342
NO # John E Waldron .84 736-5765
NO # Russell Wood 736-2994
48 RESIDENCE 2 BUSINESS

SEVENTH CONCESSION

•MERSEA

8 Dwain McCraken .83 326-7123
13 Gary A Chalmers .83 326-4926
L16 NP
L17 NP
L19 NP
L21 NP
NO # Wm Arquette 326-9193
NO # David Brown .79 825-7378
NO # D Butler ¤ 326-9786
NO # D J Chevalier .80 326-5698
NO # Foeke Donga 326-2842
NO # John N Driedger .84 825-4382
NO # Abe Friesen ¤ 825-7239
NO # P Hamm ¤ 326-9145
NO # Steve Hanzman 326-7470
NO # Frank Hotz .79 326-0260
NO # Murray Loveless 825-7683
NO # John A Pearce .84 825-4311
NO # William Robertson ¤ 326-9564
NO # John Schmitt — 326-3056
NO # Murray Simpson 825-7759
NO # Nelson Srigley .84 825-4089
NO # Walter Srigley 825-7112
NO # S Thompson .82 825-4789
NO # C VanDorschot 326-8192
25 RESIDENCE

SEVENTH CONCESSION

•SANDWICH SOUTH

4500 NP
NO # John Lacoste 969-1334
2 RESIDENCE

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1986 WALKER ROAD

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BRESSER'S

PAGE

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★LIGHTING BOUTIQUE INC THE 969-0152
★THE APPLIANCE SHOPPE . 969-0152
4155★MODERN MOLD LTD . . . 966-4690
4165★DOUBLE M PLASTICS LTD 966-7022
4185★TATE INDUSTRIAL SALES 966-3210
NO #★AUTO HAULAWAY (1981) LTD 258-2453
NO #★Bill's Golf Service 965-3574
NO #★Famous Four Drive-In Theatre . . . . .
¤ 966-1300
NO #★M&G Convoy 252-9200
182 RESIDENCE 259 BUSINESS

● WALKER

•ANDERDON

243 Geo Bateson . . . . . ¤ 726-5118
★VILLAGE LODGE . . . . . ¤ 726-5417
NO #★Alger Machine Shop . . . — 726-6755
NO #★Canada Post Corporation . ¤ 726-5156
NO # Gary Deibel 84 726-5419
NO # Keith Doherty . . . . . ¤ 726-6953
NO # Dolphis Gagnon 726-6589
NO #-BSMNT W Gagnon . . . — 726-5330
NO # S Haller . . . . . — 726-5492
NO # Stanley Hamelin 726-6578
NO #-LOWER D Kelly . . . . . — 726-5166
NO # Raymond Lefrancois . . . 726-6834
NO #-2 P O'Connor . . . . . ¤ 726-6739
NO # E Ostapovitch . . . . . ¤ 726-9681
NO # R J Ouellette . . . . . ¤ 726-9619
NO #-UPPER S Rochefort . . . . ¤ 726-5112
NO # O Shuel 80 726-6786
NO #★Société Canadienne des Postes . . . . . ¤ 726-5156
14 RESIDENCE 4 BUSINESS

● WALKER

•COLCHESTER NORTH

NO # Mrs Florence Bondy . . . 726-6547
NO # Vincent Drouillard 726-6709
NO # Bernard Ducharme 726-6483
NO # Jas D Hotson 79 726-5220
NO # Leo Knapp 726-6025
NO # Francis Meloche 726-6185
NO # Percy Paquette 726-6728
NO # Felix J Renaud 726-6020
NO # Hubert Renaud 726-6828
NO # Leo A Rocheleau 726-6288
10 RESIDENCE

● WALKER

•HARROW

NOR 1GO

2 Acacio Gomes 738-4625
23 M Drummond . . . . . — 825-7059
NO # Bernard J Bezaire 738-2097
NO # Wit Dudzic 738-2426
NO # K Ferriss 84 738-4526
NO # Alex Gall 738-6758
NO # Allan Gall 80 738-3113
NO # Alex Gall Jr . . . . . ¤ 738-2825
NO #★Harrow United Mennonite Church 738-2148
NO # David Hernandez 738-6091
NO # Steve Kordyban 738-4573
NO # B F LaBombard 80 738-6207
NO # Joao Martins 83 738-3152
NO # Tim Morency 84 738-4254
NO # George Mulder 82 738-4604
NO # Tom Nichol 738-3120
NO #★Ray Deschamps Service . 738-6622
NO # V Reich . . . . . — 738-2342
NO # R Robinson 738-6740
NO # Roger Robinson 80 738-2023
NO # Mina Shepley 738-4686
NO # John Stefani 738-4349
NO # Julius Van Den Driessche . 81 738-4483
21 RESIDENCE 2 BUSINESS

● WALKER

•MAIDSTONE

NOR 1KO

4450★EAST SIDE AUTO WRECKING LTD 969-6602
4610 Michael Oddy . . . . . ¤ 969-6518
4616 . . . . . NP
4620★DUROCHER'S SERVICE . . 969-3780
4690 Thos Morkin 969-3870
4730 Donald Eagleson 80 966-7964
4785 R Duggan 83 966-4577
4800★MICROMOULDS TOOL CO 966-7093
4820 Peter Doorigan 969-2727
4845 M Peltier 82 966-3034
4921★GAL'S MIKE TRUCK SERVICE 737-6176
★GAL'S MIKE TRUCK SERVICE 737-1287
★ Sales 737-1287
★GAL'S MIKE TRUCK SERVICE 737-6746
★ Parts 737-6746
★Kam Tool . . . . . ¤ 737-1176
4951 M Karadeniz 80 737-1171
4960★MARSH FROZEN FOODS . 737-6115
4961 Tarmo Hulkkonen 83 737-1110
4971★Viking Motors 737-6050
4985 Clifford Porter 84 737-1383
4989 Laurent J Masse 84 737-6669
4995★Cabinet Wonder . . . . . ¤ 737-6623
★Poodle Shop The 737-1155
J M Roberts 80 737-1155
5015 Louis James Stalmach . . . 84 737-1126
5020★COLE MOTION INC . . . 737-6953
★VALDEN EQUIPMENT INC . 737-6937
5025 Rev Kenneth J Knight . . 84 737-6608
★Safeway Self Storage . . . 737-1391
5040★Diesel Service Division-Windsor Automotive Supply 737-6189
5058 . . . . . NP
5130★VENTURE TOOL CO (WINDSOR) LTD 737-6943
5141 D Garrod 737-6032
5151 M G Stahlbrand 79 737-6664
★Windsorbilt Prefab Products 737-6210
5163★HALLEWICK MECHANICAL LTD 737-6801
Pat Hebert 83 737-6315
5175★APARTMENTS
-LEFT R Barrette 84 737-8760
-NORTH Richard Laur 81 737-6458
5185★APARTMENTS
-LOWER Gord Campeau . . . . . — 737-8470
-UPPER Lorne Bastain 84 737-6636
5188★MORTON TOBACCO LTD . 737-6961
5215★KIRBY TOOL&MOLD INC . 737-1267
5300★Oldcastle Shell 737-6511
5305★UNIT PRECAST (WINDSOR) LTD . . . . . — 737-6184
5308 . . . . . NP
5310★APARTMENTS
★REKO TOOL&MOULD INC . 737-6974
-UPPER . . . . . NP
5315 Wm A Crowder 737-6675
5324 . . . . . NP
5325★COLEX BODY SHOP . . . 737-1175
Luigi Girimonte 84 737-6264
5340★UNDERGROUND SPECIALTIES 737-1263
5345 G S Keltika 84 737-6842
5365★CONVERTIBLE POOLS (WINDSOR) 737-6555
★CONVERTIBLE POOLS (WINDSOR) . . . . . ¤ 737-1253
★ If Busy Call 737-1253
5375★CANSTEEL STRUCTURAL CO 737-6252
★ELMARA GARDEN CENTRE& LANDSCAPING . . . . . ¤ 737-1151
5395 M Smith . . . . . — 737-6651
5400★GORSKI BULK TRANSPORT INC 737-1275
5415★Italian Pentecostal Church 737-6322
5420★Dixon Tool Co Ltd 737-6698
★Dixon Tool Co Ltd . . . . ¤ 737-1125
★ If Busy Call 737-1125
5425★RAY'S FARM TRUCK&AUTO TIRE REPAIR 737-6622
5445★Canada South Baptist College 737-6161
★Windsor Baptist Temple . 737-6161
★Windsor Christian Academy 737-6161
★Windsor Kiddie Academy . 737-6161
5485★BUILDING
-3 . . . . . NP
-6 . . . . . NP
-11 . . . . . NP
-14 . . . . . NP
-15 . . . . . NP
5616★HALLMARK MEMORIAL CO 737-6158
★Monaghan Bernard 737-6158
5845★APARTMENTS
-16 . . . . . NP
NO # Fred Austin 737-6243
NO # Frank Balind 737-6404
NO # Roger Bauer 737-6400
NO # D Borrowman 737-6686
NO # K Borrowman 737-6207
NO #-LOWER John Brouyette . . ¤ 737-6328
NO # Leo R Brown 737-6250
NO # Gordon J Cahill 737-6818
NO #-UPPER G Campbell 737-1135
NO # Abbey Chiasson 737-6459
NO # Bruce Clark 737-1108
NO # Andy Colasanti 80 737-6860
NO #★COLLAVINO INCORPORATED 737-1216
NO # Gary Coomber 84 737-6453
NO # Richard Cybak 79 737-1194
NO # Bernard W Deslippe . . . 83 737-6309
NO #★DON'S SERVICE&VARIETY 737-6773
NO # John Dydzak 737-6374
NO # John Edl 737-6354
NO # Gordon Edwards 737-6633
NO # Marwood A Fletcher 737-6435
NO # John C Gardiner 737-6538
NO # R Gignac 737-6383
NO # Richard Gignac 737-6044
NO # Rick Laporte 737-6228
NO # Doug Mangin 737-6276
NO # Harvey Martel 737-6427
NO # Harvey McCauley 737-6667
NO # I M McCord 737-6258
NO # Dr G R McCormick 737-6642
NO # R Moore . . . . . ¤ 737-6297
NO #★Nemeth Don Fuels 737-6331
NO # Leslie O'Brien 81 737-6024
NO # Clifford O'Neil 737-6639
NO # Clyde O'Neil 737-6442
NO # Albert Ouellette 737-6269
NO # D Ouellette 737-6029
NO # S Palencar 737-6327
NO #★Paquette Fred 737-6183
NO # John Prati 79 737-6800
NO #★PRESTRESSED SYSTEMS WINDSOR INC 737-1216
NO # Harold Shepley 737-6876
NO # Jim Shepley 737-6658
NO # Leonard Shreve Jr 80 737-1106
NO #-BSMNT M L Siebert . . . 84 737-6287
NO # Sam Talbot 737-6352
NO #★TEAL MFG 737-6901
NO # B Thompson 83 737-6441
NO # Reginald Thompson 737-6735
NO # A Trenholme 737-6249
NO # William Wall 737-6782
NO #★Windsor Drive-In Theatre 737-6476
80 RESIDENCE 47 BUSINESS

● WALKER

•MCGREGOR

NOR 1JO

87★APARTMENTS
-BACK J Belleau 83 726-6523
NO #★A B C Auto Parts McGregor 726-6348
NO #★Aqua Soft Water Service 726-6187
NO # Fred Bakker 79 726-6265
NO # R Banfill 80 726-6342
NO # M Banks 83 726-6777
NO # Martin Barnes 726-6723
NO # G Beaulieu 726-5227
NO # Dennis Belanger 726-5092
NO # P Beltrame 726-6952
NO # D Bissonnette 80 726-6749
NO # Robert Bondy 726-5208
NO # L Boutet 726-6506
NO # Lottie Boutet 726-6272
NO # Jerome J Chauvin 726-6936
NO # D Clingan 84 726-5292
NO #-LOWER Thomas Cochois . . 84 726-6889
NO # L Cote 726-6775
NO # R A Cote 83 726-6994
NO #★COUNTY OF ESSEX . . . 726-6161
NO # S Curley 81 726-5386
NO #-5 D DeLisle 84 726-6950
NO # Jean Marc DeRaeve 726-6029
NO # Albert Deschamps 726-5164
NO # Armand Deschamps 726-6394
NO # M J Deschamps 82 726-5028
NO # Oscar J Deslippe 726-6412
NO #-UPPER Terry Doherty . . . 84 726-6080
NO # C Drouillard 726-6316

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. . . . . LA SALE
NO #•BASF WYANDOTTE ¤7347835
NO # F MONFORTON 7348817
14 RESIDENCE 2 BUSINESS

● SENECA

WINDSOR

ODD 1545 N8W 1A4
ODD 1643 N8W 1A6
EVEN 1400 1430 N8W 1A2
EVEN 1516 1538 N8W 1A3
EVEN 1636 N8W 1A5
1400 L GAUTHIER ¤2534029
1410•CAMEO BEAUTY SALON 2520867
1420•APARTMENTS
5 H PERRAULT 2582168
1430•ORANGE BLOSSOM RNG 2536610
•TRAUB MFG CO CND 2536610
1536 R B CHAMBERLAIN 2531207
1545 HENRY PETZ 2522682
1636•APARTMENTS
•ILLIAM HINDSHAW 2547886
3 R M COOPER 2531600
1643 R MIND 2520165
7 RESIDENCE 5 BUSINESS

● SERVICE RD N

WINDSOR

1440 EDGAR DENNISON 9661646
1 RESIDENCE

● SERVICE RD

LEMNGTN

6 RONALD E NICHOLLS 3266886
8 ALFRED WILLMS 3262179
12 BILL KELLY ¤3266353
16 TONY PERCIBAL_I 3261107
18 RICHARD L DUMAIS ¤3260136
20 JOAO REGO 3269268
NO # ANDY CHIBI 3265604
NO # PHILLIP TESKEY 3267262
8 RESIDENCE

● SETTERINGTON

LEMNGTN

ODD 35 55 N8H 1T4
ODD 63 93 N8H 1T5
EVEN 4 12 N8H 1S9
EVEN 20 26 N8H 1T2
EVEN 32 60 N8H 1T3
EVEN 68 92 N8H 1T6
12•AUTOMOTIVE SERV ¤7765908
•AUTOMOTIVE SERV EQ 3268433
•BUMPER TO BUMPER ¤3268433
20 LEWIS SETTERINGTON 3265439
22 ORVIL WILCOX —3269715
26•LAKESDE JRSY DAIRY 3264551
32•APARTMENTS
N NAJM 3264770
REAR K WESENBERG ¤3260241
34 GILBERTO REIS 3266234
35 JOHN MACEYOVSKI 3262042
36 FRED CHALMERS 3264567
37 BERT MUSGROVE 3269783
38 H D HILLMAN 3265595
39 RICHARD EDMONDSON 3264668
41 E L HARTWICK ¤3264973
45 JOE CHAMID 3261213
46 V WOOLLVEN 3263995
47 FLORIANO SOARES 3261854
48 JAMES Y OBIAD 3264750
51 A ISAAC 3263512
53 A P PASTORIUS 3269625
54 SARKIS JAIJE 3262427
55 EDNA BASSILE 3264366
56 BAKOS YOUSSEF 3266558
60 GEORGE FITTLAR 3264387
63 C MCLELLAN ¤3261583
S MERHE ¤3266477
65 J FRATARCANGELI 3261055
67 W MATHESON 3264367
68•APARTMENTS
TOM HOLLINGSWORTH ¤3263504
UPPER J LACOUNT ¤3261461
69 MADAM DOHER 3265330
70 •ILLIAM H POPE 3268909
72 JOHN EDDGE 3263147
73 ROSS NICHOLSON 3262719
74 L JENNER 3264655
JOE TELL 3266513
76 H S MONCK 3264713
79•APARTMENTS
A HARMS 3262210
L C SIMON 3262498
81•APARTMENTS
LOWER J BADOUR ¤3261343
UPPER VICTOR LEHAN 3263829
82•APARTMENTS
UPPER I MAGGINS 3268592
83 CARLOS TAVARES 3268511
84 CARL J HESELTINE 3261483
86 FRANK FROHMAN 3266233
88•SALVATION ARMY 3264901
89•HOWARD UDOS BRKLR 3269351
90 K LEE —3261659
91 MARCE BEAULIEU 3263933
92 ADOLFO RIBEIRO 3268202
45 RESIDENCE 11 BUSINESS

● SEVENTH

OL 8V2

NOR 1A0

140 R A HOOPER 7281169
146 J AMES DALE 7282063
150 N DUMONTIER 7282045
153•APARTMENTS
1 TOM KOWARSKI ¤7282741
2 L SCHILLER ¤7283352
4 RAY J HACHEY ¤7281507
5 W BALL 7283014
154 MICHAEL DUPUIS 7281412
159•APARTMENTS
UPPER MAURICE NOEL 7281024
AS CAZA 7282823
BR NOEL 7282737
166•TREPANIERS SRV 7282651
174 ESSO TREPANIER 7282692
186 WILLIAM B ANCHETTE 7282051
192 W DENOMEY 7281433
220 B POPE 7283150
NO # GILBERT POISSON 7281255
16 RESIDENCE 3 BUSINESS

● SEVENTH CONCESSION

AYDERDN

NO # L GIOVANOTO 7266359
NO # DEL BASTIEN 7265080
NO # DEL BASTIEN 7265080
NO # ROMEO BEZAIRE 7266727
NO # D COYLE 7266281
NO # FRANCIS COYLE 7266258
NO # LARRY DENT ¤7269664
NO # L GIOVANOTO 7269695

NO # DENNIS GIRARD 7265904
NO # GRANT GOLDEN 7265743
NO # HAZEN IMESON 7265738
NO # R L JANISSE 7266084
NO # WYNAN E LARAMIE 7265990
NO # EDWARD MAILLOUX 7265503
NO # CLIFFORD MORENCIE 7266238
NO # ANTONIO PUZZUOLI 7265025
NO # ALEX RUSSETTE 7266049
16 RESIDENCE

● SEVENTH CONCESSION

COLCR N

NO #•ESSEX CO LNDFL ST 7767941
NO # A GIARDINI 7767850
NO # RICHARD HURTUBISE ¤7768775
NO # WILLIAM NIXON 7765727
NO #••INKLER AUTO WRCKR ¤7765540
NO # ROY ADAMS 7382479
NO # MIKE BRINGAS ¤7384895
NO # LARRY BUCHANAN ¤7384974
NO # BRIAN DEAN 7382466
NO # PAUL MARTON 7382090
NO # RICHARD MORAND 7382788
NO # HERMAN REICHERT 7386859
NO # P VANVROUNERFF 7384516
NO # MARTIN R WALLS 7384786
NO # RALPH GRONDIN SR ¤7265431
NO # RALPH GRONDIN 7266048
NO # RICHARD POUGET 7265263
NO # GERALD SINASAC 7265444
16 RESIDENCE 2 BUSINESS

● SEVENTH CONCESSION

GOSFLD S

EVEN 2028 2090 N8W 1H1
NO # RICHARD BARNETT 7767248
NO # ROY BARNETT 7768325
NO # ARTHUR CRISFORD 7768755
NO # G A CRISFORD 7767476
4 RESIDENCE

● SEVENTH CONCESSION

LEMNGTN

NO #•PURICH MEATS E 3263931
1 BUSINESS

● SEVENTH CONCESSION

MAIDSTN

NOR 1KO

NO # ALFRED BEADOW 7265239
1 RESIDENCE

● SEVENTH CONCESSION

MALDEN

L 2 JOHN G CIPKAR 7362265
L58 DELMER MARONTATE 7362260
L59 ROY GRANT 7366827
L61 JOHN CAPELA 7363064
MARGARET JOHNSTON 7362969
L65 ERWIN BERNAUER ¤7362884
L66•C K L W TRNSMYR 7364038
L71 OLA IMESON 7364036
L80 R HAROLD MARTIN 7362453
AARON J MCGUIRE 7362253
THOMAS MCGUIRE 7362961
L82 J FRED THOMAS 7362685
CHARLES D WOOD 7362535
L84 LLOYD BONDY 7362645
L85 JOHN E WALDRON 7365769
NO # R W BAKER 7364836
NO # ALVIN B BEAUDOIN 7362770
NO # FRANCIS W BEAUDOIN 7362795
NO # D BEZAIRE 7362242
NO # PAUL BOUCHARD 7362998
NO # BRUD CARMICHAEL 7363396
NO # JON CIPKAR ¤7362390
NO # MRS ZUZA G CIPKAR 7362252
NO # ROBERT DEMERS 7365936
NO # B DENEAU 7363275
NO # G DEUTSCHLANDER 7362449
NO # ELMER FELTHAM 7363443
NO # RONALD FRENCH 7362410
NO # MARVIN GRANT 7362601
NO # GEORGE MENDEL ¤7362982
NO # K MORENCY 7366389
NO # MARWOOD PARKS 7362735
NO # RONALD ROUNDING ¤7363136
NO # GORDON THRASHER 7367342
NO # WILLIAM P WINK 7362664
NO # RUSSELL WOOD 7362994
NO # GALLIANO CANDUSSO 7266711
NO # RALPH DUFOUR 7266592
NO # DAVID GILLAN 7266269
NO # R GOLLIN ¤7266253
NO # ELLIS GRONDIN 7265457
NO # G GUENNEVILLE 7265062
NO # CLARENCE J RENAUD 7265159
NO # STAN SAPALSKI 7266218
NO # WILFRED I SINASAC 7265232
44 RESIDENCE 1 BUSINESS

● SEVENTH CONCESSION

MERSEA

L16 JOHN A PEARCE 8254311
L17 CLAIRE SIDDALL 8257776
L19 JOHN N DRIEDGER 8254382
L21 WALTER S LOVELESS 8257518
NO # WILLIAM ARQUETTE 3262193
NO # FRANK CZIRAKY JR 3251430
NO # FRED DONGA 3262842
NO # STEVE MANZMAN 3257470
NO # FRANK HOTZ ¤3269737
NO # RICHARD KOOP 3250196
NO # N LEPINE 3267255
NO # C VANDORSCHOT 3269002
NO # DAVID BROWN 88254035
NO # PETER ENNS 88257568
NO # ABE FRIESEN 88257096
NO # BERNHARD FRIESEN 8257445
NO # PETER KETLER 8254276
NO # C H LEHN 8257877
NO # MURRAY LOVELESS 8257531
NO #NAME BRANDS ALUM 88257701
NO # GEORGE PETERS 8254440
NO #•WILLIAM E SIDDALL 88257701
NO # BRAD SIMPSON 8257525
NO # MURRAY SIMPSON 8257759
NO # N C SRIGLEY 8257112
NO # G WARKENTIN 8254027
NO # FRANK WIELER 8254052
25 RESIDENCE 2 BUSINESS

● SEVENTH CONCESSION

SDWCH S

4500 ROBERT KELLA —9697147
NO # JOHN LACOUNTE 9691334
2 RESIDENCE

● SEVENTH CONCESSION

TILBURY

NOP 2L0

SYLVAIN GAGNIER 6873023
1 RESIDENCE

1980 WALKER ROAD

SOURCE: BRESSERS



WALKER 1980 WINDSOR BRESSER'S

WINDSOR
3473 ROY SHEPLEY -9665346
3485 L BOUCHARD 9663839
3491 *HAIR DESIGNS JOSIE 9662012
3502 A J BELANGER -9661212
3503 M FOOTE 9660845
3506 BRIAN THRASHER 9665548
3507 *APARTMENTS
REAR H ROBINSON 9693429
3511 *APARTMENTS
FRONT JOHN MACECEVIC 9692651
3514 *PINE WOODS HOPPE -9693733
3523 D HIBBS #9660469
3527 D A LEMMON 9696180
3545 *OLYMPIA CRPT DIV 9662500
*OLYMPIA FLR&WALL 9662500
3561 ANGUS MACEACHERN #9664898
3577 *LONE PINE RSTRNT 9698416
3595 *INTRNTL UPHLSTRY 9660420
3596 D HARCUS 9696114
3603 *N A HORN CYCLE SHP 9692610
*NORMS CYCLE SHOP 9692610
3615 *MARK CONST LTD 9692190
3636 *PALAZZI BROS CRPT 9693941
*PALAZZI BROS 9693941
3663 *STARLITE 9692334
*WILLIAMS SELF SRV 9664145
3666 *MASSEAU TRANS REFR 9664301
3670 *HONEYWELL LTD 9695840
3690 *S CANDIDO CO LTD 9663007
*ESSO HOME CMFRT 9663007
3691 *HI-HO CURB SRV-US 9692260
3702 *COLLINS ELECTRIC 9692277
3703 *THE MUSIC HOUSE 9661552
3705 *ARGO CLEANERS #9694152
3707 *BLACK&DECKER 9663174
3710 JOE SABOLSKY 9693631
3737 *MIRTO AUTO REPAIR 9661210
3750 *GOODYEAR SERVICE 9693238
3755 *ROSE CITY GEN DEL 9696367
3774 A NAPIER 9693669
3775 *AIRPORT MOTELSAPTS
*AIRPORT MOTEL&APTS 9693710
*SELECT REALTY #9693231
BERT TURNBULL 9693231
3785 ROY SIERGJUK #9699932
3803 LINO SILVAGGI 9699023
3819 *WALKER RD VARIETY 9691650
N WINCHARUK 9691650
3829 *BRYANT AIR-CNDTNG 9661550
3838 *RED SAIL RESTRNT 9696921
3839 *BRYANT HEATING 9661550
3861 B STANLEY #9692997
3864 PETER TOMEN 9691578
3873 *ANTRO INDUSTRIES 9662622
*COUNTRY KITCHN&BTH 9663831
*FAHR-HALL MECHNCL 9697822
3895 *RORISON INDSTL ELC #9696221
3898 *GOROS RADIATOR SER 9692130
*G PENNEY RADIATOR 9692130
*PENNEYS RADIATOR 9692130
3900 *E R ST DENIS&SONS 9694130
3911 *WINDSOR BRAKE&STR #9664931
3940 *BENETEAU AUTO SALE 9692623
*TEXACO CANADA INC 9692623
3951 *CHATHAM COACH LINE-2582520
*CHATHAM COACH LINE-2547575
*CHATHAM COACH LINE-9662821
*CHATHAM COACH LINE-9663423
*DEJ MACHINE SHOP 9664122
3957 *HUNTER-DOUGLAS PRD 9697060
*TAMAR BLDG PRDCTS 9697060
*WINDSOR SIDING&MLD 9697060
3966 *SPLENDOR POOLS 9664434
3967 *WAHL CLIPPER CORP 9691480
3990 *LK ERIE OXYGN LMTD 9690610
*PETROGEN CANADA 9696300
3991 *CANADIANNA MTR HTL #9693150
N SAMANC 9691225
3998 *ARPT TAVERN WN LTD #9697250
3999 *CHANS RESTAURANT 9661070
4040 M HOCHREITER #9697857
M HOCHREITER #9699321
*HUMPTY DUMPTY MOTL 9694260
4044 *APARTMENTS
L FITCH 9663783
S GEORGE 9663821
HOWARD B GREEN 9694213
MARCEL LATREILLE 9690449
2 RON RENAUD 9695008
6 TODD STUART 9662340
8 S A OSHOWY #9695943
12 DAVE PATTERSON #9664403
15 ROY DONOVAN 9665820
21 J HAPF #9663403
4050 LEO BERTELLE 9691718
4055 *CNDIAN GRT WESTERN 9660810
4072 *LIGHTING BOUTIQUE 9690152
*LIGHTING BOUTIQUE 9690152
4155 *MODERN MOLD LTD 9664690
*STEVENS ENGRAVING 9660405
4185 *TATE INDUSTRIAL 9663210
4255 *CANADIN INST BLIND 9661451
*CAN P O PERSONNEL 9692132
4450 *EAST SIDE AUTO WRK 9696602
4610 NICK J OUT 9698086
4620 *DUROCHERS SERVICE 9693780
4690 THOMAS MORKIN 9693870
4730 WILLARD WARNER 9693240
NO #*AUTO HAULAWAY LTD 2582453
NO #*BILLS GULF SERVICE #9663574
NO #*CANADIN LOGISTICS 2528109
NO #*CITY CAR RELEASING 2529200
NO # R FERRIS -9691858
NO # HOWARD ST JEAN 9664498
NO # MURRAY SHEPLEY 9666293
NO #*TRIPLE M DEMOLITION 2528291
NO #*TWIN DRIVE-IN THTR 9661300
NO #*VENMAC LTD #9660182
121 RESIDENCE 312 BUSINESS

WALKER AVERDN

NO # R DUFOUR #7269668
NO # ODLPHIS GAGNON 7266569
NO # STANLEY HAMELIN 7266576
NO # RAYMOND LEFRANCOIS 7266834
NO # DANIEL MELOCHE 7266072
NO # LEONARD MELOCHE 7266579
NO # LORENE SHUEL 7266786
NO # RAYMOND DEMARS 7376425
8 RESIDENCE

WALKER COLCR N

NO # MRS FLORENCE BONDY 7266547
NO # VINCENT DROLILLARD 7266709
NO # BERANRD DUCHARME 7266463
NO # JAMES D HOTSON #7265220
NO # LEO KNAPP 7266025
NO # FRANCIS MELOCHE 7266185
NO # PERCY PAQUETTE 7265728
NO # FELIX J RENAUD 7266020
NO # HUBERT RENALD 7266828
NO # LEO A ROCHELEAU 7269268

NO # JIM SMALLMAN 7269694
11 RESIDENCE

WALKER HARRO

NOR 1G0
2 ACACIO GOMES 7384625
NO # BERNARD J BEZAIRE 7382097
NO # RANDY BEZAIRE 7386378
NO # MIT DUDZIC 7382426
NO # ALEXANDER GALL 7386758
NO # DAVID HERNANDEZ 7385091
NO # STEVE KORDYBAN 7384573
NO # TOM NICHOL 7386104
NO # FRANCISCO PEREIRA 7384311
NO # R ROBINSON 7385740
NO # GORD SCHWAB 7382483
NO # MINA SHEPLEY 7384686
NO # JOHN SLAVKO 7382930
NO # ZENO SOROS #7386635
NO # JOHN STEFANI 7384349
NO # J VANDENDRIESSCHE 7384483
NO # A ZAGONYI 7382484
NO # FRANK HART 7265002
18 RESIDENCE

WALKER MAIDSTN

7 S MARMARA #7376037
4785 JACOB BART 7376203
4800 *MICROMOULDS TOOL 7376444
4820 PETER DOORIGAN 7376579
4921 *JANISSE INTRNTL TR 7375746
4961 WILLIAM LEPAIN 7376376
4971 BOB BELLEAU -7375550
4989 TIMOTHY QUINN -7376970
4995 *CANIDAE KENNELS -7376671
STUART ROBERTS -7376671
5040 *DIESEL SERVICE 7376189
*WINDSOR AUTO SPPLY 7376189
5058 MURRAY COX 7376809
5141 D GARROD 7375032
5151 *HALLENICK MCHNCL LB 7376801
M G STAHLBRAND -7376664
5163 MRS B BRODERICK 7376788
5175 HAROLD MCLEAN 7376509
5185 LESTER LAUR 7376004
5188 *MORTON TOBACCO 7376961
5215 *PROMO PRODUCTS 2545139
5310 *APARTMENTS
UPPER D COSSARINI #7376453
5315 WILLIAM A CROWDER 7376675
5325 LUIGI GIRIMONTE -7376976
5345 CAMIEL ROELENS 7376710
5365 *CONVERTIBLE POOLS 7376711
*CONVERTIBLE POOLS 7376555
5375 *MALDEN TREE FARMS 7376525
5400 *RENASH TRACTOR&EQ -7376931
5415 *ITALIAN PENT CHRCH #7376322
5420 *DIXON TOOL&MOLD 7376698
NO # FRED AUSTIN 7376243
NO # ALAN BALD -7375833
NO # FRANK BALIND 7376404
NO # ROGER BAUER 7376400
NO # D BORROWMAN 7376586
NO # K BORROWMAN 7376207
NO # ROY BRADY 7376031
NO # LEO R BROWN 7376250
NO # GORDON J CAHILL 7376818
NO # ABBEY CHIASSON 7376077
NO # BRUCE CLARK 7376079
NO #*COLLAVINO INC 9562700
NO # RICHARD CYBAK -7376998
NO # JOHN DYDZAK 7376374
NO # JOHN EDL 7376354
NO # GORDON EDWARDS 7376633
NO # MARWOOD A FLETCHER 7376435
NO # JOHN C GARDINER 7376536
NO # R GIGNAC 7375383
NO # RICHARD GIGNAC 7376044
NO #*HALLMARK AUTO SALES #7376918
NO #*HANKS PLACE 7376773
NO #*JANISSE INTRNTL TR 7376176
NO # HAROLD JESSOP 7376309
NO #*JOBMAR CONST #7376625
NO #*JOBMAR CONST #7376718
NO # RICK LAPORTE 7375228
NO # RUSSELL LEPAIN 7376217
NO # M B LEVASSEUR 7376887
NO # DOUG MANGIN 7376276
NO #*MARK CONST LTD #7375852
NO # HARVEY MARTEL 7375427
NO # HARVEY MCCALLEY 7376667
NO # I M MCCORD 7376258
NO #*DR G R MCCORMICK 7375642
NO #*MURIS BLDG SYSTEMS 7375991
NO # DONALD NEMETH 7376331
NO # CLIFFORD ONEIL 7376639
NO # CLYDE ONEIL 7375442
NO # EDWARD S ONEIL 7375420
NO # GERALD ONEIL 7376669
NO # ALBERT OUELLETTE 7376269
NO # D OUELLETTE 7376029
NO # S PALENCAR 7376327
NO #*F PAQUETTE CONTR 7375183
NO # JOHN PRALL #7375800
NO #*PRESTRESSED SYSTEM 7375991
NO # RICHARD J PRIEUR 7376005
NO # JEROME RECORD #7376821
NO # BRADLEY ROBITAILLE #7375402
NO # HAROLD SHEPLEY 7376876
NO # JIM SHEPLEY 7376658
NO # WAYNARD SHREVE 7376660
NO # SAM TALBOT 7376352
NO #*TEAL MFG 7375901
NO # REGINALD THOMPSON 7376441
NO # HENRY THRASHER 7376773
NO # A TRENHOLME 7375249
NO # PETER UJJ SR 7375705
NO # WILLIAM WALL 7376782
NO #*WINDSOR BAPTIST #7376613
NO #*WINDSOR DRV-IN THR 7376476
NO # SAM ZICHUCK 7376895
66 RESIDENCE 29 BUSINESS

WALKER MC GRG

NOR 1J0
NC # LOTTIE BOUTET 7376272
NC #*ABC AUTO PARTS #7266348
NC #*AQUA SOFT WTR SY 7266187
NC # FRED BAKKER #7266265
NC # HERBERT BANKS 7266777
NC # MARTIN BARNES 7266723
NC # ALBERT BASTIEN 7266209
NC # BERNARD BASTIEN -7265245
NC # MAURICE BASTIEN #7265013
NC # R BATES #7266989
NC # G BEAULIEU 7265227
NC # DENNIS BELANGER 7265092
NC # P BELTRAME 7266962

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1974 7TH CONCESSION ROAD

SOURCE: MIGHTS

STREET NOT LISTED

1974 WALKER ROAD

SOURCE: MIGHTS

WALKER RD-Contd

3774 Napier Wm M
3775 Airport Motel 969-3710
Turnbull Burton ® 969-3710
Howes Kenneth
Darling Fred
3779 Lyons David
3785 Garrick Patk ® 969-1328
3790 Robinson Herbert ® 969-6185
LEDYARD AV INTERSECTS
AIRPORT RD BEGINS
3803 Silvaggi Lino ® 969-9023
3819 Walker Road Variety 969-1650
Marvanovic Slobodan ®
3838 Red Sail Restr 969-6921
3839 Bryant Htg & Cooling Co Ltd contrs 966-1550
3851 Freer Lovina Mrs ®
3861 Mojzner Alex ® 966-3399
3864 Tomen Peter ® 969-1578
3873 Samco Radio & Electronics Ltd 969-9013
S & M Premium Co 969-9567
3881 No Return
3895 M G W Hydraulics Ltd equip & sup 966-5114
3898 Penney Gordon ® 969-2130
Keen Bruce A
Gord's Radiator Serv 969-2130
MOXLEY AV INTERSECTS
3900 St Denis E R & Sons Ltd pattern & dies 969-4130
3911 Adam's Body Shop auto body repr 966-2510
3918 Oldham Robt W ® 966-2370
3940 Umbenhower's Serv serv sta 966-3342
3951 Teal Truck & Trailer serv 966-4232
3957 Tamar Bldg Products Ltd bldg supplies 969-7060
Windsor Siding & Molding Ltd 969-7060
3966 Hilton Home Improvements 969-7701
Hilton Painting & Decorating Co Ltd 969-8570
Hilton Prestige Construction Co Ltd 969-7701
Hilton Paradise Pools 969-6221
3967 Wahl Clipper Corp Can Ltd barber supplies 969-1480
3989 No Return
3991 Flohr Corp Ltd motel 969-3150
Canadianna Motor Hotel 969-3150
3998 Airport House hotel 969-0071
3999 Chan's Restr 966-1070

59

DIVISION RD INTERSECTS
4040 Humpty Dumpty Hotel 969-4260
Graff Howard ® 969-4260
ES Maple Trailer Court
ES Nelson Alice R Mrs ®
ES McLellan Restie L ® 969-2639
ES Cote Gilles ®
ES Mason Haydon ® 969-6871
ES Lappage Jim ®
ES Hunter Ian D
ES Wheeler E D
ES Davis Roy ®
ES Deschamps Elmer ®
ES Dawson Geo
ES Latrielle Marcel
ES Fitch Lewis ® 966-3783
ES Bourke Elmer J ® 969-1034
ES Hovde Joseph
ES Nicolitti Joseph
ES Kelly Allan ®
4042 McKenzie Ronald
4044 Houde John ®
4050 Bertelle Leo L ® 969-9805
4062 No Return
4072 Lighting Boutique 969-0152
4155 Modern Mold Ltd molds & dies 966-4690
[illegible] Twin Drive-In Theatre 966-1300
4450 East Side Auto Wrecking Ltd 969-6602
4500 Dore Yolanda Mrs
4590 Sipos Louis ® 969-2770
4610 Pokrywa Joseph
4616 Durocher Donald C ® 969-3780
4620 Durocher Gulf Serv 969-3780
4665 St Jean Howard B 966-4498
4680 Walters Richd G ® 966-1976
4690 Morkin Thos R ® 969-3870
PROVINCIAL RD INTERSECTS
4730 Warner Millard L ® 969-3240
4800 Micro Mold Tool Co 737-6444
4820 Doorigan Peter ® 737-6579
PENN CENTRAL INTERSECTS
4835 Bart Jacob ® 737-6203
4845 Bart John ®
4920 Washbrook Dorothy Mrs ® 737-6340
5365 No Return

59

WALLACE AV
EAST FROM HOWARD AV TO HOLBURN AV, FOURTH SOUTH OF CABANA RD E

HANLEY CRES BEGINS
515 Hughes Sydney T ® 969-2719
520 Naccarato Peter D ® 966-3796
526 No Return
530 Paterson Robt ® 966-1794
535 Jakosky Gregory C ® 969-9308
540 Seguin Ronald ® 969-2103
543 Anderson Marion Mrs ® 966-3218
548 Vassos Christopher ® 966-0596
551 Laforet Frank J ® 969-4363
555 Taylor Richd S ® 966-0843
558 Campbell James A ® 966-5714
564 Serecin Joseph P ® 969-7942
565 Keenan Kenneth L ® 966-5980
574 Metz Ernest ®
575 Dickson Talbot S ® 969-0527
580 Soper Jeffrey P ® 966-5641
583 Harrison Helen ®
584 Vacant
591 Vandenberghe Alphonse A 966-2876
598 Vacant
599 Logan Robt D ® 969-0667
615 Zanon Fernando M ® 966-0998
620 Enns Peter F ® 969-4065
631 Clarke Jane C Mrs ® 969-4547
HANLEY CRES ENDS
655 Litchfield John ® 969-1058
660 Pankevicz Michl J ® 969-2006
675 Erdmann Reinhold ® 966-1895
695 Raco Bruno ® 966-1893
696 No Return
705 Marciano Consolato ® 966-1163
706 Ceccucci Armando ® 966-2027
715 Schulz Ewald ® 966-4489
718 D'Andrea Achille ® 969-5776
725 Zelezney Andre ®
728 Wick Peter ® 969-1259
733 Green Richd E ® 969-9611
735 Roveroni Arturo ® 969-6292
738 Ofner Joseph ® 966-3059
746 D'Andrea Venicio R ® 969-6192
751 Sanna Frank ®
760 Del Mul Ugo G ® 969-7750
761 Collodel Duilio ® 966-2248
770 Gardonio Armando ® 969-8022
771 Bergamo Angelo ® 969-0983
780 Hecnar Steve J ®
781 Cocchetto Giancarlo ® 969-0177
791 De Anna Mario ® 966-3775
HOLBURN ENDS
810 D'Andrea Louis ® 969-1428
820 Caruso Giacinto ® 966-0214
832 Robbins Kenneth E ® 969-7012
840 Severin Abramo ® 969-3580
850 Siewertsen Ludwig J ® 966-5656
860 Sekela Frank J ® 966-3116
870 Faroni Alfio ® 969-9204
890 Minaudo Philip ® 966-2035
894 Windhaus Fred G ® 966-1915
910 Foradori Bruno ® 969-9475
920 Sorge Gino ® 966-3154
930 Barel Arnaldo A ® 969-7062
940 Francescutti Frank ® 966-2023
950 Truant Anthony ® 966-3879
960 Delpup Achille ® 966-2480
970 Joynt Bruce E ® 966-2709
980 Ivanic Alphonse A ® 966-0882
990 Nicodemo Walter U ® 966-1639

1969 7TH CONCESSION ROAD

SOURCE: MIGHTS

STREET NOT LISTED

1969 WALKER ROAD

SOURCE: MIGHTS

RANGE NOT LISTED

1965 7TH CONCESSION ROAD

SOURCE: MIGHTS

STREET NOT LISTED

1965 WALKER ROAD

SOURCE: MIGHTS

RANGE NOT LISTED

1960 7TH CONCESSION ROAD

SOURCE: ACME WINDSOR DIRECTORY CO

STREET NOT LISTED

1960 WALKER ROAD

SOURCE: ACME WINDSOR DIRECTORY CO

RANGE NOT LISTED

Paige Sarafin

From: Fish, Mike <mfish@windsorpubliclibrary.com>
Sent: July 22, 2025 10:26 AM
To: Paige Sarafin
Subject: RE: FIPs

Hi Paige,

Unfortunately, none of the FIPs cover this area in question.

Sincerely,

Michael Fish | Archivist

Windsor's Municipal Archives
Windsor Public Library
85 Pitt Street East
Mailing Address: 185 Ouellette Avenue, Windsor, ON N9A 4H7
519-255-6770x4414
Windsorpubliclibrary.com

From: Paige Sarafin <paige.sarafin@sertas.ca>
Sent: Tuesday, July 22, 2025 9:06 AM
To: Fish, Mike <mfish@windsorpubliclibrary.com>
Subject: FIPs

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Michael,

Do you have FIPs for the property north adjacent to 4880 7th Concession, see attached for reference, outlined in red.

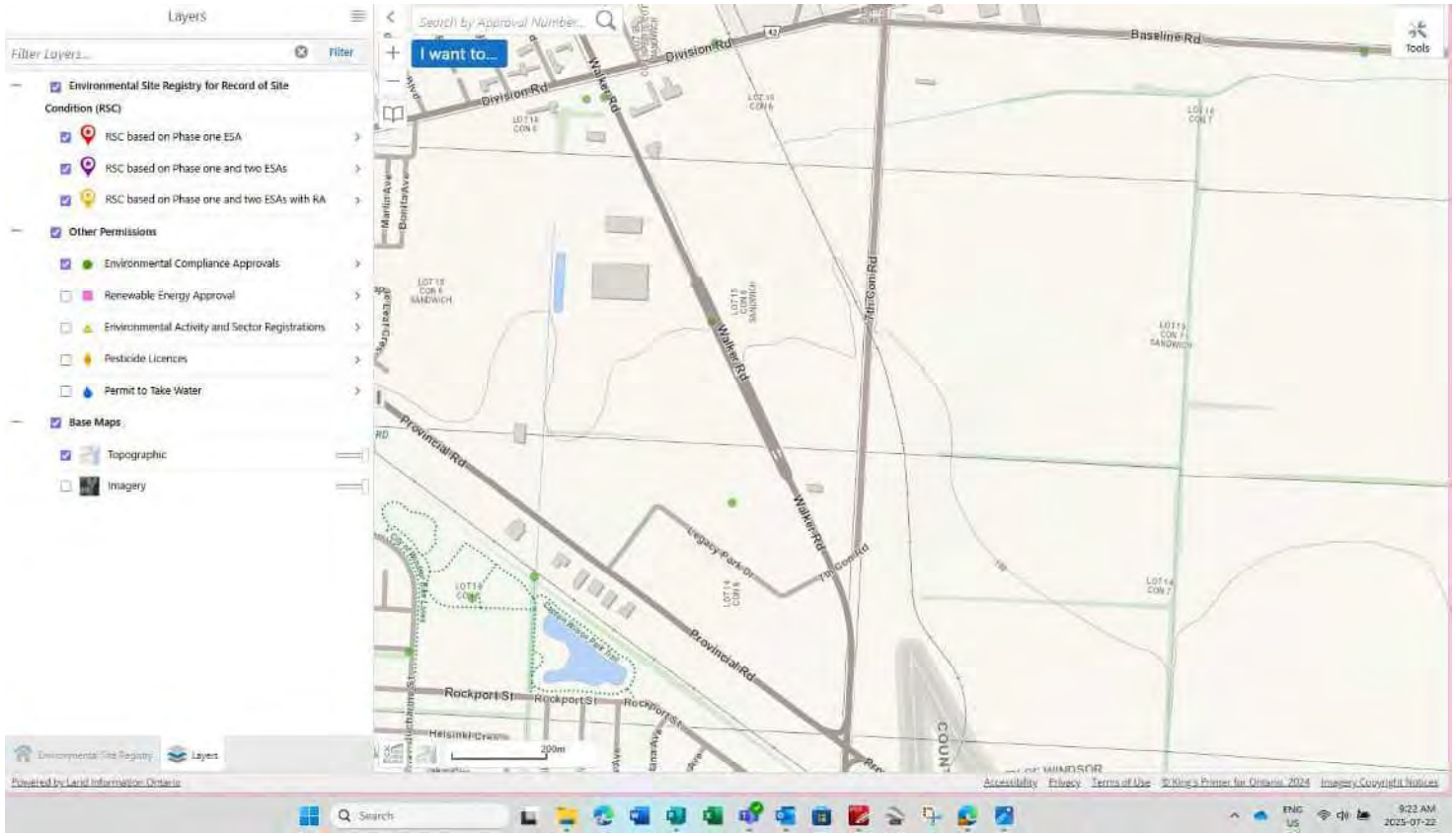
Thank you

Paige Sarafin, MSc., EPt
Senior Environmental Specialist
She/her

1-519-822-3442 1-519-981-2724
www.sertas.ca paige.sarafin@sertas.ca

Environmental Site Registry for Record of Site Conditions and Environmental Compliance Approvals

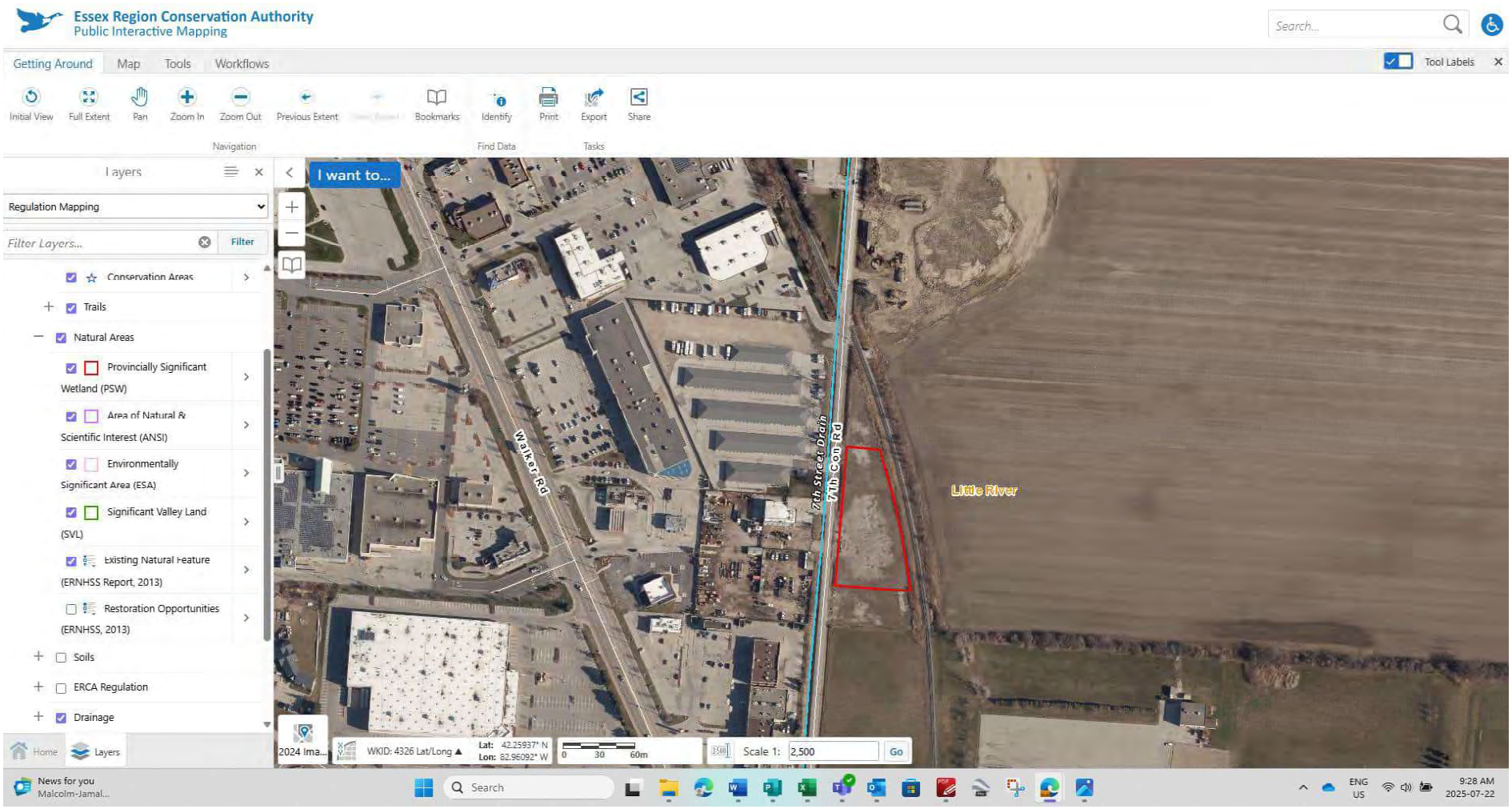
Date Accessed: July 22, 2025



Approval Number	Document Link	Business Name	Address	Date	Approval Type	Status
9406-9TFR56	https://www.accessenvironment.ene.gov.on.ca/instruments/0955-92UHZN-14.pdf	Ultimate Manufactured Systems Inc.	4165 Walker Rd	2015-02-05	ECA-AIR	Approved
2038-7WBP6S	https://www.accessenvironment.ene.gov.on.ca/instruments/7503-7TPQAJ-14.pdf	Costco Wholesale Canada Ltd.	4411 Walker Rd S	2009-09-29	ECA-INDUSTRIAL SEWAGE WORKS	Approved

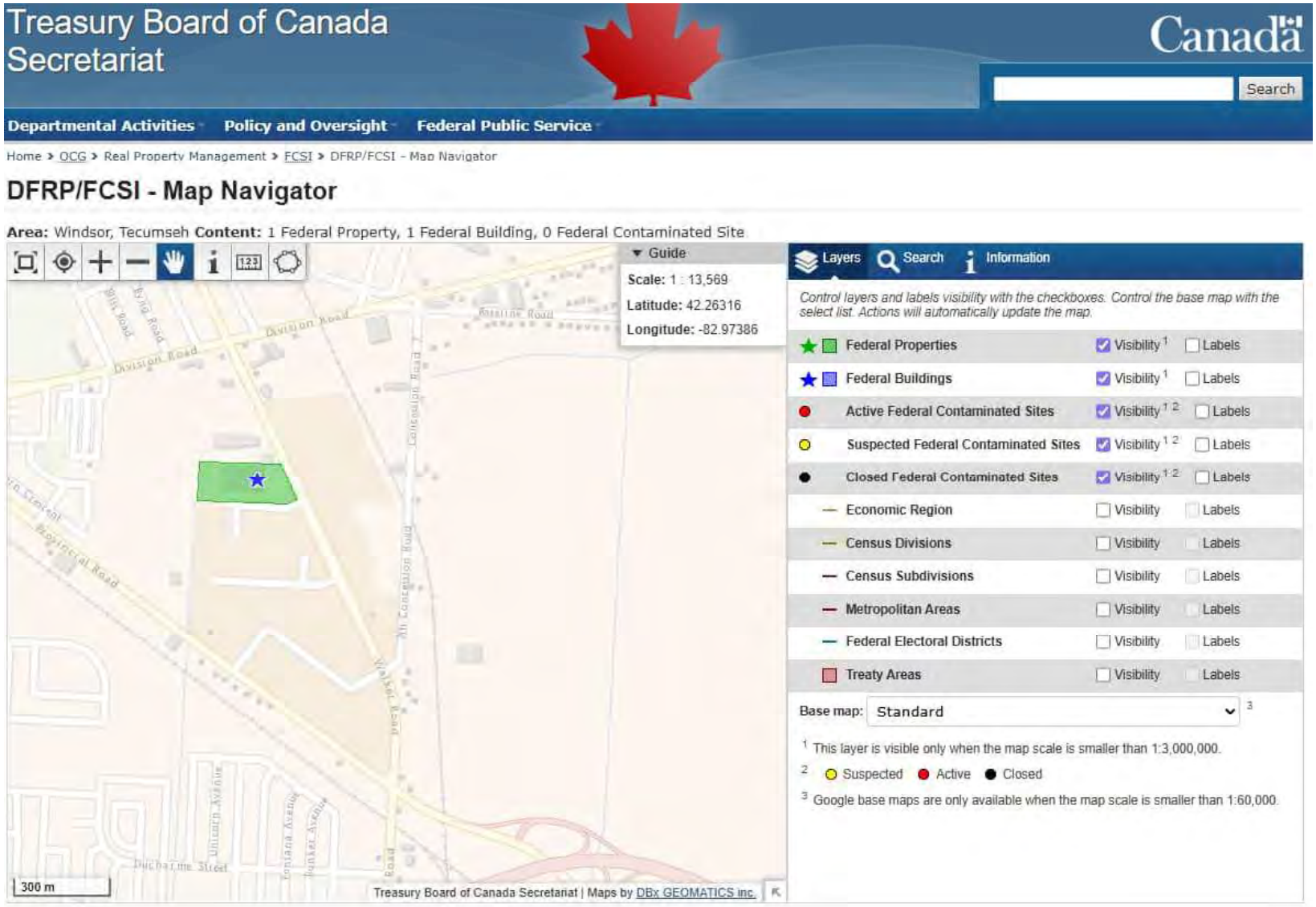
Essex County Conservation Authority Areas of Natural Significance

Date Accessed: July 22, 2025



Federal Contaminated Sites Inventory

Date Accessed: July 22, 2025

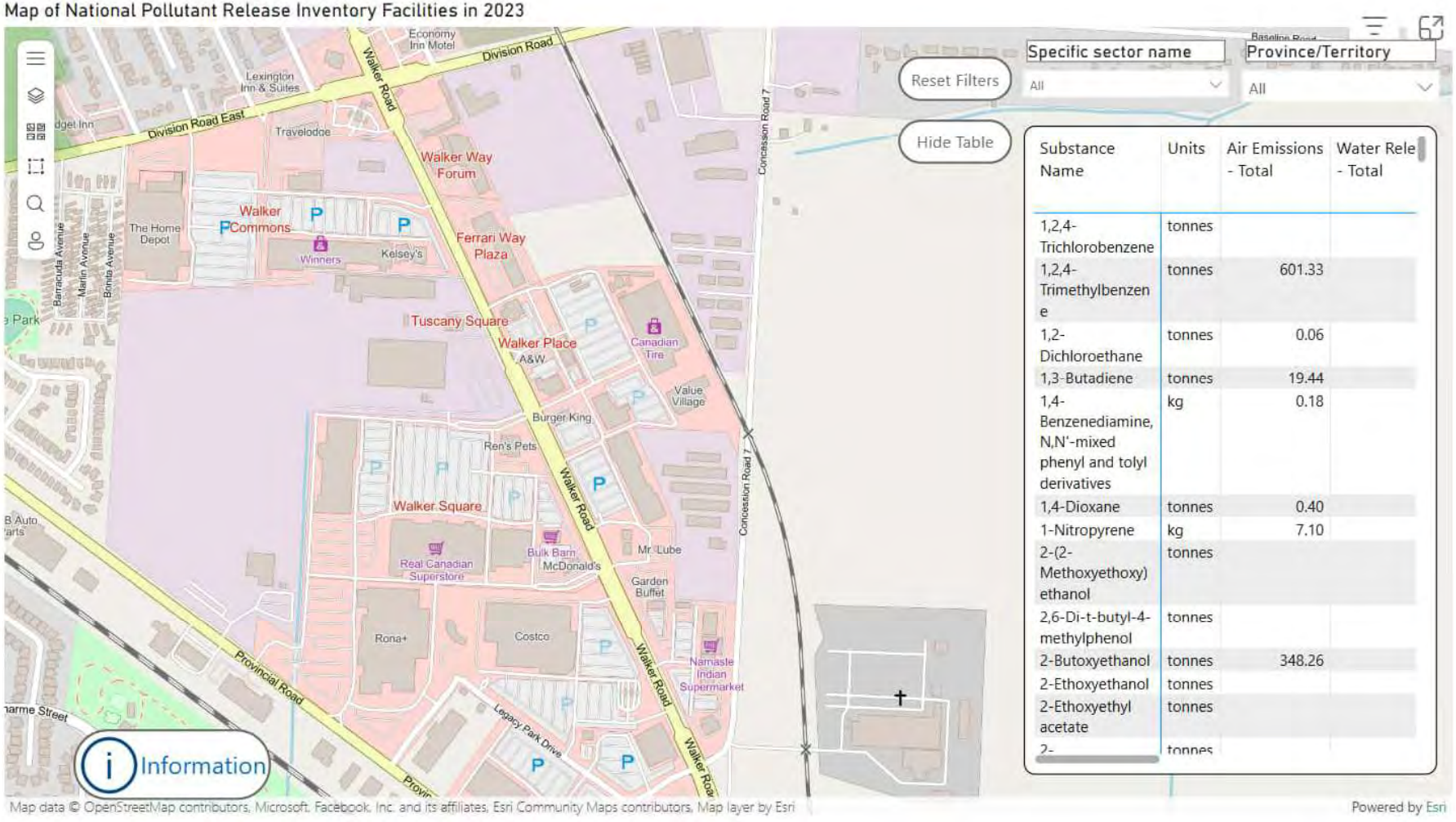


National Pollutant Release Inventory

Date Accessed: July 22, 2025

(NPRI) facilities

Map of National Pollutant Release Inventory Facilities in 2023



APPENDIX B

ERIS Report

DATABASE REPORT

Project Property:	*Phase One* *4450 7th Concession Rd* *Windsor ON N8W 5V6*
Project No:	*2501E038.1000*
Report Type:	*RSC Report (Urban)*
Order No:	*25071700027*
Requested by:	*Sertas Group Limited*
Date Completed:	*July 22, 2025*

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

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Notice: IMPORTANT LIMITATIONS and YOUR LIABILITY

Reliance on information in Report: This report DOES NOT replace a full Phase I Environmental Site Assessment but is solely intended to be used as a database review of environmental records.

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Executive Summary

Property Information:

Project Property:	*Phase One* *4450 7th Concession Rd Windsor ON N8W 5V6*
Project No:	*2501E038.1000*

Order Information:

Order No:	*25071700027*
Date Requested:	*July 17, 2025*
Requested by:	*Sertas Group Limited*
Report Type:	*RSC Report (Urban)*

Historical/Products:

City Directory Search	*Smart CD Search*
ERIS Xplorer	*ERIS Xplorer*
Topographic Map	*RSC Maps*

Executive Summary: Report Summary

Database	Name	Searched	Project Property	Boundary to 0.30km	Total
AAGR	*Abandoned Aggregate Inventory*	Y	0	0	0
AGR	*Aggregate Inventory*	Y	0	0	0
AMIS	*Abandoned Mine Information System*	Y	0	0	0
ANDR	*Anderson's Waste Disposal Sites*	Y	0	2	2
AST	*Aboveground Storage Tanks*	Y	0	0	0
AUWR	*Automobile Wrecking & Supplies*	Y	0	1	1
BORE	*Borehole*	Y	0	0	0
CA	*Certificates of Approval*	Y	0	3	3
CDRY	*Dry Cleaning Facilities*	Y	0	0	0
CFOT	*Commercial Fuel Oil Tanks*	Y	0	0	0
CHEM	*Chemical Manufacturers and Distributors*	Y	0	0	0
CHM	*Chemical Register*	Y	0	0	0
CNG	*Compressed Natural Gas Stations*	Y	0	0	0
COAL	*Inventory of Coal Gasification Plants and Coal Tar Sites*	Y	0	0	0
CONV	*Compliance and Convictions*	Y	0	0	0
CPU	*Certificates of Property Use*	Y	0	0	0
DRL	*Drill Hole Database*	Y	0	0	0
DTNK	*Delisted Fuel Tanks*	Y	0	1	1
EASR	*Environmental Activity and Sector Registry*	Y	0	1	1
EBR	*Environmental Registry*	Y	0	1	1
ECA	*Environmental Compliance Approval*	Y	0	1	1
EEM	*Environmental Effects Monitoring*	Y	0	0	0
EHS	*ERIS Historical Searches*	Y	0	14	14
EIIS	*Environmental Issues Inventory System*	Y	0	0	0
EMHE	*Emergency Management Historical Event*	Y	0	0	0
EPAR	*Environmental Penalty Annual Report*	Y	0	0	0
EXP	*List of Expired Fuels Safety Facilities*	Y	0	0	0
FCON	*Federal Convictions*	Y	0	0	0
FCS	*Contaminated Sites on Federal Land*	Y	0	0	0
FOFT	*Fisheries & Oceans Fuel Tanks*	Y	0	0	0
FRST	*Federal Identification Registry for Storage Tank Systems (FIRSTS)*	Y	0	0	0
FST	*Fuel Storage Tank*	Y	0	8	8
FSTH	*Fuel Storage Tank - Historic*	Y	0	2	2
GEN	*Ontario Regulation 347 Waste Generators Summary*	Y	1	48	49
GHG	*Greenhouse Gas Emissions from Large Facilities*	Y	0	0	0
HINC	*TSSA Historic Incidents*	Y	0	0	0

Database	Name	Searched	Project Property	Boundary to 0.30km	Total
IAFT	Indian & Northern Affairs Fuel Tanks	Y	0	0	0
INC	Fuel Oil Spills and Leaks	Y	0	2	2
LIMO	Landfill Inventory Management Ontario	Y	0	0	0
MINE	Canadian Mine Locations	Y	0	0	0
MNR	Mineral Occurrences	Y	0	0	0
NATE	National Analysis of Trends in Emergencies System (NATES)	Y	0	0	0
NCPL	Non-Compliance Reports	Y	0	0	0
NDFT	National Defense & Canadian Forces Fuel Tanks	Y	0	0	0
NDSP	National Defense & Canadian Forces Spills	Y	0	0	0
NDWD	National Defence & Canadian Forces Waste Disposal Sites	Y	0	0	0
NEBI	National Energy Board Pipeline Incidents	Y	0	0	0
NEBP	National Energy Board Wells	Y	0	0	0
NEES	National Environmental Emergencies System (NEES)	Y	0	0	0
NPCB	National PCB Inventory	Y	0	0	0
NPR2	National Pollutant Release Inventory	Y	0	0	0
NPRI	National Pollutant Release Inventory - Historic	Y	0	0	0
OGWE	Oil and Gas Wells	Y	0	0	0
OOGW	Ontario Oil and Gas Wells	Y	0	0	0
OPCB	Inventory of PCB Storage Sites	Y	0	0	0
ORD	Orders	Y	0	0	0
PAP	Canadian Pulp and Paper	Y	0	0	0
PCFT	Parks Canada Fuel Storage Tanks	Y	0	0	0
PES	Pesticide Register	Y	0	15	15
PFAS	Ontario PFAS Spills	Y	0	0	0
PFCH	NPRI Reporters - PFAS Substances	Y	0	0	0
PFHA	Potential PFAS Handlers from NPRI	Y	0	0	0
PINC	Pipeline Incidents	Y	0	0	0
PPHA	Potential PFAS Handlers from EASR	Y	0	0	0
PRT	Private and Retail Fuel Storage Tanks	Y	0	0	0
PTTW	Permit to Take Water	Y	0	0	0
REC	Ontario Regulation 347 Waste Receivers Summary	Y	0	0	0
RSC	Record of Site Condition	Y	0	0	0
RST	Retail Fuel Storage Tanks	Y	0	4	4
SCT	Scott's Manufacturing Directory	Y	0	0	0
SPL	Ontario Spills	Y	0	14	14
SRDS	Wastewater Discharger Registration Database	Y	0	0	0
TANK	Anderson's Storage Tanks	Y	0	0	0
TCFT	Transport Canada Fuel Storage Tanks	Y	0	0	0
VAR	Variances for Abandonment of Underground Storage Tanks	Y	0	0	0
WDS	Waste Disposal Sites - MOE CA Inventory	Y	0	0	0

Database	Name	Searched	Project Property	Boundary to 0.30km	Total
WDSH	***Waste Disposal Sites - MOE 1991 Historical Approval Inventory***	Y	*0*	*0*	*0*
WWIS	***Water Well Information System***	Y	*0*	*12*	*12*
		Total:	*1*	*129*	*130*

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev diff (m)	Page Number
1	GEN	DMSS TRUCKING INC.	4450 7th concession rd windsor ON N9A 6J2	S/15.4	0.53	36

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
2	WWIS		lot 15 con 7 ON ***Well ID:*** 2102750	W/0.8	0.00	37
3	WWIS		lot 15 con 7 ON ***Well ID:*** 2102749	S/37.4	1.03	40
4	WWIS		lot 15 con 7 ON ***Well ID:*** 2102748	SSW/39.1	0.72	44
5	WWIS		4405 CONCESSION RD 7 Windsor ON ***Well ID:*** 7180363	WSW/54.2	0.96	47
6	WWIS		4405 CONCESSION RD 7 Windsor ON ***Well ID:*** 7180364	W/55.5	0.00	50
7	WWIS		4405 CONCESSION RD 7 Windsor ON ***Well ID:*** 7180365	WSW/60.0	0.47	54
8	PES	SKZ LANDSCAPING INC	4405 7TH CONCESSION WINDSOR ON N9A6V3	W/67.9	0.00	57
8	PES	SKZ LANDSCAPING INC	4405 7TH CONCESSION WINDSOR ON N9A6V3	W/67.9	0.00	57
8	EHS		4405 7Th Concession Windsor ON	W/67.9	0.00	57
8	EHS		4405 7Th Conc Windsor ON	W/67.9	0.00	58
8	PES	SKZ LANDSCAPING INC	4405 7TH CONCESSION WINDSOR ON N9A6V3	W/67.9	0.00	58
8	PES	SKZ LANDSCAPING INC	4405 7TH CONCESSION WINDSOR ON N9A6V3	W/67.9	0.00	58

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
9	EHS		4381 Seventh Concession Road Windsor 4381 Seventh Concession Rd ON N9A 6J3	NW/73.3	0.00	59
10	WWIS		4388 WALKER ROAD lot 15 con 6 WINDSOR ON ***Well ID:*** 2105813	W/140.6	0.72	59
11	WWIS		4388 WALKER RD WINDSOR ON ***Well ID:*** 2105893	W/141.8	1.00	61
11	RST	MR LUBE	4380 WALKER RD WINDSOR ON N8W 3T5	W/141.8	1.00	63
11	EHS		4380 Walker Road Windsor ON	W/141.8	1.00	63
11	RST	MR LUBE	4380 WALKER RD WINDSOR ON N8W3T5	W/141.8	1.00	63
12	WWIS		4450 WALKER ROAD lot 15 con 6 WINDSOR ON ***Well ID:*** 2105783	WSW/143.2	1.00	64
13	AUWR	EAST SIDE AUTO RECYCLING WAREHOUSE	4450 WALKER RD WINDSOR ON N8W 3T5	SW/146.3	1.00	66
13	EHS		4450 Walker Road Windsor ON N8W 3T5	SW/146.3	1.00	66
13	SPL	Swiss Chalet<UNOFFICIAL>	4450 Walker Rd Windsor ON N8W 3T5	SW/146.3	1.00	66
13	EHS		4450 Walker Rd Windsor ON N8W 3T5	SW/146.3	1.00	67
14	WWIS		lot 15 con 7 ON ***Well ID:*** 2103431	N/151.2	0.00	68
15	ANDR	Walker Rd junkyard 1971	Windsor ON N8W	SW/162.8	1.00	71

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
16	ANDR	Walker Rd junkyard 1976	Windsor ON N8W	SSW/172.5	1.00	71
17	EHS		4388 Walker Road Windsor ON N8W 3T5	WSW/176.8	1.00	72
17	EHS		#224 - 4338 Walker Rd, Windsor, ON Windsor ON	WSW/176.8	1.00	72
18	RST	SUNCOR ENERGY PRODUCTS	4340 WALKER RD WINDSOR ON N8W 3T5	W/196.9	0.39	72
18	FSTH	AJS INC O/A SUNOCO	4340 WALKER RD LOT 15 CON 6 WINDSOR ON N8W 3T5	W/196.9	0.39	72
18	FSTH	AJS INC O/A SUNOCO	4340 WALKER RD WINDSOR ON N8W 3T5	W/196.9	0.39	73
18	FST	SUNCOR ENERGY PRODUCTS PARTNERSHIP	4340 WALKER RD WINDSOR ON	W/196.9	0.39	73
18	FST	SUNCOR ENERGY PRODUCTS PARTNERSHIP	4340 WALKER RD WINDSOR ON	W/196.9	0.39	73
18	FST	SUNCOR ENERGY PRODUCTS PARTNERSHIP	4340 WALKER RD WINDSOR ON	W/196.9	0.39	74
18	RST	PETRO CANADA	4340 WALKER RD WINDSOR ON N8W3T5	W/196.9	0.39	74
18	FST	SUNCOR ENERGY PRODUCTS PARTNERSHIP	4340 WALKER RD WINDSOR ON	W/196.9	0.39	74
18	GEN	Petro Canada	4340 Walker Road Windsor ON	W/196.9	0.39	74
19	GEN	Value Village Stores, Inc.	4322 Walker Road Bldg. 1 Windsor ON N8W 3T5	NW/201.5	0.00	75

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
19	GEN	Value Village Stores, Inc.	4322 Walker Road Bldg. 1 Windsor ON N8W 3T5	NW/201.5	0.00	75
19	GEN	Value Village Stores, Inc.	4322 Walker Road Bldg. 1 Windsor ON N8W 3T5	NW/201.5	0.00	76
19	GEN	Value Village Stores, Inc.	4322 Walker Road Bldg. 1 Windsor ON N8W 3T5	NW/201.5	0.00	77
19	GEN	Value Village Stores	4322 Walker Road Bldg. 1 Windsor ON N8W 3T5	NW/201.5	0.00	78
19	GEN	Value Village Stores	4322 Walker Road Bldg. 1 Windsor ON	NW/201.5	0.00	78
19	GEN	Value Village Stores	4322 Walker Road Bldg. 1 Windsor ON N8W 3T6	NW/201.5	0.00	79
19	GEN	Value Village Stores	4322 Walker Road Bldg. 1 Windsor ON N8W 3T6	NW/201.5	0.00	80
19	GEN	Value Village Stores	4322 Walker Road Bldg. 1 Windsor ON N8W 3T6	NW/201.5	0.00	81
19	GEN	Value Village Stores	4322 Walker Road Bldg. 1 Windsor ON N8W 3T6	NW/201.5	0.00	82
19	GEN	Value Village Stores	4322 Walker Road Bldg. 1 Windsor ON N8W 3T6	NW/201.5	0.00	84
19	GEN	Value Village Stores	4322 Walker Road Bldg. 1 Windsor ON N8W 3T6	NW/201.5	0.00	87
19	GEN	Value Village Store #2109	Store #2109, 4322 Walker Road, Bldg. 1 Windsor ON	NW/201.5	0.00	89
20	EHS		4326 Walker Road Windsor ON N8W 3T5	WNW/225.9	0.00	100

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
21	EHS		4485 Concession 7 R.R. 1 Windsor ON N9A 6J3	SSW/241.1	1.00	101
22	EHS		4264 - 4340 Walker Road Windsor ON N8W 3T5	WNW/255.6	0.00	101
23	WWIS		4411 WALKER RD. Windsor ON ***Well ID:*** 7124222	SW/269.8	2.00	101
24	WWIS		lot 15 con 6 ON ***Well ID:*** 2102722	SW/271.6	2.00	104
25	EHS		3051, 4001, 5001-5011 LEGACY PARK DRIVE & 4511 WALKER ROAD WINDSOR ON	SSW/277.1	2.00	108
26	GEN	Princess Auto Ltd	4347 Walker Road Windsor ON	W/283.0	0.00	108
27	GEN	1413496	4275 7th Concession Windsor ON	NNW/285.2	-0.68	110
27	GEN	1413496	4275 7th Concession Windsor ON N9A 6J3	NNW/285.2	-0.68	110
27	GEN	1413496	4275 7th Concession Windsor ON N9A 6J3	NNW/285.2	-0.68	111
27	GEN	1413496	4275 7th Concession Windsor ON N9A 6J3	NNW/285.2	-0.68	111
27	GEN	1413496	4275 7th Concession Windsor ON N9A 6J3	NNW/285.2	-0.68	111
27	GEN	1413496	4275 7th Concession Windsor ON N9A 6J3	NNW/285.2	-0.68	112
27	GEN	1413496	4275 7th Concession Windsor ON N9A 6J3	NNW/285.2	-0.68	112

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
28	GEN	Detail and Design 2000	4275 7th Concession Windsor ON	NNW/287.1	-0.34	113
29	CA	734028 ONTARIO LTD. COMMERCIAL DEVELOPME	WALKER RD./SEVENTH CONC. PRIVA WINDSOR CITY ON	SSW/292.3	2.00	117
29	CA	WINDSOR CHRISTIAN FELLOWSHIP	7TH CONCESSION WALKER RD. WINDSOR CITY ON	SSW/292.3	2.00	117
30	PES	COSTCO WHOLESALE CANADA LTD	4411 WALKER ROAD WINDSOR ON N8W 3T6	WSW/299.5	1.00	117
30	GEN	CLUB PRICE STE-FOY INC.	4411 WALKER ROAD WINDSOR ON N9A 6J3	WSW/299.5	1.00	118
30	GEN	PRICE CLUB	4411 WALKER ROAD WINDSOR ON N9A 6J3	WSW/299.5	1.00	118
30	EBR	Costco Wholesale Corporation	4411 Walker Road, Windsor, Ontario CITY OF WINDSOR ON	WSW/299.5	1.00	118
30	CA	Costco Wholesale Canada Ltd.	4411 Walker Rd S Windsor ON	WSW/299.5	1.00	119
30	SPL		4411 Walker Rd. Windsor ON N8W 3T6	WSW/299.5	1.00	119
30	SPL		4411 Walker Rd Windsor ON N8W 3T6	WSW/299.5	1.00	120
30	DTNK	COSTCO WHOLESALE INC	4411 WALKER RD WINDSOR ON N8W 3T6	WSW/299.5	1.00	121
30	EASR	COSTCO WHOLESALE CANADA LTD	4411 WALKER RD WINDSOR ON N8W 3T6	WSW/299.5	1.00	121
30	PES	COSTCO WHOLESALE CANADA LTD	4411 WALKER RD WINDSOR ON N8W 3T6	WSW/299.5	1.00	122

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
30	GEN	Costco Wholesale	4411 Walker Road Windsor ON N8W 3T6	WSW/299.5	1.00	122
30	FST	COSTCO WHOLESALE CANADA LTD.	4411 WALKER RD WINDSOR ON	WSW/299.5	1.00	122
30	FST	COSTCO WHOLESALE CANADA LTD.	4411 WALKER RD WINDSOR ON	WSW/299.5	1.00	123
30	FST	COSTCO WHOLESALE CANADA LTD.	4411 WALKER RD WINDSOR ON	WSW/299.5	1.00	123
30	GEN	Costco Wholesale	4411 Walker Road Windsor ON N8W 3T6	WSW/299.5	1.00	123
30	SPL	Dual Electric and Refrigeration Service<UNOFFICIAL>	4411 Walkder Rd Windsor ON	WSW/299.5	1.00	123
30	GEN	Costco Wholesale	4411 Walker Road Windsor ON	WSW/299.5	1.00	124
30	INC		4411 WALKER ROAD, WINDSOR ON	WSW/299.5	1.00	125
30	SPL		4411 Walker Rd S Windsor ON	WSW/299.5	1.00	126
30	SPL		4411 Walker Rd Windsor ON	WSW/299.5	1.00	127
30	SPL		4411 Walker Road Windsor ON	WSW/299.5	1.00	127
30	ECA	Costco Wholesale Canada Ltd.	4411 Walker Rd S Windsor ON K2E 1C5	WSW/299.5	1.00	128
30	GEN	Costco Wholesale	4411 Walker Road Windsor ON N8W 3T6	WSW/299.5	1.00	129

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
30	GEN	Costco Wholesale	4411 Walker Road Windsor ON N8W 3T6	WSW/299.5	1.00	129
30	GEN	Costco Wholesale	4411 Walker Road Windsor ON N8W 3T6	WSW/299.5	1.00	130
30	GEN	COSTCO WHOLESALE #534 Windsor	4411 Walker Road Windsor ON N8W 3T6	WSW/299.5	1.00	131
30	PES	COSTCO WHOLESALE CANADA LTD	4411 WALKER RD WINDSOR ON N8W3T6	WSW/299.5	1.00	132
30	SPL	Costco Canada Wholesale Ltd.	4411 Walker road Windsor ON	WSW/299.5	1.00	133
30	SPL	Costco Wholesale	4411 Walker Road Windsor ON	WSW/299.5	1.00	134
30	SPL	Costco Canada Inc.	4411 Walker Rd S Windsor ON	WSW/299.5	1.00	135
30	PES	COSTCO WHOLESALE CANADA LTD	4411 WALKER RD WINDSOR ON N8W3T6	WSW/299.5	1.00	135
30	GEN	COSTCO WHOLESALE #534 Windsor	4411 Walker Road Windsor ON N8W 3T6	WSW/299.5	1.00	136
30	SPL		4411 Walker Rd Windsor ON	WSW/299.5	1.00	138
30	INC	COSTCO WHOLESALE CANADA LTD.	4411 WALKER RD WINDSOR ON	WSW/299.5	1.00	138
30	GEN	COSTCO WHOLESALE #534 Windsor	4411 Walker Road Windsor ON N8W 3T6	WSW/299.5	1.00	139
30	PES	COSTCO WHOLESALE CANADA LTD	4411 WALKER RD WINDSOR ON N8W 3T6	WSW/299.5	1.00	141

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
30	GEN	Costco Wholesale Canada Ltd.	4411 Walker Road Windsor ON	WSW/299.5	1.00	142
30	FST	COSTCO WHOLESALE CANADA LTD.	4411 WALKER RD WINDSOR ON	WSW/299.5	1.00	148
30	SPL	Costco - 4411 Walker Rd	4411 Walker Rd, Windsor, ON N8W 3T6 WINDSOR ON	WSW/299.5	1.00	149
30	SPL	Costco - 4411 Walker Rd	4411 Walker Rd, Windsor WINDSOR ON	WSW/299.5	1.00	149
31	PES	CANADIAN TIRE ASSOCIATE STORE/WRANK ENTERPRISES LTD.	4150 WALKER ROAD WINDSOR ON N8W 3T5	NNW/299.7	0.00	150
31	GEN	Wrank Enterprises Ltd.	4150 Walker Rd Windsor ON N8W 3T5	NNW/299.7	0.00	151
31	PES	CANADIAN TIRE ASSOCIATE STORE/WRANK ENTERPRISES LTD.	4150 WALKER ROAD WINDSOR ON N8W 3T5	NNW/299.7	0.00	151
31	GEN	Wrank Enterprises Ltd.	4150 Walkers Road Windsor ON	NNW/299.7	0.00	152
31	EHS		4150 Walker Road Windsor ON N8W 3T5	NNW/299.7	0.00	153
31	GEN	Wrank Enterprises Ltd.	4150 Walkers Road Windsor ON	NNW/299.7	0.00	153
31	GEN	Wrank Enterprises Ltd.	4150 Walkers Road Windsor ON	NNW/299.7	0.00	155
31	GEN	Wrank Enterprises Ltd.	4150 Walkers Road Windsor ON	NNW/299.7	0.00	156

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
31	EHS		4150 Walker Road Windsor ON	NNW/299.7	0.00	157
31	GEN	Wrank Enterprises Ltd.	4150 Walkers Road Windsor ON	NNW/299.7	0.00	158
31	PES	CANADIAN TIRE ASSOCIATE STORE/WRANK ENTERPRISES LTD.	4150 WALKER ROAD WINDSOR ON N8W3T5	NNW/299.7	0.00	159
31	GEN	Wrank Enterprises Ltd.	4150 Walkers Road Windsor ON N8W3T5	NNW/299.7	0.00	160
31	GEN	Wrank Enterprises Ltd.	4150 Walkers Road Windsor ON N8W3T5	NNW/299.7	0.00	161
31	GEN	Wrank Enterprises Ltd.	4150 Walkers Road Windsor ON N8W3T5	NNW/299.7	0.00	163
31	GEN	Wrank Enterprises Ltd.	4150 Walkers Road Windsor ON N8W3T5	NNW/299.7	0.00	164
31	PES	MICHAEL J. KENOPIC SALES LTD.	4150 WALKER RD WINDSOR ON N8W 3T5	NNW/299.7	0.00	165
31	PES	CANADIAN TIRE ASSOCIATE STORE/WRANK ENTERPRISES LTD.	4150 WALKER ROAD WINDSOR ON N8W3T5	NNW/299.7	0.00	166
31	GEN	Michael Kenopic Sales Limited	4150 Walkers Road Windsor ON N8W3T5	NNW/299.7	0.00	166
31	SPL	Canadian Tire- East Windsor	4150 Walker Road Windsor ON N8W 3T5	NNW/299.7	0.00	167
31	GEN	Michael Kenopic Sales Limited	4150 Walkers Road Windsor ON N8W3T5	NNW/299.7	0.00	168
31	GEN	Canadian Tire Real Estate Limited	4150 Walker Road Windsor ON N8W 3T5	NNW/299.7	0.00	169

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
31	PES	MICHAEL J. KENOPIC SALES LTD.	4150 WALKER RD WINDSOR ON N8W 3T5	NNW/299.7	0.00	169

Executive Summary: Summary By Data Source

ANDR - Anderson's Waste Disposal Sites

A search of the ANDR database, dated 1860s-Present has found that there are 2 ANDR site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
Walker Rd junkyard 1971	Windsor ON N8W	162.8	15
Walker Rd junkyard 1976	Windsor ON N8W	172.5	16

AUWR - Automobile Wrecking & Supplies

A search of the AUWR database, dated 1999-Apr 30, 2025 has found that there are 1 AUWR site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
EAST SIDE AUTO RECYCLING WAREHOUSE	4450 WALKER RD WINDSOR ON N8W 3T5	146.3	13

CA - Certificates of Approval

A search of the CA database, dated 1985-Oct 30, 2011* has found that there are 3 CA site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
734028 ONTARIO LTD. COMMERCIAL DEVELOPME	WALKER RD./SEVENTH CONC. PRIVA WINDSOR CITY ON	292.3	29
WINDSOR CHRISTIAN FELLOWSHIP	7TH CONCESSION WALKER RD. WINDSOR CITY ON	292.3	29
Costco Wholesale Canada Ltd.	4411 Walker Rd S Windsor ON	299.5	30

Site	Address	Distance (m)	Map Key

DTNK - Delisted Fuel Tanks

A search of the DTNK database, dated Oct 2023 has found that there are 1 DTNK site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
COSTCO WHOLESALE INC	4411 WALKER RD WINDSOR ON N8W 3T6	299.5	30

EASR - Environmental Activity and Sector Registry

A search of the EASR database, dated Oct 2011 - May 31, 2025 has found that there are 1 EASR site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
COSTCO WHOLESALE CANADA LTD	4411 WALKER RD WINDSOR ON N8W 3T6	299.5	30

EBR - Environmental Registry

A search of the EBR database, dated 1994 - Jun 30, 2025 has found that there are 1 EBR site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
Costco Wholesale Corporation	4411 Walker Road, Windsor, Ontario CITY OF WINDSOR ON	299.5	30

ECA - Environmental Compliance Approval

A search of the ECA database, dated Oct 2011 - May 31, 2025 has found that there are 1 ECA site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
Costco Wholesale Canada Ltd.	4411 Walker Rd S Windsor ON K2E 1C5	299.5	30

EHS - ERIS Historical Searches

A search of the EHS database, dated 1999-Aug 31, 2024 has found that there are 14 EHS site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	4405 7Th Concession Windsor ON	67.9	8
	4405 7Th Conc Windsor ON	67.9	8
	4381 Seventh Concession Road Windsor 4381 Seventh Concession Rd ON N9A 6J3	73.3	9
	4380 Walker Road Windsor ON	141.8	11
	4450 Walker Road Windsor ON N8W 3T5	146.3	13
	4450 Walker Rd Windsor ON N8W 3T5	146.3	13
	4388 Walker Road Windsor ON N8W 3T5	176.8	17
	#224 - 4338 Walker Rd, Windsor, ON Windsor ON	176.8	17
	4326 Walker Road Windsor ON N8W 3T5	225.9	20
	4485 Concession 7 R.R. 1 Windsor ON N9A 6J3	241.1	21
	4264 - 4340 Walker Road Windsor ON N8W 3T5	255.6	22

Site	Address	Distance (m)	Map Key
	3051, 4001, 5001-5011 LEGACY PARK DRIVE & 4511 WALKER ROAD WINDSOR ON	277.1	25
	4150 Walker Road Windsor ON N8W 3T5	299.7	31
	4150 Walker Road Windsor ON	299.7	31

FST - Fuel Storage Tank

A search of the FST database, dated Oct 2023 has found that there are 8 FST site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
SUNCOR ENERGY PRODUCTS PARTNERSHIP	4340 WALKER RD WINDSOR ON	196.9	18
SUNCOR ENERGY PRODUCTS PARTNERSHIP	4340 WALKER RD WINDSOR ON	196.9	18
SUNCOR ENERGY PRODUCTS PARTNERSHIP	4340 WALKER RD WINDSOR ON	196.9	18
SUNCOR ENERGY PRODUCTS PARTNERSHIP	4340 WALKER RD WINDSOR ON	196.9	18
COSTCO WHOLESALE CANADA LTD.	4411 WALKER RD WINDSOR ON	299.5	30
COSTCO WHOLESALE CANADA LTD.	4411 WALKER RD WINDSOR ON	299.5	30

Site	Address	Distance (m)	Map Key
COSTCO WHOLESALE CANADA LTD.	4411 WALKER RD WINDSOR ON	299.5	30
COSTCO WHOLESALE CANADA LTD.	4411 WALKER RD WINDSOR ON	299.5	30

FSTH - Fuel Storage Tank - Historic

A search of the FSTH database, dated Pre-Jan 2010* has found that there are 2 FSTH site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
AJS INC O/A SUNOCO	4340 WALKER RD WINDSOR ON N8W 3T5	196.9	18
AJS INC O/A SUNOCO	4340 WALKER RD LOT 15 CON 6 WINDSOR ON N8W 3T5	196.9	18

GEN - Ontario Regulation 347 Waste Generators Summary

A search of the GEN database, dated 1986-Dec 31, 2024 has found that there are 49 GEN site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
DMSS TRUCKING INC.	4450 7th concession rd windsor ON N9A 6J2	15.4	1
Petro Canada	4340 Walker Road Windsor ON	196.9	18
Value Village Stores, Inc.	4322 Walker Road Bldg. 1 Windsor ON N8W 3T5	201.5	19
Value Village Stores, Inc.	4322 Walker Road Bldg. 1 Windsor ON N8W 3T5	201.5	19

Site	Address	Distance (m)	Map Key
Value Village Stores, Inc.	4322 Walker Road Bldg. 1 Windsor ON N8W 3T5	201.5	19
Value Village Stores, Inc.	4322 Walker Road Bldg. 1 Windsor ON N8W 3T5	201.5	19
Value Village Stores	4322 Walker Road Bldg. 1 Windsor ON N8W 3T5	201.5	19
Value Village Stores	4322 Walker Road Bldg. 1 Windsor ON	201.5	19
Value Village Stores	4322 Walker Road Bldg. 1 Windsor ON N8W 3T6	201.5	19
Value Village Stores	4322 Walker Road Bldg. 1 Windsor ON N8W 3T6	201.5	19
Value Village Stores	4322 Walker Road Bldg. 1 Windsor ON N8W 3T6	201.5	19
Value Village Stores	4322 Walker Road Bldg. 1 Windsor ON N8W 3T6	201.5	19
Value Village Stores	4322 Walker Road Bldg. 1 Windsor ON N8W 3T6	201.5	19
Value Village Stores	4322 Walker Road Bldg. 1 Windsor ON N8W 3T6	201.5	19
Value Village Store #2109	Store #2109, 4322 Walker Road, Bldg. 1 Windsor ON	201.5	19
Princess Auto Ltd	4347 Walker Road Windsor ON	283.0	26

Site	Address	Distance (m)	Map Key
1413496	4275 7th Concession Windsor ON	285.2	27
1413496	4275 7th Concession Windsor ON N9A 6J3	285.2	27
1413496	4275 7th Concession Windsor ON N9A 6J3	285.2	27
1413496	4275 7th Concession Windsor ON N9A 6J3	285.2	27
1413496	4275 7th Concession Windsor ON N9A 6J3	285.2	27
1413496	4275 7th Concession Windsor ON N9A 6J3	285.2	27
1413496	4275 7th Concession Windsor ON N9A 6J3	285.2	27
Detail and Design 2000	4275 7th Concession Windsor ON	287.1	28
CLUB PRICE STE-FOY INC.	4411 WALKER ROAD WINDSOR ON N9A 6J3	299.5	30
PRICE CLUB	4411 WALKER ROAD WINDSOR ON N9A 6J3	299.5	30
Costco Wholesale	4411 Walker Road Windsor ON N8W 3T6	299.5	30

Site	Address	Distance (m)	Map Key
Costco Wholesale	4411 Walker Road Windsor ON N8W 3T6	299.5	30
Costco Wholesale	4411 Walker Road Windsor ON	299.5	30
Costco Wholesale	4411 Walker Road Windsor ON N8W 3T6	299.5	30
Costco Wholesale	4411 Walker Road Windsor ON N8W 3T6	299.5	30
Costco Wholesale	4411 Walker Road Windsor ON N8W 3T6	299.5	30
COSTCO WHOLESALE #534 Windsor	4411 Walker Road Windsor ON N8W 3T6	299.5	30
COSTCO WHOLESALE #534 Windsor	4411 Walker Road Windsor ON N8W 3T6	299.5	30
COSTCO WHOLESALE #534 Windsor	4411 Walker Road Windsor ON N8W 3T6	299.5	30
Costco Wholesale Canada Ltd.	4411 Walker Road Windsor ON	299.5	30
Canadian Tire Real Estate Limited	4150 Walker Road Windsor ON N8W 3T5	299.7	31
Wrank Enterprises Ltd.	4150 Walker Rd Windsor ON N8W 3T5	299.7	31
Wrank Enterprises Ltd.	4150 Walkers Road Windsor ON	299.7	31

Site	Address	Distance (m)	Map Key
Wrank Enterprises Ltd.	4150 Walkers Road Windsor ON	299.7	31
Wrank Enterprises Ltd.	4150 Walkers Road Windsor ON	299.7	31
Wrank Enterprises Ltd.	4150 Walkers Road Windsor ON	299.7	31
Wrank Enterprises Ltd.	4150 Walkers Road Windsor ON	299.7	31
Wrank Enterprises Ltd.	4150 Walkers Road Windsor ON N8W3T5	299.7	31
Wrank Enterprises Ltd.	4150 Walkers Road Windsor ON N8W3T5	299.7	31
Wrank Enterprises Ltd.	4150 Walkers Road Windsor ON N8W3T5	299.7	31
Wrank Enterprises Ltd.	4150 Walkers Road Windsor ON N8W3T5	299.7	31
Michael Kenopic Sales Limited	4150 Walkers Road Windsor ON N8W3T5	299.7	31
Michael Kenopic Sales Limited	4150 Walkers Road Windsor ON N8W3T5	299.7	31

INC - Fuel Oil Spills and Leaks

A search of the INC database, dated 31 Oct, 2023 has found that there are 2 INC site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
COSTCO WHOLESALE CANADA LTD.	4411 WALKER RD WINDSOR ON	299.5	30
	4411 WALKER ROAD, WINDSOR ON	299.5	30

PES - Pesticide Register

A search of the PES database, dated Oct 2011 - May 31, 2025 has found that there are 15 PES site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
SKZ LANDSCAPING INC	4405 7TH CONCESSION WINDSOR ON N9A6V3	67.9	8
SKZ LANDSCAPING INC	4405 7TH CONCESSION WINDSOR ON N9A6V3	67.9	8
SKZ LANDSCAPING INC	4405 7TH CONCESSION WINDSOR ON N9A6V3	67.9	8
SKZ LANDSCAPING INC	4405 7TH CONCESSION WINDSOR ON N9A6V3	67.9	8
COSTCO WHOLESALE CANADA LTD	4411 WALKER ROAD WINDSOR ON N8W 3T6	299.5	30
COSTCO WHOLESALE CANADA LTD	4411 WALKER RD WINDSOR ON N8W 3T6	299.5	30
COSTCO WHOLESALE CANADA LTD	4411 WALKER RD WINDSOR ON N8W3T6	299.5	30

Site	Address	Distance (m)	Map Key
COSTCO WHOLESALE CANADA LTD	4411 WALKER RD WINDSOR ON N8W3T6	299.5	30
COSTCO WHOLESALE CANADA LTD	4411 WALKER RD WINDSOR ON N8W 3T6	299.5	30
CANADIAN TIRE ASSOCIATE STORE/WRANK ENTERPRISES LTD.	4150 WALKER ROAD WINDSOR ON N8W 3T5	299.7	31
CANADIAN TIRE ASSOCIATE STORE/WRANK ENTERPRISES LTD.	4150 WALKER ROAD WINDSOR ON N8W 3T5	299.7	31
CANADIAN TIRE ASSOCIATE STORE/WRANK ENTERPRISES LTD.	4150 WALKER ROAD WINDSOR ON N8W3T5	299.7	31
MICHAEL J. KENOPIC SALES LTD.	4150 WALKER RD WINDSOR ON N8W 3T5	299.7	31
CANADIAN TIRE ASSOCIATE STORE/WRANK ENTERPRISES LTD.	4150 WALKER ROAD WINDSOR ON N8W3T5	299.7	31
MICHAEL J. KENOPIC SALES LTD.	4150 WALKER RD WINDSOR ON N8W 3T5	299.7	31

RST - Retail Fuel Storage Tanks

A search of the RST database, dated 1999-Apr 30, 2025 has found that there are 4 RST site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
MR LUBE	4380 WALKER RD WINDSOR ON N8W3T5	141.8	11
MR LUBE	4380 WALKER RD WINDSOR ON N8W 3T5	141.8	11

Site	Address	Distance (m)	Map Key
PETRO CANADA	4340 WALKER RD WINDSOR ON N8W3T5	196.9	18
SUNCOR ENERGY PRODUCTS	4340 WALKER RD WINDSOR ON N8W 3T5	196.9	18

SPL - Ontario Spills

A search of the SPL database, dated 1988-Jun 2024; Aug; Oct-Apr 2025 has found that there are 14 SPL site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
Swiss Chalet<UNOFFICIAL>	4450 Walker Rd Windsor ON N8W 3T5	146.3	13
Costco - 4411 Walker Rd	4411 Walker Rd, Windsor WINDSOR ON	299.5	30
Costco - 4411 Walker Rd	4411 Walker Rd, Windsor, ON N8W 3T6 WINDSOR ON	299.5	30
	4411 Walker Rd Windsor ON	299.5	30
Costco Canada Inc.	4411 Walker Rd S Windsor ON	299.5	30
Costco Wholesale	4411 Walker Road Windsor ON	299.5	30
Costco Canada Wholesale Ltd.	4411 Walker road Windsor ON	299.5	30

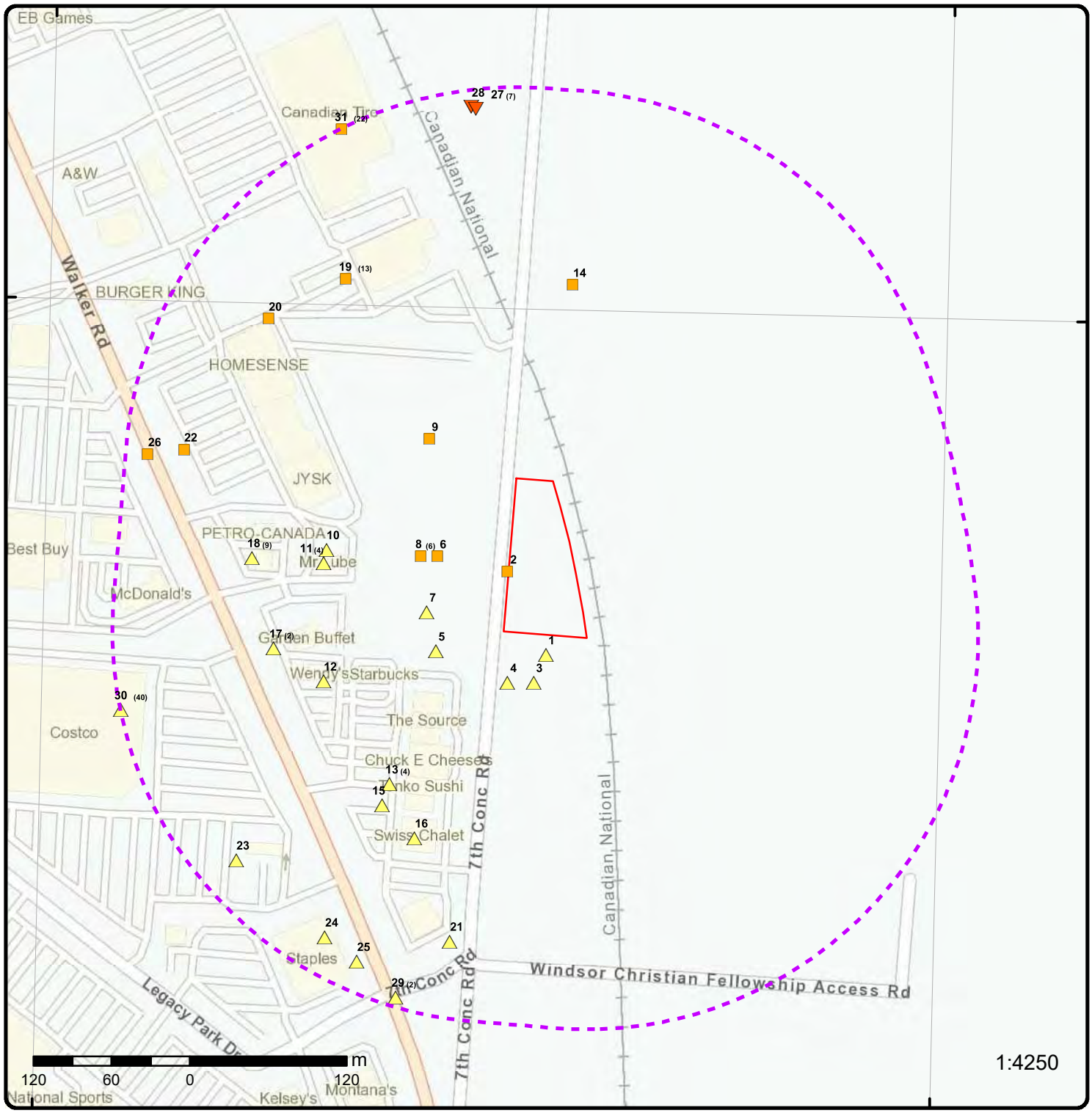
Site	Address	Distance (m)	Map Key
	4411 Walker Road Windsor ON	299.5	30
	4411 Walker Rd Windsor ON	299.5	30
	4411 Walker Rd S Windsor ON	299.5	30
Dual Electric and Refrigeration Service<UNOFFICIAL>	4411 Walkder Rd Windsor ON	299.5	30
	4411 Walker Rd Windsor ON N8W 3T6	299.5	30
	4411 Walker Rd. Windsor ON N8W 3T6	299.5	30
Canadian Tire- East Windsor	4150 Walker Road Windsor ON N8W 3T5	299.7	31

WWIS - Water Well Information System

A search of the WWIS database, dated Dec 31 2023 has found that there are 12 WWIS site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	lot 15 con 7 ON ***Well ID:*** 2102750	0.8	2
	lot 15 con 7 ON ***Well ID:*** 2102749	37.4	3
	lot 15 con 7 ON	39.1	4

Site	Address	Distance (m)	Map Key
	Well ID: 2102748		
	4405 CONCESSION RD 7 Windsor ON ***Well ID:*** 7180363	54.2	5
	4405 CONCESSION RD 7 Windsor ON ***Well ID:*** 7180364	55.5	6
	4405 CONCESSION RD 7 Windsor ON ***Well ID:*** 7180365	60.0	7
	4388 WALKER ROAD lot 15 con 6 WINDSOR ON ***Well ID:*** 2105813	140.6	10
	4388 WALKER RD WINDSOR ON ***Well ID:*** 2105893	141.8	11
	4450 WALKER ROAD lot 15 con 6 WINDSOR ON ***Well ID:*** 2105783	143.2	12
	lot 15 con 7 ON ***Well ID:*** 2103431	151.2	14
	4411 WALKER RD. Windsor ON ***Well ID:*** 7124222	269.8	23
	lot 15 con 6 ON ***Well ID:*** 2102722	271.6	24



Map: 0.3 Kilometer Radius

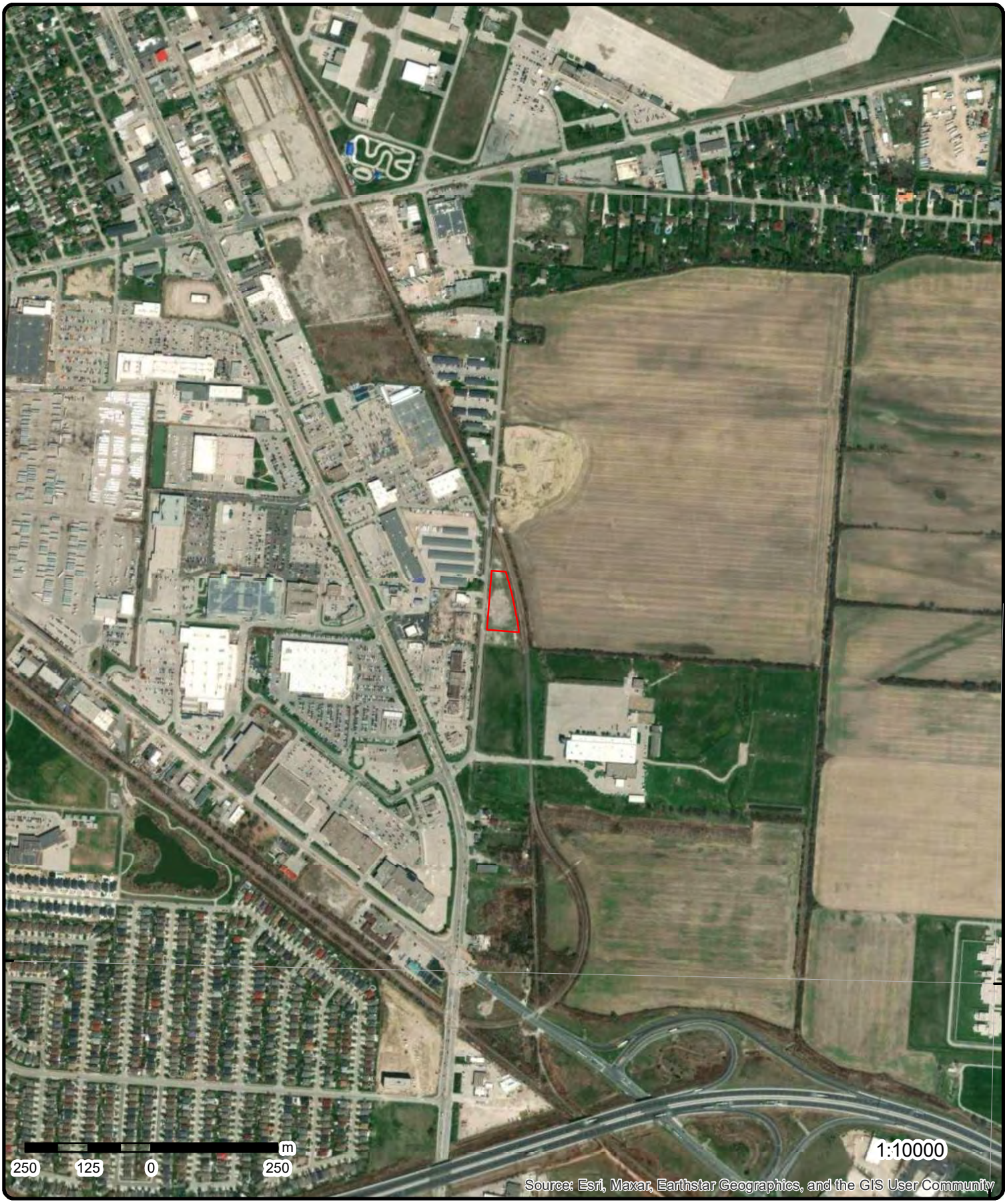
Order Number: 25071700027

Address: 4450 7th Concession Rd, Windsor, ON

- Project Property
- Buffer Outline
- Eris Sites with Higher Elevation
- Eris Sites with Same Elevation
- Eris Sites with Lower Elevation
- Eris Sites with Unknown Elevation
- Freeways; Highways
- Traffic Circle; Ramp
- Major Arterial; Minor Arterial
- Local Road
- Service Road; Traffic Circle; Ramp
- Rail
- Beach
- Airport
- Industrial Area
- Military Base
- Aircraft Roads
- Native Reservation
- Hospital
- Shopping & Sports Area
- University/College
- Cemetery; Golf Course
- Parkt (National)
- Park (City/County)

Source: © 2021 ESRI StreetMap Premium.

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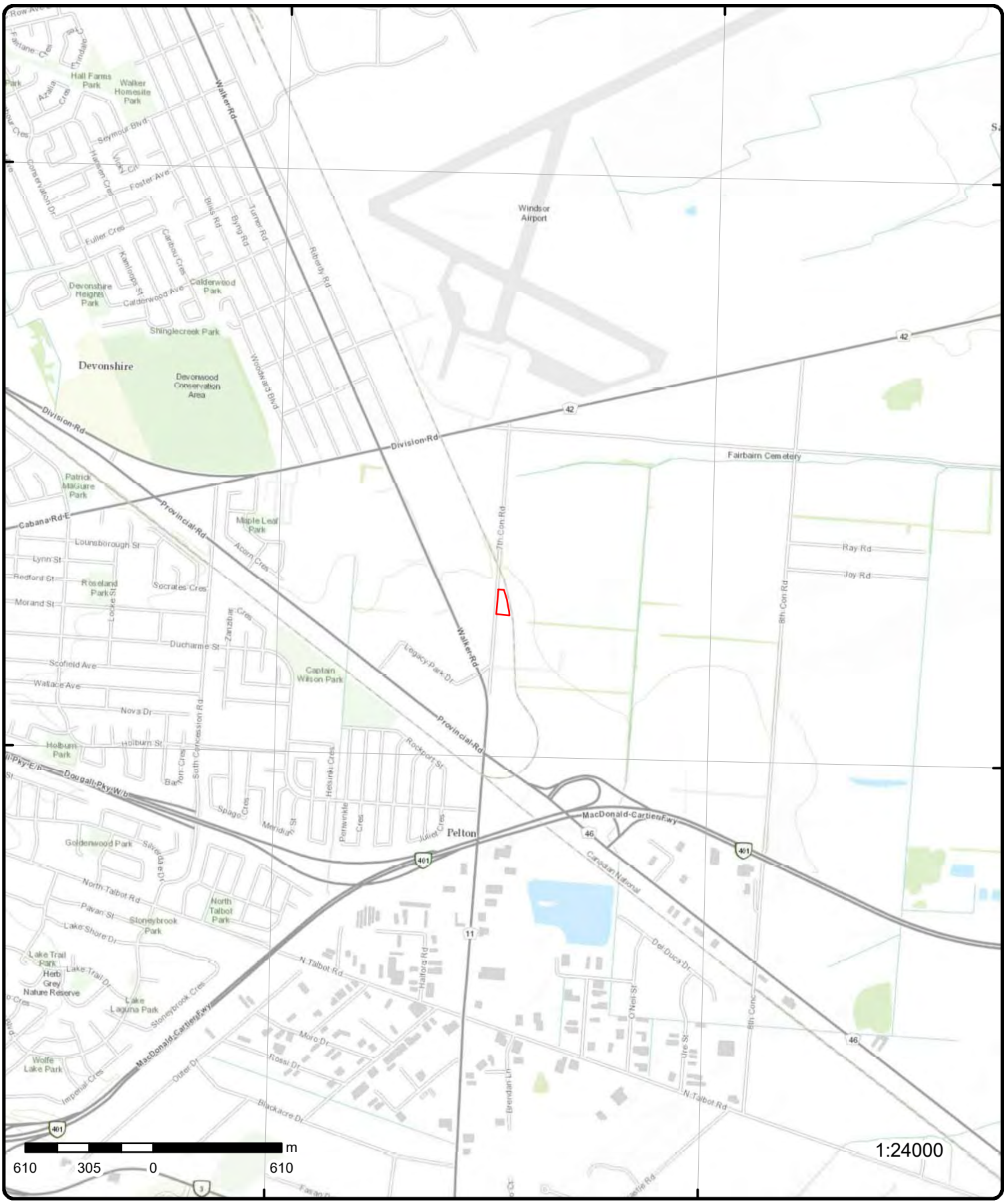
Aerial **Year: 2023**

Order Number: 25071700027

Address: 4450 7th Concession Rd, Windsor, ON

Source: ESRI World Imagery

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Topographic Map

Order Number: 25071700027

Address: 4450 7th Concession Rd, ON

Source: ESRI World Topographic Map

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Detail Report

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	1 of 1	S/15.4	190.4 / 0.53	DMSS TRUCKING INC. 4450 7th concession rd windsor ON N9A 6J2	GEN

Generator Info

Generator No:	ON6432286	***Choice of Contact:***	
Approval Years:	As of Oct 2019	***Contaminated Fac:***	
Status:	Registered	***MHSW Facility:***	
PO Box No:		***SIC Code:***	
Country:	Canada		
Co Admin:			
Phone No Admin:			
SIC Description:			

Waste Detail(s)

Waste Class:	252 L
Waste Class Name:	Waste crankcase oils and lubricants

2019 Generator Info

Gen No:	ON6432286	***Choice of Contact:***	CO_OFFICIAL
ID:	25823	***Phone No Official:***	2262464109 Ext.
Contaminated Fac:	N	***Phone No Admin:***	2262464109 Ext.
MHSW Facility:	N	***County Ont:***	ESSEX
NAICS Code1:	493190	***County Out:***	
NAICS Code2:		***District:***	102
NAICS Code3:			
Gen Name:	DMSS TRUCKING INC.		
Gen Div:			
Gen Op Name:	SUKHWINDER KAUR		
Gen Op Div:			
Site Adrs1:	4450 7th concession rd		
Site Bldg:			
Site Pobox:			
Province In:	ONTARIO		
Site Adrs2:			
Site City:	windsor		
Province Out:			
Site Postal Code:	N9A 6J2		
Site Country:	Canada		
Co Official:	sukhwinder s'k kaur		
Co Admin:	SUKHWINDER sk KAUR		

2019 Generator Manifest

ID:	50731	***Sum Received Qty:***	800.0
Generator No:	ON6432286	***Waste Class Name:***	WASTE OILS & LUBRICANTS
Receiver Type:	030	***Count Manifests:***	1
Waste Char:	L	***District:***	102
Waste Code:	252		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
2	1 of 1	W/0.8	189.9 / 0.00	lot 15 con 7 ON	WWIS

Well ID:	2102750	**Flowing (Y/N):**	
Construction Date:		**Flow Rate:**	
Use 1st:	Domestic	**Data Entry Status:**	
Use 2nd:	0	**Data Src:**	1
Final Well Status:	Water Supply	**Date Received:**	03/21/1960
Water Type:		**Selected Flag:**	TRUE
Casing Material:		**Abandonment Rec:**	
Audit No:		**Contractor:**	4802
Tag:		**Form Version:**	1
Constructn Method:		**Owner:**	
Elevation (m):		**County:**	ESSEX
Elevatn Reliabilty:		**Lot:**	015
Depth to Bedrock:		**Concession:**	07
Well Depth:		**Concession Name:**	CON
Overburden/Bedrock:		**Easting NAD83:**	
Pump Rate:		**Northing NAD83:**	
Static Water Level:		**Zone:**	
Clear/Cloudy:		**UTM Reliability:**	
Municipality:	WINDSOR CITY (SANDWICH SOUTH)		
Site Info:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/210\2102750.pdf

Additional Detail(s) (Map)

Well Completed Date:	03/14/1960
Year Completed:	1960
Depth (m):	64.9224
Latitude:	42.2565166548438
Longitude:	-82.9623644899294
X:	-82.96236434946489
Y:	42.256516656219596
Path:	210\2102750.pdf

Bore Hole Information

Bore Hole ID:	10091759	**Elevation:**	
DP2BR:		**Elevrc:**	
Spatial Status:		**Zone:**	17
Code OB:		**East83:**	338132.90
Code OB Desc:		**North83:**	4680122.00
Open Hole:		**Org CS:**	
Cluster Kind:		**UTMRC:**	5
Date Completed:	03/14/1960	**UTMRC Desc:**	margin of error : 100 m - 300 m
Remarks:		**Location Method:**	p5
Location Method Desc:	Original Pre1985 UTM Rel Code 5: margin of error : 100 m - 300 m		
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock Materials Interval

Formation ID:	931239072
Layer:	2

Color:	5
General Color:	YELLOW
Material 1:	05
Material 1 Desc:	CLAY
Material 2:	
Material 2 Desc:	
Material 3:	
Material 3 Desc:	
Formation Top Depth:	1.0
Formation End Depth:	12.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931239074
Layer:	4
Color:	
General Color:	
Material 1:	05
Material 1 Desc:	CLAY
Material 2:	08
Material 2 Desc:	FINE SAND
Material 3:	
Material 3 Desc:	
Formation Top Depth:	80.0
Formation End Depth:	137.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931239077
Layer:	7
Color:	2
General Color:	GREY
Material 1:	15
Material 1 Desc:	LIMESTONE
Material 2:	
Material 2 Desc:	
Material 3:	
Material 3 Desc:	
Formation Top Depth:	167.0
Formation End Depth:	213.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931239073
Layer:	3
Color:	3
General Color:	BLUE
Material 1:	05
Material 1 Desc:	CLAY
Material 2:	
Material 2 Desc:	
Material 3:	
Material 3 Desc:	
Formation Top Depth:	12.0
Formation End Depth:	80.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931239075
Layer:	5
Color:	
General Color:	
Material 1:	05
Material 1 Desc:	CLAY
Material 2:	09
Material 2 Desc:	MEDIUM SAND
Material 3:	14
Material 3 Desc:	HARDPAN
Formation Top Depth:	137.0
Formation End Depth:	162.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931239071
Layer:	1
Color:	8
General Color:	BLACK
Material 1:	02
Material 1 Desc:	TOPSOIL
Material 2:	
Material 2 Desc:	
Material 3:	
Material 3 Desc:	
Formation Top Depth:	0.0
Formation End Depth:	1.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931239076
Layer:	6
Color:	
General Color:	
Material 1:	05
Material 1 Desc:	CLAY
Material 2:	12
Material 2 Desc:	STONES
Material 3:	
Material 3 Desc:	
Formation Top Depth:	162.0
Formation End Depth:	167.0
Formation End Depth UOM:	ft

Method of Construction & Well Use

Method Construction ID:	962102750
Method Construction Code:	1
Method Construction:	Cable Tool
Other Method Construction:	

Pipe Information

Pipe ID:	10640329

Casing No:	1
Comment:	
Alt Name:	

Construction Record - Casing

Casing ID:	930154875
Layer:	1
Material:	1
Open Hole or Material:	STEEL
Depth From:	
Depth To:	168.0
Casing Diameter:	3.0
Casing Diameter UOM:	inch
Casing Depth UOM:	ft

Construction Record - Casing

Casing ID:	930154876
Layer:	2
Material:	4
Open Hole or Material:	OPEN HOLE
Depth From:	
Depth To:	213.0
Casing Diameter:	3.0
Casing Diameter UOM:	inch
Casing Depth UOM:	ft

Results of Well Yield Testing

Pumping Test Method Desc:	PUMP
Pump Test ID:	992102750
Pump Set At:	
Static Level:	35.0
Final Level After Pumping:	100.0
Recommended Pump Depth:	100.0
Pumping Rate:	2.0
Flowing Rate:	
Recommended Pump Rate:	2.0
Levels UOM:	ft
Rate UOM:	GPM
Water State After Test Code:	2
Water State After Test:	CLOUDY
Pumping Test Method:	1
Pumping Duration HR:	2
Pumping Duration MIN:	0
Flowing:	No

Water Details

Water ID:	933533348
Layer:	1
Kind Code:	3
Kind:	SULPHUR
Water Found Depth:	210.0
Water Found Depth UOM:	ft

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
3	1 of 1	S/37.4	190.9 / 1.03	lot 15 con 7 ON	WWIS

Well ID:	2102749	**Flowing (Y/N):**	
Construction Date:		**Flow Rate:**	

Use 1st:	Livestock	**Data Entry Status:**	
Use 2nd:	Domestic	**Data Src:**	1
Final Well Status:	Water Supply	**Date Received:**	12/08/1959
Water Type:		**Selected Flag:**	TRUE
Casing Material:		**Abandonment Rec:**	
Audit No:		**Contractor:**	3420
Tag:		**Form Version:**	1
Constructn Method:		**Owner:**	
Elevation (m):		**County:**	ESSEX
Elevatn Reliabilty:		**Lot:**	015
Depth to Bedrock:		**Concession:**	07
Well Depth:		**Concession Name:**	CON
Overburden/Bedrock:		**Easting NAD83:**	
Pump Rate:		**Northing NAD83:**	
Static Water Level:		**Zone:**	
Clear/Cloudy:		**UTM Reliability:**	

Municipality: WINDSOR CITY (SANDWICH SOUTH)
Site Info:

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/210\2102749.pdf

Additional Detail(s) (Map)

Well Completed Date: 10/14/1959
Year Completed: 1959
Depth (m): 48.768
Latitude: 42.2557557195811
Longitude: -82.9620984359073
X: -82.96209829557765
Y: 42.25575572131803
Path: 210\2102749.pdf

Bore Hole Information

Bore Hole ID:	10091758	**Elevation:**	
DP2BR:		**Elevrc:**	
Spatial Status:		**Zone:**	17
Code OB:		**East83:**	338152.90
Code OB Desc:		**North83:**	4680037.00
Open Hole:		**Org CS:**	
Cluster Kind:		**UTMRC:**	5
Date Completed:	10/14/1959	**UTMRC Desc:**	margin of error : 100 m - 300 m
Remarks:		**Location Method:**	p5

Location Method Desc: Original Pre1985 UTM Rel Code 5: margin of error : 100 m - 300 m
Elevrc Desc:
Location Source Date:
Improvement Location Source:
Improvement Location Method:
Source Revision Comment:
Supplier Comment:

Overburden and Bedrock Materials Interval

Formation ID: 931239069
Layer: 4
Color:
General Color:
Material 1: 05
Material 1 Desc: CLAY
Material 2: 09
Material 2 Desc: MEDIUM SAND
Material 3:

Material 3 Desc:
Formation Top Depth: 130.0
Formation End Depth: 150.0
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 931239066
Layer: 1
Color:
General Color:
Material 1: 02
Material 1 Desc: TOPSOIL
Material 2:
Material 2 Desc:
Material 3:
Material 3 Desc:
Formation Top Depth: 0.0
Formation End Depth: 2.0
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 931239068
Layer: 3
Color: 3
General Color: BLUE
Material 1: 05
Material 1 Desc: CLAY
Material 2:
Material 2 Desc:
Material 3:
Material 3 Desc:
Formation Top Depth: 20.0
Formation End Depth: 130.0
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 931239067
Layer: 2
Color: 7
General Color: RED
Material 1: 05
Material 1 Desc: CLAY
Material 2:
Material 2 Desc:
Material 3:
Material 3 Desc:
Formation Top Depth: 2.0
Formation End Depth: 20.0
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 931239070
Layer: 5
Color:

General Color:	
Material 1:	11
Material 1 Desc:	GRAVEL
Material 2:	
Material 2 Desc:	
Material 3:	
Material 3 Desc:	
Formation Top Depth:	150.0
Formation End Depth:	160.0
Formation End Depth UOM:	ft

Method of Construction & Well Use

Method Construction ID:	962102749
Method Construction Code:	1
Method Construction:	Cable Tool
Other Method Construction:	

Pipe Information

Pipe ID:	10640328
Casing No:	1
Comment:	
Alt Name:	

Construction Record - Casing

Casing ID:	930154874
Layer:	1
Material:	1
Open Hole or Material:	STEEL
Depth From:	
Depth To:	160.0
Casing Diameter:	3.0
Casing Diameter UOM:	inch
Casing Depth UOM:	ft

Results of Well Yield Testing

Pumping Test Method Desc:	PUMP
Pump Test ID:	992102749
Pump Set At:	
Static Level:	30.0
Final Level After Pumping:	130.0
Recommended Pump Depth:	
Pumping Rate:	4.0
Flowing Rate:	
Recommended Pump Rate:	
Levels UOM:	ft
Rate UOM:	GPM
Water State After Test Code:	2
Water State After Test:	CLOUDY
Pumping Test Method:	1
Pumping Duration HR:	2
Pumping Duration MIN:	0
Flowing:	No

Water Details

Water ID:	933533347
Layer:	1

Kind Code:	1
Kind:	FRESH
Water Found Depth:	160.0
Water Found Depth UOM:	ft

4 | **1 of 1** | **SSW/39.1** | **190.6 / 0.72** | **lot 15 con 7 ON** | **WWIS**

Well ID:	2102748	**Flowing (Y/N):**	
Construction Date:		**Flow Rate:**	
Use 1st:	Not Used	**Data Entry Status:**	
Use 2nd:	0	**Data Src:**	1
Final Well Status:	Test Hole	**Date Received:**	01/27/1960
Water Type:		**Selected Flag:**	TRUE
Casing Material:		**Abandonment Rec:**	
Audit No:		**Contractor:**	3420
Tag:		**Form Version:**	1
Constructn Method:		**Owner:**	
Elevation (m):		**County:**	ESSEX
Elevatn Reliabilty:		**Lot:**	015
Depth to Bedrock:		**Concession:**	07
Well Depth:		**Concession Name:**	CON
Overburden/Bedrock:		**Easting NAD83:**	
Pump Rate:		**Northing NAD83:**	
Static Water Level:		**Zone:**	
Clear/Cloudy:		**UTM Reliability:**	
Municipality:	WINDSOR CITY (SANDWICH SOUTH)		
Site Info:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/210\2102748.pdf

Additional Detail(s) (Map)

Well Completed Date:	10/04/1959
Year Completed:	1959
Depth (m):	54.2544
Latitude:	42.2557515722417
Longitude:	-82.9623407612733
X:	-82.96234062054297
Y:	42.255751573756264
Path:	210\2102748.pdf

Bore Hole Information

Bore Hole ID:	10091757	**Elevation:**	
DP2BR:		**Elevrc:**	
Spatial Status:		**Zone:**	17
Code OB:		**East83:**	338132.90
Code OB Desc:		**North83:**	4680037.00
Open Hole:		**Org CS:**	
Cluster Kind:		**UTMRC:**	5
Date Completed:	10/04/1959	**UTMRC Desc:**	margin of error : 100 m - 300 m
Remarks:		**Location Method:**	p5
Location Method Desc:	Original Pre1985 UTM Rel Code 5: margin of error : 100 m - 300 m		
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID:	931239061
Layer:	3
Color:	3
General Color:	BLUE
Material 1:	05
Material 1 Desc:	CLAY
Material 2:	
Material 2 Desc:	
Material 3:	
Material 3 Desc:	
Formation Top Depth:	20.0
Formation End Depth:	120.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931239064
Layer:	6
Color:	1
General Color:	WHITE
Material 1:	15
Material 1 Desc:	LIMESTONE
Material 2:	
Material 2 Desc:	
Material 3:	
Material 3 Desc:	
Formation Top Depth:	160.0
Formation End Depth:	166.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931239060
Layer:	2
Color:	5
General Color:	YELLOW
Material 1:	05
Material 1 Desc:	CLAY
Material 2:	
Material 2 Desc:	
Material 3:	
Material 3 Desc:	
Formation Top Depth:	3.0
Formation End Depth:	20.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931239062
Layer:	4
Color:	
General Color:	
Material 1:	09
Material 1 Desc:	MEDIUM SAND
Material 2:	
Material 2 Desc:	
Material 3:	
Material 3 Desc:	

Formation Top Depth:	120.0
Formation End Depth:	140.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931239063
Layer:	5
Color:	
General Color:	
Material 1:	09
Material 1 Desc:	MEDIUM SAND
Material 2:	11
Material 2 Desc:	GRAVEL
Material 3:	
Material 3 Desc:	
Formation Top Depth:	140.0
Formation End Depth:	160.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931239065
Layer:	7
Color:	
General Color:	
Material 1:	09
Material 1 Desc:	MEDIUM SAND
Material 2:	11
Material 2 Desc:	GRAVEL
Material 3:	
Material 3 Desc:	
Formation Top Depth:	166.0
Formation End Depth:	178.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931239059
Layer:	1
Color:	
General Color:	
Material 1:	02
Material 1 Desc:	TOPSOIL
Material 2:	
Material 2 Desc:	
Material 3:	
Material 3 Desc:	
Formation Top Depth:	0.0
Formation End Depth:	3.0
Formation End Depth UOM:	ft

Method of Construction & Well Use

Method Construction ID:	962102748
Method Construction Code:	1
Method Construction:	Cable Tool
Other Method Construction:	

Pipe Information

Pipe ID:	10640327
Casing No:	1
Comment:	
Alt Name:	

Construction Record - Casing

Casing ID:	930154873
Layer:	1
Material:	
Open Hole or Material:	
Depth From:	
Depth To:	
Casing Diameter:	3.0
Casing Diameter UOM:	inch
Casing Depth UOM:	ft

Results of Well Yield Testing

Pumping Test Method Desc:	PUMP
Pump Test ID:	992102748
Pump Set At:	
Static Level:	80.0
Final Level After Pumping:	178.0
Recommended Pump Depth:	
Pumping Rate:	1.0
Flowing Rate:	
Recommended Pump Rate:	
Levels UOM:	ft
Rate UOM:	GPM
Water State After Test Code:	2
Water State After Test:	CLOUDY
Pumping Test Method:	1
Pumping Duration HR:	2
Pumping Duration MIN:	0
Flowing:	No

Water Details

Water ID:	933533346
Layer:	1
Kind Code:	1
Kind:	FRESH
Water Found Depth:	166.0
Water Found Depth UOM:	ft

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5 ***1 of 1*** ***WSW/54.2*** ***190.8 / 0.96*** ***4405 CONCESSION RD 7 Windsor ON*** ***WWIS***

Well ID:	7180363	***Flowing (Y/N):***	
Construction Date:		***Flow Rate:***	
Use 1st:	Monitoring and Test Hole	***Data Entry Status:***	
Use 2nd:	0	***Data Src:***	
Final Well Status:	Test Hole	***Date Received:***	05/07/2012
Water Type:		***Selected Flag:***	TRUE
Casing Material:		***Abandonment Rec:***	
Audit No:	Z147211	***Contractor:***	7241
Tag:	A097732	***Form Version:***	7
Constructn Method:		***Owner:***	

Elevation (m):		***County:***	ESSEX
Elevatn Reliabilty:		***Lot:***	
Depth to Bedrock:		***Concession:***	
Well Depth:		***Concession Name:***	
Overburden/Bedrock:		***Easting NAD83:***	
Pump Rate:		***Northing NAD83:***	
Static Water Level:		***Zone:***	
Clear/Cloudy:		***UTM Reliability:***	
Municipality:	SANDWICH SOUTH TOWNSHIP		
Site Info:	WKQ-004739		

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/718\7180363.pdf

Additional Detail(s) (Map)

Well Completed Date:	03/08/2012
Year Completed:	2012
Depth (m):	4.8768
Latitude:	42.2559562084138
Longitude:	-82.9630126461701
X:	-82.96301250535332
Y:	42.25595620949072
Path:	718\7180363.pdf

Bore Hole Information

Bore Hole ID:	1003723767	***Elevation:***	
DP2BR:		***Elevrc:***	
Spatial Status:		***Zone:***	17
Code OB:		***East83:***	338078.00
Code OB Desc:		***North83:***	4680061.00
Open Hole:		***Org CS:***	UTM83
Cluster Kind:		***UTMRC:***	4
Date Completed:	03/08/2012	***UTMRC Desc:***	margin of error : 30 m - 100 m
Remarks:		***Location Method:***	wwr
Location Method Desc:	on Water Well Record		
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock Materials Interval

Formation ID:	1004295219
Layer:	1
Color:	6
General Color:	BROWN
Material 1:	01
Material 1 Desc:	FILL
Material 2:	34
Material 2 Desc:	TILL
Material 3:	85
Material 3 Desc:	SOFT
Formation Top Depth:	0.0
Formation End Depth:	5.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	1004295221
Layer:	3
Color:	2
General Color:	GREY
Material 1:	05
Material 1 Desc:	CLAY
Material 2:	34
Material 2 Desc:	TILL
Material 3:	73
Material 3 Desc:	HARD
Formation Top Depth:	10.0
Formation End Depth:	16.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	1004295220
Layer:	2
Color:	6
General Color:	BROWN
Material 1:	34
Material 1 Desc:	TILL
Material 2:	05
Material 2 Desc:	CLAY
Material 3:	73
Material 3 Desc:	HARD
Formation Top Depth:	5.0
Formation End Depth:	10.0
Formation End Depth UOM:	ft

Annular Space/Abandonment Sealing Record

Plug ID:	1004295230
Layer:	2
Plug From:	1.0
Plug To:	5.0
Plug Depth UOM:	ft

Annular Space/Abandonment Sealing Record

Plug ID:	1004295231
Layer:	3
Plug From:	5.0
Plug To:	16.0
Plug Depth UOM:	ft

Annular Space/Abandonment Sealing Record

Plug ID:	1004295229
Layer:	1
Plug From:	0.0
Plug To:	1.0
Plug Depth UOM:	ft

Method of Construction & Well Use

Method Construction ID:	1004295228
Method Construction Code:	D
Method Construction:	Direct Push
Other Method Construction:	

Pipe Information

Pipe ID:	1004295218
Casing No:	0
Comment:	
Alt Name:	

Construction Record - Casing

Casing ID:	1004295224
Layer:	1
Material:	5
Open Hole or Material:	PLASTIC
Depth From:	0.0
Depth To:	6.0
Casing Diameter:	2.0
Casing Diameter UOM:	inch
Casing Depth UOM:	ft

Construction Record - Screen

Screen ID:	1004295225
Layer:	1
Slot:	10
Screen Top Depth:	6.0
Screen End Depth:	16.0
Screen Material:	5
Screen Depth UOM:	ft
Screen Diameter UOM:	inch
Screen Diameter:	2.25

Water Details

Water ID:	1004295223
Layer:	
Kind Code:	
Kind:	
Water Found Depth:	
Water Found Depth UOM:	ft

Hole Diameter

Hole ID:	1004295222
Diameter:	8.0
Depth From:	0.0
Depth To:	16.0
Hole Depth UOM:	ft
Hole Diameter UOM:	inch

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6 | ***1 of 1*** | ***W/55.5*** | ***189.9 / 0.00*** | ***4405 CONCESSION RD 7 Windsor ON*** | ***WWIS***

Well ID:	7180364	**Flowing (Y/N):**	
Construction Date:		**Flow Rate:**	
Use 1st:	Monitoring and Test Hole	**Data Entry Status:**	
Use 2nd:	0	**Data Src:**	

Final Well Status:	Observation Wells	**Date Received:**	05/07/2012
Water Type:		**Selected Flag:**	TRUE
Casing Material:		**Abandonment Rec:**	
Audit No:	Z147212	**Contractor:**	7241
Tag:	A097751	**Form Version:**	7
Constructn Method:		**Owner:**	
Elevation (m):		**County:**	ESSEX
Elevatn Reliabilty:		**Lot:**	
Depth to Bedrock:		**Concession:**	
Well Depth:		**Concession Name:**	
Overburden/Bedrock:		**Easting NAD83:**	
Pump Rate:		**Northing NAD83:**	
Static Water Level:		**Zone:**	
Clear/Cloudy:		**UTM Reliability:**	
Municipality:	SANDWICH SOUTH TOWNSHIP		
Site Info:	WKQ-004739		

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/718\7180364.pdf

Additional Detail(s) (Map)

Well Completed Date:	03/08/2012
Year Completed:	2012
Depth (m):	4.8768
Latitude:	42.2566134865288
Longitude:	-82.9630209155361
X:	-82.96302077518196
Y:	42.25661348868756
Path:	718\7180364.pdf

Bore Hole Information

Bore Hole ID:	1003723770	**Elevation:**	
DP2BR:		**Elevrc:**	
Spatial Status:		**Zone:**	17
Code OB:		**East83:**	338079.00
Code OB Desc:		**North83:**	4680134.00
Open Hole:		**Org CS:**	UTM83
Cluster Kind:		**UTMRC:**	4
Date Completed:	03/08/2012	**UTMRC Desc:**	margin of error : 30 m - 100 m
Remarks:		**Location Method:**	wwr
Location Method Desc:	on Water Well Record		
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock Materials Interval

Formation ID:	1004295235
Layer:	3
Color:	2
General Color:	GREY
Material 1:	05
Material 1 Desc:	CLAY
Material 2:	34
Material 2 Desc:	TILL
Material 3:	73
Material 3 Desc:	HARD
Formation Top Depth:	10.0

Formation End Depth:	16.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	1004295233
Layer:	1
Color:	6
General Color:	BROWN
Material 1:	01
Material 1 Desc:	FILL
Material 2:	34
Material 2 Desc:	TILL
Material 3:	85
Material 3 Desc:	SOFT
Formation Top Depth:	0.0
Formation End Depth:	5.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	1004295234
Layer:	2
Color:	6
General Color:	BROWN
Material 1:	34
Material 1 Desc:	TILL
Material 2:	05
Material 2 Desc:	CLAY
Material 3:	73
Material 3 Desc:	HARD
Formation Top Depth:	5.0
Formation End Depth:	10.0
Formation End Depth UOM:	ft

Annular Space/Abandonment Sealing Record

Plug ID:	1004295245
Layer:	3
Plug From:	5.0
Plug To:	16.0
Plug Depth UOM:	ft

Annular Space/Abandonment Sealing Record

Plug ID:	1004295244
Layer:	2
Plug From:	1.0
Plug To:	5.0
Plug Depth UOM:	ft

Annular Space/Abandonment Sealing Record

Plug ID:	1004295243
Layer:	1
Plug From:	0.0
Plug To:	1.0

Plug Depth UOM: ft

Method of Construction & Well Use

Method Construction ID: 1004295242
Method Construction Code: D
Method Construction: Direct Push
Other Method Construction:

Pipe Information

Pipe ID: 1004295232
Casing No: 0
Comment:
Alt Name:

Construction Record - Casing

Casing ID: 1004295238
Layer: 1
Material: 5
Open Hole or Material: PLASTIC
Depth From: 0.0
Depth To: 6.0
Casing Diameter: 2.0
Casing Diameter UOM: inch
Casing Depth UOM: ft

Construction Record - Screen

Screen ID: 1004295239
Layer: 1
Slot: 10
Screen Top Depth: 6.0
Screen End Depth: 16.0
Screen Material: 5
Screen Depth UOM: ft
Screen Diameter UOM: inch
Screen Diameter: 2.25

Water Details

Water ID: 1004295237
Layer:
Kind Code:
Kind:
Water Found Depth:
Water Found Depth UOM: ft

Hole Diameter

Hole ID: 1004295236
Diameter: 8.0
Depth From: 0.0
Depth To: 16.0
Hole Depth UOM: ft
Hole Diameter UOM: inch

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
7	1 of 1	WSW/60.0	190.3 / 0.47	4405 CONCESSION RD 7 Windsor ON	WWIS

Well ID:	7180365	**Flowing (Y/N):**	
Construction Date:		**Flow Rate:**	
Use 1st:	Monitoring and Test Hole	**Data Entry Status:**	
Use 2nd:	0	**Data Src:**	
Final Well Status:	Test Hole	**Date Received:**	05/07/2012
Water Type:		**Selected Flag:**	TRUE
Casing Material:		**Abandonment Rec:**	
Audit No:	Z147210	**Contractor:**	7241
Tag:	A097734	**Form Version:**	7
Constructn Method:		**Owner:**	
Elevation (m):		**County:**	ESSEX
Elevatn Reliabilty:		**Lot:**	
Depth to Bedrock:		**Concession:**	
Well Depth:		**Concession Name:**	
Overburden/Bedrock:		**Easting NAD83:**	
Pump Rate:		**Northing NAD83:**	
Static Water Level:		**Zone:**	
Clear/Cloudy:		**UTM Reliability:**	

Municipality: SANDWICH SOUTH TOWNSHIP
Site Info: WKQ-004739

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/718\7180365.pdf

Additional Detail(s) (Map)

Well Completed Date: 03/08/2012
Year Completed: 2012
Depth (m): 4.8768
Latitude: 42.2562247852562
Longitude: -82.9631058382784
X: -82.96310569742633
Y: 42.25622478640411
Path: 718\7180365.pdf

Bore Hole Information

Bore Hole ID:	1003723773	**Elevation:**	
DP2BR:		**Elevrc:**	
Spatial Status:		**Zone:**	17
Code OB:		**East83:**	338071.00
Code OB Desc:		**North83:**	4680091.00
Open Hole:		**Org CS:**	UTM83
Cluster Kind:		**UTMRC:**	4
Date Completed:	03/08/2012	**UTMRC Desc:**	margin of error : 30 m - 100 m
Remarks:		**Location Method:**	wwr

Location Method Desc: on Water Well Record
Elevrc Desc:
Location Source Date:
Improvement Location Source:
Improvement Location Method:
Source Revision Comment:
Supplier Comment:

Overburden and Bedrock Materials Interval

Formation ID: 1004295248
Layer: 2
Color: 6
General Color: BROWN

Material 1: 34
Material 1 Desc: TILL
Material 2: 05
Material 2 Desc: CLAY
Material 3: 73
Material 3 Desc: HARD
Formation Top Depth: 5.0
Formation End Depth: 10.0
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 1004295247
Layer: 1
Color: 6
General Color: BROWN
Material 1: 01
Material 1 Desc: FILL
Material 2: 34
Material 2 Desc: TILL
Material 3: 85
Material 3 Desc: SOFT
Formation Top Depth: 0.0
Formation End Depth: 5.0
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 1004295249
Layer: 3
Color: 2
General Color: GREY
Material 1: 05
Material 1 Desc: CLAY
Material 2: 34
Material 2 Desc: TILL
Material 3: 73
Material 3 Desc: HARD
Formation Top Depth: 10.0
Formation End Depth: 16.0
Formation End Depth UOM: ft

Annular Space/Abandonment Sealing Record

Plug ID: 1004295258
Layer: 2
Plug From: 1.0
Plug To: 5.0
Plug Depth UOM: ft

Annular Space/Abandonment Sealing Record

Plug ID: 1004295257
Layer: 1
Plug From: 0.0
Plug To: 1.0
Plug Depth UOM: ft

Annular Space/Abandonment Sealing Record

Plug ID:	1004295259
Layer:	3
Plug From:	5.0
Plug To:	16.0
Plug Depth UOM:	ft

Method of Construction & Well Use

Method Construction ID:	1004295256
Method Construction Code:	7
Method Construction:	Diamond
Other Method Construction:	

Pipe Information

Pipe ID:	1004295246
Casing No:	0
Comment:	
Alt Name:	

Construction Record - Casing

Casing ID:	1004295252
Layer:	1
Material:	5
Open Hole or Material:	PLASTIC
Depth From:	0.0
Depth To:	6.0
Casing Diameter:	2.0
Casing Diameter UOM:	inch
Casing Depth UOM:	ft

Construction Record - Screen

Screen ID:	1004295253
Layer:	1
Slot:	10
Screen Top Depth:	6.0
Screen End Depth:	16.0
Screen Material:	5
Screen Depth UOM:	ft
Screen Diameter UOM:	inch
Screen Diameter:	2.25

Water Details

Water ID:	1004295251
Layer:	
Kind Code:	
Kind:	
Water Found Depth:	
Water Found Depth UOM:	ft

Hole Diameter

Hole ID:	1004295250
Diameter:	8.0

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Depth From:	0.0
Depth To:	16.0
Hole Depth UOM:	ft
Hole Diameter UOM:	inch

8 **1 of 6** **W/67.9** **189.9 / 0.00** **SKZ LANDSCAPING INC** **PES**
4405 7TH CONCESSION
WINDSOR ON N9A6V3

Detail Licence No:		**Operator Box:**	
Licence No:		**Operator Class:**	
Status:		**Operator No:**	
Approval Date:		**Operator Type:**	
Report Source:		**Oper Area Code:**	
Licence Type:	Operator	**Oper Phone No:**	
Licence Type Code:	02	**Operator Ext:**	
Licence Class:		**Operator Lot:**	
Licence Control:		**Oper Concession:**	
Latitude:		**Operator Region:**	
Longitude:		**Operator District:**	
Lot:		**Operator County:**	
Concession:		**Op Municipality:**	
Region:		**Post Office Box:**	
District:		**MOE District:**	
County:		**SWP Area Name:**	
Trade Name:			
PDF URL:			

8 **2 of 6** **W/67.9** **189.9 / 0.00** **SKZ LANDSCAPING INC** **PES**
4405 7TH CONCESSION
WINDSOR ON N9A6V3

Detail Licence No:		**Operator Box:**	
Licence No:		**Operator Class:**	
Status:		**Operator No:**	
Approval Date:		**Operator Type:**	
Report Source:		**Oper Area Code:**	
Licence Type:	Operator	**Oper Phone No:**	
Licence Type Code:	02	**Operator Ext:**	
Licence Class:		**Operator Lot:**	
Licence Control:		**Oper Concession:**	
Latitude:		**Operator Region:**	
Longitude:		**Operator District:**	
Lot:		**Operator County:**	
Concession:		**Op Municipality:**	
Region:		**Post Office Box:**	
District:		**MOE District:**	
County:		**SWP Area Name:**	
Trade Name:			
PDF URL:			

8 **3 of 6** **W/67.9** **189.9 / 0.00** **4405 7Th Concession** **EHS**
Windsor ON

Order No:	20120123040	**Nearest Intersection:**	
Status:	C	**Municipality:**	
Report Type:	Standard Select Report	**Client Prov/State:**	ON
Report Date:	2/1/2012 5:07:31 PM	**Search Radius (km):**	0.25
Date Received:	1/23/2012 5:06:41 PM	**X:**	-82.962597
Previous Site Name:		**Y:**	42.256601
Lot/Building Size:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Additional Info Ordered: Fire Insur. Maps and/or Site Plans; Topographic Maps

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8 | ***4 of 6*** | ***W/67.9*** | ***189.9 / 0.00*** | ***4405 7Th Conc Windsor ON*** | ***EHS***

Order No:	20120223005	***Nearest Intersection:***	
Status:	C	***Municipality:***	
Report Type:	Standard Report	***Client Prov/State:***	ON
Report Date:	3/2/2012 8:27:07 AM	***Search Radius (km):***	0.25
Date Received:	2/23/2012 8:23:15 AM	***X:***	-82.962597
Previous Site Name:		***Y:***	42.256601
Lot/Building Size:			
Additional Info Ordered:			

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8 | ***5 of 6*** | ***W/67.9*** | ***189.9 / 0.00*** | ***SKZ LANDSCAPING INC 4405 7TH CONCESSION WINDSOR ON N9A6V3*** | ***PES***

Detail Licence No:	02-01-05561-0	***Operator Box:***	
Licence No:	05561	***Operator Class:***	
Status:		***Operator No:***	5561
Approval Date:		***Operator Type:***	
Report Source:	Legacy Licenses (Excluding TS)	***Oper Area Code:***	519
Licence Type:	Operator	***Oper Phone No:***	2501664
Licence Type Code:	02	***Operator Ext:***	
Licence Class:	01	***Operator Lot:***	
Licence Control:	0	***Oper Concession:***	
Latitude:		***Operator Region:***	3
Longitude:		***Operator District:***	
Lot:		***Operator County:***	49
Concession:		***Op Municipality:***	
Region:	3	***Post Office Box:***	
District:		***MOE District:***	
County:	49	***SWP Area Name:***	
Trade Name:			
PDF URL:			

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8 | ***6 of 6*** | ***W/67.9*** | ***189.9 / 0.00*** | ***SKZ LANDSCAPING INC 4405 7TH CONCESSION WINDSOR ON N9A6V3*** | ***PES***

Detail Licence No:		***Operator Box:***	
Licence No:	05838	***Operator Class:***	
Status:		***Operator No:***	
Approval Date:		***Operator Type:***	
Report Source:	Legacy Licenses (Excluding TS)	***Oper Area Code:***	519
Licence Type:	Operator	***Oper Phone No:***	2501664
Licence Type Code:	02	***Operator Ext:***	
Licence Class:	01	***Operator Lot:***	
Licence Control:		***Oper Concession:***	
Latitude:		***Operator Region:***	
Longitude:		***Operator District:***	
Lot:		***Operator County:***	
Concession:		***Op Municipality:***	
Region:		***Post Office Box:***	
District:		***MOE District:***	
County:		***SWP Area Name:***	
Trade Name:			
PDF URL:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
9	1 of 1	NW/73.3	189.9 / 0.00	4381 Seventh Concession Road Windsor 4381 Seventh Concession Rd ON N9A 6J3	EHS

Order No:	20180730033	**Nearest Intersection:**	
Status:	C	**Municipality:**	
Report Type:	Standard Report	**Client Prov/State:**	ON
Report Date:	02-AUG-18	**Search Radius (km):**	.25
Date Received:	30-JUL-18	**X:**	-82.96312
Previous Site Name:		**Y:**	42.257422
Lot/Building Size:			
Additional Info Ordered:	Fire Insur. Maps and/or Site Plans		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
10	1 of 1	W/140.6	190.6 / 0.72	4388 WALKER ROAD lot 15 con 6 WINDSOR ON	WWIS

Well ID:	2105813	**Flowing (Y/N):**	
Construction Date:		**Flow Rate:**	
Use 1st:		**Data Entry Status:**	
Use 2nd:		**Data Src:**	1
Final Well Status:	Observation Wells	**Date Received:**	12/07/2004
Water Type:		**Selected Flag:**	TRUE
Casing Material:		**Abandonment Rec:**	
Audit No:	Z14221	**Contractor:**	7190
Tag:	A014188	**Form Version:**	3
Constructn Method:		**Owner:**	
Elevation (m):		**County:**	ESSEX
Elevatn Reliabilty:		**Lot:**	015
Depth to Bedrock:		**Concession:**	06
Well Depth:		**Concession Name:**	CON
Overburden/Bedrock:		**Easting NAD83:**	
Pump Rate:		**Northing NAD83:**	
Static Water Level:		**Zone:**	
Clear/Cloudy:		**UTM Reliability:**	
Municipality:	SANDWICH SOUTH TOWNSHIP		
Site Info:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/210\2105813.pdf

Additional Detail(s) (Map)

Well Completed Date:	11/18/2004
Year Completed:	2004
Depth (m):	6.1
Latitude:	42.2566408530407
Longitude:	-82.9640522084105
X:	-82.96405206775816
Y:	42.256640854501406
Path:	210\2105813.pdf

Bore Hole Information

Bore Hole ID:	11173656	**Elevation:**	
DP2BR:		**Elevrc:**	
Spatial Status:		**Zone:**	17
Code OB:		**East83:**	337994.00
Code OB Desc:		**North83:**	4680139.00
Open Hole:		**Org CS:**	UTM83
Cluster Kind:		**UTMRC:**	3
Date Completed:	11/18/2004	**UTMRC Desc:**	margin of error : 10 - 30 m
Remarks:		**Location Method:**	wwr
Location Method Desc:	on Water Well Record		

Elevrc Desc:
Location Source Date:
Improvement Location Source:
Improvement Location Method:
Source Revision Comment:
Supplier Comment:

Overburden and Bedrock Materials Interval

Formation ID:	932971436
Layer:	1
Color:	6
General Color:	BROWN
Material 1:	01
Material 1 Desc:	FILL
Material 2:	28
Material 2 Desc:	SAND
Material 3:	11
Material 3 Desc:	GRAVEL
Formation Top Depth:	0.0
Formation End Depth:	0.8999999761581421
Formation End Depth UOM:	m

Overburden and Bedrock Materials Interval

Formation ID:	932971438
Layer:	3
Color:	2
General Color:	GREY
Material 1:	
Material 1 Desc:	
Material 2:	
Material 2 Desc:	
Material 3:	
Material 3 Desc:	
Formation Top Depth:	6.099999904632568
Formation End Depth:	
Formation End Depth UOM:	m

Overburden and Bedrock Materials Interval

Formation ID:	932971437
Layer:	2
Color:	6
General Color:	BROWN
Material 1:	06
Material 1 Desc:	SILT
Material 2:	28
Material 2 Desc:	SAND
Material 3:	11
Material 3 Desc:	GRAVEL
Formation Top Depth:	0.8999999761581421
Formation End Depth:	6.099999904632568
Formation End Depth UOM:	m

Annular Space/Abandonment Sealing Record

Plug ID:	933254550

Layer:	1
Plug From:	0.0
Plug To:	3.049999952316284
Plug Depth UOM:	m

Method of Construction & Well Use

Method Construction ID:	962105813
Method Construction Code:	2
Method Construction:	Rotary (Convent.)
Other Method Construction:	

Pipe Information

Pipe ID:	11182175
Casing No:	1
Comment:	
Alt Name:	

Construction Record - Casing

Casing ID:	930844309
Layer:	1
Material:	5
Open Hole or Material:	PLASTIC
Depth From:	0.0
Depth To:	3.049999952316284
Casing Diameter:	5.0
Casing Diameter UOM:	cm
Casing Depth UOM:	m

Construction Record - Screen

Screen ID:	933409444
Layer:	1
Slot:	
Screen Top Depth:	3.049999952316284
Screen End Depth:	6.099999904632568
Screen Material:	5
Screen Depth UOM:	m
Screen Diameter UOM:	cm
Screen Diameter:	5.0

Hole Diameter

Hole ID:	11306893
Diameter:	10.0
Depth From:	6.0
Depth To:	6.099999904632568
Hole Depth UOM:	m
Hole Diameter UOM:	cm

11	*1 of 4*	*W/141.8*	*190.9 / 1.00*	***4388 WALKER RD WINDSOR ON***	***WWIS***

Well ID:	2105893	**Flowing (Y/N):**	
Construction Date:		**Flow Rate:**	
Use 1st:		**Data Entry Status:**	
Use 2nd:		**Data Src:**	
Final Well Status:	Abandoned-Other	**Date Received:**	10/07/2005

Water Type:		**Selected Flag:**	TRUE
Casing Material:		**Abandonment Rec:**	Yes
Audit No:	Z31455	**Contractor:**	7190
Tag:	A014188	**Form Version:**	3
Constructn Method:		**Owner:**	
Elevation (m):		**County:**	ESSEX
Elevatn Reliabilty:		**Lot:**	
Depth to Bedrock:		**Concession:**	
Well Depth:		**Concession Name:**	
Overburden/Bedrock:		**Easting NAD83:**	
Pump Rate:		**Northing NAD83:**	
Static Water Level:		**Zone:**	
Clear/Cloudy:		**UTM Reliability:**	
Municipality:	WINDSOR CITY		
Site Info:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/210\2105893.pdf

Additional Detail(s) (Map)

Well Completed Date:	09/21/2005
Year Completed:	2005
Depth (m):	
Latitude:	42.2565504282923
Longitude:	-82.9640736471589
X:	-82.964073506054
Y:	42.256550429558054
Path:	210\2105893.pdf

Bore Hole Information

Bore Hole ID:	11317792	**Elevation:**	
DP2BR:		**Elevrc:**	
Spatial Status:		**Zone:**	17
Code OB:		**East83:**	337992.00
Code OB Desc:		**North83:**	4680129.00
Open Hole:		**Org CS:**	UTM83
Cluster Kind:		**UTMRC:**	4
Date Completed:	09/21/2005	**UTMRC Desc:**	margin of error : 30 m - 100 m
Remarks:		**Location Method:**	wwr
Location Method Desc:	on Water Well Record		
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Annular Space/Abandonment Sealing Record

Plug ID:	933278327
Layer:	2
Plug From:	3.049999952316284
Plug To:	0.0
Plug Depth UOM:	m

Annular Space/Abandonment Sealing Record

Plug ID:	933278326
Layer:	1

Plug From: 6.099999904632568
Plug To: 3.049999952316284
Plug Depth UOM: m

Method of Construction & Well Use

Method Construction ID: 962105893
Method Construction Code: B
Method Construction: Other Method
Other Method Construction:

Pipe Information

Pipe ID: 11332647
Casing No: 1
Comment:
Alt Name:

Hole Diameter

Hole ID: 11535730
Diameter:
Depth From: 0.0
Depth To: 6.099999904632568
Hole Depth UOM: m
Hole Diameter UOM: cm

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11 | 2 of 4 | W/141.8 | 190.9 / 1.00 | **MR LUBE**
4380 WALKER RD
WINDSOR ON N8W 3T5 | RST

Headcode: 00921430
Headcode Desc: OIL CHANGES & LUBRICATION SERVICE
Phone:
List Name:
Description:

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11 | 3 of 4 | W/141.8 | 190.9 / 1.00 | **4380 Walker Road**
Windsor ON | EHS

Order No: 20101110056
Status: C
Report Type: Standard Report
Report Date: 11/12/2010
Date Received: 11/10/2010 5:38:14 PM
Previous Site Name:
Lot/Building Size:
Additional Info Ordered: Topographic Maps
Nearest Intersection:
Municipality:
Client Prov/State: ON
Search Radius (km): 0.25
X: -82.964696
Y: 42.256439

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11 | 4 of 4 | W/141.8 | 190.9 / 1.00 | **MR LUBE**
4380 WALKER RD
WINDSOR ON N8W3T5 | RST

Headcode: 00921430
Headcode Desc: OIL CHANGES & LUBRICATION SERVICE
Phone: 5192504099
List Name: INFO-DIRECT(TM) BUSINESS FILE
Description:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

12	1 of 1	WSW/143.2	190.9 / 1.00	4450 WALKER ROAD lot 15 con 6 WINDSOR ON	WWIS

Well ID:	2105783	**Flowing (Y/N):**	
Construction Date:		**Flow Rate:**	
Use 1st:	Not Used	**Data Entry Status:**	
Use 2nd:		**Data Src:**	1
Final Well Status:	Observation Wells	**Date Received:**	07/14/2004
Water Type:		**Selected Flag:**	TRUE
Casing Material:		**Abandonment Rec:**	
Audit No:	Z06398	**Contractor:**	7190
Tag:	A006265	**Form Version:**	3
Constructn Method:		**Owner:**	
Elevation (m):		**County:**	ESSEX
Elevatn Reliabilty:		**Lot:**	015
Depth to Bedrock:		**Concession:**	06
Well Depth:		**Concession Name:**	CON
Overburden/Bedrock:		**Easting NAD83:**	
Pump Rate:		**Northing NAD83:**	
Static Water Level:		**Zone:**	
Clear/Cloudy:		**UTM Reliability:**	
Municipality:	SANDWICH SOUTH TOWNSHIP		
Site Info:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/210\2105783.pdf

Additional Detail(s) (Map)

Well Completed Date:	06/16/2004
Year Completed:	2004
Depth (m):	6.18
Latitude:	42.2557313406993
Longitude:	-82.9640482214265
X:	-82.96404808021995
Y:	42.25573134261326
Path:	210\2105783.pdf

Bore Hole Information

Bore Hole ID:	11173626	**Elevation:**	
DP2BR:		**Elevrc:**	
Spatial Status:		**Zone:**	17
Code OB:		**East83:**	337992.00
Code OB Desc:		**North83:**	4680038.00
Open Hole:		**Org CS:**	UTM83
Cluster Kind:		**UTMRC:**	3
Date Completed:	06/16/2004	**UTMRC Desc:**	margin of error : 10 - 30 m
Remarks:		**Location Method:**	wwr
Location Method Desc:	on Water Well Record		
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock Materials Interval

Formation ID: 932971319

Layer:	1
Color:	6
General Color:	BROWN
Material 1:	05
Material 1 Desc:	CLAY
Material 2:	84
Material 2 Desc:	SILTY
Material 3:	34
Material 3 Desc:	TILL
Formation Top Depth:	0.0
Formation End Depth:	0.6000000238418579
Formation End Depth UOM:	m

Overburden and Bedrock Materials Interval

Formation ID:	932971320
Layer:	2
Color:	
General Color:	
Material 1:	
Material 1 Desc:	
Material 2:	
Material 2 Desc:	
Material 3:	
Material 3 Desc:	
Formation Top Depth:	0.6000000238418579
Formation End Depth:	6.179999828338623
Formation End Depth UOM:	m

Annular Space/Abandonment Sealing Record

Plug ID:	933254500
Layer:	2
Plug From:	1.0
Plug To:	6.099999904632568
Plug Depth UOM:	m

Annular Space/Abandonment Sealing Record

Plug ID:	933254499
Layer:	1
Plug From:	0.0
Plug To:	1.0
Plug Depth UOM:	m

Method of Construction & Well Use

Method Construction ID:	962105783
Method Construction Code:	6
Method Construction:	Boring
Other Method Construction:	

Pipe Information

Pipe ID:	11182145
Casing No:	1
Comment:	
Alt Name:	

Construction Record - Casing

Casing ID:	930844275
Layer:	1
Material:	5
Open Hole or Material:	PLASTIC
Depth From:	-1.0
Depth To:	3.049999952316284
Casing Diameter:	4.099999904632568
Casing Diameter UOM:	cm
Casing Depth UOM:	m

Construction Record - Screen

Screen ID:	933409424
Layer:	1
Slot:	10
Screen Top Depth:	3.049999952316284
Screen End Depth:	6.099999904632568
Screen Material:	5
Screen Depth UOM:	m
Screen Diameter UOM:	cm
Screen Diameter:	5.099999904632568

Hole Diameter

Hole ID:	11306869
Diameter:	15.0
Depth From:	0.0
Depth To:	6.099999904632568
Hole Depth UOM:	m
Hole Diameter UOM:	cm

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13 *1 of 4* *SW/146.3* *190.9 / 1.00* ***EAST SIDE AUTO RECYCLING WAREHOUSE*** ***AUWR***
4450 WALKER RD
WINDSOR ON N8W 3T5

Headcode:	98600
Headcode Desc:	Automobile Wrecking & Recycling
Phone:	5199696602
List Name:	
Description:	

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13 *2 of 4* *SW/146.3* *190.9 / 1.00* ***4450 Walker Road*** ***EHS***
Windsor ON N8W 3T5

Order No:	20050110002	***Nearest Intersection:***	
Status:	C	***Municipality:***	
Report Type:		***Client Prov/State:***	ON
Report Date:	1/18/2005	***Search Radius (km):***	0.25
Date Received:	1/10/2005	***X:***	-82.963286
Previous Site Name:		***Y:***	42.254034
Lot/Building Size:			
Additional Info Ordered:			

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13 *3 of 4* *SW/146.3* *190.9 / 1.00* ***Swiss Chalet<UNOFFICIAL>*** ***SPL***
4450 Walker Rd
Windsor ON N8W 3T5

Ref No:	3886-84XMWY	***Municipality No:***	
Year:		***Nature of Damage:***	
Incident Dt:		***Discharger Report:***	
Dt MOE Arvl on Scn:		***Material Group:***	
MOE Reported Dt:	4/28/2010	***Impact to Health:***	
Dt Document Closed:	5/21/2010	***Agency Involved:***	
Site No:			
MOE Response:	Planned Field Response		
Site County/District:			
Site Geo Ref Meth:			
Site District Office:			
Nearest Watercourse:			
Site Name:	Swiss Chalet<UNOFFICIAL>		
Site Address:			
Site Region:			
Site Municipality:			
Site Lot:			
Site Conc:			
Site Geo Ref Accu:			
Site Map Datum:			
Northing:			
Easting:			
Entity Operating Name:			
Client Name:	Swiss Chalet<UNOFFICIAL>		
Client Type:			
Source Type:			
Incident Cause:	Container Leak (Fuel Tank Barrels)		
Incident Preceding Spill:			
Incident Reason:	Other - Reason not otherwise defined		
Incident Summary:	Swiss Chalet - 800 L cooking oil		
Environment Impact:	Confirmed		
Health Env Consequence:			
Nature of Impact:	Other Impact(s)		
Contaminant Qty:	800 L		
Contaminant Qty 1:	800		
Contaminant Unit:	L		
Contaminant Code:	16		
Contaminant Name:	COOKING OIL		
Contaminant Limit 1:			
Contam Limit Freq 1:			
Contaminant UN No 1:			
Receiving Medium:			
Activity Preceding Spill:			
Property 2nd Watershed:			
Property Tertiary Watershed:			
Sector Type:	Other		
SAC Action Class:	Watercourse Spills		
Call Report Locatn Geodata:			
Time Reported:			
System Facility Address:			

13	***4 of 4***	***SW/146.3***	***190.9 / 1.00***	***4450 Walker Rd Windsor ON N8W 3T5***	***EHS***

Order No:	20120615013	***Nearest Intersection:***	
Status:	C	***Municipality:***	
Report Type:	Custom Report	***Client Prov/State:***	ON
Report Date:	21-JUN-12	***Search Radius (km):***	.25
Date Received:	15-JUN-12	***X:***	-82.96349
Previous Site Name:		***Y:***	42.25518
Lot/Building Size:			
Additional Info Ordered:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
14	1 of 1	N/151.2	189.9 / 0.00	lot 15 con 7 ON	WWIS

Well ID:	2103431	**Flowing (Y/N):**	
Construction Date:		**Flow Rate:**	
Use 1st:		**Data Entry Status:**	
Use 2nd:		**Data Src:**	1
Final Well Status:	Abandoned-Supply	**Date Received:**	11/10/1970
Water Type:		**Selected Flag:**	TRUE
Casing Material:		**Abandonment Rec:**	
Audit No:		**Contractor:**	4802
Tag:		**Form Version:**	1
Constructn Method:		**Owner:**	
Elevation (m):		**County:**	ESSEX
Elevatn Reliabilty:		**Lot:**	015
Depth to Bedrock:		**Concession:**	07
Well Depth:		**Concession Name:**	CON
Overburden/Bedrock:		**Easting NAD83:**	
Pump Rate:		**Northing NAD83:**	
Static Water Level:		**Zone:**	
Clear/Cloudy:		**UTM Reliability:**	
Municipality:	SANDWICH SOUTH TOWNSHIP		
Site Info:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/210\2103431.pdf

Additional Detail(s) (Map)

Well Completed Date:	11/09/1970
Year Completed:	1970
Depth (m):	48.1584
Latitude:	42.2585072364921
Longitude:	-82.9618200698016
X:	-82.96181992906786
Y:	42.25850723732169
Path:	210\2103431.pdf

Bore Hole Information

Bore Hole ID:	10092433	**Elevation:**	
DP2BR:		**Elevrc:**	
Spatial Status:		**Zone:**	17
Code OB:		**East83:**	338182.90
Code OB Desc:		**North83:**	4680342.00
Open Hole:		**Org CS:**	
Cluster Kind:		**UTMRC:**	4
Date Completed:	11/09/1970	**UTMRC Desc:**	margin of error : 30 m - 100 m
Remarks:		**Location Method:**	p4
Location Method Desc:	Original Pre1985 UTM Rel Code 4: margin of error : 30 m - 100 m		
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock Materials Interval

Formation ID:	931242263
Layer:	3

Color:	3
General Color:	BLUE
Material 1:	05
Material 1 Desc:	CLAY
Material 2:	
Material 2 Desc:	
Material 3:	
Material 3 Desc:	
Formation Top Depth:	12.0
Formation End Depth:	60.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931242265
Layer:	5
Color:	2
General Color:	GREY
Material 1:	09
Material 1 Desc:	MEDIUM SAND
Material 2:	05
Material 2 Desc:	CLAY
Material 3:	
Material 3 Desc:	
Formation Top Depth:	139.0
Formation End Depth:	143.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931242264
Layer:	4
Color:	2
General Color:	GREY
Material 1:	05
Material 1 Desc:	CLAY
Material 2:	
Material 2 Desc:	
Material 3:	
Material 3 Desc:	
Formation Top Depth:	60.0
Formation End Depth:	139.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931242262
Layer:	2
Color:	5
General Color:	YELLOW
Material 1:	05
Material 1 Desc:	CLAY
Material 2:	
Material 2 Desc:	
Material 3:	
Material 3 Desc:	
Formation Top Depth:	1.0
Formation End Depth:	12.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931242261
Layer:	1
Color:	
General Color:	
Material 1:	02
Material 1 Desc:	TOPSOIL
Material 2:	
Material 2 Desc:	
Material 3:	
Material 3 Desc:	
Formation Top Depth:	0.0
Formation End Depth:	1.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931242266
Layer:	6
Color:	2
General Color:	GREY
Material 1:	05
Material 1 Desc:	CLAY
Material 2:	09
Material 2 Desc:	MEDIUM SAND
Material 3:	13
Material 3 Desc:	BOULDERS
Formation Top Depth:	143.0
Formation End Depth:	158.0
Formation End Depth UOM:	ft

Annular Space/Abandonment Sealing Record

Plug ID:	933126350
Layer:	1
Plug From:	0.0
Plug To:	158.0
Plug Depth UOM:	ft

Method of Construction & Well Use

Method Construction ID:	962103431
Method Construction Code:	1
Method Construction:	Cable Tool
Other Method Construction:	

Pipe Information

Pipe ID:	10641003
Casing No:	1
Comment:	
Alt Name:	

Construction Record - Casing

Casing ID:	930156044

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Layer:	1
Material:	
Open Hole or Material:	
Depth From:	
Depth To:	
Casing Diameter:	4.0
Casing Diameter UOM:	inch
Casing Depth UOM:	ft

---

15 | **1 of 1** | **SW/162.8** | **190.9 / 1.00** | **Walker Rd junkyard 1971** | **ANDR**

Windsor ON N8W

Legal Description:	Sandwich S Con 6 Lot 15 pt
Location Description:	W side of seventh concession rd, 25m W of Walker Rd
Municipality:	Windsor City
Current Municipality:	Windsor City
RM:	Essex County
Facility:	Auto junkyard
Date Active:	1971
Date Begun:	
Date Complete:	
Area (Ha):	3.375
Landfill Type:	
Group Name:	
Operated By:	
Serial:	JY ESX7 1971
NTS:	40J07
Diameter (m):	225

Historical Summary:

Walker Rd junkyard 1971 1975 NTS Map 40J07D Junkyard marked, 225m x 150m, W side of seventh concession rd, 25m W of Walker Rd [1975 NTS 1:25,000 Map Riverside ON Sheet 40J07D Edition 3 (information 1971, printed 1975)].

Waste Type:	
UTM X Nad 27:	338025
UTM Y Nad 27:	4679725
UTM Zone:	17

---

16 | **1 of 1** | **SSW/172.5** | **190.9 / 1.00** | **Walker Rd junkyard 1976** | **ANDR**

Windsor ON N8W

Legal Description:	Sandwich S Con 6 Lot 15 pt
Location Description:	E side Walker Rd [County Rd 11], W side 7th Concession Rd, W of Chesapeake & Ohio RR/CSX
Municipality:	Windsor City
Current Municipality:	Windsor City
RM:	Essex County
Facility:	Auto junkyard
Date Active:	1976-80
Date Begun:	
Date Complete:	
Area (Ha):	
Landfill Type:	
Group Name:	
Operated By:	
Serial:	JY ESX7 1976
NTS:	40J07
Diameter (m):	250

Historical Summary:

Walker Rd junkyard 1976 1978 NTS Map 40J07 Junkyard shown, approx. 250m diameter, [1978 NTS 1:50,000 Map Belle River On Sheet 40J07 Edition 4 (air photos 1976, culture check 1976, information 1976, publication 1978)]. 1986 NTS Map 40J07 Junkyard shown [1986 NTS 1:50,000 Map Belle River On Sheet 40J07 Edition 5 (air photos 1980, culture check 1983, publication 1986)]. 1996 MapArt Located on E side Walker Rd [County Rd 11], W side 7th Concession Rd, W of Chesapeake & Ohio RR/CSX [1996 MapArt Publishing Ltd., Western Ontario [Atlas] ISBN 1-55198-386-9].

Waste Type:
UTM X Nad 27: 338050
UTM Y Nad 27: 4679700
UTM Zone: 17

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17 ***1 of 2*** ***WSW/176.8*** ***190.9 / 1.00*** ***4388 Walker Road*** ***Windsor ON N8W 3T5*** ***EHS***

Order No: 20041110008
Status: C
Report Type: Complete Report
Report Date: 11/15/04
Date Received: 11/10/04
Previous Site Name:
Lot/Building Size:
Additional Info Ordered:

Nearest Intersection:
Municipality:
Client Prov/State: ON
Search Radius (km): 0.25
X: -82.964793
Y: 42.256355

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17 ***2 of 2*** ***WSW/176.8*** ***190.9 / 1.00*** ***#224 - 4338 Walker Rd, Windsor, ON*** ***Windsor ON*** ***EHS***

Order No: 20150511200
Status: C
Report Type: Site Report
Report Date: 13-MAY-15
Date Received: 11-MAY-15
Previous Site Name:
Lot/Building Size:
Additional Info Ordered:

Nearest Intersection:
Municipality:
Client Prov/State: ON
Search Radius (km): .001
X: -82.96452
Y: 42.255952

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18 ***1 of 9*** ***W/196.9*** ***190.2 / 0.39*** ***SUNCOR ENERGY PRODUCTS*** ***4340 WALKER RD*** ***WINDSOR ON N8W 3T5*** ***RST***

Headcode: 01186800
Headcode Desc: SERVICE STATIONS-GASOLINE, OIL & NATURAL GAS
Phone:
List Name:
Description:

---

18 ***2 of 9*** ***W/196.9*** ***190.2 / 0.39*** ***AJS INC O/A SUNOCO*** ***4340 WALKER RD LOT 15 CON 6*** ***WINDSOR ON N8W 3T5*** ***FSTH***

License Issue Date: 1/31/2006
Tank Status: Licensed
Tank Status As Of: August 2007
Operation Type: Retail Fuel Outlet
Facility Type: Gasoline Station - Self Serve

--Details--
Status: Active
Year of Installation: 2005
Corrosion Protection:

Capacity: 50000
Tank Fuel Type: Liquid Fuel Double Wall UST - Gasoline

Status: Active
Year of Installation: 2005
Corrosion Protection:
Capacity: 50000
Tank Fuel Type: Liquid Fuel Double Wall UST - Gasoline

Status: Active
Year of Installation: 2005
Corrosion Protection:
Capacity: 50000
Tank Fuel Type: Liquid Fuel Double Wall UST - Gasoline

---

18 | **3 of 9** | **W/196.9** | **190.2 / 0.39** | **AJS INC O/A SUNOCO**
4340 WALKER RD
WINDSOR ON N8W 3T5 | **FSTH**

License Issue Date: 1/31/2006 12:46:00 PM
Tank Status: Pending Renewal
Tank Status As Of: December 2008
Operation Type: Retail Fuel Outlet
Facility Type: Gasoline Station - Self Serve

--Details--
Status: Active
Year of Installation: 2005
Corrosion Protection:
Capacity: 50000
Tank Fuel Type: Liquid Fuel Double Wall UST - Gasoline

Status: Active
Year of Installation: 2005
Corrosion Protection:
Capacity: 50000
Tank Fuel Type: Liquid Fuel Double Wall UST - Gasoline

Status: Active
Year of Installation: 2005
Corrosion Protection:
Capacity: 50000
Tank Fuel Type: Liquid Fuel Double Wall UST - Gasoline

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18 | **4 of 9** | **W/196.9** | **190.2 / 0.39** | **SUNCOR ENERGY PRODUCTS PARTNERSHIP**
4340 WALKER RD
WINDSOR ON | **FST**

Inventory No: 34522113
Inventory Status: active
Installation Year: 2005
Capacity: 50000
Capacity Unit: L
Tank Type: Double Wall UST
Manufacturer:
Model:
Description: ULTRA - 2009VBS

Tank Material: Fiberglass (FRP)
Corrosion Protect: Fiberglass
Overfill Protection:
Inventory Context: FS Liquid Fuel
Inventory Item: FS Liquid Fuel Tank

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18 | **5 of 9** | **W/196.9** | **190.2 / 0.39** | **SUNCOR ENERGY PRODUCTS PARTNERSHIP** | **FST**

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
				4340 WALKER RD WINDSOR ON	

Inventory No:	34522111	Tank Material:	Fiberglass (FRP)
Inventory Status:	active	Corrosion Protect:	Fiberglass
Installation Year:	2005	Overfill Protection:	
Capacity:	50000	Inventory Context:	FS Liquid Fuel
Capacity Unit:	L	Inventory Item:	FS Liquid Fuel Tank
Tank Type:	Double Wall UST		
Manufacturer:			
Model:			
Description:	UNLEAD - 2009VBS		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
18	6 of 9	W/196.9	190.2 / 0.39	SUNCOR ENERGY PRODUCTS PARTNERSHIP 4340 WALKER RD WINDSOR ON	FST

Inventory No:	34522112	Tank Material:	Fiberglass (FRP)
Inventory Status:	active	Corrosion Protect:	Fiberglass
Installation Year:	2005	Overfill Protection:	
Capacity:	50000	Inventory Context:	FS Liquid Fuel
Capacity Unit:	L	Inventory Item:	FS Liquid Fuel Tank
Tank Type:	Double Wall UST		
Manufacturer:			
Model:			
Description:	UNLEAD -2009VBS		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
18	7 of 9	W/196.9	190.2 / 0.39	PETRO CANADA 4340 WALKER RD WINDSOR ON N8W3T5	RST

Headcode:	01186800
Headcode Desc:	SERVICE STATIONS GASOLINE OIL & NATURAL GAS
Phone:	5199667349
List Name:	INFO-DIRECT(TM) BUSINESS FILE
Description:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
18	8 of 9	W/196.9	190.2 / 0.39	SUNCOR ENERGY PRODUCTS PARTNERSHIP 4340 WALKER RD WINDSOR ON	FST

Inventory No:	34374068	Tank Material:	
Inventory Status:	Active	Corrosion Protect:	
Installation Year:		Overfill Protection:	
Capacity:	150000	Inventory Context:	Liquid Fuels
Capacity Unit:	L	Inventory Item:	FS Gasoline Station - Self Serve
Tank Type:			
Manufacturer:			
Model:			
Description:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
18	9 of 9	W/196.9	190.2 / 0.39	Petro Canada 4340 Walker Road Windsor ON	GEN

Generator Info as of Dec 2024

Generator No: ON001072639
Generator Company Name: Petro Canada
Street: 4340 Walker Road
City: Windsor
Province State: Ontario
Country: Canada
Postal Code: N8W 3T5
Waste Class: 251 L

Waste Class Decoded:

251 - OIL SKIMMINGS & SLUDGES

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
19	1 of 13	NW/201.5	189.9 / 0.00	Value Village Stores, Inc. 4322 Walker Road Bldg. 1 Windsor ON N8W 3T5	GEN

Generator Info

Generator No: ON7931130
Approval Years: 07,08
Status:
PO Box No:
Country:
Co Admin:
Phone No Admin:
SIC Description: All Other Clothing Stores

Choice of Contact:
Contaminated Fac:
MHSW Facility:
SIC Code: 448199

Waste Detail(s)

Waste Class: 263
Waste Class Name: ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 331
Waste Class Name: WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class: 122
Waste Class Name: ALKALINE WASTES - OTHER METALS

Waste Detail(s)

Waste Class: 112
Waste Class Name: ACID WASTE - HEAVY METALS

Waste Detail(s)

Waste Class: 145
Waste Class Name: PAINT/PIGMENT/COATING RESIDUES

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
19	2 of 13	NW/201.5	189.9 / 0.00	Value Village Stores, Inc. 4322 Walker Road Bldg. 1 Windsor ON N8W 3T5	GEN

Generator Info

Generator No:	ON7931130	***Choice of Contact:***	
Approval Years:	2009	***Contaminated Fac:***	
Status:		***MHSW Facility:***	
PO Box No:		***SIC Code:***	448199
Country:			
Co Admin:			
Phone No Admin:			
SIC Description:	All Other Clothing Stores		

Waste Detail(s)

Waste Class:	122
Waste Class Name:	ALKALINE WASTES - OTHER METALS

Waste Detail(s)

Waste Class:	331
Waste Class Name:	WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class:	263
Waste Class Name:	ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class:	112
Waste Class Name:	ACID WASTE - HEAVY METALS

Waste Detail(s)

Waste Class:	145
Waste Class Name:	PAINT/PIGMENT/COATING RESIDUES

19	***3 of 13***	***NW/201.5***	***189.9 / 0.00***	***Value Village Stores, Inc.*** ***4322 Walker Road Bldg. 1*** ***Windsor ON N8W 3T5***	***GEN***

Generator Info

Generator No:	ON7931130	***Choice of Contact:***	
Approval Years:	2010	***Contaminated Fac:***	
Status:		***MHSW Facility:***	
PO Box No:		***SIC Code:***	448199
Country:			
Co Admin:			
Phone No Admin:			
SIC Description:	All Other Clothing Stores		

Waste Detail(s)

Waste Class:	263
Waste Class Name:	ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 112
Waste Class Name: ACID WASTE - HEAVY METALS

Waste Detail(s)

Waste Class: 145
Waste Class Name: PAINT/PIGMENT/COATING RESIDUES

Waste Detail(s)

Waste Class: 122
Waste Class Name: ALKALINE WASTES - OTHER METALS

Waste Detail(s)

Waste Class: 331
Waste Class Name: WASTE COMPRESSED GASES

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19 | ***4 of 13*** | ***NW/201.5*** | ***189.9 / 0.00*** | ***Value Village Stores, Inc.***
4322 Walker Road Bldg. 1
Windsor ON N8W 3T5 | ***GEN***

Generator Info

Generator No: ON7931130
Approval Years: 2011
Status:
PO Box No:
Country:
Co Admin:
Phone No Admin:
SIC Description: All Other Clothing Stores

Choice of Contact:
Contaminated Fac:
MHSW Facility:
SIC Code: 448199

Waste Detail(s)

Waste Class: 112
Waste Class Name: ACID WASTE - HEAVY METALS

Waste Detail(s)

Waste Class: 331
Waste Class Name: WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class: 122
Waste Class Name: ALKALINE WASTES - OTHER METALS

Waste Detail(s)

Waste Class: 263
Waste Class Name: ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 145
Waste Class Name: PAINT/PIGMENT/COATING RESIDUES

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19 **5 of 13** **NW/201.5** **189.9 / 0.00** **Value Village Stores** **GEN**
4322 Walker Road Bldg. 1
Windsor ON N8W 3T5

Generator Info

Generator No: ON7931130
Approval Years: 2012
Status:
PO Box No:
Country:
Co Admin:
Phone No Admin:
SIC Description: All Other Clothing Stores

Choice of Contact:
Contaminated Fac:
MHSW Facility:
SIC Code: 448199

Waste Detail(s)

Waste Class: 112
Waste Class Name: ACID WASTE - HEAVY METALS

Waste Detail(s)

Waste Class: 263
Waste Class Name: ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 122
Waste Class Name: ALKALINE WASTES - OTHER METALS

Waste Detail(s)

Waste Class: 331
Waste Class Name: WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class: 145
Waste Class Name: PAINT/PIGMENT/COATING RESIDUES

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19 **6 of 13** **NW/201.5** **189.9 / 0.00** **Value Village Stores** **GEN**
4322 Walker Road Bldg. 1
Windsor ON

Generator Info

Generator No: ON7931130
Approval Years: 2013
Status:
PO Box No:
Country:
Co Admin:

Choice of Contact:
Contaminated Fac:
MHSW Facility:
SIC Code: 448199

Phone No Admin:
SIC Description: ALL OTHER CLOTHING STORES

Waste Detail(s)

Waste Class: 122
Waste Class Name: ALKALINE WASTES - OTHER METALS

Waste Detail(s)

Waste Class: 263
Waste Class Name: ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 145
Waste Class Name: PAINT/PIGMENT/COATING RESIDUES

Waste Detail(s)

Waste Class: 112
Waste Class Name: ACID WASTE - HEAVY METALS

Waste Detail(s)

Waste Class: 331
Waste Class Name: WASTE COMPRESSED GASES

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19 | ***7 of 13*** | ***NW/201.5*** | ***189.9 / 0.00*** | ***Value Village Stores***
4322 Walker Road Bldg. 1
Windsor ON N8W 3T6 | ***GEN***

Generator Info

Generator No: ON7931130
Approval Years: 2016
Status:
PO Box No:
Country: Canada
Co Admin:
Phone No Admin:
SIC Description: ALL OTHER CLOTHING STORES

Choice of Contact: CO_OFFICIAL
Contaminated Fac: No
MHSW Facility: No
SIC Code: 448199

Waste Detail(s)

Waste Class: 331
Waste Class Name: WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class: 146
Waste Class Name: OTHER SPECIFIED INORGANICS

Waste Detail(s)

Waste Class: 261

Waste Class Name: PHARMACEUTICALS

Waste Detail(s)

Waste Class: 242
Waste Class Name: HALOGENATED PESTICIDES

Waste Detail(s)

Waste Class: 269
Waste Class Name: NON-HALOGENATED PESTICIDES

Waste Detail(s)

Waste Class: 212
Waste Class Name: ALIPHATIC SOLVENTS

Waste Detail(s)

Waste Class: 262
Waste Class Name: DETERGENTS/SOAPS

Waste Detail(s)

Waste Class: 148
Waste Class Name: INORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 122
Waste Class Name: ALKALINE WASTES - OTHER METALS

Waste Detail(s)

Waste Class: 112
Waste Class Name: ACID WASTE - HEAVY METALS

Waste Detail(s)

Waste Class: 252
Waste Class Name: WASTE OILS & LUBRICANTS

Waste Detail(s)

Waste Class: 263
Waste Class Name: ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 145
Waste Class Name: PAINT/PIGMENT/COATING RESIDUES

19	*8 of 13*	*NW/201.5*	*189.9 / 0.00*	***Value Village Stores*** ***4322 Walker Road Bldg. 1*** ***Windsor ON N8W 3T6***	***GEN***

Generator Info

Generator No:	ON7931130	***Choice of Contact:***	CO_OFFICIAL
Approval Years:	2015	***Contaminated Fac:***	No
Status:		***MHSW Facility:***	No
PO Box No:		***SIC Code:***	448199
Country:	Canada		
Co Admin:			
Phone No Admin:			
SIC Description:	ALL OTHER CLOTHING STORES		

Waste Detail(s)

Waste Class:	112
Waste Class Name:	ACID WASTE - HEAVY METALS

Waste Detail(s)

Waste Class:	145
Waste Class Name:	PAINT/PIGMENT/COATING RESIDUES

Waste Detail(s)

Waste Class:	122
Waste Class Name:	ALKALINE WASTES - OTHER METALS

Waste Detail(s)

Waste Class:	331
Waste Class Name:	WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class:	263
Waste Class Name:	ORGANIC LABORATORY CHEMICALS

19	***9 of 13***	***NW/201.5***	***189.9 / 0.00***	***Value Village Stores*** ***4322 Walker Road Bldg. 1*** ***Windsor ON N8W 3T6***	***GEN***

Generator Info

Generator No:	ON7931130	***Choice of Contact:***	CO_OFFICIAL
Approval Years:	2014	***Contaminated Fac:***	No
Status:		***MHSW Facility:***	No
PO Box No:		***SIC Code:***	448199
Country:	Canada		
Co Admin:			
Phone No Admin:			
SIC Description:	ALL OTHER CLOTHING STORES		

Waste Detail(s)

Waste Class:	112
Waste Class Name:	ACID WASTE - HEAVY METALS

Waste Detail(s)

Waste Class: 331
Waste Class Name: WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class: 263
Waste Class Name: ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 122
Waste Class Name: ALKALINE WASTES - OTHER METALS

Waste Detail(s)

Waste Class: 145
Waste Class Name: PAINT/PIGMENT/COATING RESIDUES

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
19	10 of 13	NW/201.5	189.9 / 0.00	**Value Village Stores** **4322 Walker Road Bldg. 1** **Windsor ON N8W 3T6**	GEN

Generator Info

Generator No: ON7931130
Approval Years: As of Dec 2018
Status: Registered
PO Box No:
Country: Canada
Co Admin:
Phone No Admin:
SIC Description:

Choice of Contact:
Contaminated Fac:
MHSW Facility:
SIC Code:

Waste Detail(s)

Waste Class: 112 C
Waste Class Name: Acid solutions - containing heavy metals

Waste Detail(s)

Waste Class: 122 C
Waste Class Name: Alkaline slutions - containing other metals and non-metals (not cyanide)

Waste Detail(s)

Waste Class: 242 T
Waste Class Name: Halogenated pesticides and herbicides

Waste Detail(s)

Waste Class: 252 L
Waste Class Name: Waste crankcase oils and lubricants

Waste Detail(s)

Waste Class: 145 L
Waste Class Name: Wastes from the use of pigments, coatings and paints

Waste Detail(s)

Waste Class: 146 T
Waste Class Name: Other specified inorganic sludges, slurries or solids

Waste Detail(s)

Waste Class: 262 C
Waste Class Name: Detergents and soaps

Waste Detail(s)

Waste Class: 261 A
Waste Class Name: Pharmaceuticals

Waste Detail(s)

Waste Class: 261 I
Waste Class Name: Pharmaceuticals

Waste Detail(s)

Waste Class: 261 L
Waste Class Name: Pharmaceuticals

Waste Detail(s)

Waste Class: 262 L
Waste Class Name: Detergents and soaps

Waste Detail(s)

Waste Class: 263 A
Waste Class Name: Misc. waste organic chemicals

Waste Detail(s)

Waste Class: 242 L
Waste Class Name: Halogenated pesticides and herbicides

Waste Detail(s)

Waste Class: 331 I
Waste Class Name: Waste compressed gases including cylinders

Waste Detail(s)

Waste Class: 331 L
Waste Class Name: Waste compressed gases including cylinders

Waste Detail(s)

Waste Class: 145 I
Waste Class Name: Wastes from the use of pigments, coatings and paints

Waste Detail(s)

Waste Class: 148 I
Waste Class Name: Misc. wastes and inorganic chemicals

Waste Detail(s)

Waste Class: 263 I
Waste Class Name: Misc. waste organic chemicals

Waste Detail(s)

Waste Class: 212 L
Waste Class Name: Aliphatic solvents and residues

Waste Detail(s)

Waste Class: 212 I
Waste Class Name: Aliphatic solvents and residues

Waste Detail(s)

Waste Class: 312 P
Waste Class Name: Pathological wastes

Waste Detail(s)

Waste Class: 263 L
Waste Class Name: Misc. waste organic chemicals

Waste Detail(s)

Waste Class: 269 L
Waste Class Name: Organic non-halogenated pesticide and herbicide wastes

Waste Detail(s)

Waste Class: 269 T
Waste Class Name: Organic non-halogenated pesticide and herbicide wastes

Waste Detail(s)

Waste Class: 148 A
Waste Class Name: Misc. wastes and inorganic chemicals

19	11 of 13	NW/201.5	189.9 / 0.00	***Value Village Stores*** ***4322 Walker Road Bldg. 1*** ***Windsor ON N8W 3T6***	***GEN***

Generator Info

Generator No: ON7931130
Approval Years: As of Jul 2020
Choice of Contact:
Contaminated Fac:

Status: Registered
MHSW Facility:
PO Box No:
SIC Code:
Country: Canada
Co Admin:
Phone No Admin:
SIC Description:

Waste Detail(s)

Waste Class: 122 C
Waste Class Name: Alkaline slutions - containing other metals and non-metals (not cyanide)

Waste Detail(s)

Waste Class: 261 I
Waste Class Name: Pharmaceuticals

Waste Detail(s)

Waste Class: 145 I
Waste Class Name: Wastes from the use of pigments, coatings and paints

Waste Detail(s)

Waste Class: 331 L
Waste Class Name: Waste compressed gases including cylinders

Waste Detail(s)

Waste Class: 331 I
Waste Class Name: Waste compressed gases including cylinders

Waste Detail(s)

Waste Class: 212 I
Waste Class Name: Aliphatic solvents and residues

Waste Detail(s)

Waste Class: 148 I
Waste Class Name: Misc. wastes and inorganic chemicals

Waste Detail(s)

Waste Class: 312 P
Waste Class Name: Pathological wastes

Waste Detail(s)

Waste Class: 261 L
Waste Class Name: Pharmaceuticals

Waste Detail(s)

Waste Class: 212 L
Waste Class Name: Aliphatic solvents and residues

Waste Detail(s)

Waste Class: 262 L
Waste Class Name: Detergents and soaps

Waste Detail(s)

Waste Class: 269 T
Waste Class Name: Organic non-halogenated pesticide and herbicide wastes

Waste Detail(s)

Waste Class: 112 C
Waste Class Name: Acid solutions - containing heavy metals

Waste Detail(s)

Waste Class: 263 A
Waste Class Name: Misc. waste organic chemicals

Waste Detail(s)

Waste Class: 242 T
Waste Class Name: Halogenated pesticides and herbicides

Waste Detail(s)

Waste Class: 242 L
Waste Class Name: Halogenated pesticides and herbicides

Waste Detail(s)

Waste Class: 261 A
Waste Class Name: Pharmaceuticals

Waste Detail(s)

Waste Class: 263 L
Waste Class Name: Misc. waste organic chemicals

Waste Detail(s)

Waste Class: 269 L
Waste Class Name: Organic non-halogenated pesticide and herbicide wastes

Waste Detail(s)

Waste Class: 146 T
Waste Class Name: Other specified inorganic sludges, slurries or solids

Waste Detail(s)

Waste Class: 252 L
Waste Class Name: Waste crankcase oils and lubricants

Waste Detail(s)

Waste Class: 262 C
Waste Class Name: Detergents and soaps

Waste Detail(s)

Waste Class: 148 A
Waste Class Name: Misc. wastes and inorganic chemicals

Waste Detail(s)

Waste Class: 145 L
Waste Class Name: Wastes from the use of pigments, coatings and paints

Waste Detail(s)

Waste Class: 263 I
Waste Class Name: Misc. waste organic chemicals

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19 | **12 of 13** | **NW/201.5** | **189.9 / 0.00** | **Value Village Stores**
4322 Walker Road Bldg. 1
Windsor ON N8W 3T6 | **GEN**

Generator Info

Generator No: ON7931130
Approval Years: As of Nov 2021
Status: Registered
PO Box No:
Country: Canada
Co Admin:
Phone No Admin:
SIC Description:

Choice of Contact:
Contaminated Fac:
MHSW Facility:
SIC Code:

Waste Detail(s)

Waste Class: 331 L
Waste Class Name: Waste compressed gases including cylinders

Waste Detail(s)

Waste Class: 269 T
Waste Class Name: Organic non-halogenated pesticide and herbicide wastes

Waste Detail(s)

Waste Class: 212 I
Waste Class Name: Aliphatic solvents and residues

Waste Detail(s)

Waste Class: 263 A
Waste Class Name: Misc. waste organic chemicals

Waste Detail(s)

Waste Class: 122 C
Waste Class Name: Alkaline slutions - containing other metals and non-metals (not cyanide)

Waste Detail(s)

Waste Class: 261 A
Waste Class Name: Pharmaceuticals

Waste Detail(s)

Waste Class: 112 C
Waste Class Name: Acid solutions - containing heavy metals

Waste Detail(s)

Waste Class: 212 L
Waste Class Name: Aliphatic solvents and residues

Waste Detail(s)

Waste Class: 148 I
Waste Class Name: Misc. wastes and inorganic chemicals

Waste Detail(s)

Waste Class: 263 L
Waste Class Name: Misc. waste organic chemicals

Waste Detail(s)

Waste Class: 242 T
Waste Class Name: Halogenated pesticides and herbicides

Waste Detail(s)

Waste Class: 261 L
Waste Class Name: Pharmaceuticals

Waste Detail(s)

Waste Class: 242 L
Waste Class Name: Halogenated pesticides and herbicides

Waste Detail(s)

Waste Class: 261 I
Waste Class Name: Pharmaceuticals

Waste Detail(s)

Waste Class: 312 P
Waste Class Name: Pathological wastes

Waste Detail(s)

Waste Class: 148 A

Waste Class Name: Misc. wastes and inorganic chemicals

Waste Detail(s)

Waste Class: 145 I
Waste Class Name: Wastes from the use of pigments, coatings and paints

Waste Detail(s)

Waste Class: 263 I
Waste Class Name: Misc. waste organic chemicals

Waste Detail(s)

Waste Class: 331 I
Waste Class Name: Waste compressed gases including cylinders

Waste Detail(s)

Waste Class: 262 C
Waste Class Name: Detergents and soaps

Waste Detail(s)

Waste Class: 252 L
Waste Class Name: Waste crankcase oils and lubricants

Waste Detail(s)

Waste Class: 146 T
Waste Class Name: Other specified inorganic sludges, slurries or solids

Waste Detail(s)

Waste Class: 269 L
Waste Class Name: Organic non-halogenated pesticide and herbicide wastes

Waste Detail(s)

Waste Class: 145 L
Waste Class Name: Wastes from the use of pigments, coatings and paints

Waste Detail(s)

Waste Class: 262 L
Waste Class Name: Detergents and soaps

19	*13 of 13*	*NW/201.5*	*189.9 / 0.00*	***Value Village Store #2109*** ***Store #2109, 4322 Walker Road, Bldg. 1*** ***Windsor ON***	***GEN***

Generator Info

Generator No:	ON7931130	***Choice of Contact:***	
Approval Years:	As of Oct 2022	***Contaminated Fac:***	
Status:	Registered	***MHSW Facility:***	

PO Box No: ***SIC Code:***
Country: Canada
Co Admin:
Phone No Admin:
SIC Description:

Waste Detail(s)

Waste Class: 262 C
Waste Class Name: DETERGENTS/SOAPS

Waste Detail(s)

Waste Class: 331 L
Waste Class Name: WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class: 212 I
Waste Class Name: ALIPHATIC SOLVENTS

Waste Detail(s)

Waste Class: 263 I
Waste Class Name: ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 122 C
Waste Class Name: ALKALINE WASTES - OTHER METALS

Waste Detail(s)

Waste Class: 148 I
Waste Class Name: INORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 261 L
Waste Class Name: PHARMACEUTICALS

Waste Detail(s)

Waste Class: 331 I
Waste Class Name: WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class: 145 I
Waste Class Name: PAINT/PIGMENT/COATING RESIDUES

Waste Detail(s)

Waste Class: 242 T
Waste Class Name: HALOGENATED PESTICIDES

Waste Detail(s)

Waste Class: 269 L
Waste Class Name: NON-HALOGENATED PESTICIDES

Waste Detail(s)

Waste Class: 148 A
Waste Class Name: INORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 145 L
Waste Class Name: PAINT/PIGMENT/COATING RESIDUES

Waste Detail(s)

Waste Class: 112 C
Waste Class Name: ACID WASTE - HEAVY METALS

Waste Detail(s)

Waste Class: 242 L
Waste Class Name: HALOGENATED PESTICIDES

Waste Detail(s)

Waste Class: 261 A
Waste Class Name: PHARMACEUTICALS

Waste Detail(s)

Waste Class: 263 A
Waste Class Name: ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 312 P
Waste Class Name: PATHOLOGICAL WASTES

Waste Detail(s)

Waste Class: 263 L
Waste Class Name: ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 261 I
Waste Class Name: PHARMACEUTICALS

Waste Detail(s)

Waste Class: 269 T
Waste Class Name: NON-HALOGENATED PESTICIDES

Waste Detail(s)

Waste Class: 262 L
Waste Class Name: DETERGENTS/SOAPS

Waste Detail(s)

Waste Class: 146 T
Waste Class Name: OTHER SPECIFIED INORGANICS

Waste Detail(s)

Waste Class: 212 L
Waste Class Name: ALIPHATIC SOLVENTS

Waste Detail(s)

Waste Class: 252 L
Waste Class Name: WASTE OILS & LUBRICANTS

Generator Info as of Dec 2024

Generator No: ON7931130
Generator Company Name: Value Village Store #2109
Street: Store #2109, 4322 Walker Road, Bldg. 1
City: Windsor
Province State: Ontario
Country: Canada
Postal Code: N8W3T6
Waste Class: 112 C, 122 C, 145 I, 263 L, 331 I, 145 L, 146 T, 148 A, 148 I, 212 I, 212 L, 242 L, 242 T, 252 L, 261 A, 261 I, 261 L, 262 C, 262 L, 263 A, 263 I, 269 L, 269 T, 312 P, 148 C

Waste Class Decoded:

112 - ACID WASTE - HEAVY METALS; 122 - ALKALINE WASTES - OTHER METALS; 145 - PAINT/PIGMENT/COATING RESIDUES; 263 - ORGANIC LABORATORY CHEMICALS; 331 - WASTE COMPRESSED GASES; 145 - PAINT/PIGMENT/COATING RESIDUES; 146 - OTHER SPECIFIED INORGANICS; 148 - INORGANIC LABORATORY CHEMICALS; 148 - INORGANIC LABORATORY CHEMICALS; 212 - ALIPHATIC SOLVENTS; 212 - ALIPHATIC SOLVENTS; 242 - HALOGENATED PESTICIDES; 242 - HALOGENATED PESTICIDES; 252 - WASTE OILS & LUBRICANTS; 261 - PHARMACEUTICALS; 261 - PHARMACEUTICALS; 261 - PHARMACEUTICALS; 262 - DETERGENTS/SOAPS; 262 - DETERGENTS/SOAPS; 263 - ORGANIC LABORATORY CHEMICALS; 263 - ORGANIC LABORATORY CHEMICALS; 269 - NON-HALOGENATED PESTICIDES; 269 - NON-HALOGENATED PESTICIDES; 312 - PATHOLOGICAL WASTES; 148 - INORGANIC LABORATORY CHEMICALS

Generator Info as of Dec 2024

Generator No: ON7931130
Generator Company Name: Value Village Store #2109
Street: Store #2109, 4322 Walker Road, Bldg. 1
City: Windsor
Province State: Ontario
Country: Canada
Postal Code: N8W3T6
Waste Class: 148 C,112 C,122 C,145 I,263 L,331 I,145 L,146 T,148 A,148 I,212 I,212 L,242 L,242 T,252 L,261 A,261 I,261 L, 262 C,262 L,263 A,263 I,269 L,269 T,312 P

Waste Class Decoded:

148 - INORGANIC LABORATORY CHEMICALS; 112 - ACID WASTE - HEAVY METALS; 122 - ALKALINE WASTES - OTHER METALS; 145 - PAINT/PIGMENT/COATING RESIDUES; 263 - ORGANIC LABORATORY CHEMICALS; 331 - WASTE COMPRESSED GASES; 145 - PAINT/PIGMENT/COATING RESIDUES; 146 - OTHER SPECIFIED INORGANICS; 148 - INORGANIC LABORATORY CHEMICALS; 148 - INORGANIC LABORATORY CHEMICALS; 212 - ALIPHATIC SOLVENTS; 212 - ALIPHATIC SOLVENTS; 242 - HALOGENATED PESTICIDES; 242 - HALOGENATED PESTICIDES; 252 - WASTE OILS & LUBRICANTS; 261 - PHARMACEUTICALS; 261 - PHARMACEUTICALS; 261 - PHARMACEUTICALS; 262 - DETERGENTS/SOAPS; 262 - DETERGENTS/SOAPS; 263 - ORGANIC LABORATORY CHEMICALS; 263 - ORGANIC

LABORATORY CHEMICALS; 269 - NON-HALOGENATED PESTICIDES; 269 - NON-HALOGENATED PESTICIDES; 312 - PATHOLOGICAL WASTES

2017 Generator Info

Gen No:	ON7931130	***Choice of Contact:***	CO_OFFICIAL
ID:	30985	***Phone No Official:***	615-773-8600 Ext.
Contaminated Fac:	N	***Phone No Admin:***	
MHSW Facility:	N	***County Ont:***	ESSEX
NAICS Code1:	448199	***County Out:***	
NAICS Code2:		***District:***	102
NAICS Code3:			
Gen Name:	Value Village Stores		
Gen Div:			
Gen Op Name:	Value Village Store #2109		
Gen Op Div:			
Site Adrs1:	4322 Walker Road		
Site Bldg:	Store #2109		
Site Pobox:			
Province In:	ONTARIO		
Site Adrs2:	Bldg. 1		
Site City:	Windsor		
Province Out:			
Site Postal Code:	N8W 3T6		
Site Country:	Canada		
Co Official:	Randy Raines		
Co Admin:			

2017 Generator Manifest

ID:	58234	***Sum Received Qty:***	24.0
Generator No:	ON7931130	***Waste Class Name:***	ALIPHATIC SOLVENTS
Receiver Type:	035	***Count Manifests:***	3
Waste Char:	I	***District:***	305
Waste Code:	212		

2017 Generator Manifest

ID:	58239	***Sum Received Qty:***	135.0
Generator No:	ON7931130	***Waste Class Name:***	WASTE COMPRESSED GASES
Receiver Type:	035	***Count Manifests:***	12
Waste Char:	I	***District:***	305
Waste Code:	331		

2017 Generator Manifest

ID:	58231	***Sum Received Qty:***	55.0
Generator No:	ON7931130	***Waste Class Name:***	PAINT/PIGMENT/COATING RESIDUES
Receiver Type:	035	***Count Manifests:***	3
Waste Char:	L	***District:***	305
Waste Code:	145		

2017 Generator Manifest

ID:	58240	***Sum Received Qty:***	57.0
Generator No:	ON7931130	***Waste Class Name:***	WASTE COMPRESSED GASES
Receiver Type:	035	***Count Manifests:***	9
Waste Char:	L	***District:***	305
Waste Code:	331		

2017 Generator Manifest

ID:	58235	**Sum Received Qty:**	11.0
Generator No:	ON7931130	**Waste Class Name:**	WASTE OILS & LUBRICANTS
Receiver Type:	035	**Count Manifests:**	2
Waste Char:	L	**District:**	305
Waste Code:	252		

2017 Generator Manifest

ID:	58236	**Sum Received Qty:**	263.0
Generator No:	ON7931130	**Waste Class Name:**	DETERGENTS/SOAPS
Receiver Type:	035	**Count Manifests:**	4
Waste Char:	L	**District:**	305
Waste Code:	262		

2017 Generator Manifest

ID:	58232	**Sum Received Qty:**	58.0
Generator No:	ON7931130	**Waste Class Name:**	OTHER SPECIFIED INORGANICS
Receiver Type:	035	**Count Manifests:**	4
Waste Char:	T	**District:**	305
Waste Code:	146		

2017 Generator Manifest

ID:	58237	**Sum Received Qty:**	211.0
Generator No:	ON7931130	**Waste Class Name:**	ORGANIC LABORATORY CHEMICALS
Receiver Type:	035	**Count Manifests:**	4
Waste Char:	A	**District:**	305
Waste Code:	263		

2017 Generator Manifest

ID:	58233	**Sum Received Qty:**	49.0
Generator No:	ON7931130	**Waste Class Name:**	INORGANIC LABORATORY CHEMICALS
Receiver Type:	035	**Count Manifests:**	7
Waste Char:	A	**District:**	305
Waste Code:	148		

2017 Generator Manifest

ID:	58238	**Sum Received Qty:**	20.0
Generator No:	ON7931130	**Waste Class Name:**	NON-HALOGENATED PESTICIDES
Receiver Type:	035	**Count Manifests:**	3
Waste Char:	T	**District:**	305
Waste Code:	269		

2018 Generator Info

Gen No:	ON7931130	**Choice of Contact:**	CO_OFFICIAL
ID:	31569	**Phone No Official:**	615-773-8600 Ext.
Contaminated Fac:	N	**Phone No Admin:**	
MHSW Facility:	N	**County Ont:**	ESSEX
NAICS Code1:	448199	**County Out:**	
NAICS Code2:		**District:**	102
NAICS Code3:			
Gen Name:	Value Village Stores		
Gen Div:			
Gen Op Name:	Value Village Store #2109		
Gen Op Div:			
Site Adrs1:	4322 Walker Road		

Site Bldg:	Store #2109
Site Pobox:	
Province In:	ONTARIO
Site Adrs2:	Bldg. 1
Site City:	Windsor
Province Out:	
Site Postal Code:	N8W 3T6
Site Country:	Canada
Co Official:	Randy Raines
Co Admin:	

2018 Generator Manifest

ID:	58351	**Sum Received Qty:**	87.0
Generator No:	ON7931130	**Waste Class Name:**	ORGANIC LABORATORY CHEMICALS
Receiver Type:	035	**Count Manifests:**	2
Waste Char:	A	**District:**	305
Waste Code:	263		

2018 Generator Manifest

ID:	58355	**Sum Received Qty:**	42.0
Generator No:	ON7931130	**Waste Class Name:**	WASTE COMPRESSED GASES
Receiver Type:	035	**Count Manifests:**	9
Waste Char:	L	**District:**	305
Waste Code:	331		

2018 Generator Manifest

ID:	58348	**Sum Received Qty:**	54.0
Generator No:	ON7931130	**Waste Class Name:**	PAINT/PIGMENT/COATING RESIDUES
Receiver Type:	035	**Count Manifests:**	1
Waste Char:	L	**District:**	305
Waste Code:	145		

2018 Generator Manifest

ID:	58354	**Sum Received Qty:**	210.0
Generator No:	ON7931130	**Waste Class Name:**	WASTE COMPRESSED GASES
Receiver Type:	035	**Count Manifests:**	11
Waste Char:	I	**District:**	305
Waste Code:	331		

2018 Generator Manifest

ID:	58350	**Sum Received Qty:**	131.0
Generator No:	ON7931130	**Waste Class Name:**	ALIPHATIC SOLVENTS
Receiver Type:	035	**Count Manifests:**	3
Waste Char:	I	**District:**	305
Waste Code:	212		

2018 Generator Manifest

ID:	58352	**Sum Received Qty:**	143.0
Generator No:	ON7931130	**Waste Class Name:**	ORGANIC LABORATORY CHEMICALS
Receiver Type:	035	**Count Manifests:**	3
Waste Char:	L	**District:**	305
Waste Code:	263		

2018 Generator Manifest

ID:	58353	**Sum Received Qty:**	8.0
Generator No:	ON7931130	**Waste Class Name:**	NON-HALOGENATED PESTICIDES
Receiver Type:	035	**Count Manifests:**	3
Waste Char:	T	**District:**	305
Waste Code:	269		

2018 Generator Manifest

ID:	58349	**Sum Received Qty:**	13.0
Generator No:	ON7931130	**Waste Class Name:**	INORGANIC LABORATORY CHEMICALS
Receiver Type:	035	**Count Manifests:**	2
Waste Char:	A	**District:**	305
Waste Code:	148		

2019 Generator Info

Gen No:	ON7931130	**Choice of Contact:**	CO_OFFICIAL
ID:	31934	**Phone No Official:**	615-773-8600 Ext.
Contaminated Fac:	N	**Phone No Admin:**	
MHSW Facility:	N	**County Ont:**	ESSEX
NAICS Code1:	448199	**County Out:**	
NAICS Code2:		**District:**	102
NAICS Code3:			
Gen Name:	Value Village Stores		
Gen Div:			
Gen Op Name:	Value Village Store #2109		
Gen Op Div:			
Site Adrs1:	4322 Walker Road		
Site Bldg:	Store #2109		
Site Pobox:			
Province In:	ONTARIO		
Site Adrs2:	Bldg. 1		
Site City:	Windsor		
Province Out:			
Site Postal Code:	N8W 3T6		
Site Country:	Canada		
Co Official:	Randy Raines		
Co Admin:			

2019 Generator Manifest

ID:	58413	**Sum Received Qty:**	31.0
Generator No:	ON7931130	**Waste Class Name:**	INORGANIC LABORATORY CHEMICALS
Receiver Type:	035	**Count Manifests:**	2
Waste Char:	A	**District:**	305
Waste Code:	148		

2019 Generator Manifest

ID:	58416	**Sum Received Qty:**	215.0
Generator No:	ON7931130	**Waste Class Name:**	ORGANIC LABORATORY CHEMICALS
Receiver Type:	035	**Count Manifests:**	4
Waste Char:	L	**District:**	305
Waste Code:	263		

2019 Generator Manifest

ID:	58417	**Sum Received Qty:**	37.0
Generator No:	ON7931130	**Waste Class Name:**	NON-HALOGENATED PESTICIDES
Receiver Type:	035	**Count Manifests:**	3
Waste Char:	T	**District:**	305

Waste Code: 269

2019 Generator Manifest

ID: 58412
Generator No: ON7931130
Receiver Type: 035
Waste Char: T
Waste Code: 146
Sum Received Qty: 3.0
Waste Class Name: OTHER SPECIFIED INORGANICS
Count Manifests: 1
District: 305

2019 Generator Manifest

ID: 58418
Generator No: ON7931130
Receiver Type: 035
Waste Char: I
Waste Code: 331
Sum Received Qty: 292.0
Waste Class Name: WASTE COMPRESSED GASES
Count Manifests: 7
District: 305

2019 Generator Manifest

ID: 58415
Generator No: ON7931130
Receiver Type: 035
Waste Char: L
Waste Code: 252
Sum Received Qty: 67.0
Waste Class Name: WASTE OILS & LUBRICANTS
Count Manifests: 1
District: 305

2019 Generator Manifest

ID: 58419
Generator No: ON7931130
Receiver Type: 035
Waste Char: L
Waste Code: 331
Sum Received Qty: 47.0
Waste Class Name: WASTE COMPRESSED GASES
Count Manifests: 8
District: 305

2019 Generator Manifest

ID: 58414
Generator No: ON7931130
Receiver Type: 035
Waste Char: I
Waste Code: 212
Sum Received Qty: 191.0
Waste Class Name: ALIPHATIC SOLVENTS
Count Manifests: 4
District: 305

2020 Generator Info

Gen No: ON7931130
ID: 31658
Contaminated Fac: N
MHSW Facility: N
NAICS Code1: 448199
NAICS Code2:
NAICS Code3:
Gen Name: Value Village Stores
Gen Div:
Gen Op Name: Value Village Store #2109
Gen Op Div:
Site Adrs1: 4322 Walker Road
Site Bldg: Store #2109
Site Pobox:
Province In: ONTARIO
Site Adrs2: Bldg. 1
Site City: Windsor
Choice of Contact: CO_OFFICIAL
Phone No Official: 615-773-8600 Ext.
Phone No Admin:
County Ont: ESSEX
County Out:
District: 102

Province Out:
Site Postal Code: N8W 3T6
Site Country: Canada
Co Official: Randy Raines
Co Admin:

2020 Generator Manifest

ID: 54663
Generator No: ON7931130
Receiver Type: 035
Waste Char: L
Waste Code: 145
Sum Received Qty: 42.0
Waste Class Name: PAINT/PIGMENT/COATING RESIDUES
Count Manifests: 2
District: 305

2020 Generator Manifest

ID: 54664
Generator No: ON7931130
Receiver Type: 035
Waste Char: T
Waste Code: 146
Sum Received Qty: 6.0
Waste Class Name: OTHER SPECIFIED INORGANICS
Count Manifests: 2
District: 305

2020 Generator Manifest

ID: 54666
Generator No: ON7931130
Receiver Type: 035
Waste Char: I
Waste Code: 212
Sum Received Qty: 83.0
Waste Class Name: ALIPHATIC SOLVENTS
Count Manifests: 3
District: 305

2020 Generator Manifest

ID: 54667
Generator No: ON7931130
Receiver Type: 035
Waste Char: T
Waste Code: 263
Sum Received Qty: 2.0
Waste Class Name: ORGANIC LABORATORY CHEMICALS
Count Manifests: 1
District: 305

2020 Generator Manifest

ID: 54665
Generator No: ON7931130
Receiver Type: 035
Waste Char: A
Waste Code: 148
Sum Received Qty: 11.0
Waste Class Name: INORGANIC LABORATORY CHEMICALS
Count Manifests: 3
District: 305

2020 Generator Manifest

ID: 54668
Generator No: ON7931130
Receiver Type: 035
Waste Char: T
Waste Code: 269
Sum Received Qty: 3.0
Waste Class Name: NON-HALOGENATED PESTICIDES
Count Manifests: 1
District: 305

2020 Generator Manifest

ID: 54669
Generator No: ON7931130
Receiver Type: 035
Waste Char: I
Sum Received Qty: 182.0
Waste Class Name: WASTE COMPRESSED GASES
Count Manifests: 4
District: 305

Waste Code: 331

2020 Generator Manifest

ID: 54670
Generator No: ON7931130
Receiver Type: 035
Waste Char: L
Waste Code: 331
Sum Received Qty: 46.0
Waste Class Name: WASTE COMPRESSED GASES
Count Manifests: 7
District: 305

2021 Generator Info

Gen No: ON7931130
ID: 32360
Contaminated Fac: N
MHSW Facility: N
NAICS Code1: 448199
NAICS Code2:
NAICS Code3:
Gen Name: Value Village Stores
Gen Div:
Gen Op Name: Value Village Store #2109
Gen Op Div:
Site Adrs1: 4322 Walker Road
Site Bldg: Store #2109
Site Pobox:
Province In: ONTARIO
Site Adrs2: Bldg. 1
Site City: Windsor
Province Out:
Site Postal Code: N8W 3T6
Site Country: Canada
Co Official: Randy Raines
Co Admin:
Choice of Contact: CO_OFFICIAL
Phone No Official: 615-773-8600 Ext.
Phone No Admin:
County Ont: ESSEX
County Out:
District: 102

2021 Generator Manifest

ID: 57016
Generator No: ON7931130
Receiver Type: 035
Waste Char: L
Waste Code: 252
Sum Received Qty: 14.0
Waste Class Name: WASTE OILS & LUBRICANTS
Count Manifests: 1
District: 305

2021 Generator Manifest

ID: 57017
Generator No: ON7931130
Receiver Type: 035
Waste Char: L
Waste Code: 261
Sum Received Qty: 2.0
Waste Class Name: PHARMACEUTICALS
Count Manifests: 1
District: 305

2021 Generator Manifest

ID: 57014
Generator No: ON7931130
Receiver Type: 035
Waste Char: I
Waste Code: 148
Sum Received Qty: 5.0
Waste Class Name: INORGANIC LABORATORY CHEMICALS
Count Manifests: 1
District: 305

2021 Generator Manifest

ID:	57012	**Sum Received Qty:**	9.0
Generator No:	ON7931130	**Waste Class Name:**	OTHER SPECIFIED INORGANICS
Receiver Type:	035	**Count Manifests:**	2
Waste Char:	T	**District:**	305
Waste Code:	146		

2021 Generator Manifest

ID:	57013	**Sum Received Qty:**	41.0
Generator No:	ON7931130	**Waste Class Name:**	INORGANIC LABORATORY CHEMICALS
Receiver Type:	035	**Count Manifests:**	5
Waste Char:	A	**District:**	305
Waste Code:	148		

2021 Generator Manifest

ID:	57019	**Sum Received Qty:**	8.0
Generator No:	ON7931130	**Waste Class Name:**	NON-HALOGENATED PESTICIDES
Receiver Type:	035	**Count Manifests:**	1
Waste Char:	T	**District:**	305
Waste Code:	269		

2021 Generator Manifest

ID:	57018	**Sum Received Qty:**	331.0
Generator No:	ON7931130	**Waste Class Name:**	ORGANIC LABORATORY CHEMICALS
Receiver Type:	035	**Count Manifests:**	3
Waste Char:	L	**District:**	305
Waste Code:	263		

2021 Generator Manifest

ID:	57020	**Sum Received Qty:**	187.0
Generator No:	ON7931130	**Waste Class Name:**	WASTE COMPRESSED GASES
Receiver Type:	035	**Count Manifests:**	6
Waste Char:	I	**District:**	305
Waste Code:	331		

2021 Generator Manifest

ID:	57021	**Sum Received Qty:**	28.0
Generator No:	ON7931130	**Waste Class Name:**	WASTE COMPRESSED GASES
Receiver Type:	035	**Count Manifests:**	6
Waste Char:	L	**District:**	305
Waste Code:	331		

2021 Generator Manifest

ID:	57015	**Sum Received Qty:**	170.0
Generator No:	ON7931130	**Waste Class Name:**	ALIPHATIC SOLVENTS
Receiver Type:	035	**Count Manifests:**	4
Waste Char:	I	**District:**	305
Waste Code:	212		

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20 | ***1 of 1*** | ***WNW/225.9*** | ***189.9 / 0.00*** | ***4326 Walker Road Windsor ON N8W 3T5*** | ***EHS***

Order No:	20060623023	**Nearest Intersection:**	Walker Rd and Legacy Park Dr
Status:	C	**Municipality:**	
Report Type:	Complete Report	**Client Prov/State:**	ON

Report Date:	7/4/2006	**Search Radius (km):**	0.4
Date Received:	6/23/2006	**X:**	-82.964901
Previous Site Name:		**Y:**	42.257117
Lot/Building Size:	4.25 acres (54,500 sq ft building)		
Additional Info Ordered:	Fire Insur. Maps and/or Site Plans		

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21 | 1 of 1 | SSW/241.1 | 190.9 / 1.00 | 4485 Concession 7 R.R. 1 Windsor ON N9A 6J3 | EHS

Order No:	19990628018	**Nearest Intersection:**	
Status:	C	**Municipality:**	
Report Type:	Complete Report	**Client Prov/State:**	TX
Report Date:	7/8/99	**Search Radius (km):**	0.50
Date Received:	6/29/99	**X:**	-123.028404
Previous Site Name:		**Y:**	49.290035
Lot/Building Size:			
Additional Info Ordered:			

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22 | 1 of 1 | WNW/255.6 | 189.9 / 0.00 | 4264 - 4340 Walker Road Windsor ON N8W 3T5 | EHS

Order No:	20100910010	**Nearest Intersection:**	
Status:	C	**Municipality:**	
Report Type:	Custom Report	**Client Prov/State:**	ON
Report Date:	9/16/2010	**Search Radius (km):**	0.25
Date Received:	9/10/2010	**X:**	-82.964992
Previous Site Name:		**Y:**	42.257364
Lot/Building Size:			
Additional Info Ordered:			

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23 | 1 of 1 | SW/269.8 | 191.9 / 2.00 | 4411 WALKER RD. Windsor ON | WWIS

Well ID:	7124222	**Flowing (Y/N):**	
Construction Date:		**Flow Rate:**	
Use 1st:	Monitoring	**Data Entry Status:**	
Use 2nd:		**Data Src:**	
Final Well Status:	Observation Wells	**Date Received:**	06/19/2009
Water Type:		**Selected Flag:**	TRUE
Casing Material:		**Abandonment Rec:**	
Audit No:	Z91541	**Contractor:**	7298
Tag:	A060887	**Form Version:**	7
Constructn Method:		**Owner:**	
Elevation (m):		**County:**	ESSEX
Elevatn Reliabilty:		**Lot:**	
Depth to Bedrock:		**Concession:**	
Well Depth:		**Concession Name:**	
Overburden/Bedrock:		**Easting NAD83:**	
Pump Rate:		**Northing NAD83:**	
Static Water Level:		**Zone:**	
Clear/Cloudy:		**UTM Reliability:**	
Municipality:	WINDSOR CITY		
Site Info:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/712\7124222.pdf

Additional Detail(s) (Map)

Well Completed Date:	05/12/2009
Year Completed:	2009

Depth (m): 7.6
Latitude: 42.2544842997863
Longitude: -82.964821717839
X: -82.96482157716513
Y: 42.25448430177388
Path: 712\7124222.pdf

Bore Hole Information

Bore Hole ID: 1002478216
DP2BR:
Spatial Status:
Code OB:
Code OB Desc:
Open Hole:
Cluster Kind:
Date Completed: 05/12/2009
Remarks:
Location Method Desc: on Water Well Record
Elevrc Desc:
Location Source Date:
Improvement Location Source:
Improvement Location Method:
Source Revision Comment:
Supplier Comment:

Elevation:
Elevrc:
Zone: 17
East83: 337925.00
North83: 4679901.00
Org CS: UTM83
UTMRC: 4
UTMRC Desc: margin of error : 30 m - 100 m
Location Method: wwr

Overburden and Bedrock Materials Interval

Formation ID: 1002532291
Layer: 3
Color: 6
General Color: BROWN
Material 1: 28
Material 1 Desc: SAND
Material 2: 05
Material 2 Desc: CLAY
Material 3: 77
Material 3 Desc: LOOSE
Formation Top Depth: 0.6000000238418579
Formation End Depth: 2.0
Formation End Depth UOM: m

Overburden and Bedrock Materials Interval

Formation ID: 1002532289
Layer: 1
Color: 8
General Color: BLACK
Material 1: 27
Material 1 Desc: OTHER
Material 2:
Material 2 Desc:
Material 3: 73
Material 3 Desc: HARD
Formation Top Depth: 0.0
Formation End Depth: 0.05999999865889549
Formation End Depth UOM: m

Overburden and Bedrock Materials Interval

Formation ID:	1002532292
Layer:	4
Color:	2
General Color:	GREY
Material 1:	05
Material 1 Desc:	CLAY
Material 2:	28
Material 2 Desc:	SAND
Material 3:	74
Material 3 Desc:	LAYERED
Formation Top Depth:	2.0
Formation End Depth:	7.599999904632568
Formation End Depth UOM:	m

Overburden and Bedrock Materials Interval

Formation ID:	1002532290
Layer:	2
Color:	2
General Color:	GREY
Material 1:	11
Material 1 Desc:	GRAVEL
Material 2:	
Material 2 Desc:	
Material 3:	73
Material 3 Desc:	HARD
Formation Top Depth:	0.05999999865889549
Formation End Depth:	0.6000000238418579
Formation End Depth UOM:	m

Annular Space/Abandonment Sealing Record

Plug ID:	1002532295
Layer:	2
Plug From:	0.30000001192092896
Plug To:	1.2999999523162842
Plug Depth UOM:	m

Annular Space/Abandonment Sealing Record

Plug ID:	1002532294
Layer:	1
Plug From:	0.0
Plug To:	0.30000001192092896
Plug Depth UOM:	m

Method of Construction & Well Use

Method Construction ID:	1002532300
Method Construction Code:	6
Method Construction:	Boring
Other Method Construction:	

Pipe Information

Pipe ID:	1002532288
Casing No:	0

Comment:
Alt Name:

Construction Record - Casing

Casing ID:	1002532297
Layer:	
Material:	
Open Hole or Material:	
Depth From:	
Depth To:	
Casing Diameter:	
Casing Diameter UOM:	cm
Casing Depth UOM:	m

Construction Record - Screen

Screen ID:	1002532298
Layer:	1
Slot:	10
Screen Top Depth:	1.7000000476837158
Screen End Depth:	7.599999904632568
Screen Material:	5
Screen Depth UOM:	m
Screen Diameter UOM:	cm
Screen Diameter:	5.699999809265137

Water Details

Water ID:	1002532296
Layer:	1
Kind Code:	1
Kind:	FRESH
Water Found Depth:	2.0
Water Found Depth UOM:	m

Hole Diameter

Hole ID:	1002532293
Diameter:	12.0
Depth From:	0.0
Depth To:	7.599999904632568
Hole Depth UOM:	m
Hole Diameter UOM:	cm

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24 | **1 of 1** | **SW/271.6** | **191.9 / 2.00** | **lot 15 con 6 ON** | **WWIS**

Well ID:	2102722	**Flowing (Y/N):**	
Construction Date:		**Flow Rate:**	
Use 1st:	Domestic	**Data Entry Status:**	
Use 2nd:	0	**Data Src:**	1
Final Well Status:	Water Supply	**Date Received:**	10/03/1952
Water Type:		**Selected Flag:**	TRUE
Casing Material:		**Abandonment Rec:**	
Audit No:		**Contractor:**	3018
Tag:		**Form Version:**	1
Constructn Method:		**Owner:**	
Elevation (m):		**County:**	ESSEX
Elevatn Reliabilty:		**Lot:**	015
Depth to Bedrock:		**Concession:**	06
Well Depth:		**Concession Name:**	CON

Overburden/Bedrock:		**Easting NAD83:**	
Pump Rate:		**Northing NAD83:**	
Static Water Level:		**Zone:**	
Clear/Cloudy:		**UTM Reliability:**	
Municipality:	WINDSOR CITY (SANDWICH SOUTH)		
Site Info:			

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/210\2102722.pdf

Additional Detail(s) (Map)

Well Completed Date:	08/20/1952
Year Completed:	1952
Depth (m):	46.6344
Latitude:	42.2539673383885
Longitude:	-82.963982557582
X:	-82.96398241714533
Y:	42.25396733981003
Path:	210\2102722.pdf

Bore Hole Information

Bore Hole ID:	10091731	**Elevation:**	
DP2BR:		**Elevrc:**	
Spatial Status:		**Zone:**	17
Code OB:		**East83:**	337992.90
Code OB Desc:		**North83:**	4679842.00
Open Hole:		**Org CS:**	
Cluster Kind:		**UTMRC:**	9
Date Completed:	08/20/1952	**UTMRC Desc:**	unknown UTM
Remarks:		**Location Method:**	p9
Location Method Desc:	Original Pre1985 UTM Rel Code 9: unknown UTM		
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock Materials Interval

Formation ID:	931238947
Layer:	5
Color:	
General Color:	
Material 1:	15
Material 1 Desc:	LIMESTONE
Material 2:	
Material 2 Desc:	
Material 3:	
Material 3 Desc:	
Formation Top Depth:	144.0
Formation End Depth:	153.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931238945
Layer:	3
Color:	

General Color:
Material 1: 05
Material 1 Desc: CLAY
Material 2:
Material 2 Desc:
Material 3:
Material 3 Desc:
Formation Top Depth: 86.0
Formation End Depth: 132.0
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 931238943
Layer: 1
Color:
General Color:
Material 1: 05
Material 1 Desc: CLAY
Material 2:
Material 2 Desc:
Material 3:
Material 3 Desc:
Formation Top Depth: 0.0
Formation End Depth: 80.0
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 931238944
Layer: 2
Color:
General Color:
Material 1: 09
Material 1 Desc: MEDIUM SAND
Material 2:
Material 2 Desc:
Material 3:
Material 3 Desc:
Formation Top Depth: 80.0
Formation End Depth: 86.0
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 931238946
Layer: 4
Color:
General Color:
Material 1: 09
Material 1 Desc: MEDIUM SAND
Material 2:
Material 2 Desc:
Material 3:
Material 3 Desc:
Formation Top Depth: 132.0
Formation End Depth: 144.0
Formation End Depth UOM: ft

Method of Construction & Well Use

Method Construction ID:	962102722
Method Construction Code:	1
Method Construction:	Cable Tool
Other Method Construction:	

Pipe Information

Pipe ID:	10640301
Casing No:	1
Comment:	
Alt Name:	

Construction Record - Casing

Casing ID:	930154821
Layer:	2
Material:	4
Open Hole or Material:	OPEN HOLE
Depth From:	
Depth To:	153.0
Casing Diameter:	2.0
Casing Diameter UOM:	inch
Casing Depth UOM:	ft

Construction Record - Casing

Casing ID:	930154820
Layer:	1
Material:	1
Open Hole or Material:	STEEL
Depth From:	
Depth To:	144.0
Casing Diameter:	2.0
Casing Diameter UOM:	inch
Casing Depth UOM:	ft

Results of Well Yield Testing

Pumping Test Method Desc:	
Pump Test ID:	992102722
Pump Set At:	
Static Level:	30.0
Final Level After Pumping:	
Recommended Pump Depth:	
Pumping Rate:	1.0
Flowing Rate:	
Recommended Pump Rate:	
Levels UOM:	ft
Rate UOM:	GPM
Water State After Test Code:	
Water State After Test:	
Pumping Test Method:	
Pumping Duration HR:	
Pumping Duration MIN:	
Flowing:	No

Water Details

Water ID:	933533320

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Layer: 1
Kind Code: 3
Kind: SULPHUR
Water Found Depth: 152.0
Water Found Depth UOM: ft

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25 | **1 of 1** | **SSW/277.1** | **191.9 / 2.00** | **3051, 4001, 5001-5011 LEGACY PARK DRIVE & 4511 WALKER ROAD WINDSOR ON** | **EHS**

Order No: 20070725006
Status: C
Report Type: CAN - Custom Report
Report Date: 7/26/2007
Date Received: 7/25/2007
Previous Site Name:
Lot/Building Size:
Additional Info Ordered: Fire Insur. Maps And /or Site Plans

Nearest Intersection:
Municipality:
Client Prov/State:
Search Radius (km): 0.25
X: -82.963682
Y: 42.253804

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26 | **1 of 1** | **W/283.0** | **189.9 / 0.00** | **Princess Auto Ltd 4347 Walker Road Windsor ON** | **GEN**

Generator Info

Generator No: ON3254762
Approval Years: As of Oct 2022
Status: Registered
PO Box No:
Country: Canada
Co Admin:
Phone No Admin:
SIC Description:

Choice of Contact:
Contaminated Fac:
MHSW Facility:
SIC Code:

Waste Detail(s)

Waste Class: 312 P
Waste Class Name: PATHOLOGICAL WASTES

Waste Detail(s)

Waste Class: 221 I
Waste Class Name: LIGHT FUELS

Waste Detail(s)

Waste Class: 263 I
Waste Class Name: ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 145 L
Waste Class Name: PAINT/PIGMENT/COATING RESIDUES

Waste Detail(s)

Waste Class: 331 L

Waste Class Name: WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class: 252 L
Waste Class Name: WASTE OILS & LUBRICANTS

Waste Detail(s)

Waste Class: 145 I
Waste Class Name: PAINT/PIGMENT/COATING RESIDUES

Waste Detail(s)

Waste Class: 148 A
Waste Class Name: INORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 269 T
Waste Class Name: NON-HALOGENATED PESTICIDES

Waste Detail(s)

Waste Class: 212 I
Waste Class Name: ALIPHATIC SOLVENTS

Waste Detail(s)

Waste Class: 146 T
Waste Class Name: OTHER SPECIFIED INORGANICS

Waste Detail(s)

Waste Class: 263 L
Waste Class Name: ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 331 I
Waste Class Name: WASTE COMPRESSED GASES

Generator Info as of Dec 2024

Generator No: ON3254762
Generator Company Name: Princess Auto Ltd
Street: 4347 Walker Road
City: Windsor
Province State: Ontario
Country: Canada
Postal Code: N8W3T6
Waste Class: 148 I,263 L,148 L,331 I,113 C,212 I,221 L,146 T,212 L,221 I,148 C,331 L,263 T,312 P,263 I,269 T,145 I,252 L,148 A,145 L,122 C

Waste Class Decoded:

148 - INORGANIC LABORATORY CHEMICALS; 263 - ORGANIC LABORATORY CHEMICALS; 148 - INORGANIC LABORATORY CHEMICALS; 331 - WASTE COMPRESSED GASES; 113 - ACID WASTE - OTHER METALS; 212 - ALIPHATIC SOLVENTS; 221 - LIGHT FUELS; 146 - OTHER

SPECIFIED INORGANICS; 212 - ALIPHATIC SOLVENTS; 221 - LIGHT FUELS; 148 - INORGANIC LABORATORY CHEMICALS; 331 - WASTE COMPRESSED GASES; 263 - ORGANIC LABORATORY CHEMICALS; 312 - PATHOLOGICAL WASTES; 263 - ORGANIC LABORATORY CHEMICALS; 269 - NON-HALOGENATED PESTICIDES; 145 - PAINT/PIGMENT/COATING RESIDUES; 252 - WASTE OILS & LUBRICANTS; 148 - INORGANIC LABORATORY CHEMICALS; 145 - PAINT/PIGMENT/COATING RESIDUES; 122 - ALKALINE WASTES - OTHER METALS

2021 Generator Info

Gen No:	ON3254762	***Choice of Contact:***	CO_ADMIN
ID:	12220	***Phone No Official:***	2046545232 Ext.304
Contaminated Fac:	N	***Phone No Admin:***	8552770388 Ext.
MHSW Facility:	N	***County Ont:***	ESSEX
NAICS Code1:	444210	***County Out:***	
NAICS Code2:		***District:***	102
NAICS Code3:			
Gen Name:	Princess Auto LTD		
Gen Div:			
Gen Op Name:	Princess Auto LTD #28		
Gen Op Div:			
Site Adrs1:	4347 Walker Road		
Site Bldg:			
Site Pobox:			
Province In:	ONTARIO		
Site Adrs2:			
Site City:	Windsor		
Province Out:			
Site Postal Code:	N8W3T6		
Site Country:	Canada		
Co Official:	Chelsey Martin		
Co Admin:	Elaine Jones		

27	***1 of 7***	***NNW/285.2***	***189.2 / -0.68***	***1413496*** ***4275 7th Concession*** ***Windsor ON***	***GEN***

Generator Info

Generator No:	ON6376352	***Choice of Contact:***	
Approval Years:	2011	***Contaminated Fac:***	
Status:		***MHSW Facility:***	
PO Box No:		***SIC Code:***	333519
Country:			
Co Admin:			
Phone No Admin:			
SIC Description:			

27	***2 of 7***	***NNW/285.2***	***189.2 / -0.68***	***1413496*** ***4275 7th Concession*** ***Windsor ON N9A 6J3***	***GEN***

Generator Info

Generator No:	ON6376352	***Choice of Contact:***	CO_OFFICIAL
Approval Years:	2015	***Contaminated Fac:***	No
Status:		***MHSW Facility:***	No
PO Box No:		***SIC Code:***	333519
Country:	Canada		
Co Admin:	Nathan Snively		
Phone No Admin:	5199670440 Ext.		
SIC Description:	OTHER METALWORKING MACHINERY MANUFACTURING		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Waste Detail(s)

Waste Class: 252
Waste Class Name: WASTE OILS & LUBRICANTS

27	3 of 7	NNW/285.2	189.2 / -0.68	1413496 4275 7th Concession Windsor ON N9A 6J3	GEN

Generator Info

Generator No:	ON6376352	***Choice of Contact:***	CO_OFFICIAL
Approval Years:	2016	***Contaminated Fac:***	No
Status:		***MHSW Facility:***	No
PO Box No:		***SIC Code:***	333519
Country:	Canada		
Co Admin:	Nathan Snively		
Phone No Admin:	5199670440 Ext.		
SIC Description:	OTHER METALWORKING MACHINERY MANUFACTURING		

Waste Detail(s)

Waste Class: 252
Waste Class Name: WASTE OILS & LUBRICANTS

27	4 of 7	NNW/285.2	189.2 / -0.68	1413496 4275 7th Concession Windsor ON N9A 6J3	GEN

Generator Info

Generator No:	ON6376352	***Choice of Contact:***	CO_OFFICIAL
Approval Years:	2014	***Contaminated Fac:***	No
Status:		***MHSW Facility:***	No
PO Box No:		***SIC Code:***	333519
Country:	Canada		
Co Admin:	Nathan Snively		
Phone No Admin:	5199670440 Ext.		
SIC Description:	OTHER METALWORKING MACHINERY MANUFACTURING		

Waste Detail(s)

Waste Class: 252
Waste Class Name: WASTE OILS & LUBRICANTS

27	5 of 7	NNW/285.2	189.2 / -0.68	1413496 4275 7th Concession Windsor ON N9A 6J3	GEN

Generator Info

Generator No:	ON6376352	***Choice of Contact:***	
Approval Years:	As of Dec 2018	***Contaminated Fac:***	
Status:	Registered	***MHSW Facility:***	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

PO Box No: **SIC Code:**
Country: Canada
Co Admin:
Phone No Admin:
SIC Description:

Waste Detail(s)

Waste Class: 253 L
Waste Class Name: Emulsified oils

Waste Detail(s)

Waste Class: 253 T
Waste Class Name: Emulsified oils

Waste Detail(s)

Waste Class: 252 L
Waste Class Name: Waste crankcase oils and lubricants

27	6 of 7	NNW/285.2	189.2 / -0.68	1413496 4275 7th Concession Windsor ON N9A 6J3	GEN

Generator Info

Generator No: ON6376352
Approval Years: As of Jul 2020
Status: Registered
PO Box No:
Country: Canada
Co Admin:
Phone No Admin:
SIC Description:
Choice of Contact:
Contaminated Fac:
MHSW Facility:
SIC Code:

Waste Detail(s)

Waste Class: 253 L
Waste Class Name: Emulsified oils

Waste Detail(s)

Waste Class: 252 L
Waste Class Name: Waste crankcase oils and lubricants

Waste Detail(s)

Waste Class: 253 T
Waste Class Name: Emulsified oils

27	7 of 7	NNW/285.2	189.2 / -0.68	1413496 4275 7th Concession Windsor ON N9A 6J3	GEN

Generator Info

Generator No: ON6376352
Approval Years: As of Nov 2021
Status: Registered
PO Box No:
Country: Canada
Co Admin:
Phone No Admin:
SIC Description:

Choice of Contact:
Contaminated Fac:
MHSW Facility:
SIC Code:

Waste Detail(s)

Waste Class: 253 T
Waste Class Name: Emulsified oils

Waste Detail(s)

Waste Class: 253 L
Waste Class Name: Emulsified oils

Waste Detail(s)

Waste Class: 252 L
Waste Class Name: Waste crankcase oils and lubricants

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28 | ***1 of 1*** | ***NNW/287.1*** | ***189.5 / -0.34*** | ***Detail and Design 2000***
4275 7th Concession
Windsor ON | ***GEN***

Generator Info

Generator No: ON6376352
Approval Years: As of Oct 2022
Status: Registered
PO Box No:
Country: Canada
Co Admin:
Phone No Admin:
SIC Description:

Choice of Contact:
Contaminated Fac:
MHSW Facility:
SIC Code:

Waste Detail(s)

Waste Class: 253 T
Waste Class Name: EMULSIFIED OILS

Waste Detail(s)

Waste Class: 252 L
Waste Class Name: WASTE OILS & LUBRICANTS

Waste Detail(s)

Waste Class: 253 L
Waste Class Name: EMULSIFIED OILS

Generator Info as of Dec 2024

Generator No:	ON6376352
Generator Company Name:	Detail and Design 2000
Street:	4275 7th Concession
City:	Windsor
Province State:	Ontario
Country:	Canada
Postal Code:	N8V 0A7
Waste Class:	252 L,253 L,253 T

Waste Class Decoded:

252 - WASTE OILS & LUBRICANTS; 253 - EMULSIFIED OILS; 253 - EMULSIFIED OILS

2017 Generator Info

Gen No:	ON6376352	**Choice of Contact:**	CO_OFFICIAL
ID:	25110	**Phone No Official:**	5199670440 Ext.
Contaminated Fac:	N	**Phone No Admin:**	5199670440 Ext.
MHSW Facility:	N	**County Ont:**	ESSEX
NAICS Code1:	333519	**County Out:**	
NAICS Code2:		**District:**	102
NAICS Code3:			

Gen Name:	1413496
Gen Div:	
Gen Op Name:	Detail and Design 2000
Gen Op Div:	
Site Adrs1:	4275 7th Concession
Site Bldg:	
Site Pobox:	
Province In:	ONTARIO
Site Adrs2:	
Site City:	Windsor
Province Out:	
Site Postal Code:	N9A 6J3
Site Country:	Canada
Co Official:	Todd W Brancaccio
Co Admin:	Nathan Snively

2017 Generator Manifest

ID:	50647	**Sum Received Qty:**	2350.0
Generator No:	ON6376352	**Waste Class Name:**	EMULSIFIED OILS
Receiver Type:	035	**Count Manifests:**	1
Waste Char:	L	**District:**	202
Waste Code:	253		

2018 Generator Info

Gen No:	ON6376352	**Choice of Contact:**	CO_OFFICIAL
ID:	25414	**Phone No Official:**	5199670440 Ext.
Contaminated Fac:	N	**Phone No Admin:**	5199670440 Ext.
MHSW Facility:	N	**County Ont:**	ESSEX
NAICS Code1:	333519	**County Out:**	
NAICS Code2:		**District:**	102
NAICS Code3:			

Gen Name:	1413496
Gen Div:	
Gen Op Name:	Detail and Design 2000
Gen Op Div:	
Site Adrs1:	4275 7th Concession
Site Bldg:	

Site Pobox:
Province In: ONTARIO
Site Adrs2:
Site City: Windsor
Province Out:
Site Postal Code: N9A 6J3
Site Country: Canada
Co Official: Todd W Brancaccio
Co Admin: Nathan Snively

2018 Generator Manifest

ID: 50521
Generator No: ON6376352
Receiver Type: 035
Waste Char: L
Waste Code: 253
Sum Received Qty: 3550.0
Waste Class Name: EMULSIFIED OILS
Count Manifests: 2
District: 202

2018 Generator Manifest

ID: 50522
Generator No: ON6376352
Receiver Type: 035
Waste Char: T
Waste Code: 253
Sum Received Qty: 1331.0
Waste Class Name: EMULSIFIED OILS
Count Manifests: 1
District: 202

2019 Generator Info

Gen No: ON6376352
ID: 25602
Contaminated Fac: N
MHSW Facility: N
NAICS Code1: 333519
NAICS Code2:
NAICS Code3:
Choice of Contact: CO_OFFICIAL
Phone No Official: 5199670440 Ext.
Phone No Admin: 5199670440 Ext.
County Ont: ESSEX
County Out:
District: 102
Gen Name: 1413496
Gen Div:
Gen Op Name: Detail and Design 2000
Gen Op Div:
Site Adrs1: 4275 7th Concession
Site Bldg:
Site Pobox:
Province In: ONTARIO
Site Adrs2:
Site City: Windsor
Province Out:
Site Postal Code: N9A 6J3
Site Country: Canada
Co Official: Todd W Brancaccio
Co Admin: Nathan Snively

2019 Generator Manifest

ID: 50354
Generator No: ON6376352
Receiver Type: 035
Waste Char: L
Waste Code: 253
Sum Received Qty: 2200.0
Waste Class Name: EMULSIFIED OILS
Count Manifests: 1
District: 202

2020 Generator Info

Gen No: ON6376352
Choice of Contact: CO_OFFICIAL

ID:	25324	**Phone No Official:**	5199670440 Ext.
Contaminated Fac:	N	**Phone No Admin:**	5199670440 Ext.
MHSW Facility:	N	**County Ont:**	ESSEX
NAICS Code1:	333519	**County Out:**	
NAICS Code2:		**District:**	102
NAICS Code3:			
Gen Name:	1413496		
Gen Div:			
Gen Op Name:	Detail and Design 2000		
Gen Op Div:			
Site Adrs1:	4275 7th Concession		
Site Bldg:			
Site Pobox:			
Province In:	ONTARIO		
Site Adrs2:			
Site City:	Windsor		
Province Out:			
Site Postal Code:	N9A 6J3		
Site Country:	Canada		
Co Official:	Todd W Brancaccio		
Co Admin:	Nathan Snively		

2020 Generator Manifest

ID:	46840	**Sum Received Qty:**	2000.0
Generator No:	ON6376352	**Waste Class Name:**	EMULSIFIED OILS
Receiver Type:	035	**Count Manifests:**	1
Waste Char:	L	**District:**	202
Waste Code:	253		

2021 Generator Info

Gen No:	ON6376352	**Choice of Contact:**	CO_OFFICIAL
ID:	25766	**Phone No Official:**	5199670440 Ext.
Contaminated Fac:	N	**Phone No Admin:**	5199670440 Ext.
MHSW Facility:	N	**County Ont:**	ESSEX
NAICS Code1:	333519	**County Out:**	
NAICS Code2:		**District:**	102
NAICS Code3:			
Gen Name:	1413496		
Gen Div:			
Gen Op Name:	Detail and Design 2000		
Gen Op Div:			
Site Adrs1:	4275 7th Concession		
Site Bldg:			
Site Pobox:			
Province In:	ONTARIO		
Site Adrs2:			
Site City:	Windsor		
Province Out:			
Site Postal Code:	N9A 6J3		
Site Country:	Canada		
Co Official:	Todd W Brancaccio		
Co Admin:	Nathan Snively		

2021 Generator Manifest

ID:	48717	**Sum Received Qty:**	2000.0
Generator No:	ON6376352	**Waste Class Name:**	EMULSIFIED OILS
Receiver Type:	030	**Count Manifests:**	1
Waste Char:	L	**District:**	102
Waste Code:	253		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

2021 Generator Manifest

ID:	48718	***Sum Received Qty:***	1927.0
Generator No:	ON6376352	***Waste Class Name:***	EMULSIFIED OILS
Receiver Type:	035	***Count Manifests:***	1
Waste Char:	L	***District:***	202
Waste Code:	253		

29	***1 of 2***	***SSW/292.3***	***191.9 / 2.00***	***734028 ONTARIO LTD. COMMERCIAL DEVELOPME WALKER RD./SEVENTH CONC. PRIVA WINDSOR CITY ON***	***CA***

Certificate #:	3-0639-89-
Application Year:	89
Issue Date:	3/13/1990
Approval Type:	Municipal sewage
Status:	Approved in 1990
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	
Contaminants:	
Emission Control:	

29	***2 of 2***	***SSW/292.3***	***191.9 / 2.00***	***WINDSOR CHRISTIAN FELLOWSHIP 7TH CONCESSION WALKER RD. WINDSOR CITY ON***	***CA***

Certificate #:	7-1369-88-
Application Year:	88
Issue Date:	10/3/1988
Approval Type:	Municipal water
Status:	Approved
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	
Contaminants:	
Emission Control:	

30	***1 of 40***	***WSW/299.5***	***190.9 / 1.00***	***COSTCO WHOLESALE CANADA LTD 4411 WALKER ROAD WINDSOR ON N8W 3T6***	***PES***

Detail Licence No:	23-01-11029-0	***Operator Box:***	
Licence No:	11029	***Operator Class:***	
Status:		***Operator No:***	
Approval Date:		***Operator Type:***	
Report Source:		***Oper Area Code:***	
Licence Type:	Limited Vendor	***Oper Phone No:***	
Licence Type Code:	23	***Operator Ext:***	
Licence Class:	01	***Operator Lot:***	
Licence Control:	0	***Oper Concession:***	
Latitude:		***Operator Region:***	1
Longitude:		***Operator District:***	
Lot:		***Operator County:***	21

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Concession: **Op Municipality:**
Region: **Post Office Box:**
District: **MOE District:**
County: **SWP Area Name:**
Trade Name:
PDF URL:

---

30 **2 of 40** **WSW/299.5** **190.9 / 1.00**

CLUB PRICE STE-FOY INC.
4411 WALKER ROAD
WINDSOR ON N9A 6J3

GEN

Generator Info

Generator No: ON1315413
Approval Years: 97,98
Status:
PO Box No:
Country:
Co Admin:
Phone No Admin:
SIC Description: CAMERA/PHOTO. SUPPLY

Choice of Contact:
Contaminated Fac:
MHSW Facility:
SIC Code: 6571

Waste Detail(s)

Waste Class: 264
Waste Class Name: PHOTOPROCESSING WASTES

---

30 **3 of 40** **WSW/299.5** **190.9 / 1.00**

PRICE CLUB
4411 WALKER ROAD
WINDSOR ON N9A 6J3

GEN

Generator Info

Generator No: ON1315413
Approval Years: 99,00,01
Status:
PO Box No:
Country:
Co Admin:
Phone No Admin:
SIC Description: CAMERA/PHOTO. SUPPLY

Choice of Contact:
Contaminated Fac:
MHSW Facility:
SIC Code: 6571

Waste Detail(s)

Waste Class: 264
Waste Class Name: PHOTOPROCESSING WASTES

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30 **4 of 40** **WSW/299.5** **190.9 / 1.00**

Costco Wholesale Corporation
4411 Walker Road, Windsor, Ontario CITY OF WINDSOR
ON

EBR

EBR Registry No: 010-9013
Ministry Ref No: SR 298080
Notice Type: Instrument Decision
Notice Stage:
Notice Date: March 03, 2010

Decision Posted:
Exception Posted:
Section:
Act 1:
Act 2:

Proposal Date: January 27, 2010 ***Site Location Map:***
Year: 2010
Instrument Type: (Liquid Fuels Handling Code) - Liquid Fuels Handling Code Section
Off Instrument Name:
Posted By:
Company Name: Costco Wholesale Corporation
Site Address:
Location Other:
Proponent Name:
Proponent Address: 999 Lake Drive, Issaquah WA, USA 98027
Comment Period:
URL:
Summary:

Site Location Details:

4411 Walker Road, Windsor, Ontario CITY OF WINDSOR

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30 ***5 of 40*** ***WSW/299.5*** ***190.9 / 1.00*** ***Costco Wholesale Canada Ltd.***
4411 Walker Rd S
Windsor ON ***CA***

Certificate #: 2038-7WBP6S
Application Year: 2009
Issue Date: 9/29/2009
Approval Type: Industrial Sewage Works
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

---

30 ***6 of 40*** ***WSW/299.5*** ***190.9 / 1.00*** ***4411 Walker Rd.***
Windsor ON N8W 3T6 ***SPL***

Ref No: 0216-8HTVDK ***Municipality No:***
Year: ***Nature of Damage:***
Incident Dt: 6/14/2011 ***Discharger Report:***
Dt MOE Arvl on Scn: ***Material Group:***
MOE Reported Dt: 6/14/2011 ***Impact to Health:***
Dt Document Closed: 6/20/2011 ***Agency Involved:***
Site No:
MOE Response: No Field Response
Site County/District:
Site Geo Ref Meth:
Site District Office:
Nearest Watercourse:
Site Name: Costco Wholesale: Gas Station<UNOFFICIAL>
Site Address: 4411 Walker Rd.
Site Region:
Site Municipality: Windsor
Site Lot:
Site Conc:
Site Geo Ref Accu:
Site Map Datum:
Northing:
Easting:

Entity Operating Name:	
Client Name:	
Client Type:	
Source Type:	
Incident Cause:	
Incident Preceding Spill:	
Incident Reason:	Equipment/Vehicles
Incident Summary:	Costco Wholesale: 50 L gasoline fuel to asphalt, cntd
Environment Impact:	Not Anticipated
Health Env Consequence:	
Nature of Impact:	Other Impact(s)
Contaminant Qty:	50 L
Contaminant Qty 1:	50
Contaminant Unit:	L
Contaminant Code:	12
Contaminant Name:	GASOLINE
Contaminant Limit 1:	
Contam Limit Freq 1:	
Contaminant UN No 1:	
Receiving Medium:	
Activity Preceding Spill:	
Property 2nd Watershed:	
Property Tertiary Watershed:	
Sector Type:	Motor Vehicle
SAC Action Class:	Land Spills
Call Report Locatn Geodata:	
Time Reported:	
System Facility Address:	

30 | ***7 of 40*** | ***WSW/299.5*** | ***190.9 / 1.00*** | ***4411 Walker Rd Windsor ON N8W 3T6*** | ***SPL***

Ref No:	5051-8L52M5	***Municipality No:***	
Year:		***Nature of Damage:***	
Incident Dt:	8/26/2011	***Discharger Report:***	
Dt MOE Arvl on Scn:		***Material Group:***	
MOE Reported Dt:	8/26/2011	***Impact to Health:***	
Dt Document Closed:	8/29/2011	***Agency Involved:***	
Site No:			
MOE Response:	No Field Response		
Site County/District:			
Site Geo Ref Meth:			
Site District Office:			
Nearest Watercourse:			
Site Name:	Costco<UNOFFICIAL>		
Site Address:	4411 Walker Rd		
Site Region:			
Site Municipality:	Windsor		
Site Lot:			
Site Conc:			
Site Geo Ref Accu:			
Site Map Datum:			
Northing:			
Easting:			
Entity Operating Name:			
Client Name:			
Client Type:			
Source Type:			
Incident Cause:	Other Discharges		
Incident Preceding Spill:			
Incident Reason:			
Incident Summary:	Costco Store 534: spill 25 L gasoline, cleaned		
Environment Impact:	Not Anticipated		
Health Env Consequence:			

Nature of Impact:	Soil Contamination
Contaminant Qty:	25 L
Contaminant Qty 1:	25
Contaminant Unit:	L
Contaminant Code:	12
Contaminant Name:	GASOLINE
Contaminant Limit 1:	
Contam Limit Freq 1:	
Contaminant UN No 1:	
Receiving Medium:	
Activity Preceding Spill:	
Property 2nd Watershed:	
Property Tertiary Watershed:	
Sector Type:	Motor Vehicle
SAC Action Class:	Land Spills
Call Report Locatn Geodata:	
Time Reported:	
System Facility Address:	

30 ***8 of 40*** ***WSW/299.5*** ***190.9 / 1.00*** ***COSTCO WHOLESALE INC***
4411 WALKER RD
WINDSOR ON N8W 3T6 ***DTNK***

Delisted Expired Fuel Safety Facilities

Instance No:	64483370	***Expired Date:***	4/7/2011 13:20
Status:	EXPIRED	***Max Hazard Rank:***	
Instance ID:		***Facility Location:***	
Instance Type:	FS Facility	***Facility Type:***	
Instance Creation Dt:		***Fuel Type 2:***	
Instance Install Dt:		***Fuel Type 3:***	
Item Description:		***Panam Related:***	
Manufacturer:		***Panam Venue Nm:***	
Model:		***External Identifier:***	
Serial No:		***Item:***	
ULC Standard:		***Piping Steel:***	
Quantity:		***Piping Galvanized:***	
Unit of Measure:		***Tank Single Wall St:***	
Overfill Prot Type:		***Piping Underground:***	
Creation Date:		***Tank Underground:***	
Next Periodic Str DT:		***Source:***	
TSSA Base Sched Cycle 2:			
TSSAMax Hazard Rank 1:			
TSSA Risk Based Periodic Yn:			
TSSA Volume of Directives:			
TSSA Periodic Exempt:			
TSSA Statutory Interval:			
TSSA Recd Insp Interva:			
TSSA Recd Tolerance:			
TSSA Program Area:			
TSSA Program Area 2:			
Description:			
Original Source:	EXP		
Record Date:	Up to May 2013		

30 ***9 of 40*** ***WSW/299.5*** ***190.9 / 1.00*** ***COSTCO WHOLESALE CANADA LTD***
4411 WALKER RD
WINDSOR ON N8W 3T6 ***EASR***

Approval No:	R-003-3109019901	***MOE District:***	Windsor

Status:	REGISTERED	**Municipality:**	WINDSOR
Date:	2012-05-04	**Latitude:**	42.254818
Record Type:	EASR	**Longitude:**	-82.96588
Link Source:	MOFA	**Geometry X:**	
Project Type:	Heating System	**Geometry Y:**	
Full Address:			
Approval Type:	EASR-Heating System		
SWP Area Name:	Essex		
PDF NAICS Code:			
PDF URL:			
PDF Site Location:			

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30 **10 of 40** **WSW/299.5** **190.9 / 1.00** **COSTCO WHOLESALE CANADA LTD** **PES**
4411 WALKER RD
WINDSOR ON N8W 3T6

Detail Licence No:		**Operator Box:**	
Licence No:		**Operator Class:**	
Status:		**Operator No:**	
Approval Date:		**Operator Type:**	
Report Source:		**Oper Area Code:**	
Licence Type:	Vendor	**Oper Phone No:**	
Licence Type Code:		**Operator Ext:**	
Licence Class:		**Operator Lot:**	
Licence Control:		**Oper Concession:**	
Latitude:		**Operator Region:**	
Longitude:		**Operator District:**	
Lot:		**Operator County:**	
Concession:		**Op Municipality:**	
Region:		**Post Office Box:**	
District:		**MOE District:**	
County:		**SWP Area Name:**	
Trade Name:			
PDF URL:			

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30 **11 of 40** **WSW/299.5** **190.9 / 1.00** **Costco Wholesale** **GEN**
4411 Walker Road
Windsor ON N8W 3T6

Generator Info

Generator No:	ON4945361	**Choice of Contact:**	
Approval Years:	2011	**Contaminated Fac:**	
Status:		**MHSW Facility:**	
PO Box No:		**SIC Code:**	418990
Country:			
Co Admin:			
Phone No Admin:			
SIC Description:			

---

30 **12 of 40** **WSW/299.5** **190.9 / 1.00** **COSTCO WHOLESALE CANADA LTD.** **FST**
4411 WALKER RD
WINDSOR ON

Inventory No:	64483372	**Tank Material:**	Fiberglass (FRP)
Inventory Status:	active	**Corrosion Protect:**	Fiberglass
Installation Year:	2009	**Overfill Protection:**	Alarm
Capacity:	75000	**Inventory Context:**	FS Liquid Fuel
Capacity Unit:	L	**Inventory Item:**	FS Liquid Fuel Tank
Tank Type:	Double Wall UST		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Manufacturer:
Model:
Description: ELLD installed

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30 | ***13 of 40*** | ***WSW/299.5*** | ***190.9 / 1.00*** | ***COSTCO WHOLESALE CANADA LTD.*** ***4411 WALKER RD*** ***WINDSOR ON*** | ***FST***

Inventory No:	64483373	***Tank Material:***	Fiberglass (FRP)
Inventory Status:	active	***Corrosion Protect:***	Fiberglass
Installation Year:	2009	***Overfill Protection:***	Alarm
Capacity:	75000	***Inventory Context:***	FS Liquid Fuel
Capacity Unit:	L	***Inventory Item:***	FS Liquid Fuel Tank
Tank Type:	Double Wall UST		
Manufacturer:			
Model:			
Description:	ELLD installed		

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30 | ***14 of 40*** | ***WSW/299.5*** | ***190.9 / 1.00*** | ***COSTCO WHOLESALE CANADA LTD.*** ***4411 WALKER RD*** ***WINDSOR ON*** | ***FST***

Inventory No:	64483371	***Tank Material:***	Fiberglass (FRP)
Inventory Status:	active	***Corrosion Protect:***	Fiberglass
Installation Year:	2009	***Overfill Protection:***	Alarm
Capacity:	75000	***Inventory Context:***	FS Liquid Fuel
Capacity Unit:	L	***Inventory Item:***	FS Liquid Fuel Tank
Tank Type:	Double Wall UST		
Manufacturer:			
Model:			
Description:	ELLD installed		

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30 | ***15 of 40*** | ***WSW/299.5*** | ***190.9 / 1.00*** | ***Costco Wholesale*** ***4411 Walker Road*** ***Windsor ON N8W 3T6*** | ***GEN***

Generator Info

Generator No:	ON4945361	***Choice of Contact:***	
Approval Years:	2012	***Contaminated Fac:***	
Status:		***MHSW Facility:***	
PO Box No:		***SIC Code:***	418990
Country:			
Co Admin:			
Phone No Admin:			
SIC Description:	All Other Wholesaler-Distributors		

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30 | ***16 of 40*** | ***WSW/299.5*** | ***190.9 / 1.00*** | ***Dual Electric and Refrigeration Service<UNOFFICIAL>*** ***4411 Walkder Rd*** ***Windsor ON*** | ***SPL***

Ref No:	5375-9BNJG5	***Municipality No:***	
Year:		***Nature of Damage:***	
Incident Dt:	2013/09/17	***Discharger Report:***	
Dt MOE Arvl on Scn:		***Material Group:***	
MOE Reported Dt:	2013/09/18	***Impact to Health:***	
Dt Document Closed:		***Agency Involved:***	

Site No:	
MOE Response:	
Site County/District:	
Site Geo Ref Meth:	
Site District Office:	
Nearest Watercourse:	
Site Name:	Costco, Store # 534<UNOFFICIAL>
Site Address:	4411 Walkder Rd
Site Region:	
Site Municipality:	Windsor
Site Lot:	
Site Conc:	
Site Geo Ref Accu:	
Site Map Datum:	
Northing:	
Easting:	
Entity Operating Name:	
Client Name:	Dual Electric and Refrigeration Service<UNOFFICIAL>
Client Type:	
Source Type:	
Incident Cause:	Leak/Break
Incident Preceding Spill:	
Incident Reason:	Equipment Failure
Incident Summary:	Cosco: ref leak R22, 522 kg
Environment Impact:	Confirmed
Health Env Consequence:	
Nature of Impact:	Air Pollution
Contaminant Qty:	
Contaminant Qty 1:	
Contaminant Unit:	
Contaminant Code:	38
Contaminant Name:	REFRIGERANT GAS, N.O.S.
Contaminant Limit 1:	
Contam Limit Freq 1:	
Contaminant UN No 1:	
Receiving Medium:	
Activity Preceding Spill:	
Property 2nd Watershed:	
Property Tertiary Watershed:	
Sector Type:	Other
SAC Action Class:	Air Spills - Gases and Vapours
Call Report Locatn Geodata:	
Time Reported:	
System Facility Address:	

30	17 of 40	WSW/299.5	190.9 / 1.00	**Costco Wholesale** **4411 Walker Road** **Windsor ON**	GEN

Generator Info

Generator No:	ON4945361	**Choice of Contact:**	
Approval Years:	2013	**Contaminated Fac:**	
Status:		**MHSW Facility:**	
PO Box No:		**SIC Code:**	418990
Country:			
Co Admin:			
Phone No Admin:			
SIC Description:	ALL OTHER WHOLESALER-DISTRIBUTORS		

Waste Detail(s)

Waste Class: 251
Waste Class Name: OIL SKIMMINGS & SLUDGES

Waste Detail(s)

Waste Class: 150
Waste Class Name: INERT INORGANIC WASTES

Waste Detail(s)

Waste Class: 252
Waste Class Name: WASTE OILS & LUBRICANTS

Waste Detail(s)

Waste Class: 264
Waste Class Name: PHOTOPROCESSING WASTES

Waste Detail(s)

Waste Class: 221
Waste Class Name: LIGHT FUELS

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30 | **18 of 40** | **WSW/299.5** | **190.9 / 1.00** | **4411 WALKER ROAD, WINDSOR ON** | **INC**

Incident No:	352178	**Any Health Impact:**	No
Incident ID:		**Any Enviro Impact:**	No
Instance No:		**Service Intrp:**	No
Status Code:		**Was Prop Damaged:**	No
Incident Status:		**Reside App. Type:**	
Incident Severity:		**Commer App. Type:**	
Task No:	2813682	**Indus App. Type:**	
Attribute Category:	FS-Perform L1 Incident Insp	**Institut App. Type:**	
Context:		**Depth Ground Cover:**	
Date of Occurrence:	2010/03/18 00:00:00	**Operation Pressure:**	
Time of Occurrence:	NULL	**Equipment Type:**	
Occr Insp Start Dt:	2010/03/26 00:00:00	**Equipment Model:**	
Incident Creat On:		**Serial No:**	
Instance Creat Dt:		**Cylinder Capacity:**	
Instance Install Dt:		**Cylinder Cap Units:**	
Approx Quant Rel:		**Cylinder Mat Type:**	
Tank Capacity:		**Pump Flow Rate Cap:**	
Fuels Occur Type:	Vapour Release	**Contam. Migrated:**	
Occur Type Rpt:		**Near Body of Water:**	
Occur Category:		**Drainage System:**	
Fuel Type Involved:	Propane	**Sub Surface Contam:**	
Fuel Type Reported:		**Tank Material Type:**	
Enforcement Policy:	NULL	**Tank Storage Type:**	
Prc Escalation Req:	NULL	**Tank Location Type:**	
Item:			
Item Description:			
Device Installed Location:			
Venting Type:			
Vent Conn Mater:			
Vent Chimney Mater:			
Pipeline Type:			
Pipeline Involved:			
Pipe Material:			
Regulator Location:			
Regulator Type:			

Liquid Prop Make:	
Liquid Prop Model:	
Liquid Prop Serial No:	
Liquid Prop Notes:	
Inventory Address:	4411 WALKER ROAD, WINDSOR - NEAR MISS
Invent Postal Code:	
Notes:	
Contact Natural Env:	
Aff Prop Use Water:	
Occurence Narrative:	Inspection of overfilled 20lb cylinder
Operation Type Involved:	Private Dwelling

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30 | ***19 of 40*** | ***WSW/299.5*** | ***190.9 / 1.00*** | ***4411 Walker Rd S Windsor ON*** | ***SPL***

Ref No:	3076-9HTPN7	***Municipality No:***	
Year:		***Nature of Damage:***	
Incident Dt:	2014/04/03	***Discharger Report:***	
Dt MOE Arvl on Scn:		***Material Group:***	
MOE Reported Dt:	2014/04/03	***Impact to Health:***	
Dt Document Closed:	2014/05/23	***Agency Involved:***	

Site No:	3241-7TPQB6
MOE Response:	No Field Response
Site County/District:	
Site Geo Ref Meth:	NA
Site District Office:	
Nearest Watercourse:	
Site Name:	4411 Walker Road South
Site Address:	4411 Walker Rd S
Site Region:	
Site Municipality:	Windsor
Site Lot:	
Site Conc:	
Site Geo Ref Accu:	NA
Site Map Datum:	NA
Northing:	NA
Easting:	NA
Entity Operating Name:	
Client Name:	
Client Type:	
Source Type:	
Incident Cause:	Leak/Break
Incident Preceding Spill:	
Incident Reason:	Equipment Failure
Incident Summary:	Costco: 116 kg R22 to atm
Environment Impact:	Confirmed
Health Env Consequence:	
Nature of Impact:	Air Pollution
Contaminant Qty:	116 kg
Contaminant Qty 1:	116
Contaminant Unit:	kg
Contaminant Code:	38
Contaminant Name:	FREON R-22 (CFC)
Contaminant Limit 1:	
Contam Limit Freq 1:	
Contaminant UN No 1:	
Receiving Medium:	
Activity Preceding Spill:	
Property 2nd Watershed:	
Property Tertiary Watershed:	
Sector Type:	Structure
SAC Action Class:	Air Spills - Gases and Vapours
Call Report Locatn Geodata:	
Time Reported:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

System Facility Address:

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30 | ***20 of 40*** | ***WSW/299.5*** | ***190.9 / 1.00*** | ***4411 Walker Rd Windsor ON*** | ***SPL***

Ref No:	1700-A2FHH7	***Municipality No:***	
Year:		***Nature of Damage:***	
Incident Dt:	9/16/2015	***Discharger Report:***	
Dt MOE Arvl on Scn:		***Material Group:***	
MOE Reported Dt:	9/17/2015	***Impact to Health:***	
Dt Document Closed:	10/8/2015	***Agency Involved:***	
Site No:	NA		
MOE Response:	No		
Site County/District:			
Site Geo Ref Meth:			
Site District Office:			
Nearest Watercourse:			
Site Name:	Costco <UNOFFICIAL>		
Site Address:	4411 Walker Rd		
Site Region:			
Site Municipality:	Windsor		
Site Lot:			
Site Conc:			
Site Geo Ref Accu:			
Site Map Datum:			
Northing:			
Easting:			
Entity Operating Name:			
Client Name:			
Client Type:			
Source Type:			
Incident Cause:			
Incident Preceding Spill:			
Incident Reason:	Equipment Failure		
Incident Summary:	Costco - 113.4kg R22 to the atm		
Environment Impact:			
Health Env Consequence:			
Nature of Impact:			
Contaminant Qty:	113.4 kg		
Contaminant Qty 1:	113.4		
Contaminant Unit:	kg		
Contaminant Code:	38		
Contaminant Name:	FREON R-22 (CFC)		
Contaminant Limit 1:			
Contam Limit Freq 1:			
Contaminant UN No 1:			
Receiving Medium:			
Activity Preceding Spill:			
Property 2nd Watershed:			
Property Tertiary Watershed:			
Sector Type:	Miscellaneous Industrial		
SAC Action Class:	Air Spills - Gases and Vapours		
Call Report Locatn Geodata:			
Time Reported:			
System Facility Address:			

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30 | ***21 of 40*** | ***WSW/299.5*** | ***190.9 / 1.00*** | ***4411 Walker Road Windsor ON*** | ***SPL***

Ref No:	0527-AJYRC4	***Municipality No:***	
Year:		***Nature of Damage:***	
Incident Dt:	2/27/2017	***Discharger Report:***	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Dt MOE Arvl on Scn:		**Material Group:**	
MOE Reported Dt:	2/27/2017	**Impact to Health:**	
Dt Document Closed:		**Agency Involved:**	
Site No:	NA		
MOE Response:	No		
Site County/District:			
Site Geo Ref Meth:			
Site District Office:			
Nearest Watercourse:			
Site Name:	Costco Wholesale<UNOFFICIAL>		
Site Address:	4411 Walker Road		
Site Region:			
Site Municipality:	Windsor		
Site Lot:			
Site Conc:			
Site Geo Ref Accu:			
Site Map Datum:			
Northing:			
Easting:			
Entity Operating Name:			
Client Name:			
Client Type:			
Source Type:			
Incident Cause:			
Incident Preceding Spill:	Leak/Break		
Incident Reason:	Operator/Human Error		
Incident Summary:	Dual Electric - 260 Kg of refrigerant # 22 to air - Windsor		
Environment Impact:			
Health Env Consequence:			
Nature of Impact:			
Contaminant Qty:	260 kg		
Contaminant Qty 1:	260		
Contaminant Unit:	kg		
Contaminant Code:	38		
Contaminant Name:	REFRIGERANT GAS, N.O.S.		
Contaminant Limit 1:			
Contam Limit Freq 1:			
Contaminant UN No 1:			
Receiving Medium:	Air		
Activity Preceding Spill:			
Property 2nd Watershed:			
Property Tertiary Watershed:			
Sector Type:	Miscellaneous Industrial		
SAC Action Class:	Air Spills - Gases and Vapours		
Call Report Locatn Geodata:			
Time Reported:			
System Facility Address:			

30	22 of 40	WSW/299.5	190.9 / 1.00	**Costco Wholesale Canada Ltd.** **4411 Walker Rd S** **Windsor ON K2E 1C5**	ECA

Approval No:	2038-7WBP6S	**MOE District:**	Windsor
Approval Date:	2009-09-29	**City:**	
Status:	Approved	**Longitude:**	-82.96588
Record Type:	ECA	**Latitude:**	42.254818
Link Source:	IDS	**Geometry X:**	
SWP Area Name:	Essex	**Geometry Y:**	
Approval Type:	ECA-INDUSTRIAL SEWAGE WORKS		
Project Type:	INDUSTRIAL SEWAGE WORKS		
Business Name:	Costco Wholesale Canada Ltd.		
Address:	4411 Walker Rd S		
Full Address:			
Full PDF Link:	https://www.accessenvironment.ene.gov.on.ca/instruments/7503-7TPQAJ-14.pdf		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
PDF Site Location:					
30	23 of 40	WSW/299.5	190.9 / 1.00	Costco Wholesale 4411 Walker Road Windsor ON N8W 3T6	GEN

Generator Info

Generator No:	ON4945361	**Choice of Contact:**	CO_OFFICIAL
Approval Years:	2016	**Contaminated Fac:**	No
Status:		**MHSW Facility:**	No
PO Box No:		**SIC Code:**	418990
Country:	Canada		
Co Admin:	Jace Ratcliffe		
Phone No Admin:	6132212276 Ext.		
SIC Description:	ALL OTHER WHOLESALER-DISTRIBUTORS		

Waste Detail(s)

Waste Class: 251
Waste Class Name: OIL SKIMMINGS & SLUDGES

Waste Detail(s)

Waste Class: 252
Waste Class Name: WASTE OILS & LUBRICANTS

Waste Detail(s)

Waste Class: 264
Waste Class Name: PHOTOPROCESSING WASTES

Waste Detail(s)

Waste Class: 221
Waste Class Name: LIGHT FUELS

Waste Detail(s)

Waste Class: 150
Waste Class Name: INERT INORGANIC WASTES

30	24 of 40	WSW/299.5	190.9 / 1.00	Costco Wholesale 4411 Walker Road Windsor ON N8W 3T6	GEN

Generator Info

Generator No:	ON4945361	**Choice of Contact:**	CO_OFFICIAL
Approval Years:	2015	**Contaminated Fac:**	No
Status:		**MHSW Facility:**	No
PO Box No:		**SIC Code:**	418990
Country:	Canada		
Co Admin:	Jace Ratcliffe		
Phone No Admin:	6132212276 Ext.		

SIC Description: ALL OTHER WHOLESALER-DISTRIBUTORS

Waste Detail(s)

Waste Class: 251
Waste Class Name: OIL SKIMMINGS & SLUDGES

Waste Detail(s)

Waste Class: 252
Waste Class Name: WASTE OILS & LUBRICANTS

Waste Detail(s)

Waste Class: 264
Waste Class Name: PHOTOPROCESSING WASTES

Waste Detail(s)

Waste Class: 221
Waste Class Name: LIGHT FUELS

Waste Detail(s)

Waste Class: 150
Waste Class Name: INERT INORGANIC WASTES

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30 | ***25 of 40*** | ***WSW/299.5*** | ***190.9 / 1.00*** | ***Costco Wholesale***
4411 Walker Road
Windsor ON N8W 3T6 | ***GEN***

Generator Info

Generator No:	ON4945361	***Choice of Contact:***	CO_OFFICIAL
Approval Years:	2014	***Contaminated Fac:***	No
Status:		***MHSW Facility:***	No
PO Box No:		***SIC Code:***	418990
Country:	Canada		
Co Admin:	Pascal Ponton		
Phone No Admin:	613-221-2480 Ext.		
SIC Description:	ALL OTHER WHOLESALER-DISTRIBUTORS		

Waste Detail(s)

Waste Class: 221
Waste Class Name: LIGHT FUELS

Waste Detail(s)

Waste Class: 252
Waste Class Name: WASTE OILS & LUBRICANTS

Waste Detail(s)

Waste Class: 264
Waste Class Name: PHOTOPROCESSING WASTES

Waste Detail(s)

Waste Class: 150
Waste Class Name: INERT INORGANIC WASTES

Waste Detail(s)

Waste Class: 251
Waste Class Name: OIL SKIMMINGS & SLUDGES

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30 | ***26 of 40*** | ***WSW/299.5*** | ***190.9 / 1.00*** | ***COSTCO WHOLESALE #534 Windsor***
4411 Walker Road
Windsor ON N8W 3T6 | ***GEN***

Generator Info

Generator No: ON4945361
Approval Years: As of Dec 2018
Status: Registered
PO Box No:
Country: Canada
Co Admin:
Phone No Admin:
SIC Description:

Choice of Contact:
Contaminated Fac:
MHSW Facility:
SIC Code:

Waste Detail(s)

Waste Class: 312 P
Waste Class Name: Pathological wastes

Waste Detail(s)

Waste Class: 264 L
Waste Class Name: Photoprocessing wastes

Waste Detail(s)

Waste Class: 264 T
Waste Class Name: Photoprocessing wastes

Waste Detail(s)

Waste Class: 269 T
Waste Class Name: Organic non-halogenated pesticide and herbicide wastes

Waste Detail(s)

Waste Class: 331 I
Waste Class Name: Waste compressed gases including cylinders

Waste Detail(s)

Waste Class: 331 L
Waste Class Name: Waste compressed gases including cylinders

Waste Detail(s)

Waste Class: 150 L
Waste Class Name: Inert organic wastes

Waste Detail(s)

Waste Class: 221 I
Waste Class Name: Light fuels

Waste Detail(s)

Waste Class: 146 T
Waste Class Name: Other specified inorganic sludges, slurries or solids

Waste Detail(s)

Waste Class: 148 A
Waste Class Name: Misc. wastes and inorganic chemicals

Waste Detail(s)

Waste Class: 212 I
Waste Class Name: Aliphatic solvents and residues

Waste Detail(s)

Waste Class: 261 L
Waste Class Name: Pharmaceuticals

Waste Detail(s)

Waste Class: 251 L
Waste Class Name: Waste oils/sludges (petroleum based)

Waste Detail(s)

Waste Class: 252 L
Waste Class Name: Waste crankcase oils and lubricants

Waste Detail(s)

Waste Class: 261 A
Waste Class Name: Pharmaceuticals

Waste Detail(s)

Waste Class: 263 A
Waste Class Name: Misc. waste organic chemicals

Waste Detail(s)

Waste Class: 263 L
Waste Class Name: Misc. waste organic chemicals

30	*27 of 40*	*WSW/299.5*	*190.9 / 1.00*	*COSTCO WHOLESALE CANADA LTD*	*PES*

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
				4411 WALKER RD WINDSOR ON N8W3T6	

Detail Licence No:		Operator Box:	
Licence No:	11029	Operator Class:	
Status:		Operator No:	
Approval Date:		Operator Type:	
Report Source:	Legacy Licenses (Excluding TS)	Oper Area Code:	519
Licence Type:	Limited Vendor	Oper Phone No:	9721899
Licence Type Code:	23	Operator Ext:	
Licence Class:	01	Operator Lot:	
Licence Control:		Oper Concession:	
Latitude:		Operator Region:	
Longitude:		Operator District:	
Lot:		Operator County:	
Concession:		Op Municipality:	
Region:		Post Office Box:	
District:		MOE District:	
County:		SWP Area Name:	
Trade Name:			
PDF URL:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
30	28 of 40	WSW/299.5	190.9 / 1.00	Costco Canada Wholesale Ltd. 4411 Walker road Windsor ON	SPL

Ref No:	4478-AZHP4B	Municipality No:	
Year:		Nature of Damage:	
Incident Dt:	2018/06/06	Discharger Report:	
Dt MOE Arvl on Scn:		Material Group:	
MOE Reported Dt:	2018/06/07	Impact to Health:	2 - Minor Environment
Dt Document Closed:	2018/06/21	Agency Involved:	
Site No:	NA		
MOE Response:	No		
Site County/District:	County of Essex		
Site Geo Ref Meth:			
Site District Office:	Windsor		
Nearest Watercourse:			
Site Name:	Costco<UNOFFICIAL>		
Site Address:	4411 Walker road		
Site Region:	Southwestern		
Site Municipality:	Windsor		
Site Lot:			
Site Conc:			
Site Geo Ref Accu:			
Site Map Datum:			
Northing:	4680038.34		
Easting:	337924.54		
Entity Operating Name:			
Client Name:	Costco Canada Wholesale Ltd.		
Client Type:	Corporation		
Source Type:	Other		
Incident Cause:			
Incident Preceding Spill:	Leak/Break		
Incident Reason:	Operator/Human Error		
Incident Summary:	Costco: Refrigerant spill to atm, 1000lbs of R407F		
Environment Impact:			
Health Env Consequence:			
Nature of Impact:			
Contaminant Qty:	454.5 kg		
Contaminant Qty 1:	454.5		
Contaminant Unit:	kg		
Contaminant Code:	38		
Contaminant Name:	REFRIGERANT GAS, N.O.S.		

Contaminant Limit 1:
Contam Limit Freq 1:
Contaminant UN No 1: 1078
Receiving Medium: Air; Source Water Zone
Activity Preceding Spill:
Property 2nd Watershed:
Property Tertiary Watershed:
Sector Type: Miscellaneous Communal
SAC Action Class: Air Spills - Gases and Vapours
Call Report Locatn Geodata:
Time Reported:
System Facility Address:

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30 | ***29 of 40*** | ***WSW/299.5*** | ***190.9 / 1.00*** | ***Costco Wholesale 4411 Walker Road Windsor ON*** | ***SPL***

Ref No: 3880-B3DMVV
Year:
Incident Dt: 2018/08/06
Dt MOE Arvl on Scn:
MOE Reported Dt: 2018/08/06
Dt Document Closed: 2018/09/24
Site No: NA
MOE Response: No
Site County/District: County of Essex
Site Geo Ref Meth:
Site District Office: Windsor
Nearest Watercourse:
Site Name: Costco <UNOFFICIAL>
Site Address: 4411 Walker Road
Site Region: Southwestern
Site Municipality: Windsor
Site Lot:
Site Conc:
Site Geo Ref Accu:
Site Map Datum:
Northing:
Easting:
Entity Operating Name:
Client Name: Costco Wholesale
Client Type: Corporation
Source Type: Valve/Fitting/Piping
Incident Cause:
Incident Preceding Spill: Leak/Break
Incident Reason: Equipment Failure
Incident Summary: Costco 600 lbs of R407F
Environment Impact:
Health Env Consequence:
Nature of Impact:
Contaminant Qty: 272 kg
Contaminant Qty 1: 272
Contaminant Unit: kg
Contaminant Code: 38
Contaminant Name: REFRIGERANT GAS, N.O.S.
Contaminant Limit 1:
Contam Limit Freq 1:
Contaminant UN No 1: 1078
Receiving Medium: Air
Activity Preceding Spill:
Property 2nd Watershed:
Property Tertiary Watershed:
Sector Type: Miscellaneous Industrial
SAC Action Class: Air Spills - Gases and Vapours
Municipality No:
Nature of Damage:
Discharger Report:
Material Group:
Impact to Health: 2 - Minor Environment
Agency Involved:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Call Report Locatn Geodata:
Time Reported:
System Facility Address:

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30 | ***30 of 40*** | ***WSW/299.5*** | ***190.9 / 1.00*** | ***Costco Canada Inc.***
4411 Walker Rd S
Windsor ON | ***SPL***

Ref No:	2030-B48L5F	***Municipality No:***	
Year:		***Nature of Damage:***	
Incident Dt:	2018/09/02	***Discharger Report:***	
Dt MOE Arvl on Scn:		***Material Group:***	
MOE Reported Dt:	2018/09/02	***Impact to Health:***	2 - Minor Environment
Dt Document Closed:		***Agency Involved:***	

Site No: 3241-7TPQB6
MOE Response: No
Site County/District: County of Essex
Site Geo Ref Meth: NA
Site District Office: Windsor
Nearest Watercourse:
Site Name: 4411 Walker Road South
Site Address: 4411 Walker Rd S
Site Region: Southwestern
Site Municipality: Windsor
Site Lot:
Site Conc: NA
Site Geo Ref Accu: NA
Site Map Datum: NA
Northing: NA
Easting: NA
Entity Operating Name:
Client Name: Costco Canada Inc.
Client Type: Corporation
Source Type: Valve/Fitting/Piping
Incident Cause:
Incident Preceding Spill: Leak/Break
Incident Reason: Equipment Failure
Incident Summary: Costco: 900 lbs R407-F to atmosphere
Environment Impact:
Health Env Consequence:
Nature of Impact:
Contaminant Qty: 408 kg
Contaminant Qty 1: 408
Contaminant Unit: kg
Contaminant Code: 38
Contaminant Name: REFRIGERANT GAS, N.O.S.
Contaminant Limit 1:
Contam Limit Freq 1:
Contaminant UN No 1: 1078
Receiving Medium: Air
Activity Preceding Spill:
Property 2nd Watershed:
Property Tertiary Watershed:
Sector Type: Miscellaneous Industrial
SAC Action Class: Air Spills - Gases and Vapours
Call Report Locatn Geodata:
Time Reported:
System Facility Address:

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30 | ***31 of 40*** | ***WSW/299.5*** | ***190.9 / 1.00*** | ***COSTCO WHOLESALE CANADA LTD***
4411 WALKER RD
WINDSOR ON N8W3T6 | ***PES***

Detail Licence No:		**Operator Box:**	
Licence No:	11029	**Operator Class:**	
Status:		**Operator No:**	
Approval Date:		**Operator Type:**	
Report Source:	Legacy Licenses (Excluding TS)	**Oper Area Code:**	519
Licence Type:	Retail Vendor Class 03	**Oper Phone No:**	9721899
Licence Type Code:	21	**Operator Ext:**	
Licence Class:	03	**Operator Lot:**	
Licence Control:		**Oper Concession:**	
Latitude:		**Operator Region:**	
Longitude:		**Operator District:**	
Lot:		**Operator County:**	
Concession:		**Op Municipality:**	
Region:		**Post Office Box:**	
District:		**MOE District:**	
County:		**SWP Area Name:**	
Trade Name:			
PDF URL:			

30	32 of 40	WSW/299.5	190.9 / 1.00	**COSTCO WHOLESALE #534 Windsor** **4411 Walker Road** **Windsor ON N8W 3T6**	GEN

Generator Info

Generator No:	ON4945361	**Choice of Contact:**	
Approval Years:	As of Jul 2020	**Contaminated Fac:**	
Status:	Registered	**MHSW Facility:**	
PO Box No:		**SIC Code:**	
Country:	Canada		
Co Admin:			
Phone No Admin:			
SIC Description:			

Waste Detail(s)

Waste Class:	146 T
Waste Class Name:	Other specified inorganic sludges, slurries or solids

Waste Detail(s)

Waste Class:	264 L
Waste Class Name:	Photoprocessing wastes

Waste Detail(s)

Waste Class:	221 I
Waste Class Name:	Light fuels

Waste Detail(s)

Waste Class:	312 P
Waste Class Name:	Pathological wastes

Waste Detail(s)

Waste Class:	251 L

Waste Class Name: Waste oils/sludges (petroleum based)

Waste Detail(s)

Waste Class: 331 L
Waste Class Name: Waste compressed gases including cylinders

Waste Detail(s)

Waste Class: 263 L
Waste Class Name: Misc. waste organic chemicals

Waste Detail(s)

Waste Class: 212 I
Waste Class Name: Aliphatic solvents and residues

Waste Detail(s)

Waste Class: 261 L
Waste Class Name: Pharmaceuticals

Waste Detail(s)

Waste Class: 264 T
Waste Class Name: Photoprocessing wastes

Waste Detail(s)

Waste Class: 261 A
Waste Class Name: Pharmaceuticals

Waste Detail(s)

Waste Class: 148 A
Waste Class Name: Misc. wastes and inorganic chemicals

Waste Detail(s)

Waste Class: 263 A
Waste Class Name: Misc. waste organic chemicals

Waste Detail(s)

Waste Class: 331 I
Waste Class Name: Waste compressed gases including cylinders

Waste Detail(s)

Waste Class: 150 L
Waste Class Name: Inert organic wastes

Waste Detail(s)

Waste Class: 252 L
Waste Class Name: Waste crankcase oils and lubricants

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Waste Detail(s)

Waste Class: 269 T
Waste Class Name: Organic non-halogenated pesticide and herbicide wastes

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30 **33 of 40** **WSW/299.5** **190.9 / 1.00** **4411 Walker Rd Windsor ON** **SPL**

Ref No: 7575-BFYH2L
Year:
Incident Dt: 9/13/2019
Dt MOE Arvl on Scn:
MOE Reported Dt: 9/13/2019
Dt Document Closed: 10/11/2019
Site No: NA
MOE Response: No
Site County/District: County of Essex
Site Geo Ref Meth:
Site District Office: Windsor
Nearest Watercourse:
Site Name: Costco <UNOFFICIAL>
Site Address: 4411 Walker Rd
Site Region: Southwestern
Site Municipality: Windsor
Site Lot:
Site Conc:
Site Geo Ref Accu:
Site Map Datum:
Northing:
Easting:
Entity Operating Name:
Client Name:
Client Type:
Source Type: Valve/Fitting/Piping
Incident Cause:
Incident Preceding Spill: Leak/Break
Incident Reason: Equipment Failure
Incident Summary: Costco 209 kg of R407F to atm
Environment Impact:
Health Env Consequence:
Nature of Impact:
Contaminant Qty: 209 kg
Contaminant Qty 1: 209
Contaminant Unit: kg
Contaminant Code: 38
Contaminant Name: REFRIGERANT GAS, N.O.S.
Contaminant Limit 1:
Contam Limit Freq 1:
Contaminant UN No 1: 1078
Receiving Medium: Air
Activity Preceding Spill:
Property 2nd Watershed:
Property Tertiary Watershed:
Sector Type: Miscellaneous Industrial
SAC Action Class: Air Spills - Gases and Vapours
Call Report Locatn Geodata:
Time Reported:
System Facility Address:

Municipality No:
Nature of Damage:
Discharger Report:
Material Group:
Impact to Health: 2 - Minor Environment
Agency Involved:

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30 **34 of 40** **WSW/299.5** **190.9 / 1.00** **COSTCO WHOLESALE CANADA LTD. 4411 WALKER RD** **INC**

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
				WINDSOR ON	

Incident No:	2585578	Any Health Impact:	
Incident ID:		Any Enviro Impact:	
Instance No:	10196039	Service Intrp:	
Status Code:		Was Prop Damaged:	
Incident Status:	Causal Analysis Complete	Reside App. Type:	
Incident Severity:		Commer App. Type:	
Task No:		Indus App. Type:	
Attribute Category:	FS-Incident	Institut App. Type:	
Context:		Depth Ground Cover:	
Date of Occurrence:	5/18/2019	Operation Pressure:	
Time of Occurrence:		Equipment Type:	
Occr Insp Start Dt:		Equipment Model:	
Incident Creat On:	5/21/2019	Serial No:	
Instance Creat Dt:		Cylinder Capacity:	
Instance Install Dt:		Cylinder Cap Units:	
Approx Quant Rel:		Cylinder Mat Type:	
Tank Capacity:		Pump Flow Rate Cap:	
Fuels Occur Type:	Vapour Release	Contam. Migrated:	
Occur Type Rpt:	Vapour Release	Near Body of Water:	
Occur Category:		Drainage System:	
Fuel Type Involved:	Propane	Sub Surface Contam:	
Fuel Type Reported:	Heating Fuel	Tank Material Type:	
Enforcement Policy:		Tank Storage Type:	
Prc Escalation Req:		Tank Location Type:	
Item:			
Item Description:			
Device Installed Location:			
Venting Type:			
Vent Conn Mater:			
Vent Chimney Mater:			
Pipeline Type:			
Pipeline Involved:			
Pipe Material:			
Regulator Location:			
Regulator Type:			
Liquid Prop Make:			
Liquid Prop Model:			
Liquid Prop Serial No:			
Liquid Prop Notes:			
Inventory Address:	4411 WALKER RD		
Invent Postal Code:	N9A 6J3		
Notes:			
Contact Natural Env:			
Aff Prop Use Water:			
Occurence Narrative:			
Operation Type Involved:	Retail Outlet (including cylinder exchange)		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
30	35 of 40	WSW/299.5	190.9 / 1.00	COSTCO WHOLESALE #534 Windsor 4411 Walker Road Windsor ON N8W 3T6	GEN

Generator Info

Generator No:	ON4945361	Choice of Contact:	
Approval Years:	As of Nov 2021	Contaminated Fac:	
Status:	Registered	MHSW Facility:	
PO Box No:		SIC Code:	
Country:	Canada		
Co Admin:			

Phone No Admin:
SIC Description:

Waste Detail(s)

Waste Class: 251 L
Waste Class Name: Waste oils/sludges (petroleum based)

Waste Detail(s)

Waste Class: 148 C
Waste Class Name: Misc. wastes and inorganic chemicals

Waste Detail(s)

Waste Class: 150 L
Waste Class Name: Inert organic wastes

Waste Detail(s)

Waste Class: 261 L
Waste Class Name: Pharmaceuticals

Waste Detail(s)

Waste Class: 212 I
Waste Class Name: Aliphatic solvents and residues

Waste Detail(s)

Waste Class: 264 L
Waste Class Name: Photoprocessing wastes

Waste Detail(s)

Waste Class: 221 I
Waste Class Name: Light fuels

Waste Detail(s)

Waste Class: 263 L
Waste Class Name: Misc. waste organic chemicals

Waste Detail(s)

Waste Class: 261 A
Waste Class Name: Pharmaceuticals

Waste Detail(s)

Waste Class: 148 A
Waste Class Name: Misc. wastes and inorganic chemicals

Waste Detail(s)

Waste Class: 331 L

Waste Class Name: Waste compressed gases including cylinders

Waste Detail(s)

Waste Class: 269 T
Waste Class Name: Organic non-halogenated pesticide and herbicide wastes

Waste Detail(s)

Waste Class: 331 I
Waste Class Name: Waste compressed gases including cylinders

Waste Detail(s)

Waste Class: 312 P
Waste Class Name: Pathological wastes

Waste Detail(s)

Waste Class: 112 C
Waste Class Name: Acid solutions - containing heavy metals

Waste Detail(s)

Waste Class: 252 L
Waste Class Name: Waste crankcase oils and lubricants

Waste Detail(s)

Waste Class: 264 T
Waste Class Name: Photoprocessing wastes

Waste Detail(s)

Waste Class: 122 C
Waste Class Name: Alkaline slutions - containing other metals and non-metals (not cyanide)

Waste Detail(s)

Waste Class: 263 A
Waste Class Name: Misc. waste organic chemicals

Waste Detail(s)

Waste Class: 146 T
Waste Class Name: Other specified inorganic sludges, slurries or solids

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30	36 of 40	WSW/299.5	190.9 / 1.00	COSTCO WHOLESALE CANADA LTD 4411 WALKER RD WINDSOR ON N8W 3T6	PES

Detail Licence No:
Licence No: L-232-1113587508
Status: Active
Approval Date: 2021-01-14
Report Source: PEST-Limited Vendor
Licence Type: Limited Vendor

Operator Box:
Operator Class:
Operator No:
Operator Type:
Oper Area Code:
Oper Phone No:

Licence Type Code:		**Operator Ext:**	
Licence Class:		**Operator Lot:**	
Licence Control:		**Oper Concession:**	
Latitude:	42.254818	**Operator Region:**	
Longitude:	-82.96588	**Operator District:**	
Lot:		**Operator County:**	
Concession:		**Op Municipality:**	
Region:		**Post Office Box:**	
District:		**MOE District:**	Windsor
County:		**SWP Area Name:**	Essex
Trade Name:			

PDF URL: http://www.accessenvironment.ene.gov.on.ca/AEWeb/ae/ViewDocument.action?documentRefID=2327898

30	37 of 40	WSW/299.5	190.9 / 1.00	**Costco Wholesale Canada Ltd.** **4411 Walker Road** **Windsor ON**	GEN

Generator Info

Generator No:	ON4945361	**Choice of Contact:**	
Approval Years:	As of Oct 2022	**Contaminated Fac:**	
Status:	Registered	**MHSW Facility:**	
PO Box No:		**SIC Code:**	
Country:	Canada		
Co Admin:			
Phone No Admin:			
SIC Description:			

Waste Detail(s)

Waste Class: 312 P
Waste Class Name: PATHOLOGICAL WASTES

Waste Detail(s)

Waste Class: 251 L
Waste Class Name: OIL SKIMMINGS & SLUDGES

Waste Detail(s)

Waste Class: 263 L
Waste Class Name: ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 269 T
Waste Class Name: NON-HALOGENATED PESTICIDES

Waste Detail(s)

Waste Class: 212 I
Waste Class Name: ALIPHATIC SOLVENTS

Waste Detail(s)

Waste Class: 331 L
Waste Class Name: WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class: 148 C
Waste Class Name: INORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 331 I
Waste Class Name: WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class: 264 T
Waste Class Name: PHOTOPROCESSING WASTES

Waste Detail(s)

Waste Class: 150 L
Waste Class Name: INERT INORGANIC WASTES

Waste Detail(s)

Waste Class: 264 L
Waste Class Name: PHOTOPROCESSING WASTES

Waste Detail(s)

Waste Class: 112 C
Waste Class Name: ACID WASTE - HEAVY METALS

Waste Detail(s)

Waste Class: 261 A
Waste Class Name: PHARMACEUTICALS

Waste Detail(s)

Waste Class: 221 I
Waste Class Name: LIGHT FUELS

Waste Detail(s)

Waste Class: 261 L
Waste Class Name: PHARMACEUTICALS

Waste Detail(s)

Waste Class: 263 A
Waste Class Name: ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 146 T
Waste Class Name: OTHER SPECIFIED INORGANICS

Waste Detail(s)

Waste Class: 148 A
Waste Class Name: INORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 122 C
Waste Class Name: ALKALINE WASTES - OTHER METALS

Waste Detail(s)

Waste Class: 252 L
Waste Class Name: WASTE OILS & LUBRICANTS

Generator Info as of Dec 2024

Generator No: ON4945361
Generator Company Name: Costco Wholesale Canada Ltd.
Street: 4411 Walker Road
City: Windsor
Province State: Ontario
Country: Canada
Postal Code: N8W3T6
Waste Class: 221 I,264 L,252 L,221 L,221 I,261 A,150 L,261 I,251 L,262 C,264 T,269 T,146 T,331 I,148 A,331 L,261 L,263 A, 331 I,263 L,312 P,212 I,212 I,148 C,122 C,112 C,145 I,145 L,148 I,212 L,221 B

Waste Class Decoded:

221 - LIGHT FUELS; 264 - PHOTOPROCESSING WASTES; 252 - WASTE OILS & LUBRICANTS; 221 - LIGHT FUELS; 221 - LIGHT FUELS; 261 - PHARMACEUTICALS; 150 - INERT INORGANIC WASTES; 261 - PHARMACEUTICALS; 251 - OIL SKIMMINGS & SLUDGES; 262 - DETERGENTS/SOAPS; 264 - PHOTOPROCESSING WASTES; 269 - NON-HALOGENATED PESTICIDES; 146 - OTHER SPECIFIED INORGANICS; 331 - WASTE COMPRESSED GASES; 148 - INORGANIC LABORATORY CHEMICALS; 331 - WASTE COMPRESSED GASES; 261 - PHARMACEUTICALS; 263 - ORGANIC LABORATORY CHEMICALS; 331 - WASTE COMPRESSED GASES; 263 - ORGANIC LABORATORY CHEMICALS; 312 - PATHOLOGICAL WASTES; 212 - ALIPHATIC SOLVENTS; 212 - ALIPHATIC SOLVENTS; 148 - INORGANIC LABORATORY CHEMICALS; 122 - ALKALINE WASTES - OTHER METALS; 112 - ACID WASTE - HEAVY METALS; 145 - PAINT/PIGMENT/COATING RESIDUES; 145 - PAINT/PIGMENT/COATING RESIDUES; 148 - INORGANIC LABORATORY CHEMICALS; 212 - ALIPHATIC SOLVENTS; 221 - LIGHT FUELS

2017 Generator Info

Gen No: ON4945361
ID: 19608
Contaminated Fac: N
MHSW Facility: N
NAICS Code1: 418990
NAICS Code2:
NAICS Code3:
Gen Name: COSTCO WHOLESALE
Gen Div: #534 Windsor
Gen Op Name: COSTCO WHOLESALE
Gen Op Div: #534 Windsor
Site Adrs1: 4411 Walker Road
Site Bldg:
Site Pobox:
Province In: ONTARIO
Site Adrs2:
Site City: Windsor
Province Out:
Site Postal Code: N8W 3T6
Site Country: Canada
Co Official: Cesar Gervais
Co Admin: Jace Ratcliffe
Choice of Contact: CO_OFFICIAL
Phone No Official: 613-221-2426 Ext.
Phone No Admin: 6132212276 Ext.
County Ont: ESSEX
County Out:
District: 102

2017 Generator Manifest

ID:	43578	***Sum Received Qty:***	2503.0
Generator No:	ON4945361	***Waste Class Name:***	OIL SKIMMINGS & SLUDGES
Receiver Type:	035	***Count Manifests:***	1
Waste Char:	L	***District:***	306
Waste Code:	251		

2018 Generator Info

Gen No:	ON4945361	***Choice of Contact:***	CO_OFFICIAL
ID:	19716	***Phone No Official:***	613-221-2426 Ext.
Contaminated Fac:	N	***Phone No Admin:***	6132212276 Ext.
MHSW Facility:	N	***County Ont:***	ESSEX
NAICS Code1:	418990	***County Out:***	
NAICS Code2:		***District:***	102
NAICS Code3:			
Gen Name:	COSTCO WHOLESALE		
Gen Div:	#534 Windsor		
Gen Op Name:	COSTCO WHOLESALE		
Gen Op Div:	#534 Windsor		
Site Adrs1:	4411 Walker Road		
Site Bldg:			
Site Pobox:			
Province In:	ONTARIO		
Site Adrs2:			
Site City:	Windsor		
Province Out:			
Site Postal Code:	N8W 3T6		
Site Country:	Canada		
Co Official:	Cesar Gervais		
Co Admin:	Jace Ratcliffe		

2018 Generator Manifest

ID:	43498	***Sum Received Qty:***	174.0
Generator No:	ON4945361	***Waste Class Name:***	ALIPHATIC SOLVENTS
Receiver Type:	035	***Count Manifests:***	1
Waste Char:	I	***District:***	305
Waste Code:	212		

2018 Generator Manifest

ID:	43497	***Sum Received Qty:***	789.0
Generator No:	ON4945361	***Waste Class Name:***	OIL SKIMMINGS & SLUDGES
Receiver Type:	035	***Count Manifests:***	1
Waste Char:	L	***District:***	301
Waste Code:	251		

2018 Generator Manifest

ID:	43499	***Sum Received Qty:***	42.0
Generator No:	ON4945361	***Waste Class Name:***	ORGANIC LABORATORY CHEMICALS
Receiver Type:	035	***Count Manifests:***	1
Waste Char:	A	***District:***	305
Waste Code:	263		

2019 Generator Info

Gen No:	ON4945361	***Choice of Contact:***	CO_OFFICIAL

ID:	19723	**Phone No Official:**	613-221-2426 Ext.
Contaminated Fac:	N	**Phone No Admin:**	6132212276 Ext.
MHSW Facility:	N	**County Ont:**	ESSEX
NAICS Code1:	418990	**County Out:**	
NAICS Code2:		**District:**	102
NAICS Code3:			
Gen Name:	COSTCO WHOLESALE		
Gen Div:	#534 Windsor		
Gen Op Name:	COSTCO WHOLESALE		
Gen Op Div:	#534 Windsor		
Site Adrs1:	4411 Walker Road		
Site Bldg:			
Site Pobox:			
Province In:	ONTARIO		
Site Adrs2:			
Site City:	Windsor		
Province Out:			
Site Postal Code:	N8W 3T6		
Site Country:	Canada		
Co Official:	Cesar Gervais		
Co Admin:	Jace Ratcliffe		

2019 Generator Manifest

ID:	43045	**Sum Received Qty:**	24.0
Generator No:	ON4945361	**Waste Class Name:**	ORGANIC LABORATORY CHEMICALS
Receiver Type:	035	**Count Manifests:**	1
Waste Char:	L	**District:**	305
Waste Code:	263		

2019 Generator Manifest

ID:	43044	**Sum Received Qty:**	714.0
Generator No:	ON4945361	**Waste Class Name:**	ALIPHATIC SOLVENTS
Receiver Type:	035	**Count Manifests:**	7
Waste Char:	I	**District:**	305
Waste Code:	212		

2020 Generator Info

Gen No:	ON4945361	**Choice of Contact:**	CO_OFFICIAL
ID:	19436	**Phone No Official:**	613-221-2426 Ext.
Contaminated Fac:	N	**Phone No Admin:**	6132212276 Ext.
MHSW Facility:	N	**County Ont:**	ESSEX
NAICS Code1:	418990	**County Out:**	
NAICS Code2:		**District:**	102
NAICS Code3:			
Gen Name:	COSTCO WHOLESALE		
Gen Div:	#534 Windsor		
Gen Op Name:	COSTCO WHOLESALE		
Gen Op Div:	#534 Windsor		
Site Adrs1:	4411 Walker Road		
Site Bldg:			
Site Pobox:			
Province In:	ONTARIO		
Site Adrs2:			
Site City:	Windsor		
Province Out:			
Site Postal Code:	N8W 3T6		
Site Country:	Canada		
Co Official:	Cesar Gervais		
Co Admin:	Jace Ratcliffe		

2020 Generator Manifest

ID:	39782	***Sum Received Qty:***	377.0
Generator No:	ON4945361	***Waste Class Name:***	ALIPHATIC SOLVENTS
Receiver Type:	035	***Count Manifests:***	4
Waste Char:	I	***District:***	305
Waste Code:	212		

2020 Generator Manifest

ID:	39784	***Sum Received Qty:***	2350.0
Generator No:	ON4945361	***Waste Class Name:***	OIL SKIMMINGS & SLUDGES
Receiver Type:	035	***Count Manifests:***	1
Waste Char:	L	***District:***	306
Waste Code:	251		

2020 Generator Manifest

ID:	39783	***Sum Received Qty:***	5.0
Generator No:	ON4945361	***Waste Class Name:***	ORGANIC LABORATORY CHEMICALS
Receiver Type:	035	***Count Manifests:***	1
Waste Char:	L	***District:***	305
Waste Code:	263		

2021 Generator Info

Gen No:	ON4945361	***Choice of Contact:***	CO_OFFICIAL
ID:	19573	***Phone No Official:***	613-221-2426 Ext.
Contaminated Fac:	N	***Phone No Admin:***	6132212276 Ext.
MHSW Facility:	N	***County Ont:***	ESSEX
NAICS Code1:	418990	***County Out:***	
NAICS Code2:		***District:***	102
NAICS Code3:			
Gen Name:	COSTCO WHOLESALE		
Gen Div:	#534 Windsor		
Gen Op Name:	COSTCO WHOLESALE		
Gen Op Div:	#534 Windsor		
Site Adrs1:	4411 Walker Road		
Site Bldg:			
Site Pobox:			
Province In:	ONTARIO		
Site Adrs2:			
Site City:	Windsor		
Province Out:			
Site Postal Code:	N8W 3T6		
Site Country:	Canada		
Co Official:	Cesar Gervais		
Co Admin:	Jace Ratcliffe		

2021 Generator Manifest

ID:	41113	***Sum Received Qty:***	7.0
Generator No:	ON4945361	***Waste Class Name:***	ACID WASTE - HEAVY METALS
Receiver Type:	035	***Count Manifests:***	1
Waste Char:	C	***District:***	305
Waste Code:	112		

2021 Generator Manifest

ID:	41114	***Sum Received Qty:***	10.0
Generator No:	ON4945361	***Waste Class Name:***	ALKALINE WASTES - OTHER METALS

Receiver Type:	035	**Count Manifests:**	1
Waste Char:	C	**District:**	305
Waste Code:	122		

2021 Generator Manifest

ID:	41111	**Sum Received Qty:**	5000.0
Generator No:	ON4945361	**Waste Class Name:**	OIL SKIMMINGS & SLUDGES
Receiver Type:	030	**Count Manifests:**	2
Waste Char:	L	**District:**	102
Waste Code:	251		

2021 Generator Manifest

ID:	41112	**Sum Received Qty:**	1500.0
Generator No:	ON4945361	**Waste Class Name:**	WASTE OILS & LUBRICANTS
Receiver Type:	030	**Count Manifests:**	1
Waste Char:	L	**District:**	102
Waste Code:	252		

2021 Generator Manifest

ID:	41115	**Sum Received Qty:**	82.0
Generator No:	ON4945361	**Waste Class Name:**	INORGANIC LABORATORY CHEMICALS
Receiver Type:	035	**Count Manifests:**	1
Waste Char:	A	**District:**	305
Waste Code:	148		

2021 Generator Manifest

ID:	41116	**Sum Received Qty:**	743.0
Generator No:	ON4945361	**Waste Class Name:**	ALIPHATIC SOLVENTS
Receiver Type:	035	**Count Manifests:**	7
Waste Char:	I	**District:**	305
Waste Code:	212		

2021 Generator Manifest

ID:	41117	**Sum Received Qty:**	67.45
Generator No:	ON4945361	**Waste Class Name:**	PATHOLOGICAL WASTES
Receiver Type:	035	**Count Manifests:**	1
Waste Char:	P	**District:**	305
Waste Code:	312		

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30 | ***38 of 40*** | ***WSW/299.5*** | ***190.9 / 1.00*** | ***COSTCO WHOLESALE CANADA LTD.***
4411 WALKER RD
WINDSOR ON | ***FST***

Inventory No:	64505652	**Tank Material:**	
Inventory Status:	Active	**Corrosion Protect:**	
Installation Year:		**Overfill Protection:**	
Capacity:	225000	**Inventory Context:**	Liquid Fuels
Capacity Unit:	L	**Inventory Item:**	FS Gasoline Station - Card/Keylock
Tank Type:			
Manufacturer:			
Model:			
Description:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
30	39 of 40	WSW/299.5	190.9 / 1.00	Costco - 4411 Walker Rd 4411 Walker Rd, Windsor, ON N8W 3T6 WINDSOR ON	SPL

Ref No:	1-3VXQXK	**Municipality No:**	
Year:		**Nature of Damage:**	
Incident Dt:	9/29/2023 7:00:56 AM	**Discharger Report:**	
Dt MOE Arvl on Scn:		**Material Group:**	
MOE Reported Dt:	9/29/2023 8:08:56 AM	**Impact to Health:**	
Dt Document Closed:	10/24/2023 8:28:59 AM	**Agency Involved:**	

Site No:
MOE Response: Desktop Response
Site County/District:
Site Geo Ref Meth:
Site District Office: Windsor Area Office
Nearest Watercourse:
Site Name: Costco - 4411 Walker Rd
Site Address: 4411 Walker Rd, Windsor, ON N8W 3T6
Site Region: COUNTY OF ESSEX
Site Municipality: WINDSOR
Site Lot:
Site Conc:
Site Geo Ref Accu:
Site Map Datum:
Northing:
Easting:
Entity Operating Name:
Client Name:
Client Type:
Source Type: Pipeline/Components
Incident Cause:
Incident Preceding Spill: Leak/Break
Incident Reason:
Incident Summary: Neelands Group Ltd: 156kg R407F to atmosphere; Windsor Costco
Environment Impact:
Health Env Consequence:
Nature of Impact:
Contaminant Qty: 156 kilogram (kg)
Contaminant Qty 1:
Contaminant Unit:
Contaminant Code:
Contaminant Name: REFRIGERANT GASES (N.O.S.)
Contaminant Limit 1:
Contam Limit Freq 1:
Contaminant UN No 1:
Receiving Medium: Air
Activity Preceding Spill: Normal operations
Property 2nd Watershed: Northern Lake Erie
Property Tertiary Watershed: 02GH - Cedar
Sector Type: SUPERMARKETS AND OTHER GROCERY (EXCEPT CONVENIENCE) STORES
SAC Action Class:
Call Report Locatn Geodata: {"integration_ids":["PR00000233025"],"wkts":["POINT (-82.9645848000 42.2545380000)"],"creation_date":"2023-09-29"}
Time Reported:
System Facility Address: 4411 WALKER RD, WINDSOR, ON N8W 3T6

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
30	40 of 40	WSW/299.5	190.9 / 1.00	Costco - 4411 Walker Rd 4411 Walker Rd, Windsor WINDSOR ON	SPL

Ref No:	1-DDJTRW	**Municipality No:**	
Year:		**Nature of Damage:**	
Incident Dt:	Nov 14,2024 06:37:43 PM	**Discharger Report:**	
Dt MOE Arvl on Scn:		**Material Group:**	

MOE Reported Dt:	Nov 14,2024 06:37:43 PM	**Impact to Health:**	
Dt Document Closed:	Dec 09,2024 11:01:45 AM	**Agency Involved:**	
Site No:			
MOE Response:	Desktop Response		
Site County/District:			
Site Geo Ref Meth:			
Site District Office:	Windsor Area Office		
Nearest Watercourse:			
Site Name:	Costco - 4411 Walker Rd		
Site Address:	4411 Walker Rd, Windsor		
Site Region:	COUNTY OF ESSEX		
Site Municipality:	WINDSOR		
Site Lot:			
Site Conc:			
Site Geo Ref Accu:			
Site Map Datum:			
Northing:			
Easting:			
Entity Operating Name:			
Client Name:			
Client Type:			
Source Type:	Tank - Above Ground		
Incident Cause:			
Incident Preceding Spill:	Leak/Break		
Incident Reason:	Equipment failure/malfunction		
Incident Summary:	Windsor FD: 33lb Propane Leak at Costco		
Environment Impact:			
Health Env Consequence:	Low		
Nature of Impact:			
Contaminant Qty:	0 other - see notes		
Contaminant Qty 1:			
Contaminant Unit:			
Contaminant Code:			
Contaminant Name:	PROPANE		
Contaminant Limit 1:			
Contam Limit Freq 1:			
Contaminant UN No 1:			
Receiving Medium:	Air		
Activity Preceding Spill:	Normal operations		
Property 2nd Watershed:	Northern Lake Erie		
Property Tertiary Watershed:	02GH - Cedar		
Sector Type:	NATURAL GAS DISTRIBUTION		
SAC Action Class:			
Call Report Locatn Geodata:	{"integration_ids":["PR00000233025"],"wkts":["POINT (-82.9645875000 42.2545550000)"],"creation_date":"2024-11-14"}		
Time Reported:			
System Facility Address:	4411 WALKER RD, WINDSOR, ON N8W 3T6		

31	***1 of 22***	***NNW/299.7***	***189.9 / 0.00***	***CANADIAN TIRE ASSOCIATE STORE/WRANK ENTERPRISES LTD. 4150 WALKER ROAD WINDSOR ON N8W 3T5***	***PES***

Detail Licence No:		**Operator Box:**	
Licence No:		**Operator Class:**	
Status:		**Operator No:**	
Approval Date:		**Operator Type:**	
Report Source:		**Oper Area Code:**	
Licence Type:	Limited Vendor	**Oper Phone No:**	
Licence Type Code:	23	**Operator Ext:**	
Licence Class:		**Operator Lot:**	
Licence Control:		**Oper Concession:**	
Latitude:		**Operator Region:**	
Longitude:		**Operator District:**	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Lot:
Concession:
Region:
District:
County:
Trade Name:
PDF URL:

Operator County:
Op Municipality:
Post Office Box:
MOE District:
SWP Area Name:

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31 **2 of 22** **NNW/299.7** **189.9 / 0.00**

Wrank Enterprises Ltd.
4150 Walker Rd
Windsor ON N8W 3T5

GEN

Generator Info

Generator No: ON7434544
Approval Years: 07,08
Status:
PO Box No:
Country:
Co Admin:
Phone No Admin:
SIC Description: Home and Auto Supplies Stores, All Other Miscellaneous General Merchandise Stores

Choice of Contact:
Contaminated Fac:
MHSW Facility:
SIC Code: 452991 452999

Waste Detail(s)

Waste Class: 252
Waste Class Name: WASTE OILS & LUBRICANTS

Waste Detail(s)

Waste Class: 331
Waste Class Name: WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class: 122
Waste Class Name: ALKALINE WASTES - OTHER METALS

Waste Detail(s)

Waste Class: 148
Waste Class Name: INORGANIC LABORATORY CHEMICALS

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31 **3 of 22** **NNW/299.7** **189.9 / 0.00**

CANADIAN TIRE ASSOCIATE STORE/WRANK ENTERPRISES LTD.
4150 WALKER ROAD
WINDSOR ON N8W 3T5

PES

Detail Licence No:
Licence No:
Status:
Approval Date:
Report Source:
Licence Type: Vendor
Licence Type Code:
Licence Class:
Licence Control:
Latitude:

Operator Box:
Operator Class:
Operator No:
Operator Type:
Oper Area Code:
Oper Phone No:
Operator Ext:
Operator Lot:
Oper Concession:
Operator Region:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Longitude: ***Operator District:***
Lot: ***Operator County:***
Concession: ***Op Municipality:***
Region: ***Post Office Box:***
District: ***MOE District:***
County: ***SWP Area Name:***
Trade Name:
PDF URL:

31	*4 of 22*	*NNW/299.7*	*189.9 / 0.00*	***Wrank Enterprises Ltd.*** ***4150 Walkers Road*** ***Windsor ON***	***GEN***

Generator Info

Generator No: ON4805708
Approval Years: 2009
Status:
PO Box No:
Country:
Co Admin:
Phone No Admin:
SIC Description: Home and Auto Supplies Stores, All Other Miscellaneous General Merchandise Stores

Choice of Contact:
Contaminated Fac:
MHSW Facility:
SIC Code: 452991, 452999

Waste Detail(s)

Waste Class: 222
Waste Class Name: HEAVY FUELS

Waste Detail(s)

Waste Class: 221
Waste Class Name: LIGHT FUELS

Waste Detail(s)

Waste Class: 242
Waste Class Name: HALOGENATED PESTICIDES

Waste Detail(s)

Waste Class: 331
Waste Class Name: WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class: 112
Waste Class Name: ACID WASTE - HEAVY METALS

Waste Detail(s)

Waste Class: 122
Waste Class Name: ALKALINE WASTES - OTHER METALS

Waste Detail(s)

Waste Class: 145
Waste Class Name: PAINT/PIGMENT/COATING RESIDUES

Waste Detail(s)

Waste Class: 147
Waste Class Name: CHEMICAL FERTILIZER WASTES

Waste Detail(s)

Waste Class: 148
Waste Class Name: INORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 213
Waste Class Name: PETROLEUM DISTILLATES

Waste Detail(s)

Waste Class: 262
Waste Class Name: DETERGENTS/SOAPS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
31	5 of 22	NNW/299.7	189.9 / 0.00	4150 Walker Road Windsor ON N8W 3T5	EHS

Order No: 20111003050
Status: C
Report Type: Standard Report
Report Date: 10/13/2011
Date Received: 10/3/2011 4:50:48 PM
Previous Site Name:
Lot/Building Size:
Additional Info Ordered: Fire Insur. Maps and/or Site Plans;

Nearest Intersection:
Municipality:
Client Prov/State: ON
Search Radius (km): 0.25
X: -82.966374
Y: 42.25887

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
31	6 of 22	NNW/299.7	189.9 / 0.00	Wrank Enterprises Ltd. 4150 Walkers Road Windsor ON	GEN

Generator Info

Generator No: ON4805708
Approval Years: 2010
Status:
PO Box No:
Country:
Co Admin:
Phone No Admin:
SIC Description: Home and Auto Supplies Stores, All Other Miscellaneous General Merchandise Stores

Choice of Contact:
Contaminated Fac:
MHSW Facility:
SIC Code: 452991, 452999

Waste Detail(s)

Waste Class: 112
Waste Class Name: ACID WASTE - HEAVY METALS

Waste Detail(s)

Waste Class: 212
Waste Class Name: ALIPHATIC SOLVENTS

Waste Detail(s)

Waste Class: 148
Waste Class Name: INORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 122
Waste Class Name: ALKALINE WASTES - OTHER METALS

Waste Detail(s)

Waste Class: 331
Waste Class Name: WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class: 242
Waste Class Name: HALOGENATED PESTICIDES

Waste Detail(s)

Waste Class: 221
Waste Class Name: LIGHT FUELS

Waste Detail(s)

Waste Class: 147
Waste Class Name: CHEMICAL FERTILIZER WASTES

Waste Detail(s)

Waste Class: 263
Waste Class Name: ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 145
Waste Class Name: PAINT/PIGMENT/COATING RESIDUES

Waste Detail(s)

Waste Class: 213
Waste Class Name: PETROLEUM DISTILLATES

Waste Detail(s)

Waste Class: 262
Waste Class Name: DETERGENTS/SOAPS

Waste Detail(s)

Waste Class: 222
Waste Class Name: HEAVY FUELS

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31 | **7 of 22** | **NNW/299.7** | **189.9 / 0.00** | **Wrank Enterprises Ltd.**
4150 Walkers Road
Windsor ON | **GEN**

Generator Info

Generator No: ON4805708
Approval Years: 2011
Status:
PO Box No:
Country:
Co Admin:
Phone No Admin:
SIC Description: Home and Auto Supplies Stores, All Other Miscellaneous General Merchandise Stores

Choice of Contact:
Contaminated Fac:
MHSW Facility:
SIC Code: 452991, 452999

Waste Detail(s)

Waste Class: 262
Waste Class Name: DETERGENTS/SOAPS

Waste Detail(s)

Waste Class: 222
Waste Class Name: HEAVY FUELS

Waste Detail(s)

Waste Class: 331
Waste Class Name: WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class: 148
Waste Class Name: INORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 242
Waste Class Name: HALOGENATED PESTICIDES

Waste Detail(s)

Waste Class: 147
Waste Class Name: CHEMICAL FERTILIZER WASTES

Waste Detail(s)

Waste Class: 213
Waste Class Name: PETROLEUM DISTILLATES

Waste Detail(s)

Waste Class: 263

Waste Class Name: ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 221
Waste Class Name: LIGHT FUELS

Waste Detail(s)

Waste Class: 212
Waste Class Name: ALIPHATIC SOLVENTS

Waste Detail(s)

Waste Class: 112
Waste Class Name: ACID WASTE - HEAVY METALS

Waste Detail(s)

Waste Class: 122
Waste Class Name: ALKALINE WASTES - OTHER METALS

Waste Detail(s)

Waste Class: 145
Waste Class Name: PAINT/PIGMENT/COATING RESIDUES

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31 | ***8 of 22*** | ***NNW/299.7*** | ***189.9 / 0.00*** | ***Wrank Enterprises Ltd.***
4150 Walkers Road
Windsor ON | ***GEN***

Generator Info

Generator No: ON4805708
Approval Years: 2012
Status:
PO Box No:
Country:
Co Admin:
Phone No Admin:
SIC Description: Home and Auto Supplies Stores, All Other Miscellaneous General Merchandise Stores

Choice of Contact:
Contaminated Fac:
MHSW Facility:
SIC Code: 452991, 452999

Waste Detail(s)

Waste Class: 147
Waste Class Name: CHEMICAL FERTILIZER WASTES

Waste Detail(s)

Waste Class: 242
Waste Class Name: HALOGENATED PESTICIDES

Waste Detail(s)

Waste Class: 212
Waste Class Name: ALIPHATIC SOLVENTS

Waste Detail(s)

Waste Class: 145
Waste Class Name: PAINT/PIGMENT/COATING RESIDUES

Waste Detail(s)

Waste Class: 112
Waste Class Name: ACID WASTE - HEAVY METALS

Waste Detail(s)

Waste Class: 213
Waste Class Name: PETROLEUM DISTILLATES

Waste Detail(s)

Waste Class: 122
Waste Class Name: ALKALINE WASTES - OTHER METALS

Waste Detail(s)

Waste Class: 263
Waste Class Name: ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 331
Waste Class Name: WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class: 148
Waste Class Name: INORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 262
Waste Class Name: DETERGENTS/SOAPS

Waste Detail(s)

Waste Class: 222
Waste Class Name: HEAVY FUELS

Waste Detail(s)

Waste Class: 221
Waste Class Name: LIGHT FUELS

31	*9 of 22*	*NNW/299.7*	*189.9 / 0.00*	***4150 Walker Road Windsor ON***	***EHS***

Order No:	20130605211	***Nearest Intersection:***	
Status:	C	***Municipality:***	
Report Type:	Standard Report	***Client Prov/State:***	ON

Report Date:	14-JUN-13	**Search Radius (km):**	.25
Date Received:	05-JUN-13	**X:**	-82.964675
Previous Site Name:		**Y:**	42.259583
Lot/Building Size:			
Additional Info Ordered:	Fire Insur. Maps and/or Site Plans; Topographic Maps; Aerial Photos		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
31	10 of 22	NNW/299.7	189.9 / 0.00	**Wrank Enterprises Ltd.** **4150 Walkers Road** **Windsor ON**	GEN

Generator Info

Generator No:	ON4805708	**Choice of Contact:**	
Approval Years:	2013	**Contaminated Fac:**	
Status:		**MHSW Facility:**	
PO Box No:		**SIC Code:**	452991, 452999
Country:			
Co Admin:			
Phone No Admin:			
SIC Description:	HOME AND AUTO SUPPLIES STORES, ALL OTHER MISCELLANEOUS GENERAL MERCHANDISE STORES		

Waste Detail(s)

Waste Class: 112
Waste Class Name: ACID WASTE - HEAVY METALS

Waste Detail(s)

Waste Class: 212
Waste Class Name: ALIPHATIC SOLVENTS

Waste Detail(s)

Waste Class: 148
Waste Class Name: INORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 221
Waste Class Name: LIGHT FUELS

Waste Detail(s)

Waste Class: 263
Waste Class Name: ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 331
Waste Class Name: WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class: 122
Waste Class Name: ALKALINE WASTES - OTHER METALS

Waste Detail(s)

Waste Class: 213
Waste Class Name: PETROLEUM DISTILLATES

Waste Detail(s)

Waste Class: 222
Waste Class Name: HEAVY FUELS

Waste Detail(s)

Waste Class: 262
Waste Class Name: DETERGENTS/SOAPS

Waste Detail(s)

Waste Class: 251
Waste Class Name: OIL SKIMMINGS & SLUDGES

Waste Detail(s)

Waste Class: 145
Waste Class Name: PAINT/PIGMENT/COATING RESIDUES

Waste Detail(s)

Waste Class: 147
Waste Class Name: CHEMICAL FERTILIZER WASTES

Waste Detail(s)

Waste Class: 242
Waste Class Name: HALOGENATED PESTICIDES

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31 | ***11 of 22*** | ***NNW/299.7*** | ***189.9 / 0.00*** | ***CANADIAN TIRE ASSOCIATE STORE/WRANK ENTERPRISES LTD.***
4150 WALKER ROAD
WINDSOR ON N8W3T5 | ***PES***

Detail Licence No:
Licence No: 09376
Status:
Approval Date:
Report Source: Legacy Licenses (Excluding TS)
Licence Type: Limited Vendor
Licence Type Code: 23
Licence Class: 01
Licence Control: 0
Latitude:
Longitude:
Lot:
Concession:
Region: 1
District: 2
County: 21
Trade Name:
PDF URL:

Operator Box:
Operator Class:
Operator No:
Operator Type:
Oper Area Code: 519
Oper Phone No: 9663560
Operator Ext:
Operator Lot:
Oper Concession:
Operator Region: 1
Operator District: 2
Operator County: 21
Op Municipality:
Post Office Box:
MOE District:
SWP Area Name:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
31	12 of 22	NNW/299.7	189.9 / 0.00	Wrank Enterprises Ltd. 4150 Walkers Road Windsor ON N8W3T5	GEN

Generator Info

Generator No:	ON4805708	***Choice of Contact:***	CO_OFFICIAL
Approval Years:	2016	***Contaminated Fac:***	No
Status:		***MHSW Facility:***	No
PO Box No:		***SIC Code:***	452991, 452999
Country:	Canada		
Co Admin:	Matt Gunness		
Phone No Admin:	905-795-3339 Ext.		
SIC Description:	HOME AND AUTO SUPPLIES STORES, ALL OTHER MISCELLANEOUS GENERAL MERCHANDISE STORES		

Waste Detail(s)

Waste Class: 263
Waste Class Name: ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 148
Waste Class Name: INORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 147
Waste Class Name: CHEMICAL FERTILIZER WASTES

Waste Detail(s)

Waste Class: 212
Waste Class Name: ALIPHATIC SOLVENTS

Waste Detail(s)

Waste Class: 213
Waste Class Name: PETROLEUM DISTILLATES

Waste Detail(s)

Waste Class: 251
Waste Class Name: OIL SKIMMINGS & SLUDGES

Waste Detail(s)

Waste Class: 222
Waste Class Name: HEAVY FUELS

Waste Detail(s)

Waste Class: 262
Waste Class Name: DETERGENTS/SOAPS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Waste Detail(s)

Waste Class: 242
Waste Class Name: HALOGENATED PESTICIDES

Waste Detail(s)

Waste Class: 331
Waste Class Name: WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class: 145
Waste Class Name: PAINT/PIGMENT/COATING RESIDUES

Waste Detail(s)

Waste Class: 221
Waste Class Name: LIGHT FUELS

Waste Detail(s)

Waste Class: 122
Waste Class Name: ALKALINE WASTES - OTHER METALS

Waste Detail(s)

Waste Class: 112
Waste Class Name: ACID WASTE - HEAVY METALS

31	13 of 22	NNW/299.7	189.9 / 0.00	***Wrank Enterprises Ltd.*** ***4150 Walkers Road*** ***Windsor ON N8W3T5***	GEN

Generator Info

Generator No:	ON4805708	***Choice of Contact:***	CO_OFFICIAL
Approval Years:	2015	***Contaminated Fac:***	No
Status:		***MHSW Facility:***	No
PO Box No:		***SIC Code:***	452991, 452999
Country:	Canada		
Co Admin:	Matt Gunness		
Phone No Admin:	905-795-3339 Ext.		
SIC Description:	HOME AND AUTO SUPPLIES STORES, ALL OTHER MISCELLANEOUS GENERAL MERCHANDISE STORES		

Waste Detail(s)

Waste Class: 147
Waste Class Name: CHEMICAL FERTILIZER WASTES

Waste Detail(s)

Waste Class: 222
Waste Class Name: HEAVY FUELS

Waste Detail(s)

Waste Class: 212
Waste Class Name: ALIPHATIC SOLVENTS

Waste Detail(s)

Waste Class: 122
Waste Class Name: ALKALINE WASTES - OTHER METALS

Waste Detail(s)

Waste Class: 221
Waste Class Name: LIGHT FUELS

Waste Detail(s)

Waste Class: 262
Waste Class Name: DETERGENTS/SOAPS

Waste Detail(s)

Waste Class: 242
Waste Class Name: HALOGENATED PESTICIDES

Waste Detail(s)

Waste Class: 213
Waste Class Name: PETROLEUM DISTILLATES

Waste Detail(s)

Waste Class: 112
Waste Class Name: ACID WASTE - HEAVY METALS

Waste Detail(s)

Waste Class: 263
Waste Class Name: ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 145
Waste Class Name: PAINT/PIGMENT/COATING RESIDUES

Waste Detail(s)

Waste Class: 331
Waste Class Name: WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class: 251
Waste Class Name: OIL SKIMMINGS & SLUDGES

Waste Detail(s)

Waste Class: 148
Waste Class Name: INORGANIC LABORATORY CHEMICALS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
31	14 of 22	NNW/299.7	189.9 / 0.00	Wrank Enterprises Ltd. 4150 Walkers Road Windsor ON N8W3T5	GEN

Generator Info

Generator No:	ON4805708	**Choice of Contact:**	CO_OFFICIAL
Approval Years:	2014	**Contaminated Fac:**	No
Status:		**MHSW Facility:**	No
PO Box No:		**SIC Code:**	452991, 452999
Country:	Canada		
Co Admin:	Matt Gunness		
Phone No Admin:	905-795-3339 Ext.		
SIC Description:	HOME AND AUTO SUPPLIES STORES, ALL OTHER MISCELLANEOUS GENERAL MERCHANDISE STORES		

Waste Detail(s)

Waste Class: 263
Waste Class Name: ORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 221
Waste Class Name: LIGHT FUELS

Waste Detail(s)

Waste Class: 112
Waste Class Name: ACID WASTE - HEAVY METALS

Waste Detail(s)

Waste Class: 262
Waste Class Name: DETERGENTS/SOAPS

Waste Detail(s)

Waste Class: 213
Waste Class Name: PETROLEUM DISTILLATES

Waste Detail(s)

Waste Class: 222
Waste Class Name: HEAVY FUELS

Waste Detail(s)

Waste Class: 147
Waste Class Name: CHEMICAL FERTILIZER WASTES

Waste Detail(s)

Waste Class: 212

Waste Class Name: ALIPHATIC SOLVENTS

Waste Detail(s)

Waste Class: 148
Waste Class Name: INORGANIC LABORATORY CHEMICALS

Waste Detail(s)

Waste Class: 242
Waste Class Name: HALOGENATED PESTICIDES

Waste Detail(s)

Waste Class: 145
Waste Class Name: PAINT/PIGMENT/COATING RESIDUES

Waste Detail(s)

Waste Class: 331
Waste Class Name: WASTE COMPRESSED GASES

Waste Detail(s)

Waste Class: 251
Waste Class Name: OIL SKIMMINGS & SLUDGES

Waste Detail(s)

Waste Class: 122
Waste Class Name: ALKALINE WASTES - OTHER METALS

31	***15 of 22***	***NNW/299.7***	***189.9 / 0.00***	***Wrank Enterprises Ltd.*** ***4150 Walkers Road*** ***Windsor ON N8W3T5***	***GEN***

Generator Info

Generator No:	ON4805708	***Choice of Contact:***	
Approval Years:	As of Dec 2018	***Contaminated Fac:***	
Status:	Registered	***MHSW Facility:***	
PO Box No:		***SIC Code:***	
Country:	Canada		
Co Admin:			
Phone No Admin:			
SIC Description:			

Waste Detail(s)

Waste Class: 148 I
Waste Class Name: Misc. wastes and inorganic chemicals

Waste Detail(s)

Waste Class: 145 I
Waste Class Name: Wastes from the use of pigments, coatings and paints

Waste Detail(s)

Waste Class: 262 L
Waste Class Name: Detergents and soaps

Waste Detail(s)

Waste Class: 263 I
Waste Class Name: Misc. waste organic chemicals

Waste Detail(s)

Waste Class: 331 I
Waste Class Name: Waste compressed gases including cylinders

Waste Detail(s)

Waste Class: 212 L
Waste Class Name: Aliphatic solvents and residues

Waste Detail(s)

Waste Class: 242 A
Waste Class Name: Halogenated pesticides and herbicides

Waste Detail(s)

Waste Class: 148 C
Waste Class Name: Misc. wastes and inorganic chemicals

Waste Detail(s)

Waste Class: 251 L
Waste Class Name: Waste oils/sludges (petroleum based)

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31 | ***16 of 22*** | ***NNW/299.7*** | ***189.9 / 0.00*** | ***MICHAEL J. KENOPIC SALES LTD.***
4150 WALKER RD
WINDSOR ON N8W 3T5 | ***PES***

Detail Licence No:		***Operator Box:***	
Licence No:	L-232-9039399808	***Operator Class:***	
Status:	Active	***Operator No:***	
Approval Date:	2019-01-11	***Operator Type:***	
Report Source:	PEST-Limited Vendor	***Oper Area Code:***	
Licence Type:	Limited Vendor	***Oper Phone No:***	
Licence Type Code:		***Operator Ext:***	
Licence Class:		***Operator Lot:***	
Licence Control:		***Oper Concession:***	
Latitude:	42.25972222	***Operator Region:***	
Longitude:	-82.96472222	***Operator District:***	
Lot:		***Operator County:***	
Concession:		***Op Municipality:***	
Region:		***Post Office Box:***	
District:		***MOE District:***	Windsor
County:		***SWP Area Name:***	Essex
Trade Name:			

PDF URL: http://www.accessenvironment.ene.gov.on.ca/AEWeb/ae/ViewDocument.action?documentRefID=2117371

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
31	17 of 22	NNW/299.7	189.9 / 0.00	CANADIAN TIRE ASSOCIATE STORE/WRANK ENTERPRISES LTD. 4150 WALKER ROAD WINDSOR ON N8W3T5	PES

Detail Licence No:		**Operator Box:**	
Licence No:	09376	**Operator Class:**	
Status:		**Operator No:**	
Approval Date:		**Operator Type:**	
Report Source:	Legacy Licenses (Excluding TS)	**Oper Area Code:**	519
Licence Type:	Retail Vendor Class 03	**Oper Phone No:**	9663560
Licence Type Code:	21	**Operator Ext:**	
Licence Class:	03	**Operator Lot:**	
Licence Control:		**Oper Concession:**	
Latitude:		**Operator Region:**	
Longitude:		**Operator District:**	
Lot:		**Operator County:**	
Concession:		**Op Municipality:**	
Region:		**Post Office Box:**	
District:		**MOE District:**	
County:		**SWP Area Name:**	
Trade Name:			
PDF URL:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
31	18 of 22	NNW/299.7	189.9 / 0.00	Michael Kenopic Sales Limited 4150 Walkers Road Windsor ON N8W3T5	GEN

Generator Info

Generator No:	ON4805708	**Choice of Contact:**	
Approval Years:	As of Jul 2020	**Contaminated Fac:**	
Status:	Registered	**MHSW Facility:**	
PO Box No:		**SIC Code:**	
Country:	Canada		
Co Admin:			
Phone No Admin:			
SIC Description:			

Waste Detail(s)

Waste Class: 331 I
Waste Class Name: Waste compressed gases including cylinders

Waste Detail(s)

Waste Class: 263 I
Waste Class Name: Misc. waste organic chemicals

Waste Detail(s)

Waste Class: 148 I
Waste Class Name: Misc. wastes and inorganic chemicals

Waste Detail(s)

Waste Class: 251 L

Waste Class Name: Waste oils/sludges (petroleum based)

Waste Detail(s)

Waste Class: 262 L
Waste Class Name: Detergents and soaps

Waste Detail(s)

Waste Class: 148 C
Waste Class Name: Misc. wastes and inorganic chemicals

Waste Detail(s)

Waste Class: 242 A
Waste Class Name: Halogenated pesticides and herbicides

Waste Detail(s)

Waste Class: 145 I
Waste Class Name: Wastes from the use of pigments, coatings and paints

Waste Detail(s)

Waste Class: 212 L
Waste Class Name: Aliphatic solvents and residues

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31 | ***19 of 22*** | ***NNW/299.7*** | ***189.9 / 0.00*** | ***Canadian Tire- East Windsor***
4150 Walker Road
Windsor ON N8W 3T5 | ***SPL***

Ref No: 0420-BAGLMC
Year:
Incident Dt: 3/21/2019
Dt MOE Arvl on Scn:
MOE Reported Dt: 3/21/2019
Dt Document Closed:
Site No: NA
MOE Response: No
Site County/District: County of Essex
Site Geo Ref Meth:
Site District Office: Windsor
Nearest Watercourse:
Site Name: Canadian Tire Windsor<UNOFFICIAL>
Site Address: 4150 Walker Road
Site Region: Southwestern
Site Municipality: Windsor
Site Lot:
Site Conc:
Site Geo Ref Accu:
Site Map Datum:
Northing: 4680464.88
Easting: 337992.66
Entity Operating Name:
Client Name: Canadian Tire- East Windsor
Client Type: Corporation
Source Type: Container/Drum/Tote
Incident Cause:
Incident Preceding Spill: Operator/Human error
Incident Reason: Operator/Human Error
Incident Summary: Dragun Corp - 150L Motor Oil to asphalt; contained

Municipality No:
Nature of Damage:
Discharger Report:
Material Group:
Impact to Health: 2 - Minor Environment
Agency Involved:

Environment Impact:	
Health Env Consequence:	
Nature of Impact:	
Contaminant Qty:	150 L
Contaminant Qty 1:	150
Contaminant Unit:	L
Contaminant Code:	15
Contaminant Name:	MOTOR OIL
Contaminant Limit 1:	
Contam Limit Freq 1:	
Contaminant UN No 1:	1993
Receiving Medium:	Land
Activity Preceding Spill:	
Property 2nd Watershed:	
Property Tertiary Watershed:	
Sector Type:	Miscellaneous Communal
SAC Action Class:	Land Spills
Call Report Locatn Geodata:	
Time Reported:	
System Facility Address:	

31	***20 of 22***	***NNW/299.7***	***189.9 / 0.00***	***Michael Kenopic Sales Limited*** ***4150 Walkers Road*** ***Windsor ON N8W3T5***	***GEN***

Generator Info

Generator No:	ON4805708	***Choice of Contact:***	
Approval Years:	As of Nov 2021	***Contaminated Fac:***	
Status:	Registered	***MHSW Facility:***	
PO Box No:		***SIC Code:***	
Country:	Canada		
Co Admin:			
Phone No Admin:			
SIC Description:			

Waste Detail(s)

Waste Class:	262 L
Waste Class Name:	Detergents and soaps

Waste Detail(s)

Waste Class:	145 I
Waste Class Name:	Wastes from the use of pigments, coatings and paints

Waste Detail(s)

Waste Class:	251 L
Waste Class Name:	Waste oils/sludges (petroleum based)

Waste Detail(s)

Waste Class:	242 A
Waste Class Name:	Halogenated pesticides and herbicides

Waste Detail(s)

Waste Class: 263 I
Waste Class Name: Misc. waste organic chemicals

Waste Detail(s)

Waste Class: 148 C
Waste Class Name: Misc. wastes and inorganic chemicals

Waste Detail(s)

Waste Class: 148 I
Waste Class Name: Misc. wastes and inorganic chemicals

Waste Detail(s)

Waste Class: 331 I
Waste Class Name: Waste compressed gases including cylinders

Waste Detail(s)

Waste Class: 212 L
Waste Class Name: Aliphatic solvents and residues

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31 | ***21 of 22*** | ***NNW/299.7*** | ***189.9 / 0.00*** | ***Canadian Tire Real Estate Limited***
4150 Walker Road
Windsor ON N8W 3T5 | ***GEN***

Generator Info

Generator No:	ON8048958	***Choice of Contact:***	
Approval Years:	As of Oct 2022	***Contaminated Fac:***	
Status:	Registered	***MHSW Facility:***	
PO Box No:		***SIC Code:***	
Country:	Canada		
Co Admin:			
Phone No Admin:			
SIC Description:			

Waste Detail(s)

Waste Class: 146 L
Waste Class Name: OTHER SPECIFIED INORGANICS

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31 | ***22 of 22*** | ***NNW/299.7*** | ***189.9 / 0.00*** | ***MICHAEL J. KENOPIC SALES LTD.***
4150 WALKER RD
WINDSOR ON N8W 3T5 | ***PES***

Detail Licence No:		***Operator Box:***	
Licence No:	L-232-9265623079	***Operator Class:***	
Status:	Active	***Operator No:***	
Approval Date:	January 23, 2024	***Operator Type:***	
Report Source:	PEST-Limited Vendor	***Oper Area Code:***	
Licence Type:	Limited Vendor	***Oper Phone No:***	
Licence Type Code:		***Operator Ext:***	
Licence Class:		***Operator Lot:***	
Licence Control:		***Oper Concession:***	
Latitude:	42.25972222	***Operator Region:***	
Longitude:	-82.96472222	***Operator District:***	

Lot:		**Operator County:**	
Concession:		**Op Municipality:**	
Region:		**Post Office Box:**	
District:		**MOE District:**	Windsor
County:		**SWP Area Name:**	Essex
Trade Name:			
PDF URL:	http://www.accessenvironment.ene.gov.on.ca/AEWeb/ae/ViewDocument.action?documentRefID=3279125		

Unplottable Summary

Total: 24 Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
CA		Walker Road	Windsor ON	
CA		Walker Road	Windsor ON	
CA	CHRYSLER CANADA LTD., WINDSOR ASSY. PLAN	WALKER ROAD	WINDSOR CITY ON	
CA	CHRYSLER CANADA LTD., WINDSOR ASSY. PLAN	WALKER ROAD	WINDSOR CITY ON	
CA	1088135 ONTARIO LIMITED	WALKER RD.,PLAN 12R-512,BLK.A	SANDWICH SOUTH TWP. ON	
CA	1088135 ONTARIO LIMITED	WALKER RD.,PLAN 12R-5112,BLK.A	SANDWICH SOUTH TWP. ON	
CA	The Corporation of the County of Essex	Walker Road	Tecumseh ON	
CA	The Corporation of the City of Windsor	Walker Road/CPR Grade Separation	Windsor ON	
CA	North Roseland Development Ltd.	Part of Lot 14, Concession 6	Windsor ON	
CA	The Corporation of the City of Windsor	Walker Road	Windsor ON	
CA	The Corporation of the City of Windsor	Walker Road	Windsor ON	
CA	CHRYSLER CANADA LTD., WINDSOR ASSY. PLAN	WALKER ROAD	WINDSOR CITY ON	
CA	WINDSOR CHRISTIAN FELLOWSHIP	7TH CONC.	WINDSOR CITY ON	
CA	SANDWICH SOUTH TWP.	WALKER RD.	SANDWICH SOUTH TWP. ON	
CA	SANDWICH SOUTH TWP.	WALKER RD.	SANDWICH SOUTH TWP. ON	
CA	WINDSOR CITY	WALKER RD.	WINDSOR CITY ON	

CA	REMIGIO PITTAO (TRUSTEE)	LOT 15/CONC.6,WALKER RD.	WINDSOR CITY ON
DTNK	PUBLIC WORKS MAINT PROCESSING PLANT	WALKER RD	WINDSOR ON
DTNK	PUBLIC WORKS MAINT PROCESSING PLANT	WALKER RD	WINDSOR ON
PRT	PUBLIC WORKS MAINT PROCESSING PLANT	WALKER RD	WINDSOR ON
SPL	PETRO-CANADA	WALKER ROAD BULK PLANT/TERMINAL	SANDWICH SOUTH TOWNSHIP ON
SPL	PROVOST BULK TRANSPORT	WALKER ROAD TANK TRUCK (CARGO)	WINDSOR CITY ON
SPL	unknown<UNOFFICIAL>	Walker Rd.	Windsor ON
WDS		E. OF WALKER RD. N. OF E.C. -	ON

Unplottable Report

Site:
Walker Road Windsor ON

Database: CA

Certificate #:	5909-53JS2J
Application Year:	01
Issue Date:	10/17/01
Approval Type:	Municipal & Private water
Status:	Approved
Application Type:	New Certificate of Approval
Client Name:	Corporation of the City of Windsor
Client Address:	350 City Hall Square West, P.O. Box 1607
Client City:	Windsor
Client Postal Code:	N9A 6S1
Project Description:	This application is for a Certificate of Approval for watermain construction on Walker Road.
Contaminants:	
Emission Control:	

Site:
Walker Road Windsor ON

Database: CA

Certificate #:	2074-53JRV9
Application Year:	01
Issue Date:	10/17/01
Approval Type:	Municipal & Private sewage
Status:	Approved
Application Type:	New Certificate of Approval
Client Name:	Corporation of the City of Windsor
Client Address:	350 City Hall Square West, P.O. Box 1607
Client City:	Windsor
Client Postal Code:	N9A 6S1
Project Description:	This application is for storm sewer construction on walker road.
Contaminants:	
Emission Control:	

Site: ***CHRYSLER CANADA LTD., WINDSOR ASSY. PLAN***
WALKER ROAD WINDSOR CITY ON

Database: CA

Certificate #:	8-1065-95-967
Application Year:	95
Issue Date:	10/15/96
Approval Type:	Industrial air
Status:	First Ammendment in 1996
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	STACK FROM BOILER 2 DUCTED TO STACK 2
Contaminants:	
Emission Control:	

Site: ***CHRYSLER CANADA LTD., WINDSOR ASSY. PLAN***
WALKER ROAD WINDSOR CITY ON

Database: CA

Certificate #:	8-1065-95-006

Application Year: 95
Issue Date: 4/1/96
Approval Type: Industrial air
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description: REDUCE HEIGHT OF STACK AT POWERHOUSE
Contaminants:
Emission Control:

Site: ***1088135 ONTARIO LIMITED***
WALKER RD.,PLAN 12R-512,BLK.A SANDWICH SOUTH TWP. ON

Database: ***CA***

Certificate #: 3-0297-96-
Application Year: 96
Issue Date: 7/24/1996
Approval Type: Municipal sewage
Status:
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***1088135 ONTARIO LIMITED***
WALKER RD.,PLAN 12R-5112,BLK.A SANDWICH SOUTH TWP. ON

Database: ***CA***

Certificate #: 7-0272-96-
Application Year: 96
Issue Date: 7/23/1996
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***The Corporation of the County of Essex***
Walker Road Tecumseh ON

Database: ***CA***

Certificate #: 0469-5LRNUH
Application Year: 2003
Issue Date: 5/12/2003
Approval Type: Municipal and Private Sewage Works
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***The Corporation of the City of Windsor***
Walker Road/CPR Grade Separation Windsor ON

Database: ***CA***

Certificate #: 5920-6YPL78
Application Year: 2007
Issue Date: 4/5/2007
Approval Type: Municipal and Private Sewage Works
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***North Roseland Development Ltd.***
Part of Lot 14, Concession 6 Windsor ON

Database: ***CA***

Certificate #: 6944-5J8TEN
Application Year: 2003
Issue Date: 2/5/2003
Approval Type: Municipal and Private Sewage Works
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***The Corporation of the City of Windsor***
Walker Road Windsor ON

Database: ***CA***

Certificate #: 7095-67BKVJ
Application Year: 2004
Issue Date: 12/22/2004
Approval Type: Municipal and Private Sewage Works
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***The Corporation of the City of Windsor***
Walker Road Windsor ON

Database: ***CA***

Certificate #: 7971-757FXL
Application Year: 2007
Issue Date: 7/19/2007
Approval Type: Municipal and Private Sewage Works
Status: Approved
Application Type:
Client Name:
Client Address:

Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***CHRYSLER CANADA LTD., WINDSOR ASSY. PLAN***
WALKER ROAD WINDSOR CITY ON

Database: ***CA***

Certificate #: 8-1065-95-
Application Year: 95
Issue Date: 7/24/1995
Approval Type: Industrial air
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description: INSTALL 59 TONNE/HOUR STEAM BOILER
Contaminants:
Emission Control:

Site: ***WINDSOR CHRISTIAN FELLOWSHIP***
7TH CONC. WINDSOR CITY ON

Database: ***CA***

Certificate #: 7-1445-88-
Application Year: 88
Issue Date: 9/16/1988
Approval Type: Municipal water
Status: Cancelled
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***SANDWICH SOUTH TWP.***
WALKER RD. SANDWICH SOUTH TWP. ON

Database: ***CA***

Certificate #: 7-1874-87-
Application Year: 87
Issue Date: 1/12/1988
Approval Type: Municipal water
Status: Approved in 1988
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***SANDWICH SOUTH TWP.***
WALKER RD. SANDWICH SOUTH TWP. ON

Database: ***CA***

Certificate #: 7-0760-89-
Application Year: 89

Issue Date: 5/26/1989
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***WINDSOR CITY***
WALKER RD. WINDSOR CITY ON

Database: ***CA***

Certificate #: 3-1427-87-
Application Year: 87
Issue Date: 9/24/1987
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***REMIGIO PITTAO (TRUSTEE)***
LOT 15/CONC.6,WALKER RD. WINDSOR CITY ON

Database: ***CA***

Certificate #: 3-0357-93-
Application Year: 93
Issue Date: 5/7/1993
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***PUBLIC WORKS MAINT PROCESSING PLANT***
WALKER RD WINDSOR ON

Database: ***DTNK***

Delisted Expired Fuel Safety Facilities

Instance No: 11102395
Status: EXPIRED
Instance ID: 68844
Instance Type: FS Propane Tank
Instance Creation Dt:
Instance Install Dt:
Item Description:
Manufacturer:
Model:
Serial No:

Expired Date:
Max Hazard Rank:
Facility Location:
Facility Type:
Fuel Type 2:
Fuel Type 3:
Panam Related:
Panam Venue Nm:
External Identifier:
Item:

ULC Standard:
Quantity:
Unit of Measure:
Overfill Prot Type:
Creation Date:
Next Periodic Str DT:
TSSA Base Sched Cycle 2:
TSSAMax Hazard Rank 1:
TSSA Risk Based Periodic Yn:
TSSA Volume of Directives:
TSSA Periodic Exempt:
TSSA Statutory Interval:
TSSA Recd Insp Interva:
TSSA Recd Tolerance:
TSSA Program Area:
TSSA Program Area 2:
Description: FS Propane Tank
Original Source: EXP
Record Date: Up to Mar 2012

Piping Steel:
Piping Galvanized:
Tank Single Wall St:
Piping Underground:
Tank Underground:
Source:

Site: ***PUBLIC WORKS MAINT PROCESSING PLANT***
WALKER RD WINDSOR ON

Database: ***DTNK***

Delisted Expired Fuel Safety Facilities

Instance No: 9898164
Status: EXPIRED
Instance ID: 394049
Instance Type: FS Facility
Instance Creation Dt:
Instance Install Dt:
Item Description:
Manufacturer:
Model:
Serial No:
ULC Standard:
Quantity:
Unit of Measure:
Overfill Prot Type:
Creation Date:
Next Periodic Str DT:
TSSA Base Sched Cycle 2:
TSSAMax Hazard Rank 1:
TSSA Risk Based Periodic Yn:
TSSA Volume of Directives:
TSSA Periodic Exempt:
TSSA Statutory Interval:
TSSA Recd Insp Interva:
TSSA Recd Tolerance:
TSSA Program Area:
TSSA Program Area 2:
Description: FS Propane Refill Cntr - Cylr Fill
Original Source: EXP
Record Date: Up to Mar 2012

Expired Date:
Max Hazard Rank:
Facility Location:
Facility Type:
Fuel Type 2:
Fuel Type 3:
Panam Related:
Panam Venue Nm:
External Identifier:
Item:
Piping Steel:
Piping Galvanized:
Tank Single Wall St:
Piping Underground:
Tank Underground:
Source:

Site: ***PUBLIC WORKS MAINT PROCESSING PLANT***
WALKER RD WINDSOR ON

Database: ***PRT***

Location ID: 19371
Type: retail
Expiry Date: 1993-01-31
Capacity (L): 2000
Licence #: 0076349042

Site: ***PETRO-CANADA***
WALKER ROAD BULK PLANT/TERMINAL SANDWICH SOUTH TOWNSHIP ON

Database: ***SPL***

Ref No:	108554	***Municipality No:***	45611
Year:		***Nature of Damage:***	
Incident Dt:	12/23/1994	***Discharger Report:***	
Dt MOE Arvl on Scn:		***Material Group:***	
MOE Reported Dt:	12/24/1994	***Impact to Health:***	
Dt Document Closed:		***Agency Involved:***	FIRE DEPARTMENT
Site No:			
MOE Response:			
Site County/District:			
Site Geo Ref Meth:			
Site District Office:			
Nearest Watercourse:			
Site Name:			
Site Address:			
Site Region:			
Site Municipality:	SANDWICH SOUTH TOWNSHIP		
Site Lot:			
Site Conc:			
Site Geo Ref Accu:			
Site Map Datum:			
Northing:			
Easting:			
Entity Operating Name:			
Client Name:			
Client Type:			
Source Type:			
Incident Cause:	UNKNOWN		
Incident Preceding Spill:			
Incident Reason:	UNKNOWN		
Incident Summary:	PETRO-CANADA: DIESEL FUEL SPILLED TO GROUND		
Environment Impact:	POSSIBLE		
Health Env Consequence:			
Nature of Impact:	Soil contamination		
Contaminant Qty:			
Contaminant Qty 1:			
Contaminant Unit:			
Contaminant Code:			
Contaminant Name:			
Contaminant Limit 1:			
Contam Limit Freq 1:			
Contaminant UN No 1:			
Receiving Medium:	LAND		
Activity Preceding Spill:			
Property 2nd Watershed:			
Property Tertiary Watershed:			
Sector Type:			
SAC Action Class:			
Call Report Locatn Geodata:			
Time Reported:			
System Facility Address:			

Site: ***PROVOST BULK TRANSPORT***
WALKER ROAD TANK TRUCK (CARGO) WINDSOR CITY ON

Database: ***SPL***

Ref No:	137107	***Municipality No:***	45101
Year:		***Nature of Damage:***	
Incident Dt:	2/12/1997	***Discharger Report:***	
Dt MOE Arvl on Scn:		***Material Group:***	
MOE Reported Dt:	2/12/1997	***Impact to Health:***	
Dt Document Closed:		***Agency Involved:***	
Site No:			
MOE Response:			
Site County/District:			

Site Geo Ref Meth:
Site District Office:
Nearest Watercourse:
Site Name:
Site Address:
Site Region:
Site Municipality: WINDSOR CITY
Site Lot:
Site Conc:
Site Geo Ref Accu:
Site Map Datum:
Northing:
Easting:
Entity Operating Name:
Client Name:
Client Type:
Source Type:
Incident Cause: CONTAINER OVERFLOW
Incident Preceding Spill:
Incident Reason: ERROR
Incident Summary: PROVOST TRANSPORT TRUCK 227L OF POWER STEERING FLUID CONTAINED
Environment Impact: NOT ANTICIPATED
Health Env Consequence:
Nature of Impact:
Contaminant Qty:
Contaminant Qty 1:
Contaminant Unit:
Contaminant Code:
Contaminant Name:
Contaminant Limit 1:
Contam Limit Freq 1:
Contaminant UN No 1:
Receiving Medium: LAND
Activity Preceding Spill:
Property 2nd Watershed:
Property Tertiary Watershed:
Sector Type:
SAC Action Class:
Call Report Locatn Geodata:
Time Reported:
System Facility Address:

Site: ***unknown<UNOFFICIAL>***
Walker Rd. Windsor ON

Database: ***SPL***

Ref No: 6166-82WRF8
Year:
Incident Dt:
Dt MOE Arvl on Scn:
MOE Reported Dt: 2/22/2010
Dt Document Closed: 3/3/2010
Site No:
Municipality No:
Nature of Damage:
Discharger Report:
Material Group:
Impact to Health:
Agency Involved:
MOE Response: No Field Response
Site County/District:
Site Geo Ref Meth:
Site District Office:
Nearest Watercourse:
Site Name: Walker Rd. <UNOFFICIAL>
Site Address:
Site Region:
Site Municipality:
Site Lot:
Site Conc:
Site Geo Ref Accu:
Site Map Datum:
Northing:
Easting:

Entity Operating Name:	
Client Name:	unknown<UNOFFICIAL>
Client Type:	
Source Type:	
Incident Cause:	Other Transport Accident
Incident Preceding Spill:	
Incident Reason:	Other - Reason not otherwise defined
Incident Summary:	Vehicle gas tank punc. Walker Rd. Windsor
Environment Impact:	Confirmed
Health Env Consequence:	
Nature of Impact:	Soil Contamination
Contaminant Qty:	0 other - see incident description
Contaminant Qty 1:	0
Contaminant Unit:	other - see incident description
Contaminant Code:	12
Contaminant Name:	GASOLINE
Contaminant Limit 1:	
Contam Limit Freq 1:	
Contaminant UN No 1:	
Receiving Medium:	
Activity Preceding Spill:	
Property 2nd Watershed:	
Property Tertiary Watershed:	
Sector Type:	Motor Vehicle
SAC Action Class:	Land Spills
Call Report Locatn Geodata:	
Time Reported:	
System Facility Address:	

Site:

E. OF WALKER RD. N. OF E.C. - ON

Database: ***WDS***

Approval No:	A010106	***Total Area (ha):***	0
Mob Unit Cert No:		***Landfill Cap (m³):***	0
EBR Registry No:		***Transfer Area (ha):***	0
Status:	Approved	***Transfer Cap (m³):***	0
Facility Type:	Transfer Station	***Transfer Cert No:***	
Record Type:		***Inciner. Area (ha):***	0
Link Source:		***Inciner. Cap (t):***	0
Project Type:		***Process Area (m³):***	0
Application Status:		***Process Cap (m³/d):***	0
Issue Date:	11/11/1111	***Process Vol (m³):***	0
Input Date:	7/23/93	***Process Feed (m³):***	0
Date Received:	6/7/72	***Site Concession:***	2
Est Closure Date:		***Site Region/County:***	WINDSOR
Mobile Capacity:	0	***SWP Area Name:***	
Mobile Units:		***MOE District:***	
Mobile Description:		***District Office:***	Windsor
Prop City:	WINDSOR, ONTARIO	***Latitude:***	
Prop Postal:	N9A-2Y7	***Longitude:***	
Prop Phone:		***Geometry X:***	
Serial Link:	010106	***Geometry Y:***	
Approval Type:			
Proponent:	WINDSOR, CITY OF		
Prop Address:	205 UNIVERSITY AVE. E. CITY HL		
Proponent County/District:			
Full Address:			
Site Lot:	102 - ROW ON FARM		
Waste Class Code:			
Waste Class:			
Waste Type:			
Waste Type Other:	No		
Waste Description:			
Landfill Monitoring:			
Landfill Ctrl Type:			
Site Closing Description:			
Project Description:			

Municipalities Served:
Approval Description:
Other Approvals/Permits:
PDF URL:
PDF Site Location:

Appendix: Database Descriptions

Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ***Note:*** *Databases denoted with " * " indicates that the database will no longer be updated. See the individual database description for more information.*

Abandoned Aggregate Inventory: Provincial AAGR

The MAAP Program maintains a database of abandoned pits and quarries. Please note that the database is only referenced by lot and concession and city/town location. The database provides information regarding the location, type, size, land use, status and general comments.*

Government Publication Date: Sept 2002*

Aggregate Inventory: Provincial AGR

This database of licensed and permitted pits and quarries is maintained by the Ontario Ministry of Natural Resources and Forestry (MNRF), as regulated under the Aggregate Resources Act, R.S.O. 1990. Aggregate site data has been divided into active and inactive sites. Active sites may be further subdivided into partial surrenders. In partial surrenders, defined areas of a site are inactive while the rest of the site remains active.

Government Publication Date: Up to Nov 2024

Abandoned Mine Information System: Provincial AMIS

The Abandoned Mines Information System contains data on known abandoned and inactive mines located on both Crown and privately held lands. The information was provided by the Ministry of Northern Development and Mines (MNDM), with the following disclaimer: "the database provided has been compiled from various sources, and the Ministry of Northern Development and Mines makes no representation and takes no responsibility that such information is accurate, current or complete". Reported information includes official mine name, status, background information, mine start/end date, primary commodity, mine features, hazards and remediation.

Government Publication Date: 1800-Apr 2024

Anderson's Waste Disposal Sites: Private ANDR

The information provided in this database was collected by examining various historical documents which aimed to characterize the likely position of former waste disposal sites from 1860 to present. The research initiative behind the creation of this database was to identify those sites that are missing from the Ontario MOE Waste Disposal Site Inventory, as well as to provide revisions and corrections to the positions and descriptions of sites currently listed in the MOE inventory. In addition to historic waste disposal facilities, the database also identifies certain auto wreckers and scrap yards that have been extrapolated from documentary sources. Please note that the data is not warranted to be complete, exhaustive or authoritative. The information was collected for research purposes only.

Government Publication Date: 1860s-Present

Aboveground Storage Tanks: Provincial AST

Historical listing of aboveground storage tanks made available by the Department of Natural Resources and Forestry. Includes tanks used to hold water or petroleum. This dataset has been retired as of September 25, 2014 and will no longer be updated.

Government Publication Date: May 31, 2014

Automobile Wrecking & Supplies: Private AUWR

This database provides an inventory of known locations that are involved in the scrap metal, automobile wrecking/recycling, and automobile parts & supplies industry. Information is provided on the company name, location and business type.

Government Publication Date: 1999-Apr 30, 2025

Borehole: Provincial BORE

A borehole is the generalized term for any narrow shaft drilled in the ground, either vertically or horizontally. The information here includes geotechnical investigations or environmental site assessments, mineral exploration, or as a pilot hole for installing piers or underground utilities. Information is from many sources such as the Ministry of Transportation (MTO) boreholes from engineering reports and projects from the 1950 to 1990's in Southern Ontario. Boreholes from the Ontario Geological Survey (OGS) including The Urban Geology Analysis Information System (UGAIS) and the York Peel Durham Toronto (YPDT) database of the Conservation Authority Moraine Coalition. This database will include fields such as location, stratigraphy, depth, elevation, year drilled, etc. For all water well data or oil and gas well data for Ontario please refer to WWIS and OOGW.

Government Publication Date: 1875-Jul 2018

Certificates of Approval: Provincial CA

This database contains the following types of approvals: Air & Noise, Industrial Sewage, Municipal & Private Sewage, Waste Management Systems and Renewable Energy Approvals. The MOE in Ontario states that any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste, must have a Certificate of Approval before it can operate lawfully. Fields include approval number, business name, address, approval date, approval type and status. This database will no longer be updated, as CofA's have been replaced by either Environmental Activity and Sector Registry (EASR) or Environmental Compliance Approval (ECA). Please refer to those individual databases for any information after Oct.31, 2011.

Government Publication Date: 1985-Oct 30, 2011*

Dry Cleaning Facilities: Federal CDRY

List of dry cleaning facilities made available by Environment and Climate Change Canada. Environment and Climate Change Canada's Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations (SOR/2003-79) are intended to reduce releases of tetrachloroethylene to the environment from dry cleaning facilities.

Government Publication Date: Jan 2004-Dec 2023

Commercial Fuel Oil Tanks: Provincial CFOT

Locations of commercial underground fuel oil tanks. This is not a comprehensive or complete inventory of commercial fuel tanks in the province; this listing is a copy of records of registered commercial underground fuel oil tanks obtained under Access to Public Information.
Note that the following types of tanks do not require registration: waste oil tanks in apartments, office buildings, residences, etc.; aboveground gas or diesel tanks. Records are not verified for accuracy or completeness.

Government Publication Date: Oct 2023

Chemical Manufacturers and Distributors: Private CHEM

This database includes information from both a one time study conducted in 1992 and private source and is a listing of facilities that manufacture or distribute chemicals. The production of these chemical substances may involve one or more chemical reactions and/or chemical separation processes (i.e. fractionation, solvent extraction, crystallization, etc.).

Government Publication Date: 1999-Jan 31, 2020

Chemical Register: Private CHM

This database includes a listing of locations of facilities within the Province or Territory that either manufacture and/or distributes chemicals.

Government Publication Date: 1999-Apr 30, 2025

Compressed Natural Gas Stations: Private CNG

Canada has a network of public access compressed natural gas (CNG) refuelling stations. These stations dispense natural gas in compressed form at 3,000 pounds per square inch (psi), the pressure which is allowed within the current Canadian codes and standards. The majority of natural gas refuelling is located at existing retail gasoline that have a separate refuelling island for natural gas. This list of stations is made available by the Canadian Natural Gas Vehicle Alliance.

Government Publication Date: Dec 2012 -Apr 2025

Inventory of Coal Gasification Plants and Coal Tar Sites: Provincial COAL

This inventory includes both the "Inventory of Coal Gasification Plant Waste Sites in Ontario-April 1987" and the Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario-November 1988) collected by the MOE. It identifies industrial sites that produced and continue to produce or use coal tar and other related tars. Detailed information is available and includes: facility type, size, land use, information on adjoining properties, soil condition, site operators/occupants, site description, potential environmental impacts and historic maps available. This was a one-time inventory.*

Government Publication Date: Apr 1987 and Nov 1988*

Compliance and Convictions: Provincial CONV

This database summarizes the fines and convictions handed down by the Ontario courts beginning in 1989. Companies and individuals named here have been found guilty of environmental offenses in Ontario courts of law.

Government Publication Date: 1989-Apr 2025

Certificates of Property Use: Provincial CPU

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include CPU's on the registry such as (EPA s. 168.6) - Certificate of Property Use.

Government Publication Date: 1994 - Jun 30, 2025

Drill Hole Database: Provincial DRL

The Ontario Drill Hole Database (ODHD) is offered by the Province of Ontario's Ministry of Mines. The dataset contains information for over 164,000 percussion, overburden, sonic and diamond-drill holes. The presence of assay results with cutoff values for gold, silver, copper, zinc, lead, nickel and platinum group elements is noted. Drill hole data are compiled from assessment files that have been submitted to the ministry in accordance with the Ontario Mining Act (OMA). Source assessment file numbers are captured for cross reference with the Ontario Assessment File Database (OAFD). Please note that limited data is available for southern Ontario, as it was the last area to be completed. The database was created when surveys submitted to the Ministry were converted in the Assessment File Research Image Database (AFRI) project. However, the degree of accuracy (coordinates) as to the exact location of drill holes is dependent upon the source document submitted. Levels of accuracy used to locate holes are: centering on the mining claim; a sketch of the mining claim; a 1:50,000 map; a detailed company map; or from submitted a "Report of Work".

Government Publication Date: 1886 - Aug 2024

Delisted Fuel Tanks: Provincial DTNK

List of fuel storage tank sites that were once found in - and have since been removed from - the list of fuel storage tanks made available by the regulatory agency under Access to Public Information.

Government Publication Date: Oct 2023

Environmental Activity and Sector Registry: Provincial EASR

On October 31, 2011, a smarter, faster environmental approvals system came into effect in Ontario. The EASR allows businesses to register certain activities with the ministry, rather than apply for an approval. The registry is available for common systems and processes, to which preset rules of operation can be applied. The EASR is currently available for: heating systems, standby power systems and automotive refinishing. Businesses whose activities aren't subject to the EASR may apply for an ECA (Environmental Compliance Approval), Please see our ECA database.

Government Publication Date: Oct 2011 - May 31, 2025

Environmental Registry: Provincial EBR

The Environmental Registry lists proposals, decisions and exceptions regarding policies, Acts, instruments, or regulations that could significantly affect the environment. Through the Registry, thirteen provincial ministries notify the public of upcoming proposals and invite their comments. For example, if a local business is requesting a permit, license, or certificate of approval to release substances into the air or water; these are notified on the registry. Data includes: Approval for discharge into the natural environment other than water (i.e. Air) - EPA s. 9, Approval for sewage works - OWRA s. 53(1), and EPA s. 27 - Approval for a waste disposal site. For information regarding Permit to Take Water (PTTW), Certificate of Property Use (CPU) and (ORD) Orders please refer to those individual databases.

Government Publication Date: 1994 - Jun 30, 2025

Environmental Compliance Approval: Provincial ECA

On October 31, 2011, a smarter, faster environmental approvals system came into effect in Ontario. In the past, a business had to apply for multiple approvals (known as certificates of approval) for individual processes and pieces of equipment. Today, a business either registers itself, or applies for a single approval, depending on the types of activities it conducts. Businesses whose activities aren't subject to the EASR may apply for an ECA. A single ECA addresses all of a business's emissions, discharges and wastes. Separate approvals for air, noise and waste are no longer required. This database will also include Renewable Energy Approvals. For certificates of approval prior to Nov 1st, 2011, please refer to the CA database. For all Waste Disposal Sites please refer to the WDS database.

Government Publication Date: Oct 2011 - May 31, 2025

Environmental Effects Monitoring: Federal EEM

The Environmental Effects Monitoring program assesses the effects of effluent from industrial or other sources on fish, fish habitat and human usage of fisheries resources. Since 1992, pulp and paper mills have been required to conduct EEM studies under the Pulp and Paper Effluent Regulations. This database provides information on the mill name, geographical location and sub-lethal toxicity data.

Government Publication Date: 1992-2007*

ERIS Historical Searches: Private EHS

ERIS has compiled a database of all environmental risk reports completed since March 1999. Available fields for this database include: site location, date of report, type of report, and search radius. As per all other databases, the ERIS database can be referenced on both the map and "Statistical Profile" page.

Government Publication Date: 1999-Aug 31, 2024

Environmental Issues Inventory System: Federal EIIS

The Environmental Issues Inventory System was developed through the implementation of the Environmental Issues and Remediation Plan. This plan was established to determine the location and severity of contaminated sites on inhabited First Nation reserves, and where necessary, to remediate those that posed a risk to health and safety; and to prevent future environmental problems. The EIIS provides information on the reserve under investigation, inventory number, name of site, environmental issue, site action (Remediation, Site Assessment), and date investigation completed.

Government Publication Date: 1992-2001*

Emergency Management Historical Event: Provincial EMHE

List of locations of historical occurrences of emergency events, including those assigned to the Ministry of Natural Resources by Order-In-Council (OIC) under the Emergency Management and Civil Protection Act, as well as events where MNR provided requested emergency response assistance. Many of these events will have involved community evacuations, significant structural loss, and/or involvement of MNR emergency response staff. These events fall into one of ten (10) type categories: Dam Failure; Drought / Low Water; Erosion; Flood; Forest Fire; Soil and Bedrock Instability; Petroleum Resource Center Event, EMO Requested Assistance, Continuity of Operations Event, Other Requested Assistance. EMHE record details are reproduced by ERIS under License with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2017.

Government Publication Date: Apr 30, 2022

Environmental Penalty Annual Report: Provincial EPAR

This database contains data from Ontario's annual environmental penalty report published by the Ministry of the Environment, Conservation and Parks (MECP). These reports provide information on environmental penalties for land or water violations issued to companies in one of the nine industrial sectors covered by the Municipal Industrial Strategy for Abatement (MISA) regulations.

Government Publication Date: Jan 1, 2011 - Dec 31, 2024

List of Expired Fuels Safety Facilities: Provincial EXP

List of facilities and tanks for which there was once a fuel registration. This is not a comprehensive or complete inventory of expired tanks/tank facilities in the province; this listing is a copy of previously registered tanks and facilities obtained under Access to Public Information. Includes private fuel outlets, bulk plants, fuel oil tanks, gasoline stations, marinas, propane filling stations, liquid fuel tanks, piping systems, etc; includes tanks which have been removed from the ground.
Notes: registration was not required for private fuel underground/aboveground storage tanks prior to January 1990, nor for furnace oil tanks prior to May 1, 2002; registration is not required for waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness.

Government Publication Date: Oct 2023

Federal Convictions: Federal FCON

Environment Canada maintains a database referred to as the "Environmental Registry" that details prosecutions under the Canadian Environmental Protection Act (CEPA) and the Fisheries Act (FA). Information is provided on the company name, location, charge date, offence and penalty.

Government Publication Date: 1988-Jun 2007*

Contaminated Sites on Federal Land: Federal FCS

The Federal Contaminated Sites Inventory includes information on known federal contaminated sites under the custodianship of departments, agencies and consolidated Crown corporations as well as those that are being or have been investigated to determine whether they have contamination arising from past use that could pose a risk to human health or the environment. The inventory also includes non-federal contaminated sites for which the Government of Canada has accepted some or all financial responsibility. It does not include sites where contamination has been caused by, and which are under the control of, enterprise Crown corporations, private individuals, firms or other levels of government. Includes fire training sites and sites at which Per- and Polyfluoroalkyl Substances (PFAS) are a concern.

Government Publication Date: Jun 2000-Jan 2025

Fisheries & Oceans Fuel Tanks: Federal FOFT

Fisheries & Oceans Canada maintains an inventory of aboveground & underground fuel storage tanks located on Fisheries & Oceans property or controlled by DFO. Our inventory provides information on the site name, location, tank owner, tank operator, facility type, storage tank location, tank contents & capacity, and date of tank installation.

Government Publication Date: 1964-Sep 2019

Federal Identification Registry for Storage Tank Systems (FIRSTS): Federal FRST

A list of federally regulated Storage tanks from the Federal Identification Registry for Storage Tank Systems (FIRSTS). FIRSTS is Environment and Climate Change Canada's database of storage tank systems subject to the Storage Tank for Petroleum Products and Allied Petroleum Products Regulations. The main objective of the Regulations is to prevent soil and groundwater contamination from storage tank systems located on federal and aboriginal lands. Storage tank systems that do not have a valid identification number displayed in a readily visible location on or near the storage tank system may be refused product delivery.

Government Publication Date: Oct 31, 2021

Fuel Storage Tank: Provincial FST

List of registered private and retail fuel storage tanks. This is not a comprehensive or complete inventory of private and retail fuel storage tanks in the province; this listing is a copy of registered private and retail fuel storage tanks, obtained under Access to Public Information.
Notes: registration was not required for private fuel underground/aboveground storage tanks prior to January 1990, nor for furnace oil tanks prior to May 1, 2002; registration is not required for waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness.

Government Publication Date: Oct 2023

Fuel Storage Tank - Historic: Provincial FSTH

The Fuels Safety Branch of the Ontario Ministry of Consumer and Commercial Relations maintained a database of all registered private fuel storage tanks. Public records of private fuel storage tanks are only available since the registration became effective in September 1989. This information is now collected by the Technical Standards and Safety Authority.

Government Publication Date: Pre-Jan 2010*

Ontario Regulation 347 Waste Generators Summary: Provincial GEN

Regulation 347 of the Ontario EPA defines a waste generation site as any site, equipment and/or operation involved in the production, collection, handling and/or storage of regulated wastes. A generator of regulated waste is required to register the waste generation site and each waste produced, collected, handled, or stored at the site. This database contains the registration number, company name and address of registered generators including the types of hazardous wastes generated. It includes data on waste generating facilities such as: drycleaners, waste treatment and disposal facilities, machine shops, electric power distribution etc. This information is a summary of all years from 1986 including the most currently available data. As of January 1, 2023, businesses and institutions subject to the amended Reg. 347: General – Waste Management are required to report their activities and pay fees through Resource Productivity & Recovery Authority (RPRA) online Hazardous Waste Program Registry (HWPR) rather than the Hazardous Waste Information Network (HWIN) system previously operated by the Ministry of the Environment, Conservation and Parks (MECP). Some records may contain, within the company name, the phrase "See & Use..." followed by a series of letters and numbers. This occurs when one company is amalgamated with or taken over by another registered company. The number listed as "See & Use", refers to the new ownership and the other identification number refers to the original ownership. This phrase serves as a link between the 2 companies until operations have been fully transferred.

Government Publication Date: 1986-Dec 31, 2024

Greenhouse Gas Emissions from Large Facilities: Federal GHG

List of greenhouse gas emissions from large facilities made available by Environment Canada. Greenhouse gas emissions in kilotonnes of carbon dioxide equivalents (kt CO2 eq).

Government Publication Date: 2013-Apr 2024

TSSA Historic Incidents: Provincial HINC

List of historic incidences of spills and leaks of diesel, fuel oil, gasoline, natural gas, propane, and hydrogen recorded by the TSSA in their previous incident tracking system. The TSSA's Fuels Safety Program administers the Technical Standards & Safety Act 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, the TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of historical fuel spills and leaks in the province. This listing is a copy of the data captured at one moment in time and is hence limited by the record date provided here.

Government Publication Date: 2006-June 2009*

Indian & Northern Affairs Fuel Tanks: Federal IAFT

The Department of Indian & Northern Affairs Canada (INAC) maintains an inventory of aboveground & underground fuel storage tanks located on both federal and crown land. Our inventory provides information on the reserve name, location, facility type, site/facility name, tank type, material & ID number, tank contents & capacity, and date of tank installation.

Government Publication Date: 1950-Aug 2003*

Fuel Oil Spills and Leaks: Provincial INC

Listing of spills and leaks of diesel, fuel oil, gasoline, natural gas, propane, and hydrogen reported to the Spills Action Centre (SAC). This is not a comprehensive or complete inventory of fuel-related leaks, spills, and incidents in the province; this listing in a copy of incidents reported to the SAC, obtained under Access to Public Information. Includes incidents from fuel-related hazards such as spills, fires, and explosions. Records are not verified for accuracy or completeness.

Government Publication Date: 31 Oct, 2023

Landfill Inventory Management Ontario: Provincial LIMO

The Landfill Inventory Management Ontario (LIMO) database is updated every year, as the Ministry of the Environment, Conservation and Parks compiles new and updated information. Includes small and large landfills currently operating as well as those which are closed and historic. Operators of larger landfills provide landfill information for the previous operating year to the ministry for LIMO including: estimated amount of total waste received, landfill capacity, estimated total remaining landfill capacity, fill rates, engineering designs, reporting and monitoring details, size of location, service area, approved waste types, leachate of site treatment, contaminant attenuation zone and more. The small landfills include information such as site owner, site location and certificate of approval # and status.

Government Publication Date: Mar 31, 2022

Canadian Mine Locations: Private MINE

This information is collected from the Canadian & American Mines Handbook. The Mines database is a national database that provides over 290 listings on mines (listed as public companies) dealing primarily with precious metals and hard rocks. Listed are mines that are currently in operation, closed, suspended, or are still being developed (advanced projects). Their locations are provided as geographic coordinates (x, y and/or longitude, latitude). As of 2002, data pertaining to Canadian smelters and refineries has been appended to this database.

Government Publication Date: 1998-2009*

Mineral Occurrences: Provincial MNR

In the early 70's, the Ministry of Northern Development and Mines created an inventory of approximately 19,000 mineral occurrences in Ontario, in regard to metallic and industrial minerals, as well as some information on building stones and aggregate deposits. Please note that the "Horizontal Positional Accuracy" is approximately +/- 200 m. Many reference elements for each record were derived from field sketches using pace or chain/tape measurements against claim posts or topographic features in the area. The primary limiting factor for the level of positional accuracy is the scale of the source material. The testing of horizontal accuracy of the source materials was accomplished by comparing the plan metric (X and Y) coordinates of that point with the coordinates of the same point as defined from a source of higher accuracy.

Government Publication Date: 1846-Feb 2025

National Analysis of Trends in Emergencies System (NATES): Federal NATE

In 1974 Environment Canada established the National Analysis of Trends in Emergencies System (NATES) database, for the voluntary reporting of significant spill incidents. The data was to be used to assist in directing the work of the emergencies program. NATES ran from 1974 to 1994. Extensive information is available within this database including company names, place where the spill occurred, date of spill, cause, reason and source of spill, damage incurred, and amount, concentration, and volume of materials released.

Government Publication Date: 1974-1994*

Non-Compliance Reports: Provincial NCPL

The Ministry of the Environment Conservation and Parks (MECP) provides information about non-compliant discharges of contaminants to air and water that exceed legal allowable limits, from regulated industrial and municipal facilities. A reported non-compliance failure may be in regard to a Control Order, Certificate of Approval, Sectoral Regulation or specific regulation/act. MECP publicly releases the Environmental Compliance Report (ECR) on the Ontario Data Catalogue. In Ontario, all facilities with regulated wastewater discharges or air emissions under the Ontario Water Resources Act and the Environmental Protection Act must monitor and report any cases where approved operating limits have been exceeded.

Government Publication Date: Dec 31, 2023

National Defense & Canadian Forces Fuel Tanks: Federal NDFT

The Department of National Defense and the Canadian Forces maintains an inventory of all aboveground & underground fuel storage tanks located on DND lands. Our inventory provides information on the base name, location, tank type & capacity, tank contents, tank class, date of tank installation, date tank last used, and status of tank as of May 2001. This database will no longer be updated due to the new National Security protocols which have prohibited any release of this database.

Government Publication Date: Up to May 2001*

National Defense & Canadian Forces Spills: Federal NDSP

The Department of National Defense and the Canadian Forces maintains an inventory of spills to land and water. All spill sites have been classified under the "Transportation of Dangerous Goods Act - 1992". Our inventory provides information on the facility name, location, spill ID #, spill date, type of spill, as well as the quantity of substance spilled & recovered.

Government Publication Date: Mar 1999-Nov 2023

National Defence & Canadian Forces Waste Disposal Sites: Federal NDWD

The Department of National Defence and the Canadian Forces maintains an inventory of waste disposal sites located on DND lands. Where available, our inventory provides information on the base name, location, type of waste received, area of site, depth of site, year site opened/closed and status.

Government Publication Date: 2001-Apr 2007*

National Energy Board Pipeline Incidents: Federal NEBI

Locations of pipeline incidents from 2008 to present, made available by the Canada Energy Regulator (CER) - previously the National Energy Board (NEB). Includes incidents reported under the Onshore Pipeline Regulations and the Processing Plant Regulations related to pipelines under federal jurisdiction, does not include incident data related to pipelines under provincial or territorial jurisdiction.

Government Publication Date: 2008-May 31, 2025

National Energy Board Wells: Federal NEBP

The NEBW database contains information on onshore & offshore oil and gas wells that are outside provincial jurisdiction(s) and are thereby regulated by the National Energy Board. Data is provided regarding the operator, well name, well ID No./UWI, status, classification, well depth, spud and release date.

Government Publication Date: 1920-Feb 2003*

National Environmental Emergencies System (NEES): Federal NEES

In 2000, the Emergencies program implemented NEES, a reporting system for spills of hazardous substances. For the most part, this system only captured data from the Atlantic Provinces, some from Quebec and Ontario and a portion from British Columbia. Data for Alberta, Saskatchewan, Manitoba and the Territories was not captured. However, NEES is also a repository for previous Environment Canada spill datasets. NEES is composed of the historic datasets ' or Trends ' which dates from approximately 1974 to present. NEES Trends is a compilation of historic databases, which were merged and includes data from NATES (National Analysis of Trends in Emergencies System), ARTS (Atlantic Regional Trends System), and NEES. In 2001, the Emergencies Program determined that variations in reporting regimes and requirements between federal and provincial agencies made national spill reporting and trend analysis difficult to achieve. As a consequence, the department has focused efforts on capturing data on spills of substances which fall under its legislative authority only (CEPA and FA). As such, the NEES database will be decommissioned in December 2004.

Government Publication Date: 1974-2003*

National PCB Inventory: Federal NPCB

Environment Canada's National PCB inventory includes information on in-use PCB containing equipment in Canada including federal, provincial and private facilities. Federal out-of-service PCB containing equipment and PCB waste owned by the federal government or by federally regulated industries such as airlines, railway companies, broadcasting companies, telephone and telecommunications companies, pipeline companies, etc. are also listed. Although it is not Environment Canada's mandate to collect data on non-federal PCB waste, the National PCB inventory includes some information on provincial and private PCB waste and storage sites. Some addresses provided may be Head Office addresses and are not necessarily the location of where the waste is being used or stored.

Government Publication Date: 1988-2008*

National Pollutant Release Inventory: Federal NPR2

The National Pollutant Release Inventory (NPRI) is Canada's public inventory of pollutant releases (to air, water and land), disposals, and transfers for recycling. The inventory, managed by Environment and Climate Change Canada, tracks over 300 substances. Under the authority of the Canadian Environmental Protection Act (CEPA), owners or operators of facilities that meet published reporting requirements are required to report to the NPRI.

Government Publication Date: Feb 2024

National Pollutant Release Inventory - Historic: Federal NPRI

Environment Canada has defined the National Pollutant Release Inventory ("NPRI") as a federal government initiative designed to collect comprehensive national data regarding releases to air, water, or land, and waste transfers for recycling for more than 300 listed substances. This data holds historic records; current records are found in NPR2.

Government Publication Date: 1993-May 2017

Oil and Gas Wells: Private OGWE

The Nickle's Energy Group (publisher of the Daily Oil Bulletin) collects information on drilling activity including operator and well statistics. The well information database includes name, location, class, status and depth. The main Nickle's database is updated on a daily basis, however, this database is updated on a monthly basis. More information is available at www.nickles.com.

Government Publication Date: 1988-Feb 28, 2025

Ontario Oil and Gas Wells: Provincial OOGW

In 1998, the Ministry of Natural Resources (MNR) handed over to the Ontario Oil, Gas and Salt Resources (OGSR) Corporation, the responsibility of maintaining a database of oil and gas wells drilled in Ontario. The OGSR Library has over 20,000+ wells in their database. Information available for all wells in the ERIS database includes well owner/operator, location, permit issue date, and well cap date, license number, status, depth and the primary target (rock unit) of the well being drilled. All geology/stratigraphy table information, plus all water table information is also provided for each well record.

Government Publication Date: 1800-Aug 2024

Inventory of PCB Storage Sites: Provincial OPCB

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of PCB storage sites within the province. Ontario Regulation 11/82 (Waste Management - PCB) and Regulation 347 (Generator Waste Management) under the Ontario EPA requires the registration of inactive PCB storage equipment and/or disposal sites of PCB waste with the Ontario Ministry of Environment. This database contains information on: 1) waste quantities; 2) major and minor sites storing liquid or solid waste; and 3) a waste storage inventory.

Government Publication Date: 1987-Oct 2004; 2012-Dec 2013

Orders: Provincial ORD

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include Orders on the registry such as (EPA s. 17) - Order for remedial work, (EPA s. 18) - Order for preventative measures, (EPA s. 43) - Order for removal of waste and restoration of site, (EPA s. 44) - Order for conformity with Act for waste disposal sites, (EPA s. 136) - Order for performance of environmental measures.

Government Publication Date: 1994 - Jun 30, 2025

Canadian Pulp and Paper: Private PAP

This information is part of the Pulp and Paper Canada Directory. The Directory provides a comprehensive listing of the locations of pulp and paper mills and the products that they produce.

Government Publication Date: 1999, 2002, 2004, 2005, 2009-2014

Parks Canada Fuel Storage Tanks: Federal PCFT

Canadian Heritage maintains an inventory of known fuel storage tanks operated by Parks Canada, in both National Parks and at National Historic Sites. The database details information on site name, location, tank install/removal date, capacity, fuel type, facility type, tank design and owner/operator.

Government Publication Date: 1920-Jan 2005*

Pesticide Register: Provincial PES

The Ontario Ministry of the Environment and Climate Change maintains a database of licensed operators and vendors of registered pesticides.

Government Publication Date: Oct 2011 - May 31, 2025

Ontario PFAS Spills: Provincial PFAS

This specific list of spills includes those incidents where one or more of the listed contaminants are identified in the PFAS Structure List and/or PFAS Chemicals Without Explicit Structure List made available by the United States Environmental Protection Agency (US EPA), is originally sourced from the Ministry of the Environment, Conservation and Parks spills related data. Information from 1988-2002 was part of the ORIS (Occurrence Reporting Information System). The SAC (Spills Action Centre) handles all spills reported in Ontario. Regulations for spills in Ontario are part of the MOE's Environmental Protection Act, Part X.

Government Publication Date: 1988-Jun 2024; Aug 2024; Oct-Nov 2024

NPRI Reporters - PFAS Substances: Federal PFCH

The National Pollutant Release Inventory (NPRI) is Canada's public inventory of releases, disposals, and transfers, tracking over 320 pollutants. Per - and polyfluoroalkyl substances (PFAS) are a group of over 4,700 human-made substances for which adverse environmental and health effects have been observed. This listing of PFAS substance reporters includes those NPRI facilities that reported substances that are found in either: a) the Comprehensive Global Database of PFASs compiled by the Organisation for Economic Co-operation and Development (OECD), b) the US Environmental Protection Agency (US EPA) Master List of PFAS Substances, c) the US EPA list of PFAS chemicals without explicit structures, or d) the US EPA list of PFAS structures (encompassing the largest set of structures having sufficient levels of fluorination to potentially impart PFAS-type properties).

Government Publication Date: Feb 2024

Potential PFAS Handlers from NPRI: Federal PFHA

The National Pollutant Release Inventory (NPRI) is Canada's public inventory of releases, disposals, and transfers, tracking over 320 pollutants. Per - and polyfluoroalkyl substances (PFAS) are a group of over 4,700 human-made substances for which adverse environmental and health effects have been observed. This list of potential PFAS handlers includes those NPRI facilities that reported business activity (NAICS code) included in the US Environmental Protection Agency (US EPA) list of Potential PFAS-Handling Industry Sectors, further described as operating in industry sectors where literature reviews indicate that PFAS may be handled and/or released. Inclusion of a facility in this listing does not indicate that PFAS are being manufactured, processed, used, or released by the facility - these are facilities that potentially handle PFAS based on their industrial profile.

Government Publication Date: Feb 2024

Pipeline Incidents: Provincial PINC

List of pipeline incidents (strikes, leaks, spills). This is not a comprehensive or complete inventory of pipeline incidents in the province; this listing in an historical copy of records previously obtained under Access to Public Information. Records are not verified for accuracy or completeness.

Government Publication Date: Feb 28, 2021

Potential PFAS Handlers from EASR: Provincial PPHA

The Ontario Environmental Activity and Sector Registry (EASR), described in Ontario Regulation 245/11, allows businesses with less complex operations - and hence not requiring an Environmental Compliance Approval - to register their activities with the Ontario Ministry of the Environment, Conservation and Parks (MECP). This list of potential PFAS handlers includes those EASR facilities that reported business activity (NAICS code) included in the US Environmental Protection Agency (US EPA) list of Potential PFAS-Handling Industry Sectors, further described as operating in industry sectors where literature reviews indicate that PFAS may be handled and/or released. Inclusion of a facility in this listing does not indicate that PFAS are being manufactured, processed, used.

Government Publication Date: Jun 30, 2024

Private and Retail Fuel Storage Tanks: Provincial PRT

The Fuels Safety Branch of the Ontario Ministry of Consumer and Commercial Relations maintained a database of all registered private fuel storage tanks and licensed retail fuel outlets. This database includes an inventory of locations that have gasoline, oil, waste oil, natural gas and/or propane storage tanks on their property. The MCCR no longer collects this information. This information is now collected by the Technical Standards and Safety Authority (TSSA).

Government Publication Date: 1989-1996*

Permit to Take Water: Provincial PTTW

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include PTTW's on the registry such as OWRA s. 34 - Permit to take water.

Government Publication Date: 1994 - Jun 30, 2025

Ontario Regulation 347 Waste Receivers Summary: Provincial REC

Part V of the Ontario Environmental Protection Act ("EPA") regulates the disposal of regulated waste through an operating waste management system or a waste disposal site operated or used pursuant to the terms and conditions of a Certificate of Approval or a Provisional Certificate of Approval. Regulation 347 of the Ontario EPA defines a waste receiving site as any site or facility to which waste is transferred by a waste carrier. A receiver of regulated waste is required to register the waste receiving facility. This database represents registered receivers of regulated wastes, identified by registration number, company name and address, and includes receivers of waste such as: landfills, incinerators, transfer stations, PCB storage sites, sludge farms and water pollution control plants. This information is a summary of all years from 1986 including the most currently available data.

Government Publication Date: 1986-1990, 1992-2021

Record of Site Condition: Provincial RSC

The Record of Site Condition (RSC) is part of the Ministry of the Environment's Brownfields Environmental Site Registry. Protection from environmental cleanup orders for property owners is contingent upon documentation known as a record of site condition (RSC) being filed in the Environmental Site Registry. In order to file an RSC, the property must have been properly assessed and shown to meet the soil, sediment and groundwater standards appropriate for the use (such as residential) proposed to take place on the property. The Record of Site Condition Regulation (O. Reg. 153/04) details requirements related to site assessment and clean up. RSCs filed after July 1, 2011 will also be included as part of the new (O.Reg. 511/09). The Government of Ontario states that it is not responsible for the accuracy of the information in this Registry.

Government Publication Date: 1997-Sept 2001, Oct 2004-May 2025

Retail Fuel Storage Tanks: Private RST

This database includes an inventory of retail fuel outlet locations (including marinas) that have on their property gasoline, oil, waste oil, natural gas and / or propane storage tanks.

Government Publication Date: 1999-Apr 30, 2025

Scott's Manufacturing Directory: Private SCT

Scott's Directories is a data bank containing information on over 200,000 manufacturers across Canada. Even though Scott's listings are voluntary, it is the most comprehensive database of Canadian manufacturers available. Information concerning a company's address, plant size, and main products are included in this database.

Government Publication Date: 1992-Mar 2011*

Ontario Spills: Provincial SPL

List of spills and incidents made available by the Ministry of the Environment, Conservation and Parks. This database identifies information such as location (approximate), type and quantity of contaminant, date of spill, environmental impact, cause, nature of impact, etc. Information from 1988-2002 was part of the ORIS (Occurrence Reporting Information System). The SAC (Spills Action Centre) handles all spills reported in Ontario. Regulations for spills in Ontario are part of the MOE's Environmental Protection Act, Part X.

Government Publication Date: 1988-Jun 2024; Aug; Oct-Apr 2025

Wastewater Discharger Registration Database: Provincial SRDS

Facilities that report either municipal treated wastewater effluent or industrial wastewater discharges under the Effluent Monitoring and Effluent Limits (EMEL) and Municipal/Industrial Strategy for Abatement Regulations. The Municipal/Industrial Strategy for Abatement (MISA) division of the Ontario Ministry of Environment keeps record of direct dischargers of toxic pollutants within nine sectors including: Electric Power Generation, Mining, Petroleum Refining, Organic Chemicals, Inorganic Chemicals, Pulp & Paper, Metal Casting, Iron & Steel, and Quarries.

Government Publication Date: 1990-Dec 31, 2021

Anderson's Storage Tanks: Private TANK

The information provided in this database was collected by examining various historical documents, which identified the location of former storage tanks, containing substances such as fuel, water, gas, oil, and other various types of miscellaneous products. Information is available in regard to business operating at tank site, tank location, permit year, permit & installation type, no. of tanks installed & configuration and tank capacity. Data contained within this database pertains only to the city of Toronto and is not warranted to be complete, exhaustive or authoritative. The information was collected for research purposes only.

Government Publication Date: 1915-1953*

Transport Canada Fuel Storage Tanks: Federal TCFT

List of fuel storage tanks currently or previously owned or operated by Transport Canada. This inventory also includes tanks on The Pickering Lands, which refers to 7,530 hectares (18,600 acres) of land in Pickering, Markham, and Uxbridge owned by the Government of Canada since 1972; properties on this land has been leased by the government since 1975, and falls under the Site Management Policy of Transport Canada, but is administered by Public Works and Government Services Canada. This inventory provides information on the site name, location, tank age, capacity and fuel type.

Government Publication Date: 1970 - Apr 2024

Variances for Abandonment of Underground Storage Tanks: Provincial VAR

Listing of variances granted for storage tank abandonment. This is not a comprehensive or complete inventory of tank abandonment variances in the province; this listing is a copy of tank abandonment variance records previously obtained under Access to Public Information. In Ontario, registered underground storage tanks must be removed within two years of disuse; if removal of a tank is not feasible, an application may be sought for a variance from this code requirement.
Records are not verified for accuracy or completeness.

Government Publication Date: Feb 28, 2022

Waste Disposal Sites - MOE CA Inventory: Provincial WDS

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of known open (active or inactive) and closed disposal sites in the Province of Ontario. Active sites maintain a Certificate of Approval, are approved to receive and are receiving waste. Inactive sites maintain Certificate(s) of Approval but are not receiving waste. Closed sites are not receiving waste. The data contained within this database was compiled from the MOE's Certificate of Approval database. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number. All new Environmental Compliance Approvals handed out after Oct 31, 2011 for Waste Disposal Sites will still be found in this database.

Government Publication Date: Oct 2011 - May 31, 2025

Waste Disposal Sites - MOE 1991 Historical Approval Inventory: Provincial WDSH

In June 1991, the Ontario Ministry of Environment, Waste Management Branch, published the "June 1991 Waste Disposal Site Inventory", of all known active and closed waste disposal sites as of October 30st, 1990. For each "active" site as of October 31st 1990, information is provided on site location, site/CA number, waste type, site status and site classification. For each "closed" site as of October 31st 1990, information is provided on site location, site/CA number, closure date and site classification. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number.

Government Publication Date: Up to Oct 1990*

Water Well Information System: Provincial WWIS

This database describes locations and characteristics of water wells found within Ontario in accordance with Regulation 903. It includes such information as coordinates, construction date, well depth, primary and secondary use, pump rate, static water level, well status, etc. Also included are detailed stratigraphy information, approximate depth to bedrock and the approximate depth to the water table.

Government Publication Date: Dec 31 2023

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

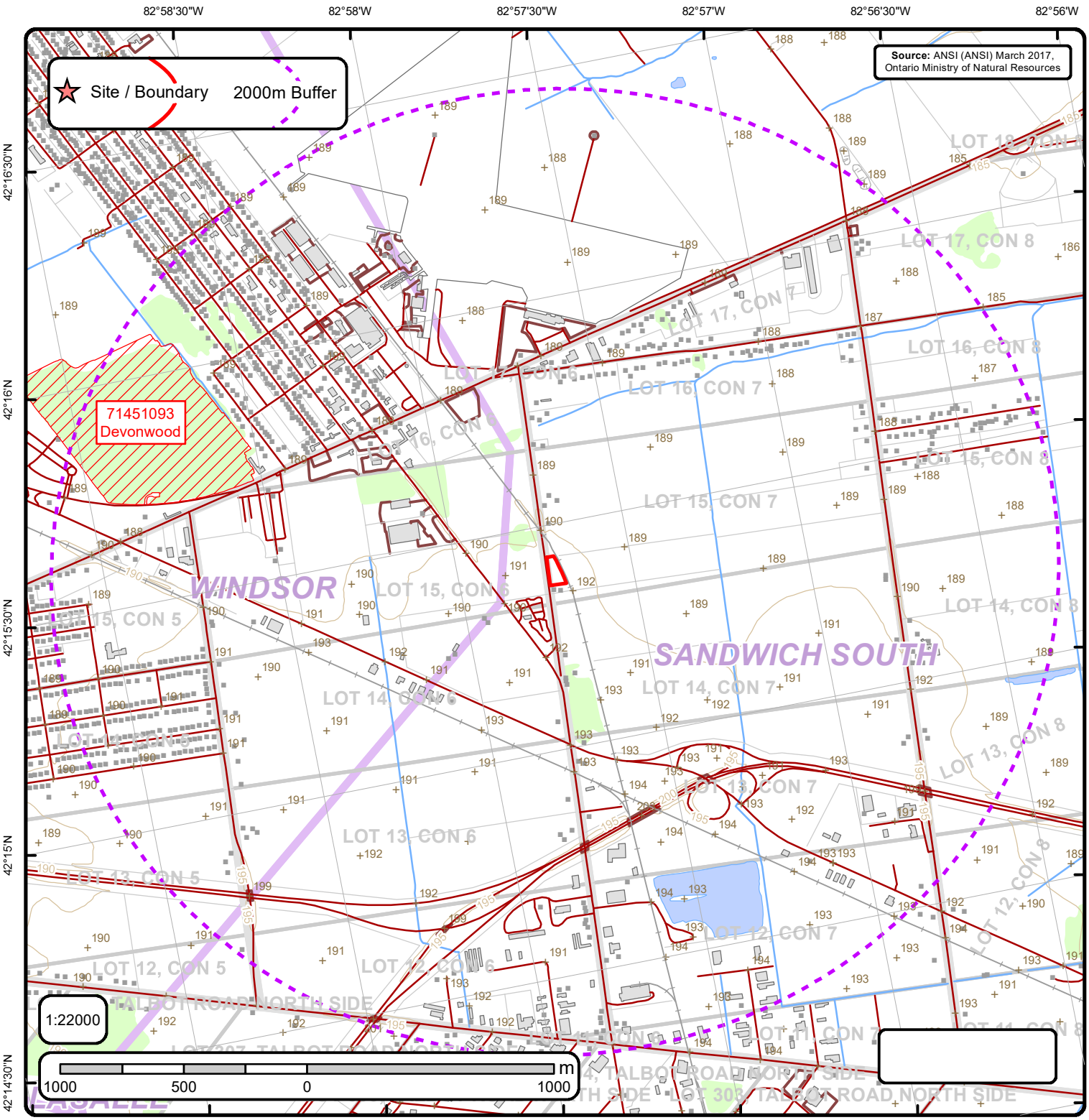
'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.



Area of Natural & Scientific Interest (ANSI) Order No. 25071700027

- Spot Height
- Building Point
- Towers
- Utility Site Point
- Misc. Line
- Railroads
- Roads
- Trail
- Transportation Structure
- Utility Line
- Water Structure
- Drainage Line Feature
- River or Stream
- Airports
- Tanks
- Building to Scale
- Contour Line
- Pit or Quarry
- Waterbody
- Wetlands
- Concession
- Lots
- Municipalitiy
- Land Ownership
- Wooded Area
- Conservation Authority
- Conservation Area
- Municipal Park
- Provincial Park
- National Park
- Nature Reserve
- ANSI Area

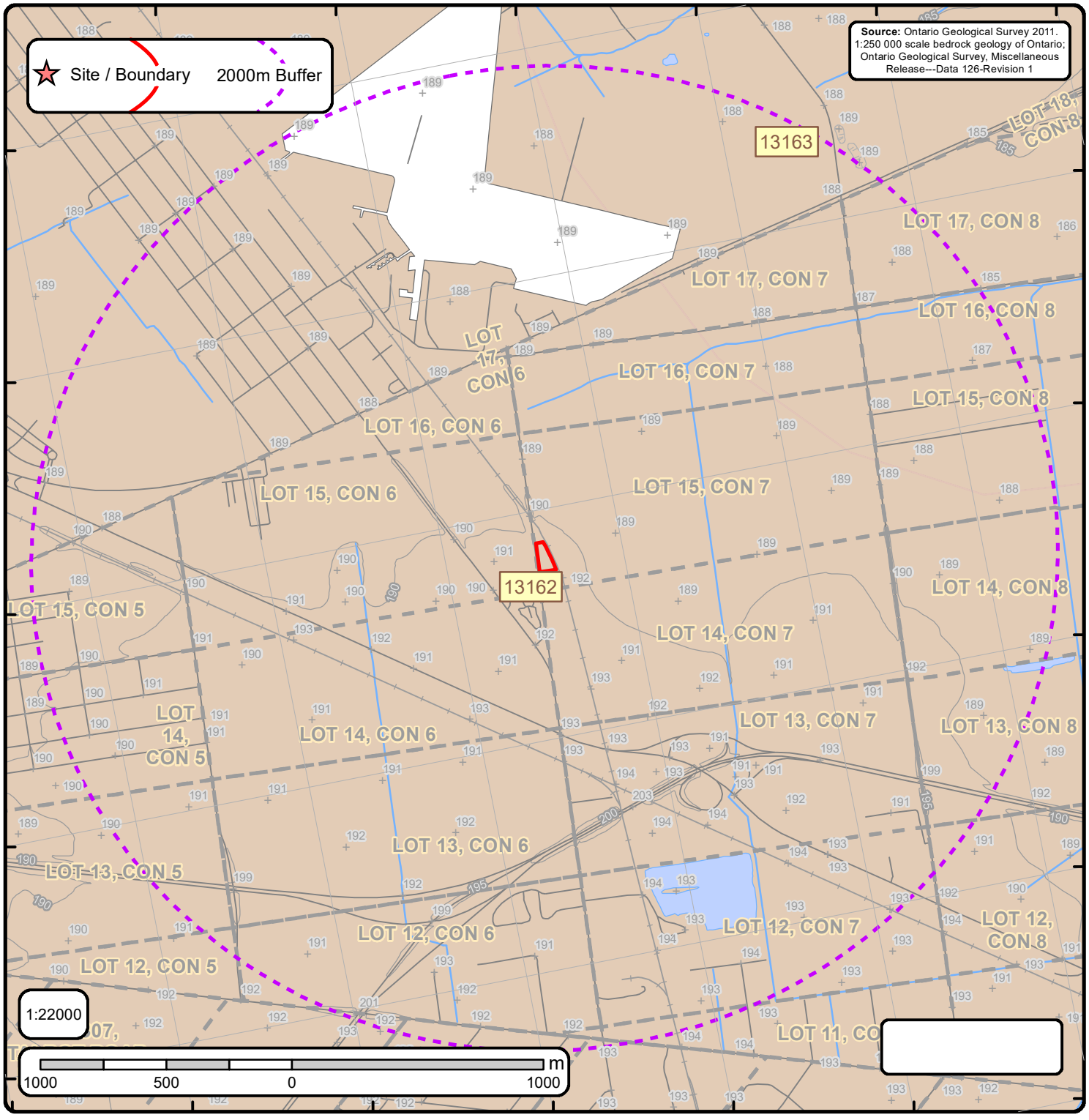
ANSI Report

ANSI Units Found within 2000 m of
4450 7th Concession Rd

Order No.
25071700027



ANSI Name: Devonwood
ID: 71451093 | **Type:** ANSI, Life Science | **Significance:** Regional | **Management Plan:** | **Area (sqm):** 406367.424 | **Comments:**



Bedrock Geology of Ontario

Order No. 25071700027

Spot Height
Roads
Contour Lines
Streams
Railroads
Lots
Pit or Quarry
Airports
Waterbody
Wetlands

Bedrock Geology Lines

- CONTACT, GEOPHYSICAL, TREND, INTERPRETED
- CONTACT, SHARP, TREND, INTERPRETED
- CONTACT, SHARP, TREND, OBSERVED
- FAULT, DEXTRAL HORIZONTAL COMPONENT, TREND, INTERPRETED, UNKNOWN GENERATION
- FAULT, PROJECTED FAULT, INTERPRETED, UNKNOWN GENERATION
- FAULT, SINISTRAL HORIZONTAL COMPONENT, TREND, INTERPRETED, UNKNOWN GENERATION
- FAULT, SINISTRAL HORIZONTAL COMPONENT, TREND, OBSERVED, UNKNOWN GENERATION
- FAULT, UNKNOWN HORIZONTAL COMPONENT, INCLINED-REVERSE, INTERPRETED, UNKNOWN GENERATION
- FAULT, UNKNOWN HORIZONTAL COMPONENT, INCLINED-REVERSE, OBSERVED, UNKNOWN GENERATION
- FAULT, UNKNOWN HORIZONTAL COMPONENT, TREND, INTERPRETED, UNKNOWN GENERATION
- FAULT, UNKNOWN HORIZONTAL COMPONENT, TREND, OBSERVED, UNKNOWN GENERATION
- NEATLINE
- ONTARIO BORDER
- Marble, chert, iron formation, minor metavolcanic rocks

Dikes

- Abitibi mafic dike
- Biscotasing mafic dike
- Empey Lake mafic dike
- Felsic to intermediate intrusive rocks
- Fort Frances mafic dike
- Frontenac mafic dike
- Grenville mafic dike
- Logan and Nipigon mafic sills
- Mackenzie mafic dike
- Mafic dikes of uncertain age
- Mafic sills and dikes
- Marathon mafic dike
- Marathon, Kapuskasing or Biscotasing mafic dike
- Matachewan mafic dike
- Mine Centre mafic dike
- Molson mafic dike
- North Channel mafic dike
- Pickle Crow mafic dike (Molson swarm) normal
- Pickle Crow mafic dike (Molson swarm) reverse
- Rideau mafic dike
- Sudbury mafic dike
- Ultramafic, gabbroic and granophyric intrusions
- Unsubdivided mafic dike
- Unsubdivided mafic dike (Keweenawan age)
- unknown

C Lines

- FOLD, ANTICLINE, INTERPRETED, UNKNOWN GENERATION
- FOLD, ANTICLINE, OBSERVED, UNKNOWN GENERATION
- FOLD, ANTICLINE, SYNFORMAL, INTERPRETED, SECOND GENERATION
- FOLD, ANTIFORM, INTERPRETED, UNKNOWN GENERATION
- FOLD, SYNCLINE, INTERPRETED, UNKNOWN GENERATION
- FOLD, SYNCLINE, OBSERVED, UNKNOWN GENERATION
- FOLD, SYNFORM, INTERPRETED, UNKNOWN GENERATION

Kimberlite

Bedrock Geology Report

Bedrock Geology units found within 2000 m of

4450 7th Concession Rd

Order No.
25071700027



ID: 13163 | **Unit Name:** |
Type (All): 59a | **Type (Primary):** 59a | **Type (Secondary):** | **Type (Tertiary):** | **Rock Type (Primary):** Limestone, dolostone, shale | **Strata (Primary):** Hamilton Group | **Super Eon (Primary):** | **Eon (Primary):** PHANEROZOIC (Present to 542.0 Ma) | **Era (Primary):** PALEOZOIC (251.0 Ma to 542.0 Ma) | **Period (Primary):** DEVONIAN (359.2 Ma to 416.0 Ma) | **Epoch (Primary):** MIDDLE DEVONIAN | **Province (Primary):**

ID: 13162 | **Unit Name:** |
Type (All): 59c | **Type (Primary):** 59c | **Type (Secondary):** | **Type (Tertiary):** | **Rock Type (Primary):** Limestone, dolostone, shale | **Strata (Primary):** Dundee Formation | **Super Eon (Primary):** | **Eon (Primary):** PHANEROZOIC (Present to 542.0 Ma) | **Era (Primary):** PALEOZOIC (251.0 Ma to 542.0 Ma) | **Period (Primary):** DEVONIAN (359.2 Ma to 416.0 Ma) | **Epoch (Primary):** MIDDLE DEVONIAN | **Province (Primary):**

Bedrock Geology Report Metadata

Ontario Geological Survey 2011. 1:250 000 scale bedrock geology of Ontario; Ontario Geological Survey, Miscellaneous Release-Data 126 Revision1

ONTARIO MINISTRY OF NORTHERN DEVELOPMENT, MINES AND FORESTRY



ID - Unit ID **Unit Name** - Generalized geological unit classification

Type (All) - The geological unit number(s) or code(s) for all rock types present in an individual polygon.

Type (Primary) - The primary geological unit number or code for the primary rock type in an individual polygon

Type (Secondary) - The secondary geological unit number or code for the secondary rock type, if present, in an individual polygon

Type (Tertiary) - The tertiary geological unit number or code for the tertiary rock type, if present, in an individual polygon

Rock Type (Primary) - Rock type or sub-unit description

Status (Primary) - The Stratigraphic unit. Divided into:

```
Supergroup (two or more groups and lone formations)
Group (two or more formations)
Formation (primary unit of lithostratigraphy)
Member (named lithologic subdivision of a formation)
Bed (named distinctive layer in a member or formation)
```

Super Eon (Primary) - A name given to the largest defined unit of geological time, divided into Eons. Unique values which this field may contain (Domains) are:

```
PRECAMBRIAN (0.542 Ga to <3.85 Ga)
```

Eon (Primary) - A name given to a defined unit of geological time, divided into Eras. Unique values which this field may contain (Domains) are:

```
ARCHEAN (2.5 Ga to <3.85 Ga)
PROTEROZOIC (0.542 Ga to 2.50 Ga)
PHANEROZOIC (Present to 542.0 Ma)
```

Era (Primary) - A name given to a defined unit of geological time, divided into Periods. Each era on the scale is separated from the next by a major event or change. Unique values which this field may contain (Domains) are:

```
MESOARCHEAN (2.8 Ga to 3.2 Ga)                MESOPROTEROZOIC (1.0 Ga to 1.6 Ga)
NEO-TO MESOARCHEAN (2.5 Ga to 3.2 Ga)         EARLY PALEOZOIC TO NEOPROTEROZOIC (443.7 Ma to 1.0 Ga)
NEOARCHEAN (2.5 Ga to 2.8 Ga)                 NEO-TO MESOPROTEROZOIC (0.542 Ga to 1.6 Ga)
PALEOPROTEROZOIC (1.6 Ga to 2.5 Ga)           PALEOZOIC (251.0 Ma to 542.0 Ma)
MESO-TO PALEOPROTEROZOIC (1.0 Ga to 2.5 Ga)   MESOZOIC (65.5 Ma to 251.0 Ma)
```

Period (Primary) - A name given to a defined unit of geological time, divided into Epochs. Unique values which this field may contain (Domains) are:

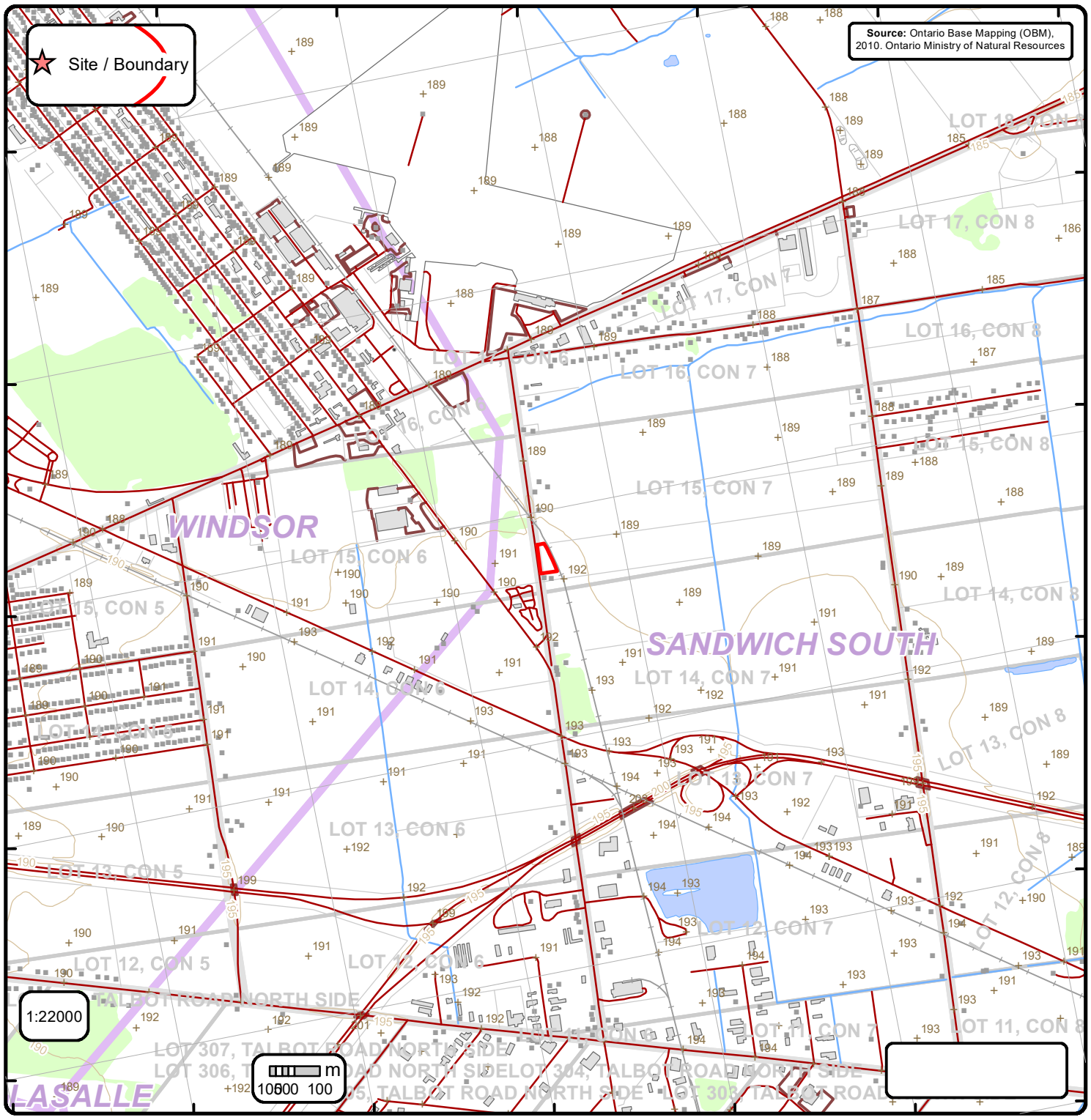
```
CAMBRIAN (488.3 Ma to 542.0 Ma)
ORDOVICIAN (443.7 Ma to 488.3 Ma)
SILURIAN (416.0 Ma to 443.7 Ma)
DEVONIAN (359.2 Ma to 416.0 Ma)
MISSISSIPPIAN TO DEVONIAN (318.1 Ma to 416.0 Ma)
JURASSIC (145.5 Ma to 199.6 Ma)
CRETACEOUS AND JURASSIC (65.5 Ma to 199.6 Ma)
```

Epoch (Primary) - A name given to a defined unit of geological time. Unique values which this field may contain (Domains) are:

```
LOWER ORDOVICIAN                    UPPER SILURIAN
MIDDLE ORDOVICIAN                   LOWER DEVONIAN
UPPER ORDOVICIAN                    MIDDLE DEVONIAN
MIDDLE AND LOWER SILURIAN           UPPER DEVONIAN
UPPER SILURIAN TO LOWER DEVONIAN    LOWER CRETACEOUS AND MIDDLE JURASSIC
```

Province (Primary) - The Geological Province the geological unit is in. Unique values which this field may contain (Domains) are:

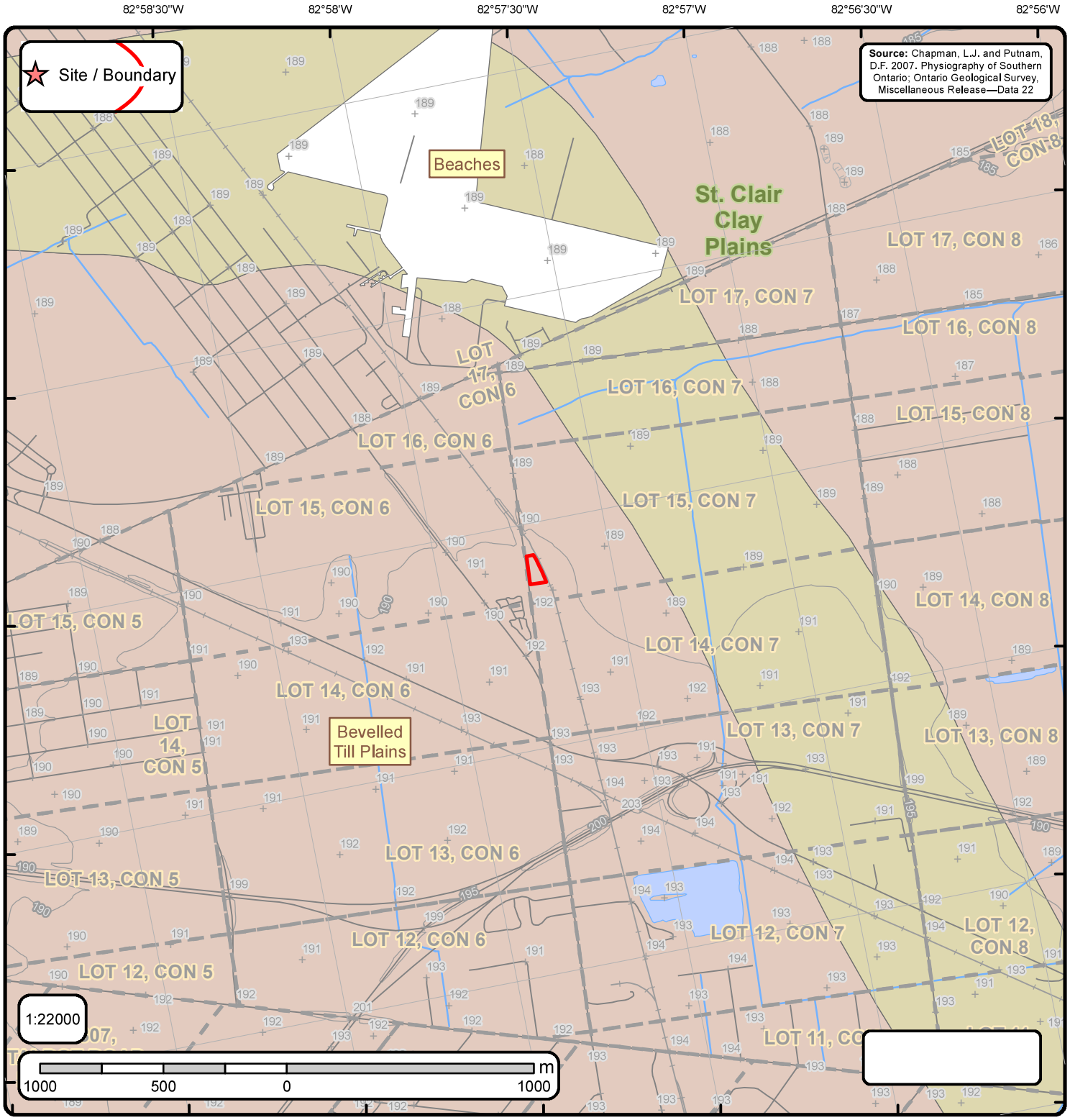
```
SUPERIOR
SOUTHERN
SUPERIOR
GRENVILLE
```



Ontario Base Mapping (OBM) Data

Order No. 25071700027

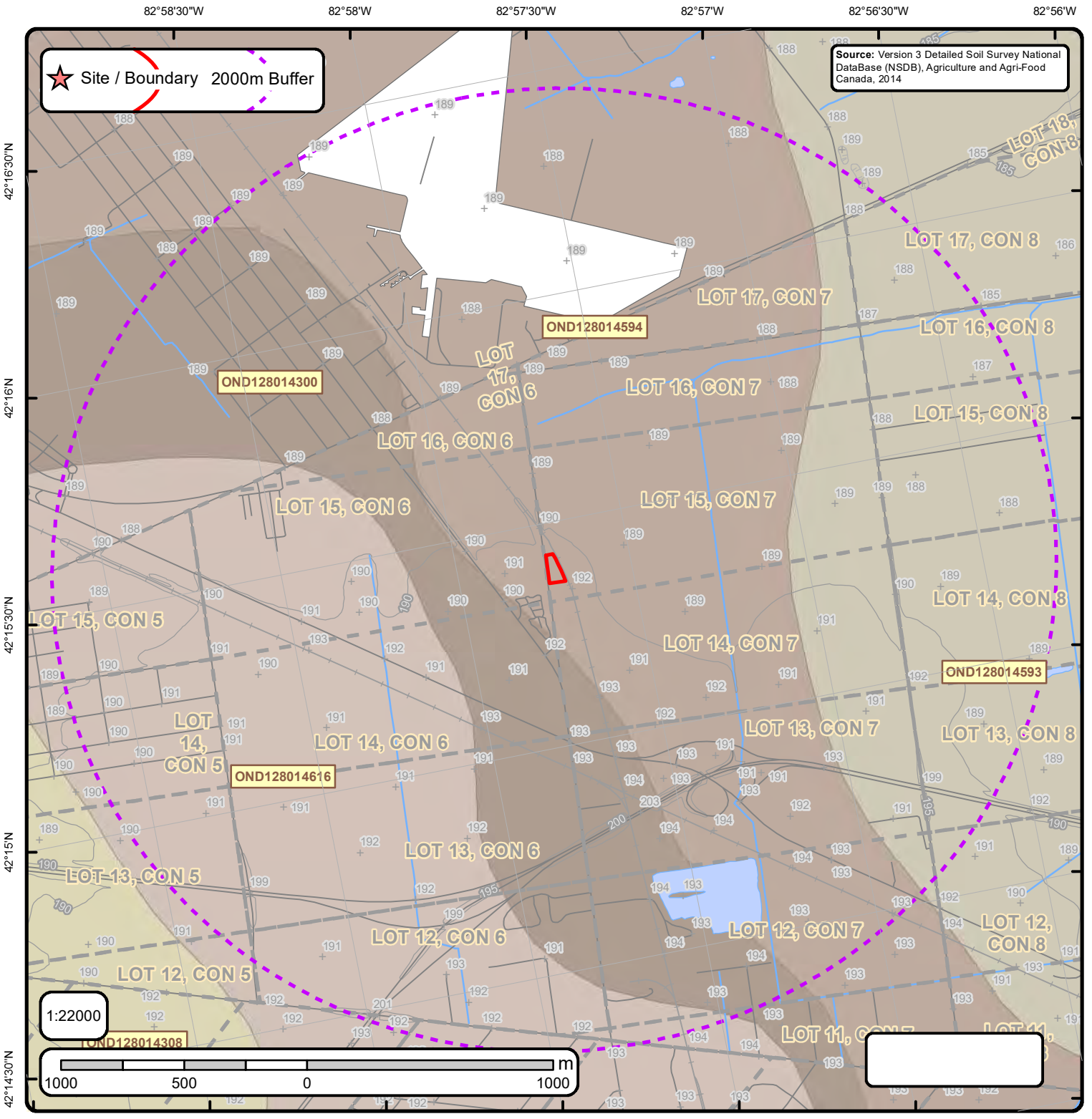
Spot Height (metre)	Transportation Structure	Contour Line	Wooded Area
Building Point	Utility Line	Pit or Quarry	Conservation Authority
Towers	Water Structure	Waterbody	Conservation Area
Utility Site Point	Drainage Line Feature	Wetlands	Municipal Park
Misc. Line	River or Stream	Concession	Provincial Park
Railroads	Airports	Lots	National Park
Roads	Tanks	Municipalitiy	Nature Reserve
Trail	Building to Scale	Land Ownership	



Physiography of Southern Ontario

Order No. 25071700027

- Spot Height
- Roads
- Railroads
- Contour Lines
- Streams
- Lots
- Pit or Quarry
- Airports
- Wetlands
- Waterbody
- Boulder Pavement
- Dissected Terrain
- Mud Flow Scars
- Sand Dunes
- escarpment
- shorecliff
- shorecliff (weakly developed)
- Physiography Regions
- Bare Rock Ridges And Shallow Till
- Beaches
- Bevelled Till Plains
- Clay Plains
- Drumlins
- Escarpments
- Eskers
- Kame Moraines
- Limestone Plains
- Peat And Muck
- Sand Plains
- Shale Plains
- Shallow Till And Rock Ridges
- Spillways
- Till Moraines
- Till Plains (Drumlinized)
- Till Plains (Undrumlinized)



Detailed Soil Survey (ON Soils)

Order No. 25071700027

- Spot Height
- Railroads
- Roads
- Contour Lines
- Streams
- Lots
- Pit or Quarry
- Airports
- Wetlands
- Waterbody

Soils Report

Soil Map Units Found within 2000 m of
4450 7th Concession Rd

Order No.
25071700027



Soil ID: OND128014300
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONBUFSH~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with moderate infiltration rates when completely wetted. Soils are sandy loam soils with moderately fine to moderately coarse textures. | **Soil Texture of A Horizon** : medium - moderately fine loam | **Field Crops Capability** : moderate limitations on use for crops | **First CLI Limitation Subclass** : Low inherent soil Fertility | **Second CLI Limitation Subclass** : Low inherent Moisture holding capacity | **Depth(cm)** : 0-22 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 15 | **Total Sand(%)** : 35 | **Total Silt(%)** : 53 | **Total Clay(%)** : 12 | **Organic Carbon(%)** : 2.1 | **pH in Calc Chloride** : 5.5 | **Saturated Hydraulic Conductivity(cm/h)** : 1.157 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 22-30 | **Horizon** : Bm | **Layer No** : 2 | **Very Fine Sand(%)** : 13 | **Total Sand(%)** : 39 | **Total Silt(%)** : 47 | **Total Clay(%)** : 14 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.7 | **Saturated Hydraulic Conductivity(cm/h)** : 0.883 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 30-48 | **Horizon** : Bt | **Layer No** : 3 | **Very Fine Sand(%)** : 8 | **Total Sand(%)** : 43 | **Total Silt(%)** : 25 | **Total Clay(%)** : 32 | **Organic Carbon(%)** : 0.8 | **pH in Calc Chloride** : 6.3 | **Saturated Hydraulic Conductivity(cm/h)** : 0.333 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 48-50 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 12 | **Total Sand(%)** : 57 | **Total Silt(%)** : 22 | **Total Clay(%)** : 21 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 7.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.714 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 50-100 | **Horizon** : R | **Layer No** : 5 | **Very Fine Sand(%)** : -9 | **Total Sand(%)** : -9 | **Total Silt(%)** : -9 | **Total Clay(%)** : -9 | **Organic Carbon(%)** : None | **pH in Calc Chloride** : None | **Saturated Hydraulic Conductivity(cm/h)** : None | **Electrical Conductivity(dS/m)** : None |

Soil ID: OND128014594
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONBKN~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils have a high runoff potential and very slow infiltration rate when thoroughly wetted. Soils include clay soils with high swelling potential, soils in a permanent high water table and shallow soils over nearly impervious material. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : moderate limitations on use for crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-25 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 4 | **Total Sand(%)** : 16 | **Total Silt(%)** : 47 | **Total Clay(%)** : 37 | **Organic Carbon(%)** : 2.0 | **pH in Calc Chloride** : 4.9 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 25-65 | **Horizon** : Btg | **Layer No** : 2 | **Very Fine Sand(%)** : 3 | **Total Sand(%)** : 11 | **Total Silt(%)** : 38 | **Total Clay(%)** : 51 | **Organic Carbon(%)** : 0.6 | **pH in Calc Chloride** : 6.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.205 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 65-100 | **Horizon** : Ckg | **Layer No** : 3 | **Very Fine Sand(%)** : 3 | **Total Sand(%)** : 16 | **Total Silt(%)** : 41 | **Total Clay(%)** : 43 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 0.144 | **Electrical Conductivity(dS/m)** : 1 |

Soil ID: OND128014593
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONBKN~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils have a high runoff potential and very slow infiltration rate when thoroughly wetted. Soils include clay soils with high swelling potential, soils in a permanent high water table and shallow soils over nearly impervious material. | **Soil Texture of A Horizon** : clay | **Field Crops Capability** : moderate limitations on use for crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-25 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 4 | **Total Sand(%)** : 16 | **Total Silt(%)** : 47 | **Total Clay(%)** : 37 | **Organic Carbon(%)** : 2.0 | **pH in Calc Chloride** : 4.9 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 25-65 | **Horizon** : Btg | **Layer No** : 2 | **Very Fine Sand(%)** : 3 | **Total Sand(%)** : 11 | **Total Silt(%)** : 38 | **Total Clay(%)** : 51 | **Organic Carbon(%)** : 0.6 | **pH in Calc Chloride** : 6.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.205 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 65-100 | **Horizon** : Ckg | **Layer No** : 3 | **Very Fine Sand(%)** : 3 | **Total Sand(%)** : 16 | **Total Silt(%)** : 41 | **Total Clay(%)** : 43 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 0.144 | **Electrical Conductivity(dS/m)** : 1 |

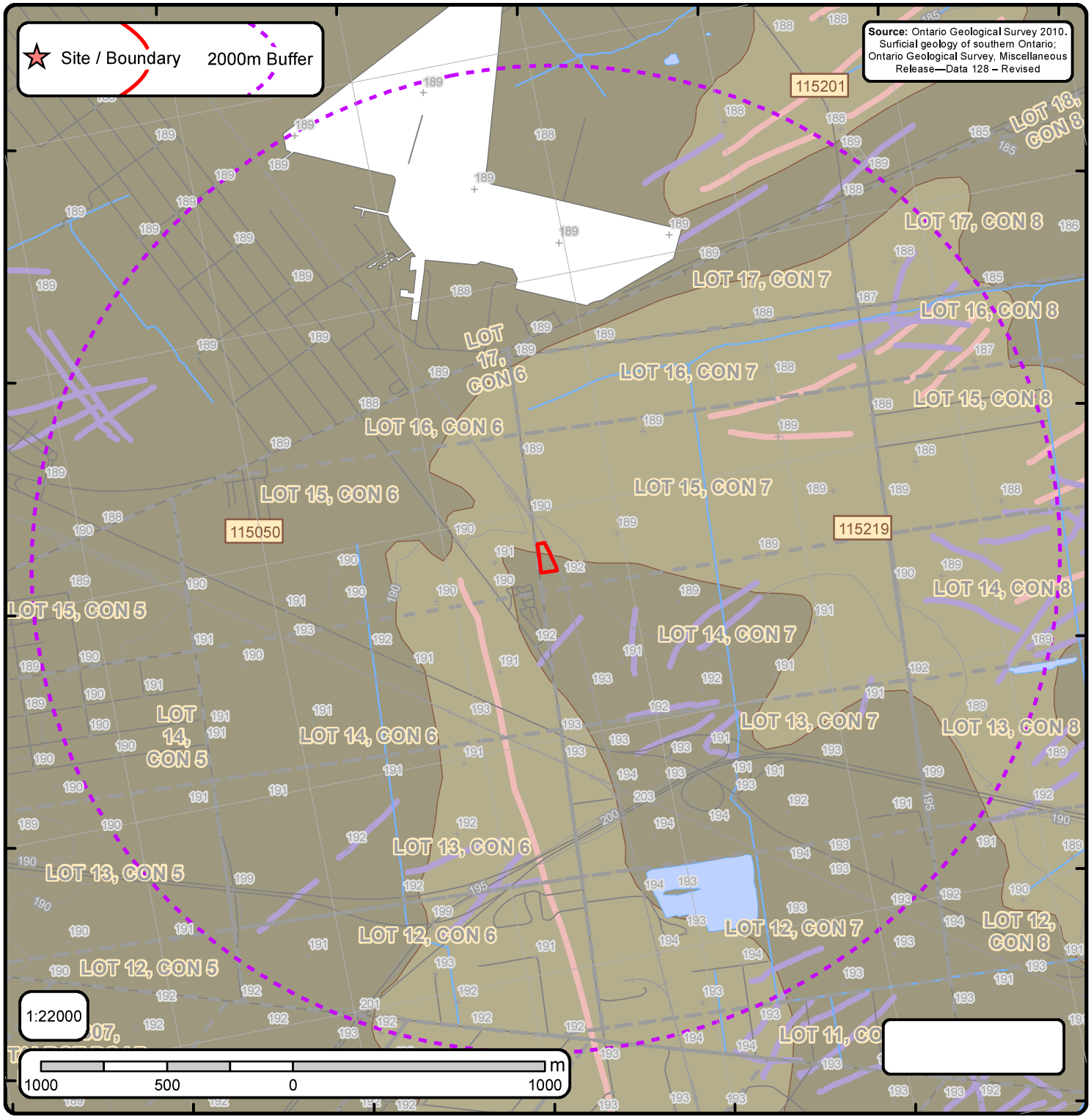
Soils Report

Soil Map Units Found within 2000 m of
4450 7th Concession Rd

Order No.
25071700027



Soil ID: OND128014616
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONBKN~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils have a high runoff potential and very slow infiltration rate when thoroughly wetted. Soils include clay soils with high swelling potential, soils in a permanent high water table and shallow soils over nearly impervious material. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : moderate limitations on use for crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-25 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 4 | **Total Sand(%)** : 16 | **Total Silt(%)** : 47 | **Total Clay(%)** : 37 | **Organic Carbon(%)** : 2.0 | **pH in Calc Chloride** : 4.9 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 25-65 | **Horizon** : Btg | **Layer No** : 2 | **Very Fine Sand(%)** : 3 | **Total Sand(%)** : 11 | **Total Silt(%)** : 38 | **Total Clay(%)** : 51 | **Organic Carbon(%)** : 0.6 | **pH in Calc Chloride** : 6.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.205 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 65-100 | **Horizon** : Ckg | **Layer No** : 3 | **Very Fine Sand(%)** : 3 | **Total Sand(%)** : 16 | **Total Silt(%)** : 41 | **Total Clay(%)** : 43 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 0.144 | **Electrical Conductivity(dS/m)** : 1 |



The Surficial Geology of Southern Ontario

Order No. 25071700027

Spot Height	Streams	Dune	Beach	Esker	karst	pitsg		
Waterbody	Contour Lines	Lake	Bluff	Esker ND	linfeat	popup		
Wetlands	Roads	Rib	Crevasse	Fluvial DL	megarip	ribl		
Airports	Railroads	Scab	Crest	fluvndl	mfluvdl	slidel		
Pit or Quarry	Morains	Slide	End	iceberg	mfluvndl	slumpb		
Lots		NOF Dune	Escarpment	icslope	moraine	terrace		

Surface Geology Report

Surface Geology units found within 2000 m of
4450 7th Concession Rd

Order No.
25071700027



ID: 115050 | **Unit Name:** Glaciolacustrine silty clay |
Deposit Type Code: 3 | **Deposit Age:** Pleistocene | **Map Number:** p3252 | **Map Name:** Essex E | **Source Map Scale:** 1:50 000 | **Primary Material:** clay | **Primary Material Modifier:** silty | **Secondary Material:** | **Primary General:** glaciolacustrine | **Primary General Modifier:** foreshore/basinal | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** Low | **Material Description:** Silty clay

ID: 115201 | **Unit Name:** Clayey silt till |
Deposit Type Code: 2a | **Deposit Age:** Pleistocene | **Map Number:** p3253 | **Map Name:** Essex W | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** clayey silt | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** Port Bruce | **Stratus Modifier:** Surface | **Provenance:** Huron-Georgian Bay | **Carbon Content:** medium | **Formation:** Tavistock Till | **Permeability:** Low | **Material Description:** Clayey silt till; related to recessional moraine and may be sandier material

ID: 115219 | **Unit Name:** Clayey silt till |
Deposit Type Code: 2a | **Deposit Age:** Pleistocene | **Map Number:** p3253 | **Map Name:** Essex W | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** clayey silt | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** Port Bruce | **Stratus Modifier:** Surface | **Provenance:** Huron-Georgian Bay | **Carbon Content:** medium | **Formation:** Tavistock Till | **Permeability:** Low | **Material Description:** Clayey silt till; related to recessional moraine and may be sandier material

Surface Geology Report Metadata

Ontario Geological Survey 2010. Surficial geology of southern Ontario; Ontario Geological Survey, Miscellaneous Release - Data 128 - Revised.

ONTARIO MINISTRY OF NORTHERN DEVELOPMENT, MINES AND FORESTRY



ID - ID applied to the Unit

Unit Name - Name of deposit

Deposit Type Code - The geological unit number taken from the original map legend.

Deposit Age - to show the age when the sediments were deposited, e.g., Wisconsinan, postglacial or recent.

Map Number - Original map series number, eg., 'M2402' or 'P1973'. Each sgu_point feature is tagged to its original map.

Map Name - Usually NTS area where mapping was completed, e.g., 'Golden Lake'

Source Map Scale - The scale at which the original map was captured, e.g., '1:50 000'

Primary Material - This attribute provides the user with information regarding the most prevalent material present within a given area.

Primary Material Modifier- This attribute provides the user with a more refined description of the lithological classification of the primary material.

Secondary Material - This attribute provides the user with information regarding subordinate materials present within a given area.

Primary General - This attribute provides the user with an interpretation of the depositional environment within which the primary material was deposited.

Primary General Modifier - This attribute provides the user with a refined interpretation of the primary genetic modifier.

Veneer - This attribute provides the user with information regarding the type of material that forms a thin, discontinuous veneer over the primary material.

Sub Episode - A diachronic stratigraphic unit in a lower order than Episode and the proposed sequence-stratigraphic classification, consists in descending order of Michigan, Elgin and Ontario in the eastern and northern Great Lakes area in the Wisconsin Episode (Johnson et al. 1997; Karrow et al. 2000).

Sub Episode - A diachronic stratigraphic unit in a lower order than Episode and the proposed sequence-stratigraphic classification, consists in descending order of Michigan, Elgin and Ontario in the eastern and northern Great Lakes area in the Wisconsin Episode (Johnson et al. 1997; Karrow et al. 2000).

Phase - A diachronic stratigraphic unit in a lower order than Subepisode, and the proposed sequence-stratigraphic classification is listed in the following table in the eastern and northern Great Lakes area (Karrow et al. 2000)

Stratus Modifier - This attribute provides the user information regarding the stratigraphic position of the mapped unit (i.e., whether the unit occurs primarily on the surface or in the subsurface).

Provenance - This attribute provides the user with information regarding the provenance of a particular till unit (i.e. direction or lobe from which the till is derived).

Carbon Content - This attribute provides the user with information regarding the carbonate content of till.

Formation - This attribute provides the user with information regarding the formation to which a given primary material belongs (e.g., Tavistock Till, Port Stanley Till, Scarborough Formation). This attribute is seamless and allows the user to create a map based on formation.

Permeability - This attribute provides the user with basic information about permeability of the sediments in a ranking of high, medium and low.

Material Description - Material or sediment description, e.g., 'sand and silty fine sand', 'silty sand and gravel' and 'silty till with low stone content'.

APPENDIX C

Correspondence with Regulators

Paige Sarafin

From: Public Information Services <publicinformationservices@tssa.org>
Sent: July 22, 2025 9:34 AM
To: Paige Sarafin
Subject: RE: TSSA - 2501E038.1000

Hello ,

NO RECORD FOUND IN CURRENT DATABASE:

- We confirm that there are NO **fuels records** in our database at the subject address(es).

For a further search in our archives, please go to the **TSSA Client Portal** to complete an Application for Release of Public Information. Please refer to Training (tssa.org) for instructions on how to use the portal. Please refer to How to Submit a Public Information Request (tssa.org) for instructions.

The associated fee must be paid via credit card (Visa or MasterCard).

Once all steps have been successfully completed you will receive your payment receipt via email.

TSSA does not make any representations or warranties with respect to the accuracy or completeness of any records released. The requestor assumes all risk in using or relying on the information provided.

If you have any questions or concerns, please do not hesitate to contact our Public Information Release team at publicinformationservices@tssa.org.

Kind regards,

Aleena Tahir | Public Information & Records Agent
Public Information
345 Carlingview Drive
Toronto, Ontario M9W 6N9
Tel: +1 416-734-3546 | E-Mail: ATahir@tssa.org
www.tssa.org

Winner of 2024 5-Star Safety Cultures Award

From: Paige Sarafin <paige.sarafin@sertas.ca>
Sent: Tuesday, July 22, 2025 9:10 AM

To: Public Information Services <publicinformationservices@tssa.org>
Subject: TSSA - 2501E038.1000

> **[CAUTION]:** This email originated outside the organisation.
> Please do not click links or open attachments unless you recognise the source of this email and know the content is safe.

Hello,

Could you please search the TSSA database for any registered fuel storage tanks and/or spills at the following properties?

- 4405 7TH CON RD, WINDSOR
- 4450 7TH CON RD, WINDSOR
- 4381 7TH CON RD, WINDSOR
- 4450 WALKER RD, WINDSOR
- 4380 WALKER RD, WINDSOR

Thank you,



Paige Sarafin, MSc., EPt
Senior Environmental Specialist
She/her

1-519-822-3442 1-519-981-2724
www.sertas.ca paige.sarafin@sertas.ca
4510 Rhodes Drive, Unit 210, Windsor, ON N8X 5K5

This electronic message and any attached documents are intended only for the named recipients. This communication from the Technical Standards and Safety Authority may contain information that is privileged, confidential or otherwise protected from disclosure and it must not be disclosed, copied, forwarded or distributed without authorization. If you have received this message in error, please notify the sender immediately and delete the original message.

APPENDIX D

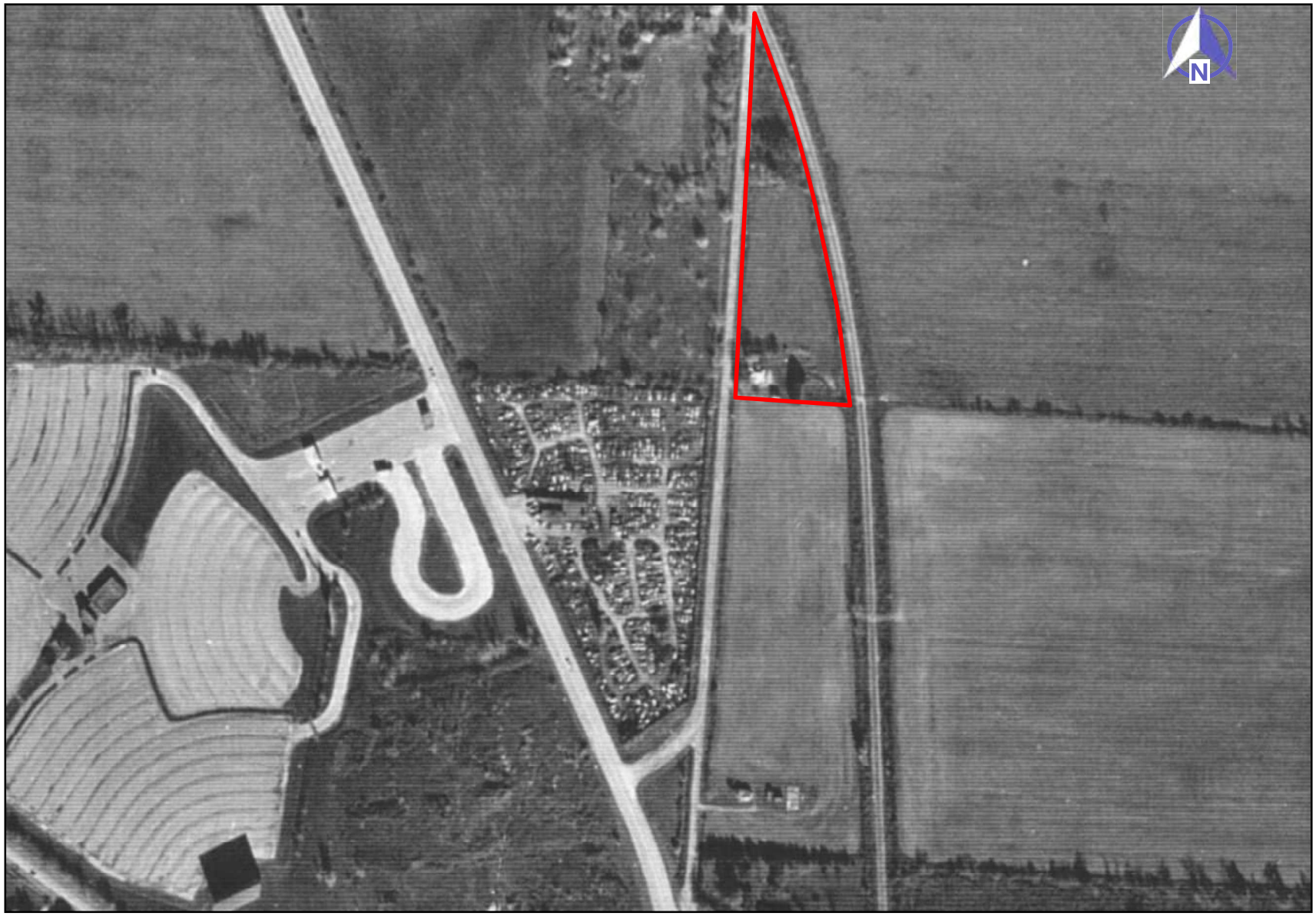
Aerial Photographs



SERTAS 4510 RHODES DRIVE, UNIT 210 WINDSOR, ON N8X 5K5 T: 519-822-3442	SERTAS	**AERIAL PHOTOGRAPH DATE: 1947** PROJECT: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT LOCATION: 4450 7TH CONCESSION, WINDSOR, ONTARIO PROJECT NO: 2501E038.1000 CLIENT: ENWIN UTILITIES LTD.	LEGEND SITE



SERTAS 4510 RHODES DRIVE, UNIT 210 WINDSOR, ON N8X 5K5 T: 519-822-3442	SERTAS	**AERIAL PHOTOGRAPH DATE: 1952** PROJECT: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT LOCATION: 4450 7TH CONCESSION, WINDSOR, ONTARIO PROJECT NO: 2501E038.1000 CLIENT: ENWIN UTILITIES LTD.	LEGEND SITE



SERTAS
4510 RHODES DRIVE, UNIT 210
WINDSOR, ON N8X 5K5
T: 519-822-3442

AERIAL PHOTOGRAPH DATE: 1985

PROJECT: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
LOCATION: 4450 7TH CONCESSION, WINDSOR, ONTARIO
PROJECT NO: 2501E038.1000
CLIENT: ENWIN UTILITIES LTD.

LEGEND

SITE



SERTAS 4510 RHODES DRIVE, UNIT 210 WINDSOR, ON N8X 5K5 T: 519-822-3442	SERTAS	**AERIAL PHOTOGRAPH DATE: 1990** PROJECT: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT LOCATION: 4450 7TH CONCESSION, WINDSOR, ONTARIO PROJECT NO: 2501E038.1000 CLIENT: ENWIN UTILITIES LTD.	LEGEND SITE



SERTAS
4510 RHODES DRIVE, UNIT 210
WINDSOR, ON N8X 5K5
T: 519-822-3442

AERIAL PHOTOGRAPH DATE: 2000

PROJECT: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
LOCATION: 4450 7TH CONCESSION, WINDSOR, ONTARIO
PROJECT NO: 2501E038.1000
CLIENT: ENWIN UTILITIES LTD.

LEGEND

SITE



SERTAS 4510 RHODES DRIVE, UNIT 210 WINDSOR, ON N8X 5K5 T: 519-822-3442	SERTAS	**AERIAL PHOTOGRAPH DATE: 2005** PROJECT: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT LOCATION: 4450 7TH CONCESSION, WINDSOR, ONTARIO PROJECT NO: 2501E038.1000 CLIENT: ENWIN UTILITIES LTD.	LEGEND SITE



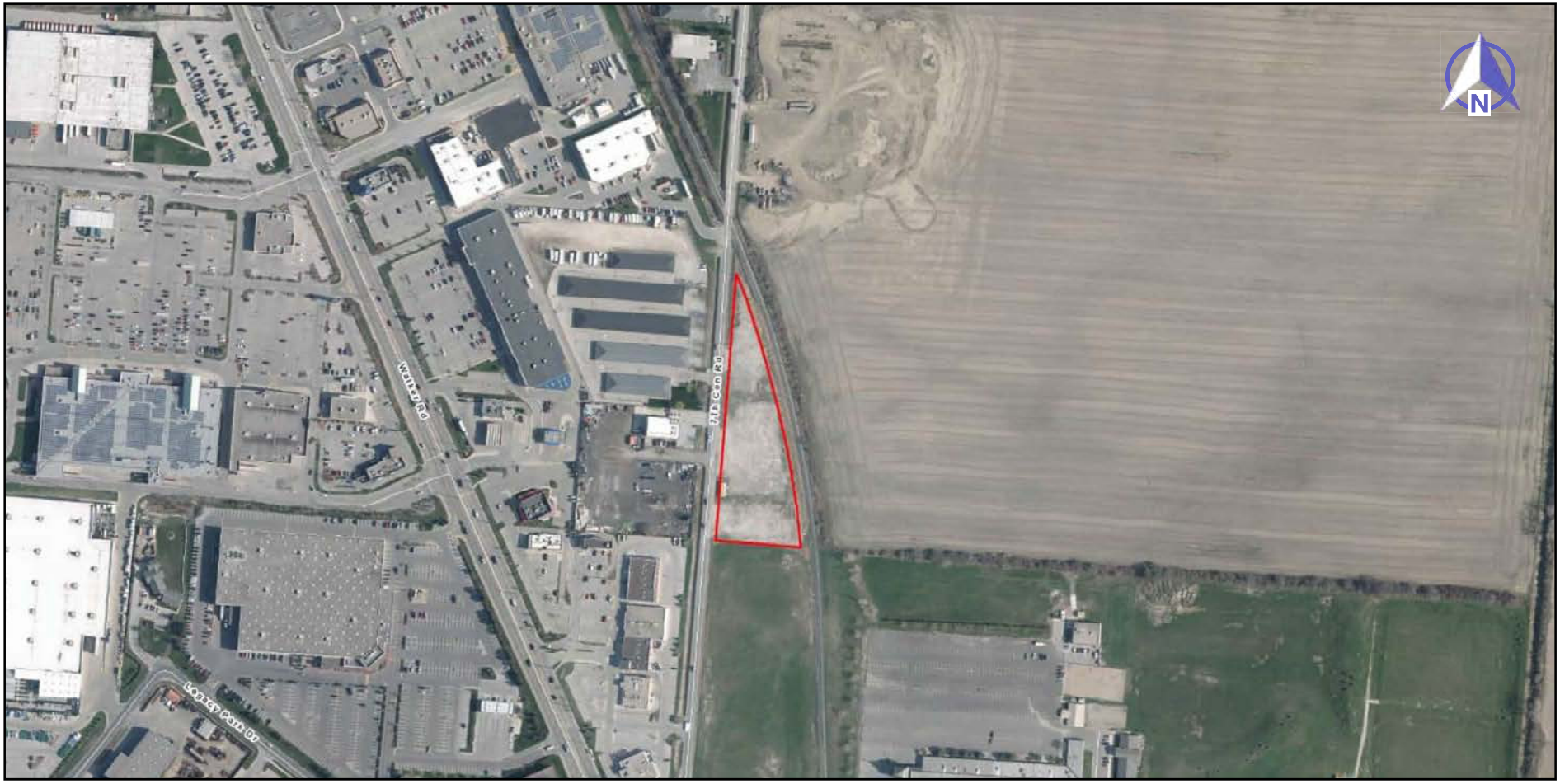
SERTAS
4510 RHODES DRIVE, UNIT 210
WINDSOR, ON N8X 5K5
T: 519-822-3442

AERIAL PHOTOGRAPH DATE: 2010

PROJECT: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
LOCATION: 4450 7TH CONCESSION, WINDSOR, ONTARIO
PROJECT NO: 2501E038.1000
CLIENT: ENWIN UTILITIES LTD.

LEGEND

SITE



SERTAS
4510 RHODES DRIVE, UNIT 210
WINDSOR, ON N8X 5K5
T: 519-822-3442

AERIAL PHOTOGRAPH DATE: 2015

PROJECT: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
LOCATION: 4450 7TH CONCESSION, WINDSOR, ONTARIO
PROJECT NO: 2501E038.1000
CLIENT: ENWIN UTILITIES LTD.

LEGEND

SITE



SERTAS 4510 RHODES DRIVE, UNIT 210 WINDSOR, ON N8X 5K5 T: 519-822-3442	SERTAS	**AERIAL PHOTOGRAPH DATE: 2024** PROJECT: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT LOCATION: 4450 7TH CONCESSION, WINDSOR, ONTARIO PROJECT NO: 2501E038.1000 CLIENT: ENWIN UTILITIES LTD.	LEGEND SITE

APPENDIX E

Site Reconnaissance Photos

	**Photo 1:** View of the Site facing southeast.
	Date: July 24, 2025
	Direction: Southeast

	**Photo 2:** View of the Site facing north along the western boundary.
	Date: July 24, 2025
	Direction: North

	**Photo 3:** View of the Site and 7th Concession Rd, facing north along the western boundary.
	Date: July 24, 2025
	Direction: North

	**Photo 4:** View of the Site facing east from the western property boundary, from the central portion.
	Date: July 24, 2025
	Direction: East

	**Photo 5:** View of the Site facing south from the northern boundary.
	Date: July 24, 2025
	Direction: South

	**Photo 6:** View of the Site facing south from the eastern boundary.
	Date: July 24, 2025
	Direction: South

	**Photo 7:** View of the Site facing west from the west central boundary.
	Date: July 24, 2025
	Direction: West

	**Photo 8:** View of the Site facing west and from the eastern boundary.
	Date: July 24, 2025
	Direction: West

	**Photo 9:** View of the ground surface from the southern portion of the Site.
	Date: July 24, 2025
	Direction: North
	**Photo 10:** View of 7th Concession Rd facing south from the south adjacent property.
	Date: July 24, 2025
	Direction: South

	**Photo 11:** View of 7th Concession Rd facing north from the south adjacent property.
	Date: July 24, 2025
	Direction: North

	**Photo 12:** View of the residential trailer located in the southeast corner of the Site.
	Date: July 24, 2025
	Direction: South

	**Photo 13:** View of south adjacent property from 7th Concession Road, facing southeast.
	Date: July 24, 2025
	Direction: South

APPENDIX F

Table of Current and Past Uses

"Table of current and past uses of the phase one property" (Refer to clause 16(2)(b), Schedule D, O. Reg. 153/04)

Year	Name of owner	Description of property use	Property use	Other observations from aerial photographs, fire insurance plans, etc.
4450 Concession 7, Windsor, Part W1/2 Lot 15 Concession 7 Sandwich East as in R295865 PIN: 01560-0065 (LT)				
Prior to 1872	Inferred to be Crown	Undeveloped land	Agricultural or Other Use	No aerial photographs, city directories, or Fire Insurance Plans (FIPs) were available for this time period. The title search indicates the site was Crown land; site use during this period was inferred based on the title search.
1872 – 1876	Catherine Meagher	Undeveloped land	Agricultural or Other Use	No aerial photographs, city directories, or FIPs were available for this time period. The title search identified an individual property owner; site use during this period was inferred based on title search information.
1876 – 1880	Joseph Langlois	Undeveloped land	Agricultural or Other Use	
1880 – 1917	Esdras Berthiaume	Undeveloped land	Agricultural or Other Use	
1917 – 1939	Frederick Moore	Undeveloped land	Agricultural or Other Use	
1939 – 1963	Fannie J. Moore	Undeveloped land	Agricultural or Other Use	Based on a review of aerial photographs, between 1947 and 1952 the Site appears to have consisted of undeveloped agricultural land. By July 1959, Union Gas Company had obtained a right-of-way.
1963 -1965	Gordon O'Neil, Sylvia O'Neil	Undeveloped land	Agricultural or Other Use	No aerial photographs, city directories, or FIPs were available for this time, Site is inferred to be in similar configuration to previous years.
1965 – 1994	Paul Roth	Undeveloped land	Agricultural or Other Use	Aerial photographs from 1985 and 1990 indicate the Site remained undeveloped, with dense tree growth present.

1994 – 2001	Ernesto Paul Delicata, Catherina Delicata	Undeveloped land	Agricultural or Other Use	The 2000 aerial photograph shows the Site remained undeveloped, with portions of the property appearing graveled.
2001 – 2015	Ernesto Paul Delicata	Undeveloped land	Agricultural or Other Use	The 2015 aerial photograph shows the Site remained undeveloped, with portions of the property appearing graveled.
2015 – present	2463154 Ontario Inc.	Undeveloped land	Agricultural or Other Use	The 2000 aerial photograph shows the Site remained undeveloped, with portions of the property appearing graveled. The 2024 aerial photograph and Site visit shows the Site with gravel and topsoil overgrown areas.
4450 Concession 7, Windsor, Part W1/2 Lot 15 Concession 7 Sandwich East as in R1364716 PIN: 01560-0064 (LT)				
Prior to 1872	Inferred to be Crown	Undeveloped land	Agricultural or Other Use	Prior to development it is inferred the project area was undeveloped crown land.
1872 – 1876	Catherine Meagher	Undeveloped land	Agricultural or Other Use	No aerial photographs, city directories, or FIPs were available for this time period. The title search identified an individual property owner; site use during this period was inferred based on title search information.
1876 – 1880	Joseph Langlois	Undeveloped land	Agricultural or Other Use	
1880 – 1888	Esdras Berthiaume	Undeveloped land	Agricultural or Other Use	
1888 – 1888	Felix Guindon	Undeveloped land	Agricultural or Other Use	
1888 – 1928	Annie Guindon	Undeveloped land	Agricultural or Other Use	

1928 – 1959	Mathilde Guindon	Dwelling with associated farmland	Agricultural or Other Use	The 1947 and 1952 aerial photographs show the Site developed with a dwelling and driveway in the southern portion, tree coverage across the property, and a rectangular agricultural area near the center.
1959 – 1994	Frank Lyons, Cora Lyons	Dwelling with associated farmland	Agricultural or Other Use	In 1959 Union Gas Company had obtained a right-of-way across the property. By 1985 and 1990, tree cover and the former agricultural area appear to have been removed. A structure resembling a dwelling may remain in the southern portion of the Site, although its presence is unclear from the available imagery.
1994 - 1996	John Spagnuolo, Ernesto Paul Delicata	Dwelling with associated farmland	Agricultural or Other Use	No aerial photographs, city directories, or FIPs were available for this time, Site is inferred to be in similar configuration to previous years.
1996 – 2015	Ernesto Paul Delicata	Truck Trailer Storage	Commercial Use	The 2000 to 2010 aerial photographs show the Site contained truck trailers with the northern 2/3rd of the Site and the southern portion have a dwelling, grassed area, paved driveway and various items scattered/ stored across the property. The 2015 show the site is graveled, with some grass areas and vacant.
2015 – present	2463154 Ontario Inc.	Vacant, except for a trailer	Commercial Use	The 2015 show the site is graveled, with some grass areas and vacant. The 2024 aerial photographs show the Site was vacant. However, based on the 2025 Site reconnaissance 2/3 of the Site is grassed areas and what appears to be compacted gravel fill. Beneath the topsoil, approximately two-thirds of the Site contains fill with gravel, along with scattered remnants of concrete and asphalt. Located in the southeast corner of the Site is a residential trailer with a small area for parking and a garden.

Notes: 1 - For each owner, specify one of the following types of property use (as defined in O. Reg. 153/04) that applies: Agriculture or other use

Commercial use

Community use

Industrial use

Institutional use

Parkland use

Residential use

2 - When submitting a record of site condition for filing, a copy of this table must be attached

Cette publication hautement spécialisée n'est disponible qu'en anglais en vertu du règlement 671/92, qui en exempte l'application de la Loi sur les services en français. Pour obtenir de l'aide en français, veuillez communiquer avec le ministère de l'Environnement, de la Protection de la nature et des Parcs au 1-800-461-6290.

CHAIN OF TITLE REPORT

Project #: 25091701056
Address: 4450 Con 7, Windsor
Legal Description: Part w1/2 Lot 15 Con 7 Sandwich East as in R1295865

PIN #: 01560-0065 (LT)

Searched at: Windsor
LRO #: 12

INSTR #	DOC. TYPE	REG. DATE	PARTY FROM	PARTY TO
	Patent	14 08 1872	Crown	**Catherine MEAGHER**
2022	Deed	08 08 1876	Catherine Meagher	Joseph LANGLOIS
2857	Deed	05 10 1880	Joseph Langlois	Esdras BERTHIAUME
2760	Deed	19 04 1917	Esdras Berthiaume	Frederick MOORE
6304	Deed	31 05 1939	Frederick Moore	Fannie J. MOORE
202281	Right-of-Way	16 07 1959	Fannie J. Moore	Union Gas Company
293845	Deed	12 12 1963	Fannie J. Moore	Gordon O'NEIL Sylvia O'NEIL
348458	Deed	31 12 1965	Gordon O'Neil & Sylvia O'Neil	Paul ROTH
R1295865	Deed	16 12 1994	Paul Roth	Ernesto Paul DELICATA Catherina DELICATA

Cont'd on Page 2

CHAIN OF TITLE REPORT

Project #: 25091701056
Address: 4450 Con 7, Windsor
Legal Description: Part w1/2 Lot 15 Con 7 Sandwich East as in R1295865

PIN #: 01560-0065 (LT)

Searched at: Windsor
LRO #: 12

INSTR #	DOC. TYPE	REG. DATE	PARTY FROM	PARTY TO
LT320936	Deed	09 10 2001	Ernesto Paul Delicata Catherina Delicata	Ernesto Paul DELICATA
CE656534	Deed **(Present Owner)**	01 05 2015	Ernesto (Ernie) Paul Delicata	**2463154 Ontario Inc.**

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: PT W 1/2 LT 15 CON 7 SANDWICH EAST AS IN R1295865; WINDSOR

PROPERTY REMARKS:

ESTATE/QUALIFIER:
FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:
RE-ENTRY FROM 01560-1031

PIN CREATION DATE:
2000/10/30

OWNERS' NAMES
2463154 ONTARIO INC.

CAPACITY SHARE

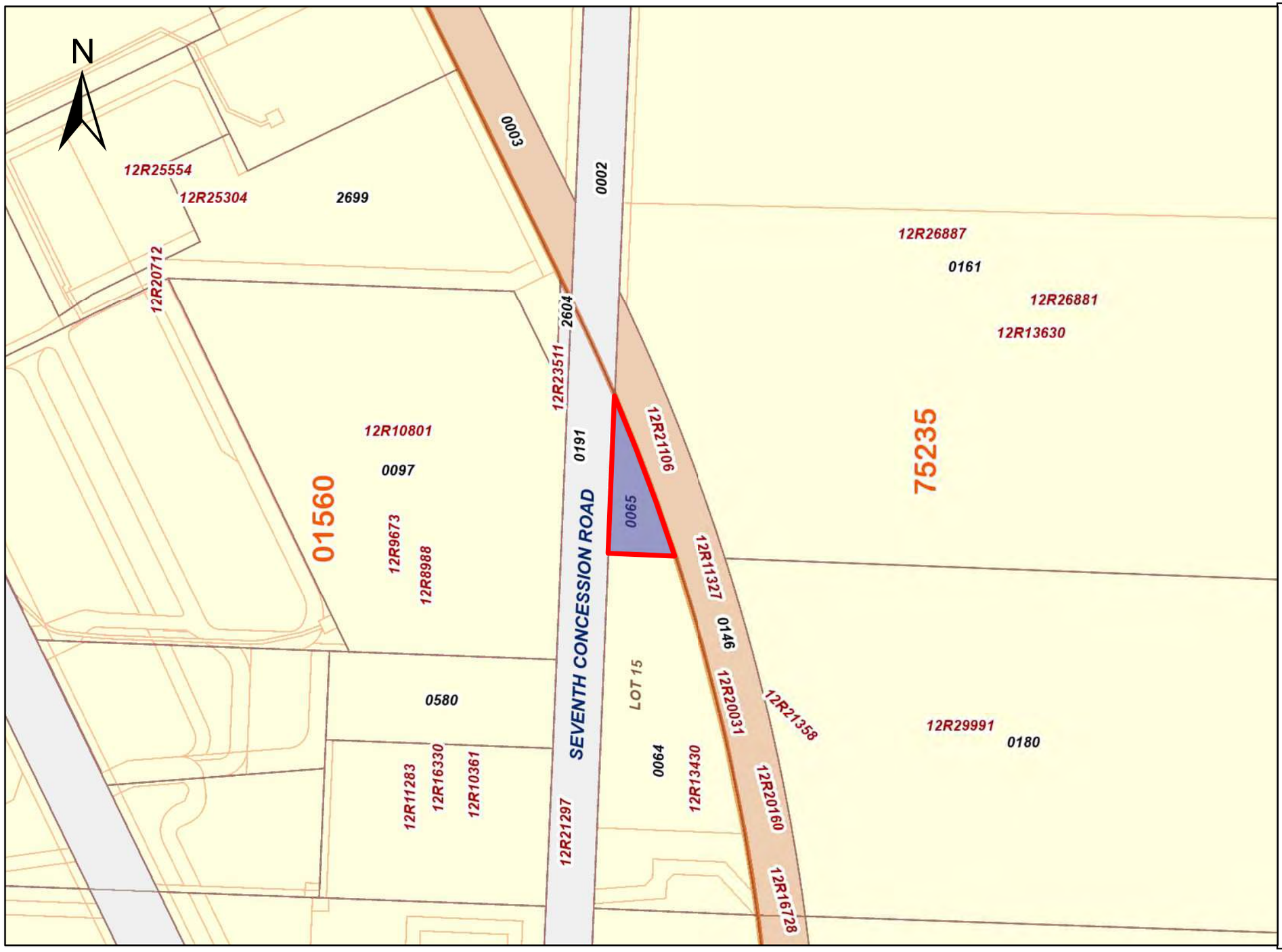
REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE 2000/10/27 **						
**SUBJECT, ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO:						
** SUBSECTION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES *						
** AND ESCHEATS OR FORFEITURE TO THE CROWN.						
** THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF						
** IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY						
** CONVENTION.						
** ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES.						
**DATE OF CONVERSION TO LAND TITLES: 2000/10/30 **						
R459284	1970/01/07	NOTICE		SEE DOCUMENT	DEPARTMENT OF TRANSPORT	C
REMARKS: WINDSOR AIRPORT ZONING REGULATIONS D.N.A P.I.N 01337-0434 DELETED NOV 15/07						
CORRECTIONS: 'PARTY: DEPARTMENT OF TRANSPORT' ADDED ON 1997/03/25 BY REGISTRAR 23. 'PARTY: SEE DOCUMENT' ADDED ON 1997/04/08 BY REGISTRAR 23.						
R844423	1981/10/27	NOTICE		SEE DOCUMENT	DEPARTMENT OF TRANSPORT	C
REMARKS: AMENDS 137437 & 459284 WINDSOR AIRPORT ZONING REGULATIONS						
CORRECTIONS: 'PARTY' CHANGED FROM 'DEPARTMENT OF TRANSPORT' TO 'DEPARTMENT OF TRANSPORT' ON 1996/11/14 BY LAND REGISTRAR #3. 'PARTY' CHANGED FROM 'DEPARTMENT OF TRANSPORT' TO 'SEE DOCUMENT' ON 1997/04/01 BY LAND REGISTRAR#19. 'PARTY: DEPARTMENT OF TRANSPORT' ADDED ON 1997/04/08 BY REGISTRAR 23.						
R844424	1981/10/27	NOTICE		SEE DOCUMENT	DEPARTMENT OF TRANSPORT	C
CORRECTIONS: 'PARTY' CHANGED FROM 'DEPARTMENT OF TRANSPORT' TO 'SEE DOCUMENT' ON 1997/04/01 BY LAND REGISTRAR#19. 'PARTY: DEPARTMENT OF TRANSPORT' ADDED ON 1997/04/08 BY REGISTRAR 23.						
R1295865	1994/12/16	TRANSFER		*** COMPLETELY DELETED ***	DELICATA, ERNESTO PAUL DELICATA, CATERINA	
LT320936	2001/10/09	TRANSFER		*** COMPLETELY DELETED ***		

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
				DELICATA, ERNESTO PAUL DELICATA, CATERINA	DELICATA, ERNESTO PAUL	
CE656534	2015/05/01	TRANSFER	$190,000	DELICATA, ERNESTO PAUL DELICATA, ERNIE	2463154 ONTARIO INC.	C
	REMARKS: PLANNING ACT STATEMENTS.					
CE656535	2015/05/01	CHARGE		*** COMPLETELY DELETED *** 2463154 ONTARIO INC.	DELICATA, ERNESTO PAUL	
CE784977	2017/08/01	DISCH OF CHARGE		*** COMPLETELY DELETED *** DELICATA, ERNESTO PAUL		
	REMARKS: CE656535.					

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.



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SCALE

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PROPERTY INDEX MAP

ESSEX(No. 12)

LEGEND

FREEHOLD PROPERTY	
LEASEHOLD PROPERTY	
LIMITED INTEREST PROPERTY	
CONDOMINIUM PROPERTY	
RETIRED PIN (MAP UPDATE PENDING)	
PROPERTY NUMBER	*0449*
BLOCK NUMBER	08050
GEOGRAPHIC FABRIC	
EASEMENT	

THIS IS NOT A PLAN OF SURVEY

NOTES

REVIEW THE TITLE RECORDS FOR COMPLETE PROPERTY INFORMATION AS THIS MAP MAY NOT REFLECT RECENT REGISTRATIONS

THIS MAP WAS COMPILED FROM PLANS AND DOCUMENTS RECORDED IN THE LAND REGISTRATION SYSTEM AND HAS BEEN PREPARED FOR PROPERTY INDEXING PURPOSES ONLY

FOR DIMENSIONS OF PROPERTIES BOUNDARIES SEE RECORDED PLANS AND DOCUMENTS

ONLY MAJOR EASEMENTS ARE SHOWN

REFERENCE PLANS UNDERLYING MORE RECENT REFERENCE PLANS ARE NOT ILLUSTRATED

Ontario

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CHAIN OF TITLE REPORT

Project #: 25091701056
Address: 4450 Con 7, Windsor
Legal Description: Part w1/2 Lot 15 Con 7 Sandwich East as in R1364716

Searched at: Windsor
LRO #: 12

PIN #: 01560-0064 (LT)

INSTR #	DOC. TYPE	REG. DATE	PARTY FROM	PARTY TO
	Patent	14 08 1872	Crown	**Catherine MEAGHER**
2022	Deed	08 08 1876	Catherine Meagher	Joseph LANGLOIS
2857	Deed	05 10 1880	Joseph Langlois	Esdras BERTHIAUME
4854	Deed	22 05 1888	Esdras Berthiaume	Felix GUINDON
4931	Deed	09 08 1888	Felix Guindon	Annie (Anna) GUINDON
6439	Will	06 03 1928	Annie Guindon - Estate	Mathilde GUINDON
196664	Deed	21 01 1959	Mathilde Guindon - Estate	Frank LYONS & Cora LYONS
202282	Right-of-Way	16 07 1959	Frank Lyons & Cora Lyons	Union Gas Company of Canada
R1262230	Deed	02 02 1994	Lisa, Linda, Michael & Chris Lyons exors of Frank Lyons & Cora Lyons - Estate	John SPAGNUOLO Ernesto (Ernie) Paul DELICATA

Cont'd on Page 2

CHAIN OF TITLE REPORT

Project #: 25091701056
Address: 4450 Con 7, Windsor
Legal Description: Part w1/2 Lot 15 Con 7 Sandwich East as in R1364716

PIN #: 01560-0064 (LT)

Searched at: Windsor
LRO #: 12

INSTR #	DOC. TYPE	REG. DATE	PARTY FROM	PARTY TO
R1364716	Deed	15 11 1996	John Spagnuolo	Ernesto (Ernie) Paul DELICATA
CE656534	Deed **(Present Owner)**	01 05 2015	Ernesto (Ernie) Paul Delicata	**2463154 Ontario Inc.**

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: PART W1/2 LOT 15 CON 7 SANDWICH EAST AS IN R1364716; CITY OF WINDSOR

PROPERTY REMARKS:

ESTATE/QUALIFIER:
FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:
RE-ENTRY FROM 01560-1030

PIN CREATION DATE:
2000/10/30

OWNERS' NAMES
2463154 ONTARIO INC.

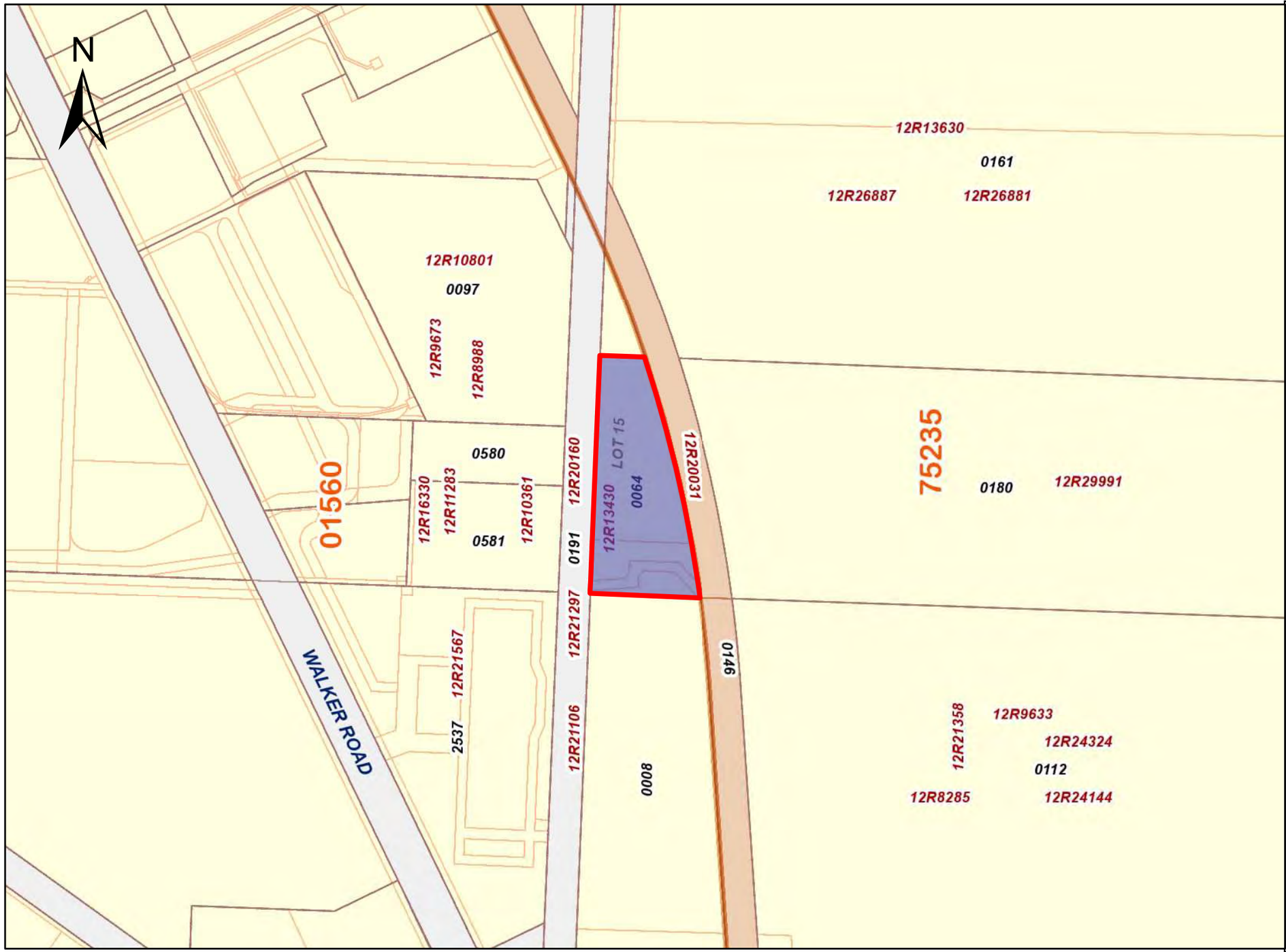
CAPACITY SHARE

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE 2000/10/27 **						
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R844423	1981/10/27	NOTICE		SEE DOCUMENT	DEPARTMENT OF TRANSPORT	C
REMARKS: AMENDS 137437 & 459284 WINDSOR AIRPORT ZONING REGULATIONS						
CORRECTIONS: 'PARTY' CHANGED FROM 'DEPARTMENT OF TRANSPORT' TO 'DEPARTMENT OF TRANSPORT' ON 1996/11/14 BY LAND REGISTRAR #3. 'PARTY' CHANGED FROM 'DEPARTMENT OF TRANSPORT' TO 'SEE DOCUMENT' ON 1997/04/01 BY LAND REGISTRAR#19. 'PARTY: DEPARTMENT OF TRANSPORT' ADDED ON 1997/04/08 BY REGISTRAR 23.						
R844424	1981/10/27	NOTICE		SEE DOCUMENT	DEPARTMENT OF TRANSPORT	C
CORRECTIONS: 'PARTY' CHANGED FROM 'DEPARTMENT OF TRANSPORT' TO 'SEE DOCUMENT' ON 1997/04/01 BY LAND REGISTRAR#19. 'PARTY: DEPARTMENT OF TRANSPORT' ADDED ON 1997/04/08 BY REGISTRAR 23.						
R1262230	1994/02/02	TRANSFER		*** COMPLETELY DELETED ***	SPAGNUOLO, JOHN DELICATA, ERNIE	
12R13430	1994/09/14	PLAN REFERENCE				C

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REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
R1286868	1994/09/20	TRANSFER		*** COMPLETELY DELETED ***	DELICATA, ERNIE	
R1364716	1996/11/15	TRANSFER		*** DELETED AGAINST THIS PROPERTY *** SPAGNUOLO, JOHN	DELICATA, ERNIE	
	REMARKS: PLANNING ACT STATEMENT					
CE656534	2015/05/01	TRANSFER	$190,000	DELICATA, ERNESTO PAUL DELICATA, ERNIE	2463154 ONTARIO INC.	C
	REMARKS: PLANNING ACT STATEMENTS.					
CE656535	2015/05/01	CHARGE		*** COMPLETELY DELETED *** 2463154 ONTARIO INC.	DELICATA, ERNESTO PAUL	
CE784977	2017/08/01	DISCH OF CHARGE		*** COMPLETELY DELETED *** DELICATA, ERNESTO PAUL		
	REMARKS: CE656535.					
CE1211889	2024/12/20	TRANSFER REL&ABAND		*** COMPLETELY DELETED *** 1741077 ONTARIO INC. 1741078 ONTARIO INC. 1156664 ONTARIO INC.	2463154 ONTARIO INC.	
	REMARKS: R1364716. PLANNING ACT STATEMENTS.					
CE1233223	2025/06/17	LR'S ORDER		*** COMPLETELY DELETED *** LAND REGISTRAR, ESSEX LAND REGISTRY OFFICE		
	REMARKS: DELETED 2025/9/2 M.MUDIE					
CE1234057	2025/06/23	TRANSFER REL&ABAND		*** COMPLETELY DELETED *** 2463154 ONTARIO INC.	2463154 ONTARIO INC.	
	REMARKS: R1364716. DELETED 2025/9/2 M.MUDIE					
CE1236579	2025/07/10	APL (GENERAL)		*** COMPLETELY DELETED *** 2463154 ONTARIO INC.		
	REMARKS: DELETES S/T INTEREST AS IN R1262227					

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FREEHOLD PROPERTY	
LEASEHOLD PROPERTY	
LIMITED INTEREST PROPERTY	
CONDOMINIUM PROPERTY	
RETIRED PIN (MAP UPDATE PENDING)	
PROPERTY NUMBER	*0449*
BLOCK NUMBER	08050
GEOGRAPHIC FABRIC	
EASEMENT	

THIS IS NOT A PLAN OF SURVEY

NOTES

REVIEW THE TITLE RECORDS FOR COMPLETE PROPERTY INFORMATION AS THIS MAP MAY NOT REFLECT RECENT REGISTRATIONS

THIS MAP WAS COMPILED FROM PLANS AND DOCUMENTS RECORDED IN THE LAND REGISTRATION SYSTEM AND HAS BEEN PREPARED FOR PROPERTY INDEXING PURPOSES ONLY

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REFERENCE PLANS UNDERLYING MORE RECENT REFERENCE PLANS ARE NOT ILLUSTRATED

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APPENDIX G

Table of Potentially Contaminating Activities

TABLE 2

POTENTIALLY CONTAMINATING ACTIVITIES

(On-Site and within 250 m)

PCA Identifier	Address	Location of Activity (in relation to Site) (1)	Potentially Contaminating Activity (PCA) (2)	Approximate timeline that PCA occurred	Contribution to APEC at the Site
1	4450 7th Concession Rd	On-Site	52. Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems	From 2000 - 2019 the 2/3rd of the Site contained numerous truck trailers being stored.	Yes, due to this PCA occurring on-site, it has been identified as a contributing PCA to an APEC.
2	4450 7th Concession Rd	On-Site	30. Importation of Fill Material of Unknown Quality	During the site reconnaissance, beneath the topsoil, approximately two-thirds of the Site contains fill with gravel, along with scattered remnants of concrete and asphalt. An entrance is present along the western boundary. Evidence of a former structure was noted on-site, including small footings and concrete blocks observed in various locations. Additionally, a dwelling was formerly present in the southern portion of the Site.	Yes, due to this PCA occurring on-site, it has been identified as a contributing PCA to an APEC.
3	4450 7th Concession Rd	On-Site	Other. Waste Generator	At 4450 7th Concession Road, the Site was identified in 2019 as a registered waste generator for crankcase oils and lubricants.	Yes, due to this PCA occurring on-site, it has been identified as a contributing PCA to an APEC.
4	No Municipal Address	East Adjacent	46. Rail Yards, Tracks and Spurs	Railway tracks have been present on the Site since at least 1947, the date of the earliest available aerial photograph, though they likely existed prior to that time.	Yes, due to this PCA occurring adjacent to the RSC Property, it has been identified as a contributing PCA to an APEC.
5	4405 7th Concession Rd	20 m West Adjacent	Other. Contractor Yard	J J Infrastructure Inc. (2017–present), which uses the property for equipment storage	Yes, due to this PCA occurring adjacent to the RSC Property, it has been

				related to sewer and watermain underground installations.	identified as a contributing PCA to an APEC.
6	4405 7th Concession Rd	20 m West Adjacent	40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	At 4405 7th Concession Road, currently occupied by SKZ Landscaping Inc., the property was listed as an operator of pesticides, although no specific year or date range was provided; five related records were identified.	No, due to the inferred scale of operations, the low-risk nature of the activity, the inferred direction of groundwater flow and the presence of low permeability native clay soils, the potential for contaminant transport from this off-site source to the RSC Property is considered low.
7	4450 7th Concession Rd	40 m Southwest	49. Salvage Yard, including automobile wrecking	At 4450 Walker Road, the property was formerly occupied by East Side Auto Recycling Warehouse, which operated as an automobile wrecking and recycling yard from approximately 1971 into the 1990s. Later, the same address was occupied by Swiss Chalet, where a reported spill occurred in 2010 involving 800 litres of cooking oil released to ground due to a leaking container.	Yes, due to this PCA occurring within close proximity to the RSC Property, it has been identified as a contributing PCA to an APEC.
8			Other. Cooking Oil Spill		Yes, due to this PCA occurring within close proximity to the RSC Property, it has been identified as a contributing PCA to an APEC.
9	4380 Walker Rd	120 m West	10. Commercial Autobody Shops	At 4380 Walker Road, Mr. Lube has operated as a retail service station, offering oil changes and lubrication services since 2010.	Yes, due to this PCA occurring within close proximity to the RSC Property, it has been identified as a contributing PCA to an APEC.
10	4340 Walker Rd	170 m West	28. Gasoline and Associated Products Storage in Fixed Tanks	Petro-Canada (2012 – 2024) and appears to have three (3) USTs based on a review of Google Earth (2024).	No, due this PCA occurring a considerable distance from the RSC Property. Based on the inferred direction of groundwater flow and the presence of low permeability native clay soils, the potential for contaminant transport from this off-site source to the RSC Property is considered low. As such, this PCA is not expected to pose an environmental concern to the RSC Property.

Notes:

(1) Distances are approximately only. Precise distances are not possible due to the age of some listings and the aggregation and/or loss of addresses.

(2) Potentially contaminating activity means a use or activity set out in Column A of Table 2 of Schedule D (O. Reg 153/04, as amended)

APPENDIX H

Table of Areas of Potential Environmental Concern

"Table of areas of potential environmental concern"
(Refer to clause 16(2)(a), Schedule D, O. Reg. 153/04)

Area of Potential Environmental Concern [1]	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity[2]	Location of PCA (on-site or off-site)	Contaminants of Potential Concern [3]	Media Potentially Impacted (Ground Water, Soil and/or Sediment)
APEC 1 Storage of Vehicles	Entire Project Area	52. Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems	On-Site	Metals, As, Sb, Se, Hg, EC, SAR, pH, PAHs, PHCs, VOCs	Soil & Groundwater
APEC 2 Importation of Fill	Entire Project Area	30. Importation of Fill of Unknown Quality and Quantity	On-Site	Metals, As, Sb, Se, Hg, EC, SAR, pH, PAHs, PHCs, BTEXs	Soil
APEC 3 Waste Generator	Southern Property Boundary	Other. Waste Generator	Off-Site	Metals, As, Sb, Se, Hg, EC, SAR, pH, BTEX, PHCs	Soil & Groundwater
APEC 4 Railway Tracks	Eastern Property Boundary	46. Rail Yards, Tracks and Spurs	Off-Site	Metals, As, Sb, Se, Hg, EC, SAR, pH, PHCs, VOCs, PCBs	Soil & Groundwater
APEC 5 Westerly PCAs	Western Property Boundary	Other. Contractor Yard 49. Salvage Yard, including automobile wrecking Other. Cooking Oil Spill 10. Commercial Autobody Shops	Off-Site	Metals, As, Sb, Se, Hg, EC, SAR, pH, PHCs VOCs	Soil & Groundwater

Notes:

1 - Areas of potential environmental concern means the area on, in or under a phase one property where one or more contaminants are potentially present, as determined through the phase one environmental site assessment, including through,
(a) identification of past or present uses on, in or under the phase one property, and
(b) identification of potentially contaminating activity.

2 - Potentially contaminating activity means a use or activity set out in Column A of Table 2 of Schedule D that is occurring or has occurred in a phase one study area

3 - When completing this column, identify all contaminants of potential concern using the Method Groups as identified in the Protocol for in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, March 9, 2004, amended as of July 1, 2011, as specified below:

List of Method Groups:

ABNs	PCBs	Metals	Electrical Conductivity
CPs	PAHs	As, Sb, Se	Cr (VI)
1,4-Dioxane	THMs	Na	Hg
Dioxins/Furans, PCDDs/PCDFs	VOCs	B-HWS	Methyl Mercury
OCs	BTEX	Cl-	Low or high pH,
PHCs	Ca, Mg	CN-	SAR

4 - When submitting a record of site condition for filing, a copy of this table must be attached

Cette publication hautement spécialisée n'est disponible qu'en anglais en vertu du règlement 671/92, qui en exempte l'application de la Loi sur les services en français. Pour obtenir de l'aide en français, veuillez communiquer avec le ministère de l'Environnement, de la Protection de la nature et des Parcs au 1-800-461-6290.

ENVIRONMENTAL LIMITATIONS

ENVIRNMENTAL REPORT LIMITATIONS

No additional warranties or representations, whether expressed or implied, are made regarding the professional services provided under the terms of our Contract or the conclusions presented herein.

The conclusions in this report are partially based on visual observations of the Site and related structures. Our findings do not extend to portions of the Site or structures that, in our opinion, were not reasonably accessible for direct observation.

The environmental conditions at the Site were assessed within the above limitations, taking into account applicable environmental regulations as of the inspection date. No review of compliance by past owners or occupants with local, provincial, or federal laws and regulations was performed.

Site history research included information obtained from third parties and representatives of the owner. Unless specifically noted, no attempt has been made to independently verify the accuracy of this information.

Testing was conducted according to the terms outlined in our Contract. Additional substances or varying quantities of those tested for may exist on-site and could be revealed through other testing methods not included in our Contract.

Due to the limitations noted above, different environmental conditions from those presented in this report may be present. If different conditions are encountered, we must be notified to determine if modifications to the report's conclusions are necessary.

Engaging our services during any remedial actions will allow us to monitor compliance with our recommendations and make adjustments as needed based on field conditions.

This report is intended solely for the use of the addressee unless otherwise stated in the report or Contract. Any third-party use, reliance, or decisions based on the information or conclusions in this report are at the third party's own risk. We accept no liability for any loss or damage suffered by third parties due to actions taken or not taken based on this report.

This report may not be shared with any third party without our written permission.

Provided the report is deemed reliable and is less than 12 months old, we will issue a third-party reliance letter to parties identified by the client in writing, upon payment of the applicable fee. All third parties relying on this report agree to be bound by our proposal and standard reliance terms. Our standard reliance letter specifies that we are not liable for any damages arising from third-party reliance on the report. No third-party reliance is permitted without such an agreement.





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PHASE II ENVIRONMENTAL SITE ASSESSMENT

4450 7TH CONCESSION ROAD, WINDSOR, ONTARIO

Prepared For:

Enwin Utilities Ltd.
4545 Rhodes Drive, Windsor, ON N8W 5T1
t +1.519.251.7300

Project Number:

2501E038.2000

Prepared By:

Sertas Group Limited
4510 Rhodes Drive, Windsor, ON N8W 5K5
t +1.519.822.3442

Date Submitted:

October 6, 2025

Distribution List

Enwin Utilities Ltd. – 1 copy (electronic)
Sertas Group Limited – 1 copy

Revision History

Date	Rev. No.	Description	Prepared By	Approved By
October 6, 2025	0	First submission	Paige Sarafin	Clayton Sereres

Signature Page

Prepared By	Approved By
	
Paige Sarafin, MSc., EPt Senior Environmental Specialist *E: paige.sarafin@sertas.ca* *M: 519.981.2724*	**Clayton Sereres, P.Geo., ENV SP** Director – Environmental *E: clay.sereres@sertas.ca* *M: 519.563.9118*

I Clayton Sereres, P.Geo., QP_{ESA}, by the signature provided above, certify that I carried out the Phase II ESA and concur with the findings, conceptual site model and conclusions of the report. Paige Sarafin helped prepare this Phase II ESA under the supervision of Clayton Sereres, P.Geo., Qualified Person for ESAs (QP_{ESA}) as defined by O. Reg. 153/04.

This report has been prepared specifically for Enwin Utilities Ltd., the authorized user. Sertas Group Limited retains the copyright and ownership of the report. The original digital file and associated records will be kept by Sertas Group Limited for at least 10 years.

Executive Summary

Sertas Group Limited ("Sertas") was retained by the Enwin Utilities Ltd. ("the Client") to complete a Phase II Environmental Site Assessment (ESA) for the property located at 4450 7th Concession Road in Windsor, Ontario (the "Site").

This Phase II ESA was undertaken as part of the due diligence process in support of a potential property sale. The purpose was to investigate Areas of Potential Environmental Concern (APECs) identified in the Phase One ESA conducted by Sertas and to evaluate associated Contaminants of Potential Concern (COPCs) through soil and groundwater testing. The work was completed in general accordance with the *CSA Standard Z769-00, Phase II Environmental Site Assessment (Reaffirmed 2023)*.

The Site consists of two (2) adjoining parcels: Parcel A (4450 Concession 7) and Parcel B (no municipal address assigned), both legally described as portions of Part W 1/2 Lot 15, Concession 7, Sandwich East, City of Windsor. Together the Site forms a triangular shaped parcel consisting of grassed areas and compacted fill with gravel and areas with remnants of concrete, or asphalt.

This Phase II ESA was carried out in accordance with the Terms of Reference as provided in Sertas-Enwin Purchase Order, signed July 2025

Sertas drilled a total of four (4) environmental boreholes across the Site to a maximum depth of 6.1 metres below ground surface (m BGS). In addition, one (1) combined geotechnical/environmental borehole was completed to a depth of 9.14 m BGS, three (3) geotechnical boreholes were advanced to 9.14 m BGS, and one (1) geotechnical borehole was completed to a depth of 63.39 m BGS. Four (4) boreholes were completed as groundwater monitoring wells.

Soil samples were submitted for analysis of grain size, Full Metals (including hydride-forming metals, hexavalent chromium, and mercury), pH, Electrical Conductivity (EC), Sodium Absorption Ratio (SAR), Petroleum Hydrocarbons (PHCs F1–F4, including BTEX), Polycyclic Aromatic Hydrocarbons (PAHs), Volatile Organic Compounds (VOCs), and Polychlorinated Biphenyl's (PCBs). A total of 40 representative soil samples were analytically tested. Groundwater samples were submitted for Metals, Chloride, pH, PHC F1-F4 including BTEX, PAHs VOCs and PCB.

Based on MECP water well records, a 1960 domestic well was noted within the southwest corner of the Site, along with a 1952 domestic well located approximately 249 m southwest, and a 1959 farm-use well adjacent to the south. However, none of these wells were observed during the Phase 1, Phase II, or a follow-up field inspection. Based on Sertas' work to date, the Site and surrounding properties are municipally serviced, and no potable water users are believed to be within 250 m of the property. Accordingly, Sertas requested and received confirmation on October 6, 2025, from the City of Windsor to apply non-potable standards in accordance with O. Reg. 153/04. As a result, analytical results were evaluated against Table 3: Full Depth Generic Site Condition

Standards in a Non-Potable Ground Water Condition for Industrial/ Commercial/ Community land use, fine-medium texture soil (**Table 3 ICC SCS**).

Monitoring wells MW2 and MW7 were installed on September 7, 2025, and MW5 and MW8 on September 9, 2025. Groundwater levels were first recorded on September 17; however, insufficient groundwater recovery was observed at MW2, MW5, and MW7. A follow-up visit on September 19, 2025, confirmed insufficient groundwater recovery at MW2 and MW5 within the clayey soils encountered, but allowed for development of MW7 and MW8, and a third visit on September 23, 2025 allowed monitoring and low flow sampling at MW7 and MW8. To confirm groundwater results and in an attempt to reduce sample turbidity, MW7 and MW8 were resampled using a bailer on September 30, 2025. Based on the water levels obtained, the direction of shallow groundwater flow is inferred to be to the northwest.

The groundwater analytical results indicated no exceedances of Table 3 ICC SCS for chloride, pH, PHC F1-F4 including BTEX, PAHs VOCs and PCB. With respect to metals, the initial low flow groundwater sample collected from MW-7 on September 23, 2025, reported a cobalt concentration of 90.2 ug/L, exceeding the Table 3 ICC SCS of 66 ug/L, while all other metals met the standard. A subsequent confirmation sample collected on September 30, 2025, using a bailer under lower turbidity conditions reported a cobalt concentration of 16.1 ug/L. The lower cobalt concentration obtained under more stable conditions is considered more representative of dissolved groundwater quality. On this basis, cobalt is also interpreted to meet Table 3 ICC SCS.

Soil analytical results identified exceedances of Table 3 ICC SCS as follows:

- BH2-1A (0 - 0.15 m BGS, gravel fill): PHC F4 gravimetric at 14,500 µg/g (standard 6,600 ug/g).
- BH5-1A (0 - 0.13 m BGS, gravel/ sand/ asphalt fill): PHC F4 gravimetric at 13,300 ug/g (standard 6,600 ug/g).
- BH6-1 (0 - 0.15 m BGS, gravel/sand/asphalt fill): PHC F4 gravimetric at 19,300 ug/g (standard 6,600 ug/g).
- BH8-1 (0 - 0.60 m BGS, gravel/ sand/ asphalt fill): PHC F4 extractable at 8,160 ug/g (standard 6,600 ug/g) and PHC F4 gravimetric at 12,600 ug/g (standard 6,600 ug/g).
- BH7-2 (0.75 – 1.35 m BGS, clay fill): Available boron at 6.4 ug/g (standard 2 ug/g).

The majority of soil exceedances are limited to surficial gravel/sand/asphalt fill, generally from surface to 0.15 m BGS, except for BH8 where fill was noted to extended deeper. A review of the chromatographic results indicates the PHC F4 exceedances of Table 3 ICC SCS are likely associated with asphalt fragments observed across the Site or weathered oil consistent with the historical crankcase oil generation at the Site.

The available boron exceedance may pose limitations for vegetation growth; however, this is unlikely to be a concern give the intended future land use and its localized occurrence.

Based on the findings of Sertas' Phase II ESA, Section 8 outlines the recommended next steps for addressing soil exceedances of Table 3 ICC SCS, should the Client elect to proceed with the property purchase. These include off-site waste disposal, if surficial fill is removed during future construction, or the application of appropriate risk management measures for soil left in place.

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1. INTRODUCTION

Sertas Group Limited ("Sertas") was retained by the Enwin Utilities Ltd. ("the Client") to complete a Phase II Environmental Site Assessment (ESA) for the property located at 4450 7th Concession Road in Windsor, Ontario (the "Site").

This Phase II ESA was undertaken as part of the due diligence process in support of a potential property sale. The purpose was to investigate Areas of Potential Environmental Concern (APECs) identified in the Phase One ESA conducted by Sertas and to evaluate associated Contaminants of Potential Concern (COPCs) through soil and groundwater testing.

This report is not intended for submission of a Record of Site Condition (RSC) to the Ministry of the Environment, Conservation and Parks (MECP) and does not satisfy the requirements of a Soil Characterization Report (SCR) under Ontario Regulation 406/19.

1.1 Objective

The objective of this Phase II ESA was to assess subsurface soil and groundwater conditions for the identified COPCs and determine whether impacts are present. The work was completed in general accordance with the *CSA Standard Z769-00, Phase II Environmental Site Assessment (Reaffirmed 2023).* The findings are intended to confirm or dismiss concerns identified in the Phase I ESA and to inform decisions regarding risk, remedial needs, and future land use.

1.2 Site Description

The Site consists of two (2) adjoining parcels: Parcel A (4450 Concession 7) and Parcel B (no municipal address assigned), both legally described as portions of Part W ½ Lot 15, Concession 7, Sandwich East, City of Windsor. Together the Site forms a triangular shaped parcel consisting of grassed areas and what appears to be compacted fill with gravel and areas with remnants of concrete, or asphalt. An entrance is located along the western boundary. There is evidence that a building may have previously existed on-site, as small footings and concrete blocks were observed in certain areas.

Details about the location and identification of the Phase II Property, as well as the party who authorized this study, are presented in the table below. Figure 1 illustrates the Site's location.

Table 1-1 Phase One Property Information

	4450 Concession 7 (Parcel A)				Address N/A (Parcel B)	
Legal description	Part W1/2 Lot 15 Con 7 Sandwich East as in R1364716, S/T R1364716 Partially Released by CE1211889 Subject to an Easement as in R1262227 City of Windsor				Pt W 1/2 Lt 15 Con 7 Sandwich East as in R1295865; Windsor	
Paracel Identification Number	015600064				015600065	
Assessment Roll Number	373907016003700				373907016003800	
Municipal Address	4450 Concession 7				No Municipal Address	
Site Area	1.945 acres				0.247 acres	
Current Land Use	Commercial Use					
Zoning	M1.1					
Proposed Land Use	Community Use					
UTM (NAD 83)	Zone:	17	Easting:	338,157	Northing:	4,680,138

1.3 Previous Reports

Sertas completed the report title "Phase One Environmental Site Assessment, 4450 7th Concession Road, Windsor, Ontario" dated September 7, 2025. Based on the findings of the Phase One ESA, the following can be summarized.

The ESA was undertaken as part of due diligence for the potential sale of the property and is also intended to serve in lieu of an Assessment of Past Uses (APU) for future excess soil management activities. Filing of a Record of Site Condition (RSC) is not currently being pursued.

The Site consists of two adjoining parcels (Parcel A - 4450 Concession 7 and Parcel B - no municipal address) that together form a triangular-shaped property. Current conditions include grassed areas, compacted fill with gravel, and remnants of asphalt and concrete. An entrance is located along the western boundary, and scattered concrete footings and blocks suggest that a building previously existed on-site.

Historical research indicated that the property was first developed prior to 1947 for mixed agricultural and residential use. The Phase One ESA identified:

- 3 PCAs on the Phase One Property, each contributing to an Area of Potential Environmental Concern (APEC).
- 5 PCAs within the Phase One Study Area, each contributing to an APEC.
- 2 PCAs were determined to not contribute to APECs due to distance, transgradient location, or lack of environmental significance.

Based on the findings of this Phase One, the APECs are as follow:

Table 1-2 Areas of Potential Environmental Concern

APEC	Location of APEC	PCA	COPC	Media Potentially Impacted
APEC 1 Storage of Vehicles	Entire Project Area	52. Storage, maintenance, fueling and repair of equipment, vehicles, and material used to maintain transportation systems	Metals, As, Sb, Se, Hg, EC, SAR, pH, PAHs, PHCs, VOCs	Soil & Groundwater
APEC 2 Importation of Fill	Entire Project Area	30. Importation of Fill of Unknown Quality and Quantity	Metals, As, Sb, Se, Hg, EC, SAR, pH, PAHs, PHCs, BTEXs	Soil
APEC 3 Waste Generator	Southern Portion of Site	Other. Waste Generator - crankcase oils and lubricants	Metals, As, Sb, Se, Hg, EC, SAR, pH, BTEX, PHCs	Soil & Groundwater
APEC 4 Railway Tracks	Eastern Property Boundary	46. Rail Yards, Tracks and Spurs	Metals, As, Sb, Se, Hg, EC, SAR, pH, PHCs, VOCs, PAHs, PCBs	Soil & Groundwater
APEC 5 Westerly PCAs	Western Property Boundary	Other. Contractor Yard 49. Salvage Yard, including automobile wrecking Other. Cooking Oil Spill 10. Commercial Autobody Shops	Metals, As, Sb, Se, Hg, EC, SAR, pH, PHCs VOCs	Soil & Groundwater

2. SCOPE OF WORK

The Phase II Environmental Site Assessment (ESA) was completed in general accordance with the guidelines outlined in the CSA Standard Z769-00, *Phase II Environmental Site Assessment* (Reaffirmed 2023). The following tasks were undertaken as part of this assessment:

1. **Utility Locates:** Prior to intrusive work, private locate companies marked underground utilities (e.g., telephone, natural gas, electrical) to clear all proposed borehole locations.
2. **Borehole Installation:** A qualified drilling subcontractor advanced four (4) environmental boreholes across the Site to a maximum depth of 6.1 metres below ground surface (m BGS). In addition, one (1) combined geotechnical/environmental borehole was completed to a depth of 9.14 m BGS, three (3) geotechnical boreholes were advanced to 9.14 m BGS, and one (1) geotechnical borehole was completed to a depth of 63.39 m BGS. All drilling activities were conducted under the supervision of a Sertas Environmental Technician.
3. **Monitoring Well Installation:** Four (4) boreholes were completed as groundwater monitoring wells using 31 mm diameter PVC pipe in accordance with the *Ontario Water Resources Act – R.R.O. 1990, Regulation 903 (as amended by O. Reg. 128/03)*. Installation included well materials (concrete, bentonite, silica sand, screen, riser, bottom caps, J-plugs, protective covers, and well tags). Monitoring wells were surveyed for elevation relative to a local benchmark, where available.
4. **Soil Logging and Screening:** Soil samples retrieved from boreholes were logged under the direction of an Environmental Professional and field-screened for potential contaminants using visual, olfactory, and headspace methods.
5. **Groundwater Development and Measurement:** Newly installed monitoring wells were developed (where possible), and static groundwater levels were measured in accordance with standard practice.
6. **Soil and Groundwater Sampling:** Soil and groundwater samples were collected under the direction of an Environmental Professional for laboratory testing.
7. **Laboratory Analysis:** Selected soil and groundwater samples were submitted to a certified laboratory for analysis of the following parameters:
    - Grain size
    - Full Metals (including hydride-forming metals, hexavalent chromium, and mercury)
    - Chloride (Groundwater)
    - pH, Electrical Conductivity (EC), Sodium Absorption Ratio (SAR)
    - Petroleum Hydrocarbons (PHCs, F1–F4, including BTEX)

- Polycyclic Aromatic Hydrocarbons (PAHs)
- Volatile Organic Compounds (VOCs)
- Polychlorinated Biphenyl's (PCBs)

8. **Bulk Soil and Groundwater Criteria:** Analytical results for soil and groundwater were compared to the relevant *Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA* (MECP, April 15, 2011).
9. **Evaluation and Interpretation:** Field and laboratory results were evaluated by a Qualified Person (QP) to assess the presence or absence of potential environmental impacts, and to determine whether further investigation or remedial activities may be warranted.
10. **Reporting:** A Phase II ESA report was prepared, documenting the methodology, borehole logs, laboratory certificates, analytical results, interpretation of findings, and recommendations regarding additional work, remedial measures, or regulatory obligations.

This assessment was completed in accordance with the standards and requirements applicable at the time of reporting.

3. SAMPLING AND ANALYSIS PLAN

The following Sampling and Analysis Plan (SAP) was developed and implemented in accordance with the Phase II ESA to guide the collection of soil and groundwater samples at the Site. The table below outlines the minimum number of soil and groundwater samples that were collected and analyzed as part of the soil characterization program.

Table 3-1 Bulk Soil Sampling & Analysis per Borehole

BH/ MW ID	APEC	Location BH/ MW Project Area	COPC	# Soil Samples Required	Depth of Borehole (m BGS)	Media Investigated
1	NA	Centre of Site	NA – Geotechnical Borehole	NA	63.39	Soil
2	APEC 1 Storage of Vehicles	Entire Site	Metals, As, Sb, Se, Hg, EC, SAR, pH, PAHs, PHCs, VOCs	1-3	9.14	Soil & Groundwater
3	NA	Centre of Site	NA – Geotechnical Borehole	NA	9.14	Soil
4	NA	Centre of Site	NA – Geotechnical Borehole	NA	9.14	Soil
5	APEC 5 Westerly PCAs	Western Site Boundary	Metals, As, Sb, Se, Hg, EC, SAR, pH, PHCs VOCs	1-3	6.1	Soil & Groundwater
6	APEC 2 Importation of Fill	Entire Site	Metals, As, Sb, Se, Hg, EC, SAR, pH, PAHs, PHCs, BTEXs	1-3	6.1	Soil
7	APEC 4 Railway Tracks	Eastern Site Boundary	Metals, As, Sb, Se, Hg, EC, SAR, pH, PHCs, VOCs, PAHs, PCBs	1-3	6.1	Soil & Groundwater
8	APEC 3 Waste Generator	Southern Site Boundary	Metals, As, Sb, Se, Hg, EC, SAR, pH, BTEX, PHCs	1-3	6.1	Soil & Groundwater

4. INVESTIGATION METHODS

4.1 Drilling Program

A concurrent geotechnical and environmental investigation was undertaken under the direction of Sertas on September 8, 9, 15, 16, 17, and 18, 2025. Borehole locations were cleared of underground utilities and overhead obstructions prior to drilling. Drilling was completed by Direct Environmental Drilling, using a track-mounted power auger at Boreholes 2 through 8 and a truck-mounted power auger at Borehole 1. The borehole locations were selected to provide representative coverage of subsurface conditions across the Site and are presented in Figure 2.

Standard 83 mm I.D. hollow-stem augers were used to advance the boreholes, allowing soil stratigraphy to be observed and preventing cross-contamination between depths. The boreholes were advanced to a maximum depth of 63.49 m BGS, with soil samples collected in 0.6 m intervals using a split-spoon sampler driven ahead of the augers. Sampling locations were selected in areas considered most likely to have been affected by potentially contaminating activities.

4.2 Sample Collection and Logging

Samples retrieved during the investigation underwent detailed examination, classification, and logging based on factors including soil type, colour, consistency, and the presence of visual and/or olfactory indicators of potential impact.

4.3 Field Screening

All samples underwent field screening for signs of contamination, including staining and odours. Headspace screening was performed to help determine sample selection for laboratory analysis and to evaluate the distribution of potential contaminants at various depths across the stockpile. All samples were analyzed for combustible organic vapours (COVs) using a Tiger XT photoionization detector. The instrument was calibrated with an isobutylene standard at the start of the investigation and was regularly fresh-air calibrated throughout the sampling program to maintain accuracy.

4.4 Monitoring Well Installation

Monitoring wells were installed in general accordance with the *Ontario Water Resources Act* (R.R.O. 1990, Regulation 903, as amended by O. Reg. 128/03) by a licensed well contractor. The wells were constructed using 25 millimetre or 32 millimetre diameter Schedule 40 PVC riser pipe fitted with No. 10 slot size (0.25 millimetre) well screens. Each well was completed with a 3.05 metre screen intercepting the groundwater table in the overburden to a maximum depth of 6.1 metres BGS. The base of each screen was sealed with a PVC end cap, and flush-threaded couplings were used for all pipe connections. Pipe components were pre-wrapped in protective plastic, which was

removed immediately before installation to minimize the potential for contamination. No lubricants or adhesives were used during construction.

The annular space surrounding the well screens was backfilled with silica sand to a depth 0.3 metres above the top of the screen. The borehole annulus was then sealed with granular bentonite from the top of the sand pack to 0.3 metres below grade. The monitoring wells were completed using stick-up casing and cemented into place.

4.5 Monitoring Well Development

Following installation, select monitoring wells were developed in accordance with the requirements of O. Reg. 153/04 to remove particulates and fluids that may have accumulated in the screen or sand pack during construction. Development was completed using polyethylene tubing equipped with inertial lift foot valves, operating along the saturated portion of the screen in 0.60-metre lifts. Development was considered complete once a minimum of three well volumes, including the sand pack, had been removed or the well had been pumped dry, whichever occurred first. Groundwater was observed to be clear and free of particulates upon completion, with the exception of MW8, which remained visibly silty despite development and purging.

4.6 Water Level Measurements

Groundwater levels were measured at required locations over a short duration to assist in determining inferred groundwater flow direction. Measurements were obtained using a decontaminated interface probe capable of detecting both water and the presence of free product. Depth-to-water measurements were converted to elevations relative to surveyed top-of-pipe elevations. To prevent cross-contamination, the probe was decontaminated between wells with a methanol rinse followed by distilled water. Monitoring wells were measured and sampled in order from least to most likely to be impacted.

4.7 Groundwater Sample Collection

Groundwater sampling was conducted in accordance with standard low-flow methodology and using a bailer. Prior to sampling, static water levels were measured, and groundwater was purged from each well. For low flow sampling, purging was completed using a peristaltic pump with dedicated low-density polyethylene (LDPE) tubing.

Groundwater samples were collected in new, laboratory-supplied containers prepared by Paracel Laboratories with parameter-specific preservatives. Care was taken to ensure that minimal particulate matter was entrained into the samples. Dissolved metals and manganese samples were field-filtered using dedicated 0.45-micron filters. Samples were collected in order of parameter stability, beginning with volatile organic compounds (VOCs) and petroleum hydrocarbons (PHCs) with no headspace, followed by metals and other analytes.

4.8 Laboratory Analysis

Representative soil and groundwater samples were submitted to Paracel Laboratories Ltd., which is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA, Membership No. 1262), in accordance with their Scope of Accreditation.

4.9 Quality Program

To ensure the accuracy and reliability of analytical results and to prevent cross-contamination between sampling locations, all reusable sampling equipment was thoroughly decontaminated following the collection of each soil sample. The decontamination process included: washing with an appropriate laboratory-grade detergent, rinsing with clean tap water, and where required, a final rinse with deionized water.

Following decontamination, equipment was inspected to confirm it was free of visible debris and potential contaminants prior to reuse. These procedures were conducted in accordance with industry standards and best practices.

A new pair of nitrile gloves was worn when handling each soil sample. For samples intended for organic analysis with higher regulatory thresholds (e.g., PHCs and BTEX), contact with clean gloves was considered acceptable, though minimized to reduce the risk of contamination.

All samples were carefully labeled with clear, permanent markings to ensure accurate identification throughout field handling and laboratory analysis.

4.10 Impediments

4.10.1 Utilities

Minor adjustments to borehole and monitoring well locations were made to avoid utilities, and these adjustments did not affect the overall investigation objectives.

4.10.2 Groundwater Development, Monitoring and Sampling

Monitoring wells 2 and 7 were installed on September 7 and 5 and 8 were installed on September 9, 2025. Initial groundwater levels were recorded on September 17; however, insufficient recovery was observed at Monitoring wells 2, 5, and 7. A subsequent site visit on September 19 confirmed that monitoring wells 2 and 5 continued to exhibit inadequate recovery during development. A third site visit on September 23 facilitated monitoring and low flow sampling at monitoring wells 7 and 8; however, 2 and 5 remained with insufficient groundwater recovery within the clayey soils, with measured water levels of 6.14 m BGS and 5.93 m BGS, respectively. To confirm groundwater results and in an attempt to reduce sample turbidity, MW7 and MW8 were resampled using a bailer on September 30, 2025.

As of the date of reporting, monitoring wells 2 and 5 have not been developed, monitored, or sampled. Should groundwater conditions at these locations change in the future, further assessment may be warranted to confirm the absence of potential impacts.

4.10.3 TCLP Analysis

Insufficient sample recovery remained at the majority of borehole locations for additional testing. Sample BH7-2 was initially selected for TCLP analysis; however, no material was available. Sample BH6-1 was then considered, but again no material remained. To address this limitation, a surficial soil sample (BH6-1A) was collected by hand digging within 1 m of BH6-1 on September 24, 2025. Due to depth of refusal and hard ground conditions, a comparable sample could not be collected at BH7-2. Sample BH6-1A was subsequently submitted for waste classification testing in accordance with O. Reg. 347/90 – General, Waste Management ("O. Reg. 347/90").

4.10.4 Investigating Historical Potable Wells

Sertas completed a Site Walk on September 30, 2025, to verify the historical well locations using GPS coordinates. The 1960 on-Site domestic well could not be located, nor could the off-site wells (south adjacent farm-use well; 1952 domestic well 249 m southwest at 4511 Walker Road within the Staples Plaza).

Written notice of the intention to apply non-potable groundwater site condition standards was provided to the City of Windsor Clerk on September 30, 2025. Sertas received written confirmation from City of Windsor on October 6, 2025, to apply non-potable standards.

5. SITE CONDITION STANDARDS

The Site Condition Standards (SCS), applicable to the Site were established in accordance with subsection 168.4(1) of the Environmental Protection Act. The tabulated generic criteria are provided in the *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* ("SGWS Standards"), MECP, April 15, 2011.

Site-specific considerations for SCS selection are as follows:

- The Site is not identified as a sensitive site as defined by O. Reg. 153/04.
- The Site is not located within 30 m of an area of natural significance or a water body, as defined by O. Reg. 153/04.
- No drinking water wells were identified on the Site or within 250 m.
- In accordance with s.43.1 of O. Reg. 153/04, the Site is not considered a "shallow soil property," based on historical RSCs filed.
- There are no plans to carry out a stratified restoration at the Site.
- Based on the grain size analysis indicated medium-fine texture soil standards are applicable under s.42(1) of O. Reg. 153/04.
- Historical potable wells within 250 m of the Site are no longer in service or could not be located during field reconnaissance.
- The Site and surrounding properties are currently serviced by a municipal drinking water supply; and
- Sertas requested and received confirmation from City of Windsor on October 6, 2025, to apply non-potable standards in accordance with O. Reg. 153/04. See Appendix C for correspondence.

Accordingly, analytical results were evaluated against Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition for Industrial/ Commercial/ Community land use, medium to fine texture soil (**Table 3 ICC SCS**).

6. REVIEW AND EVALUATION

6.1 Subsurface Geology

The boreholes generally encountered surficial fill materials consisting of asphalt, gravel, sands, and occasional clays, with thicknesses ranging from approximately 1.2 m to 2.3 m below ground surface (BGS). Beneath the fill, an extensive silty clay deposit was present across the Site, typically mottled brown and grey in the upper horizons and transitioning to grey with depth. This unit exhibited firm to very stiff consistency, with moisture contents generally between 10% and 20%. Localized sand seams and trace gravel were noted within the silty clay. In BH-1, a coarse grey sand layer was encountered between approximately 16.8 m and 18.3 m BGS, underlain by grey silty clay to a depth of 52 m, with grey clay till encountered to approximately 60 m BGS before termination in bedrock at 63.4 m BGS. Other boreholes were advanced to shallower depths (approximately 6.7 m to 9.8 m BGS), terminating within the silty clay. Overall, the stratigraphy comprises surficial fill underlain by silty clay, with localized sand and till deposits, and bedrock encountered at a depth of 63.40 m BGS in BH-1

No staining or sheens were observed; however, a strong organic odour was noted at most sampling locations

6.2 Soil Visual Inspection and Headspace Screening

During drilling activities, soil samples collected at the Project Area were inspected for odours, staining, and screened. COV concentration headspace measurements ranged from 0.0 to 0.3 ppm.

6.3 Hydrogeological Conditions

The screened intervals of the monitoring wells were selected based on the inferred depth to groundwater observed during drilling. Wells were generally installed to straddle the groundwater table to allow for assessment of potential light non-aqueous phase liquid (LNAPL) presence.

Given the limited recharge in the monitoring wells, the groundwater must stabilize to observe the direction of the groundwater flow. However, given the limited data and closest water body (River Canard), the direction of shallow groundwater flow is inferred to be to the northwest

No free product, sheens, staining, or persistent odours were observed in any monitoring well during the investigation. An organic odour was noted at MW7 during well development on September 17, 2025; however, this was not observed during subsequent sampling on September 23, 2025.

6.4 Grain Size Analysis

Three (3) soil samples (BH2 Sa.4, BH5 Sa. 3, and BH8 Sa.7) were submitted for grain size analyses (wash loss over #200 sieve). The grain size results indicated the predominant subsurface soil

conditions across the Site are considered medium/fine textured for the purposes of assessment. See Appendix B for reference.

6.5 Elevation Survey

On September 26, 2025, relative elevations within the monitored geologic unit ranged from 100.424 m (BH8) to 100.853 m (BH6). Elevations were surveyed relative to an arbitrary benchmark established at 100.000 m, located at a manhole in front of J&J Lepara Infrastructure within the grass.

7. LABORATORY ANALYSIS

The results of the soil sample analyses carried out as part of this investigation are summarized in Tables 1 to 3. A discussion of the results of the laboratory analyses in the context of the applicable SCS are provided in the following sections.

Copies of the laboratory Certificates of Analysis are provided in Appendix B.

7.1 Table 3 ICC SCS Soil Results

The bulk soil samples collected as part of this assessment that exceeded the Table 3 ICC SCS are as follows:

Table 7-1 Bulk Soil Table 3 ICC SCS Soil Exceedance

Type	Details
Metals	• 6-5 had an available boron exceedance of 6.4 ug/g (2 ug/g).
PHCs	• 2-1A had a PHC F4 gravimetric exceedance of 14,500 ug/g (6,600 ug/g). • 5-1A had a PHC F4 gravimetric exceedance of 13,300 ug/g (6,600 ug/g). • 6-1 had a PHC F4 gravimetric exceedance of 19,300 ug/g (6,600 ug/g). • 8-1 had a PHC F4 and PHC F4 gravimetric exceedance of 8,160 ug/g (6,600 ug/g) and 12,600 ug/g (6,600 ug/g), respectively.

The remaining samples were below the Table 3 ICC SCS for full metals, EC, SAR, pH, PAHs, PHC, BTEX, VOCs and PCB.

7.2 Table 3 ICC SCS Groundwater Results

The groundwater analytical results indicated no exceedances of Table 3 ICC SCS for chloride, pH, PHC F1-F4 including BTEX, PAHs VOCs and PCB.

With respect to metals, the initial low flow groundwater sample collected from MW-7 on September 23, 2025, reported a cobalt concentration of 90.2 ug/L, exceeding the Table 3 ICC SCS of 66 ug/L, while all other metals met the standard. A subsequent confirmation sample collected on September 30, 2025, using a bailer under lower turbidity conditions reported a cobalt concentration of 16.1 ug/L. The lower cobalt concentration obtained under more stable conditions is considered more representative of dissolved groundwater quality. On this basis, cobalt is also interpreted to meet Table 3 ICC SCS.

7.3 Toxic Characteristic Leachate Procedure Analysis

Soil sample 6-1A was submitted for waste classification testing in accordance with *O.Reg. 347/90 - General, Waste Management* ("O.Reg. 347/90"). The sample was reported below O. Reg. 347/90 Schedule 4 for general inorganics, metals, VOCs, Benzo (A) Pyrene and ignitability, as summarized

in Table 3. This material is representative of the upper fill and is classified as non-hazardous solid waste if removed from the Project Area.

7.4 Quality Assurance/Quality Control Results

As part of the QA/QC program, four (4) blind field duplicate soil samples were collected to evaluate precision in field sampling and laboratory analysis. The duplicates included DUP1 (from BH6-3), DUP2 (from BH2-7), DUP3 (from BH5-2), and DUP4 (from BH7-1). Each duplicate sample was submitted for analysis of one or a combination of metals, electrical conductivity (EC), sodium adsorption ratio (SAR), pH, petroleum hydrocarbons (PHCs), benzene, toluene, ethylbenzene, and xylenes (BTEX), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs), as summarized in Table 1.

In addition, two (2) blind field duplicate groundwater samples were collected. DUP1 was obtained from monitoring well MW7 and analyzed for PHCs, VOCs, PAHs, and PCBs. DUP2 was obtained from monitoring well MW8 and analyzed for metals, inorganics, pH, and chloride as summarized in Table 2.

Relative Percent Difference (RPD) criteria were applied where the average of the sample and its duplicate exceeded five times the Reportable Detection Limit (RDL). RPD values for parameters above this threshold were within acceptable limits (≤50%), with the exception of 6-3 and DUP1 (silty clay) for EC, and BH7-1 and DUP4 (heterogenous upper fill consisting of gravel/sand/asphalt) for SAR, EC, several metals, F3 PHCs, and F4 PHC gravimetric. All samples were analyzed within holding times using approved methods.

Reporting limits were met with the exception of elevated reporting limits related to sample 6-1,7-1, 2-1A, and DUP4. No parameters were detected in method blanks, and surrogate recoveries were acceptable. Where surrogate recovery fell outside control limits, the data were retained based on valid recovery of other surrogates and overall method performance.

8. CONCLUSIONS AND RECOMMENDATIONS

Sertas advanced five (5) environmental boreholes across the Site with four (4) of which were completed as groundwater monitoring wells. The boreholes and well locations were selected to assess soil and groundwater quality in relation to the APECs and PCAs identified in the Phase One ESA.

8.1 Soil Exceedances

Based on the bulk soil analytical results the following exceedances of Table 3 ICC SCS were reported:

- BH2-1A (0 - 0.15 m BGS, gravel fill): PHC F4 gravimetric at 14,500 ug/g (standard 6,600 ug/g).
- BH5-1A (0 - 0.13 m BGS, gravel/sand/asphalt fill): PHC F4 gravimetric at 13,300 ug/g (standard 6,600 ug/g).
- BH6-1 (0 - 0.15 m BGS, gravel/sand/asphalt fill): PHC F4 gravimetric at 19,300 ug/g (standard 6,600 ug/g).
- BH8-1 (0 - 0.60 m BGS, gravel/sand/asphalt fill): PHC F4 extractable at 8,160 ug/g (standard 6,600 ug/g) and PHC F4 gravimetric at 12,600 ug/g (standard 6,600 ug/g).
- BH7-2 (0.75 – 1.35 m BGS, clay fill): Available boron at 6.4 ug/g (standard 2 ug/g).

8.1.1 Discussion

Most soil exceedances are limited to surficial gravel/sand/asphalt fill, generally from surface to 0.15 m BGS, except for BH8 where fill was noted to extended deeper. A review of the chromatographic results (Appendix B) indicates the PHC F4 exceedances of Table 3 ICC SCS are likely associated with asphalt fragments observed across the Site or weathered oil consistent with the historical crankcase oil generation identified in the Phase I ESA.

The available boron exceedance may pose limitations for vegetation growth; however, this is unlikely to be a concern give the intended future land use and its localized occurrence. Should removal as excess soil be required, further delineation may be warranted to better define its extent and minimize off-site disposal volumes.

8.1.2 Next Steps

- The Site comprises an area of 10,750 m^2. The total estimated volume of surficial fill across the Site requiring off-site disposal at a licensed waste facility, if removed from the Site during future construction as excess soil, is approximately 1,774 m^3, including a 10% bulking factor to be 1,774 m^3.

- With additional delineation at BH8, the estimated maximum volume increases to approximately 1,836 m^3.
- Within the proposed construction footprint (approximately 2,000 m^2), the estimated volume of surficial fill requiring off-site disposal, including a 10% bulking factor, is approximately 330 m^3, if removed during future construction as excess soil.
- Should the surficial fill exceeding Table 3 ICC SCS remain on-site, appropriate risk management options (such applying appropriate health and safety measures, capping, hardscaping, and/ or institutional controls) should be evaluated by the Client and incorporated into future design plans.

The volume estimates are based on available borehole data and are approximate; actual quantities may vary depending on excavation limits and field conditions.

8.2 Groundwater Sampling

The groundwater analytical results indicated no exceedances of Table 3 ICC SCS.

8.2.1 Discussion

Due to low recovery in the clayey soils, only two (2) of four (4) monitoring wells were successfully developed, monitored, and sampled. Should groundwater levels at MW-2 and MW-5 increase in the future, additional assessment may be warranted to confirm the absence of potential impacts.

The two rounds of groundwater sampling produced consistent results with cobalt, uranium and PAHs detected above Table 2 ICC SCS, but below Table 3 ICC SCS. The recurrence of cobalt in both MW-7 and MW-8 suggests an anthropogenic source, potentially associated with historical site activities such as vehicle storage and the generation or handling of used crankcase oil.

8.2.2 Next Steps

If the Client proceeds with the purchase of the Site, MW-7, located outside the proposed construction footprint, may be retained for future groundwater monitoring and due diligence purposes.

9. REFERENCES

- Canadian Standards Association (CSA). *CSA Standard Z769-00 (R2016; R2023), Phase II Environmental Site Assessment*.
- Ministry of Environment and Energy. *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*. Revised December 1996.
- Ontario Environmental Industry Association (ONEIA). *Best Practices for Qualified Persons for Consideration with O. Reg. 406/19: Onsite and Excess Soil Management in Ontario, Version 2*. January 11, 2021.
- Ontario Regulation 153/04. *Records of Site Condition – Part XV.1 of the Environmental Protection Act*.
- Ontario Regulation 903. *Wells Regulation under the Ontario Water Resources Act*.
- Ontario Ministry of the Environment. *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*. March 9, 2004; amended July 1, 2011.
- Sertas Group Limited (Sertas) Phase One Environmental Site Assessment – 4450 7th Concession Road, Windsor, Ontario, dated September 7, 2025

10. CLOSURE AND LIMITATIONS

This Phase II Environmental Site Assessment (ESA) report has been prepared exclusively for **Enwin Utilities Ltd.** for the purpose of assessing subsurface soil and groundwater quality at the property located at **4450 7th Concession Road, Windsor, Ontario**. The report is based on conditions observed during site activities and data collected as part of this investigation.

This report is not intended for use by any party other than Enwin Utilities Ltd. without the prior written authorization of **Sertas**. Reliance on this report by third parties, or decisions made based on its contents, are at the sole risk of those parties. Sertas assumes no responsibility for any damages, claims, or financial losses resulting from such unauthorized use.

The conclusions and recommendations presented herein are based on professional judgment, field observations, and analytical results obtained at the time of investigation. They reflect conditions encountered at the specific borehole and monitoring well locations advanced and may not represent subsurface conditions across the entire Site. Subsurface conditions may vary between and beyond the locations investigated.

The findings of this report are dependent on the accuracy of the laboratory analytical data and information obtained during site activities. Sertas is not responsible for errors, omissions, or deficiencies resulting from laboratory performance, equipment limitations, or conditions that were not evident during the investigation.

This report has been prepared in accordance with the agreed scope, schedule, and budget. It does not represent a legal opinion on property ownership, title, or regulatory compliance. Regulatory requirements and interpretations are subject to change, and consultation with legal counsel is recommended where compliance obligations are in question.

This Phase II ESA was not prepared for the purpose of filing a RSC under Ontario Regulation 153/04, as amended. Should an RSC be required in the future, additional investigation, delineation, or remediation may be necessary to meet regulatory requirements.

Tables

Notes on Analytical Summary Tables

RDL = Laboratory Analytical Reporting Detection Limit.

RL = MOE 2011 Analytical Protocol Reporting Limit.

NC = Not Calculated

- = Not Analyzed or No Published Value.

DUP = Quality Assurance/Quality Control Duplicate Sample.

RPD = Relative Percent Difference (Between Primary and Duplicate Samples).

* Denotes RPD Exceeds Recommended Alert Criterion Exceeded, However, Parameter Concentration Less than 5 Times Laboratory RDL.

< = Less Than Laboratory Analytical Reporting Detection Limit.

(a) The Boron Standards are for Hot Water Soluble Extract for All Surface Soils. For Subsurface Soils the Standards are for Total Boron (Mixed Strong Acid Digest), Since Plant Protection for Soils Below the Root Zone is not a Significant Concern.

(b) Analysis for Methyl Mercury Only Applies When Mercury (Total) Standard is Exceeded.

(c) F1 Fraction Does Not Include BTEX; However, the Proponent has the Choice as to Whether or not to Subtract BTEX from the Analytical Result.

100	Parameter Concentration May Exceed Applicable Standard Due to Elevated Method Detection Limit.
150	Parameter Concentration Exceeds Tablee 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition for Industrial/ Commercial/ Community Property Use (Table 3 ICC SCS) .

Table 1. Summary of Soil Bulk Analyses

	Sample Location			MECP	APEC 1	APEC 1	APEC 1	APEC 1	APEC 1	APEC 5	APEC 5	AVG	RPD	APEC 5	APEC 2	APEC 2	APEC 2	AVG	RPD	APEC 2
	BH Sample ID Laboratory Sample ID			Table 3 ICC SCS	2-1A 2537136-21	2-1B 2537136-22	2-4 2537136-26	2-7 2537136-29	5-1A 2537264-01	5-2 2537264-03	DUP3 2537264-04			5-3 2537264-05	6-1 2537136-04	6-3 2537136-06	DUP1 2537136-07			6-5 2537136-09
	Soil Type				Gravel Fill	Clay Fill	Silty Clay	Silty Clay	Gravel/Sand/Asphalt Fill	Clay Fill	Clay Fill			Silty Clay	Gravel/Sand/Asphalt Fill	Silty Clay	Silty Clay			Silty Clay
	Sample Depth (m)				0 - 0.15	0.15 - 0.60	2.30 - 2.90	4.55 - 5.15	0 - 0.13	0.75 - 1.22	0.75 - 1.22			1.50 - 2.10	0 - 0.15	1.68 - 2.10	1.68 - 2.10			3.80 - 4.40
	Laboratory Name				Paracel	Paracel	Paracel	Paracel	Paracel	Paracel	Paracel			Paracel	Paracel	Paracel	Paracel			Paracel
	Laboratory Work Order No.				2537136	2537136	2537136	2537136	2537264	2537264	2537264			2537264	2537136	2537136	2537136			2537136
	Sample Date				09/08/2025	09/08/2025	09/08/2025	09/08/2025	09/09/2025	09/09/2025	09/09/2025			09/09/2025	09/08/2025	09/08/2025	09/08/2025			09/08/2025
	Reported Date				09/19/2025	09/15/2025	09/15/2025	09/15/2025	09/23/2025	09/16/2025	09/16/2025			09/16/2025	09/19/2025	09/15/2025	09/15/2025			09/15/2025
Parameters	ATG	Units	MDL																	
Physical Characteristics																				
% Solids	%	% by Wt.	0.1	NV	96.0	90.2	92.4	89.0	0.19	83.5	82.6	83.05	1.08	88.2	96.8	84.9	90.1	87.50	5.94	96.8
General Inorganics																				
SAR	ING	N/A	0.01	12	0.09	1.67	0.26	N/A	0.19	1.12	N/A	NC	NC	0.77	0.11	0.34	0.40	0.37	16.22	0.27
Conductivity	ING	uS/cm	5	1400	115	366	163	N/A	211	224	N/A	NC	NC	172	120	157	279	218.00	55.96	160
Cyanide, free	ING	ug/g	0.03	0.051	ND (0.03)	NA	NA	NA	ND (0.03)	NA	NA	NA	NA	NA	ND (0.03)	NA	NA	NA	NA	NA
pH	ING	pH Units	0.05	5-9; 5-11	7.68	7.19	7.41	N/A	7.69	6.89	N/A	NC	NC	7.45	7.75	6.71	6.68	6.70	0.45	7.42
Metals																				
Antimony	METALS	ug/g	1.0	50	ND (1.0)	ND (1.0)	ND (1.0)	N/A	ND (1.0)	ND (1.0)	N/A	NC	NC	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	NC	NC	ND (1.0)
Arsenic	METALS	ug/g	1.0	18	2.9	7.2	9.4	N/A	6.6	11.3	N/A	NC	NC	9.2	5.7	11.6	7.2	9.40	46.81	9.6
Barium	METALS	ug/g	1.0	670	78.7	72.5	79.0	N/A	189	87.4	N/A	NC	NC	80.4	97.6	79.4	64.6	72.00	20.56	82.1
Beryllium	METALS	ug/g	0.5	10	ND (0.5)	0.6	0.7	N/A	ND (0.5)	1.0	N/A	NC	NC	0.8	ND (0.5)	0.8	0.7	0.75	13.33	0.6
Boron, available	METALS	ug/g	0.5	2	ND (0.5)	1.1	ND (0.5)	N/A	0.6	1.5	N/A	NC	NC	0.9	0.6	0.9	1.1	1.00	20.00	ND (0.5)
Boron	METALS	ug/g	5.0	120	ND (5.0)	7.4	15.3	N/A	5.9	12.2	N/A	NC	NC	18.6	ND (5.0)	9.2	11.8	10.50	24.76	13.5
Cadmium	METALS	ug/g	0.5	1.9	ND (0.5)	ND (0.5)	ND (0.5)	N/A	ND (0.5)	ND (0.5)	N/A	NC	NC	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	NC	NC	ND (0.5)
Chromium (VI)	METALS	ug/g	0.2	10	0.3	ND (0.2)	ND (0.2)	N/A	ND (0.2)	ND (0.2)	N/A	NC	NC	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	NC	NC	ND (0.2)
Chromium	METALS	ug/g	5.0	160	8.0	19.8	24.0	N/A	12.6	26.2	N/A	NC	NC	23.1	11.2	25.3	22.4	23.85	12.16	20.5
Cobalt	METALS	ug/g	1.0	100	5.1	7.1	13.7	N/A	9.3	11.2	N/A	NC	NC	11.8	3.6	11.0	8.7	9.85	23.35	11.2
Copper	METALS	ug/g	5.0	300	19.5	20.1	21.2	N/A	17.5	19.8	N/A	NC	NC	19.5	17.9	21.1	18.3	19.70	14.21	17.3
Lead	METALS	ug/g	1.0	120	12.5	31.6	11.3	N/A	22.7	12.9	N/A	NC	NC	12.6	19.5	13.6	18.2	15.90	28.93	10.9
Mercury	METALS	ug/g	0.1	20	ND (0.1)	ND (0.1)	ND (0.1)	N/A	ND (0.1)	ND (0.1)	N/A	NC	NC	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	NC	NC	ND (0.1)
Molybdenum	METALS	ug/g	1.0	40	1.2	2.0	4.0	N/A	2.1	2.3	N/A	NC	NC	3.5	2.0	2.3	2.1	2.20	9.09	3.8
Nickel	METALS	ug/g	5.0	340	10.8	19.0	33.3	N/A	13.4	29.5	N/A	NC	NC	30.6	13.8	28.4	21.3	24.85	28.57	26.9
Selenium	METALS	ug/g	1.0	5.5	ND (1.0)	ND (1.0)	ND (1.0)	N/A	ND (1.0)	ND (1.0)	N/A	NC	NC	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	NC	NC	ND (1.0)
Silver	METALS	ug/g	0.3	50	ND (0.3)	ND (0.3)	ND (0.3)	N/A	ND (0.3)	ND (0.3)	N/A	NC	NC	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.3)	NC	NC	ND (0.3)
Thallium	METALS	ug/g	1.0	3.3	ND (1.0)	ND (1.0)	ND (1.0)	N/A	ND (1.0)	ND (1.0)	N/A	NC	NC	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	NC	NC	ND (1.0)
Uranium	METALS	ug/g	1.0	33	1.0	1.1	1.4	N/A	1.0	ND (1.0)	N/A	NC	NC	1.1	ND (1.0)	1.6	1.8	1.70	11.76	1.2
Vanadium	METALS	ug/g	10.0	86	23.6	29.8	37.9	N/A	33.8	43.5	N/A	NC	NC	35.6	48.8	40.1	33.7	36.90	17.34	31.7
Zinc	METALS	ug/g	20.0	340	21.9	70.3	62.1	N/A	46.1	58.6	N/A	NC	NC	57.3	43.7	58.8	71.3	65.05	19.22	51.1
Volatiles																				
Acetone	VOC	ug/g	0.50	28	ND (0.50)	ND (0.50)	N/A	N/A	ND (0.50)	ND (0.50)	ND (0.50)	NC	NC	ND (0.50)	N/A	N/A	N/A	N/A	N/A	N/A
Benzene	VOC	ug/g	0.02	0.4	ND (0.02)	ND (0.02)	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)	NC	NC	ND (0.02)	N/A	N/A	N/A	N/A	N/A	N/A
Bromodichloromethane	VOC	ug/g	0.05	18	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Bromoform	VOC	ug/g	0.05	1.7	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Bromomethane	VOC	ug/g	0.05	0.05	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	VOC	ug/g	0.05	1.5	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Chlorobenzene	VOC	ug/g	0.05	2.7	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Chloroform	VOC	ug/g	0.05	0.18	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Dibromochloromethane	VOC	ug/g	0.05	13	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Dichlorodifluoromethane	VOC	ug/g	0.05	25	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichlorobenzene	VOC	ug/g	0.05	8.5	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,3-Dichlorobenzene	VOC	ug/g	0.05	12	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,4-Dichlorobenzene	VOC	ug/g	0.05	0.84	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,1-Dichloroethane	VOC	ug/g	0.05	21	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichloroethane	VOC	ug/g	0.05	0.05	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,1-Dichloroethylene	VOC	ug/g	0.05	0.48	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
cis-1,2-Dichloroethylene	VOC	ug/g	0.05	37	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
trans-1,2-Dichloroethylene	VOC	ug/g	0.05	9.3	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichloropropane	VOC	ug/g	0.05	0.68	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
cis-1,3-Dichloropropylene	VOC	ug/g	0.05	NV	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
trans-1,3-Dichloropropylene	VOC	ug/g	0.05	NV	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,3-Dichloropropene, total	VOC	ug/g	0.05	0.21	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Ethylbenzene	VOC	ug/g	0.05	19	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Ethylene dibromide (dibromoethane, 1,2-)	VOC	ug/g	0.05	0.05	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Hexane	VOC	ug/g	0.05	88	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Methyl Ethyl Ketone (2-Butanone)	VOC	ug/g	0.50	88	ND (0.50)	ND (0.50)	N/A	N/A	ND (0.50)	ND (0.50)	ND (0.50)	NC	NC	ND (0.50)	N/A	N/A	N/A	N/A	N/A	N/A
Methyl Isobutyl Ketone	VOC	ug/g	0.50	210	ND (0.50)	ND (0.50)	N/A	N/A	ND (0.50)	ND (0.50)	ND (0.50)	NC	NC	ND (0.50)	N/A	N/A	N/A	N/A	N/A	N/A
Methyl tert-butyl ether	VOC	ug/g	0.05	3.2	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Methylene Chloride	VOC	ug/g	0.05	2	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Styrene	VOC	ug/g	0.05	43	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A

Table 1. Summary of Soil Bulk Analyses

Sample Location				MECP	APEC 1	APEC 1	APEC 1	APEC 1	APEC 1	APEC 5	APEC 5	AVG	RPD	APEC 5	APEC 2	APEC 2	APEC 2	AVG	RPD	APEC 2
BH Sample ID					2-1A	2-1B	2-4	2-7	5-1A	5-2	DUP3			5-3	6-1	6-3	DUP1			6-5
Laboratory Sample ID					2537136-21	2537136-22	2537136-26	2537136-29	2537264-01	2537264-03	2537264-04			2537264-05	2537136-04	2537136-06	2537136-07			2537136-09
Soil Type				Table 3 ICC SCS	Gravel Fill	Clay Fill	Silty Clay	Silty Clay	Gravel/Sand/Asphalt Fill	Clay Fill	Clay Fill			Silty Clay	Gravel/Sand/Asphalt Fill	Silty Clay	Silty Clay			Silty Clay
Sample Depth (m)					0 - 0.15	0.15 - 0.60	2.30 - 2.90	4.55 - 5.15	0 - 0.13	0.75 - 1.22	0.75 - 1.22			1.50 - 2.10	0 - 0.15	1.68 - 2.10	1.68 - 2.10			3.80 - 4.40
Laboratory Name					Paracel	Paracel	Paracel	Paracel	Paracel	Paracel	Paracel			Paracel	Paracel	Paracel	Paracel			Paracel
Laboratory Work Order No.					2537136	2537136	2537136	2537136	2537264	2537264	2537264			2537264	2537136	2537136	2537136			2537136
Sample Date					09/08/2025	09/08/2025	09/08/2025	09/08/2025	09/09/2025	09/09/2025	09/09/2025			09/09/2025	09/08/2025	09/08/2025	09/08/2025			09/08/2025
Reported Date					09/19/2025	09/15/2025	09/15/2025	09/15/2025	09/23/2025	09/16/2025	09/16/2025			09/16/2025	09/19/2025	09/15/2025	09/15/2025			09/15/2025
Parameters	AGS	Units	MDL																	
1,1,1,2-Tetrachloroethane	VOC	ug/g	0.05	0.11	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,1,2,2-Tetrachloroethane	VOC	ug/g	0.05	0.094	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Tetrachloroethylene	VOC	ug/g	0.05	21	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	VOC	ug/g	0.05	78	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,1,1-Trichloroethane	VOC	ug/g	0.05	12	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,1,2-Trichloroethane	VOC	ug/g	0.05	0.11	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Trichloroethylene	VOC	ug/g	0.05	0.61	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Trichlorofluoromethane	VOC	ug/g	0.05	5.8	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	VOC	ug/g	0.02	0.25	ND (0.02)	ND (0.02)	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)	NC	NC	ND (0.02)	N/A	N/A	N/A	N/A	N/A	N/A
m/p-Xylene	VOC	ug/g	0.05	NV	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
o-Xylene	VOC	ug/g	0.05	NV	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Xylenes, total	VOC	ug/g	0.05	30	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Benzene	VOC	ug/g	0.02	0.4	N/A	N/A	N/A	ND (0.02)	N/A	N/A	N/A	NC	NC	N/A	ND (0.02)	ND (0.02)	ND (0.02)	NC	NC	ND (0.02)
Ethylbenzene	VOC	ug/g	0.05	19	N/A	N/A	N/A	ND (0.05)	N/A	N/A	N/A	NC	NC	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)
Toluene	VOC	ug/g	0.05	78	N/A	N/A	N/A	ND (0.05)	N/A	N/A	N/A	NC	NC	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)
m/p-Xylene	VOC	ug/g	0.05	NV	N/A	N/A	N/A	ND (0.05)	N/A	N/A	N/A	NC	NC	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)
o-Xylene	VOC	ug/g	0.05	NV	N/A	N/A	N/A	ND (0.05)	N/A	N/A	N/A	NC	NC	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)
Xylenes, total	VOC	ug/g	0.05	30	N/A	N/A	N/A	ND (0.05)	N/A	N/A	N/A	NC	NC	N/A	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)
Hydrocarbons																				
F1 PHCs (C6-C10)	PHC	ug/g	7	65	ND (7)	ND (7)	N/A	ND (7)	ND (7)	ND (7)	N/A	NC	NC	ND (7)	ND (7)	ND (7)	ND (7)	NC	NC	ND (7)
F2 PHCs (C10-C16)	PHC	ug/g	4	250	ND (40)	ND (4)	N/A	6	ND (40)	ND (4)	N/A	NC	NC	ND (4)	ND (40)	ND (4)	ND (4)	NC	NC	ND (4)
F3 PHCs (C16-C34)	PHC	ug/g	8	2500	720	39	N/A	38	972	ND (8)	N/A	NC	NC	11	411	ND (8)	ND (8)	NC	NC	ND (8)
F4 PHCs (C34-C50)	PHC	ug/g	6	6600	5420	91	N/A	ND (6)	6390	ND (6)	N/A	NC	NC	ND (6)	4910	ND (6)	ND (6)	NC	NC	ND (6)
F4 PHCs (C34-C50)	PHC	ug/g	50	6600	14500	421	N/A	N/A	13300	N/A	N/A	NC	NC	N/A	19300	N/A	N/A	NC	NC	N/A
Semi-Volatiles																				
Acenaphthene	PAH	ug/g	0.02	96	ND (0.02)	ND (0.02)	ND (0.02)	N/A	N/A	N/A	N/A	NC	NC	N/A	ND (0.02)	ND (0.02)	ND (0.02)	NC	NC	ND (0.02)
Acenaphthylene	PAH	ug/g	0.02	0.17	ND (0.02)	ND (0.02)	ND (0.02)	N/A	N/A	N/A	N/A	NC	NC	N/A	ND (0.02)	ND (0.02)	ND (0.02)	NC	NC	ND (0.02)
Anthracene	PAH	ug/g	0.02	0.74	ND (0.02)	ND (0.02)	ND (0.02)	N/A	N/A	N/A	N/A	NC	NC	N/A	ND (0.02)	ND (0.02)	ND (0.02)	NC	NC	ND (0.02)
Benzo[a]anthracene	PAH	ug/g	0.02	0.96	ND (0.02)	0.02	ND (0.02)	N/A	N/A	N/A	N/A	NC	NC	N/A	0.08	ND (0.02)	ND (0.02)	NC	NC	ND (0.02)
Benzo[a]pyrene	PAH	ug/g	0.02	0.3	ND (0.02)	0.03	ND (0.02)	N/A	N/A	N/A	N/A	NC	NC	N/A	0.09	ND (0.02)	ND (0.02)	NC	NC	ND (0.02)
Benzo[b]fluoranthene	PAH	ug/g	0.02	0.96	ND (0.02)	0.04	ND (0.02)	N/A	N/A	N/A	N/A	NC	NC	N/A	0.13	ND (0.02)	ND (0.02)	NC	NC	ND (0.02)
Benzo[g,h,i]perylene	PAH	ug/g	0.02	9.6	ND (0.02)	0.03	ND (0.02)	N/A	N/A	N/A	N/A	NC	NC	N/A	ND (0.02)	ND (0.02)	ND (0.02)	NC	NC	ND (0.02)
Benzo[k]fluoranthene	PAH	ug/g	0.02	0.96	0.17	ND (0.02)	ND (0.02)	N/A	N/A	N/A	N/A	NC	NC	N/A	0.04	ND (0.02)	ND (0.02)	NC	NC	ND (0.02)
Chrysene	PAH	ug/g	0.02	9.6	ND (0.02)	0.03	ND (0.02)	N/A	N/A	N/A	N/A	NC	NC	N/A	0.12	ND (0.02)	ND (0.02)	NC	NC	ND (0.02)
Dibenzo[a,h]anthracene	PAH	ug/g	0.02	0.1	ND (0.02)	ND (0.02)	ND (0.02)	N/A	N/A	N/A	N/A	NC	NC	N/A	0.05	ND (0.02)	ND (0.02)	NC	NC	ND (0.02)
Fluoranthene	PAH	ug/g	0.02	9.6	0.23	0.06	ND (0.02)	N/A	N/A	N/A	N/A	NC	NC	N/A	0.17	0.02	ND (0.02)	NC	NC	ND (0.02)
Fluorene	PAH	ug/g	0.02	69	ND (0.02)	ND (0.02)	ND (0.02)	N/A	N/A	N/A	N/A	NC	NC	N/A	ND (0.02)	ND (0.02)	ND (0.02)	NC	NC	ND (0.02)
Indeno [1,2,3-cd] pyrene	PAH	ug/g	0.02	0.95	ND (0.02)	0.03	ND (0.02)	N/A	N/A	N/A	N/A	NC	NC	N/A	0.08	ND (0.02)	ND (0.02)	NC	NC	ND (0.02)
1-Methylnaphthalene	PAH	ug/g	0.02	85	ND (0.02)	ND (0.02)	ND (0.02)	N/A	N/A	N/A	N/A	NC	NC	N/A	ND (0.02)	ND (0.02)	ND (0.02)	NC	NC	ND (0.02)
2-Methylnaphthalene	PAH	ug/g	0.02	85	ND (0.02)	ND (0.02)	ND (0.02)	N/A	N/A	N/A	N/A	NC	NC	N/A	ND (0.02)	ND (0.02)	ND (0.02)	NC	NC	ND (0.02)
Methylnaphthalene (1&2)	PAH	ug/g	0.03	85	ND (0.03)	ND (0.03)	ND (0.03)	N/A	N/A	N/A	N/A	NC	NC	N/A	ND (0.03)	ND (0.03)	ND (0.03)	NC	NC	ND (0.03)
Naphthalene	PAH	ug/g	0.01	28	ND (0.01)	ND (0.01)	ND (0.01)	N/A	N/A	N/A	N/A	NC	NC	N/A	ND (0.01)	ND (0.01)	ND (0.01)	NC	NC	ND (0.01)
Phenanthrene	PAH	ug/g	0.02	16	0.06	ND (0.02)	ND (0.02)	N/A	N/A	N/A	N/A	NC	NC	N/A	0.08	ND (0.02)	ND (0.02)	NC	NC	ND (0.02)
Pyrene	PAH	ug/g	0.02	96	0.11	0.05	ND (0.02)	N/A	N/A	N/A	N/A	NC	NC	N/A	0.13	ND (0.02)	ND (0.02)	NC	NC	ND (0.02)
PCBs																				
PCBs, total	PCB	ug/g	0.05	1.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 1. Summary of Soil Bulk Analyses

Sample Location				APEC 4	APEC 4	AVG	RPD	APEC 4	APEC 4	APEC 1	AVG	RPD	APEC 3	APEC 3	APEC 3
BH Sample ID				7-1	DUP4			7-2	7-4	DUP2			8-1	8-3	8-4
Laboratory Sample ID				2537136-13	2538147-01			2537136-14	2537136-16	2537136-31			2537264-13	2537264-15	2537264-16
Soil Type				Gravel/Sand/Asphalt Fill	Gravel/Sand/Asphalt Fill			Clay Fill	Silty Clay	Silty Clay			Gravel/Sand/Asphalt Fill	Sand/ Gravel Fill	Silty Clay
Sample Depth (m)				0 - 0.60	0 - 0.60			0.75 - 1.35	2.30 - 2.90	2.30 - 2.90			0 - 0.60	1.50 - 2.10	2.29 - 2.90
Laboratory Name				Paracel	Paracel			Paracel	Paracel	Paracel			Paracel	Paracel	Paracel
Laboratory Work Order No.				2537136	2537136			2537136	2537136	2537136			2537264	2537264	2537264
Sample Date				09/08/2025	09/08/2025			09/08/2025	09/08/2025	09/08/2025			09/09/2025	09/09/2025	09/09/2025
Reported Date				09/19/2025	09/22/2025			09/15/2025	09/15/2025	09/15/2025			09/23/2025	09/16/2025	09/16/2025
Parameters	ATG	Units	MDL												
Physical Characteristics															
% Solids	%	% by Wt.	0.1	96.7	92.0	94.35	4.98	91.6	91.4	88.5	89.95	3.22	98.4	82.1	87.7
General Inorganics															
SAR	ING	N/A	0.01	0.16	1.04	0.60	146.67	3.06	0.50	N/A	N/A	N/A	0.12	0.87	0.97
Conductivity	ING	uS/cm	5	137	262	199.50	62.66	396	289	N/A	N/A	N/A	174	235	287
Cyanide, free	ING	ug/g	0.03	ND (0.03)	ND (0.03)	NC	NC	NA	NA	NA	NA	NA	ND (0.03)	NA	NA
pH	ING	pH Units	0.05	7.71	7.80	7.76	1.16	8.09	7.59	N/A	N/A	N/A	7.78	7.38	7.47
Metals															
Antimony	METALS	ug/g	1.0	ND (1.0)	ND (1.0)			ND (1.0)	ND (1.0)	N/A	N/A	N/A	ND (1.0)	ND (1.0)	ND (1.0)
Arsenic	METALS	ug/g	1.0	1.9	5.6	3.75	98.67	4.4	7.3	N/A	N/A	N/A	3.4	9.1	11.2
Barium	METALS	ug/g	1.0	306	112	209.00	92.82	39.0	69.3	N/A	N/A	N/A	221	89.4	53.8
Beryllium	METALS	ug/g	0.5	ND (0.5)	0.5	NC	NC	ND (0.5)	0.5	N/A	N/A	N/A	ND (0.5)	0.7	0.6
Boron, available	METALS	ug/g	0.5	ND (0.5)	ND (0.5)	NC	NC	6.4	ND (0.5)	N/A	N/A	N/A	ND (0.5)	3.2	1.5
Boron	METALS	ug/g	5.0	ND (5.0)	8.8	NC	NC	21.8	14.8	N/A	N/A	N/A	ND (5.0)	15.3	17.5
Cadmium	METALS	ug/g	0.5	ND (0.5)	ND (0.5)	NC	NC	ND (0.5)	ND (0.5)	N/A	N/A	N/A	ND (0.5)	ND (0.5)	ND (0.5)
Chromium (VI)	METALS	ug/g	0.2	ND (0.2)	ND (0.2)	NC	NC	ND (0.2)	ND (0.2)	N/A	N/A	N/A	ND (0.2)	ND (0.2)	ND (0.2)
Chromium	METALS	ug/g	5.0	6.3	17.8	12.05	95.44	47.6	18.4	N/A	N/A	N/A	9.6	20.9	22.0
Cobalt	METALS	ug/g	1.0	1.7	6.6	4.15	118.07	7.8	11.0	N/A	N/A	N/A	2.7	8.0	10.1
Copper	METALS	ug/g	5.0	7.2	14.2	10.70	65.42	113	15.8	N/A	N/A	N/A	12.3	20.4	18.1
Lead	METALS	ug/g	1.0	18.0	27.0	22.50	40.00	11.3	9.8	N/A	N/A	N/A	25.0	19.4	10.0
Mercury	METALS	ug/g	0.1	ND (0.1)	ND (0.1)	NC	NC	ND (0.1)	ND (0.1)	N/A	N/A	N/A	ND (0.1)	ND (0.1)	ND (0.1)
Molybdenum	METALS	ug/g	1.0	1.2	1.8	1.50	40.00	5.6	4.1	N/A	N/A	N/A	1.6	3.2	5.5
Nickel	METALS	ug/g	5.0	7.6	18.3	12.95	82.63	28.5	28.2	N/A	N/A	N/A	10.7	23.6	27.2
Selenium	METALS	ug/g	1.0	ND (1.0)	ND (1.0)	NC	NC	ND (1.0)	ND (1.0)	N/A	N/A	N/A	ND (1.0)	ND (1.0)	ND (1.0)
Silver	METALS	ug/g	0.3	ND (0.3)	ND (0.3)	NC	NC	ND (0.3)	ND (0.3)	N/A	N/A	N/A	ND (0.3)	ND (0.3)	ND (0.3)
Thallium	METALS	ug/g	1.0	ND (1.0)	ND (1.0)	NC	NC	ND (1.0)	ND (1.0)	N/A	N/A	N/A	ND (1.0)	ND (1.0)	ND (1.0)
Uranium	METALS	ug/g	1.0	1.1	ND (1.0)	NC	NC	1.4	1.2	N/A	N/A	N/A	ND (1.0)	1.3	1.5
Vanadium	METALS	ug/g	10.0	13.7	30.9	22.30	77.13	19.2	28.7	N/A	N/A	N/A	24.1	29.4	33.3
Zinc	METALS	ug/g	20.0	41.5	50.7	46.10	19.96	42.6	53.0	N/A	N/A	N/A	50.9	108	63.5
Volatiles															
Acetone	VOC	ug/g	0.50	ND (0.50)	ND (0.50)	NC	NC	ND (0.50)	ND (0.50)	N/A	N/A	N/A	N/A	N/A	N/A
Benzene	VOC	ug/g	0.02	ND (0.02)	ND (0.02)	NC	NC	0.14	ND (0.02)	N/A	N/A	N/A	N/A	N/A	N/A
Bromodichloromethane	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Bromoform	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Bromomethane	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Chlorobenzene	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Chloroform	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Dibromochloromethane	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Dichlorodifluoromethane	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichlorobenzene	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,3-Dichlorobenzene	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,4-Dichlorobenzene	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,1-Dichloroethane	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichloroethane	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,1-Dichloroethylene	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
cis-1,2-Dichloroethylene	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
trans-1,2-Dichloroethylene	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichloropropane	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
cis-1,3-Dichloropropylene	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
trans-1,3-Dichloropropylene	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,3-Dichloropropene, total	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Ethylbenzene	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Ethylene dibromide (dibromoethane, 1,2-)	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Hexane	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Methyl Ethyl Ketone (2-Butanone)	VOC	ug/g	0.50	ND (0.50)	ND (0.50)	NC	NC	ND (0.50)	ND (0.50)	N/A	N/A	N/A	N/A	N/A	N/A
Methyl Isobutyl Ketone	VOC	ug/g	0.50	ND (0.50)	ND (0.50)	NC	NC	ND (0.50)	ND (0.50)	N/A	N/A	N/A	N/A	N/A	N/A
Methyl tert-butyl ether	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Methylene Chloride	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Styrene	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A

Table 1. Summary of Soil Bulk Analyses

Sample Location				APEC 4	APEC 4	AVG	RPD	APEC 4	APEC 4	APEC 1	AVG	RPD	APEC 3	APEC 3	APEC 3
BH Sample ID				7-1	DUP4			7-2	7-4	DUP2			8-1	8-3	8-4
Laboratory Sample ID				2537136-13	2538147-01			2537136-14	2537136-16	2537136-31			2537264-13	2537264-15	2537264-16
Soil Type				Gravel/Sand/Asphalt Fill	Gravel/Sand/Asphalt Fill			Clay Fill	Silty Clay	Silty Clay			Gravel/Sand/Asphalt Fill	Sand/ Gravel Fill	Silty Clay
Sample Depth (m)				0 - 0.60	0 - 0.60			0.75 - 1.35	2.30 - 2.90	2.30 - 2.90			0 - 0.60	1.50 - 2.10	2.29 - 2.90
Laboratory Name				Paracel	Paracel			Paracel	Paracel	Paracel			Paracel	Paracel	Paracel
Laboratory Work Order No.				2537136	2537136			2537136	2537136	2537136			2537264	2537264	2537264
Sample Date				09/08/2025	09/08/2025			09/08/2025	09/08/2025	09/08/2025			09/09/2025	09/09/2025	09/09/2025
Reported Date				09/19/2025	09/22/2025			09/15/2025	09/15/2025	09/15/2025			09/23/2025	09/16/2025	09/16/2025
Parameters	ATC	Units	MDL												
1,1,1,2-Tetrachloroethane	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,1,2,2-Tetrachloroethane	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Tetrachloroethylene	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	0.22	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,1,1-Trichloroethane	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
1,1,2-Trichloroethane	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Trichloroethylene	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Trichlorofluoromethane	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	VOC	ug/g	0.02	ND (0.02)	ND (0.02)	NC	NC	ND (0.02)	ND (0.02)	N/A	N/A	N/A	N/A	N/A	N/A
m/p-Xylene	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	0.18	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
o-Xylene	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	0.05	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Xylenes, total	VOC	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	0.23	ND (0.05)	N/A	N/A	N/A	N/A	N/A	N/A
Benzene	VOC	ug/g	0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)
Ethylbenzene	VOC	ug/g	0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)
Toluene	VOC	ug/g	0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)
m/p-Xylene	VOC	ug/g	0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)
o-Xylene	VOC	ug/g	0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)
Xylenes, total	VOC	ug/g	0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)
Hydrocarbons															
F1 PHCs (C6-C10)	PHC	ug/g	7	ND (7)	ND (7)	NC	NC	ND (7)	ND (7)	N/A	N/A	N/A	ND (7)	ND (7)	ND (7)
F2 PHCs (C10-C16)	PHC	ug/g	4	ND (40)	ND (40)	NC	NC	84	ND (4)	N/A	N/A	N/A	ND (40)	ND (4)	ND (4)
F3 PHCs (C16-C34)	PHC	ug/g	8	365	717	541.00	65.06	498	ND (8)	N/A	N/A	N/A	1590	ND (8)	ND (8)
F4 PHCs (C34-C50)	PHC	ug/g	6	2110	2880	2495.00	30.86	389	ND (6)	N/A	N/A	N/A	8160	ND (6)	ND (6)
F4 PHCs (C34-C50)	PHC	ug/g	50	5340	2150	3745.00	85.18	917	N/A	N/A	N/A	N/A	12600	N/A	N/A
Semi-Volatiles															
Acenaphthene	PAH	ug/g	0.02	N/A	ND (0.40)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthylene	PAH	ug/g	0.02	N/A	ND (0.40)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Anthracene	PAH	ug/g	0.02	N/A	ND (0.40)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo[a]anthracene	PAH	ug/g	0.02	N/A	ND (0.40)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo[a]pyrene	PAH	ug/g	0.02	N/A	ND (0.40)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo[b]fluoranthene	PAH	ug/g	0.02	N/A	ND (0.40)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo[g,h,i]perylene	PAH	ug/g	0.02	N/A	ND (0.40)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo[k]fluoranthene	PAH	ug/g	0.02	N/A	ND (0.40)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chrysene	PAH	ug/g	0.02	N/A	ND (0.40)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dibenzo[a,h]anthracene	PAH	ug/g	0.02	N/A	ND (0.40)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	PAH	ug/g	0.02	N/A	ND (0.40)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluorene	PAH	ug/g	0.02	N/A	ND (0.40)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Indeno [1,2,3-cd] pyrene	PAH	ug/g	0.02	N/A	ND (0.40)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-Methylnaphthalene	PAH	ug/g	0.02	N/A	ND (0.40)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Methylnaphthalene	PAH	ug/g	0.02	N/A	ND (0.40)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Methylnaphthalene (1&2)	PAH	ug/g	0.03	N/A	ND (0.80)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Naphthalene	PAH	ug/g	0.01	N/A	ND (0.20)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phenanthrene	PAH	ug/g	0.02	N/A	ND (0.40)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	PAH	ug/g	0.02	N/A	ND (0.40)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PCBs															
PCBs, total	PCB	ug/g	0.05	ND (0.05)	ND (0.05)	NC	NC	ND (0.05)	ND (0.05)	ND (0.05)	NC	NC	N/A	N/A	N/A

Table 2. Summary of Groundwater Bulk Analyses

				Sample Location	MECP	APEC 4	APEC 4			APEC 4	APEC 3	APEC 3			APEC 4
				BH Sample ID		MW7	DUP1			MW7-A	MW8	DUP2			MW8-A
				Laboratory Sample ID		2539226-01	2539226-03			2540139-01	2539226-02	2539226-04			2540139-02
				Laboratory Name	Table 3 ICC SCS	Paracel	Paracel	AVG	RPD	Paracel	Paracel	Paracel	AVG	RPD	Paracel
				Laboratory Work Order No.		2539226	2539226			2540139	2539226	2539226			2540139
				Sample Date		09/23/2025	09/23/2025			09/30/2025	09/23/2025	09/23/2025			09/30/2025
				Reported Date		09/29/2025	09/29/2025			10/01/2025	09/29/2025	09/29/2025			10/01/2025
Parameters	ATG	Units	MDL												
General Inorganics															
SAR	ING	N/A	0.01	2,300,000	ND (20.0)	N/A	NC	NC	NA	146	144	145.00	1.38	NA
pH	ING	pH Units	0.05	5 - 9	6.9	N/A	NC	NC	NA	6.9	6.8	6.85	1.46	NA
Metals															
Mercury	METALS	ug/g	1.0	2.8	ND (0.1)	N/A	NA	NA	NV	ND (0.1)	ND (0.1)	NC	NC	NV
Antimony	METALS	ug/g	1.0	20000	0.7	N/A	NA	NA	ND (0.5)	0.6	0.5	0.55	18.18	ND (0.5)
Arsenic	METALS	ug/g	1.0	1900	1	N/A	NA	NA	ND (1.0)	4	4	4.00	0.00	2.3
Barium	METALS	ug/g	0.5	29000	34	N/A	NA	NA	35.3	120	125	122.50	4.08	114
Beryllium	METALS	ug/g	0.5	67	ND (0.5)	N/A	NA	NA	ND (0.5)	ND (0.5)	ND (0.5)	NC	NC	ND (0.5)
Boron	METALS	ug/g	5.0	45000	507	N/A	NA	NA	405	1590	1550	1570.00	2.55	1170
Cadmium	METALS	ug/g	0.5	2.7	0.9	N/A	NA	NA	ND (0.2)	ND (0.1)	ND (0.1)	NC	NC	ND (0.2)
Chromium	METALS	ug/g	0.2	810	ND (1)	N/A	NA	NA	ND (1.0)	ND (1)	ND (1)	NC	NC	ND (1.0)
Chromium (VI)	METALS	ug/g	5.0	140	ND (10)	N/A	NA	NA	NV	ND (10)	ND (10)	NC	NC	NV
Cobalt	METALS	ug/g	1.0	66	90.2	N/A	NA	NA	16.1	9.3	9.5	9.40	2.13	10.1
Copper	METALS	ug/g	5.0	87	1.0	N/A	NA	NA	0.7	0.7	ND (0.5)	NC	NC	1.2
Lead	METALS	ug/g	1.0	25	ND (0.1)	N/A	NA	NA	ND (0.2)	ND (0.1)	ND (0.1)	NC	NC	0.2
Molybdenum	METALS	ug/g	0.1	9200	15.2	N/A	NA	NA	11.3	29.5	30.1	29.80	2.01	26.0
Nickel	METALS	ug/g	1.0	490	86	N/A	NA	NA	26.4	16	16	16.00	0.00	15.4
Selenium	METALS	ug/g	5.0	63	5	N/A	NA	NA	1.7	ND (1)	ND (1)	NC	NC	ND (1.0)
Silver	METALS	ug/g	1.0	1.5	ND (0.1)	N/A	NA	NA	ND (0.2)	ND (0.1)	ND (0.1)	NC	NC	ND (0.2)
Sodium	METALS	ug/g	0.3	2300000	144000	N/A	NA	NA	164000	134000	134000	134000.00	0.00	116000
Thallium	METALS	ug/g	1.0	510	ND (0.1)	N/A	NA	NA	ND (0.5)	ND (0.1)	ND (0.1)	NC	NC	ND (0.5)
Uranium	METALS	ug/g	1.0	420	40.7	N/A	NA	NA	26.8	17.9	18.3	18.10	2.21	15.8
Vanadium	METALS	ug/g	10.0	250	1.0	N/A	NA	NA	ND (0.5)	1.3	1.2	1.25	8.00	1.0
Zinc	METALS	ug/g	20.0	1100	21	N/A	NA	NA	8.5	12	12	12.00	0.00	52.3
Volatiles															
Acetone	VOC	ug/g	0.50	130000	ND (5.0)	ND (5.0)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Benzene	VOC	ug/g	0.02	430	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Bromodichloromethane	VOC	ug/g	0.05	85000	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Bromoform	VOC	ug/g	0.05	770	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Bromomethane	VOC	ug/g	0.05	56	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	VOC	ug/g	0.05	8.4	ND (0.2)	ND (0.2)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Chlorobenzene	VOC	ug/g	0.05	630	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Chloroform	VOC	ug/g	0.05	22	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Dibromochloromethane	VOC	ug/g	0.05	82000	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Dichlorodifluoromethane	VOC	ug/g	0.05	4400	ND (1.0)	ND (1.0)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichlorobenzene	VOC	ug/g	0.05	9600	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
1,3-Dichlorobenzene	VOC	ug/g	0.05	9600	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
1,4-Dichlorobenzene	VOC	ug/g	0.05	67	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
1,1-Dichloroethane	VOC	ug/g	0.05	3100	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichloroethane	VOC	ug/g	0.05	12	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
1,1-Dichloroethylene	VOC	ug/g	0.05	17	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
cis-1,2-Dichloroethylene	VOC	ug/g	0.05	17	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
trans-1,2-Dichloroethylene	VOC	ug/g	0.05	17	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichloropropane	VOC	ug/g	0.05	140	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
cis-1,3-Dichloropropylene	VOC	ug/g	0.05	NV	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
trans-1,3-Dichloropropylene	VOC	ug/g	0.05	NV	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
1,3-Dichloropropene, total	VOC	ug/g	0.05	45	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Ethylbenzene	VOC	ug/g	0.05	2300	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Ethylene dibromide (dibromoethane, 1,2-)	VOC	ug/g	0.05	0.83	ND (0.2)	ND (0.2)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Hexane	VOC	ug/g	0.05	520	ND (1.0)	ND (1.0)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Methyl Ethyl Ketone (2-Butanone)	VOC	ug/g	0.50	1500000	ND (5.0)	ND (5.0)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Methyl Isobutyl Ketone	VOC	ug/g	0.50	580000	ND (5.0)	ND (5.0)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Methyl tert-butyl ether	VOC	ug/g	0.05	1400	ND (2.0)	ND (2.0)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Methylene Chloride	VOC	ug/g	0.05	5500	ND (5.0)	ND (5.0)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Styrene	VOC	ug/g	0.05	9100	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
1,1,1,2-Tetrachloroethane	VOC	ug/g	0.05	28	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
1,1,2,2-Tetrachloroethane	VOC	ug/g	0.05	15	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Tetrachloroethylene	VOC	ug/g	0.05	17	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	VOC	ug/g	0.05	18000	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
1,1,1-Trichloroethane	VOC	ug/g	0.05	6700	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
1,1,2-Trichloroethane	VOC	ug/g	0.05	30	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Trichloroethylene	VOC	ug/g	0.05	17	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A

Table 2. Summary of Groundwater Bulk Analyses

				Sample Location	MECP	APEC 4	APEC 4	AVG	RPD	APEC 4	APEC 3	APEC 3	AVG	RPD	APEC 4
				BH Sample ID		MW7	DUP1			MW7-A	MW8	DUP2			MW8-A
				Laboratory Sample ID		2539226-01	2539226-03			2540139-01	2539226-02	2539226-04			2540139-02
				Laboratory Name	Table 3 ICC SCS	Paracel	Paracel			Paracel	Paracel	Paracel			Paracel
				Laboratory Work Order No.		2539226	2539226			2540139	2539226	2539226			2540139
				Sample Date		09/23/2025	09/23/2025			09/30/2025	09/23/2025	09/23/2025			09/30/2025
				Reported Date		09/29/2025	09/29/2025			10/01/2025	09/29/2025	09/29/2025			10/01/2025
Parameters	ATG	Units	MDL												
Trichlorofluoromethane	VOC	ug/g	0.05	2500	ND (1.0)	ND (1.0)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	VOC	ug/g	0.02	1.7	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
m/p-Xylene	VOC	ug/g	0.05	NV	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
o-Xylene	VOC	ug/g	0.05	NV	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Xylenes, total	VOC	ug/g	0.05	4200	ND (0.5)	ND (0.5)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A
Benzene	VOC	ug/g	0.02	430	N/A	N/A	NA	NA	NA	ND (0.5)	N/A	N/A	N/A	N/A
Ethylbenzene	VOC	ug/g	0.05	2300	N/A	N/A	NA	NA	NA	ND (0.5)	N/A	N/A	N/A	N/A
Toluene	VOC	ug/g	0.05	18000	N/A	N/A	NA	NA	NA	ND (0.5)	N/A	N/A	N/A	N/A
m/p-Xylene	VOC	ug/g	0.05	NV	N/A	N/A	NA	NA	NA	ND (0.5)	N/A	N/A	N/A	N/A
o-Xylene	VOC	ug/g	0.05	NV	N/A	N/A	NA	NA	NA	ND (0.5)	N/A	N/A	N/A	N/A
Xylenes, total	VOC	ug/g	0.05	4200	N/A	N/A	NA	NA	NA	ND (0.5)	N/A	N/A	N/A	N/A
Hydrocarbons															
F1 PHCs (C6-C10)	PHC	ug/g	7	750	ND (25)	ND (25)	NC	NC	N/A	ND (25)	N/A	N/A	N/A	N/A
F2 PHCs (C10-C16)	PHC	ug/g	4	150	ND (100)	ND (100)	NC	NC	N/A	ND (100)	N/A	N/A	N/A	N/A
F3 PHCs (C16-C34)	PHC	ug/g	8	500	ND (100)	ND (100)	NC	NC	N/A	ND (100)	N/A	N/A	N/A	N/A
F4 PHCs (C34-C50)	PHC	ug/g	6	500	ND (100)	ND (100)	NC	NC	N/A	ND (100)	N/A	N/A	N/A	N/A
Semi-Volatiles															
Acenaphthene	PAH	ug/g	0.02	1700	ND (0.05)	ND (0.05)	NC	NC	N/A	ND (0.05)	N/A	N/A	N/A	ND (0.05)
Acenaphthylene	PAH	ug/g	0.02	1.8	ND (0.05)	ND (0.05)	NC	NC	N/A	ND (0.05)	N/A	N/A	N/A	ND (0.05)
Anthracene	PAH	ug/g	0.02	2.4	ND (0.01)	ND (0.01)	NC	NC	N/A	0.02	N/A	N/A	N/A	ND (0.01)
Benzo[a]anthracene	PAH	ug/g	0.02	4.7	ND (0.01)	ND (0.01)	NC	NC	N/A	ND (0.01)	N/A	N/A	N/A	ND (0.01)
Benzo[a]pyrene	PAH	ug/g	0.02	0.81	ND (0.01)	ND (0.01)	NC	NC	N/A	0.11	N/A	N/A	N/A	0.04
Benzo[b]fluoranthene	PAH	ug/g	0.02	0.75	ND (0.05)	ND (0.05)	NC	NC	N/A	0.18	N/A	N/A	N/A	ND (0.05)
Benzo[g,h,i]perylene	PAH	ug/g	0.02	0.2	ND (0.05)	ND (0.05)	NC	NC	N/A	0.10	N/A	N/A	N/A	ND (0.05)
Benzo[k]fluoranthene	PAH	ug/g	0.02	0.4	ND (0.05)	ND (0.05)	NC	NC	N/A	0.06	N/A	N/A	N/A	ND (0.05)
Chrysene	PAH	ug/g	0.02	1	ND (0.05)	ND (0.05)	NC	NC	N/A	0.15	N/A	N/A	N/A	ND (0.05)
Dibenzo[a,h]anthracene	PAH	ug/g	0.02	0.52	ND (0.05)	ND (0.05)	NC	NC	N/A	ND (0.05)	N/A	N/A	N/A	ND (0.05)
Fluoranthene	PAH	ug/g	0.02	130	ND (0.01)	ND (0.01)	NC	NC	N/A	0.23	N/A	N/A	N/A	ND (0.01)
Fluorene	PAH	ug/g	0.02	400	ND (0.05)	ND (0.05)	NC	NC	N/A	ND (0.05)	N/A	N/A	N/A	ND (0.05)
Indeno [1,2,3-cd] pyrene	PAH	ug/g	0.02	0.2	ND (0.05)	ND (0.05)	NC	NC	N/A	ND (0.05)	N/A	N/A	N/A	ND (0.05)
1-Methylnaphthalene	PAH	ug/g	0.02	1800	ND (0.05)	ND (0.05)	NC	NC	N/A	ND (0.05)	N/A	N/A	N/A	ND (0.05)
2-Methylnaphthalene	PAH	ug/g	0.02	1800	ND (0.05)	ND (0.05)	NC	NC	N/A	ND (0.05)	N/A	N/A	N/A	ND (0.05)
Methylnaphthalene (1&2)	PAH	ug/g	0.03	1800	ND (0.10)	ND (0.10)	NC	NC	N/A	ND (0.10)	N/A	N/A	N/A	ND (0.10)
Naphthalene	PAH	ug/g	0.01	6400	ND (0.05)	ND (0.05)	NC	NC	N/A	ND (0.05)	N/A	N/A	N/A	ND (0.05)
Phenanthrene	PAH	ug/g	0.02	580	ND (0.05)	ND (0.05)	NC	NC	N/A	0.10	N/A	N/A	N/A	ND (0.05)
Pyrene	PAH	ug/g	0.02	68	ND (0.01)	ND (0.01)	NC	NC	N/A	0.17	N/A	N/A	N/A	ND (0.01)
PCBs															
PCBs, total	PCB	ug/g	0.05	15	ND (0.05)	ND (0.05)	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A

Table 3. Summary of TCLP Analyses

	Sample Location			Reg 558 Schedule 4	APEC 2
	BH Sample ID / Laboratory Sample ID				6-1A / 2539195-01
	Soil Type				Gravel/Sand/Asphalt Fill
	Sample Depth (m)				0 - 0.15
	Laboratory Name				Paracel
	Laboratory Work Order No.				2539195
	Sample Date				09/24/2025
	Reported Date				09/30/2025
Parameters	AGT	Units	MDL		
Physical Characteristics					
Ignitability	NA	N/A	NV	NV	Negative
% Solids	NA	% by Wt.	0.1	NV	81.1
EPA 1311 - TCLP Leachate Inorganics					
Fluoride	ING	mg/L	0.05	150	0.30
Nitrate as N	ING	mg/L	1	1000	ND (1)
Nitrite as N	ING	mg/L	1	1000	ND (1)
Cyanide, free	ING	mg/L	0.02	20	ND (0.02)
EPA 1311 - TCLP Leachate Metals					
Arsenic	METAL	mg/L	0.05	2.5	ND (0.05)
Barium	METAL	mg/L	0.05	100	0.61
Boron	METAL	mg/L	0.05	500	ND (0.10)
Cadmium	METAL	mg/L	0.01	0.5	ND (0.01)
Chromium	METAL	mg/L	0.05	5	ND (0.05)
Lead	METAL	mg/L	0.05	5	ND (0.05)
Mercury	METAL	mg/L	0.005	0.1	ND (0.005)
Selenium	METAL	mg/L	0.05	1	ND (0.05)
Silver	METAL	mg/L	0.05	5	ND (0.05)
Uranium	METAL	mg/L	0.05	10	ND (0.05)
EPA 1311 - TCLP Leachate Volatiles					
Benzene	VOC	mg/L	0.005	0.5	ND (0.005)
Carbon Tetrachloride	VOC	mg/L	0.005	0.5	ND (0.005)
Chlorobenzene	VOC	mg/L	0.004	8	ND (0.004)
Chloroform	VOC	mg/L	0.006	10	ND (0.006)
1,2-Dichlorobenzene	VOC	mg/L	0.004	20	ND (0.004)
1,4-Dichlorobenzene	VOC	mg/L	0.004	0.5	ND (0.004)
1,2-Dichloroethane	VOC	mg/L	0.005	0.5	ND (0.005)
1,1-Dichloroethylene	VOC	mg/L	0.006	1.4	ND (0.006)
Methyl Ethyl Ketone (2-Butanone)	VOC	mg/L	0.30	200	ND (0.30)
Methylene Chloride	VOC	mg/L	0.04	5	ND (0.04)
Tetrachloroethylene	VOC	mg/L	0.005	3	ND (0.005)
Trichloroethylene	VOC	mg/L	0.004	5	ND (0.004)
Vinyl Chloride	VOC	mg/L	0.005	0.2	ND (0.005)
EPA 1311 - TCLP Leachate Organics					
Benzo[a]pyrene	PAH	mg/L	0.0001	0.001	ND (0.0001)

FIGURES



NOTES:
THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH SERTAS' REPORT No. 2501E038.2000. ALL LOCATIONS ARE APPROXIMATE.

ORIGINAL PAPER SIZE: 8½ x 11.

REFERENCES:
OPEN STREET MAP, ESRI 2025

ENWIN UTILITIES LTD. 4545 RHODES DRIVE WINDSOR, ONTARIO, N9A 5T7	ENWIN	DWN BY: TMA CHK'D BY: CS DATUM: NAD83 PROJECTION: UTM Zone 17 SCALE: 1:20	PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT VACANT PROPERTY 4550 7TH CONCESSION ROAD WINDSOR, ONTARIO	DATE: SEPT. 19, 2025 PROJECT No: 2501E038.2000
SERTAS 4510 RHODES DRIVE, UNIT 210 WINDSOR, ONTARIO, N8W 5K5	SERTAS		TITLE: KEY PLAN	REV No: 0 FIGURE No: 1

DATE PLOTTED: September 18, 2025 @ 8:16:10 am
FILE LOCATION: c:\Users\cindel\Sertas Group Limited\Windsor Project Files - Documents\03_Projects\PF_2025\02_Enviro\2501E038_Enwin_7th Conc. Water Tower\Phase 2000 - Phase II\07_CAD\02_Dwg_Files\Phase II\2501E038.2000_F1.dwg

LEGEND:

- PHASE ONE SITE & APEC-1 / APEC-2 BOUNDARIES
- APEC-3 BOUNDARY
- APEC-4 BOUNDARY
- APEC-5 BOUNDARY
- RAIL TRACKS
- SURFACE DRAINAGE DITCH
- ENV. BOREHOLE LOCATION
- ENV. BOREHOLE & MONITORING WELL LOCATION
- GEO. BOREHOLE LOCATION
- INFERRED GROUNDWATER FLOW

0 10 30 50m

SCALE 1:1000

APEC	PCA
APEC 1 Storage of Vehicles	52. Storage, maintenance, fueling and repair of equipment, vehicles, and material used to maintain transportation systems
APEC 2 Importation of Fill	30. Importation of Fill of Unknown Quality and Quantity
APEC 3 Waste Generator	Other. Waste Generator
APEC 4 Railway Tracks	46. Rail Yards, Tracks and Spurs
APEC 5 Westerly PCAs	Other. Contractor Yard 49. Salvage Yard, including automobile wrecking Other. Cooking Oil Spill 10. Commercial Autobody Shops



NOTES:
THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH SERTAS' REPORT No. 2501E038.2000.

ALL LOCATIONS ARE APPROXIMATE.

ORIGINAL PAPER SIZE: 11 x 17.

REFERENCES:
MICROSOFT BING MAPPING, 2025 AERIALS. IMAGES ARE USED FOR ILLUSTRATION PURPOSES ONLY, AND NOT FOR MEASUREMENT PURPOSES.

ENWIN UTILITIES LTD.
4545 RHODES DRIVE
WINDSOR, ONTARIO, N9A 5T7

SERTAS
4510 RHODES DRIVE, UNIT 210
WINDSOR, ONTARIO, N8W 5K5
519-822-3442

DWN BY: TMA
CHK'D BY: CS
DATUM: NAD83
PROJECTION: UTM Zone 17
SCALE: 1:1000

PROJECT:
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
VACANT PROPERTY
4550 7TH CONCESSION ROAD, WINDSOR, ONTARIO

TITLE:
BOREHOLE & MONITORING WELL LOCATIONS

DATE: SEPT. 22, 2025
PROJECT No: 2501E038.2000
REV No: 0
FIGURE No: 2

DATE PLOTTED: September 19, 2025 6:14:14 PM
FILE LOCATION: C:\Users\tmak\Sertas Group Limited\Windsor Project Files – Documents\03_Projects\PE_2025\02_Enviro\2501E038_Enwin_7th Conc. Water Tower\Phase 2000 – Phase II\07_CAD\02_Dwg_Files\Phase II\2501E038-2000_F2.dwg

	Sample Location	Table 3 ICC SCS (ug/g)	APEC 1	APEC 5	APEC 2	APEC 4	APEC 3
	BH No.-Sample ID		2 - 1A	5 - 1A	6 - 1	7 - 2	8 - 1
Parameters	Boron, available	2	ND	0.6	0.6	5.4	ND
	PHC F4	6,600	5,420	6,390	4,910	389	8,160
	PHC F4 Gravimetric	6,600	14,500	13,300	19,300	917	12,600

Note: ND = Non-detect, NA = Not Analyzed

LEGEND:

- PHASE ONE SITE & APEC-1 / APEC-2 BOUNDARIES
- APEC-3 BOUNDARY
- APEC-4 BOUNDARY
- APEC-5 BOUNDARY
- RAIL TRACKS
- SURFACE DRAINAGE DITCH
- MONITORING WELL LOCATION
- GEOTECHNICAL BOREHOLE LOCATION
- CONCENTRATION REPORTED ABOVE TABLE 3 ICC SCS
- CONCENTRATION REPORTED BELOW TABLE 3 ICC SCS

0 10 30 50m

SCALE 1:1000

APEC	PCA
APEC 1 Storage of Vehicles	52. Storage, maintenance, fueling and repair of equipment, vehicles, and material used to maintain transportation systems
APEC 2 Importation of Fill	30. Importation of Fill of Unknown Quality and Quantity
APEC 3 Waste Generator	Other. Waste Generator
APEC 4 Railway Tracks	46. Rail Yards, Tracks and Spurs
APEC 5 Westerly PCAs	Other. Contractor Yard 49. Salvage Yard, including automobile wrecking Other. Cooking Oil Spill 10. Commercial Autobody Shops



NOTES:
THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH SERTAS' REPORT No. 2501E038.2000.

ALL LOCATIONS ARE APPROXIMATE.

ORIGINAL PAPER SIZE: 11 x 17.

REFERENCES:
MICROSOFT BING MAPPING, 2025 AERIALS. IMAGES ARE USED FOR ILLUSTRATION PURPOSES ONLY, AND NOT FOR MEASUREMENT PURPOSES.

ENWIN UTILITIES LTD.
4545 RHODES DRIVE
WINDSOR, ONTARIO, N9A 5T7

SERTAS
4510 RHODES DRIVE, UNIT 210
WINDSOR, ONTARIO, N8W 5K5
519-822-3442

DWN BY: TMA
CHK'D BY: CS
DATUM: NAD83
PROJECTION: UTM Zone 17
SCALE: 1:1000

PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
VACANT PROPERTY
4550 7TH CONCESSION ROAD, WINDSOR, ONTARIO

TITLE: SOIL EXCEEDANCES

DATE: Oct. 7, 2025
PROJECT No: 2501E038.2000
REV No: 1
FIGURE No: 3

DATE PLOTTED: September 24, 2025 2:25:20 PM
FILE LOCATION: C:\Users\Umair\Sertas Group Limited\Windsor Project Files - Documents\03_Projects\PF_2025\02_Enviro\2501E038_Enwin_7th Conc. Water Tower\Phase ... - Phase II\07_CAD\02_Dwg_Files\Phase II\2501E038-2000_F3.dwg

NOTE:
MONITORING WELLS BH/MW-2 & BH/MW-5 HAD INSUFFICIENT GROUNDWATER FOR WELL DEVELOPMENT, MONITORING & SAMPLING.

LEGEND:

- PHASE ONE SITE & APEC-1 / APEC-2 BOUNDARIES
- APEC-3 BOUNDARY
- APEC-4 BOUNDARY
- APEC-5 BOUNDARY
- RAIL TRACKS
- SURFACE DRAINAGE DITCH
- MONITORING WELL LOCATION
- ENVIRONMENTAL BOREHOLE LOCATION (NO WATER SAMPLING)
- GEOTECHNICAL BOREHOLE LOCATION
- CONCENTRATION REPORTED ABOVE TABLE 3 ICC SCS
- CONCENTRATION REPORTED BELOW TABLE 3 ICC SCS
- INFERRED GROUNDWATER FLOW

0 10 30 50m
SCALE 1:1000

APEC	PCA
APEC 1 Storage of Vehicles	52. Storage, maintenance, fueling and repair of equipment, vehicles, and material used to maintain transportation systems
APEC 2 Importation of Fill	30. Importation of Fill of Unknown Quality and Quantity
APEC 3 Waste Generator	Other. Waste Generator
APEC 4 Railway Tracks	46. Rail Yards, Tracks and Spurs
APEC 5 Westerly PCAs	Other. Contractor Yard 49. Salvage Yard, including automobile wrecking Other. Cooking Oil Spill 10. Commercial Autobody Shops



NOTES:
THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH SERTAS' REPORT No. 2501E038.2000.

ALL LOCATIONS ARE APPROXIMATE.

ORIGINAL PAPER SIZE: 11 x 17.

REFERENCES:
MICROSOFT BING MAPPING, 2025 AERIALS. IMAGES ARE USED FOR ILLUSTRATION PURPOSES ONLY, AND NOT FOR MEASUREMENT PURPOSES.

ENWIN UTILITIES LTD.
4545 RHODES DRIVE
WINDSOR, ONTARIO, N9A 5T7

SERTAS
4510 RHODES DRIVE, UNIT 210
WINDSOR, ONTARIO, N8W 5K5
519-822-3442

DWN BY:	TMA
CHK'D BY:	CS
DATUM:	NAD83
PROJECTION:	UTM Zone 17
SCALE:	1:1000

PROJECT:
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
VACANT PROPERTY
4550 7TH CONCESSION ROAD, WINDSOR, ONTARIO

TITLE:
GROUNDWATER EXCEEDANCES

DATE:	OCT. 7, 2025
PROJECT No:	2501E038.2000
REV No:	1
FIGURE No:	4

DATE PLOTTED: September 24, 2025 2:36:14 PM
FILE LOCATION: C:\Users\Uroski\Sertas Group Limited\Windsor Project Files - Documents\03_Projects\PF_2025\02_Enviro\2501E038_Enwin_7th Conc. Water Tower\Phase ... Phase II\07_CAD\02_Dwg_Files\Phase II\2501E038-2000_F4.dwg

APPENDIX A

Borehole Logs

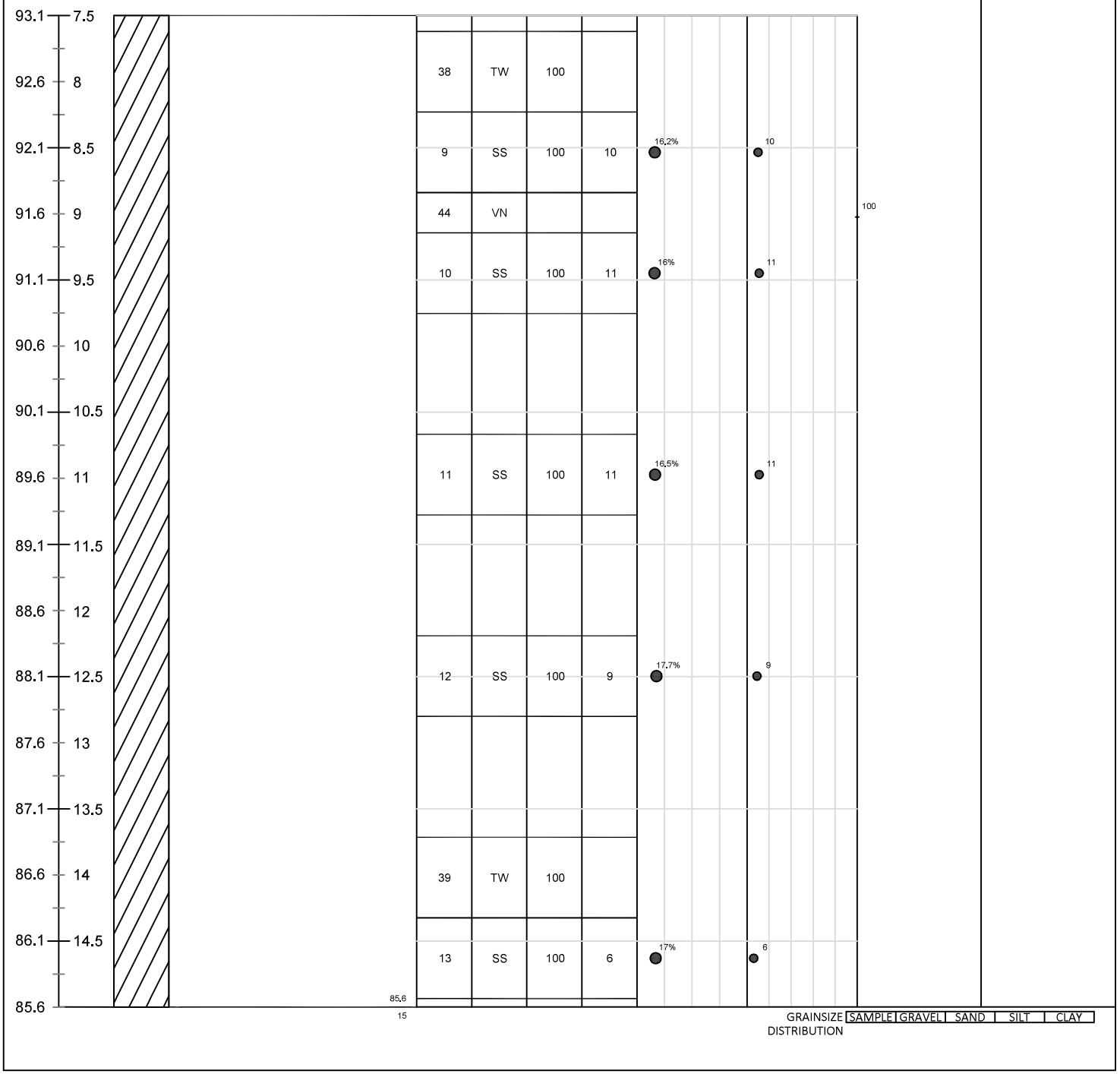
Client:	ENWIN Utilities Ltd.	Project Name:	Enwin Water Tower	Log of Borehole:	BH-1
Contractor:	Direct Environmental Drilling	Method:	Track Mounted Solid Stem Auger	Page:	1 of 9
Project No.:	2501E038	Elevation:	100.6	Date Completed:	Sep 15, 2025
Location:	7th Concession	UTM:	17 N: 4680101 E: 338160		

SUBSURFACE PROFILE				SAMPLE							
Elevation (m)	Depth	Lithology	Description	Number	Type	% Recovery	SPT (N)	Atterberg Limits (%) LL PL PI 25 50 75 / % Moisture 25 50 75	Shear Strength Cu, kPa nat V. rem V. 20 40 60 80 / SPT (N) 20 40 60 80	Well Installation	Log Notes
100.6	0		**FILL:** Gravel	1	SS	25	22	1.9%	22		
100.1	0.5		Clay Fill, sands								
99.6	1			2	SS	25	75	15.1%	75		
99.1	1.5		98.77 / 1.83	3	SS	83	10	12.4%	10		
98.6	2		**(CL) SILTY CLAY:** Mottled Brown and Grey, some Sand trace Gravel Brown								
98.1	2.5			4	SS	100	24	13.7%	24		
97.6	3			5	SS	83	13	13%	13		
97.1	3.5										
96.6	4			6	SS	100	45	13%	45		
96.1	4.5		Grey	7	SS	38	28	13.9%	28		
95.6	5										
95.1	5.5										
94.6	6			8	SS	100	13	15.5%	13		
94.1	6.5										
93.6	7										
93.1			93.1 / 7.5								

GRAINSIZE DISTRIBUTION: SAMPLE | GRAVEL | SAND | SILT | CLAY

Logged By: PS Input By: SS

Client:	ENWIN Utilities Ltd.	Project Name:	Enwin Water Tower	Log of Borehole:	BH-1
Contractor:	Direct Environmental Drilling	Method:	Track Mounted Solid Stem Auger	Page:	2 of 9
Project No.:	2501E038	Elevation:	100.6	Date Completed:	Sep 15, 2025
Location:	7th Concession	UTM:	17 N: 4680101 E: 338160		



Logged By: PS Input By: SS

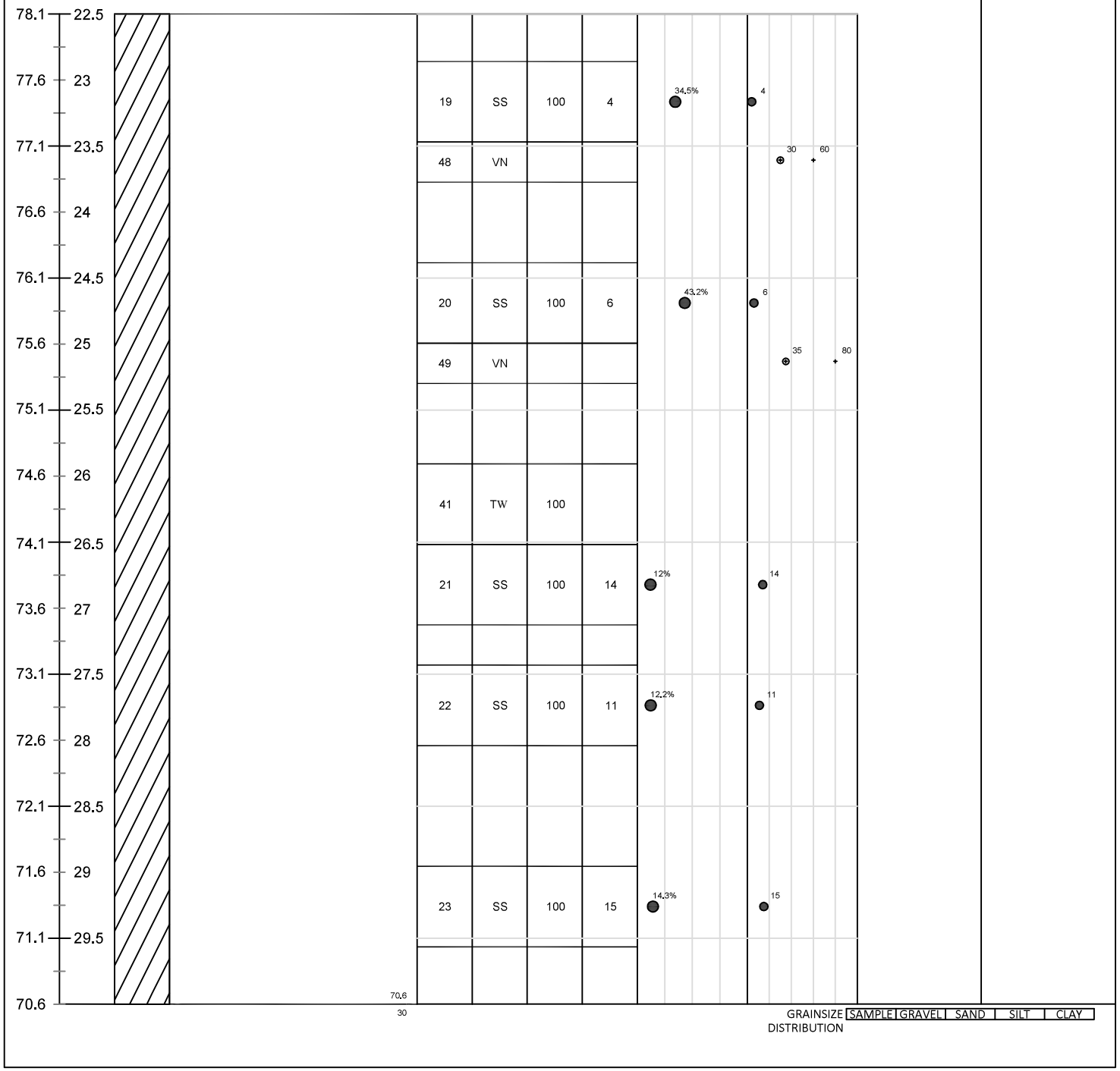
Client:	ENWIN Utilities Ltd.	Project Name:	Enwin Water Tower	Log of Borehole:	BH-1
Contractor:	Direct Environmental Drilling	Method:	Track Mounted Solid Stem Auger	Page:	3 of 9
Project No.:	2501E038	Elevation:	100.6	Date Completed:	Sep 15, 2025
Location:	7th Concession	UTM:	17 N: 4680101 E: 338160		

SUBSURFACE PROFILE				SAMPLE							
Elevation (m)	Depth	Lithology	Description	Number	Type	% Recovery	SPT (N)	Atterberg Limits (%) LL PL PI 25 50 75 / % Moisture 25 50 75	Shear Strength Cu, kPa nat V. rem V. 20 40 60 80 / SPT (N) 20 40 60 80	Well Installation	Log Notes
85.6	15			45	VN				100		
85.1	15.5			14	SS	100	9	16.2%	9		
84.6	16										
84.1	16.5										
			83.84								
83.6	17		16.76 **(SW) SAND:** Grey coarse Sand	15	SS	100	16	14.3%	16		
83.1	17.5										
82.6	18										
			82.31								
82.1	18.5		18.29 **(CL) SILTY CLAY:** Grey, some Sand trace Gravel	16	SS	100	10	13.9%	10		
81.6	19										
81.1	19.5										
80.6	20			40	TW	100					
80.1	20.5			17	SS	100	2	32.9%	2		
79.6	21			46	VN				25 60		
79.1	21.5			18	SS	100	4	31.8%	4		
78.6	22			47	VN				35 65		
78.1			78.1 22.5								

GRAINSIZE DISTRIBUTION: SAMPLE | GRAVEL | SAND | SILT | CLAY

Logged By: PS Input By: SS

Client:	ENWIN Utilities Ltd.	Project Name:	Enwin Water Tower	Log of Borehole:	BH-1
Contractor:	Direct Environmental Drilling	Method:	Track Mounted Solid Stem Auger	Page:	4 of 9
Project No.:	2501E038	Elevation:	100.6	Date Completed:	Sep 15, 2025
Location:	7th Concession	UTM:	17 N: 4680101 E: 338160		



Logged By: PS

Input By: SS

Client:	ENWIN Utilities Ltd.	Project Name:	Enwin Water Tower	Log of Borehole:	BH-1
Contractor:	Direct Environmental Drilling	Method:	Track Mounted Solid Stem Auger	Page:	5 of 9
Project No.:	2501E038	Elevation:	100.6	Date Completed:	Sep 15, 2025
Location:	7th Concession	UTM:	17 N: 4680101 E: 338160		

SUBSURFACE PROFILE			SAMPLE							
Elevation (m) / Depth	Lithology	Description (Elevation / Depth)	Number	Type	% Recovery	SPT (N)	Atterberg Limits (%) LL PL PI; 25 50 75; % Moisture 25 50 75	Shear Strength Cu, kPa nat V. rem V.; 20 40 60 80; SPT (N) 20 40 60 80	Well Installation	Log Notes
70.6 / 30										
70.1 / 30.5			24	SS	100	18	12.4%	18		
69.6 / 31										
69.1 / 31.5										
68.6 / 32			42	TW	100					
68.1 / 32.5			25	SS	100	19	14.4%	19		
67.6 / 33										
67.1 / 33.5			26	SS	100	17	14.8%	17		
66.6 / 34										
66.1 / 34.5										
65.6 / 35			27	SS	100	13	19.1%	13		
65.1 / 35.5										
64.6 / 36										
64.1 / 36.5										
63.6 / 37										
63.1		63.1 / 37.5								

GRAINSIZE DISTRIBUTION: SAMPLE | GRAVEL | SAND | SILT | CLAY

Logged By: PS Input By: SS

Client:	ENWIN Utilities Ltd.	Project Name:	Enwin Water Tower	Log of Borehole:	BH-1
Contractor:	Direct Environmental Drilling	Method:	Track Mounted Solid Stem Auger	Page:	6 of 9
Project No.:	2501E038	Elevation:	100.6	Date Completed:	Sep 15, 2025
Location:	7th Concession	UTM:	17 N: 4680101 E: 338160		

SUBSURFACE PROFILE				SAMPLE							
Elevation (m)	Depth	Lithology	Description	Number	Type	% Recovery	SPT (N)	Atterberg Limits (%) LL PL PI 25 50 75 / % Moisture 25 50 75	Shear Strength Cu, kPa nat V. rem V. 20 40 60 80 / SPT (N) 20 40 60 80	Well Installation	Log Notes
63.1	37.5										
62.6	38										
62.1	38.5			28	SS	100	35	19%	35		
61.6	39										
61.1	39.5		Increased Sand Content, wet								
60.6	40										
60.1	40.5										
59.6	41										
59.1	41.5			29	SS	100	13	14.1%	13		
58.6	42										
58.1	42.5										
57.6	43		57.62 42.98 **(CL) SILTY CLAY:** Grey Silty Clay till with interbedded Sand layers								
57.1	43.5										
56.6	44										
56.1	44.5			30	SS	33	50		50		
55.6	45		55.6								

GRAINSIZE DISTRIBUTION: SAMPLE | GRAVEL | SAND | SILT | CLAY

Logged By: PS Input By: SS

Client:	ENWIN Utilities Ltd.	Project Name:	Enwin Water Tower	Log of Borehole:	BH-1
Contractor:	Direct Environmental Drilling	Method:	Track Mounted Solid Stem Auger	Page:	7 of 9
Project No.:	2501E038	Elevation:	100.6	Date Completed:	Sep 15, 2025
Location:	7th Concession	UTM:	17 N: 4680101 E: 338160		

SUBSURFACE PROFILE			SAMPLE							
Elevation (m) / Depth	Lithology	Description (Elevation / Depth)	Number	Type	% Recovery	SPT (N)	Atterberg Limits (%) LL PL PI; 25 50 75; % Moisture 25 50 75	Shear Strength Cu, kPa nat V. rem V.; 20 40 60 80; SPT (N) 20 40 60 80	Well Installation	Log Notes
55.6 / 45										
55.1 / 45.5										
54.6 / 46										
54.1 / 46.5										
53.6 / 47										
53.1 / 47.5			31	SS	13	50		50		
52.6 / 48										
52.1 / 48.5										
51.6 / 49			32	SS	21	50	12.9%	50		
51.1 / 49.5										
50.6 / 50										
50.1 / 50.5										
49.6 / 51										
49.1 / 51.5										
48.6 / 52			33	SS	25	50		50		
48.1		48.1 / 52.5								

GRAINSIZE DISTRIBUTION: SAMPLE | GRAVEL | SAND | SILT | CLAY

Logged By: PS

Input By: SS

Client:	ENWIN Utilities Ltd.	Project Name:	Enwin Water Tower	Log of Borehole:	BH-1
Contractor:	Direct Environmental Drilling	Method:	Track Mounted Solid Stem Auger	Page:	8 of 9
Project No.:	2501E038	Elevation:	100.6	Date Completed:	Sep 15, 2025
Location:	7th Concession	UTM:	17 N: 4680101 E: 338160		

SUBSURFACE PROFILE				SAMPLE							
Elevation (m)	Depth	Lithology	Description	Number	Type	% Recovery	SPT (N)	Atterberg Limits (%) LL PL PI 25 50 75 / % Moisture 25 50 75	Shear Strength Cu, kPa nat V. rem V. 20 40 60 80 / SPT (N) 20 40 60 80	Well Installation	Log Notes
48.1	52.5										
47.6	53										
47.1	53.5										
46.6	54										
46.1	54.5										
45.6	55			34	SS	25	50		50		
45.1	55.5										
44.6	56										
44.1	56.5										
43.6	57										
43.1	57.5										
42.6	58			35	SS	25	50		50		
42.1	58.5										
41.6	59										
41.1	59.5										
40.6			40.6								
	60										

GRAINSIZE DISTRIBUTION: SAMPLE | GRAVEL | SAND | SILT | CLAY

Logged By: PS

Input By: SS

Client:	ENWIN Utilities Ltd.	Project Name:	Enwin Water Tower	Log of Borehole:	BH-1
Contractor:	Direct Environmental Drilling	Method:	Track Mounted Solid Stem Auger	Page:	9 of 9
Project No.:	2501E038	Elevation:	100.6	Date Completed:	Sep 15, 2025
Location:	7th Concession	UTM:	17 N: 4680101 E: 338160		

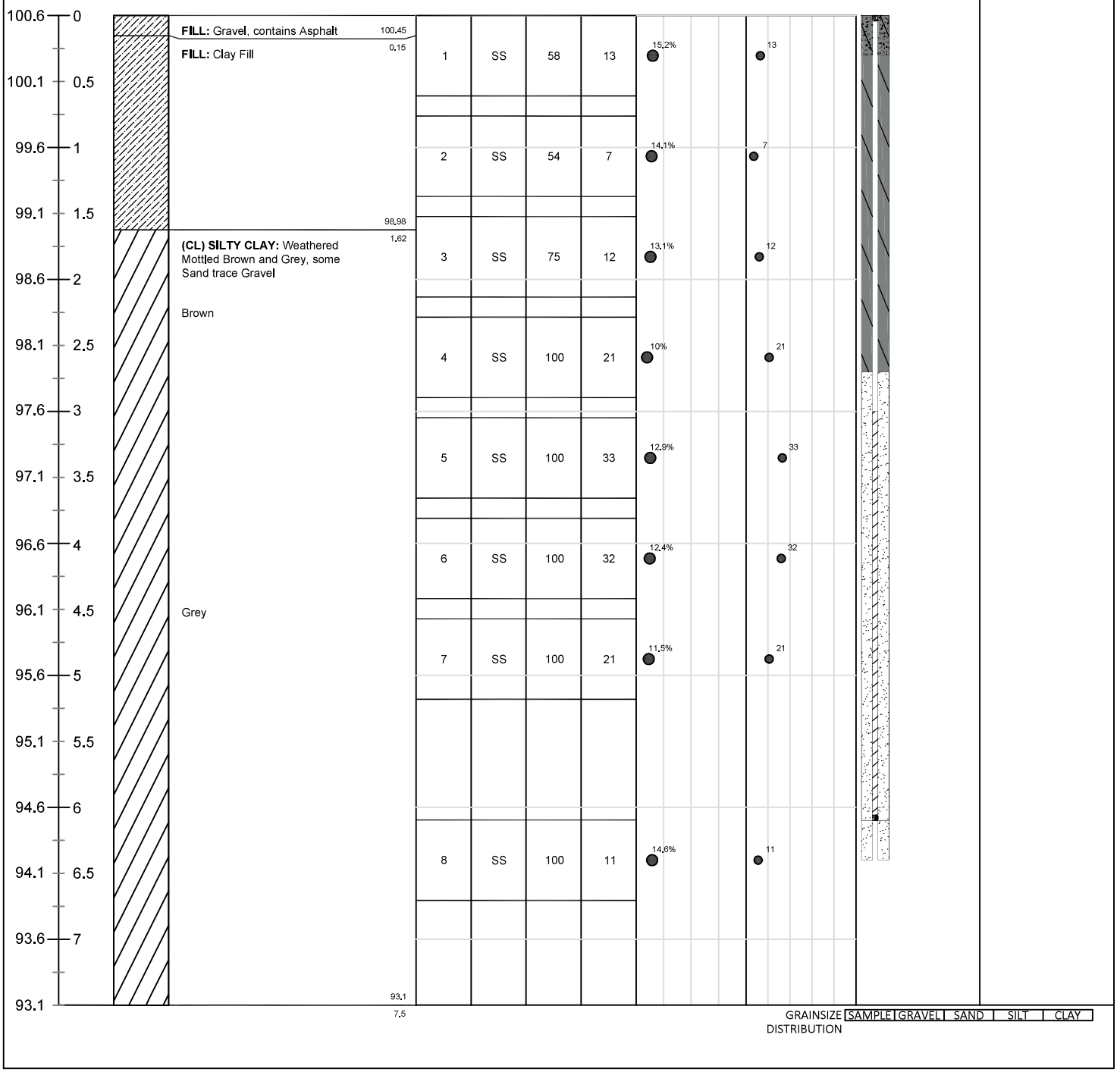
Elevation (m)	Depth	Description	Elevation / Depth	Number	Type	% Recovery	SPT (N)	Atterberg Limits (%) LL PL PI 25 50 75 / % Moisture 25 50 75	Shear Strength Cu, kPa nat V. rem V. 20 40 60 80 / SPT (N) 20 40 60 80	Well Installation	Log Notes
40.6	60										
40.1	60.5										
39.6	61			36	SS	21	50		50		
39.1	61.5										
38.6	62										
38.1	62.5			37	SS	17	50		50		
37.6	63		37.2								
37.1	63.5	**(BR) Bedrock:** Shale TCR = 98% SCR = 96% RQD = 40%	63.4	1	RC	98					
36.6	64	**(BR) Bedrock:** Limestone TCR = 98% SCR = 98% RQD = 83%	64.01	2	RC	98					
36.1	64.5										
35.6	65										
35.1	65.5	**(BR) Bedrock:** Limestone TCR = 99% SCR = 99% RQD = 99%	65.53	3	RC	99					
34.6	66										
34.1	66.5										
33.6	67		33.54								
33.1		Borehole terminated @ 67.1 mbgs due to target depth achieved.	67.06								

GRAINSIZE DISTRIBUTION: SAMPLE | GRAVEL | SAND | SILT | CLAY

Logged By: PS

Input By: SS

Client:	ENWIN Utilities Ltd.	Project Name:	Enwin Water Tower	Log of Borehole:	BH/MW-2
Contractor:	Direct Environmental Drilling	Method:	Track Mounted Solid Stem Auger	Page:	1 of 2
Project No.:	2501E038	Elevation:	100.6	Date Completed:	Sep 08, 2025
Location:	7th Concession	UTM:	17 N: 4680116 E: 338162		



Logged By: PS Input By: SS

Client:	ENWIN Utilities Ltd.	Project Name:	Enwin Water Tower	Log of Borehole:	BH/MW-2
Contractor:	Direct Environmental Drilling	Method:	Track Mounted Solid Stem Auger	Page:	2 of 2
Project No.:	2501E038	Elevation:	100.6	Date Completed:	Sep 08, 2025
Location:	7th Concession	UTM:	17 N: 4680116 E: 338162		

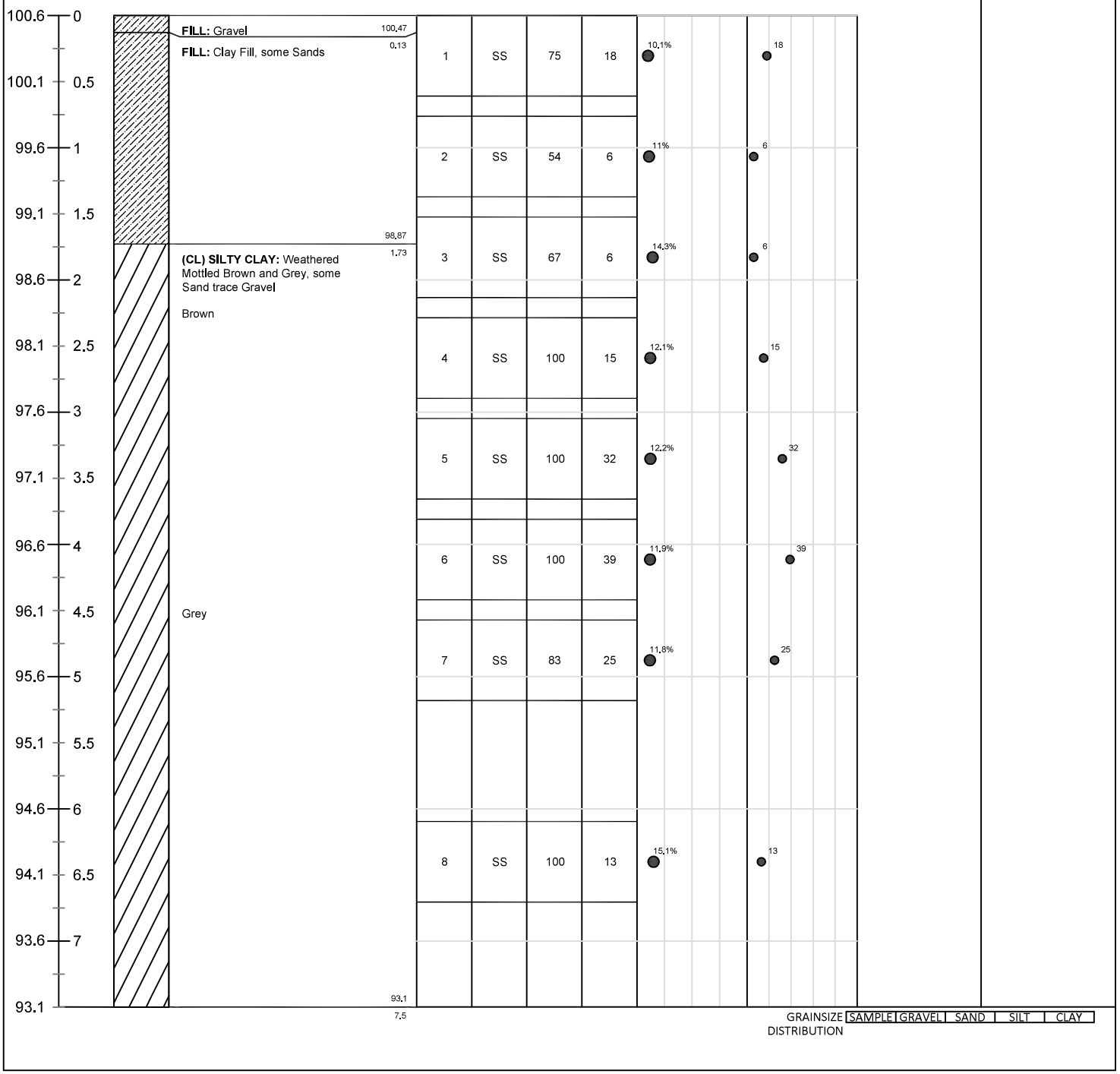
SUBSURFACE PROFILE				SAMPLE							
Elevation (m) / Depth	Lithology	Description (Elevation / Depth)	Number	Type	% Recovery	SPT (N)	Atterberg Limits (%) LL PL PI; 25 50 75; % Moisture 25 50 75	Shear Strength Cu, kPa nat V. rem V.; 20 40 60 80; SPT (N) 20 40 60 80	Well Installation	Log Notes
93.1 / 7.5										
92.6 / 8		**(CL) SILTY CLAY:** Weathered Mottled Brown and Grey, some Sand trace Gravel	9	SS	100	9	17%	9		
92.1 / 8.5										
91.6 / 9										
91.1 / 9.5		90.85	10	SS	100	7	19.9%	7		
90.6 / 10		9.75 Borehole terminated @ 9.8 mbgs due to target depth achieved.								
90.1 / 10.5										
89.6 / 11										
89.1 / 11.5										
88.6 / 12										
88.1 / 12.5										
87.6 / 13										
87.1 / 13.5										
86.6 / 14										
86.1 / 14.5										
85.6										

GRAINSIZE DISTRIBUTION: SAMPLE | GRAVEL | SAND | SILT | CLAY

Logged By: PS

Input By: SS

Client:	ENWIN Utilities Ltd.	Project Name:	Enwin Water Tower	Log of Borehole:	BH-3
Contractor:	Direct Environmental Drilling	Method:	Track Mounted Solid Stem Auger	Page:	1 of 2
Project No.:	2501E038	Elevation:	100.6	Date Completed:	Sep 08, 2025
Location:	7th Concession	UTM:	17 N: 4680100 E: 338175		



Logged By: PS

Input By: SS

Client:	ENWIN Utilities Ltd.	Project Name:	Enwin Water Tower	Log of Borehole:	BH-3
Contractor:	Direct Environmental Drilling	Method:	Track Mounted Solid Stem Auger	Page:	2 of 2
Project No.:	2501E038	Elevation:	100.6	Date Completed:	Sep 08, 2025
Location:	7th Concession	UTM:	17 N: 4680100 E: 338175		

SUBSURFACE PROFILE				SAMPLE							
Elevation (m) / Depth	Lithology	Description (Elevation / Depth)	Number	Type	% Recovery	SPT (N)	Atterberg Limits (%) LL PL PI; 25 50 75; % Moisture 25 50 75	Shear Strength Cu, kPa nat V. rem V.; 20 40 60 80; SPT (N) 20 40 60 80	Well Installation	Log Notes
93.1 / 7.5										
92.6 / 8		**(CL) SILTY CLAY:** Weathered Mottled Brown and Grey, some Sand trace Gravel	9	SS	100	7	16.5%	7		
92.1 / 8.5										
91.6 / 9										
91.1 / 9.5		90.85	10	SS	100	8	16.4%	8		
90.6 / 10		9.75 Borehole terminated @ 9.8 mbgs due to target depth achieved.								
90.1 / 10.5										
89.6 / 11										
89.1 / 11.5										
88.6 / 12										
88.1 / 12.5										
87.6 / 13										
87.1 / 13.5										
86.6 / 14										
86.1 / 14.5										
85.6										

GRAINSIZE DISTRIBUTION: SAMPLE | GRAVEL | SAND | SILT | CLAY

Logged By: PS

Input By: SS

Client:	ENWIN Utilities Ltd.	Project Name:	Enwin Water Tower	Log of Borehole:	BH-4
Contractor:	Direct Environmental Drilling	Method:	Track Mounted Solid Stem Auger	Page:	1 of 2
Project No.:	2501E038	Elevation:	100.6	Date Completed:	Sep 09, 2025
Location:	7th Concession	UTM:	17 N: 4680085 E: 338158		

SUBSURFACE PROFILE				SAMPLE							
Elevation (m)	Depth	Lithology	Description	Number	Type	% Recovery	SPT (N)	Atterberg Limits (%) LL PL PI 25 50 75 / % Moisture 25 50 75	Shear Strength Cu, kPa nat V. rem V. 20 40 60 80 / SPT (N) 20 40 60 80	Well Installation	Log Notes
100.6	0		**FILL:** Asphalt and Gravel (100.45, 0.15)								
			FILL: Clay Fill	1	SS	25	15		15		
100.1	0.5										
99.6	1			2	SS	67	5	12.7%	5		
99.1	1.5		(99.08, 1.52)								
			(CL) SILTY CLAY: Weathered Mottled Brown and Grey, some Sand trace Gravel	3	SS	75	4	16.8%	4		
98.6	2										
			Brown	4	SS	100	27	12.2%	27		
98.1	2.5										
97.6	3			5	SS	100	34	11.5%	34		
97.1	3.5										
96.6	4			6	SS	100	26	11.7%	26		
			Grey								
96.1	4.5			7	SS	100	22	12.8%	22		
95.6	5										
95.1	5.5										
94.6	6										
94.1	6.5			8	SS	100	11	14%	11		
93.6	7										
93.1			(93.1, 7.5)								

GRAINSIZE DISTRIBUTION: SAMPLE | GRAVEL | SAND | SILT | CLAY

Logged By: PS Input By: SS

Client:	ENWIN Utilities Ltd.	Project Name:	Enwin Water Tower	Log of Borehole:	BH-4
Contractor:	Direct Environmental Drilling	Method:	Track Mounted Solid Stem Auger	Page:	2 of 2
Project No.:	2501E038	Elevation:	100.6	Date Completed:	Sep 09, 2025
Location:	7th Concession	UTM:	17 N: 4680085 E: 338158		

SUBSURFACE PROFILE				SAMPLE							
Elevation (m) / Depth	Lithology	Description (Elevation / Depth)	Number	Type	% Recovery	SPT (N)	Atterberg Limits (%) LL PL PI; % Moisture	Shear Strength Cu, kPa (nat V., rem V.); SPT (N)	Well Installation	Log Notes
							25 50 75	20 40 60 80		
93.1 / 7.5		**(CL) SILTY CLAY:** Weathered Mottled Brown and Grey, some Sand trace Gravel	9	SS	100	9	16.2%	9		
92.6 / 8			11	VN						
92.1 / 8.5										
91.6 / 9										
91.1 / 9.5		90.85	10	SS	100	10	16.1%	10		
		9.75 Borehole terminated @ 9.8 mbgs due to target depth achieved.								
90.6 / 10										
90.1 / 10.5										
89.6 / 11										
89.1 / 11.5										
88.6 / 12										
88.1 / 12.5										
87.6 / 13										
87.1 / 13.5										
86.6 / 14										
86.1 / 14.5										
85.6										

GRAINSIZE DISTRIBUTION: SAMPLE | GRAVEL | SAND | SILT | CLAY

Logged By: PS Input By: SS

Client:	ENWIN Utilities Ltd.	Project Name:	Enwin Water Tower	Log of Borehole:	BH/MW - 5
Contractor:	Direct Environmental Drilling	Method:	Track Mounted Solid Stem Auger	Page:	1 of 1
Project No.:	2501E038	Elevation:	100.4	Date Completed:	Sep 09, 2025
Location:	7th Concession	UTM:	17 N: 4680102 E: 338145		

SUBSURFACE PROFILE				SAMPLE							
Elevation (m)	Depth	Lithology	Description	Number	Type	% Recovery	SPT (N)	Atterberg Limits (%) 25 50 75 / % Moisture 25 50 75	Shear Strength Cu, kPa 20 40 60 80 / SPT (N) 20 40 60 80	Well Installation	Log Notes
100.4	0		**FILL:** Asphalt and Gravel, trace Organics (100.27 / 0.13)	1	SS	71	20	16.1%	20		
99.9	0.5		**FILL:** Asphalt and Gravel, trace Organics (100.27 / 0.13) **FILL:** Clay Fill								
99.4	1		(99.18 / 1.22)	2	SS	67	7	14.9%	7		
98.9	1.5		**(CL) SILTY CLAY:** Weathered Mottled Brown and Grey, some Sand trace Gravel	3	SS	83	9	13.5%	9		
98.4	2		Brown								
97.9	2.5			4	SS	88	27	12.8%	27		
97.4	3										
96.9	3.5			5	SS	100	32	12.9%	32		
96.4	4			6	SS	100	31	12.9%	31		
95.9	4.5		Grey								
95.4	5			7	SS	100	17	13.3%	17		
94.9	5.5										
94.4	6										
93.9	6.5		(93.69 / 6.71)	8	SS	100	11	14.5%	11		
93.4	7		Borehole terminated @ 6.7 mbgs due to target depth achieved.								
92.9											

GRAINSIZE DISTRIBUTION: SAMPLE | GRAVEL | SAND | SILT | CLAY

Logged By: PS Input By: SS

Client:	ENWIN Utilities Ltd.	Project Name:	Enwin Water Tower	Log of Borehole:	BH-6
Contractor:	Direct Environmental Drilling	Method:	Track Mounted Solid Stem Auger	Page:	1 of 1
Project No.:	2501E038	Elevation:	100.9	Date Completed:	Sep 08, 2025
Location:	7th Concession	UTM:	17 N: 4680214 E: 338150		

Elevation (m)	Depth	Lithology	Description	Elevation / Depth	Number	Type	% Recovery	SPT (N)	Atterberg Limits (%) LL PL PI 25 50 75 / % Moisture 25 50 75	Shear Strength Cu, kPa nat V. rem V. 20 40 60 80 / SPT (N) 20 40 60 80	Well Installation	Log Notes
100.9	0		**FILL:** Sands, Gravel, Asphalt	100.75								
			FILL: Clay Fill	0.15	1	SS	71	33	3.9%	33		
100.4	0.5											
99.9	1				2	SS	50	7		7		
99.4	1.5			99.22								
			(CL) SILTY CLAY: Weathered Mottled Brown and Grey, some Sand trace Gravel	1.68	3	SS	67	7	13.8%	7		
98.9	2											
98.4	2.5				4	SS	100	13	13.5%	13		
97.9	3		Brown									
					5	SS	100	28	11.5%	28		
97.4	3.5											
96.9	4				6	SS	100	35	12.5%	35		
96.4	4.5											
					7	SS	100	29	12.1%	29		
95.9	5											
95.4	5.5											
94.9	6		Grey									
94.4	6.5				8	SS	100	12	14.1%	12		
				94.19								
93.9	7		Borehole terminated @ 6.7 mbgs due to target depth achieved.	6.71								
93.4												

GRAINSIZE DISTRIBUTION: SAMPLE | GRAVEL | SAND | SILT | CLAY

Logged By: PS

Input By: SS

Client:	ENWIN Utilities Ltd.	Project Name:	Enwin Water Tower	Log of Borehole:	BH/MW-7
Contractor:	Direct Environmental Drilling	Method:	Track Mounted Solid Stem Auger	Page:	1 of 1
Project No.:	2501E038	Elevation:	100.8	Date Completed:	Sep 08, 2025
Location:	7th Concession	UTM:	17 N: 4680133 E: 338173		

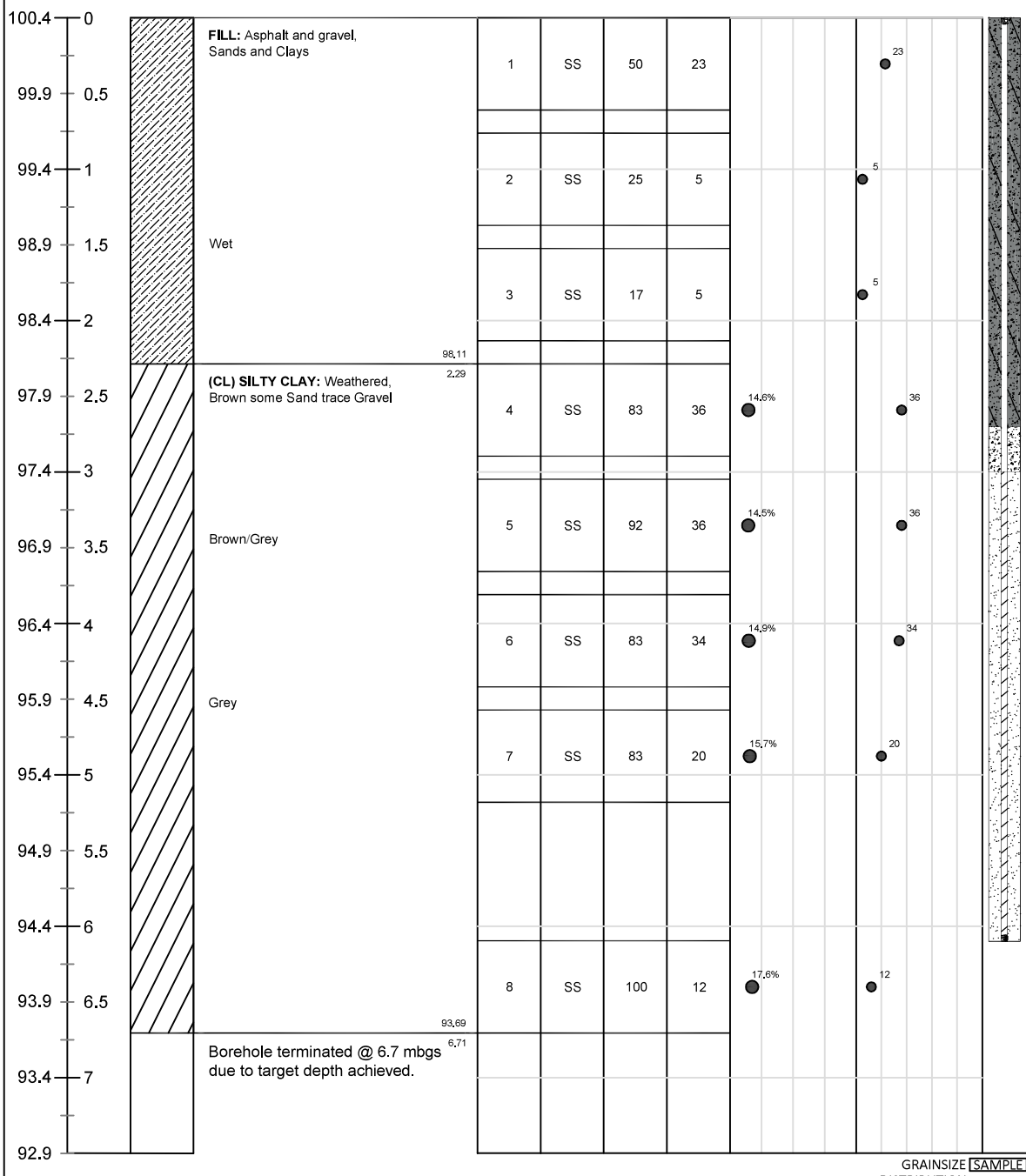
SUBSURFACE PROFILE				SAMPLE							
Elevation (m)	Depth	Lithology	Description (Elevation / Depth)	Number	Type	% Recovery	SPT (N)	Atterberg Limits (%) LL PL PI 25 50 75 / % Moisture 25 50 75	Shear Strength Cu, kPa nat V. rem V. 20 40 60 80 / SPT (N) 20 40 60 80	Well Installation	Log Notes
100.8	0		**FILL:** Asphalt and Gravel, Sands								
100.3	0.5		Clay Fill	1	SS	58	36	0.3%	36		
99.8	1			2	SS	50	11		11		
99.3	1.5		99.28								
			(CL) SILTY CLAY: Weathered Mottled Brown and Grey, some Sand trace Gravel	3	SS	88	9	11.6%	9		
98.8	2		1.52								
			Brown	4	SS	100	23	13.3%	23		
98.3	2.5										
97.8	3			5	SS	100	26	12.6%	26		
97.3	3.5										
96.8	4			6	SS	100	31	12.2%	31		
96.3	4.5										
95.8	5			7	SS	100	27	12.8%	27		
95.3	5.5										
94.8	6		Grey								
94.3	6.5			8	SS	100	12	14.7%	12		
			94.09								
93.8	7		Borehole terminated @ 6.7 mbgs due to target depth achieved. 6.71								
93.3											

GRAINSIZE DISTRIBUTION: SAMPLE | GRAVEL | SAND | SILT | CLAY

Logged By: PS

Input By: SS

Client:	ENWIN Utilities Ltd.	Project Name:	Enwin Water Tower	Log of Borehole:	BH/MW-8
Contractor:	Direct Environmental Drilling	Method:	Track Mounted Solid Stem Auger	Page:	1 of 1
Project No.:	2501E038	Elevation:	100.4	Date Completed:	Sep 09, 2025
Location:	7th Concession	UTM:	17 N: 4680073 E: 338160		



Logged By: PS Input By: SS

APPENDIX B

Laboratory Certificate of Analysis, Chromatograms, Grain Size Analysis

351 Nash Road North, unit 9B
Hamilton, ON L8H 7P4
1-800-749-1947
www.paracellabs.com

Certificate of Analysis

SERTAS
4510 Rhodes Drive, Unit 210
Windsor, ON N8W 5K5
Attn: Paige Sarafin

Client PO:
Project: 2501E038
Custody:

Report Date: 16-Sep-2025
Order Date: 9-Sep-2025

Order #: 2537264

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2537264-03	5-2
2537264-04	DUP3
2537264-05	5-3
2537264-15	8-3
2537264-16	8-4

Approved By:

Milan Ralitsch, PhD
Senior Technical Manager

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	16-Sep-25	16-Sep-25
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	11-Sep-25	12-Sep-25
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	11-Sep-25	12-Sep-25
Conductivity	MOE E3138 - probe @25 °C, water ext	15-Sep-25	15-Sep-25
Mercury by CVAA	EPA 7471B - CVAA, digestion	13-Sep-25	15-Sep-25
PHC F1	CWS Tier 1 - P&T GC-FID	11-Sep-25	12-Sep-25
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	11-Sep-25	15-Sep-25
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	13-Sep-25	13-Sep-25
REG 153: pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	16-Sep-25	16-Sep-25
REG 153: VOCs by P&T GC-MS	EPA 8260 - P&T GC-MS	11-Sep-25	12-Sep-25
SAR	Calculated	15-Sep-25	15-Sep-25
Solids, %	CWS Tier 1 - Gravimetric	15-Sep-25	16-Sep-25

Certificate of Analysis

Report Date: 16-Sep-2025

Client: SERTAS

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

Summary of Criteria Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in red

Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances.

Sample	Analyte	MDL / Units	Result	Reg 153/04 -T3 Ind/Com, fine	Reg 153/04 -T3 Res/Park, fine
8-3	Boron, available	0.5 ug/g	3.2	2 ug/g	1.5 ug/g

PARACEL LABORATORIES LTD.

Order #: 2537264

Certificate of Analysis

Report Date: 16-Sep-2025

Client: SERTAS

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	5-2	DUP3	5-3	8-3	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Ind/Com, fine	Reg 153/04 -T3 Res/Park, fine
	Sample ID:	2537264-03	2537264-04	2537264-05	2537264-15		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	83.5	82.6	88.2	82.1	-	-
General Inorganics							
SAR	0.01 N/A	1.12	-	0.77	0.87	12 N/A	5 N/A
Conductivity	5 uS/cm	224	-	172	235	1.4 mS/cm	0.7 mS/cm
pH	0.05 pH Units	6.89	-	7.45	7.38	5.00 - 9.00 pH Units	5.00 - 9.00 pH Units
Metals							
Antimony	1.0 ug/g	<1.0	-	<1.0	<1.0	50 ug/g	7.5 ug/g
Arsenic	1.0 ug/g	11.3	-	9.2	9.1	18 ug/g	18 ug/g
Barium	1.0 ug/g	87.4	-	80.4	89.4	670 ug/g	390 ug/g
Beryllium	0.5 ug/g	1.0	-	0.8	0.7	10 ug/g	5 ug/g
Boron, available	0.5 ug/g	1.5	-	0.9	3.2	2 ug/g	1.5 ug/g
Boron	5.0 ug/g	12.2	-	18.6	15.3	120 ug/g	120 ug/g
Cadmium	0.5 ug/g	<0.5	-	<0.5	<0.5	1.9 ug/g	1.2 ug/g
Chromium (VI)	0.2 ug/g	<0.2	-	<0.2	<0.2	10 ug/g	10 ug/g
Chromium	5.0 ug/g	26.2	-	23.1	20.9	160 ug/g	160 ug/g
Cobalt	1.0 ug/g	11.2	-	11.8	8.0	100 ug/g	22 ug/g
Copper	5.0 ug/g	19.8	-	19.5	20.4	300 ug/g	180 ug/g
Lead	1.0 ug/g	12.9	-	12.6	19.4	120 ug/g	120 ug/g
Mercury	0.1 ug/g	<0.1	-	<0.1	<0.1	20 ug/g	1.8 ug/g
Molybdenum	1.0 ug/g	2.3	-	3.5	3.2	40 ug/g	6.9 ug/g
Nickel	5.0 ug/g	29.5	-	30.6	23.6	340 ug/g	130 ug/g
Selenium	1.0 ug/g	<1.0	-	<1.0	<1.0	5.5 ug/g	2.4 ug/g
Silver	0.3 ug/g	<0.3	-	<0.3	<0.3	50 ug/g	25 ug/g
Thallium	1.0 ug/g	<1.0	-	<1.0	<1.0	3.3 ug/g	1 ug/g
Uranium	1.0 ug/g	<1.0	-	1.1	1.3	33 ug/g	23 ug/g

Certificate of Analysis

Report Date: 16-Sep-2025

Client: SERTAS

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	5-2	DUP3	5-3	8-3	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Ind/Com, fine	Reg 153/04 -T3 Res/Park, fine
	Sample ID:	2537264-03	2537264-04	2537264-05	2537264-15		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Vanadium	10.0 ug/g	43.5	-	35.6	29.4	86 ug/g	86 ug/g
Zinc	20.0 ug/g	58.6	-	57.3	108	340 ug/g	340 ug/g
Volatiles							
Acetone	0.50 ug/g	<0.50	<0.50	<0.50	-	28 ug/g	28 ug/g
Benzene	0.02 ug/g	<0.02	<0.02	<0.02	-	0.4 ug/g	0.17 ug/g
Bromodichloromethane	0.05 ug/g	<0.05	<0.05	<0.05	-	18 ug/g	13 ug/g
Bromoform	0.05 ug/g	<0.05	<0.05	<0.05	-	1.7 ug/g	0.26 ug/g
Bromomethane	0.05 ug/g	<0.05	<0.05	<0.05	-	0.05 ug/g	0.05 ug/g
Carbon Tetrachloride	0.05 ug/g	<0.05	<0.05	<0.05	-	1.5 ug/g	0.12 ug/g
Chlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	-	2.7 ug/g	2.7 ug/g
Chloroform	0.05 ug/g	<0.05	<0.05	<0.05	-	0.18 ug/g	0.18 ug/g
Dibromochloromethane	0.05 ug/g	<0.05	<0.05	<0.05	-	13 ug/g	9.4 ug/g
Dichlorodifluoromethane	0.05 ug/g	<0.05	<0.05	<0.05	-	25 ug/g	25 ug/g
1,2-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	-	8.5 ug/g	4.3 ug/g
1,3-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	-	12 ug/g	6 ug/g
1,4-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	-	0.84 ug/g	0.097 ug/g
1,1-Dichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	-	21 ug/g	11 ug/g
1,2-Dichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	-	0.05 ug/g	0.05 ug/g
1,1-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	-	0.48 ug/g	0.05 ug/g
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	-	37 ug/g	30 ug/g
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	-	9.3 ug/g	0.75 ug/g
1,2-Dichloropropane	0.05 ug/g	<0.05	<0.05	<0.05	-	0.68 ug/g	0.085 ug/g
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	<0.05	-	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	<0.05	-	-	-
1,3-Dichloropropene, total	0.05 ug/g	<0.05	<0.05	<0.05	-	0.21 ug/g	0.083 ug/g

Certificate of Analysis

Report Date: 16-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	5-2	DUP3	5-3	8-3	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Ind/Com, fine	Reg 153/04 -T3 Res/Park, fine
	Sample ID:	2537264-03	2537264-04	2537264-05	2537264-15		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Ethylene dibromide (dibromoethane,	0.05 ug/g	<0.05	<0.05	<0.05	-	0.05 ug/g	0.05 ug/g
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	-	19 ug/g	15 ug/g
Hexane	0.05 ug/g	<0.05	<0.05	<0.05	-	88 ug/g	34 ug/g
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	<0.50	<0.50	-	88 ug/g	44 ug/g
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	<0.50	<0.50	-	210 ug/g	4.3 ug/g
Methyl tert-butyl ether	0.05 ug/g	<0.05	<0.05	<0.05	-	3.2 ug/g	1.4 ug/g
Methylene Chloride	0.05 ug/g	<0.05	<0.05	<0.05	-	2 ug/g	0.96 ug/g
Styrene	0.05 ug/g	<0.05	<0.05	<0.05	-	43 ug/g	2.2 ug/g
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	<0.05	-	0.11 ug/g	0.05 ug/g
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	<0.05	-	0.094 ug/g	0.05 ug/g
Tetrachloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	-	21 ug/g	2.3 ug/g
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	-	78 ug/g	6 ug/g
1,1,1-Trichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	-	12 ug/g	3.4 ug/g
1,1,2-Trichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	-	0.11 ug/g	0.05 ug/g
Trichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	-	0.61 ug/g	0.52 ug/g
Trichlorofluoromethane	0.05 ug/g	<0.05	<0.05	<0.05	-	5.8 ug/g	5.8 ug/g
Vinyl chloride	0.02 ug/g	<0.02	<0.02	<0.02	-	0.25 ug/g	0.022 ug/g
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	-	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	-	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	-	30 ug/g	25 ug/g
4-Bromofluorobenzene	Surrogate	106%	106%	107%	-	-	-
Toluene-d8	Surrogate	103%	102%	103%	-	-	-
Dibromofluoromethane	Surrogate	110%	111%	110%	-	-	-
Benzene	0.02 ug/g	-	-	-	<0.02	0.4 ug/g	0.17 ug/g
Ethylbenzene	0.05 ug/g	-	-	-	<0.05	19 ug/g	15 ug/g

Certificate of Analysis

Report Date: 16-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	5-2	DUP3	5-3	8-3	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Ind/Com, fine	Reg 153/04 -T3 Res/Park, fine
	Sample ID:	2537264-03	2537264-04	2537264-05	2537264-15		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Toluene	0.05 ug/g	-	-	-	<0.05	78 ug/g	6 ug/g
m,p-Xylenes	0.05 ug/g	-	-	-	<0.05	-	-
o-Xylene	0.05 ug/g	-	-	-	<0.05	-	-
Xylenes, total	0.05 ug/g	-	-	-	<0.05	30 ug/g	25 ug/g
Toluene-d8	Surrogate	-	-	-	102%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	-	<7	<7	65 ug/g	65 ug/g
F2 PHCs (C10-C16)	4 ug/g	<4	-	<4	<4	250 ug/g	150 ug/g
F3 PHCs (C16-C34)	8 ug/g	<8	-	11	<8	2500 ug/g	1300 ug/g
F4 PHCs (C34-C50)	6 ug/g	<6	-	<6	<6	6600 ug/g	5600 ug/g

Certificate of Analysis

Report Date: 16-Sep-2025

Client: SERTAS

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	8-4				Criteria:	
	Sample Date:	09-Sep-25 00:00				Reg 153/04 -T3 Ind/Com, fine	Reg 153/04 -T3 Res/Park, fine
	Sample ID:	2537264-16					
	Matrix:	Soil					
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	87.7	-	-	-	-	-
General Inorganics							
SAR	0.01 N/A	0.97	-	-	-	12 N/A	5 N/A
Conductivity	5 uS/cm	287	-	-	-	1.4 mS/cm	0.7 mS/cm
pH	0.05 pH Units	7.47	-	-	-	5.00 - 9.00 pH Units	5.00 - 9.00 pH Units
Metals							
Antimony	1.0 ug/g	<1.0	-	-	-	50 ug/g	7.5 ug/g
Arsenic	1.0 ug/g	11.2	-	-	-	18 ug/g	18 ug/g
Barium	1.0 ug/g	53.8	-	-	-	670 ug/g	390 ug/g
Beryllium	0.5 ug/g	0.6	-	-	-	10 ug/g	5 ug/g
Boron	5.0 ug/g	17.5	-	-	-	120 ug/g	120 ug/g
Boron, available	0.5 ug/g	1.5	-	-	-	2 ug/g	1.5 ug/g
Cadmium	0.5 ug/g	<0.5	-	-	-	1.9 ug/g	1.2 ug/g
Chromium	5.0 ug/g	22.0	-	-	-	160 ug/g	160 ug/g
Chromium (VI)	0.2 ug/g	<0.2	-	-	-	10 ug/g	10 ug/g
Cobalt	1.0 ug/g	10.1	-	-	-	100 ug/g	22 ug/g
Copper	5.0 ug/g	18.1	-	-	-	300 ug/g	180 ug/g
Lead	1.0 ug/g	10.0	-	-	-	120 ug/g	120 ug/g
Mercury	0.1 ug/g	<0.1	-	-	-	20 ug/g	1.8 ug/g
Molybdenum	1.0 ug/g	5.5	-	-	-	40 ug/g	6.9 ug/g
Nickel	5.0 ug/g	27.2	-	-	-	340 ug/g	130 ug/g
Selenium	1.0 ug/g	<1.0	-	-	-	5.5 ug/g	2.4 ug/g
Silver	0.3 ug/g	<0.3	-	-	-	50 ug/g	25 ug/g
Thallium	1.0 ug/g	<1.0	-	-	-	3.3 ug/g	1 ug/g
Uranium	1.0 ug/g	1.5	-	-	-	33 ug/g	23 ug/g

Certificate of Analysis

Report Date: 16-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	8-4				Criteria:	
	Sample Date:	09-Sep-25 00:00				Reg 153/04 -T3 Ind/Com, fine	Reg 153/04 -T3 Res/Park, fine
	Sample ID:	2537264-16					
	Matrix:	Soil					
	MDL/Units						
Metals							
Vanadium	10.0 ug/g	33.3	-	-	-	86 ug/g	86 ug/g
Zinc	20.0 ug/g	63.5	-	-	-	340 ug/g	340 ug/g
Volatiles							
Benzene	0.02 ug/g	<0.02	-	-	-	0.4 ug/g	0.17 ug/g
Ethylbenzene	0.05 ug/g	<0.05	-	-	-	19 ug/g	15 ug/g
Toluene	0.05 ug/g	<0.05	-	-	-	78 ug/g	6 ug/g
m,p-Xylenes	0.05 ug/g	<0.05	-	-	-	-	-
o-Xylene	0.05 ug/g	<0.05	-	-	-	-	-
Xylenes, total	0.05 ug/g	<0.05	-	-	-	30 ug/g	25 ug/g
Toluene-d8	Surrogate	103%	-	-	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	-	-	-	65 ug/g	65 ug/g
F2 PHCs (C10-C16)	4 ug/g	<4	-	-	-	250 ug/g	150 ug/g
F3 PHCs (C16-C34)	8 ug/g	<8	-	-	-	2500 ug/g	1300 ug/g
F4 PHCs (C34-C50)	6 ug/g	<6	-	-	-	6600 ug/g	5600 ug/g

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics								
SAR	ND	0.01	N/A					
Conductivity	ND	5	uS/cm					
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
Metals								
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron, available	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium (VI)	ND	0.2	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Mercury	ND	0.1	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
Volatiles								
Acetone	ND	0.50	ug/g					
Benzene	ND	0.02	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Bromodichloromethane	ND	0.05	ug/g					
Bromoform	ND	0.05	ug/g					
Bromomethane	ND	0.05	ug/g					
Carbon Tetrachloride	ND	0.05	ug/g					
Chlorobenzene	ND	0.05	ug/g					
Chloroform	ND	0.05	ug/g					
Dibromochloromethane	ND	0.05	ug/g					
Dichlorodifluoromethane	ND	0.05	ug/g					
1,2-Dichlorobenzene	ND	0.05	ug/g					
1,3-Dichlorobenzene	ND	0.05	ug/g					
1,4-Dichlorobenzene	ND	0.05	ug/g					
1,1-Dichloroethane	ND	0.05	ug/g					
1,2-Dichloroethane	ND	0.05	ug/g					
1,1-Dichloroethylene	ND	0.05	ug/g					
cis-1,2-Dichloroethylene	ND	0.05	ug/g					
trans-1,2-Dichloroethylene	ND	0.05	ug/g					
1,2-Dichloropropane	ND	0.05	ug/g					
cis-1,3-Dichloropropylene	ND	0.05	ug/g					
trans-1,3-Dichloropropylene	ND	0.05	ug/g					
1,3-Dichloropropene, total	ND	0.05	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g					
Hexane	ND	0.05	ug/g					
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g					
Methyl Isobutyl Ketone	ND	0.50	ug/g					
Methyl tert-butyl ether	ND	0.05	ug/g					
Methylene Chloride	ND	0.05	ug/g					
Styrene	ND	0.05	ug/g					
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g					
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g					
Tetrachloroethylene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
1,1,1-Trichloroethane	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,2-Trichloroethane	ND	0.05	ug/g					
Trichloroethylene	ND	0.05	ug/g					
Trichlorofluoromethane	ND	0.05	ug/g					
Vinyl chloride	ND	0.02	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: 4-Bromofluorobenzene	*8.58*		*%*	*107*	*50-140*			
Surrogate: Dibromofluoromethane	*9.24*		*%*	*115*	*50-140*			
Surrogate: Toluene-d8	*8.22*		*%*	*102*	*50-140*			
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: Toluene-d8	*8.22*		*%*	*102*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	0.80	0.01	N/A	0.76			5.1	30	
Conductivity	184	5	uS/cm	183			0.7	5	
pH	7.40	0.05	pH Units	7.41			0.1	10	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	84	4	ug/g	84			0.1	30	
F3 PHCs (C16-C34)	482	8	ug/g	498			3.3	30	
F4 PHCs (C34-C50)	339	6	ug/g	389			13.7	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	6.2	1.0	ug/g	6.0			3.8	30	
Barium	161	1.0	ug/g	133			19.3	30	
Beryllium	1.4	0.5	ug/g	1.2			15.8	30	
Boron, available	0.95	0.5	ug/g	0.98			3.4	35	
Boron	11.1	5.0	ug/g	9.8			12.3	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	40.4	5.0	ug/g	41.8			3.5	30	
Cobalt	10.1	1.0	ug/g	8.9			12.9	30	
Copper	21.2	5.0	ug/g	18.5			13.4	30	
Lead	12.7	1.0	ug/g	11.6			9.6	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	1.3	1.0	ug/g	1.4			9.3	30	
Nickel	30.0	5.0	ug/g	26.7			11.5	30	
Selenium	1.1	1.0	ug/g	1.2			13.1	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	1.4	1.0	ug/g	1.2			9.8	30	
Vanadium	54.3	10.0	ug/g	44.3			20.4	30	
Zinc	70.6	20.0	ug/g	63.9			10.0	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Physical Characteristics									
% Solids	75.3	0.1	% by Wt.	75.6			0.4	25	
Volatiles									
Acetone	ND	0.50	ug/g	ND			NC	50	
Benzene	ND	0.02	ug/g	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g	ND			NC	50	
Bromoform	ND	0.05	ug/g	ND			NC	50	
Bromomethane	ND	0.05	ug/g	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g	ND			NC	50	
Chloroform	ND	0.05	ug/g	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g	ND			NC	50	
Hexane	ND	0.05	ug/g	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Styrene	ND	0.05	ug/g	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	*7.92*		*%*		*105*	*50-140*			
Surrogate: Dibromofluoromethane	*8.37*		*%*		*111*	*50-140*			
Surrogate: Toluene-d8	*7.76*		*%*		*103*	*50-140*			
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: Toluene-d8	*7.76*		*%*		*103*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	46	7	ug/g	ND	81.5	0-200			
F2 PHCs (C10-C16)	168	4	ug/g	84	76.4	60-140			
F3 PHCs (C16-C34)	647	8	ug/g	498	63.2	60-140			
F4 PHCs (C34-C50)	157	6	ug/g	26	77.2	60-140			
Metals									
Antimony	34.2	1.0	ug/g	ND	68.4	70-130			QM-07
Arsenic	53.5	1.0	ug/g	2.4	102	70-130			
Barium	106	1.0	ug/g	53.1	106	70-130			
Beryllium	50.9	0.5	ug/g	0.5	101	70-130			
Boron, available	5.00	0.5	ug/g	0.98	80.3	70-122			
Boron	57.2	5.0	ug/g	ND	107	70-130			
Cadmium	51.2	0.5	ug/g	ND	102	70-130			
Chromium (VI)	3.7	0.2	ug/g	ND	71.5	70-130			
Chromium	71.5	5.0	ug/g	16.7	110	70-130			
Cobalt	52.5	1.0	ug/g	3.6	97.9	70-130			
Copper	58.0	5.0	ug/g	7.4	101	70-130			
Lead	54.1	1.0	ug/g	4.6	98.9	70-130			
Mercury	1.64	0.1	ug/g	ND	109	70-130			
Molybdenum	49.7	1.0	ug/g	ND	98.2	70-130			
Nickel	60.8	5.0	ug/g	10.7	100	70-130			
Selenium	52.4	1.0	ug/g	ND	104	70-130			
Silver	50.2	0.3	ug/g	ND	100	70-130			
Thallium	48.2	1.0	ug/g	ND	95.8	70-130			
Uranium	51.1	1.0	ug/g	ND	101	70-130			
Vanadium	70.0	10.0	ug/g	17.7	105	70-130			
Zinc	76.3	20.0	ug/g	25.5	102	70-130			
Volatiles									
Acetone	138	0.50	ug/g	ND	139	50-140			
Benzene	46.2	0.02	ug/g	ND	115	50-140			
Bromodichloromethane	44.5	0.05	ug/g	ND	111	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Bromoform	39.3	0.05	ug/g	ND	98.4	50-140			
Bromomethane	55.9	0.05	ug/g	ND	138	50-140			
Carbon Tetrachloride	46.2	0.05	ug/g	ND	115	50-140			
Chlorobenzene	39.9	0.05	ug/g	ND	99.4	50-140			
Chloroform	55.2	0.05	ug/g	ND	138	50-140			
Dibromochloromethane	42.9	0.05	ug/g	ND	107	50-140			
Dichlorodifluoromethane	55.8	0.05	ug/g	ND	138	50-140			
1,2-Dichlorobenzene	36.0	0.05	ug/g	ND	89.7	50-140			
1,3-Dichlorobenzene	38.8	0.05	ug/g	ND	97.1	50-140			
1,4-Dichlorobenzene	37.8	0.05	ug/g	ND	94.2	50-140			
1,1-Dichloroethane	54.4	0.05	ug/g	ND	136	50-140			
1,2-Dichloroethane	50.6	0.05	ug/g	ND	127	50-140			
1,1-Dichloroethylene	47.0	0.05	ug/g	ND	117	50-140			
cis-1,2-Dichloroethylene	51.6	0.05	ug/g	ND	129	50-140			
trans-1,2-Dichloroethylene	52.0	0.05	ug/g	ND	130	50-140			
1,2-Dichloropropane	44.4	0.05	ug/g	ND	111	50-140			
cis-1,3-Dichloropropylene	42.5	0.05	ug/g	ND	106	50-140			
trans-1,3-Dichloropropylene	43.5	0.05	ug/g	ND	109	50-140			
Ethylbenzene	40.5	0.05	ug/g	ND	101	50-140			
Ethylene dibromide (dibromoethane, 1,2-)	46.3	0.05	ug/g	ND	116	50-140			
Hexane	40.3	0.05	ug/g	ND	101	50-140			
Methyl Ethyl Ketone (2-Butanone)	119	0.50	ug/g	ND	119	50-140			
Methyl Isobutyl Ketone	100	0.50	ug/g	ND	100	50-140			
Methyl tert-butyl ether	92.7	0.05	ug/g	ND	91.9	50-140			
Methylene Chloride	50.8	0.05	ug/g	ND	127	60-130			
Styrene	46.6	0.05	ug/g	ND	117	50-140			
1,1,1,2-Tetrachloroethane	37.3	0.05	ug/g	ND	93.5	50-140			
1,1,2,2-Tetrachloroethane	28.6	0.05	ug/g	ND	71.5	50-140			
Tetrachloroethylene	40.8	0.05	ug/g	ND	102	50-140			
Toluene	40.6	0.05	ug/g	ND	101	50-140			
1,1,1-Trichloroethane	47.3	0.05	ug/g	ND	118	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,2-Trichloroethane	40.5	0.05	ug/g	ND	101	50-140			
Trichloroethylene	47.0	0.05	ug/g	ND	118	50-140			
Trichlorofluoromethane	43.3	0.05	ug/g	ND	108	50-140			
Vinyl chloride	50.0	0.02	ug/g	ND	123	50-140			
m,p-Xylenes	84.1	0.05	ug/g	ND	105	50-140			
o-Xylene	41.6	0.05	ug/g	ND	104	50-140			
Surrogate: 4-Bromofluorobenzene	*6.29*		*%*		*97.6*	*50-140*			
Surrogate: Dibromofluoromethane	*8.35*		*%*		*130*	*50-140*			
Surrogate: Toluene-d8	*6.39*		*%*		*99.1*	*50-140*			
Benzene	46.2	0.02	ug/g	ND	115	50-140			
Ethylbenzene	40.5	0.05	ug/g	ND	101	50-140			
Toluene	40.6	0.05	ug/g	ND	101	50-140			
m,p-Xylenes	84.1	0.05	ug/g	ND	105	50-140			
o-Xylene	41.6	0.05	ug/g	ND	104	50-140			
Surrogate: Toluene-d8	*6.39*		*%*		*99.1*	*50-140*			

Qualifier Notes:

QC Qualifiers:

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on other acceptable QC.

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

PARACEL | TI RI RI

Paracel ID: 2537264

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2537264	

Client Name: SERTAS Group
Contact Name: Paige Sarafin
Address: 4510 Rhodes Drive, Unit 210, Windsor, ON
Telephone: 519 981 2724

Project Ref: 2501E038
Quote #: Erwin
PO #:
E-mail: paige.sarafin@sertas.ca; clay.sereres@sertas.ca

Page 1 of 2

Turnaround Time
☐ 1 day ☐ 3 day
☐ 2 day ☒ Regular
Date Required:

☒ REG 153/04 ☐ REG 406/19

Other Regulation
☐ Table 1 ☐ Agri/Other ☒ Med/Fine
☐ Table 2 ☐ Res/Park ☐ Coarse
☒ Table 3 ☐ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☐ No
☐ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU - Storm
Mun:
☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full Metals	EC, SAR, pH	PAHs	PHCs	BTEXs	VOCs	PCBs	OCs			HOLD
1	5-1A	S		2	-	Sept. 9 2025	-											X
2	5-1B	S		2	-	Sept. 9 2025	-											X
3	5-2	S		2	-	Sept. 9 2025	-	X	X		X		X					
4	DUP3	S		2	-	Sept. 9 2025	-						X					
5	5-3	S		2	-	Sept. 9 2025	-	X	X		X		X					
6	5-4	S		2	-	Sept. 9 2025	-											X
7	5-5	S		2	-	Sept. 9 2025	-											X
8	5-6	S		2	-	Sept. 9 2025	-											X
9	5-7	S		2	-	Sept. 9 2025	-											X
10	5-8	S		2	-	Sept. 9 2025	-											X

Required Analysis

Comments:

Method of Delivery: Dale In

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Relinquished By (Sign):	Received at Depot: Pat	Received at Lab: JW	Verified By: K. JAKOBSEN
Relinquished By (Print): Paige Sarafin	Date/Time: Sept 9/25 3:37	Date/Time: 9/11/25 15:53	Date/Time: Sept. 10/25 13:40
Date/Time: Sept 9 2025.	Temperature: 22.1 °C	Temperature: 9.2°C	pH Verified: ☐ By:

PARACEL | T R R

Paracel ID: 2537264

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2537264	

Client Name: SERTAS Group
Contact Name: Paige Sarafin
Address: 4510 Rhodes Drive, Unit 210, Windsor, ON
Telephone: 519 981 2724

Project Ref: 2501E038
Quote #: ONWIN
PO #:
E-mail: paige.sarafin@sertas.ca; clay.sereres@sertas.ca

Turnaround Time
☐ 1 day ☐ 3 day
☐ 2 day ☒ Regular
Date Required:

☒ REG 153/04 ☐ REG 406/19

Other Regulation	
☐ REG 558	☐ PWQO
☐ CCME	☐ MISA
☐ SU - Sani	☐ SU - Storm
Mun:	
☐ Other:	

☐ Table 1 ☐ Agri/Other ☒ Med/Fine
☐ Table 2 ☐ Res/Park ☐ Coarse
☒ Table 3 ☐ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☒ No

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full Metals	EC, SAR, pH	PAHs	PHCs	BTEXs	VOCs	PCBs	OCs			HOLD
1	4-2	S		2	-	Sept. 9 2025	—											X
2	4-3	S		2	-	Sept. 9 2025	—											X
3	8-1	S		2	-	Sept. 9 2025	—											X
4	8-2	S		2	-	Sept. 9 2025	—											X
5	8-3	S		2	-	Sept. 9 2025	—	X	X		X	X						
6	8-4	S		2	-	Sept. 9 2025	—	X	X		X	X						
7	8-5	S		2	-	Sept. 9 2025	—											X
8	8-6	S		2	-	Sept. 9 2025	—											X
9	8-7	S		2	-	Sept. 9 2025	—											X
10	8-8	S		2	-	Sept. 9 2025	—											X

Comments:

Method of Delivery: Walk in

Unless otherwise negotiated by the parties, by signing Paracel's Chain of Custody form, you are agreeing to Paracel Laboratories Terms and Conditions and are subject to the terms and conditions thereof. Available at www.paracellabs.com

Relinquished By (Sign):	Received at Depot: Pat	Received at Lab: Jw	Verified By: K. Jakobsen
Relinquished By (Print): Paige Sarafin	Date/Time: Sept 9/25 3:37	Date/Time: 9/11/25 9:58	Date/Time: Sept. 10/25 13:40
Date/Time: Sept 9 2025	Temperature: 22.1 °C	Temperature: 9.2°C	pH Verified: ☐ By:

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Certificate of Analysis

SERTAS
4510 Rhodes Drive, Unit 210
Windsor, ON N8W 5K5
Attn: Paige Sarafin

Client PO:
Project: 2501E038
Custody:

Report Date: 23-Sep-2025
Order Date: 9-Sep-2025

Revised Report

Order #: 2537264

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2537264-01	5-1A
2537264-03	5-2
2537264-04	DUP3
2537264-05	5-3
2537264-13	8-1
2537264-15	8-3
2537264-16	8-4

Approved By:



Alex Enfield, MSc
Lab Manager

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	19-Sep-25	19-Sep-25
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	17-Sep-25	18-Sep-25
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	19-Sep-25	19-Sep-25
Conductivity	MOE E3138 - probe @25 °C, water ext	19-Sep-25	19-Sep-25
Cyanide, free	MOE E3015 - Auto Colour, water extraction	19-Sep-25	19-Sep-25
Mercury by CVAA	EPA 7471B - CVAA, digestion	18-Sep-25	19-Sep-25
PHC F1	CWS Tier 1 - P&T GC-FID	17-Sep-25	18-Sep-25
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	19-Sep-25	23-Sep-25
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	19-Sep-25	19-Sep-25
REG 153: pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	22-Sep-25	22-Sep-25
REG 153: PHC F4(g)	CWS Tier 1 - Extraction Gravimetric	22-Sep-25	23-Sep-25
REG 153: VOCs by P&T GC-MS	EPA 8260 - P&T GC-MS	17-Sep-25	18-Sep-25
SAR	Calculated	19-Sep-25	19-Sep-25
Solids, %	CWS Tier 1 - Gravimetric	19-Sep-25	20-Sep-25

Summary of Criteria Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in red

Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances.

Sample	Analyte	MDL / Units	Result	Reg 153/04 -T3 Res/Park, fine	Reg 153/04 -T3 Ind/Com, fine
5-1A	F4 PHCs (C34-C50)	6 ug/g	6390 [1]	5600 ug/g	6600 ug/g
5-1A	F4G-sg PHCs (gravimetric)	50 ug/g	13300	5600 ug/g	6600 ug/g
8-1	F3 PHCs (C16-C34)	8 ug/g	1590	1300 ug/g	2500 ug/g
8-1	F4 PHCs (C34-C50)	6 ug/g	8160 [1]	5600 ug/g	6600 ug/g
8-1	F4G-sg PHCs (gravimetric)	50 ug/g	12600	5600 ug/g	6600 ug/g
8-3	Boron, available	0.5 ug/g	3.2	1.5 ug/g	2 ug/g

PARACEL LABORATORIES LTD.

Order #: 2537264

Certificate of Analysis

Report Date: 23-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	5-1A	5-2	DUP3	5-3	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Res/Park, fine	Reg 153/04 -T3 Ind/Com, fine
	Sample ID:	2537264-01	2537264-03	2537264-04	2537264-05		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	96.0	83.5	82.6	88.2	-	-
General Inorganics							
SAR	0.01 N/A	0.19	1.12	-	0.77	5 N/A	12 N/A
Conductivity	5 uS/cm	211	224	-	172	0.7 mS/cm	1.4 mS/cm
Cyanide, free	0.03 ug/g	<0.03	-	-	-	0.051 ug/g	0.051 ug/g
pH	0.05 pH Units	7.69	6.89	-	7.45	5.00 - 9.00 pH Units	5.00 - 9.00 pH Units
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	-	<1.0	7.5 ug/g	50 ug/g
Arsenic	1.0 ug/g	6.6	11.3	-	9.2	18 ug/g	18 ug/g
Barium	1.0 ug/g	189	87.4	-	80.4	390 ug/g	670 ug/g
Beryllium	0.5 ug/g	<0.5	1.0	-	0.8	5 ug/g	10 ug/g
Boron, available	0.5 ug/g	0.6	1.5	-	0.9	1.5 ug/g	2 ug/g
Boron	5.0 ug/g	5.9	12.2	-	18.6	120 ug/g	120 ug/g
Cadmium	0.5 ug/g	<0.5	<0.5	-	<0.5	1.2 ug/g	1.9 ug/g
Chromium	5.0 ug/g	12.6	26.2	-	23.1	160 ug/g	160 ug/g
Chromium (VI)	0.2 ug/g	<0.2	<0.2	-	<0.2	10 ug/g	10 ug/g
Cobalt	1.0 ug/g	9.3	11.2	-	11.8	22 ug/g	100 ug/g
Copper	5.0 ug/g	17.5	19.8	-	19.5	180 ug/g	300 ug/g
Lead	1.0 ug/g	22.7	12.9	-	12.6	120 ug/g	120 ug/g
Mercury	0.1 ug/g	<0.1	<0.1	-	<0.1	1.8 ug/g	20 ug/g
Molybdenum	1.0 ug/g	2.1	2.3	-	3.5	6.9 ug/g	40 ug/g
Nickel	5.0 ug/g	13.4	29.5	-	30.6	130 ug/g	340 ug/g
Selenium	1.0 ug/g	<1.0	<1.0	-	<1.0	2.4 ug/g	5.5 ug/g
Silver	0.3 ug/g	<0.3	<0.3	-	<0.3	25 ug/g	50 ug/g
Thallium	1.0 ug/g	<1.0	<1.0	-	<1.0	1 ug/g	3.3 ug/g

Certificate of Analysis

Report Date: 23-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	5-1A	5-2	DUP3	5-3	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Res/Park, fine	Reg 153/04 -T3 Ind/Com, fine
	Sample ID:	2537264-01	2537264-03	2537264-04	2537264-05		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Uranium	1.0 ug/g	1.0	<1.0	-	1.1	23 ug/g	33 ug/g
Vanadium	10.0 ug/g	33.8	43.5	-	35.6	86 ug/g	86 ug/g
Zinc	20.0 ug/g	46.1	58.6	-	57.3	340 ug/g	340 ug/g
Volatiles							
Acetone	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	28 ug/g	28 ug/g
Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	0.17 ug/g	0.4 ug/g
Bromodichloromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	13 ug/g	18 ug/g
Bromoform	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.26 ug/g	1.7 ug/g
Bromomethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05 ug/g	0.05 ug/g
Carbon Tetrachloride	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.12 ug/g	1.5 ug/g
Chlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	2.7 ug/g	2.7 ug/g
Chloroform	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.18 ug/g	0.18 ug/g
Dibromochloromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	9.4 ug/g	13 ug/g
Dichlorodifluoromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	25 ug/g	25 ug/g
1,2-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	4.3 ug/g	8.5 ug/g
1,3-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	6 ug/g	12 ug/g
1,4-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.097 ug/g	0.84 ug/g
1,1-Dichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	11 ug/g	21 ug/g
1,2-Dichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05 ug/g	0.05 ug/g
1,1-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05 ug/g	0.48 ug/g
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	30 ug/g	37 ug/g
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.75 ug/g	9.3 ug/g
1,2-Dichloropropane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.085 ug/g	0.68 ug/g
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-

	Client ID:	5-1A	5-2	DUP3	5-3	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Res/Park, fine	Reg 153/04 -T3 Ind/Com, fine
	Sample ID:	2537264-01	2537264-03	2537264-04	2537264-05		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
1,3-Dichloropropene, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.083 ug/g	0.21 ug/g
Ethylene dibromide (dibromoethane,	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05 ug/g	0.05 ug/g
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	15 ug/g	19 ug/g
Hexane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	34 ug/g	88 ug/g
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	44 ug/g	88 ug/g
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	4.3 ug/g	210 ug/g
Methyl tert-butyl ether	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	1.4 ug/g	3.2 ug/g
Methylene Chloride	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.96 ug/g	2 ug/g
Styrene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	2.2 ug/g	43 ug/g
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05 ug/g	0.11 ug/g
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05 ug/g	0.094 ug/g
Tetrachloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	2.3 ug/g	21 ug/g
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	6 ug/g	78 ug/g
1,1,1-Trichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	3.4 ug/g	12 ug/g
1,1,2-Trichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05 ug/g	0.11 ug/g
Trichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.52 ug/g	0.61 ug/g
Trichlorofluoromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	5.8 ug/g	5.8 ug/g
Vinyl chloride	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	0.022 ug/g	0.25 ug/g
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	25 ug/g	30 ug/g
4-Bromofluorobenzene	Surrogate	85.9%	106%	106%	107%	-	-
Toluene-d8	Surrogate	90.5%	103%	102%	103%	-	-
Dibromofluoromethane	Surrogate	53.4%	110%	111%	110%	-	-
Hydrocarbons							

Certificate of Analysis

Report Date: 23-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	5-1A	5-2	DUP3	5-3	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Res/Park, fine	Reg 153/04 -T3 Ind/Com, fine
	Sample ID:	2537264-01	2537264-03	2537264-04	2537264-05		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	-	<7	65 ug/g	65 ug/g
F2 PHCs (C10-C16)	4 ug/g	<40	<4	-	<4	150 ug/g	250 ug/g
F3 PHCs (C16-C34)	8 ug/g	972	<8	-	11	1300 ug/g	2500 ug/g
F4 PHCs (C34-C50)	6 ug/g	6390 [1]	<6	-	<6	5600 ug/g	6600 ug/g
F4G-sg PHCs (gravimetric)	50 ug/g	13300	-	-	-	5600 ug/g	6600 ug/g

PARACEL LABORATORIES LTD.

Order #: 2537264

Certificate of Analysis

Report Date: 23-Sep-2025

Client: SERTAS

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	8-1	8-3	8-4		Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00		Reg 153/04 -T3 Res/Park, fine	Reg 153/04 -T3 Ind/Com, fine
	Sample ID:	2537264-13	2537264-15	2537264-16			
	Matrix:	Soil	Soil	Soil			
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	98.4	82.1	87.7	-	-	-
General Inorganics							
SAR	0.01 N/A	0.12	0.87	0.97	-	5 N/A	12 N/A
Conductivity	5 uS/cm	174	235	287	-	0.7 mS/cm	1.4 mS/cm
Cyanide, free	0.03 ug/g	<0.03	-	-	-	0.051 ug/g	0.051 ug/g
pH	0.05 pH Units	7.78	7.38	7.47	-	5.00 - 9.00 pH Units	5.00 - 9.00 pH Units
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	<1.0	-	7.5 ug/g	50 ug/g
Arsenic	1.0 ug/g	3.4	9.1	11.2	-	18 ug/g	18 ug/g
Barium	1.0 ug/g	221	89.4	53.8	-	390 ug/g	670 ug/g
Beryllium	0.5 ug/g	<0.5	0.7	0.6	-	5 ug/g	10 ug/g
Boron, available	0.5 ug/g	<0.5	3.2	1.5	-	1.5 ug/g	2 ug/g
Boron	5.0 ug/g	<5.0	15.3	17.5	-	120 ug/g	120 ug/g
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	-	1.2 ug/g	1.9 ug/g
Chromium	5.0 ug/g	9.6	20.9	22.0	-	160 ug/g	160 ug/g
Chromium (VI)	0.2 ug/g	<0.2	<0.2	<0.2	-	10 ug/g	10 ug/g
Cobalt	1.0 ug/g	2.7	8.0	10.1	-	22 ug/g	100 ug/g
Copper	5.0 ug/g	12.3	20.4	18.1	-	180 ug/g	300 ug/g
Lead	1.0 ug/g	25.0	19.4	10.0	-	120 ug/g	120 ug/g
Mercury	0.1 ug/g	<0.1	<0.1	<0.1	-	1.8 ug/g	20 ug/g
Molybdenum	1.0 ug/g	1.6	3.2	5.5	-	6.9 ug/g	40 ug/g
Nickel	5.0 ug/g	10.7	23.6	27.2	-	130 ug/g	340 ug/g
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	-	2.4 ug/g	5.5 ug/g
Silver	0.3 ug/g	<0.3	<0.3	<0.3	-	25 ug/g	50 ug/g
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	-	1 ug/g	3.3 ug/g

Certificate of Analysis

Report Date: 23-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	8-1	8-3	8-4		Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00		Reg 153/04 -T3 Res/Park, fine	Reg 153/04 -T3 Ind/Com, fine
	Sample ID:	2537264-13	2537264-15	2537264-16			
	Matrix:	Soil	Soil	Soil			
	MDL/Units						
Metals							
Uranium	1.0 ug/g	<1.0	1.3	1.5	-	23 ug/g	33 ug/g
Vanadium	10.0 ug/g	24.1	29.4	33.3	-	86 ug/g	86 ug/g
Zinc	20.0 ug/g	50.9	108	63.5	-	340 ug/g	340 ug/g
Volatiles							
Benzene	0.02 ug/g	<0.02	<0.02	<0.02	-	0.17 ug/g	0.4 ug/g
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	-	15 ug/g	19 ug/g
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	-	6 ug/g	78 ug/g
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	-	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	-	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	-	25 ug/g	30 ug/g
Toluene-d8	Surrogate	89.7%	102%	103%	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	-	65 ug/g	65 ug/g
F2 PHCs (C10-C16)	4 ug/g	<40	<4	<4	-	150 ug/g	250 ug/g
F3 PHCs (C16-C34)	8 ug/g	1590	<8	<8	-	1300 ug/g	2500 ug/g
F4 PHCs (C34-C50)	6 ug/g	8160 [1]	<6	<6	-	5600 ug/g	6600 ug/g
F4G-sg PHCs (gravimetric)	50 ug/g	12600	-	-	-	5600 ug/g	6600 ug/g

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics								
Conductivity	ND	5	uS/cm					
Cyanide, free	ND	0.03	ug/g					
SAR	ND	0.01	N/A					
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
F4G-sg PHCs (gravimetric)	ND	50	ug/g					
Metals								
Boron, available	ND	0.5	ug/g					
Chromium (VI)	ND	0.2	ug/g					
Mercury	ND	0.1	ug/g					
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
Volatiles								

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: Toluene-d8	*8.22*		*%*	*102*	*50-140*			
Acetone	ND	0.50	ug/g					
Benzene	ND	0.02	ug/g					
Bromodichloromethane	ND	0.05	ug/g					
Bromoform	ND	0.05	ug/g					
Bromomethane	ND	0.05	ug/g					
Carbon Tetrachloride	ND	0.05	ug/g					
Chlorobenzene	ND	0.05	ug/g					
Chloroform	ND	0.05	ug/g					
Dibromochloromethane	ND	0.05	ug/g					
Dichlorodifluoromethane	ND	0.05	ug/g					
1,2-Dichlorobenzene	ND	0.05	ug/g					
1,3-Dichlorobenzene	ND	0.05	ug/g					
1,4-Dichlorobenzene	ND	0.05	ug/g					
1,1-Dichloroethane	ND	0.05	ug/g					
1,2-Dichloroethane	ND	0.05	ug/g					
1,1-Dichloroethylene	ND	0.05	ug/g					
cis-1,2-Dichloroethylene	ND	0.05	ug/g					
trans-1,2-Dichloroethylene	ND	0.05	ug/g					
1,2-Dichloropropane	ND	0.05	ug/g					
cis-1,3-Dichloropropylene	ND	0.05	ug/g					
trans-1,3-Dichloropropylene	ND	0.05	ug/g					
1,3-Dichloropropene, total	ND	0.05	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g					
Hexane	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g					
Methyl Isobutyl Ketone	ND	0.50	ug/g					
Methyl tert-butyl ether	ND	0.05	ug/g					
Methylene Chloride	ND	0.05	ug/g					
Styrene	ND	0.05	ug/g					
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g					
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g					
Tetrachloroethylene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
1,1,1-Trichloroethane	ND	0.05	ug/g					
1,1,2-Trichloroethane	ND	0.05	ug/g					
Trichloroethylene	ND	0.05	ug/g					
Trichlorofluoromethane	ND	0.05	ug/g					
Vinyl chloride	ND	0.02	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: 4-Bromofluorobenzene	*8.58*		*%*	*107*	*50-140*			
Surrogate: Dibromofluoromethane	*9.24*		*%*	*115*	*50-140*			
Surrogate: Toluene-d8	*8.22*		*%*	*102*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	0.80	0.01	N/A	0.76			5.1	30	
Conductivity	184	5	uS/cm	183			0.7	5	
Cyanide, free	ND	0.03	ug/g	ND			NC	35	
pH	7.40	0.05	pH Units	7.41			0.1	10	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	84	4	ug/g	84			0.1	30	
F3 PHCs (C16-C34)	482	8	ug/g	498			3.3	30	
F4 PHCs (C34-C50)	339	6	ug/g	389			13.7	30	
F4G-sg PHCs (gravimetric)	13200	50	ug/g	13300			1.1	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	6.2	1.0	ug/g	6.0			3.8	30	
Barium	161	1.0	ug/g	133			19.3	30	
Beryllium	1.4	0.5	ug/g	1.2			15.8	30	
Boron, available	0.95	0.5	ug/g	0.98			3.4	35	
Boron	11.1	5.0	ug/g	9.8			12.3	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	40.4	5.0	ug/g	41.8			3.5	30	
Cobalt	10.1	1.0	ug/g	8.9			12.9	30	
Copper	21.2	5.0	ug/g	18.5			13.4	30	
Lead	12.7	1.0	ug/g	11.6			9.6	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	1.3	1.0	ug/g	1.4			9.3	30	
Nickel	30.0	5.0	ug/g	26.7			11.5	30	
Selenium	1.1	1.0	ug/g	1.2			13.1	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	1.4	1.0	ug/g	1.2			9.8	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Vanadium	54.3	10.0	ug/g	44.3			20.4	30	
Zinc	70.6	20.0	ug/g	63.9			10.0	30	
Physical Characteristics									
% Solids	75.3	0.1	% by Wt.	75.6			0.4	25	
Volatiles									
Acetone	ND	0.50	ug/g	ND			NC	50	
Benzene	ND	0.02	ug/g	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g	ND			NC	50	
Bromoform	ND	0.05	ug/g	ND			NC	50	
Bromomethane	ND	0.05	ug/g	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g	ND			NC	50	
Chloroform	ND	0.05	ug/g	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g	ND			NC	50	
Hexane	ND	0.05	ug/g	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Methyl tert-butyl ether	ND	0.05	ug/g	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g	ND			NC	50	
Styrene	ND	0.05	ug/g	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	*7.92*		*%*		*105*	*50-140*			
Surrogate: Dibromofluoromethane	*8.37*		*%*		*111*	*50-140*			
Surrogate: Toluene-d8	*7.76*		*%*		*103*	*50-140*			
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: Toluene-d8	*7.76*		*%*		*103*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	0.365	0.03	ug/g	ND	88.3	70-130			
Hydrocarbons									
F1 PHCs (C6-C10)	46	7	ug/g	ND	81.5	0-200			
F2 PHCs (C10-C16)	168	4	ug/g	84	76.4	60-140			
F3 PHCs (C16-C34)	647	8	ug/g	498	63.2	60-140			
F4 PHCs (C34-C50)	157	6	ug/g	26	77.2	60-140			
F4G-sg PHCs (gravimetric)	1120	50	ug/g	ND	112	80-120			
Metals									
Antimony	34.2	1.0	ug/g	ND	68.4	70-130			QM-07
Arsenic	53.5	1.0	ug/g	2.4	102	70-130			
Barium	106	1.0	ug/g	53.1	106	70-130			
Beryllium	50.9	0.5	ug/g	0.5	101	70-130			
Boron, available	5.00	0.5	ug/g	0.98	80.3	70-122			
Boron	57.2	5.0	ug/g	ND	107	70-130			
Cadmium	51.2	0.5	ug/g	ND	102	70-130			
Chromium (VI)	3.7	0.2	ug/g	ND	71.5	70-130			
Chromium	71.5	5.0	ug/g	16.7	110	70-130			
Cobalt	52.5	1.0	ug/g	3.6	97.9	70-130			
Copper	58.0	5.0	ug/g	7.4	101	70-130			
Lead	54.1	1.0	ug/g	4.6	98.9	70-130			
Mercury	1.64	0.1	ug/g	ND	109	70-130			
Molybdenum	49.7	1.0	ug/g	ND	98.2	70-130			
Nickel	60.8	5.0	ug/g	10.7	100	70-130			
Selenium	52.4	1.0	ug/g	ND	104	70-130			
Silver	50.2	0.3	ug/g	ND	100	70-130			
Thallium	48.2	1.0	ug/g	ND	95.8	70-130			
Uranium	51.1	1.0	ug/g	ND	101	70-130			
Vanadium	70.0	10.0	ug/g	17.7	105	70-130			
Zinc	76.3	20.0	ug/g	25.5	102	70-130			
Volatiles									

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Acetone	138	0.50	ug/g	ND	139	50-140			
Benzene	46.2	0.02	ug/g	ND	115	50-140			
Bromodichloromethane	44.5	0.05	ug/g	ND	111	50-140			
Bromoform	39.3	0.05	ug/g	ND	98.4	50-140			
Bromomethane	2.63	0.05	ug/g	ND	90.1	50-140			
Carbon Tetrachloride	46.2	0.05	ug/g	ND	115	50-140			
Chlorobenzene	39.9	0.05	ug/g	ND	99.4	50-140			
Chloroform	55.2	0.05	ug/g	ND	138	50-140			
Dibromochloromethane	42.9	0.05	ug/g	ND	107	50-140			
Dichlorodifluoromethane	3.34	0.05	ug/g	ND	115	50-140			
1,2-Dichlorobenzene	36.0	0.05	ug/g	ND	89.7	50-140			
1,3-Dichlorobenzene	38.8	0.05	ug/g	ND	97.1	50-140			
1,4-Dichlorobenzene	37.8	0.05	ug/g	ND	94.2	50-140			
1,1-Dichloroethane	54.4	0.05	ug/g	ND	136	50-140			
1,2-Dichloroethane	50.6	0.05	ug/g	ND	127	50-140			
1,1-Dichloroethylene	47.0	0.05	ug/g	ND	117	50-140			
cis-1,2-Dichloroethylene	51.6	0.05	ug/g	ND	129	50-140			
trans-1,2-Dichloroethylene	52.0	0.05	ug/g	ND	130	50-140			
1,2-Dichloropropane	44.4	0.05	ug/g	ND	111	50-140			
cis-1,3-Dichloropropylene	42.5	0.05	ug/g	ND	106	50-140			
trans-1,3-Dichloropropylene	43.5	0.05	ug/g	ND	109	50-140			
Ethylbenzene	40.5	0.05	ug/g	ND	101	50-140			
Ethylene dibromide (dibromoethane, 1,2-)	46.3	0.05	ug/g	ND	116	50-140			
Hexane	40.3	0.05	ug/g	ND	101	50-140			
Methyl Ethyl Ketone (2-Butanone)	119	0.50	ug/g	ND	119	50-140			
Methyl Isobutyl Ketone	100	0.50	ug/g	ND	100	50-140			
Methyl tert-butyl ether	92.7	0.05	ug/g	ND	91.9	50-140			
Methylene Chloride	50.8	0.05	ug/g	ND	127	60-130			
Styrene	46.6	0.05	ug/g	ND	117	50-140			
1,1,1,2-Tetrachloroethane	37.3	0.05	ug/g	ND	93.5	50-140			
1,1,2,2-Tetrachloroethane	28.6	0.05	ug/g	ND	71.5	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Tetrachloroethylene	40.8	0.05	ug/g	ND	102	50-140			
Toluene	40.6	0.05	ug/g	ND	101	50-140			
1,1,1-Trichloroethane	47.3	0.05	ug/g	ND	118	50-140			
1,1,2-Trichloroethane	40.5	0.05	ug/g	ND	101	50-140			
Trichloroethylene	47.0	0.05	ug/g	ND	118	50-140			
Trichlorofluoromethane	43.3	0.05	ug/g	ND	108	50-140			
Vinyl chloride	3.45	0.02	ug/g	ND	118	50-140			
m,p-Xylenes	84.1	0.05	ug/g	ND	105	50-140			
o-Xylene	41.6	0.05	ug/g	ND	104	50-140			
Surrogate: 4-Bromofluorobenzene	*6.29*		*%*		*97.6*	*50-140*			
Surrogate: Dibromofluoromethane	*8.35*		*%*		*130*	*50-140*			
Surrogate: Toluene-d8	*6.39*		*%*		*99.1*	*50-140*			
Benzene	46.2	0.02	ug/g	ND	115	50-140			
Ethylbenzene	40.5	0.05	ug/g	ND	101	50-140			
Toluene	40.6	0.05	ug/g	ND	101	50-140			
m,p-Xylenes	84.1	0.05	ug/g	ND	105	50-140			
o-Xylene	41.6	0.05	ug/g	ND	104	50-140			
Surrogate: Toluene-d8	*6.39*		*%*		*99.1*	*50-140*			

Qualifier Notes:

Sample Qualifiers :

1: GC-FID signal did not return to baseline by C50

Applies to Samples: 5-1A, 8-1

QC Qualifiers:

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on other acceptable QC.

Sample Data Revisions:

None

Work Order Revisions / Comments:

Revision - 1: This report has been revised to contain additional data to samples 1 and 13.

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

PARACEL | TI RI RI

Paracel ID: 2537264

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2537264	

Client Name: SERTAS Group
Contact Name: Paige Sarafin
Address: 4510 Rhodes Drive, Unit 210, Windsor, ON
Telephone: 519 981 2724

Project Ref: 2501E038
Quote #: Erwin
PO #:
E-mail: paige.sarafin@sertas.ca; clay.sereres@sertas.ca

Page 1 of 2

Turnaround Time
☐ 1 day ☐ 3 day
☐ 2 day ☒ Regular
Date Required:

☒ REG 153/04 ☐ REG 406/19

Other Regulation
☐ Table 1 ☐ Agri/Other ☒ Med/Fine
☐ Table 2 ☐ Res/Park ☐ Coarse
☒ Table 3 ☐ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☐ No
☐ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU - Storm
Mun:
☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full Metals	EC, SAR, pH	PAHs	PHCs	BTEXs	VOCs	PCBs	OCs			HOLD
1	5-1A	S		2	-	Sept. 9 2025	-											X
2	5-1B	S		2	-	Sept. 9 2025	-											X
3	5-2	S		2	-	Sept. 9 2025	-	X	X		X		X					
4	DUP3	S		2	-	Sept. 9 2025	-						X					
5	5-3	S		2	-	Sept. 9 2025	-	X	X		X		X					
6	5-4	S		2	-	Sept. 9 2025	-											X
7	5-5	S		2	-	Sept. 9 2025	-											X
8	5-6	S		2	-	Sept. 9 2025	-											X
9	5-7	S		2	-	Sept. 9 2025	-											X
10	5-8	S		2	-	Sept. 9 2025	-											X

Required Analysis

Comments:

Method of Delivery: Dale In

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Relinquished By (Sign):	Received at Depot: Pat	Received at Lab: JW	Verified By: K. JAKOBSEN
Relinquished By (Print): Paige Sarafin	Date/Time: Sept 9/25 3:37	Date/Time: 9/11/25 15:53	Date/Time: Sept. 10/25 13:40
Date/Time: Sept 9 2025.	Temperature: 22.1 °C	Temperature: 9.2°C	pH Verified: ☐ By:

PARACEL | T R R

Paracel ID: 2537264

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2537264	

Client Name: SERTAS Group
Contact Name: Paige Sarafin
Address: 4510 Rhodes Drive, Unit 210, Windsor, ON
Telephone: 519 981 2724

Project Ref: 2501E038
Quote #: ONWIN
PO #:
E-mail: paige.sarafin@sertas.ca; clay.sereres@sertas.ca

Turnaround Time
☐ 1 day ☐ 3 day
☐ 2 day ☒ Regular
Date Required:

☒ REG 153/04 ☐ REG 406/19

Other Regulation	
☐ REG 558	☐ PWQO
☐ CCME	☐ MISA
☐ SU - Sani	☐ SU - Storm
Mun:	
☐ Other:	

☐ Table 1 ☐ Agri/Other ☒ Med/Fine
☐ Table 2 ☐ Res/Park ☐ Coarse
☒ Table 3 ☐ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☒ No

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full Metals	EC, SAR, pH	PAHs	PHCs	BTEXs	VOCs	PCBs	OCs			HOLD
1	4-2	S		2	-	Sept. 9 2025	—											X
2	4-3	S		2	-	Sept. 9 2025	—											X
3	8-1	S		2	-	Sept. 9 2025	—											X
4	8-2	S		2	-	Sept. 9 2025	—											X
5	8-3	S		2	-	Sept. 9 2025	—	X	X		X	X						
6	8-4	S		2	-	Sept. 9 2025	—	X	X		X	X						
7	8-5	S		2	-	Sept. 9 2025	—											X
8	8-6	S		2	-	Sept. 9 2025	—											X
9	8-7	S		2	-	Sept. 9 2025	—											X
10	8-8	S		2	-	Sept. 9 2025	—											X

Comments:

Method of Delivery: Walk in

Unless otherwise negotiated by the parties, by signing Paracel's Chain of Custody form, you are agreeing to Paracel Laboratories Terms and Conditions and are subject to the terms and conditions thereof. Available at www.paracellabs.com

Relinquished By (Sign):	Received at Depot: Pat	Received at Lab: Jw	Verified By: K. Jakobsen
Relinquished By (Print): Paige Sarafin	Date/Time: Sept 9/25 3:37	Date/Time: 9/11/25 9:58	Date/Time: Sept. 10/25 13:40
Date/Time: Sept 9 2025	Temperature: 22.1 °C	Temperature: 9.2°C	pH Verified: ☐ By:

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Certificate of Analysis

SERTAS
4510 Rhodes Drive, Unit 210
Windsor, ON N8W 5K5
Attn: Paige Sarafin

Client PO:
Project: 2501E038
Custody:

Report Date: 30-Sep-2025
Order Date: 9-Sep-2025

Revised Report

Order #: 2537264

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2537264-01	5-1A
2537264-03	5-2
2537264-04	DUP3
2537264-05	5-3
2537264-13	8-1
2537264-15	8-3
2537264-16	8-4

Approved By:



Milan Ralitsch, PhD
Senior Technical Manager

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	19-Sep-25	19-Sep-25
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	17-Sep-25	18-Sep-25
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	19-Sep-25	19-Sep-25
Conductivity	MOE E3138 - probe @25 °C, water ext	19-Sep-25	19-Sep-25
Cyanide, free	MOE E3015 - Auto Colour, water extraction	19-Sep-25	19-Sep-25
Mercury by CVAA	EPA 7471B - CVAA, digestion	18-Sep-25	19-Sep-25
PHC F1	CWS Tier 1 - P&T GC-FID	17-Sep-25	18-Sep-25
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	19-Sep-25	23-Sep-25
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	19-Sep-25	19-Sep-25
REG 153: pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	22-Sep-25	22-Sep-25
REG 153: PHC F4(g)	CWS Tier 1 - Extraction Gravimetric	22-Sep-25	23-Sep-25
REG 153: VOCs by P&T GC-MS	EPA 8260 - P&T GC-MS	17-Sep-25	18-Sep-25
REG 406: Leachate - Metals by ICP-MS	mSPLP EPA 6020 - Digestion - ICP-MS	30-Sep-25	30-Sep-25
SAR	Calculated	19-Sep-25	19-Sep-25
Solids, %	CWS Tier 1 - Gravimetric	19-Sep-25	20-Sep-25

Summary of Criteria Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in red

Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances.

Sample	Analyte	MDL / Units	Result	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
5-1A	F4G-sg PHCs (gravimetric)	50 ug/g	13300	6600 ug/g	-
8-1	F4 PHCs (C34-C50)	6 ug/g	8160 [1]	6600 ug/g	-
8-1	F4G-sg PHCs (gravimetric)	50 ug/g	12600	6600 ug/g	-
8-3	Boron, available	0.5 ug/g	3.2	2 ug/g	-

Certificate of Analysis

Report Date: 30-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	5-1A	5-2	DUP3	5-3	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537264-01	2537264-03	2537264-04	2537264-05		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	96.0	83.5	82.6	88.2	-	-
General Inorganics							
SAR	0.01 N/A	0.19	1.12	-	0.77	12 N/A	-
Conductivity	5 uS/cm	211	224	-	172	1.4 mS/cm	-
Cyanide, free	0.03 ug/g	<0.03	-	-	-	0.051 ug/g	-
pH	0.05 pH Units	7.69	6.89	-	7.45	5.00 - 9.00 pH Units	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	-	<1.0	50 ug/g	-
Arsenic	1.0 ug/g	6.6	11.3	-	9.2	18 ug/g	-
Barium	1.0 ug/g	189	87.4	-	80.4	670 ug/g	-
Beryllium	0.5 ug/g	<0.5	1.0	-	0.8	10 ug/g	-
Boron, available	0.5 ug/g	0.6	1.5	-	0.9	2 ug/g	-
Boron	5.0 ug/g	5.9	12.2	-	18.6	120 ug/g	-
Cadmium	0.5 ug/g	<0.5	<0.5	-	<0.5	1.9 ug/g	-
Chromium	5.0 ug/g	12.6	26.2	-	23.1	160 ug/g	-
Chromium (VI)	0.2 ug/g	<0.2	<0.2	-	<0.2	10 ug/g	-
Cobalt	1.0 ug/g	9.3	11.2	-	11.8	100 ug/g	-
Copper	5.0 ug/g	17.5	19.8	-	19.5	300 ug/g	-
Lead	1.0 ug/g	22.7	12.9	-	12.6	120 ug/g	-
Mercury	0.1 ug/g	<0.1	<0.1	-	<0.1	20 ug/g	-
Molybdenum	1.0 ug/g	2.1	2.3	-	3.5	40 ug/g	-
Nickel	5.0 ug/g	13.4	29.5	-	30.6	340 ug/g	-
Selenium	1.0 ug/g	<1.0	<1.0	-	<1.0	5.5 ug/g	-
Silver	0.3 ug/g	<0.3	<0.3	-	<0.3	50 ug/g	-
Thallium	1.0 ug/g	<1.0	<1.0	-	<1.0	3.3 ug/g	-

Certificate of Analysis

Report Date: 30-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	5-1A	5-2	DUP3	5-3	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537264-01	2537264-03	2537264-04	2537264-05		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Uranium	1.0 ug/g	1.0	<1.0	-	1.1	33 ug/g	-
Vanadium	10.0 ug/g	33.8	43.5	-	35.6	86 ug/g	-
Zinc	20.0 ug/g	46.1	58.6	-	57.3	340 ug/g	-
Volatiles							
Acetone	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	28 ug/g	-
Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	0.4 ug/g	-
Bromodichloromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	18 ug/g	-
Bromoform	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	1.7 ug/g	-
Bromomethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05 ug/g	-
Carbon Tetrachloride	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	1.5 ug/g	-
Chlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	2.7 ug/g	-
Chloroform	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.18 ug/g	-
Dibromochloromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	13 ug/g	-
Dichlorodifluoromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	25 ug/g	-
1,2-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	8.5 ug/g	-
1,3-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	12 ug/g	-
1,4-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.84 ug/g	-
1,1-Dichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	21 ug/g	-
1,2-Dichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05 ug/g	-
1,1-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.48 ug/g	-
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	37 ug/g	-
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	9.3 ug/g	-
1,2-Dichloropropane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.68 ug/g	-
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-

	Client ID:	5-1A	5-2	DUP3	5-3	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537264-01	2537264-03	2537264-04	2537264-05		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
1,3-Dichloropropene, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.21 ug/g	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	19 ug/g	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05 ug/g	-
Hexane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	88 ug/g	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	88 ug/g	-
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	210 ug/g	-
Methyl tert-butyl ether	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	3.2 ug/g	-
Methylene Chloride	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	2 ug/g	-
Styrene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	43 ug/g	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.11 ug/g	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.094 ug/g	-
Tetrachloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	21 ug/g	-
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	78 ug/g	-
1,1,1-Trichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	12 ug/g	-
1,1,2-Trichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.11 ug/g	-
Trichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.61 ug/g	-
Trichlorofluoromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	5.8 ug/g	-
Vinyl chloride	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	0.25 ug/g	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	30 ug/g	-
4-Bromofluorobenzene	Surrogate	85.9%	106%	106%	107%	-	-
Toluene-d8	Surrogate	90.5%	103%	102%	103%	-	-
Dibromofluoromethane	Surrogate	53.4%	110%	111%	110%	-	-
Hydrocarbons							

Certificate of Analysis

Report Date: 30-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	5-1A	5-2	DUP3	5-3	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537264-01	2537264-03	2537264-04	2537264-05		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	-	<7	65 ug/g	-
F2 PHCs (C10-C16)	4 ug/g	<40	<4	-	<4	250 ug/g	-
F3 PHCs (C16-C34)	8 ug/g	972	<8	-	11	2500 ug/g	-
F4 PHCs (C34-C50)	6 ug/g	6390 [1]	<6	-	<6	6600 ug/g	-
F4G-sg PHCs (gravimetric)	50 ug/g	13300	-	-	-	6600 ug/g	-

Certificate of Analysis

Report Date: 30-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	8-1	8-3	8-4		Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00		Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537264-13	2537264-15	2537264-16			
	Matrix:	Soil	Soil	Soil			
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	98.4	82.1	87.7	-	-	-
mSPLP Leachate Metals							
Antimony	0.5 ug/L	-	-	<0.5	-	-	-
Arsenic	1.0 ug/L	-	-	<1.0	-	-	-
Barium	1.0 ug/L	-	-	2.6	-	-	4600 ug/L
Beryllium	0.5 ug/L	-	-	<0.5	-	-	11 ug/L
Boron	10.0 ug/L	-	-	19.8	-	-	-
Cadmium	0.2 ug/L	-	-	<0.2	-	-	0.5 ug/L
Chromium	1.0 ug/L	-	-	<1.0	-	-	130 ug/L
Cobalt	0.5 ug/L	-	-	<0.5	-	-	10 ug/L
Copper	0.5 ug/L	-	-	<0.5	-	-	14 ug/L
Lead	0.2 ug/L	-	-	<0.2	-	-	-
Molybdenum	0.5 ug/L	-	-	5.8	-	-	1500 ug/L
Nickel	1.0 ug/L	-	-	<1.0	-	-	78 ug/L
Selenium	1.0 ug/L	-	-	<1.0	-	-	10 ug/L
Silver	0.2 ug/L	-	-	<0.2	-	-	0.3 ug/L
Thallium	0.5 ug/L	-	-	<0.5	-	-	80 ug/L
Uranium	0.2 ug/L	-	-	<0.2	-	-	66 ug/L
Vanadium	0.5 ug/L	-	-	0.6	-	-	-
Zinc	5.0 ug/L	-	-	<5.0	-	-	180 ug/L
General Inorganics							
SAR	0.01 N/A	0.12	0.87	0.97	-	12 N/A	-
Conductivity	5 uS/cm	174	235	287	-	1.4 mS/cm	-
Cyanide, free	0.03 ug/g	<0.03	-	-	-	0.051 ug/g	-
pH	0.05 pH Units	7.78	7.38	7.47	-	5.00 - 9.00 pH Units	-

PARACEL LABORATORIES LTD.

Order #: 2537264

Certificate of Analysis

Report Date: 30-Sep-2025

Client: SERTAS

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	8-1	8-3	8-4		Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00		Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537264-13	2537264-15	2537264-16			
	Matrix:	Soil	Soil	Soil			
	MDL/Units						
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	<1.0	-	50 ug/g	-
Arsenic	1.0 ug/g	3.4	9.1	11.2	-	18 ug/g	-
Barium	1.0 ug/g	221	89.4	53.8	-	670 ug/g	-
Beryllium	0.5 ug/g	<0.5	0.7	0.6	-	10 ug/g	-
Boron, available	0.5 ug/g	<0.5	3.2	1.5	-	2 ug/g	-
Boron	5.0 ug/g	<5.0	15.3	17.5	-	120 ug/g	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	-	1.9 ug/g	-
Chromium	5.0 ug/g	9.6	20.9	22.0	-	160 ug/g	-
Chromium (VI)	0.2 ug/g	<0.2	<0.2	<0.2	-	10 ug/g	-
Cobalt	1.0 ug/g	2.7	8.0	10.1	-	100 ug/g	-
Copper	5.0 ug/g	12.3	20.4	18.1	-	300 ug/g	-
Lead	1.0 ug/g	25.0	19.4	10.0	-	120 ug/g	-
Mercury	0.1 ug/g	<0.1	<0.1	<0.1	-	20 ug/g	-
Molybdenum	1.0 ug/g	1.6	3.2	5.5	-	40 ug/g	-
Nickel	5.0 ug/g	10.7	23.6	27.2	-	340 ug/g	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	-	5.5 ug/g	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	-	50 ug/g	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	-	3.3 ug/g	-
Uranium	1.0 ug/g	<1.0	1.3	1.5	-	33 ug/g	-
Vanadium	10.0 ug/g	24.1	29.4	33.3	-	86 ug/g	-
Zinc	20.0 ug/g	50.9	108	63.5	-	340 ug/g	-
Volatiles							
Benzene	0.02 ug/g	<0.02	<0.02	<0.02	-	0.4 ug/g	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	-	19 ug/g	-
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	-	78 ug/g	-

Certificate of Analysis

Report Date: 30-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	8-1	8-3	8-4		Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00		Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537264-13	2537264-15	2537264-16			
	Matrix:	Soil	Soil	Soil			
	MDL/Units						
Volatiles							
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	-	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	-	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	-	30 ug/g	-
Toluene-d8	Surrogate	89.7%	102%	103%	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	-	65 ug/g	-
F2 PHCs (C10-C16)	4 ug/g	<40	<4	<4	-	250 ug/g	-
F3 PHCs (C16-C34)	8 ug/g	1590	<8	<8	-	2500 ug/g	-
F4 PHCs (C34-C50)	6 ug/g	8160 [1]	<6	<6	-	6600 ug/g	-
F4G-sg PHCs (gravimetric)	50 ug/g	12600	-	-	-	6600 ug/g	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics								
Conductivity	ND	5	uS/cm					
Cyanide, free	ND	0.03	ug/g					
SAR	ND	0.01	N/A					
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
F4G-sg PHCs (gravimetric)	ND	50	ug/g					
Metals								
Boron, available	ND	0.5	ug/g					
Chromium (VI)	ND	0.2	ug/g					
Mercury	ND	0.1	ug/g					
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
mSPLP Leachate Metals								

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Antimony	ND	0.5	ug/L					
Arsenic	ND	1.0	ug/L					
Barium	ND	1.0	ug/L					
Beryllium	ND	0.5	ug/L					
Boron	ND	10.0	ug/L					
Cadmium	ND	0.2	ug/L					
Chromium	ND	1.0	ug/L					
Cobalt	ND	0.5	ug/L					
Copper	ND	0.5	ug/L					
Lead	ND	0.2	ug/L					
Molybdenum	ND	0.5	ug/L					
Nickel	ND	1.0	ug/L					
Selenium	ND	1.0	ug/L					
Silver	ND	0.2	ug/L					
Thallium	ND	0.5	ug/L					
Uranium	ND	0.2	ug/L					
Vanadium	ND	0.5	ug/L					
Zinc	ND	5.0	ug/L					
Volatiles								
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: Toluene-d8	*8.22*		*%*	*102*	*50-140*			
Acetone	ND	0.50	ug/g					
Benzene	ND	0.02	ug/g					
Bromodichloromethane	ND	0.05	ug/g					
Bromoform	ND	0.05	ug/g					
Bromomethane	ND	0.05	ug/g					
Carbon Tetrachloride	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Chlorobenzene	ND	0.05	ug/g					
Chloroform	ND	0.05	ug/g					
Dibromochloromethane	ND	0.05	ug/g					
Dichlorodifluoromethane	ND	0.05	ug/g					
1,2-Dichlorobenzene	ND	0.05	ug/g					
1,3-Dichlorobenzene	ND	0.05	ug/g					
1,4-Dichlorobenzene	ND	0.05	ug/g					
1,1-Dichloroethane	ND	0.05	ug/g					
1,2-Dichloroethane	ND	0.05	ug/g					
1,1-Dichloroethylene	ND	0.05	ug/g					
cis-1,2-Dichloroethylene	ND	0.05	ug/g					
trans-1,2-Dichloroethylene	ND	0.05	ug/g					
1,2-Dichloropropane	ND	0.05	ug/g					
cis-1,3-Dichloropropylene	ND	0.05	ug/g					
trans-1,3-Dichloropropylene	ND	0.05	ug/g					
1,3-Dichloropropene, total	ND	0.05	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g					
Hexane	ND	0.05	ug/g					
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g					
Methyl Isobutyl Ketone	ND	0.50	ug/g					
Methyl tert-butyl ether	ND	0.05	ug/g					
Methylene Chloride	ND	0.05	ug/g					
Styrene	ND	0.05	ug/g					
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g					
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g					
Tetrachloroethylene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
1,1,1-Trichloroethane	ND	0.05	ug/g					
1,1,2-Trichloroethane	ND	0.05	ug/g					
Trichloroethylene	ND	0.05	ug/g					
Trichlorofluoromethane	ND	0.05	ug/g					
Vinyl chloride	ND	0.02	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: 4-Bromofluorobenzene	*8.58*		*%*	*107*	*50-140*			
Surrogate: Dibromofluoromethane	*9.24*		*%*	*115*	*50-140*			
Surrogate: Toluene-d8	*8.22*		*%*	*102*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	0.80	0.01	N/A	0.76			5.1	30	
Conductivity	184	5	uS/cm	183			0.7	5	
Cyanide, free	ND	0.03	ug/g	ND			NC	35	
pH	7.40	0.05	pH Units	7.41			0.1	10	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	84	4	ug/g	84			0.1	30	
F3 PHCs (C16-C34)	482	8	ug/g	498			3.3	30	
F4 PHCs (C34-C50)	339	6	ug/g	389			13.7	30	
F4G-sg PHCs (gravimetric)	13200	50	ug/g	13300			1.1	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	6.2	1.0	ug/g	6.0			3.8	30	
Barium	161	1.0	ug/g	133			19.3	30	
Beryllium	1.4	0.5	ug/g	1.2			15.8	30	
Boron, available	0.95	0.5	ug/g	0.98			3.4	35	
Boron	11.1	5.0	ug/g	9.8			12.3	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	40.4	5.0	ug/g	41.8			3.5	30	
Cobalt	10.1	1.0	ug/g	8.9			12.9	30	
Copper	21.2	5.0	ug/g	18.5			13.4	30	
Lead	12.7	1.0	ug/g	11.6			9.6	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	1.3	1.0	ug/g	1.4			9.3	30	
Nickel	30.0	5.0	ug/g	26.7			11.5	30	
Selenium	1.1	1.0	ug/g	1.2			13.1	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	1.4	1.0	ug/g	1.2			9.8	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Vanadium	54.3	10.0	ug/g	44.3			20.4	30	
Zinc	70.6	20.0	ug/g	63.9			10.0	30	
mSPLP Leachate Metals									
Antimony	ND	0.5	ug/L	ND			NC	50	
Arsenic	ND	1.0	ug/L	ND			NC	50	
Barium	2.50	1.0	ug/L	2.36			6.0	50	
Beryllium	ND	0.5	ug/L	ND			NC	50	
Boron	ND	10.0	ug/L	ND			NC	50	
Cadmium	ND	0.2	ug/L	ND			NC	50	
Chromium	ND	1.0	ug/L	ND			NC	50	
Cobalt	ND	0.5	ug/L	ND			NC	50	
Copper	ND	0.5	ug/L	ND			NC	50	
Lead	ND	0.2	ug/L	ND			NC	50	
Molybdenum	7.81	0.5	ug/L	7.21			8.0	50	
Nickel	ND	1.0	ug/L	ND			NC	50	
Selenium	ND	1.0	ug/L	ND			NC	50	
Silver	ND	0.2	ug/L	ND			NC	50	
Thallium	ND	0.5	ug/L	ND			NC	50	
Uranium	ND	0.2	ug/L	ND			NC	50	
Vanadium	0.88	0.5	ug/L	0.80			9.2	50	
Zinc	ND	5.0	ug/L	ND			NC	50	
Physical Characteristics									
% Solids	75.3	0.1	% by Wt.	75.6			0.4	25	
Volatiles									
Acetone	ND	0.50	ug/g	ND			NC	50	
Benzene	ND	0.02	ug/g	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g	ND			NC	50	
Bromoform	ND	0.05	ug/g	ND			NC	50	
Bromomethane	ND	0.05	ug/g	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Chloroform	ND	0.05	ug/g	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g	ND			NC	50	
Hexane	ND	0.05	ug/g	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g	ND			NC	50	
Styrene	ND	0.05	ug/g	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	*7.92*		*%*		*105*	*50-140*			
Surrogate: Dibromofluoromethane	*8.37*		*%*		*111*	*50-140*			
Surrogate: Toluene-d8	*7.76*		*%*		*103*	*50-140*			
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: Toluene-d8	*7.76*		*%*		*103*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	0.365	0.03	ug/g	ND	88.3	70-130			
Hydrocarbons									
F1 PHCs (C6-C10)	46	7	ug/g	ND	81.5	0-200			
F2 PHCs (C10-C16)	168	4	ug/g	84	76.4	60-140			
F3 PHCs (C16-C34)	647	8	ug/g	498	63.2	60-140			
F4 PHCs (C34-C50)	157	6	ug/g	26	77.2	60-140			
F4G-sg PHCs (gravimetric)	1120	50	ug/g	ND	112	80-120			
Metals									
Antimony	34.2	1.0	ug/g	ND	68.4	70-130			QM-07
Arsenic	53.5	1.0	ug/g	2.4	102	70-130			
Barium	106	1.0	ug/g	53.1	106	70-130			
Beryllium	50.9	0.5	ug/g	0.5	101	70-130			
Boron, available	5.00	0.5	ug/g	0.98	80.3	70-122			
Boron	57.2	5.0	ug/g	ND	107	70-130			
Cadmium	51.2	0.5	ug/g	ND	102	70-130			
Chromium (VI)	3.7	0.2	ug/g	ND	71.5	70-130			
Chromium	71.5	5.0	ug/g	16.7	110	70-130			
Cobalt	52.5	1.0	ug/g	3.6	97.9	70-130			
Copper	58.0	5.0	ug/g	7.4	101	70-130			
Lead	54.1	1.0	ug/g	4.6	98.9	70-130			
Mercury	1.64	0.1	ug/g	ND	109	70-130			
Molybdenum	49.7	1.0	ug/g	ND	98.2	70-130			
Nickel	60.8	5.0	ug/g	10.7	100	70-130			
Selenium	52.4	1.0	ug/g	ND	104	70-130			
Silver	50.2	0.3	ug/g	ND	100	70-130			
Thallium	48.2	1.0	ug/g	ND	95.8	70-130			
Uranium	51.1	1.0	ug/g	ND	101	70-130			
Vanadium	70.0	10.0	ug/g	17.7	105	70-130			
Zinc	76.3	20.0	ug/g	25.5	102	70-130			
mSPLP Leachate Metals									

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Antimony	45.8	0.5	ug/L	ND	91.6	70-130			
Arsenic	50.3	1.0	ug/L	ND	100	70-130			
Barium	49.3	1.0	ug/L	2.36	93.9	70-130			
Beryllium	45.5	0.5	ug/L	ND	91.0	70-130			
Boron	55.2	10.0	ug/L	ND	96.0	70-130			
Cadmium	47.9	0.2	ug/L	ND	95.8	70-130			
Chromium	49.7	1.0	ug/L	ND	98.6	70-130			
Cobalt	48.5	0.5	ug/L	ND	96.8	70-130			
Copper	50.4	0.5	ug/L	ND	101	70-130			
Lead	49.3	0.2	ug/L	ND	98.3	70-130			
Molybdenum	57.6	0.5	ug/L	7.21	101	70-130			
Nickel	49.2	1.0	ug/L	ND	97.8	70-130			
Selenium	46.4	1.0	ug/L	ND	92.6	70-130			
Silver	43.3	0.2	ug/L	ND	86.5	70-130			
Thallium	47.7	0.5	ug/L	ND	95.3	70-130			
Uranium	47.9	0.2	ug/L	ND	95.5	70-130			
Vanadium	51.6	0.5	ug/L	0.80	102	70-130			
Zinc	52.1	5.0	ug/L	ND	99.3	70-130			
Volatiles									
Acetone	138	0.50	ug/g	ND	139	50-140			
Benzene	46.2	0.02	ug/g	ND	115	50-140			
Bromodichloromethane	44.5	0.05	ug/g	ND	111	50-140			
Bromoform	39.3	0.05	ug/g	ND	98.4	50-140			
Bromomethane	2.63	0.05	ug/g	ND	90.1	50-140			
Carbon Tetrachloride	46.2	0.05	ug/g	ND	115	50-140			
Chlorobenzene	39.9	0.05	ug/g	ND	99.4	50-140			
Chloroform	55.2	0.05	ug/g	ND	138	50-140			
Dibromochloromethane	42.9	0.05	ug/g	ND	107	50-140			
Dichlorodifluoromethane	3.34	0.05	ug/g	ND	115	50-140			
1,2-Dichlorobenzene	36.0	0.05	ug/g	ND	89.7	50-140			
1,3-Dichlorobenzene	38.8	0.05	ug/g	ND	97.1	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,4-Dichlorobenzene	37.8	0.05	ug/g	ND	94.2	50-140			
1,1-Dichloroethane	54.4	0.05	ug/g	ND	136	50-140			
1,2-Dichloroethane	50.6	0.05	ug/g	ND	127	50-140			
1,1-Dichloroethylene	47.0	0.05	ug/g	ND	117	50-140			
cis-1,2-Dichloroethylene	51.6	0.05	ug/g	ND	129	50-140			
trans-1,2-Dichloroethylene	52.0	0.05	ug/g	ND	130	50-140			
1,2-Dichloropropane	44.4	0.05	ug/g	ND	111	50-140			
cis-1,3-Dichloropropylene	42.5	0.05	ug/g	ND	106	50-140			
trans-1,3-Dichloropropylene	43.5	0.05	ug/g	ND	109	50-140			
Ethylbenzene	40.5	0.05	ug/g	ND	101	50-140			
Ethylene dibromide (dibromoethane, 1,2-)	46.3	0.05	ug/g	ND	116	50-140			
Hexane	40.3	0.05	ug/g	ND	101	50-140			
Methyl Ethyl Ketone (2-Butanone)	119	0.50	ug/g	ND	119	50-140			
Methyl Isobutyl Ketone	100	0.50	ug/g	ND	100	50-140			
Methyl tert-butyl ether	92.7	0.05	ug/g	ND	91.9	50-140			
Methylene Chloride	50.8	0.05	ug/g	ND	127	60-130			
Styrene	46.6	0.05	ug/g	ND	117	50-140			
1,1,1,2-Tetrachloroethane	37.3	0.05	ug/g	ND	93.5	50-140			
1,1,2,2-Tetrachloroethane	28.6	0.05	ug/g	ND	71.5	50-140			
Tetrachloroethylene	40.8	0.05	ug/g	ND	102	50-140			
Toluene	40.6	0.05	ug/g	ND	101	50-140			
1,1,1-Trichloroethane	47.3	0.05	ug/g	ND	118	50-140			
1,1,2-Trichloroethane	40.5	0.05	ug/g	ND	101	50-140			
Trichloroethylene	47.0	0.05	ug/g	ND	118	50-140			
Trichlorofluoromethane	43.3	0.05	ug/g	ND	108	50-140			
Vinyl chloride	3.45	0.02	ug/g	ND	118	50-140			
m,p-Xylenes	84.1	0.05	ug/g	ND	105	50-140			
o-Xylene	41.6	0.05	ug/g	ND	104	50-140			
Surrogate: 4-Bromofluorobenzene	*6.29*		*%*		*97.6*	*50-140*			
Surrogate: Dibromofluoromethane	*8.35*		*%*		*130*	*50-140*			
Surrogate: Toluene-d8	*6.39*		*%*		*99.1*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzene	46.2	0.02	ug/g	ND	115	50-140			
Ethylbenzene	40.5	0.05	ug/g	ND	101	50-140			
Toluene	40.6	0.05	ug/g	ND	101	50-140			
m,p-Xylenes	84.1	0.05	ug/g	ND	105	50-140			
o-Xylene	41.6	0.05	ug/g	ND	104	50-140			
Surrogate: Toluene-d8	*6.39*		*%*		*99.1*	*50-140*			

Qualifier Notes:

Sample Qualifiers :

1: GC-FID signal did not return to baseline by C50

Applies to Samples: 5-1A, 8-1

QC Qualifiers:

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on other acceptable QC.

Sample Data Revisions:

None

Certificate of Analysis

Report Date: 30-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

Work Order Revisions / Comments:

Revision - 1: This report has been revised to contain additional data to samples 1 and 13.

Revision - 2: This report has been revised to contain additional data to sample 16.

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

PARACEL | TI RI RI

Paracel ID: 2537264

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2537264	

Client Name: SERTAS Group
Contact Name: Paige Sarafin
Address: 4510 Rhodes Drive, Unit 210, Windsor, ON
Telephone: 519 981 2724

Project Ref: 2501E038
Quote #: Erwin
PO #:
E-mail: paige.sarafin@sertas.ca; clay.sereres@sertas.ca

Page 1 of 2

Turnaround Time
☐ 1 day ☐ 3 day
☐ 2 day ☒ Regular
Date Required:

☒ REG 153/04 ☐ REG 406/19

Other Regulation
☐ Table 1 ☐ Agri/Other ☒ Med/Fine
☐ Table 2 ☐ Res/Park ☐ Coarse
☒ Table 3 ☐ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☐ No
☐ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU - Storm
Mun:
☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full Metals	EC, SAR, pH	PAHs	PHCs	BTEXs	VOCs	PCBs	OCs			HOLD
1	5-1A	S		2	-	Sept. 9 2025	-											X
2	5-1B	S		2	-	Sept. 9 2025	-											X
3	5-2	S		2	-	Sept. 9 2025	-	X	X		X		X					
4	DUP3	S		2	-	Sept. 9 2025	-						X					
5	5-3	S		2	-	Sept. 9 2025	-	X	X		X		X					
6	5-4	S		2	-	Sept. 9 2025	-											X
7	5-5	S		2	-	Sept. 9 2025	-											X
8	5-6	S		2	-	Sept. 9 2025	-											X
9	5-7	S		2	-	Sept. 9 2025	-											X
10	5-8	S		2	-	Sept. 9 2025	-											X

Required Analysis

Comments:

Method of Delivery: Dale In

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Relinquished By (Sign):	Received at Depot: Pat	Received at Lab: JW	Verified By: K. JAKOBSEN
Relinquished By (Print): Paige Sarafin	Date/Time: Sept 9/25 3:37	Date/Time: 9/11/25 15:53	Date/Time: Sept. 10/25 13:40
Date/Time: Sept 9 2025.	Temperature: 22.1 °C	Temperature: 9.2°C	pH Verified: ☐ By:

PARACEL | T R R

Paracel ID: 2537264

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2537264	

Client Name: SERTAS Group
Contact Name: Paige Sarafin
Address: 4510 Rhodes Drive, Unit 210, Windsor, ON
Telephone: 519 981 2724

Project Ref: 2501E038
Quote #: ONWIN
PO #:
E-mail: paige.sarafin@sertas.ca; clay.sereres@sertas.ca

Turnaround Time
☐ 1 day ☐ 3 day
☐ 2 day ☒ Regular
Date Required:

☒ REG 153/04 ☐ REG 406/19

Other Regulation	
☐ REG 558	☐ PWQO
☐ CCME	☐ MISA
☐ SU - Sani	☐ SU - Storm
Mun:	
☐ Other:	

☐ Table 1 ☐ Agri/Other ☒ Med/Fine
☐ Table 2 ☐ Res/Park ☐ Coarse
☒ Table 3 ☐ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☒ No

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full Metals	EC, SAR, pH	PAHs	PHCs	BTEXs	VOCs	PCBs	OCs			HOLD
1	4-2	S		2	-	Sept. 9 2025	—											X
2	4-3	S		2	-	Sept. 9 2025	—											X
3	8-1	S		2	-	Sept. 9 2025	—											X
4	8-2	S		2	-	Sept. 9 2025	—											X
5	8-3	S		2	-	Sept. 9 2025	—	X	X		X	X						
6	8-4	S		2	-	Sept. 9 2025	—	X	X		X	X						
7	8-5	S		2	-	Sept. 9 2025	—											X
8	8-6	S		2	-	Sept. 9 2025	—											X
9	8-7	S		2	-	Sept. 9 2025	—											X
10	8-8	S		2	-	Sept. 9 2025	—											X

Comments:

Method of Delivery: Walk in

Unless otherwise negotiated by the parties, by signing Paracel's Chain of Custody form, you are agreeing to Paracel Laboratories Terms and Conditions and are subject to the terms and conditions thereof. Available at www.paracellabs.com

Relinquished By (Sign):	Received at Depot: Pat	Received at Lab: Jw	Verified By: K. Jakobsen
Relinquished By (Print): Paige Sarafin	Date/Time: Sept 9/25 3:37	Date/Time: 9/11/25 9:58	Date/Time: Sept. 10/25 13:40
Date/Time: Sept 9 2025	Temperature: 22.1 °C	Temperature: 9.2°C	pH Verified: ☐ By:

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Certificate of Analysis

SERTAS
4510 Rhodes Drive, Unit 210
Windsor, ON N8W 5K5
Attn: Paige Sarafin

Client PO:
Project: 2501E038
Custody:

Report Date: 3-Oct-2025
Order Date: 9-Sep-2025

Revised Report

Order #: 2537264

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2537264-01	5-1A
2537264-03	5-2
2537264-03	5-2
2537264-04	DUP3
2537264-05	5-3
2537264-13	8-1
2537264-15	8-3
2537264-16	8-4
2537264-16	8-4

Approved By:



Alex Enfield, MSc
Lab Manager

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	19-Sep-25	19-Sep-25
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	17-Sep-25	18-Sep-25
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	19-Sep-25	19-Sep-25
Conductivity	MOE E3138 - probe @25 °C, water ext	19-Sep-25	19-Sep-25
Cyanide, free	MOE E3015 - Auto Colour, water extraction	19-Sep-25	19-Sep-25
Mercury by CVAA	EPA 7471B - CVAA, digestion	18-Sep-25	19-Sep-25
PHC F1	CWS Tier 1 - P&T GC-FID	17-Sep-25	18-Sep-25
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	19-Sep-25	23-Sep-25
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	19-Sep-25	19-Sep-25
REG 153: pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	22-Sep-25	22-Sep-25
REG 153: PHC F4(g)	CWS Tier 1 - Extraction Gravimetric	22-Sep-25	23-Sep-25
REG 153: VOCs by P&T GC-MS	EPA 8260 - P&T GC-MS	17-Sep-25	18-Sep-25
REG 406: Leachate - Metals by ICP-MS	mSPLP EPA 6020 - Digestion - ICP-MS	30-Sep-25	30-Sep-25
SAR	Calculated	19-Sep-25	19-Sep-25
Solids, %	CWS Tier 1 - Gravimetric	19-Sep-25	20-Sep-25

Summary of Criteria Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in red

Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances.

Sample	Analyte	MDL / Units	Result	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
5-1A	F4G-sg PHCs (gravimetric)	50 ug/g	13300	6600 ug/g	-
8-1	F4 PHCs (C34-C50)	6 ug/g	8160 [1]	6600 ug/g	-
8-1	F4G-sg PHCs (gravimetric)	50 ug/g	12600	6600 ug/g	-
8-3	Boron, available	0.5 ug/g	3.2	2 ug/g	-

Certificate of Analysis

Report Date: 03-Oct-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	5-1A	5-2	5-2	DUP3	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537264-01	2537264-03	2537264-03RE1	2537264-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	96.0	83.5	-	82.6	-	-
General Inorganics							
SAR	0.01 N/A	0.19	1.12	-	-	12 N/A	-
Conductivity	5 uS/cm	211	224	-	-	1.4 mS/cm	-
Cyanide, free	0.03 ug/g	<0.03	-	-	-	0.051 ug/g	-
pH	0.05 pH Units	7.69	6.89	-	-	5.00 - 9.00 pH Units	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	-	-	50 ug/g	-
Arsenic	1.0 ug/g	6.6	11.3	12.6	-	18 ug/g	-
Barium	1.0 ug/g	189	87.4	-	-	670 ug/g	-
Beryllium	0.5 ug/g	<0.5	1.0	-	-	10 ug/g	-
Boron	5.0 ug/g	5.9	12.2	-	-	120 ug/g	-
Boron, available	0.5 ug/g	0.6	1.5	-	-	2 ug/g	-
Cadmium	0.5 ug/g	<0.5	<0.5	-	-	1.9 ug/g	-
Chromium (VI)	0.2 ug/g	<0.2	<0.2	-	-	10 ug/g	-
Chromium	5.0 ug/g	12.6	26.2	-	-	160 ug/g	-
Cobalt	1.0 ug/g	9.3	11.2	-	-	100 ug/g	-
Copper	5.0 ug/g	17.5	19.8	-	-	300 ug/g	-
Lead	1.0 ug/g	22.7	12.9	-	-	120 ug/g	-
Mercury	0.1 ug/g	<0.1	<0.1	-	-	20 ug/g	-
Molybdenum	1.0 ug/g	2.1	2.3	-	-	40 ug/g	-
Nickel	5.0 ug/g	13.4	29.5	-	-	340 ug/g	-
Selenium	1.0 ug/g	<1.0	<1.0	-	-	5.5 ug/g	-
Silver	0.3 ug/g	<0.3	<0.3	-	-	50 ug/g	-
Thallium	1.0 ug/g	<1.0	<1.0	-	-	3.3 ug/g	-

	Client ID:	5-1A	5-2	5-2	DUP3	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537264-01	2537264-03	2537264-03RE1	2537264-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Uranium	1.0 ug/g	1.0	<1.0	-	-	33 ug/g	-
Vanadium	10.0 ug/g	33.8	43.5	-	-	86 ug/g	-
Zinc	20.0 ug/g	46.1	58.6	-	-	340 ug/g	-
Volatiles							
Acetone	0.50 ug/g	<0.50	<0.50	-	<0.50	28 ug/g	-
Benzene	0.02 ug/g	<0.02	<0.02	-	<0.02	0.4 ug/g	-
Bromodichloromethane	0.05 ug/g	<0.05	<0.05	-	<0.05	18 ug/g	-
Bromoform	0.05 ug/g	<0.05	<0.05	-	<0.05	1.7 ug/g	-
Bromomethane	0.05 ug/g	<0.05	<0.05	-	<0.05	0.05 ug/g	-
Carbon Tetrachloride	0.05 ug/g	<0.05	<0.05	-	<0.05	1.5 ug/g	-
Chlorobenzene	0.05 ug/g	<0.05	<0.05	-	<0.05	2.7 ug/g	-
Chloroform	0.05 ug/g	<0.05	<0.05	-	<0.05	0.18 ug/g	-
Dibromochloromethane	0.05 ug/g	<0.05	<0.05	-	<0.05	13 ug/g	-
Dichlorodifluoromethane	0.05 ug/g	<0.05	<0.05	-	<0.05	25 ug/g	-
1,2-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	-	<0.05	8.5 ug/g	-
1,3-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	-	<0.05	12 ug/g	-
1,4-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	-	<0.05	0.84 ug/g	-
1,1-Dichloroethane	0.05 ug/g	<0.05	<0.05	-	<0.05	21 ug/g	-
1,2-Dichloroethane	0.05 ug/g	<0.05	<0.05	-	<0.05	0.05 ug/g	-
1,1-Dichloroethylene	0.05 ug/g	<0.05	<0.05	-	<0.05	0.48 ug/g	-
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	-	<0.05	37 ug/g	-
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	-	<0.05	9.3 ug/g	-
1,2-Dichloropropane	0.05 ug/g	<0.05	<0.05	-	<0.05	0.68 ug/g	-
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	-	<0.05	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	-	<0.05	-	-

	Client ID:	5-1A	5-2	5-2	DUP3	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537264-01	2537264-03	2537264-03RE1	2537264-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
1,3-Dichloropropene, total	0.05 ug/g	<0.05	<0.05	-	<0.05	0.21 ug/g	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	<0.05	<0.05	-	<0.05	0.05 ug/g	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	-	<0.05	19 ug/g	-
Hexane	0.05 ug/g	<0.05	<0.05	-	<0.05	88 ug/g	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	<0.50	-	<0.50	88 ug/g	-
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	<0.50	-	<0.50	210 ug/g	-
Methyl tert-butyl ether	0.05 ug/g	<0.05	<0.05	-	<0.05	3.2 ug/g	-
Methylene Chloride	0.05 ug/g	<0.05	<0.05	-	<0.05	2 ug/g	-
Styrene	0.05 ug/g	<0.05	<0.05	-	<0.05	43 ug/g	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	-	<0.05	0.11 ug/g	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	-	<0.05	0.094 ug/g	-
Tetrachloroethylene	0.05 ug/g	<0.05	<0.05	-	<0.05	21 ug/g	-
Toluene	0.05 ug/g	<0.05	<0.05	-	<0.05	78 ug/g	-
1,1,1-Trichloroethane	0.05 ug/g	<0.05	<0.05	-	<0.05	12 ug/g	-
1,1,2-Trichloroethane	0.05 ug/g	<0.05	<0.05	-	<0.05	0.11 ug/g	-
Trichloroethylene	0.05 ug/g	<0.05	<0.05	-	<0.05	0.61 ug/g	-
Trichlorofluoromethane	0.05 ug/g	<0.05	<0.05	-	<0.05	5.8 ug/g	-
Vinyl chloride	0.02 ug/g	<0.02	<0.02	-	<0.02	0.25 ug/g	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	-	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	-	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	-	<0.05	30 ug/g	-
Toluene-d8	Surrogate	90.5%	103%	-	102%	-	-
4-Bromofluorobenzene	Surrogate	85.9%	106%	-	106%	-	-
Dibromofluoromethane	Surrogate	53.4%	110%	-	111%	-	-
Hydrocarbons							

Certificate of Analysis

Report Date: 03-Oct-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	5-1A	5-2	5-2	DUP3	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537264-01	2537264-03	2537264-03RE1	2537264-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	-	-	65 ug/g	-
F2 PHCs (C10-C16)	4 ug/g	<40	<4	-	-	250 ug/g	-
F3 PHCs (C16-C34)	8 ug/g	972	<8	-	-	2500 ug/g	-
F4 PHCs (C34-C50)	6 ug/g	6390 [1]	<6	-	-	6600 ug/g	-
F4G-sg PHCs (gravimetric)	50 ug/g	13300	-	-	-	6600 ug/g	-

Certificate of Analysis

Report Date: 03-Oct-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	5-3	8-1	8-3	8-4	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537264-05	2537264-13	2537264-15	2537264-16		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	88.2	98.4	82.1	87.7	-	-
mSPLP Leachate Metals							
Antimony	0.5 ug/L	-	-	-	<0.5	-	-
Arsenic	1.0 ug/L	-	-	-	<1.0	-	-
Barium	1.0 ug/L	-	-	-	2.6	-	4600 ug/L
Beryllium	0.5 ug/L	-	-	-	<0.5	-	11 ug/L
Boron	10.0 ug/L	-	-	-	19.8	-	-
Cadmium	0.2 ug/L	-	-	-	<0.2	-	0.5 ug/L
Chromium	1.0 ug/L	-	-	-	<1.0	-	130 ug/L
Cobalt	0.5 ug/L	-	-	-	<0.5	-	10 ug/L
Copper	0.5 ug/L	-	-	-	<0.5	-	14 ug/L
Lead	0.2 ug/L	-	-	-	<0.2	-	-
Molybdenum	0.5 ug/L	-	-	-	5.8	-	1500 ug/L
Nickel	1.0 ug/L	-	-	-	<1.0	-	78 ug/L
Selenium	1.0 ug/L	-	-	-	<1.0	-	10 ug/L
Silver	0.2 ug/L	-	-	-	<0.2	-	0.3 ug/L
Thallium	0.5 ug/L	-	-	-	<0.5	-	80 ug/L
Uranium	0.2 ug/L	-	-	-	<0.2	-	66 ug/L
Vanadium	0.5 ug/L	-	-	-	0.6	-	-
Zinc	5.0 ug/L	-	-	-	<5.0	-	180 ug/L
General Inorganics							
SAR	0.01 N/A	0.77	0.12	0.87	0.97	12 N/A	-
Conductivity	5 uS/cm	172	174	235	287	1.4 mS/cm	-
Cyanide, free	0.03 ug/g	-	<0.03	-	-	0.051 ug/g	-
pH	0.05 pH Units	7.45	7.78	7.38	7.47	5.00 - 9.00 pH Units	-

Certificate of Analysis

Report Date: 03-Oct-2025

Client: SERTAS

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	5-3	8-1	8-3	8-4	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537264-05	2537264-13	2537264-15	2537264-16		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	50 ug/g	-
Arsenic	1.0 ug/g	9.2	3.4	9.1	11.2	18 ug/g	-
Barium	1.0 ug/g	80.4	221	89.4	53.8	670 ug/g	-
Beryllium	0.5 ug/g	0.8	<0.5	0.7	0.6	10 ug/g	-
Boron, available	0.5 ug/g	0.9	<0.5	3.2	1.5	2 ug/g	-
Boron	5.0 ug/g	18.6	<5.0	15.3	17.5	120 ug/g	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	1.9 ug/g	-
Chromium	5.0 ug/g	23.1	9.6	20.9	22.0	160 ug/g	-
Chromium (VI)	0.2 ug/g	<0.2	<0.2	<0.2	<0.2	10 ug/g	-
Cobalt	1.0 ug/g	11.8	2.7	8.0	10.1	100 ug/g	-
Copper	5.0 ug/g	19.5	12.3	20.4	18.1	300 ug/g	-
Lead	1.0 ug/g	12.6	25.0	19.4	10.0	120 ug/g	-
Mercury	0.1 ug/g	<0.1	<0.1	<0.1	<0.1	20 ug/g	-
Molybdenum	1.0 ug/g	3.5	1.6	3.2	5.5	40 ug/g	-
Nickel	5.0 ug/g	30.6	10.7	23.6	27.2	340 ug/g	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	5.5 ug/g	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	50 ug/g	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	3.3 ug/g	-
Uranium	1.0 ug/g	1.1	<1.0	1.3	1.5	33 ug/g	-
Vanadium	10.0 ug/g	35.6	24.1	29.4	33.3	86 ug/g	-
Zinc	20.0 ug/g	57.3	50.9	108	63.5	340 ug/g	-
Volatiles							
Acetone	0.50 ug/g	<0.50	-	-	-	28 ug/g	-
Benzene	0.02 ug/g	<0.02	-	-	-	0.4 ug/g	-
Bromodichloromethane	0.05 ug/g	<0.05	-	-	-	18 ug/g	-

Certificate of Analysis

Report Date: 03-Oct-2025

Client: SERTAS

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	5-3	8-1	8-3	8-4	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537264-05	2537264-13	2537264-15	2537264-16		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Bromoform	0.05 ug/g	<0.05	-	-	-	1.7 ug/g	-
Bromomethane	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	-
Carbon Tetrachloride	0.05 ug/g	<0.05	-	-	-	1.5 ug/g	-
Chlorobenzene	0.05 ug/g	<0.05	-	-	-	2.7 ug/g	-
Chloroform	0.05 ug/g	<0.05	-	-	-	0.18 ug/g	-
Dibromochloromethane	0.05 ug/g	<0.05	-	-	-	13 ug/g	-
Dichlorodifluoromethane	0.05 ug/g	<0.05	-	-	-	25 ug/g	-
1,2-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	8.5 ug/g	-
1,3-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	12 ug/g	-
1,4-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	0.84 ug/g	-
1,1-Dichloroethane	0.05 ug/g	<0.05	-	-	-	21 ug/g	-
1,2-Dichloroethane	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	-
1,1-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	0.48 ug/g	-
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	37 ug/g	-
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	9.3 ug/g	-
1,2-Dichloropropane	0.05 ug/g	<0.05	-	-	-	0.68 ug/g	-
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	-	-	-	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	-	-	-	-	-
1,3-Dichloropropene, total	0.05 ug/g	<0.05	-	-	-	0.21 ug/g	-
Ethylbenzene	0.05 ug/g	<0.05	-	-	-	19 ug/g	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	-
Hexane	0.05 ug/g	<0.05	-	-	-	88 ug/g	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	-	-	-	88 ug/g	-
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	-	-	-	210 ug/g	-
Methyl tert-butyl ether	0.05 ug/g	<0.05	-	-	-	3.2 ug/g	-

	Client ID:	5-3	8-1	8-3	8-4	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537264-05	2537264-13	2537264-15	2537264-16		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Methylene Chloride	0.05 ug/g	<0.05	-	-	-	2 ug/g	-
Styrene	0.05 ug/g	<0.05	-	-	-	43 ug/g	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	-	-	-	0.11 ug/g	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	-	-	-	0.094 ug/g	-
Tetrachloroethylene	0.05 ug/g	<0.05	-	-	-	21 ug/g	-
Toluene	0.05 ug/g	<0.05	-	-	-	78 ug/g	-
1,1,1-Trichloroethane	0.05 ug/g	<0.05	-	-	-	12 ug/g	-
1,1,2-Trichloroethane	0.05 ug/g	<0.05	-	-	-	0.11 ug/g	-
Trichloroethylene	0.05 ug/g	<0.05	-	-	-	0.61 ug/g	-
Trichlorofluoromethane	0.05 ug/g	<0.05	-	-	-	5.8 ug/g	-
Vinyl chloride	0.02 ug/g	<0.02	-	-	-	0.25 ug/g	-
m,p-Xylenes	0.05 ug/g	<0.05	-	-	-	-	-
o-Xylene	0.05 ug/g	<0.05	-	-	-	-	-
Xylenes, total	0.05 ug/g	<0.05	-	-	-	30 ug/g	-
Dibromofluoromethane	Surrogate	110%	-	-	-	-	-
Toluene-d8	Surrogate	103%	-	-	-	-	-
4-Bromofluorobenzene	Surrogate	107%	-	-	-	-	-
Benzene	0.02 ug/g	-	<0.02	<0.02	<0.02	0.4 ug/g	-
Ethylbenzene	0.05 ug/g	-	<0.05	<0.05	<0.05	19 ug/g	-
Toluene	0.05 ug/g	-	<0.05	<0.05	<0.05	78 ug/g	-
m,p-Xylenes	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	-	<0.05	<0.05	<0.05	30 ug/g	-
Toluene-d8	Surrogate	-	89.7%	102%	103%	-	-
Hydrocarbons							

Certificate of Analysis

Report Date: 03-Oct-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	5-3	8-1	8-3	8-4	Criteria:	
	Sample Date:	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	09-Sep-25 00:00	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537264-05	2537264-13	2537264-15	2537264-16		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	65 ug/g	-
F2 PHCs (C10-C16)	4 ug/g	<4	<40	<4	<4	250 ug/g	-
F3 PHCs (C16-C34)	8 ug/g	11	1590	<8	<8	2500 ug/g	-
F4 PHCs (C34-C50)	6 ug/g	<6	8160 [1]	<6	<6	6600 ug/g	-
F4G-sg PHCs (gravimetric)	50 ug/g	-	12600	-	-	6600 ug/g	-

Certificate of Analysis

Report Date: 03-Oct-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	8-4				Criteria:	
	Sample Date:	09-Sep-25 00:00				Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537264-16RE1					
	Matrix:	Soil					
	MDL/Units						
Metals							
Arsenic	1.0 ug/g	10.3	-	-	-	18 ug/g	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics								
Conductivity	ND	5	uS/cm					
Cyanide, free	ND	0.03	ug/g					
SAR	ND	0.01	N/A					
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
F4G-sg PHCs (gravimetric)	ND	50	ug/g					
Metals								
Boron, available	ND	0.5	ug/g					
Chromium (VI)	ND	0.2	ug/g					
Mercury	ND	0.1	ug/g					
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
mSPLP Leachate Metals								

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Antimony	ND	0.5	ug/L					
Arsenic	ND	1.0	ug/L					
Barium	ND	1.0	ug/L					
Beryllium	ND	0.5	ug/L					
Boron	ND	10.0	ug/L					
Cadmium	ND	0.2	ug/L					
Chromium	ND	1.0	ug/L					
Cobalt	ND	0.5	ug/L					
Copper	ND	0.5	ug/L					
Lead	ND	0.2	ug/L					
Molybdenum	ND	0.5	ug/L					
Nickel	ND	1.0	ug/L					
Selenium	ND	1.0	ug/L					
Silver	ND	0.2	ug/L					
Thallium	ND	0.5	ug/L					
Uranium	ND	0.2	ug/L					
Vanadium	ND	0.5	ug/L					
Zinc	ND	5.0	ug/L					
Volatiles								
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: Toluene-d8	*8.22*		*%*	*102*	*50-140*			
Acetone	ND	0.50	ug/g					
Benzene	ND	0.02	ug/g					
Bromodichloromethane	ND	0.05	ug/g					
Bromoform	ND	0.05	ug/g					
Bromomethane	ND	0.05	ug/g					
Carbon Tetrachloride	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Chlorobenzene	ND	0.05	ug/g					
Chloroform	ND	0.05	ug/g					
Dibromochloromethane	ND	0.05	ug/g					
Dichlorodifluoromethane	ND	0.05	ug/g					
1,2-Dichlorobenzene	ND	0.05	ug/g					
1,3-Dichlorobenzene	ND	0.05	ug/g					
1,4-Dichlorobenzene	ND	0.05	ug/g					
1,1-Dichloroethane	ND	0.05	ug/g					
1,2-Dichloroethane	ND	0.05	ug/g					
1,1-Dichloroethylene	ND	0.05	ug/g					
cis-1,2-Dichloroethylene	ND	0.05	ug/g					
trans-1,2-Dichloroethylene	ND	0.05	ug/g					
1,2-Dichloropropane	ND	0.05	ug/g					
cis-1,3-Dichloropropylene	ND	0.05	ug/g					
trans-1,3-Dichloropropylene	ND	0.05	ug/g					
1,3-Dichloropropene, total	ND	0.05	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g					
Hexane	ND	0.05	ug/g					
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g					
Methyl Isobutyl Ketone	ND	0.50	ug/g					
Methyl tert-butyl ether	ND	0.05	ug/g					
Methylene Chloride	ND	0.05	ug/g					
Styrene	ND	0.05	ug/g					
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g					
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g					
Tetrachloroethylene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
1,1,1-Trichloroethane	ND	0.05	ug/g					
1,1,2-Trichloroethane	ND	0.05	ug/g					
Trichloroethylene	ND	0.05	ug/g					
Trichlorofluoromethane	ND	0.05	ug/g					
Vinyl chloride	ND	0.02	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: 4-Bromofluorobenzene	*8.58*		*%*	*107*	*50-140*			
Surrogate: Dibromofluoromethane	*9.24*		*%*	*115*	*50-140*			
Surrogate: Toluene-d8	*8.22*		*%*	*102*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	0.80	0.01	N/A	0.76			5.1	30	
Conductivity	184	5	uS/cm	183			0.7	5	
Cyanide, free	ND	0.03	ug/g	ND			NC	35	
pH	7.40	0.05	pH Units	7.41			0.1	10	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	84	4	ug/g	84			0.1	30	
F3 PHCs (C16-C34)	482	8	ug/g	498			3.3	30	
F4 PHCs (C34-C50)	339	6	ug/g	389			13.7	30	
F4G-sg PHCs (gravimetric)	13200	50	ug/g	13300			1.1	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	6.2	1.0	ug/g	6.0			3.8	30	
Barium	161	1.0	ug/g	133			19.3	30	
Beryllium	1.4	0.5	ug/g	1.2			15.8	30	
Boron, available	0.95	0.5	ug/g	0.98			3.4	35	
Boron	11.1	5.0	ug/g	9.8			12.3	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	40.4	5.0	ug/g	41.8			3.5	30	
Cobalt	10.1	1.0	ug/g	8.9			12.9	30	
Copper	21.2	5.0	ug/g	18.5			13.4	30	
Lead	12.7	1.0	ug/g	11.6			9.6	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	1.3	1.0	ug/g	1.4			9.3	30	
Nickel	30.0	5.0	ug/g	26.7			11.5	30	
Selenium	1.1	1.0	ug/g	1.2			13.1	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	1.4	1.0	ug/g	1.2			9.8	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Vanadium	54.3	10.0	ug/g	44.3			20.4	30	
Zinc	70.6	20.0	ug/g	63.9			10.0	30	
mSPLP Leachate Metals									
Antimony	ND	0.5	ug/L	ND			NC	50	
Arsenic	ND	1.0	ug/L	ND			NC	50	
Barium	2.50	1.0	ug/L	2.36			6.0	50	
Beryllium	ND	0.5	ug/L	ND			NC	50	
Boron	ND	10.0	ug/L	ND			NC	50	
Cadmium	ND	0.2	ug/L	ND			NC	50	
Chromium	ND	1.0	ug/L	ND			NC	50	
Cobalt	ND	0.5	ug/L	ND			NC	50	
Copper	ND	0.5	ug/L	ND			NC	50	
Lead	ND	0.2	ug/L	ND			NC	50	
Molybdenum	7.81	0.5	ug/L	7.21			8.0	50	
Nickel	ND	1.0	ug/L	ND			NC	50	
Selenium	ND	1.0	ug/L	ND			NC	50	
Silver	ND	0.2	ug/L	ND			NC	50	
Thallium	ND	0.5	ug/L	ND			NC	50	
Uranium	ND	0.2	ug/L	ND			NC	50	
Vanadium	0.88	0.5	ug/L	0.80			9.2	50	
Zinc	ND	5.0	ug/L	ND			NC	50	
Physical Characteristics									
% Solids	75.3	0.1	% by Wt.	75.6			0.4	25	
Volatiles									
Acetone	ND	0.50	ug/g	ND			NC	50	
Benzene	ND	0.02	ug/g	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g	ND			NC	50	
Bromoform	ND	0.05	ug/g	ND			NC	50	
Bromomethane	ND	0.05	ug/g	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Chloroform	ND	0.05	ug/g	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g	ND			NC	50	
Hexane	ND	0.05	ug/g	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g	ND			NC	50	
Styrene	ND	0.05	ug/g	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	*7.92*		*%*		*105*	*50-140*			
Surrogate: Dibromofluoromethane	*8.37*		*%*		*111*	*50-140*			
Surrogate: Toluene-d8	*7.76*		*%*		*103*	*50-140*			
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: Toluene-d8	*7.76*		*%*		*103*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	0.365	0.03	ug/g	ND	88.3	70-130			
Hydrocarbons									
F1 PHCs (C6-C10)	46	7	ug/g	ND	81.5	0-200			
F2 PHCs (C10-C16)	168	4	ug/g	84	76.4	60-140			
F3 PHCs (C16-C34)	647	8	ug/g	498	63.2	60-140			
F4 PHCs (C34-C50)	157	6	ug/g	26	77.2	60-140			
F4G-sg PHCs (gravimetric)	1120	50	ug/g	ND	112	80-120			
Metals									
Antimony	34.2	1.0	ug/g	ND	68.4	70-130			QM-07
Arsenic	53.5	1.0	ug/g	2.4	102	70-130			
Barium	106	1.0	ug/g	53.1	106	70-130			
Beryllium	50.9	0.5	ug/g	0.5	101	70-130			
Boron, available	5.00	0.5	ug/g	0.98	80.3	70-122			
Boron	57.2	5.0	ug/g	ND	107	70-130			
Cadmium	51.2	0.5	ug/g	ND	102	70-130			
Chromium (VI)	3.7	0.2	ug/g	ND	71.5	70-130			
Chromium	71.5	5.0	ug/g	16.7	110	70-130			
Cobalt	52.5	1.0	ug/g	3.6	97.9	70-130			
Copper	58.0	5.0	ug/g	7.4	101	70-130			
Lead	54.1	1.0	ug/g	4.6	98.9	70-130			
Mercury	1.64	0.1	ug/g	ND	109	70-130			
Molybdenum	49.7	1.0	ug/g	ND	98.2	70-130			
Nickel	60.8	5.0	ug/g	10.7	100	70-130			
Selenium	52.4	1.0	ug/g	ND	104	70-130			
Silver	50.2	0.3	ug/g	ND	100	70-130			
Thallium	48.2	1.0	ug/g	ND	95.8	70-130			
Uranium	51.1	1.0	ug/g	ND	101	70-130			
Vanadium	70.0	10.0	ug/g	17.7	105	70-130			
Zinc	76.3	20.0	ug/g	25.5	102	70-130			
mSPLP Leachate Metals									

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Antimony	45.8	0.5	ug/L	ND	91.6	70-130			
Arsenic	50.3	1.0	ug/L	ND	100	70-130			
Barium	49.3	1.0	ug/L	2.36	93.9	70-130			
Beryllium	45.5	0.5	ug/L	ND	91.0	70-130			
Boron	55.2	10.0	ug/L	ND	96.0	70-130			
Cadmium	47.9	0.2	ug/L	ND	95.8	70-130			
Chromium	49.7	1.0	ug/L	ND	98.6	70-130			
Cobalt	48.5	0.5	ug/L	ND	96.8	70-130			
Copper	50.4	0.5	ug/L	ND	101	70-130			
Lead	49.3	0.2	ug/L	ND	98.3	70-130			
Molybdenum	57.6	0.5	ug/L	7.21	101	70-130			
Nickel	49.2	1.0	ug/L	ND	97.8	70-130			
Selenium	46.4	1.0	ug/L	ND	92.6	70-130			
Silver	43.3	0.2	ug/L	ND	86.5	70-130			
Thallium	47.7	0.5	ug/L	ND	95.3	70-130			
Uranium	47.9	0.2	ug/L	ND	95.5	70-130			
Vanadium	51.6	0.5	ug/L	0.80	102	70-130			
Zinc	52.1	5.0	ug/L	ND	99.3	70-130			
Volatiles									
Acetone	138	0.50	ug/g	ND	139	50-140			
Benzene	46.2	0.02	ug/g	ND	115	50-140			
Bromodichloromethane	44.5	0.05	ug/g	ND	111	50-140			
Bromoform	39.3	0.05	ug/g	ND	98.4	50-140			
Bromomethane	2.63	0.05	ug/g	ND	90.1	50-140			
Carbon Tetrachloride	46.2	0.05	ug/g	ND	115	50-140			
Chlorobenzene	39.9	0.05	ug/g	ND	99.4	50-140			
Chloroform	55.2	0.05	ug/g	ND	138	50-140			
Dibromochloromethane	42.9	0.05	ug/g	ND	107	50-140			
Dichlorodifluoromethane	3.34	0.05	ug/g	ND	115	50-140			
1,2-Dichlorobenzene	36.0	0.05	ug/g	ND	89.7	50-140			
1,3-Dichlorobenzene	38.8	0.05	ug/g	ND	97.1	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,4-Dichlorobenzene	37.8	0.05	ug/g	ND	94.2	50-140			
1,1-Dichloroethane	54.4	0.05	ug/g	ND	136	50-140			
1,2-Dichloroethane	50.6	0.05	ug/g	ND	127	50-140			
1,1-Dichloroethylene	47.0	0.05	ug/g	ND	117	50-140			
cis-1,2-Dichloroethylene	51.6	0.05	ug/g	ND	129	50-140			
trans-1,2-Dichloroethylene	52.0	0.05	ug/g	ND	130	50-140			
1,2-Dichloropropane	44.4	0.05	ug/g	ND	111	50-140			
cis-1,3-Dichloropropylene	42.5	0.05	ug/g	ND	106	50-140			
trans-1,3-Dichloropropylene	43.5	0.05	ug/g	ND	109	50-140			
Ethylbenzene	40.5	0.05	ug/g	ND	101	50-140			
Ethylene dibromide (dibromoethane, 1,2-)	46.3	0.05	ug/g	ND	116	50-140			
Hexane	40.3	0.05	ug/g	ND	101	50-140			
Methyl Ethyl Ketone (2-Butanone)	119	0.50	ug/g	ND	119	50-140			
Methyl Isobutyl Ketone	100	0.50	ug/g	ND	100	50-140			
Methyl tert-butyl ether	92.7	0.05	ug/g	ND	91.9	50-140			
Methylene Chloride	50.8	0.05	ug/g	ND	127	60-130			
Styrene	46.6	0.05	ug/g	ND	117	50-140			
1,1,1,2-Tetrachloroethane	37.3	0.05	ug/g	ND	93.5	50-140			
1,1,2,2-Tetrachloroethane	28.6	0.05	ug/g	ND	71.5	50-140			
Tetrachloroethylene	40.8	0.05	ug/g	ND	102	50-140			
Toluene	40.6	0.05	ug/g	ND	101	50-140			
1,1,1-Trichloroethane	47.3	0.05	ug/g	ND	118	50-140			
1,1,2-Trichloroethane	40.5	0.05	ug/g	ND	101	50-140			
Trichloroethylene	47.0	0.05	ug/g	ND	118	50-140			
Trichlorofluoromethane	43.3	0.05	ug/g	ND	108	50-140			
Vinyl chloride	3.45	0.02	ug/g	ND	118	50-140			
m,p-Xylenes	84.1	0.05	ug/g	ND	105	50-140			
o-Xylene	41.6	0.05	ug/g	ND	104	50-140			
Surrogate: 4-Bromofluorobenzene	*6.29*		*%*		*97.6*	*50-140*			
Surrogate: Dibromofluoromethane	*8.35*		*%*		*130*	*50-140*			
Surrogate: Toluene-d8	*6.39*		*%*		*99.1*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzene	46.2	0.02	ug/g	ND	115	50-140			
Ethylbenzene	40.5	0.05	ug/g	ND	101	50-140			
Toluene	40.6	0.05	ug/g	ND	101	50-140			
m,p-Xylenes	84.1	0.05	ug/g	ND	105	50-140			
o-Xylene	41.6	0.05	ug/g	ND	104	50-140			
Surrogate: Toluene-d8	*6.39*		*%*		*99.1*	*50-140*			

Qualifier Notes:

Sample Qualifiers :

1: GC-FID signal did not return to baseline by C50

Applies to Samples: 5-1A, 8-1

QC Qualifiers:

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on other acceptable QC.

Sample Data Revisions:

None

Certificate of Analysis

Report Date: 03-Oct-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

Work Order Revisions / Comments:

Revision - 1: This report has been revised to contain additional data to samples 1 and 13.

Revision - 2: This report has been revised to contain additional data to sample 16.

Revision - 3: This report has been revised to contain reanalyzed data for samples 3 and 16.

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

PARACEL | TI RI RI

Paracel ID: 2537264

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2537264	

Client Name: SERTAS Group
Contact Name: Paige Sarafin
Address: 4510 Rhodes Drive, Unit 210, Windsor, ON
Telephone: 519 981 2724

Project Ref: 2501E038
Quote #: Erwin
PO #:
E-mail: paige.sarafin@sertas.ca; clay.sereres@sertas.ca

Page 1 of 2

Turnaround Time
☐ 1 day ☐ 3 day
☐ 2 day ☒ Regular
Date Required:

☒ REG 153/04 ☐ REG 406/19

Other Regulation
☐ Table 1 ☐ Agri/Other ☒ Med/Fine
☐ Table 2 ☐ Res/Park ☐ Coarse
☒ Table 3 ☐ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☐ No
☐ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU - Storm
Mun:
☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full Metals	EC, SAR, pH	PAHs	PHCs	BTEXs	VOCs	PCBs	OCs			HOLD
1	5-1A	S		2	-	Sept. 9 2025	-											X
2	5-1B	S		2	-	Sept. 9 2025	-											X
3	5-2	S		2	-	Sept. 9 2025	-	X	X		X		X					
4	DUP3	S		2	-	Sept. 9 2025	-						X					
5	5-3	S		2	-	Sept. 9 2025	-	X	X		X		X					
6	5-4	S		2	-	Sept. 9 2025	-											X
7	5-5	S		2	-	Sept. 9 2025	-											X
8	5-6	S		2	-	Sept. 9 2025	-											X
9	5-7	S		2	-	Sept. 9 2025	-											X
10	5-8	S		2	-	Sept. 9 2025	-											X

Required Analysis

Comments:

Method of Delivery: Dale In

Unless otherwise negotiated by the parties, by signing Paracel's Chain of Custody form, you are agreeing to Paracel Laboratories Terms and Conditions and are subject to the terms and conditions thereof. Available at www.paracellabs.com

Relinquished By (Sign):	Received at Depot: Pat	Received at Lab: JW	Verified By: K. JAKOBSEN
Relinquished By (Print): Paige Sarafin	Date/Time: Sept 9/25 3:37	Date/Time: 9/11/25 15:53	Date/Time: Sept. 10/25 13:40
Date/Time: Sept 9 2025.	Temperature: 22.1 °C	Temperature: 9.2°C	pH Verified: ☐ By:

PARACEL | T R R

Paracel ID: 2537264

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2537264	

Client Name: SERTAS Group
Contact Name: Paige Sarafin
Address: 4510 Rhodes Drive, Unit 210, Windsor, ON
Telephone: 519 981 2724

Project Ref: 2501E038
Quote #: ONWIN
PO #:
E-mail: paige.sarafin@sertas.ca; clay.sereres@sertas.ca

Turnaround Time
☐ 1 day ☐ 3 day
☐ 2 day ☒ Regular
Date Required:

☒ REG 153/04 ☐ REG 406/19

Other Regulation	
☐ REG 558	☐ PWQO
☐ CCME	☐ MISA
☐ SU - Sani	☐ SU - Storm
Mun:	
☐ Other:	

☐ Table 1 ☐ Agri/Other ☒ Med/Fine
☐ Table 2 ☐ Res/Park ☐ Coarse
☒ Table 3 ☐ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☒ No

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full Metals	EC, SAR, pH	PAHs	PHCs	BTEXs	VOCs	PCBs	OCs			HOLD
1	4-2	S		2	-	Sept. 9 2025	—											X
2	4-3	S		2	-	Sept. 9 2025	—											X
3	8-1	S		2	-	Sept. 9 2025	—											X
4	8-2	S		2	-	Sept. 9 2025	—											X
5	8-3	S		2	-	Sept. 9 2025	—	X	X		X	X						
6	8-4	S		2	-	Sept. 9 2025	—	X	X		X	X						
7	8-5	S		2	-	Sept. 9 2025	—											X
8	8-6	S		2	-	Sept. 9 2025	—											X
9	8-7	S		2	-	Sept. 9 2025	—											X
10	8-8	S		2	-	Sept. 9 2025	—											X

Comments:

Method of Delivery: Walk in

Unless otherwise negotiated by the parties, by signing Paracel's Chain of Custody form, you are agreeing to Paracel Laboratories Terms and Conditions and are subject to the terms and conditions thereof. Available at www.paracellabs.com

Relinquished By (Sign):	Received at Depot: Pat	Received at Lab: Jw	Verified By: K. Jakobsen
Relinquished By (Print): Paige Sarafin	Date/Time: Sept 9/25 3:37	Date/Time: 9/11/25 9:58	Date/Time: Sept. 10/25 13:40
Date/Time: Sept 9 2025	Temperature: 22.1 °C	Temperature: 9.2°C	pH Verified: ☐ By:

351 Nash Road North, unit 9B
Hamilton, ON L8H 7P4
1-800-749-1947
www.paracellabs.com

Certificate of Analysis

SERTAS
4510 Rhodes Drive, Unit 210
Windsor, On N8W 5K5
Attn: Clayton Sereres

Client PO:
Project: 2501E038
Custody: 79403

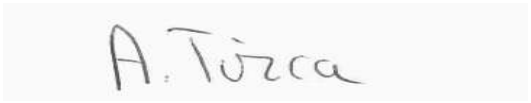
Report Date: 22-Sep-2025
Order Date: 16-Sep-2025

Order #: 2538147

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2538147-01	DUP4

Approved By:



Adriana Tirca, B.Eng (Chem)
Supervisor

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	19-Sep-25	19-Sep-25
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	19-Sep-25	19-Sep-25
Conductivity	MOE E3138 - probe @25 °C, water ext	19-Sep-25	19-Sep-25
Cyanide, free	MOE E3015 - Auto Colour, water extraction	22-Sep-25	22-Sep-25
Mercury by CVAA	EPA 7471B - CVAA, digestion	19-Sep-25	19-Sep-25
PCBs, total	SW846 8082A - GC-ECD	20-Sep-25	20-Sep-25
pH, soil	MOE E3137 - probe @25 °C, CaCl2 ext	18-Sep-25	18-Sep-25
PHC F1	CWS Tier 1 - P&T GC-FID	18-Sep-25	18-Sep-25
PHC F4G (gravimetric)	CWS Tier 1 - Extraction Gravimetric	18-Sep-25	19-Sep-25
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	18-Sep-25	18-Sep-25
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	19-Sep-25	19-Sep-25
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	18-Sep-25	19-Sep-25
REG 153: VOCs by P&T GC/MS	EPA 8260 - P&T GC-MS	18-Sep-25	18-Sep-25
SAR	Calculated	19-Sep-25	19-Sep-25
Solids, %	CWS Tier 1 - Gravimetric	18-Sep-25	19-Sep-25

Summary of Criteria Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in red

Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances.

Sample	Analyte	MDL / Units	Result	Reg 153/04 -T3 Res/Park, fine	Reg 153/04 -T3 Ind/Com, fine
DUP4	Acenaphthylene	0.02 ug/g	<0.40 [1]	0.17 ug/g	0.17 ug/g
DUP4	Benzo [a] pyrene	0.02 ug/g	<0.40 [1]	0.3 ug/g	0.3 ug/g
DUP4	Dibenzo [a,h] anthracene	0.02 ug/g	<0.40 [1]	0.1 ug/g	0.1 ug/g

Certificate of Analysis

Report Date: 22-Sep-2025

Client: **SERTAS**

Order Date: 16-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	DUP4	-	-	-	Criteria:	
	Sample Date:	08-Sep-25 00:00	-	-	-	Reg 153/04 -T3 Res/Park, fine	Reg 153/04 -T3 Ind/Com, fine
	Sample ID:	2538147-01	-	-	-		
	Matrix:	Soil	-	-	-		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	92.0	-	-	-	-	-
General Inorganics							
SAR	0.01 N/A	1.04	-	-	-	5 N/A	12 N/A
Conductivity	5 uS/cm	262	-	-	-	0.7 mS/cm	1.4 mS/cm
Cyanide, free	0.03 ug/g	<0.03	-	-	-	0.051 ug/g	0.051 ug/g
pH	0.05 pH Units	7.80	-	-	-	5.00 - 9.00 pH Units	5.00 - 9.00 pH Units
Metals							
Antimony	1.0 ug/g	<1.0	-	-	-	7.5 ug/g	50 ug/g
Arsenic	1.0 ug/g	5.6	-	-	-	18 ug/g	18 ug/g
Barium	1.0 ug/g	112	-	-	-	390 ug/g	670 ug/g
Beryllium	0.5 ug/g	0.5	-	-	-	5 ug/g	10 ug/g
Boron, available	0.5 ug/g	<0.5	-	-	-	1.5 ug/g	2 ug/g
Boron	5.0 ug/g	8.8	-	-	-	120 ug/g	120 ug/g
Cadmium	0.5 ug/g	<0.5	-	-	-	1.2 ug/g	1.9 ug/g
Chromium (VI)	0.2 ug/g	<0.2	-	-	-	10 ug/g	10 ug/g
Chromium	5.0 ug/g	17.8	-	-	-	160 ug/g	160 ug/g
Cobalt	1.0 ug/g	6.6	-	-	-	22 ug/g	100 ug/g
Copper	5.0 ug/g	14.2	-	-	-	180 ug/g	300 ug/g
Lead	1.0 ug/g	27.0	-	-	-	120 ug/g	120 ug/g
Mercury	0.1 ug/g	<0.1	-	-	-	1.8 ug/g	20 ug/g
Molybdenum	1.0 ug/g	1.8	-	-	-	6.9 ug/g	40 ug/g
Nickel	5.0 ug/g	18.3	-	-	-	130 ug/g	340 ug/g
Selenium	1.0 ug/g	<1.0	-	-	-	2.4 ug/g	5.5 ug/g
Silver	0.3 ug/g	<0.3	-	-	-	25 ug/g	50 ug/g
Thallium	1.0 ug/g	<1.0	-	-	-	1 ug/g	3.3 ug/g

Certificate of Analysis

Report Date: 22-Sep-2025

Client: **SERTAS**

Order Date: 16-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	DUP4	-	-	-	Criteria:	
	Sample Date:	08-Sep-25 00:00	-	-	-	Reg 153/04 -T3 Res/Park, fine	Reg 153/04 -T3 Ind/Com, fine
	Sample ID:	2538147-01	-	-	-		
	Matrix:	Soil	-	-	-		
	MDL/Units						
Metals							
Uranium	1.0 ug/g	<1.0	-	-	-	23 ug/g	33 ug/g
Vanadium	10.0 ug/g	30.9	-	-	-	86 ug/g	86 ug/g
Zinc	20.0 ug/g	50.7	-	-	-	340 ug/g	340 ug/g
Volatiles							
Acetone	0.50 ug/g	<0.50	-	-	-	28 ug/g	28 ug/g
Benzene	0.02 ug/g	<0.02	-	-	-	0.17 ug/g	0.4 ug/g
Bromodichloromethane	0.05 ug/g	<0.05	-	-	-	13 ug/g	18 ug/g
Bromoform	0.05 ug/g	<0.05	-	-	-	0.26 ug/g	1.7 ug/g
Bromomethane	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	0.05 ug/g
Carbon Tetrachloride	0.05 ug/g	<0.05	-	-	-	0.12 ug/g	1.5 ug/g
Chlorobenzene	0.05 ug/g	<0.05	-	-	-	2.7 ug/g	2.7 ug/g
Chloroform	0.05 ug/g	<0.05	-	-	-	0.18 ug/g	0.18 ug/g
Dibromochloromethane	0.05 ug/g	<0.05	-	-	-	9.4 ug/g	13 ug/g
Dichlorodifluoromethane	0.05 ug/g	<0.05	-	-	-	25 ug/g	25 ug/g
1,2-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	4.3 ug/g	8.5 ug/g
1,3-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	6 ug/g	12 ug/g
1,4-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	0.097 ug/g	0.84 ug/g
1,1-Dichloroethane	0.05 ug/g	<0.05	-	-	-	11 ug/g	21 ug/g
1,2-Dichloroethane	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	0.05 ug/g
1,1-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	0.48 ug/g
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	30 ug/g	37 ug/g
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	0.75 ug/g	9.3 ug/g
1,2-Dichloropropane	0.05 ug/g	<0.05	-	-	-	0.085 ug/g	0.68 ug/g
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	-	-	-	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	-	-	-	-	-

	Client ID:	DUP4	-	-	-	Criteria:	
	Sample Date:	08-Sep-25 00:00	-	-	-	Reg 153/04 -T3 Res/Park, fine	Reg 153/04 -T3 Ind/Com, fine
	Sample ID:	2538147-01	-	-	-		
	Matrix:	Soil	-	-	-		
	MDL/Units						
Volatiles							
1,3-Dichloropropene, total	0.05 ug/g	<0.05	-	-	-	0.083 ug/g	0.21 ug/g
Ethylbenzene	0.05 ug/g	<0.05	-	-	-	15 ug/g	19 ug/g
Ethylene dibromide (dibromoethane,	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	0.05 ug/g
Hexane	0.05 ug/g	<0.05	-	-	-	34 ug/g	88 ug/g
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	-	-	-	44 ug/g	88 ug/g
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	-	-	-	4.3 ug/g	210 ug/g
Methyl tert-butyl ether	0.05 ug/g	<0.05	-	-	-	1.4 ug/g	3.2 ug/g
Methylene Chloride	0.05 ug/g	<0.05	-	-	-	0.96 ug/g	2 ug/g
Styrene	0.05 ug/g	<0.05	-	-	-	2.2 ug/g	43 ug/g
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	0.11 ug/g
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	0.094 ug/g
Tetrachloroethylene	0.05 ug/g	<0.05	-	-	-	2.3 ug/g	21 ug/g
Toluene	0.05 ug/g	<0.05	-	-	-	6 ug/g	78 ug/g
1,1,1-Trichloroethane	0.05 ug/g	<0.05	-	-	-	3.4 ug/g	12 ug/g
1,1,2-Trichloroethane	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	0.11 ug/g
Trichloroethylene	0.05 ug/g	<0.05	-	-	-	0.52 ug/g	0.61 ug/g
Trichlorofluoromethane	0.05 ug/g	<0.05	-	-	-	5.8 ug/g	5.8 ug/g
Vinyl chloride	0.02 ug/g	<0.02	-	-	-	0.022 ug/g	0.25 ug/g
m,p-Xylenes	0.05 ug/g	<0.05	-	-	-	-	-
o-Xylene	0.05 ug/g	<0.05	-	-	-	-	-
Xylenes, total	0.05 ug/g	<0.05	-	-	-	25 ug/g	30 ug/g
Dibromofluoromethane	Surrogate	100%	-	-	-	-	-
Toluene-d8	Surrogate	89.8%	-	-	-	-	-
4-Bromofluorobenzene	Surrogate	110%	-	-	-	-	-
Hydrocarbons							

Certificate of Analysis

Report Date: 22-Sep-2025

Client: **SERTAS**

Order Date: 16-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	DUP4	-	-	-	Criteria:	
	Sample Date:	08-Sep-25 00:00	-	-	-	Reg 153/04 -T3 Res/Park, fine	Reg 153/04 -T3 Ind/Com, fine
	Sample ID:	2538147-01	-	-	-		
	Matrix:	Soil	-	-	-		
	MDL/Units						
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	-	-	-	65 ug/g	65 ug/g
F2 PHCs (C10-C16)	4 ug/g	<40 [1]	-	-	-	150 ug/g	250 ug/g
F3 PHCs (C16-C34)	8 ug/g	717	-	-	-	1300 ug/g	2500 ug/g
F4 PHCs (C34-C50)	6 ug/g	2880 [2]	-	-	-	5600 ug/g	6600 ug/g
F4G PHCs (gravimetric)	50 ug/g	2150	-	-	-	5600 ug/g	6600 ug/g
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.40 [1]	-	-	-	58 ug/g	96 ug/g
Acenaphthylene	0.02 ug/g	<0.40 [1]	-	-	-	0.17 ug/g	0.17 ug/g
Anthracene	0.02 ug/g	<0.40 [1]	-	-	-	0.74 ug/g	0.74 ug/g
Benzo [a] anthracene	0.02 ug/g	<0.40 [1]	-	-	-	0.63 ug/g	0.96 ug/g
Benzo [a] pyrene	0.02 ug/g	<0.40 [1]	-	-	-	0.3 ug/g	0.3 ug/g
Benzo [b] fluoranthene	0.02 ug/g	<0.40 [1]	-	-	-	0.78 ug/g	0.96 ug/g
Benzo [g,h,i] perylene	0.02 ug/g	<0.40 [1]	-	-	-	7.8 ug/g	9.6 ug/g
Benzo [k] fluoranthene	0.02 ug/g	<0.40 [1]	-	-	-	0.78 ug/g	0.96 ug/g
Chrysene	0.02 ug/g	<0.40 [1]	-	-	-	7.8 ug/g	9.6 ug/g
Dibenzo [a,h] anthracene	0.02 ug/g	<0.40 [1]	-	-	-	0.1 ug/g	0.1 ug/g
Fluoranthene	0.02 ug/g	<0.40 [1]	-	-	-	0.69 ug/g	9.6 ug/g
Fluorene	0.02 ug/g	<0.40 [1]	-	-	-	69 ug/g	69 ug/g
Indeno [1,2,3-cd] pyrene	0.02 ug/g	<0.40 [1]	-	-	-	0.48 ug/g	0.95 ug/g
1-Methylnaphthalene	0.02 ug/g	<0.40 [1]	-	-	-	3.4 ug/g	85 ug/g
2-Methylnaphthalene	0.02 ug/g	<0.40 [1]	-	-	-	3.4 ug/g	85 ug/g
Methylnaphthalene (1&2)	0.04 ug/g	<0.80 [1]	-	-	-	3.4 ug/g	85 ug/g
Naphthalene	0.01 ug/g	<0.20 [1]	-	-	-	0.75 ug/g	28 ug/g
Phenanthrene	0.02 ug/g	<0.40 [1]	-	-	-	7.8 ug/g	16 ug/g
Pyrene	0.02 ug/g	<0.40 [1]	-	-	-	78 ug/g	96 ug/g

Certificate of Analysis

Report Date: 22-Sep-2025

Client: **SERTAS**

Order Date: 16-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	DUP4	-	-	-	**Criteria:**	
	Sample Date:	08-Sep-25 00:00	-	-	-	**Reg 153/04 -T3**	**Reg 153/04 -T3**
	Sample ID:	2538147-01	-	-	-	**Res/Park, fine**	**Ind/Com, fine**
	Matrix:	Soil	-	-	-		
	MDL/Units						
Semi-Volatiles							
2-Fluorobiphenyl	Surrogate	86.6% [1]	-	-	-	-	-
Terphenyl-d14	Surrogate	60.7% [1]	-	-	-	-	-
PCBs							
PCBs, total	0.05 ug/g	<0.05	-	-	-	0.35 ug/g	1.1 ug/g
Decachlorobiphenyl	Surrogate	104%	-	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics								
Conductivity	ND	5	uS/cm					
Cyanide, free	ND	0.03	ug/g					
Hydrocarbons								
F4G PHCs (gravimetric)	ND	50	ug/g					
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
Metals								
Boron, available	ND	0.5	ug/g					
Chromium (VI)	ND	0.2	ug/g					
Mercury	ND	0.1	ug/g					
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
PCBs								
PCBs, total	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: Decachlorobiphenyl	*0.0533*		*%*	*107*	*60-140*			
Semi-Volatiles								
Acenaphthene	ND	0.02	ug/g					
Acenaphthylene	ND	0.02	ug/g					
Anthracene	ND	0.02	ug/g					
Benzo [a] anthracene	ND	0.02	ug/g					
Benzo [a] pyrene	ND	0.02	ug/g					
Benzo [b] fluoranthene	ND	0.02	ug/g					
Benzo [g,h,i] perylene	ND	0.02	ug/g					
Benzo [k] fluoranthene	ND	0.02	ug/g					
Chrysene	ND	0.02	ug/g					
Dibenzo [a,h] anthracene	ND	0.02	ug/g					
Fluoranthene	ND	0.02	ug/g					
Fluorene	ND	0.02	ug/g					
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g					
1-Methylnaphthalene	ND	0.02	ug/g					
2-Methylnaphthalene	ND	0.02	ug/g					
Methylnaphthalene (1&2)	ND	0.04	ug/g					
Naphthalene	ND	0.01	ug/g					
Phenanthrene	ND	0.02	ug/g					
Pyrene	ND	0.02	ug/g					
Surrogate: 2-Fluorobiphenyl	*0.841*		*%*	*63.1*	*50-140*			
Surrogate: Terphenyl-d14	*0.982*		*%*	*73.6*	*50-140*			
Volatiles								
Acetone	ND	0.50	ug/g					
Benzene	ND	0.02	ug/g					
Bromodichloromethane	ND	0.05	ug/g					
Bromoform	ND	0.05	ug/g					
Bromomethane	ND	0.05	ug/g					
Carbon Tetrachloride	ND	0.05	ug/g					
Chlorobenzene	ND	0.05	ug/g					
Chloroform	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Dibromochloromethane	ND	0.05	ug/g					
Dichlorodifluoromethane	ND	0.05	ug/g					
1,2-Dichlorobenzene	ND	0.05	ug/g					
1,3-Dichlorobenzene	ND	0.05	ug/g					
1,4-Dichlorobenzene	ND	0.05	ug/g					
1,1-Dichloroethane	ND	0.05	ug/g					
1,2-Dichloroethane	ND	0.05	ug/g					
1,1-Dichloroethylene	ND	0.05	ug/g					
cis-1,2-Dichloroethylene	ND	0.05	ug/g					
trans-1,2-Dichloroethylene	ND	0.05	ug/g					
1,2-Dichloropropane	ND	0.05	ug/g					
cis-1,3-Dichloropropylene	ND	0.05	ug/g					
trans-1,3-Dichloropropylene	ND	0.05	ug/g					
1,3-Dichloropropene, total	ND	0.05	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g					
Hexane	ND	0.05	ug/g					
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g					
Methyl Isobutyl Ketone	ND	0.50	ug/g					
Methyl tert-butyl ether	ND	0.05	ug/g					
Methylene Chloride	ND	0.05	ug/g					
Styrene	ND	0.05	ug/g					
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g					
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g					
Tetrachloroethylene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
1,1,1-Trichloroethane	ND	0.05	ug/g					
1,1,2-Trichloroethane	ND	0.05	ug/g					
Trichloroethylene	ND	0.05	ug/g					
Trichlorofluoromethane	ND	0.05	ug/g					
Vinyl chloride	ND	0.02	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Xylenes, total	ND	0.05	ug/g					
Surrogate: 4-Bromofluorobenzene	*7.88*		*%*	*98.5*	*50-140*			
Surrogate: Dibromofluoromethane	*6.82*		*%*	*85.3*	*50-140*			
Surrogate: Toluene-d8	*7.18*		*%*	*89.8*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	0.17	0.01	N/A	0.18			2.3	30	
Conductivity	54.2	5	uS/cm	50.2			7.5	5	QR-05
Cyanide, free	ND	0.03	ug/g	ND			NC	35	
pH	8.11	0.05	pH Units	8.09			0.2	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	ND	4	ug/g	ND			NC	30	
F3 PHCs (C16-C34)	ND	8	ug/g	ND			NC	30	
F4 PHCs (C34-C50)	ND	6	ug/g	ND			NC	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	5.7	1.0	ug/g	5.6			1.2	30	
Barium	124	1.0	ug/g	112			10.7	30	
Beryllium	0.5	0.5	ug/g	0.5			4.7	30	
Boron, available	6.55	0.5	ug/g	6.28			4.3	35	
Boron	8.5	5.0	ug/g	8.8			3.4	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	18.4	5.0	ug/g	17.8			3.2	30	
Cobalt	7.1	1.0	ug/g	6.6			7.0	30	
Copper	15.1	5.0	ug/g	14.2			6.5	30	
Lead	26.7	1.0	ug/g	27.0			1.1	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	1.8	1.0	ug/g	1.8			0.2	30	
Nickel	19.8	5.0	ug/g	18.3			7.7	30	
Selenium	ND	1.0	ug/g	ND			NC	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	ND	1.0	ug/g	ND			NC	30	
Vanadium	32.1	10.0	ug/g	30.9			3.9	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Zinc	54.2	20.0	ug/g	50.7			6.8	30	
Physical Characteristics									
% Solids	74.4	0.1	% by Wt.	75.1			0.9	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g	ND			NC	40	
Acenaphthylene	ND	0.02	ug/g	ND			NC	40	
Anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] pyrene	ND	0.02	ug/g	ND			NC	40	
Benzo [b] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g	ND			NC	40	
Benzo [k] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Chrysene	ND	0.02	ug/g	ND			NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g	ND			NC	40	
Fluoranthene	ND	0.02	ug/g	ND			NC	40	
Fluorene	ND	0.02	ug/g	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g	ND			NC	40	
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
Naphthalene	ND	0.01	ug/g	ND			NC	40	
Phenanthrene	ND	0.02	ug/g	ND			NC	40	
Pyrene	ND	0.02	ug/g	ND			NC	40	
Surrogate: 2-Fluorobiphenyl	*0.997*		*%*		*66.9*	*50-140*			
Surrogate: Terphenyl-d14	*1.01*		*%*		*67.4*	*50-140*			
Volatiles									
Acetone	ND	0.50	ug/g	ND			NC	50	
Benzene	ND	0.02	ug/g	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g	ND			NC	50	
Bromoform	ND	0.05	ug/g	ND			NC	50	
Bromomethane	ND	0.05	ug/g	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Chlorobenzene	ND	0.05	ug/g	ND			NC	50	
Chloroform	ND	0.05	ug/g	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g	ND			NC	50	
Hexane	ND	0.05	ug/g	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g	ND			NC	50	
Styrene	ND	0.05	ug/g	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Vinyl chloride	ND	0.02	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	*8.54*		*%*		*102*	*50-140*			
Surrogate: Dibromofluoromethane	*7.34*		*%*		*87.5*	*50-140*			
Surrogate: Toluene-d8	*7.57*		*%*		*90.3*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	0.158	0.03	ug/g	ND	45.7	50-150			QM-05
Hydrocarbons									
F1 PHCs (C6-C10)	179	7	ug/g	ND	104	85-115			
F2 PHCs (C10-C16)	96	4	ug/g	ND	103	60-140			
F3 PHCs (C16-C34)	247	8	ug/g	ND	108	60-140			
F4 PHCs (C34-C50)	154	6	ug/g	ND	106	60-140			
F4G PHCs (gravimetric)	840	50	ug/g	ND	84.0	80-120			
Metals									
Antimony	41.8	1.0	ug/g	ND	83.2	70-130			
Arsenic	50.9	1.0	ug/g	2.3	97.4	70-130			
Barium	104	1.0	ug/g	44.6	120	70-130			
Beryllium	49.3	0.5	ug/g	ND	98.1	70-130			
Boron, available	9.91	0.5	ug/g	6.28	72.6	60-140			
Boron	48.1	5.0	ug/g	ND	89.1	70-130			
Cadmium	46.6	0.5	ug/g	ND	92.9	70-130			
Chromium (VI)	4.8	0.2	ug/g	ND	97.0	66-118			
Chromium	60.9	5.0	ug/g	7.1	108	70-130			
Cobalt	52.9	1.0	ug/g	2.6	101	70-130			
Copper	53.0	5.0	ug/g	5.7	94.6	70-130			
Lead	56.0	1.0	ug/g	10.8	90.4	70-130			
Mercury	1.44	0.1	ug/g	ND	96.2	70-130			
Molybdenum	50.6	1.0	ug/g	ND	99.8	70-130			
Nickel	57.4	5.0	ug/g	7.3	100	70-130			
Selenium	48.0	1.0	ug/g	ND	95.8	70-130			
Silver	45.0	0.3	ug/g	ND	89.9	70-130			
Thallium	48.0	1.0	ug/g	ND	95.8	70-130			
Uranium	50.0	1.0	ug/g	ND	99.3	70-130			
Vanadium	66.9	10.0	ug/g	12.4	109	70-130			
Zinc	67.1	20.0	ug/g	20.3	93.7	70-130			
PCBs									

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs, total	0.325	0.05	ug/g	ND	81.3	60-140			
Surrogate: Decachlorobiphenyl	*0.0579*		*%*		*116*	*60-140*			
Semi-Volatiles									
Acenaphthene	0.099	0.02	ug/g	ND	53.0	50-140			
Acenaphthylene	0.096	0.02	ug/g	ND	51.6	50-140			
Anthracene	0.155	0.02	ug/g	ND	83.1	50-140			
Benzo [a] anthracene	0.156	0.02	ug/g	ND	83.8	50-140			
Benzo [a] pyrene	0.153	0.02	ug/g	ND	82.2	50-140			
Benzo [b] fluoranthene	0.169	0.02	ug/g	ND	90.9	50-140			
Benzo [g,h,i] perylene	0.173	0.02	ug/g	ND	92.7	50-140			
Benzo [k] fluoranthene	0.163	0.02	ug/g	ND	87.2	50-140			
Chrysene	0.175	0.02	ug/g	ND	94.1	50-140			
Dibenzo [a,h] anthracene	0.177	0.02	ug/g	ND	95.0	50-140			
Fluoranthene	0.177	0.02	ug/g	ND	95.2	50-140			
Fluorene	0.115	0.02	ug/g	ND	61.8	50-140			
Indeno [1,2,3-cd] pyrene	0.167	0.02	ug/g	ND	89.8	50-140			
1-Methylnaphthalene	0.108	0.02	ug/g	ND	57.7	50-140			
2-Methylnaphthalene	0.097	0.02	ug/g	ND	52.2	50-140			
Naphthalene	0.104	0.01	ug/g	ND	55.9	50-140			
Phenanthrene	0.171	0.02	ug/g	ND	91.6	50-140			
Pyrene	0.174	0.02	ug/g	ND	93.2	50-140			
Surrogate: 2-Fluorobiphenyl	*0.849*		*%*		*57.0*	*50-140*			
Surrogate: Terphenyl-d14	*1.10*		*%*		*73.9*	*50-140*			
Volatiles									
Acetone	10.3	0.50	ug/g	ND	103	50-140			
Benzene	4.84	0.02	ug/g	ND	121	60-130			
Bromodichloromethane	3.16	0.05	ug/g	ND	78.9	60-130			
Bromoform	2.76	0.05	ug/g	ND	69.0	60-130			
Bromomethane	4.71	0.05	ug/g	ND	118	50-140			
Carbon Tetrachloride	2.96	0.05	ug/g	ND	74.0	60-130			
Chlorobenzene	3.32	0.05	ug/g	ND	82.9	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Chloroform	3.03	0.05	ug/g	ND	75.8	60-130			
Dibromochloromethane	3.07	0.05	ug/g	ND	76.7	60-130			
Dichlorodifluoromethane	4.42	0.05	ug/g	ND	110	50-140			
1,2-Dichlorobenzene	3.48	0.05	ug/g	ND	87.1	60-130			
1,3-Dichlorobenzene	3.50	0.05	ug/g	ND	87.5	60-130			
1,4-Dichlorobenzene	3.43	0.05	ug/g	ND	85.7	60-130			
1,1-Dichloroethane	3.24	0.05	ug/g	ND	80.9	60-130			
1,2-Dichloroethane	2.78	0.05	ug/g	ND	69.4	60-130			
1,1-Dichloroethylene	3.89	0.05	ug/g	ND	97.2	60-130			
cis-1,2-Dichloroethylene	3.21	0.05	ug/g	ND	80.2	60-130			
trans-1,2-Dichloroethylene	3.63	0.05	ug/g	ND	90.6	60-130			
1,2-Dichloropropane	4.30	0.05	ug/g	ND	108	60-130			
cis-1,3-Dichloropropylene	3.74	0.05	ug/g	ND	93.5	60-130			
trans-1,3-Dichloropropylene	3.35	0.05	ug/g	ND	83.6	60-130			
Ethylbenzene	3.66	0.05	ug/g	ND	91.6	60-130			
Ethylene dibromide (dibromoethane, 1,2-)	3.24	0.05	ug/g	ND	81.0	60-130			
Hexane	4.68	0.05	ug/g	ND	117	60-130			
Methyl Ethyl Ketone (2-Butanone)	11.3	0.50	ug/g	ND	113	50-140			
Methyl Isobutyl Ketone	11.7	0.50	ug/g	ND	117	50-140			
Methyl tert-butyl ether	11.6	0.05	ug/g	ND	116	50-140			
Methylene Chloride	4.08	0.05	ug/g	ND	102	60-130			
Styrene	3.70	0.05	ug/g	ND	92.6	60-130			
1,1,1,2-Tetrachloroethane	3.43	0.05	ug/g	ND	85.8	60-130			
1,1,2,2-Tetrachloroethane	2.50	0.05	ug/g	ND	62.4	60-130			
Tetrachloroethylene	3.96	0.05	ug/g	ND	99.0	60-130			
Toluene	3.82	0.05	ug/g	ND	95.6	60-130			
1,1,1-Trichloroethane	2.85	0.05	ug/g	ND	71.1	60-130			
1,1,2-Trichloroethane	3.68	0.05	ug/g	ND	92.1	60-130			
Trichloroethylene	4.43	0.05	ug/g	ND	111	60-130			
Trichlorofluoromethane	3.84	0.05	ug/g	ND	96.0	50-140			
Vinyl chloride	4.58	0.02	ug/g	ND	115	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
m,p-Xylenes	7.94	0.05	ug/g	ND	99.2	60-130			
o-Xylene	4.03	0.05	ug/g	ND	101	60-130			
Surrogate: 4-Bromofluorobenzene	*7.98*		*%*		*99.8*	*50-140*			
Surrogate: Dibromofluoromethane	*6.71*		*%*		*83.8*	*50-140*			
Surrogate: Toluene-d8	*7.07*		*%*		*88.4*	*50-140*			

Qualifier Notes:

Sample Qualifiers :

1: Elevated reporting limits due to the nature of the sample matrix.

2: GC-FID signal did not return to baseline by C50

Applies to Samples: DUP4

QC Qualifiers:

QM-05 The spike recovery was outside acceptance limits for the matrix spike due to matrix interference.

QR-05 Duplicate RPDs higher than normally accepted. Remaining batch QA\QC was acceptable. May be sample effect.

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

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Paracel ID: 2538147

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2538147	№ 79403

Client Name: Sertas	Project Ref: 25016038
Contact Name: Paige Sarafin	Quote #: Erwin
Address: 4510 Rhodes Dr #210 Windsor ON	PO #:
Telephone: 519 981 3724	E-mail: paige-sarafin@sertas.ca clay-steres@sertas.ca

Page 1 of 1

Turnaround Time

☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular

Date Required: _____

☒ REG 153/04 ☐ REG 406/19

☐ Table 1 ☐ Agri/Other ☒ Med/Fine
☐ Table 2 ☒ Res/Park ☐ Coarse
☒ Table 3 ☒ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☒ No

Other Regulation

☐ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU - Storm
Mun: _____
☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Required Analysis

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Metals Extr.	Inorganics	PAH	PHC	VOC	RCP
1	DUP4	S		2	-	09.8.25	-	X	X	X	X	X	X
2		S											
3													
4													
5													
6													
7													
8													
9													
10													

Comments:

Method of Delivery: Walkin

Relinquished By (Sign):	Received at Depot: K. Jakobsen	Received at Lab: SJ	Verified By: K. Jakobsen
Relinquished By (Print): Paige Sarafin	Date/Time: Sept. 16/25 12:05	Date/Time: Sept 17, 2025 10:00	Date/Time: Sept. 16/25 14:10
Date/Time: Sept. 16/25	Temperature: 9.2 °C	Temperature: 5.3 °C	pH Verified: ☐ By:

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Certificate of Analysis

SERTAS
4510 Rhodes Drive, Unit 210
Windsor, ON N8W 5K5
Attn: Paige Sarafin

Client PO:
Project: 2501E038
Custody: 78431

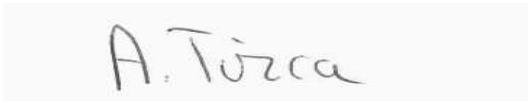
Report Date: 23-Sep-2025
Order Date: 18-Sep-2025

Order #: 2538387

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2538387-01	8-4

Approved By:



Adriana Tirca, B.Eng (Chem)
Supervisor

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
REG 406: Metals, leachate	mSPLP EPA 6020 - Digestion - ICP-MS	22-Sep-25	23-Sep-25
Solids, %	CWS Tier 1 - Gravimetric	22-Sep-25	23-Sep-25

Certificate of Analysis

Report Date: 23-Sep-2025

Client: **SERTAS**

Order Date: 18-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	8-4	-	-	-		
	Sample Date:	09-Sep-25 00:00	-	-	-	-	-
	Sample ID:	2538387-01	-	-	-		
	Matrix:	Soil	-	-	-		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	87.5	-	-	-	-	-
mSPLP Leachate Metals							
Antimony	0.5 ug/L	<0.5	-	-	-	-	-
Arsenic	1.0 ug/L	1.1	-	-	-	-	-
Barium	1.0 ug/L	7.5	-	-	-	-	-
Beryllium	0.5 ug/L	<0.5	-	-	-	-	-
Boron	10.0 ug/L	66.9	-	-	-	-	-
Cadmium	0.2 ug/L	<0.2	-	-	-	-	-
Chromium	1.0 ug/L	1.3	-	-	-	-	-
Cobalt	0.5 ug/L	<0.5	-	-	-	-	-
Copper	0.5 ug/L	1.4	-	-	-	-	-
Lead	0.2 ug/L	0.6	-	-	-	-	-
Molybdenum	0.5 ug/L	31.6	-	-	-	-	-
Nickel	1.0 ug/L	1.4	-	-	-	-	-
Selenium	1.0 ug/L	<1.0	-	-	-	-	-
Silver	0.2 ug/L	<0.2	-	-	-	-	-
Thallium	0.5 ug/L	<0.5	-	-	-	-	-
Uranium	0.2 ug/L	0.6	-	-	-	-	-
Vanadium	0.5 ug/L	2.6	-	-	-	-	-
Zinc	5.0 ug/L	5.6	-	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
mSPLP Leachate Metals								
Antimony	ND	0.5	ug/L					
Arsenic	ND	1.0	ug/L					
Barium	ND	1.0	ug/L					
Beryllium	ND	0.5	ug/L					
Boron	ND	10.0	ug/L					
Cadmium	ND	0.2	ug/L					
Chromium	ND	1.0	ug/L					
Cobalt	ND	0.5	ug/L					
Copper	ND	0.5	ug/L					
Lead	ND	0.2	ug/L					
Molybdenum	ND	0.5	ug/L					
Nickel	ND	1.0	ug/L					
Selenium	ND	1.0	ug/L					
Silver	ND	0.2	ug/L					
Thallium	ND	0.5	ug/L					
Uranium	ND	0.2	ug/L					
Vanadium	ND	0.5	ug/L					
Zinc	ND	5.0	ug/L					

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
mSPLP Leachate Metals									
Antimony	ND	0.5	ug/L	ND			NC	50	
Arsenic	ND	1.0	ug/L	ND			NC	50	
Barium	10.7	1.0	ug/L	10.8			1.1	50	
Beryllium	ND	0.5	ug/L	ND			NC	50	
Boron	27.9	10.0	ug/L	26.7			4.3	50	
Cadmium	ND	0.2	ug/L	ND			NC	50	
Chromium	3.50	1.0	ug/L	3.38			3.4	50	
Cobalt	0.81	0.5	ug/L	0.80			0.9	50	
Copper	2.55	0.5	ug/L	2.47			2.9	50	
Lead	0.87	0.2	ug/L	0.85			2.2	50	
Molybdenum	3.38	0.5	ug/L	3.34			1.3	50	
Nickel	2.08	1.0	ug/L	2.08			0.1	50	
Selenium	ND	1.0	ug/L	ND			NC	50	
Silver	ND	0.2	ug/L	ND			NC	50	
Thallium	ND	0.5	ug/L	ND			NC	50	
Uranium	ND	0.2	ug/L	ND			NC	50	
Vanadium	3.28	0.5	ug/L	3.16			3.7	50	
Zinc	5.70	5.0	ug/L	5.67			0.6	50	
Physical Characteristics									
% Solids	75.2	0.1	% by Wt.	74.4			1.0	25	

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
mSPLP Leachate Metals									
Antimony	46.0	0.5	ug/L	ND	91.8	60-130			
Arsenic	49.3	1.0	ug/L	ND	97.5	70-130			
Barium	56.0	1.0	ug/L	10.8	90.4	70-130			
Beryllium	50.5	0.5	ug/L	ND	101	70-130			
Boron	68.5	10.0	ug/L	26.7	83.5	70-130			
Cadmium	44.9	0.2	ug/L	ND	89.8	70-130			
Chromium	52.1	1.0	ug/L	3.38	97.5	70-130			
Cobalt	49.6	0.5	ug/L	0.80	97.6	70-130			
Copper	53.1	0.5	ug/L	2.47	101	70-130			
Lead	45.3	0.2	ug/L	0.85	88.9	70-130			
Molybdenum	52.4	0.5	ug/L	3.34	98.0	70-130			
Nickel	47.9	1.0	ug/L	2.08	91.7	70-130			
Selenium	48.5	1.0	ug/L	ND	96.7	70-130			
Silver	40.6	0.2	ug/L	ND	81.2	70-130			
Thallium	43.6	0.5	ug/L	ND	87.2	70-130			
Uranium	46.3	0.2	ug/L	ND	92.2	70-130			
Vanadium	53.9	0.5	ug/L	3.16	101	70-130			
Zinc	55.4	5.0	ug/L	5.67	99.4	70-130			

Certificate of Analysis

Report Date: 23-Sep-2025

Client: **SERTAS**

Order Date: 18-Sep-2025

Client PO:

Project Description: 2501E038

Qualifier Notes:

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

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Paracel ID: 2538387

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2538387	№ 78431

Client Name: Sertas	Project Ref: 25016038	Page 1 of 1
Contact Name: Paige S	Quote #: enwin	**Turnaround Time**
Address: 4510 Rhodes Dr #210 Windsor ON	PO #:	☐ 1 day ☐ 3 day
Telephone: 519 981 2734	E-mail: paige.saralinc@sertas.ca	☐ 2 day ☒ Regular
		Date Required:

☐ REG 153/04 ☐ REG 406/19	Other Regulation
☐ Table 1 ☐ Agri/Other ☐ Med/Fine	☐ REG 558 ☐ PWQO
☐ Table 2 ☐ Res/Park ☐ Coarse	☐ CCME ☐ MISA
☐ Table 3 ☐ Ind/Comm	☐ SU - Sani ☐ SU - Storm
☐ Table ___	Mun:
For RSC: ☐ Yes ☐ No	☐ Other: SPLP

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Required Analysis: SPLP metals
1	8-4	S		1		9.9.25		X
2								
3								
4								
5								
6								
7								
8								
9								
10								

Comments:

Method of Delivery: Walk in

Relinquished By (Sign):	Received at Depot: K. Jakobsen	Received at Lab: JM	Verified By: K. Jakobsen
Relinquished By (Print): Paige S	Date/Time: Sept. 18/25 D:15	Date/Time: Sept 19 1000	Date/Time: Sept. 18/25 14:40
Date/Time: Sept 18/25	Temperature: 23.4 °C	Temperature: 5.0 °C	pH Verified: ☐ By:

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Certificate of Analysis

SERTAS
4510 Rhodes Drive, Unit 210
Windsor, ON N8W 5K5
Attn: Paige Sarafin

Client PO:
Project: 2501E038
Custody:

Report Date: 30-Sep-2025
Order Date: 24-Sep-2025

Order #: 2539195

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2539195-01	6-1A

Approved By:



Mark Foto, M.Sc.
Laboratory Director

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Ignitability	based on EPA 1030	26-Sep-25	26-Sep-25
Metals, ICP-MS	TCLP EPA 6020 - Digestion - ICP-MS	26-Sep-25	26-Sep-25
REG 558 - Cyanide	TCLP MOE E3015- Auto Colour	26-Sep-25	26-Sep-25
REG 558 - Fluoride	TCLP EPA 340.2 - ISE	29-Sep-25	29-Sep-25
REG 558 - Mercury by CVAA	TCLP EPA 7470A, CVAA	29-Sep-25	29-Sep-25
REG 558 - NO3/NO2	TCLP EPA 300.1 - IC	29-Sep-25	29-Sep-25
REG 558 - PAHs	TCLP EPA 625 - GC-MS	26-Sep-25	26-Sep-25
REG 558 - VOCs	TCLP ZHE EPA 624 - P&T GC-MS	26-Sep-25	27-Sep-25
Solids, %	CWS Tier 1 - Gravimetric	29-Sep-25	30-Sep-25

Summary of Criteria Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in red

Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances.

Sample	Analyte	MDL / Units	Result	Reg 558 Schedule 4	-

Certificate of Analysis

Report Date: 30-Sep-2025

Client: **SERTAS**

Order Date: 24-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	6-1A	-	-	-	**Criteria:**	
	Sample Date:	24-Sep-25 00:00	-	-	-	**Reg 558 Schedule 4**	-
	Sample ID:	2539195-01	-	-	-		
	Matrix:	Soil	-	-	-		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	81.1	-	-	-	-	-
Ignitability	N/A	Negative	-	-	-	-	-
EPA 1311 - TCLP Leachate Inorganics							
Fluoride	0.05 mg/L	0.30	-	-	-	150 mg/L	-
Nitrate as N	1 mg/L	<1	-	-	-	1000 mg/L	-
Nitrite as N	1 mg/L	<1	-	-	-	1000 mg/L	-
Cyanide, free	0.02 mg/L	<0.02	-	-	-	20 mg/L	-
EPA 1311 - TCLP Leachate Metals							
Arsenic	0.05 mg/L	<0.05	-	-	-	2.5 mg/L	-
Barium	0.05 mg/L	0.61	-	-	-	100 mg/L	-
Boron	0.10 mg/L	<0.10	-	-	-	500 mg/L	-
Cadmium	0.01 mg/L	<0.01	-	-	-	0.5 mg/L	-
Chromium	0.05 mg/L	<0.05	-	-	-	5 mg/L	-
Lead	0.05 mg/L	<0.05	-	-	-	5 mg/L	-
Mercury	0.005 mg/L	<0.005	-	-	-	0.1 mg/L	-
Selenium	0.05 mg/L	<0.05	-	-	-	1 mg/L	-
Silver	0.05 mg/L	<0.05	-	-	-	5 mg/L	-
Uranium	0.05 mg/L	<0.05	-	-	-	10 mg/L	-
EPA 1311 - TCLP Leachate Volatiles							
Benzene	0.005 mg/L	<0.005	-	-	-	0.5 mg/L	-
Carbon Tetrachloride	0.005 mg/L	<0.005	-	-	-	0.5 mg/L	-
Chlorobenzene	0.004 mg/L	<0.004	-	-	-	8 mg/L	-
Chloroform	0.006 mg/L	<0.006	-	-	-	10 mg/L	-
1,2-Dichlorobenzene	0.004 mg/L	<0.004	-	-	-	20 mg/L	-
1,4-Dichlorobenzene	0.004 mg/L	<0.004	-	-	-	0.5 mg/L	-

Certificate of Analysis

Report Date: 30-Sep-2025

Client: **SERTAS**

Order Date: 24-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	6-1A	-	-	-	**Criteria:**	
	Sample Date:	24-Sep-25 00:00	-	-	-	**Reg 558 Schedule 4**	-
	Sample ID:	2539195-01	-	-	-		
	Matrix:	Soil	-	-	-		
	MDL/Units						
EPA 1311 - TCLP Leachate Volatiles							
1,2-Dichloroethane	0.005 mg/L	<0.005	-	-	-	0.5 mg/L	-
1,1-Dichloroethylene	0.006 mg/L	<0.006	-	-	-	1.4 mg/L	-
Methyl Ethyl Ketone (2-Butanone)	0.30 mg/L	<0.30	-	-	-	200 mg/L	-
Methylene Chloride	0.04 mg/L	<0.04	-	-	-	5 mg/L	-
Tetrachloroethylene	0.005 mg/L	<0.005	-	-	-	3 mg/L	-
Trichloroethylene	0.004 mg/L	<0.004	-	-	-	5 mg/L	-
Vinyl chloride	0.005 mg/L	<0.005	-	-	-	0.2 mg/L	-
4-Bromofluorobenzene	Surrogate	111%	-	-	-	-	-
Dibromofluoromethane	Surrogate	114%	-	-	-	-	-
Toluene-d8	Surrogate	96.8%	-	-	-	-	-
EPA 1311 - TCLP Leachate Organics							
Benzo [a] pyrene	0.0001 mg/L	<0.0001	-	-	-	0.001 mg/L	-
Terphenyl-d14	Surrogate	93.1%	-	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
EPA 1311 - TCLP Leachate Inorganics								
Nitrate as N	ND	1	mg/L					
Nitrite as N	ND	1	mg/L					
Cyanide, free	ND	0.02	mg/L					
Fluoride	ND	0.05	mg/L					
EPA 1311 - TCLP Leachate Metals								
Arsenic	ND	0.05	mg/L					
Barium	ND	0.05	mg/L					
Boron	ND	0.10	mg/L					
Cadmium	ND	0.01	mg/L					
Chromium	ND	0.05	mg/L					
Lead	ND	0.05	mg/L					
Mercury	ND	0.005	mg/L					
Selenium	ND	0.05	mg/L					
Silver	ND	0.05	mg/L					
Uranium	ND	0.05	mg/L					
EPA 1311 - TCLP Leachate Organics								
Benzo [a] pyrene	ND	0.0001	mg/L					
Surrogate: Terphenyl-d14	*0.19*		*%*	*94.5*	*37-156*			
EPA 1311 - TCLP Leachate Volatiles								
Benzene	ND	0.005	mg/L					
Carbon Tetrachloride	ND	0.005	mg/L					
Chlorobenzene	ND	0.004	mg/L					
Chloroform	ND	0.006	mg/L					
1,2-Dichlorobenzene	ND	0.004	mg/L					
1,4-Dichlorobenzene	ND	0.004	mg/L					
1,2-Dichloroethane	ND	0.005	mg/L					
1,1-Dichloroethylene	ND	0.006	mg/L					
Methyl Ethyl Ketone (2-Butanone)	ND	0.30	mg/L					
Methylene Chloride	ND	0.04	mg/L					
Tetrachloroethylene	ND	0.005	mg/L					
Trichloroethylene	ND	0.004	mg/L					
Vinyl chloride	ND	0.005	mg/L					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: 4-Bromofluorobenzene	*0.740*		*%*	*108*	*83-134*			
Surrogate: Dibromofluoromethane	*0.722*		*%*	*105*	*78-124*			
Surrogate: Toluene-d8	*0.668*		*%*	*97.1*	*76-118*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
EPA 1311 - TCLP Leachate Inorganics									
Fluoride	0.29	0.05	mg/L	0.30			1.4	15	
Nitrate as N	ND	1	mg/L	ND			NC	20	
Nitrite as N	ND	1	mg/L	ND			NC	20	
Cyanide, free	ND	0.02	mg/L	ND			NC	20	
EPA 1311 - TCLP Leachate Metals									
Arsenic	ND	0.05	mg/L	ND			NC	29	
Barium	0.698	0.05	mg/L	0.611			13.4	34	
Boron	ND	0.10	mg/L	ND			NC	33	
Cadmium	ND	0.01	mg/L	ND			NC	33	
Chromium	ND	0.05	mg/L	ND			NC	32	
Lead	ND	0.05	mg/L	ND			NC	32	
Mercury	ND	0.005	mg/L	ND			NC	30	
Selenium	ND	0.05	mg/L	ND			NC	28	
Silver	ND	0.05	mg/L	ND			NC	28	
Uranium	ND	0.05	mg/L	ND			NC	27	
EPA 1311 - TCLP Leachate Volatiles									
Benzene	ND	0.005	mg/L	ND			NC	25	
Carbon Tetrachloride	ND	0.005	mg/L	ND			NC	25	
Chlorobenzene	ND	0.004	mg/L	ND			NC	25	
Chloroform	ND	0.006	mg/L	ND			NC	25	
1,2-Dichlorobenzene	ND	0.004	mg/L	ND			NC	25	
1,4-Dichlorobenzene	ND	0.004	mg/L	ND			NC	25	
1,2-Dichloroethane	ND	0.005	mg/L	ND			NC	25	
1,1-Dichloroethylene	ND	0.006	mg/L	ND			NC	25	
Methyl Ethyl Ketone (2-Butanone)	ND	0.30	mg/L	ND			NC	25	
Methylene Chloride	ND	0.04	mg/L	ND			NC	25	
Tetrachloroethylene	ND	0.005	mg/L	ND			NC	25	
Trichloroethylene	ND	0.004	mg/L	ND			NC	25	
Vinyl chloride	ND	0.005	mg/L	ND			NC	25	
Surrogate: 4-Bromofluorobenzene	*0.766*		*%*		*111*	*83-134*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: Dibromofluoromethane	*0.758*		*%*		*110*	*78-124*			
Surrogate: Toluene-d8	*0.619*		*%*		*89.9*	*76-118*			
Physical Characteristics									
% Solids	92.7	0.1	% by Wt.	92.7			0.1	25	

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
EPA 1311 - TCLP Leachate Inorganics									
Fluoride	0.79	0.05	mg/L	0.30	97.8	77-129			
Nitrate as N	1	1	mg/L	ND	100	80-120			
Nitrite as N	1	1	mg/L	ND	103	80-120			
Cyanide, free	0.075	0.02	mg/L	ND	75.4	40-115			
EPA 1311 - TCLP Leachate Metals									
Arsenic	45.9	0.05	mg/L	0.150	91.6	83-119			
Barium	106	0.05	mg/L	61.1	89.1	80-120			
Boron	53.4	0.10	mg/L	5.62	95.6	71-128			
Cadmium	42.9	0.01	mg/L	0.212	85.4	78-119			
Chromium	53.4	0.05	mg/L	0.410	106	80-124			
Lead	43.8	0.05	mg/L	0.212	87.2	77-126			
Mercury	0.0286	0.005	mg/L	ND	95.4	70-130			
Selenium	42.6	0.05	mg/L	0.146	84.9	75-125			
Silver	44.9	0.05	mg/L	ND	89.8	70-128			
Uranium	50.4	0.05	mg/L	0.800	99.2	70-131			
EPA 1311 - TCLP Leachate Organics									
Benzo [a] pyrene	0.0377	0.0001	mg/L	ND	75.5	39-123			
Surrogate: Terphenyl-d14	*0.17*		*%*		*85.4*	*37-156*			
EPA 1311 - TCLP Leachate Volatiles									
Benzene	0.347	0.005	mg/L	ND	101	55-141			
Carbon Tetrachloride	0.411	0.005	mg/L	ND	119	49-149			
Chlorobenzene	0.380	0.004	mg/L	ND	110	64-137			
Chloroform	0.408	0.006	mg/L	ND	119	58-138			
1,2-Dichlorobenzene	0.359	0.004	mg/L	ND	104	60-150			
1,4-Dichlorobenzene	0.349	0.004	mg/L	ND	102	63-132			
1,2-Dichloroethane	0.423	0.005	mg/L	ND	123	50-140			
1,1-Dichloroethylene	0.306	0.006	mg/L	ND	88.9	43-153			
Methyl Ethyl Ketone (2-Butanone)	0.702	0.30	mg/L	ND	81.6	26-153			
Methylene Chloride	0.398	0.04	mg/L	ND	116	58-149			
Tetrachloroethylene	0.358	0.005	mg/L	ND	104	51-145			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Trichloroethylene	0.354	0.004	mg/L	ND	103	52-135			
Vinyl chloride	0.372	0.005	mg/L	ND	108	31-159			
Surrogate: 4-Bromofluorobenzene	*0.653*		*%*		*95.0*	*83-134*			
Surrogate: Dibromofluoromethane	*0.745*		*%*		*108*	*78-124*			
Surrogate: Toluene-d8	*0.660*		*%*		*96.0*	*76-118*			

Certificate of Analysis

Report Date: 30-Sep-2025

Client: **SERTAS**

Order Date: 24-Sep-2025

Client PO:

Project Description: 2501E038

Qualifier Notes:

Sample Qualifiers :

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

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Paracel ID: 2539195

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2539195	№ 79407

Client Name: Sertas
Contact Name: Paige S
Address: 4510 Rhodes Dr #210 windsor ON
Telephone: 519 981 2724

Project Ref: 2501E038
Quote #: enwin
PO #:
E-mail: Paige.saratine@sertas.ca clawsercres@sertas.ca

Page 1 of 1

Turnaround Time
☐ 1 day ☐ 3 day
☐ 2 day ☒ Regular
Date Required:

☐ REG 153/04 ☐ REG 406/19

☐ Table 1 ☐ Agri/Other ☐ Med/Fine
☐ Table 2 ☐ Res/Park ☐ Coarse
☐ Table 3 ☐ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☐ No

Other Regulation
☒ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU - Storm
Mun:
☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Required Analysis: metals	inorganics	VOCs	BaP	1911
1	6-1A	S				Sept 24 2025		X	X	X	X	X
2												
3												
4												
5												
6												
7												
8												
9												
10												

Comments: need before EOD Tuesday Sept 30

Method of Delivery: Walk in

Relinquished By (Sign):	Received at Depot: K. Jakobsen	Received at Lab: LTJ	Verified By: K. Jakobsen
Relinquished By (Print): Paige Saratin	Date/Time: Sept. 24 25 13:40	Date/Time: 25/09/25 11:03	Date/Time: Sept. 24/25 14:10
Date/Time: Sept 24/2025	Temperature: 8.8 °C	Temperature: 9.3 °C	pH Verified: ☐ By:

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Certificate of Analysis

SERTAS
4510 Rhodes Drive, Unit 210
Windsor, ON N8W 5K5
Attn: Paige Sarafin

Client PO:
Project: 2501E038
Custody: 79406

Report Date: 29-Sep-2025
Order Date: 24-Sep-2025

Order #: 2539226

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2539226-01	MW7
2539226-02	MW8
2539226-03	DUP1
2539226-04	DUP2

Approved By:



Mark Foto, M.Sc.
Laboratory Director

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Anions	EPA 300.1 - IC	26-Sep-25	29-Sep-25
BTEX by P&T GC-MS	EPA 624 - P&T GC-MS	26-Sep-25	26-Sep-25
Chromium, hexavalent - water	MOE E3056 - colourimetric	26-Sep-25	26-Sep-25
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	25-Sep-25	25-Sep-25
Metals, ICP-MS	EPA 200.8 - ICP-MS	26-Sep-25	26-Sep-25
PCBs, total	EPA 608 - GC-ECD	25-Sep-25	26-Sep-25
PHC F1	CWS Tier 1 - P&T GC-FID	26-Sep-25	26-Sep-25
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	25-Sep-25	26-Sep-25
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	26-Sep-25	26-Sep-25
REG 153: pH, water	EPA 150.1 - pH probe @25 °C	26-Sep-25	26-Sep-25
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	26-Sep-25	26-Sep-25

Summary of Criteria Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in red

Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances.

Sample	Analyte	MDL / Units	Result	Reg 153/04 -T3 Non-Potable Groundwater, fine	-
MW7	Cobalt	0.5 ug/L	90.2	66 ug/L	-

Certificate of Analysis

Report Date: 29-Sep-2025

Client: **SERTAS**

Order Date: 24-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	MW7	MW8	DUP1	DUP2	Criteria:	
	Sample Date:	23-Sep-25 00:00	23-Sep-25 00:00	23-Sep-25 00:00	23-Sep-25 00:00	Reg 153/04 -T3	-
	Sample ID:	2539226-01	2539226-02	2539226-03	2539226-04	Non-Potable	
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water	Groundwater, fine	
	MDL/Units						
General Inorganics							
pH	0.1 pH Units	6.9	6.9	-	6.8	5.00 - 9.00 pH Units	-
Anions							
Chloride	1.0 mg/L	<20.0	146	-	144	2300000 ug/L	-
Metals							
Mercury	0.1 ug/L	<0.1	<0.1	-	<0.1	2.8 ug/L	-
Antimony	0.5 ug/L	0.7	0.6	-	0.5	20000 ug/L	-
Arsenic	1 ug/L	1	4	-	4	1900 ug/L	-
Barium	1 ug/L	34	120	-	125	29000 ug/L	-
Beryllium	0.5 ug/L	<0.5	<0.5	-	<0.5	67 ug/L	-
Boron	10 ug/L	507	1590	-	1550	45000 ug/L	-
Cadmium	0.1 ug/L	0.9	<0.1	-	<0.1	2.7 ug/L	-
Chromium (VI)	10 ug/L	<10	<10	-	<10	140 ug/L	-
Chromium	1 ug/L	<1	<1	-	<1	810 ug/L	-
Cobalt	0.5 ug/L	90.2	9.3	-	9.5	66 ug/L	-
Copper	0.5 ug/L	1.0	0.7	-	<0.5	87 ug/L	-
Lead	0.1 ug/L	<0.1	<0.1	-	<0.1	25 ug/L	-
Molybdenum	0.5 ug/L	15.2	29.5	-	30.1	9200 ug/L	-
Nickel	1 ug/L	86	16	-	16	490 ug/L	-
Selenium	1 ug/L	5	<1	-	<1	63 ug/L	-
Silver	0.1 ug/L	<0.1	<0.1	-	<0.1	1.5 ug/L	-
Sodium	200 ug/L	144000	134000	-	134000	2300000 ug/L	-
Thallium	0.1 ug/L	<0.1	<0.1	-	<0.1	510 ug/L	-
Uranium	0.1 ug/L	40.7	17.9	-	18.3	420 ug/L	-
Vanadium	0.5 ug/L	1.0	1.3	-	1.2	250 ug/L	-
Zinc	5 ug/L	21	12	-	12	1100 ug/L	-

Certificate of Analysis

Report Date: 29-Sep-2025

Client: **SERTAS**

Order Date: 24-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	MW7	MW8	DUP1	DUP2	Criteria:	
	Sample Date:	23-Sep-25 00:00	23-Sep-25 00:00	23-Sep-25 00:00	23-Sep-25 00:00	Reg 153/04 -T3	-
	Sample ID:	2539226-01	2539226-02	2539226-03	2539226-04	Non-Potable	
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water	Groundwater, fine	
	MDL/Units						
Volatiles							
Acetone	5.0 ug/L	<5.0	-	<5.0	-	130000 ug/L	-
Benzene	0.5 ug/L	<0.5	-	<0.5	-	430 ug/L	-
Bromodichloromethane	0.5 ug/L	<0.5	-	<0.5	-	85000 ug/L	-
Bromoform	0.5 ug/L	<0.5	-	<0.5	-	770 ug/L	-
Bromomethane	0.5 ug/L	<0.5	-	<0.5	-	56 ug/L	-
Carbon Tetrachloride	0.2 ug/L	<0.2	-	<0.2	-	8.4 ug/L	-
Chlorobenzene	0.5 ug/L	<0.5	-	<0.5	-	630 ug/L	-
Chloroform	0.5 ug/L	<0.5	-	<0.5	-	22 ug/L	-
Dibromochloromethane	0.5 ug/L	<0.5	-	<0.5	-	82000 ug/L	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	-	<1.0	-	4400 ug/L	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	-	<0.5	-	9600 ug/L	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	-	<0.5	-	9600 ug/L	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	-	<0.5	-	67 ug/L	-
1,1-Dichloroethane	0.5 ug/L	<0.5	-	<0.5	-	3100 ug/L	-
1,2-Dichloroethane	0.5 ug/L	<0.5	-	<0.5	-	12 ug/L	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	-	<0.5	-	17 ug/L	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	<0.5	-	17 ug/L	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	<0.5	-	17 ug/L	-
1,2-Dichloropropane	0.5 ug/L	<0.5	-	<0.5	-	140 ug/L	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	<0.5	-	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	<0.5	-	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	-	<0.5	-	45 ug/L	-
Ethylene dibromide (dibromoethane,	0.2 ug/L	<0.2	-	<0.2	-	0.83 ug/L	-
Ethylbenzene	0.5 ug/L	<0.5	-	<0.5	-	2300 ug/L	-
Hexane	1.0 ug/L	<1.0	-	<1.0	-	520 ug/L	-

	Client ID:	MW7	MW8	DUP1	DUP2	Criteria:	
	Sample Date:	23-Sep-25 00:00	23-Sep-25 00:00	23-Sep-25 00:00	23-Sep-25 00:00	Reg 153/04 -T3	-
	Sample ID:	2539226-01	2539226-02	2539226-03	2539226-04	Non-Potable	
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water	Groundwater, fine	
	MDL/Units						
Volatiles							
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	-	<5.0	-	1500000 ug/L	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	-	<5.0	-	580000 ug/L	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	-	<2.0	-	1400 ug/L	-
Methylene Chloride	5.0 ug/L	<5.0	-	<5.0	-	5500 ug/L	-
Styrene	0.5 ug/L	<0.5	-	<0.5	-	9100 ug/L	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	-	<0.5	-	28 ug/L	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	-	<0.5	-	15 ug/L	-
Tetrachloroethylene	0.5 ug/L	<0.5	-	<0.5	-	17 ug/L	-
Toluene	0.5 ug/L	<0.5	-	<0.5	-	18000 ug/L	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	-	<0.5	-	6700 ug/L	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	-	<0.5	-	30 ug/L	-
Trichloroethylene	0.5 ug/L	<0.5	-	<0.5	-	17 ug/L	-
Trichlorofluoromethane	1.0 ug/L	<1.0	-	<1.0	-	2500 ug/L	-
Vinyl chloride	0.5 ug/L	<0.5	-	<0.5	-	1.7 ug/L	-
m,p-Xylenes	0.5 ug/L	<0.5	-	<0.5	-	-	-
o-Xylene	0.5 ug/L	<0.5	-	<0.5	-	-	-
Xylenes, total	0.5 ug/L	<0.5	-	<0.5	-	4200 ug/L	-
4-Bromofluorobenzene	Surrogate	114%	-	112%	-	-	-
Toluene-d8	Surrogate	103%	-	96.6%	-	-	-
Dibromofluoromethane	Surrogate	111%	-	104%	-	-	-
Benzene	0.5 ug/L	-	<0.5	-	-	430 ug/L	-
Ethylbenzene	0.5 ug/L	-	<0.5	-	-	2300 ug/L	-
Toluene	0.5 ug/L	-	<0.5	-	-	18000 ug/L	-
m,p-Xylenes	0.5 ug/L	-	<0.5	-	-	-	-
o-Xylene	0.5 ug/L	-	<0.5	-	-	-	-

Certificate of Analysis

Report Date: 29-Sep-2025

Client: **SERTAS**

Order Date: 24-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	MW7	MW8	DUP1	DUP2	Criteria:	
	Sample Date:	23-Sep-25 00:00	23-Sep-25 00:00	23-Sep-25 00:00	23-Sep-25 00:00	Reg 153/04 -T3	-
	Sample ID:	2539226-01	2539226-02	2539226-03	2539226-04	Non-Potable	
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water	Groundwater, fine	
	MDL/Units						
Volatiles							
Xylenes, total	0.5 ug/L	-	<0.5	-	-	4200 ug/L	-
Toluene-d8	Surrogate	-	98.3%	-	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	25 ug/L	<25	<25	<25	-	750 ug/L	-
F2 PHCs (C10-C16)	100 ug/L	<100	<100	<100	-	150 ug/L	-
F3 PHCs (C16-C34)	100 ug/L	<100	<100	<100	-	500 ug/L	-
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	-	500 ug/L	-
Semi-Volatiles							
Acenaphthene	0.05 ug/L	<0.05	<0.05	<0.05	-	1700 ug/L	-
Acenaphthylene	0.05 ug/L	<0.05	<0.05	<0.05	-	1.8 ug/L	-
Anthracene	0.01 ug/L	<0.01	0.02	<0.01	-	2.4 ug/L	-
Benzo [a] anthracene	0.01 ug/L	<0.01	<0.01	<0.01	-	4.7 ug/L	-
Benzo [a] pyrene	0.01 ug/L	<0.01	0.11	<0.01	-	0.81 ug/L	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	0.18	<0.05	-	0.75 ug/L	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	0.10	<0.05	-	0.2 ug/L	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	0.06	<0.05	-	0.4 ug/L	-
Chrysene	0.05 ug/L	<0.05	0.15	<0.05	-	1 ug/L	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	<0.05	<0.05	-	0.52 ug/L	-
Fluoranthene	0.01 ug/L	<0.01	0.23	<0.01	-	130 ug/L	-
Fluorene	0.05 ug/L	<0.05	<0.05	<0.05	-	400 ug/L	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	<0.05	<0.05	-	0.2 ug/L	-
1-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	-	1800 ug/L	-
2-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	-	1800 ug/L	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	<0.10	<0.10	-	1800 ug/L	-
Naphthalene	0.05 ug/L	<0.05	<0.05	<0.05	-	6400 ug/L	-

	Client ID:	MW7	MW8	DUP1	DUP2	Criteria:	
	Sample Date:	23-Sep-25 00:00	23-Sep-25 00:00	23-Sep-25 00:00	23-Sep-25 00:00	Reg 153/04 -T3	-
	Sample ID:	2539226-01	2539226-02	2539226-03	2539226-04	Non-Potable	
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water	Groundwater, fine	
	MDL/Units						
Semi-Volatiles							
Phenanthrene	0.05 ug/L	<0.05	0.10	<0.05	-	580 ug/L	-
Pyrene	0.01 ug/L	<0.01	0.17	<0.01	-	68 ug/L	-
2-Fluorobiphenyl	Surrogate	76.2%	70.3%	77.1%	-	-	-
Terphenyl-d14	Surrogate	86.5%	86.7%	87.8%	-	-	-
PCBs							
PCBs, total	0.05 ug/L	<0.05	-	<0.05	-	15 ug/L	-
Decachlorobiphenyl	Surrogate	86.9%	-	81.5%	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions								
Chloride	ND	1.0	mg/L					
Hydrocarbons								
F1 PHCs (C6-C10)	ND	25	ug/L					
F2 PHCs (C10-C16)	ND	100	ug/L					
F3 PHCs (C16-C34)	ND	100	ug/L					
F4 PHCs (C34-C50)	ND	100	ug/L					
Metals								
Antimony	ND	0.5	ug/L					
Arsenic	ND	1	ug/L					
Barium	ND	1	ug/L					
Beryllium	ND	0.5	ug/L					
Boron	ND	10	ug/L					
Cadmium	ND	0.1	ug/L					
Chromium	ND	1	ug/L					
Chromium (VI)	ND	10	ug/L					
Cobalt	ND	0.5	ug/L					
Copper	ND	0.5	ug/L					
Lead	ND	0.1	ug/L					
Mercury	ND	0.1	ug/L					
Molybdenum	ND	0.5	ug/L					
Nickel	ND	1	ug/L					
Selenium	ND	1	ug/L					
Silver	ND	0.1	ug/L					
Sodium	ND	200	ug/L					
Thallium	ND	0.1	ug/L					
Uranium	ND	0.1	ug/L					
Vanadium	ND	0.5	ug/L					
Zinc	ND	5	ug/L					
PCBs								
PCBs, total	ND	0.05	ug/L					
Surrogate: Decachlorobiphenyl	*0.260*		*%*	*104*	*60-140*			
Semi-Volatiles								

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Acenaphthene	ND	0.05	ug/L					
Acenaphthylene	ND	0.05	ug/L					
Anthracene	ND	0.01	ug/L					
Benzo [a] anthracene	ND	0.01	ug/L					
Benzo [a] pyrene	ND	0.01	ug/L					
Benzo [b] fluoranthene	ND	0.05	ug/L					
Benzo [g,h,i] perylene	ND	0.05	ug/L					
Benzo [k] fluoranthene	ND	0.05	ug/L					
Chrysene	ND	0.05	ug/L					
Dibenzo [a,h] anthracene	ND	0.05	ug/L					
Fluoranthene	ND	0.01	ug/L					
Fluorene	ND	0.05	ug/L					
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L					
1-Methylnaphthalene	ND	0.05	ug/L					
2-Methylnaphthalene	ND	0.05	ug/L					
Methylnaphthalene (1&2)	ND	0.10	ug/L					
Naphthalene	ND	0.05	ug/L					
Phenanthrene	ND	0.05	ug/L					
Pyrene	ND	0.01	ug/L					
Surrogate: 2-Fluorobiphenyl	*16.7*		*%*	*83.3*	*50-140*			
Surrogate: Terphenyl-d14	*18.2*		*%*	*90.9*	*50-140*			
Volatiles								
Benzene	ND	0.5	ug/L					
Ethylbenzene	ND	0.5	ug/L					
Toluene	ND	0.5	ug/L					
m,p-Xylenes	ND	0.5	ug/L					
o-Xylene	ND	0.5	ug/L					
Xylenes, total	ND	0.5	ug/L					
Surrogate: Toluene-d8	*80.1*		*%*	*100*	*50-140*			
Acetone	ND	5.0	ug/L					
Benzene	ND	0.5	ug/L					
Bromodichloromethane	ND	0.5	ug/L					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Bromoform	ND	0.5	ug/L					
Bromomethane	ND	0.5	ug/L					
Carbon Tetrachloride	ND	0.2	ug/L					
Chlorobenzene	ND	0.5	ug/L					
Chloroform	ND	0.5	ug/L					
Dibromochloromethane	ND	0.5	ug/L					
Dichlorodifluoromethane	ND	1.0	ug/L					
1,2-Dichlorobenzene	ND	0.5	ug/L					
1,3-Dichlorobenzene	ND	0.5	ug/L					
1,4-Dichlorobenzene	ND	0.5	ug/L					
1,1-Dichloroethane	ND	0.5	ug/L					
1,2-Dichloroethane	ND	0.5	ug/L					
1,1-Dichloroethylene	ND	0.5	ug/L					
cis-1,2-Dichloroethylene	ND	0.5	ug/L					
trans-1,2-Dichloroethylene	ND	0.5	ug/L					
1,2-Dichloropropane	ND	0.5	ug/L					
cis-1,3-Dichloropropylene	ND	0.5	ug/L					
trans-1,3-Dichloropropylene	ND	0.5	ug/L					
1,3-Dichloropropene, total	ND	0.5	ug/L					
Ethylbenzene	ND	0.5	ug/L					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.2	ug/L					
Hexane	ND	1.0	ug/L					
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L					
Methyl Isobutyl Ketone	ND	5.0	ug/L					
Methyl tert-butyl ether	ND	2.0	ug/L					
Methylene Chloride	ND	5.0	ug/L					
Styrene	ND	0.5	ug/L					
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L					
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L					
Tetrachloroethylene	ND	0.5	ug/L					
Toluene	ND	0.5	ug/L					
1,1,1-Trichloroethane	ND	0.5	ug/L					
1,1,2-Trichloroethane	ND	0.5	ug/L					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Trichloroethylene	ND	0.5	ug/L					
Trichlorofluoromethane	ND	1.0	ug/L					
Vinyl chloride	ND	0.5	ug/L					
m,p-Xylenes	ND	0.5	ug/L					
o-Xylene	ND	0.5	ug/L					
Xylenes, total	ND	0.5	ug/L					
Surrogate: 4-Bromofluorobenzene	*92.3*		*%*	*115*	*50-140*			
Surrogate: Dibromofluoromethane	*73.4*		*%*	*91.7*	*50-140*			
Surrogate: Toluene-d8	*80.1*		*%*	*100*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	ND	20.0	mg/L	ND			NC	10	
General Inorganics									
pH	7.0	0.1	pH Units	6.9			0.6	10	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
F2 PHCs (C10-C16)	ND	100	ug/L	ND			NC	30	
F3 PHCs (C16-C34)	ND	100	ug/L	ND			NC	30	
F4 PHCs (C34-C50)	ND	100	ug/L	ND			NC	30	
Metals									
Mercury	1.23	0.1	ug/L	1.31			6.3	20	
Antimony	ND	0.5	ug/L	ND			NC	20	
Arsenic	ND	1	ug/L	ND			NC	20	
Barium	135	1	ug/L	140			3.3	20	
Beryllium	ND	0.5	ug/L	ND			NC	20	
Boron	103	10	ug/L	105			1.2	20	
Cadmium	ND	0.1	ug/L	ND			NC	20	
Chromium (VI)	ND	10	ug/L	ND			NC	20	
Chromium	ND	1	ug/L	ND			NC	20	
Cobalt	ND	0.5	ug/L	ND			NC	20	
Copper	ND	0.5	ug/L	ND			NC	20	
Lead	ND	0.1	ug/L	ND			NC	20	
Molybdenum	10.6	0.5	ug/L	10.6			0.1	20	
Nickel	2.3	1	ug/L	2.5			5.3	20	
Selenium	ND	1	ug/L	ND			NC	20	
Silver	ND	0.1	ug/L	ND			NC	20	
Sodium	36000	200	ug/L	36800			2.3	20	
Thallium	ND	0.1	ug/L	ND			NC	20	
Uranium	1.2	0.1	ug/L	1.2			2.8	20	
Vanadium	0.54	0.5	ug/L	0.60			9.3	20	
Zinc	ND	5	ug/L	ND			NC	20	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	ND	0.5	ug/L	ND			NC	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	ND	0.5	ug/L	ND			NC	30	
Dibromochloromethane	ND	0.5	ug/L	ND			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	*93.0*		*%*		*116*	*50-140*			
Surrogate: Dibromofluoromethane	*80.4*		*%*		*100*	*50-140*			
Surrogate: Toluene-d8	*81.2*		*%*		*101*	*50-140*			
Benzene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: Toluene-d8	*81.2*		*%*		*101*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	9.80	1.0	mg/L	ND	98.0	80-120			
Hydrocarbons									
F1 PHCs (C6-C10)	1880	25	ug/L	ND	110	85-115			
F2 PHCs (C10-C16)	1540	100	ug/L	ND	104	60-140			
F3 PHCs (C16-C34)	4330	100	ug/L	ND	119	60-140			
F4 PHCs (C34-C50)	2870	100	ug/L	ND	125	60-140			
Metals									
Mercury	3.90	0.1	ug/L	1.31	86.6	70-130			
Antimony	43.3	0.5	ug/L	ND	86.0	80-120			
Arsenic	51.7	1	ug/L	ND	102	80-120			
Barium	179	1	ug/L	140	77.1	80-120			QM-07
Beryllium	51.9	0.5	ug/L	ND	104	80-120			
Boron	151	10	ug/L	105	93.1	80-120			
Cadmium	44.2	0.1	ug/L	ND	88.3	80-120			
Chromium (VI)	191	10	ug/L	ND	95.5	75-115			
Chromium	56.1	1	ug/L	ND	112	80-120			
Cobalt	52.3	0.5	ug/L	ND	105	80-120			
Copper	49.1	0.5	ug/L	0.50	97.3	80-120			
Lead	45.4	0.1	ug/L	ND	90.8	80-120			
Molybdenum	60.9	0.5	ug/L	10.6	101	80-120			
Nickel	52.5	1	ug/L	2.5	100	80-120			
Selenium	48.1	1	ug/L	ND	95.7	80-120			
Silver	42.0	0.1	ug/L	ND	84.0	80-120			
Sodium	45600	200	ug/L	36800	87.7	80-120			
Thallium	47.1	0.1	ug/L	ND	94.1	80-120			
Uranium	52.3	0.1	ug/L	1.2	102	80-120			
Vanadium	58.2	0.5	ug/L	0.60	115	80-120			
Zinc	47	5	ug/L	ND	86.5	80-120			
PCBs									
PCBs, total	0.863	0.05	ug/L	ND	86.3	65-135			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: Decachlorobiphenyl	*0.265*		*%*		*106*	*60-140*			
Semi-Volatiles									
Acenaphthene	3.87	0.05	ug/L	ND	77.4	50-140			
Acenaphthylene	3.76	0.05	ug/L	ND	75.1	50-140			
Anthracene	3.68	0.01	ug/L	ND	73.5	50-140			
Benzo [a] anthracene	3.77	0.01	ug/L	ND	75.3	50-140			
Benzo [a] pyrene	3.69	0.01	ug/L	ND	73.8	50-140			
Benzo [b] fluoranthene	4.00	0.05	ug/L	ND	80.0	50-140			
Benzo [g,h,i] perylene	2.89	0.05	ug/L	ND	57.8	50-140			
Benzo [k] fluoranthene	3.40	0.05	ug/L	ND	68.1	50-140			
Chrysene	3.92	0.05	ug/L	ND	78.4	50-140			
Dibenzo [a,h] anthracene	4.05	0.05	ug/L	ND	81.0	50-140			
Fluoranthene	4.05	0.01	ug/L	ND	81.0	50-140			
Fluorene	3.79	0.05	ug/L	ND	75.8	50-140			
Indeno [1,2,3-cd] pyrene	3.85	0.05	ug/L	ND	77.1	50-140			
1-Methylnaphthalene	3.79	0.05	ug/L	ND	75.9	50-140			
2-Methylnaphthalene	4.33	0.05	ug/L	ND	86.6	50-140			
Naphthalene	3.85	0.05	ug/L	ND	77.0	50-140			
Phenanthrene	3.82	0.05	ug/L	ND	76.5	50-140			
Pyrene	3.62	0.01	ug/L	ND	72.5	50-140			
Surrogate: 2-Fluorobiphenyl	*15.0*		*%*		*75.0*	*50-140*			
Surrogate: Terphenyl-d14	*16.2*		*%*		*81.2*	*50-140*			
Volatiles									
Acetone	71.3	5.0	ug/L	ND	71.3	50-140			
Benzene	48.8	0.5	ug/L	ND	122	60-130			
Bromodichloromethane	40.7	0.5	ug/L	ND	102	60-130			
Bromoform	43.8	0.5	ug/L	ND	109	60-130			
Bromomethane	42.8	0.5	ug/L	ND	107	50-140			
Carbon Tetrachloride	41.5	0.2	ug/L	ND	104	60-130			
Chlorobenzene	43.1	0.5	ug/L	ND	108	60-130			
Chloroform	42.9	0.5	ug/L	ND	107	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Dibromochloromethane	40.2	0.5	ug/L	ND	100	60-130			
Dichlorodifluoromethane	47.8	1.0	ug/L	ND	119	50-140			
1,2-Dichlorobenzene	40.4	0.5	ug/L	ND	101	60-130			
1,3-Dichlorobenzene	41.1	0.5	ug/L	ND	103	60-130			
1,4-Dichlorobenzene	40.2	0.5	ug/L	ND	100	60-130			
1,1-Dichloroethane	34.2	0.5	ug/L	ND	85.4	60-130			
1,2-Dichloroethane	41.6	0.5	ug/L	ND	104	60-130			
1,1-Dichloroethylene	47.1	0.5	ug/L	ND	118	60-130			
cis-1,2-Dichloroethylene	45.5	0.5	ug/L	ND	114	60-130			
trans-1,2-Dichloroethylene	43.9	0.5	ug/L	ND	110	60-130			
1,2-Dichloropropane	45.2	0.5	ug/L	ND	113	60-130			
cis-1,3-Dichloropropylene	45.4	0.5	ug/L	ND	113	60-130			
trans-1,3-Dichloropropylene	43.2	0.5	ug/L	ND	108	60-130			
Ethylbenzene	43.0	0.5	ug/L	ND	107	60-130			
Ethylene dibromide (dibromoethane, 1,2-)	38.7	0.2	ug/L	ND	96.6	60-130			
Hexane	45.3	1.0	ug/L	ND	113	60-130			
Methyl Ethyl Ketone (2-Butanone)	79.1	5.0	ug/L	ND	79.1	50-140			
Methyl Isobutyl Ketone	104	5.0	ug/L	ND	104	50-140			
Methyl tert-butyl ether	87.7	2.0	ug/L	ND	87.7	50-140			
Methylene Chloride	43.5	5.0	ug/L	ND	109	60-130			
Styrene	42.3	0.5	ug/L	ND	106	60-130			
1,1,1,2-Tetrachloroethane	36.7	0.5	ug/L	ND	91.7	60-130			
1,1,2,2-Tetrachloroethane	39.4	0.5	ug/L	ND	98.6	60-130			
Tetrachloroethylene	42.9	0.5	ug/L	ND	107	60-130			
Toluene	45.0	0.5	ug/L	ND	113	60-130			
1,1,1-Trichloroethane	42.8	0.5	ug/L	ND	107	60-130			
1,1,2-Trichloroethane	42.4	0.5	ug/L	ND	106	60-130			
Trichloroethylene	43.3	0.5	ug/L	ND	108	60-130			
Trichlorofluoromethane	40.3	1.0	ug/L	ND	101	60-130			
Vinyl chloride	39.0	0.5	ug/L	ND	97.6	50-140			
m,p-Xylenes	88.6	0.5	ug/L	ND	111	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
o-Xylene	43.4	0.5	ug/L	ND	108	60-130			
Surrogate: 4-Bromofluorobenzene	*79.7*		*%*		*99.6*	*50-140*			
Surrogate: Dibromofluoromethane	*83.2*		*%*		*104*	*50-140*			
Surrogate: Toluene-d8	*81.4*		*%*		*102*	*50-140*			
Benzene	48.8	0.5	ug/L	ND	122	60-130			
Ethylbenzene	43.0	0.5	ug/L	ND	107	60-130			
Toluene	45.0	0.5	ug/L	ND	113	60-130			
m,p-Xylenes	88.6	0.5	ug/L	ND	111	60-130			
o-Xylene	43.4	0.5	ug/L	ND	108	60-130			
Surrogate: Toluene-d8	*81.4*		*%*		*102*	*50-140*			

Qualifier Notes:

QC Qualifiers:

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on other acceptable QC.

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

PARACEL

Paracel ID: 2539226

Paracel Order Number (Lab Use Only): 2539226

Chain Of Custody (Lab Use Only): № 79406

Page 1 of 1

Client Name:	Sertas
Contact Name:	Paige S.
Address:	4510 Rhodes Dr #510 Windsor ON
Telephone:	519 981 3724
Project Ref:	25016038
Quote #:	Erwin
PO #:	
E-mail:	paige-sarafin@sertas.ca clay-stereres@sertas.ca

Turnaround Time: ☐ 1 day ☒ 3 day ☐ 2 day ☐ Regular — Date Required:

☒ REG 153/04 ☐ REG 406/19

☐ Table 1 ☐ Agri/Other ☒ Med/Fine
☐ Table 2 ☐ Res/Park ☐ Coarse
☒ Table 3 ☒ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☒ No

Other Regulation: ☐ REG 558 ☐ PWQO ☐ CCME ☐ MISA ☐ SU - Sani ☐ SU - Storm ☐ Mun: ☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Required Analysis

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full metals	Unfiltered	pH	PAH	PHC	BTEX	VOC	PCB				
1	~~MW2~~	~~GW~~				~~Sept 23 25~~		X	X	X	X	X		X					
2	~~MW5~~	~~GW~~						X	X	X	X	X		X					
3	MW7	GW			✓	Sept 23	—	X	X	X	X	X		X	X				
4	MW8	GW			✓		—	X	X	X	X		X						
5	DUP1	GW			NA	↓	—	~~X~~	~~X~~	~~X~~	X	X		X	X				
6	DUP2	GW			✓	↓	—	X	X	X									
7																			
8																			
9																			
10																			

Comments:

Method of Delivery: Walk in

Relinquished By (Sign):	Received at Depot: K. Jakobsen	Received at Lab: SD	Verified By: K. Jakobsen
Relinquished By (Print): Paige Sarafin	Date/Time: Sept. 24/25 13:40	Date/Time: Sept 25 2025 10:05am	Date/Time: Sept. 24/25 15:00
Date/Time: Sept 24 2025.	Temperature: 8.8 °C	Temperature: 2.9 °C	pH Verified: ☑ By: K. Jakobsen

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Certificate of Analysis

SERTAS
4510 Rhodes Drive, Unit 210
Windsor, ON N8W 5K5
Attn: Paige Sarafin

Client PO:
Project: 2501E038
Custody: 79419

Report Date: 1-Oct-2025
Order Date: 30-Sep-2025

Order #: 2540139

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2540139-01	MW7-A
2540139-02	MW8-A

Approved By:



Alex Enfield, MSc
Lab Manager

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
REG 153: Metals by ICP/MS, water	EPA 200.8 - ICP-MS	1-Oct-25	1-Oct-25
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	1-Oct-25	1-Oct-25

Summary of Criteria Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in red

Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances.

Sample	Analyte	MDL / Units	Result	Reg 153/04 -T2 Potable Groundwater, fine	Reg 153/04 -T3 Non-Potable Groundwater, fine
MW7-A	Cobalt	0.5 ug/L	16.1	3.8 ug/L	66 ug/L
MW7-A	Uranium	0.2 ug/L	26.8	20 ug/L	420 ug/L
MW8-A	Cobalt	0.5 ug/L	10.1	3.8 ug/L	66 ug/L
MW8-A	Benzo [a] pyrene	0.01 ug/L	0.04	0.01 ug/L	0.81 ug/L

Certificate of Analysis

Report Date: 01-Oct-2025

Client: SERTAS

Order Date: 30-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	MW7-A	MW8-A	-	-	Criteria:	
	Sample Date:	30-Sep-25 00:00	30-Sep-25 00:00	-	-	Reg 153/04 -T2 Potable Groundwater, fine	Reg 153/04 -T3 Non-Potable Groundwater, fine
	Sample ID:	2540139-01	2540139-02	-	-		
	Matrix:	Ground Water	Ground Water	-	-		
	MDL/Units						
Metals							
Antimony	0.5 ug/L	<0.5	<0.5	-	-	6 ug/L	20000 ug/L
Arsenic	1.0 ug/L	<1.0	2.3	-	-	25 ug/L	1900 ug/L
Barium	1.0 ug/L	35.3	114	-	-	1000 ug/L	29000 ug/L
Beryllium	0.5 ug/L	<0.5	<0.5	-	-	4 ug/L	67 ug/L
Boron	10.0 ug/L	405	1170	-	-	5000 ug/L	45000 ug/L
Cadmium	0.2 ug/L	<0.2	<0.2	-	-	2.7 ug/L	2.7 ug/L
Chromium	1.0 ug/L	<1.0	<1.0	-	-	50 ug/L	810 ug/L
Cobalt	0.5 ug/L	16.1	10.1	-	-	3.8 ug/L	66 ug/L
Copper	0.5 ug/L	0.7	1.2	-	-	87 ug/L	87 ug/L
Lead	0.2 ug/L	<0.2	0.2	-	-	10 ug/L	25 ug/L
Molybdenum	0.5 ug/L	11.3	26.0	-	-	70 ug/L	9200 ug/L
Nickel	1.0 ug/L	26.4	15.4	-	-	100 ug/L	490 ug/L
Selenium	1.0 ug/L	1.7	<1.0	-	-	10 ug/L	63 ug/L
Silver	0.2 ug/L	<0.2	<0.2	-	-	1.5 ug/L	1.5 ug/L
Sodium	200 ug/L	164000	116000	-	-	490000 ug/L	2300000 ug/L
Thallium	0.5 ug/L	<0.5	<0.5	-	-	2 ug/L	510 ug/L
Uranium	0.2 ug/L	26.8	15.8	-	-	20 ug/L	420 ug/L
Vanadium	0.5 ug/L	<0.5	1.0	-	-	6.2 ug/L	250 ug/L
Zinc	5.0 ug/L	8.5	52.3	-	-	1100 ug/L	1100 ug/L
Semi-Volatiles							
Acenaphthene	0.05 ug/L	-	<0.05	-	-	4.1 ug/L	1700 ug/L
Acenaphthylene	0.05 ug/L	-	<0.05	-	-	1 ug/L	1.8 ug/L
Anthracene	0.01 ug/L	-	<0.01	-	-	2.4 ug/L	2.4 ug/L
Benzo [a] anthracene	0.01 ug/L	-	<0.01	-	-	1 ug/L	4.7 ug/L
Benzo [a] pyrene	0.01 ug/L	-	0.04	-	-	0.01 ug/L	0.81 ug/L

Certificate of Analysis

Report Date: 01-Oct-2025

Client: **SERTAS**

Order Date: 30-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	MW7-A	MW8-A	-	-	Criteria:	
	Sample Date:	30-Sep-25 00:00	30-Sep-25 00:00	-	-	Reg 153/04 -T2 Potable Groundwater, fine	Reg 153/04 -T3 Non-Potable Groundwater, fine
	Sample ID:	2540139-01	2540139-02	-	-		
	Matrix:	Ground Water	Ground Water	-	-		
	MDL/Units						
Semi-Volatiles							
Benzo [b] fluoranthene	0.05 ug/L	-	<0.05	-	-	0.1 ug/L	0.75 ug/L
Benzo [g,h,i] perylene	0.05 ug/L	-	<0.05	-	-	0.2 ug/L	0.2 ug/L
Benzo [k] fluoranthene	0.05 ug/L	-	<0.05	-	-	0.1 ug/L	0.4 ug/L
Chrysene	0.05 ug/L	-	<0.05	-	-	0.1 ug/L	1 ug/L
Dibenzo [a,h] anthracene	0.05 ug/L	-	<0.05	-	-	0.2 ug/L	0.52 ug/L
Fluoranthene	0.01 ug/L	-	<0.01	-	-	0.41 ug/L	130 ug/L
Fluorene	0.05 ug/L	-	<0.05	-	-	120 ug/L	400 ug/L
Indeno [1,2,3-cd] pyrene	0.05 ug/L	-	<0.05	-	-	0.2 ug/L	0.2 ug/L
1-Methylnaphthalene	0.05 ug/L	-	<0.05	-	-	3.2 ug/L	1800 ug/L
2-Methylnaphthalene	0.05 ug/L	-	<0.05	-	-	3.2 ug/L	1800 ug/L
Methylnaphthalene (1&2)	0.10 ug/L	-	<0.10	-	-	3.2 ug/L	1800 ug/L
Naphthalene	0.05 ug/L	-	<0.05	-	-	11 ug/L	6400 ug/L
Phenanthrene	0.05 ug/L	-	<0.05	-	-	1 ug/L	580 ug/L
Pyrene	0.01 ug/L	-	<0.01	-	-	4.1 ug/L	68 ug/L
2-Fluorobiphenyl	Surrogate	-	83.3%	-	-	-	-
Terphenyl-d14	Surrogate	-	63.2%	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals								
Antimony	ND	0.5	ug/L					
Arsenic	ND	1.0	ug/L					
Barium	ND	1.0	ug/L					
Beryllium	ND	0.5	ug/L					
Boron	ND	10.0	ug/L					
Cadmium	ND	0.2	ug/L					
Chromium	ND	1.0	ug/L					
Cobalt	ND	0.5	ug/L					
Copper	ND	0.5	ug/L					
Lead	ND	0.2	ug/L					
Molybdenum	ND	0.5	ug/L					
Nickel	ND	1.0	ug/L					
Selenium	ND	1.0	ug/L					
Silver	ND	0.2	ug/L					
Sodium	ND	200	ug/L					
Thallium	ND	0.5	ug/L					
Uranium	ND	0.2	ug/L					
Vanadium	ND	0.5	ug/L					
Zinc	ND	5.0	ug/L					
Semi-Volatiles								
Acenaphthene	ND	0.05	ug/L					
Acenaphthylene	ND	0.05	ug/L					
Anthracene	ND	0.01	ug/L					
Benzo [a] anthracene	ND	0.01	ug/L					
Benzo [a] pyrene	ND	0.01	ug/L					
Benzo [b] fluoranthene	ND	0.05	ug/L					
Benzo [g,h,i] perylene	ND	0.05	ug/L					
Benzo [k] fluoranthene	ND	0.05	ug/L					
Chrysene	ND	0.05	ug/L					
Dibenzo [a,h] anthracene	ND	0.05	ug/L					
Fluoranthene	ND	0.01	ug/L					
Fluorene	ND	0.05	ug/L					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L					
1-Methylnaphthalene	ND	0.05	ug/L					
2-Methylnaphthalene	ND	0.05	ug/L					
Methylnaphthalene (1&2)	ND	0.10	ug/L					
Naphthalene	ND	0.05	ug/L					
Phenanthrene	ND	0.05	ug/L					
Pyrene	ND	0.01	ug/L					
Surrogate: 2-Fluorobiphenyl	*8.97*		*%*	*88.8*	*50-140*			
Surrogate: Terphenyl-d14	*10.2*		*%*	*101*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Antimony	ND	0.5	ug/L	ND			NC	20	
Arsenic	ND	1.0	ug/L	ND			NC	20	
Barium	34.6	1.0	ug/L	35.3			1.8	20	
Beryllium	ND	0.5	ug/L	ND			NC	20	
Boron	422	10.0	ug/L	405			4.1	20	
Cadmium	ND	0.2	ug/L	ND			NC	20	
Chromium	ND	1.0	ug/L	ND			NC	20	
Cobalt	15.8	0.5	ug/L	16.1			2.0	20	
Copper	0.8	0.5	ug/L	0.7			3.4	20	
Lead	ND	0.2	ug/L	ND			NC	20	
Molybdenum	11.5	0.5	ug/L	11.3			1.5	20	
Nickel	26.4	1.0	ug/L	26.4			0.1	20	
Selenium	1.7	1.0	ug/L	1.7			4.4	20	
Silver	ND	0.2	ug/L	ND			NC	20	
Sodium	165000	200	ug/L	164000			1.0	20	
Thallium	ND	0.5	ug/L	ND			NC	20	
Uranium	26.5	0.2	ug/L	26.8			1.2	20	
Vanadium	ND	0.5	ug/L	ND			NC	20	
Zinc	8.5	5.0	ug/L	8.5			0.6	20	

Method Quality Control: LCS Dup

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Semi-Volatiles									
Acenaphthene	5.58	0.05	ug/L	ND	55.8	50-140	20.8	200	
Acenaphthylene	6.73	0.05	ug/L	ND	67.3	50-140	17.5	200	
Anthracene	9.45	0.01	ug/L	ND	94.5	50-140	4.61	200	
Benzo [a] anthracene	10.0	0.01	ug/L	ND	100	50-140	2.38	200	
Benzo [a] pyrene	10.2	0.01	ug/L	ND	102	50-140	1.33	200	
Benzo [b] fluoranthene	10.1	0.05	ug/L	ND	101	50-140	2.07	200	
Benzo [g,h,i] perylene	10.2	0.05	ug/L	ND	102	50-140	2.69	200	
Benzo [k] fluoranthene	10.5	0.05	ug/L	ND	105	50-140	0.799	200	
Chrysene	10.2	0.05	ug/L	ND	102	50-140	1.82	200	
Dibenzo [a,h] anthracene	9.65	0.05	ug/L	ND	96.5	50-140	2.64	200	
Fluoranthene	9.40	0.01	ug/L	ND	94.0	50-140	0.953	200	
Fluorene	7.18	0.05	ug/L	ND	71.8	50-140	14.7	200	
Indeno [1,2,3-cd] pyrene	9.36	0.05	ug/L	ND	93.6	50-140	2.34	200	
1-Methylnaphthalene	4.48	0.05	ug/L	ND	44.8	50-140	21.4	200	QS-02
2-Methylnaphthalene	5.52	0.05	ug/L	ND	55.2	50-140	1.97	200	
Naphthalene	5.01	0.05	ug/L	ND	50.1	50-140	12.5	200	
Phenanthrene	9.14	0.05	ug/L	ND	91.4	50-140	5.62	200	
Pyrene	10.2	0.01	ug/L	ND	102	50-140	0.702	200	

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Antimony	43.3	0.5	ug/L	ND	86.5	70-130			
Arsenic	56.1	1.0	ug/L	1.0	110	70-130			
Barium	81.3	1.0	ug/L	35.3	92.0	70-130			
Beryllium	43.3	0.5	ug/L	ND	86.5	70-130			
Boron	440	10.0	ug/L	405	70.0	70-130			
Cadmium	42.0	0.2	ug/L	0.2	83.6	70-130			
Chromium	60.7	1.0	ug/L	ND	121	70-130			
Cobalt	69.5	0.5	ug/L	16.1	107	70-130			
Copper	49.3	0.5	ug/L	0.7	97.1	70-130			
Lead	43.0	0.2	ug/L	ND	85.9	70-130			
Molybdenum	61.9	0.5	ug/L	11.3	101	70-130			
Nickel	74.4	1.0	ug/L	26.4	96.1	70-130			
Selenium	57.0	1.0	ug/L	1.7	110	70-130			
Silver	41.4	0.2	ug/L	ND	82.6	70-130			
Sodium	9240	200	ug/L	ND	92.4	80-120			
Thallium	43.6	0.5	ug/L	ND	87.0	70-130			
Uranium	68.7	0.2	ug/L	26.8	83.7	70-130			
Vanadium	64.3	0.5	ug/L	ND	128	70-130			
Zinc	48.6	5.0	ug/L	8.5	80.2	70-130			
Semi-Volatiles									
Acenaphthene	6.87	0.05	ug/L	ND	68.7	50-140			
Acenaphthylene	8.02	0.05	ug/L	ND	80.2	50-140			
Anthracene	9.90	0.01	ug/L	ND	99.0	50-140			
Benzo [a] anthracene	10.3	0.01	ug/L	ND	103	50-140			
Benzo [a] pyrene	10.3	0.01	ug/L	ND	103	50-140			
Benzo [b] fluoranthene	10.3	0.05	ug/L	ND	103	50-140			
Benzo [g,h,i] perylene	10.5	0.05	ug/L	ND	105	50-140			
Benzo [k] fluoranthene	10.6	0.05	ug/L	ND	106	50-140			
Chrysene	10.4	0.05	ug/L	ND	104	50-140			
Dibenzo [a,h] anthracene	9.90	0.05	ug/L	ND	99.0	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Fluoranthene	9.49	0.01	ug/L	ND	94.9	50-140			
Fluorene	8.32	0.05	ug/L	ND	83.2	50-140			
Indeno [1,2,3-cd] pyrene	9.58	0.05	ug/L	ND	95.8	50-140			
1-Methylnaphthalene	5.55	0.05	ug/L	ND	55.5	50-140			
2-Methylnaphthalene	5.63	0.05	ug/L	ND	56.3	50-140			
Naphthalene	5.68	0.05	ug/L	ND	56.8	50-140			
Phenanthrene	9.67	0.05	ug/L	ND	96.7	50-140			
Pyrene	10.3	0.01	ug/L	ND	103	50-140			
Surrogate: 2-Fluorobiphenyl	*7.88*		*%*		*78.0*	*50-140*			
Surrogate: Terphenyl-d14	*7.46*		*%*		*73.9*	*50-140*			

Certificate of Analysis

Report Date: 01-Oct-2025

Client: **SERTAS**

Order Date: 30-Sep-2025

Client PO:

Project Description: 2501E038

Qualifier Notes:

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

PARACEL LABORATORIES LTD

Paracel ID: 2540139

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2540139	№ 79419

Client Name: Sertas
Contact Name: Paige S
Address: 4510 Rhodes Dr #210 Windsor ON
Telephone: 519 981 2724

Project Ref: 2501E038
Quote #: Erwin
PO #:
E-mail: paige.sarafin@sertas.ca clay.secreto@sertas.ca

Page 1 of 1

Turnaround Time
☒ 1 day ☐ 3 day ☐ 2 day ☐ Regular
Date Required:

☒ REG 153/04 ☐ REG 406/19

☐ Table 1 ☐ Agri/Other ☒ Med/Fine
☒ Table 2 ☐ Res/Park ☐ Coarse
☒ Table 3 ☒ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☒ No

Other Regulation
☐ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU - Storm
Mun:
☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Required Analysis: metals	Required Analysis: PAH
1	MW7-A	GW		1	✓	Sept. 30		X	
2	MW8-A	GW		2	✓	Sept. 30		X	X
3									
4									
5									
6									
7									
8									
9									
10									

Comments:

Method of Delivery: Walk in

Relinquished By (Sign):
Relinquished By (Print): Paige Sarafin
Date/Time: Sept 30 2025

Received at Depot: K. Jakobsen
Date/Time: Sept. 30/25 14:00
Temperature: 20.1 °C

Received at Lab: CM
Date/Time: 1/10/25 957
Temperature: 7.9 °C

Verified By: K. Jakobsen
Date/Time: Sept. 30/25 15:00
pH Verified: ☑ By: K. Jakobsen

Revision 6.0

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Certificate of Analysis

SERTAS
4510 Rhodes Drive, Unit 210
Windsor, ON N8W 5K5
Attn: Paige Sarafin

Client PO:
Project: 2501E038
Custody:

Report Date: 15-Sep-2025
Order Date: 9-Sep-2025

Order #: 2537136

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2537136-06	6-3
2537136-07	DUP1
2537136-09	6-5
2537136-14	7-2
2537136-16	7-4
2537136-22	2-1B
2537136-26	2-4
2537136-29	2-7
2537136-31	DUP2

Approved By:



Milan Ralitsch, PhD
Senior Technical Manager

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	12-Sep-25	12-Sep-25
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	10-Sep-25	11-Sep-25
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	11-Sep-25	12-Sep-25
Conductivity	MOE E3138 - probe @25 °C, water ext	12-Sep-25	12-Sep-25
Mercury by CVAA	EPA 7471B - CVAA, digestion	12-Sep-25	12-Sep-25
PCBs, total	SW846 8082A - GC-ECD	10-Sep-25	11-Sep-25
PHC F1	CWS Tier 1 - P&T GC-FID	10-Sep-25	11-Sep-25
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	11-Sep-25	15-Sep-25
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	12-Sep-25	12-Sep-25
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	11-Sep-25	15-Sep-25
REG 153: pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	15-Sep-25	15-Sep-25
REG 153: PHC F4(g)	CWS Tier 1 - Extraction Gravimetric	15-Sep-25	15-Sep-25
REG 153: VOCs by P&T GC-MS	EPA 8260 - P&T GC-MS	10-Sep-25	11-Sep-25
SAR	Calculated	12-Sep-25	13-Sep-25
Solids, %	CWS Tier 1 - Gravimetric	12-Sep-25	15-Sep-25

Summary of Criteria Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in red

Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances.

Sample	Analyte	MDL / Units	Result	Reg 153/04 -T3 Ind/Com, fine	-
7-2	Boron, available	0.5 ug/g	6.4	2 ug/g	-

PARACEL LABORATORIES LTD.

Order #: 2537136

Certificate of Analysis

Report Date: 15-Sep-2025

Client: SERTAS

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	6-3	DUP1	6-5	7-2	Criteria:	
	Sample Date:	08-Sep-25 11:20	08-Sep-25 07:00	08-Sep-25 11:40	08-Sep-25 14:10	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-06	2537136-07	2537136-09	2537136-14		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	84.9	90.1	96.8	91.6	-	-
General Inorganics							
SAR	0.01 N/A	0.34	0.40	0.27	3.06	12 N/A	-
Conductivity	5 uS/cm	157	279	160	396	1.4 mS/cm	-
pH	0.05 pH Units	6.71	6.68	7.42	8.09	5.00 - 9.00 pH Units	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	50 ug/g	-
Arsenic	1.0 ug/g	11.6	7.2	9.6	4.4	18 ug/g	-
Barium	1.0 ug/g	79.4	64.6	82.1	39.0	670 ug/g	-
Beryllium	0.5 ug/g	0.8	0.7	0.6	<0.5	10 ug/g	-
Boron	5.0 ug/g	9.2	11.8	13.5	21.8	120 ug/g	-
Boron, available	0.5 ug/g	0.9	1.1	<0.5	6.4	2 ug/g	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	1.9 ug/g	-
Chromium (VI)	0.2 ug/g	<0.2	<0.2	<0.2	<0.2	10 ug/g	-
Chromium	5.0 ug/g	25.3	22.4	20.5	47.6	160 ug/g	-
Cobalt	1.0 ug/g	11.0	8.7	11.2	7.8	100 ug/g	-
Copper	5.0 ug/g	21.1	18.3	17.3	113	300 ug/g	-
Lead	1.0 ug/g	13.6	18.2	10.9	11.3	120 ug/g	-
Mercury	0.1 ug/g	<0.1	<0.1	<0.1	<0.1	20 ug/g	-
Molybdenum	1.0 ug/g	2.3	2.1	3.8	5.6	40 ug/g	-
Nickel	5.0 ug/g	28.4	21.3	26.9	28.5	340 ug/g	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	5.5 ug/g	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	50 ug/g	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	3.3 ug/g	-
Uranium	1.0 ug/g	1.6	1.8	1.2	1.4	33 ug/g	-

Certificate of Analysis

Report Date: 15-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	6-3	DUP1	6-5	7-2	Criteria:	
	Sample Date:	08-Sep-25 11:20	08-Sep-25 07:00	08-Sep-25 11:40	08-Sep-25 14:10	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-06	2537136-07	2537136-09	2537136-14		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Vanadium	10.0 ug/g	40.1	33.7	31.7	19.2	86 ug/g	-
Zinc	20.0 ug/g	58.8	71.3	51.1	42.6	340 ug/g	-
Volatiles							
Acetone	0.50 ug/g	-	-	-	<0.50	28 ug/g	-
Benzene	0.02 ug/g	-	-	-	0.14	0.4 ug/g	-
Bromodichloromethane	0.05 ug/g	-	-	-	<0.05	18 ug/g	-
Bromoform	0.05 ug/g	-	-	-	<0.05	1.7 ug/g	-
Bromomethane	0.05 ug/g	-	-	-	<0.05	0.05 ug/g	-
Carbon Tetrachloride	0.05 ug/g	-	-	-	<0.05	1.5 ug/g	-
Chlorobenzene	0.05 ug/g	-	-	-	<0.05	2.7 ug/g	-
Chloroform	0.05 ug/g	-	-	-	<0.05	0.18 ug/g	-
Dibromochloromethane	0.05 ug/g	-	-	-	<0.05	13 ug/g	-
Dichlorodifluoromethane	0.05 ug/g	-	-	-	<0.05	25 ug/g	-
1,2-Dichlorobenzene	0.05 ug/g	-	-	-	<0.05	8.5 ug/g	-
1,3-Dichlorobenzene	0.05 ug/g	-	-	-	<0.05	12 ug/g	-
1,4-Dichlorobenzene	0.05 ug/g	-	-	-	<0.05	0.84 ug/g	-
1,1-Dichloroethane	0.05 ug/g	-	-	-	<0.05	21 ug/g	-
1,2-Dichloroethane	0.05 ug/g	-	-	-	<0.05	0.05 ug/g	-
1,1-Dichloroethylene	0.05 ug/g	-	-	-	<0.05	0.48 ug/g	-
cis-1,2-Dichloroethylene	0.05 ug/g	-	-	-	<0.05	37 ug/g	-
trans-1,2-Dichloroethylene	0.05 ug/g	-	-	-	<0.05	9.3 ug/g	-
1,2-Dichloropropane	0.05 ug/g	-	-	-	<0.05	0.68 ug/g	-
cis-1,3-Dichloropropylene	0.05 ug/g	-	-	-	<0.05	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	-	-	-	<0.05	-	-
1,3-Dichloropropene, total	0.05 ug/g	-	-	-	<0.05	0.21 ug/g	-

	Client ID:	6-3	DUP1	6-5	7-2	Criteria:	
	Sample Date:	08-Sep-25 11:20	08-Sep-25 07:00	08-Sep-25 11:40	08-Sep-25 14:10	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-06	2537136-07	2537136-09	2537136-14		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Ethylbenzene	0.05 ug/g	-	-	-	<0.05	19 ug/g	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	-	-	-	<0.05	0.05 ug/g	-
Hexane	0.05 ug/g	-	-	-	<0.05	88 ug/g	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	-	-	-	<0.50	88 ug/g	-
Methyl Isobutyl Ketone	0.50 ug/g	-	-	-	<0.50	210 ug/g	-
Methyl tert-butyl ether	0.05 ug/g	-	-	-	<0.05	3.2 ug/g	-
Methylene Chloride	0.05 ug/g	-	-	-	<0.05	2 ug/g	-
Styrene	0.05 ug/g	-	-	-	<0.05	43 ug/g	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	-	-	-	<0.05	0.11 ug/g	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	-	-	-	<0.05	0.094 ug/g	-
Tetrachloroethylene	0.05 ug/g	-	-	-	<0.05	21 ug/g	-
Toluene	0.05 ug/g	-	-	-	0.22	78 ug/g	-
1,1,1-Trichloroethane	0.05 ug/g	-	-	-	<0.05	12 ug/g	-
1,1,2-Trichloroethane	0.05 ug/g	-	-	-	<0.05	0.11 ug/g	-
Trichloroethylene	0.05 ug/g	-	-	-	<0.05	0.61 ug/g	-
Trichlorofluoromethane	0.05 ug/g	-	-	-	<0.05	5.8 ug/g	-
Vinyl chloride	0.02 ug/g	-	-	-	<0.02	0.25 ug/g	-
m,p-Xylenes	0.05 ug/g	-	-	-	0.18	-	-
o-Xylene	0.05 ug/g	-	-	-	0.05	-	-
Xylenes, total	0.05 ug/g	-	-	-	0.23	30 ug/g	-
4-Bromofluorobenzene	Surrogate	-	-	-	95.7%	-	-
Toluene-d8	Surrogate	-	-	-	101%	-	-
Dibromofluoromethane	Surrogate	-	-	-	119%	-	-
Benzene	0.02 ug/g	<0.02	<0.02	<0.02	-	0.4 ug/g	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	-	19 ug/g	-

Certificate of Analysis

Report Date: 15-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	6-3	DUP1	6-5	7-2	Criteria:	
	Sample Date:	08-Sep-25 11:20	08-Sep-25 07:00	08-Sep-25 11:40	08-Sep-25 14:10	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-06	2537136-07	2537136-09	2537136-14		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	-	78 ug/g	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	-	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	-	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	-	30 ug/g	-
Toluene-d8	Surrogate	102%	103%	102%	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	65 ug/g	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	84	250 ug/g	-
F3 PHCs (C16-C34)	8 ug/g	<8	<8	<8	498	2500 ug/g	-
F4 PHCs (C34-C50)	6 ug/g	<6	<6	<6	389 [1]	6600 ug/g	-
F4G-sg PHCs (gravimetric)	50 ug/g	-	-	-	917	6600 ug/g	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	<0.02	<0.02	-	96 ug/g	-
Acenaphthylene	0.02 ug/g	<0.02	<0.02	<0.02	-	0.17 ug/g	-
Anthracene	0.02 ug/g	<0.02	<0.02	<0.02	-	0.74 ug/g	-
Benzo [a] anthracene	0.02 ug/g	<0.02	<0.02	<0.02	-	0.96 ug/g	-
Benzo [a] pyrene	0.02 ug/g	<0.02	<0.02	<0.02	-	0.3 ug/g	-
Benzo [b] fluoranthene	0.02 ug/g	<0.02	<0.02	<0.02	-	0.96 ug/g	-
Benzo [g,h,i] perylene	0.02 ug/g	<0.02	<0.02	<0.02	-	9.6 ug/g	-
Benzo [k] fluoranthene	0.02 ug/g	<0.02	<0.02	<0.02	-	0.96 ug/g	-
Chrysene	0.02 ug/g	<0.02	<0.02	<0.02	-	9.6 ug/g	-
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	<0.02	<0.02	-	0.1 ug/g	-
Fluoranthene	0.02 ug/g	0.02	<0.02	<0.02	-	9.6 ug/g	-
Fluorene	0.02 ug/g	<0.02	<0.02	<0.02	-	69 ug/g	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	<0.02	<0.02	<0.02	-	0.95 ug/g	-

Certificate of Analysis

Report Date: 15-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	6-3	DUP1	6-5	7-2	Criteria:	
	Sample Date:	08-Sep-25 11:20	08-Sep-25 07:00	08-Sep-25 11:40	08-Sep-25 14:10	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-06	2537136-07	2537136-09	2537136-14		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Semi-Volatiles							
1-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	<0.02	-	85 ug/g	-
2-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	<0.02	-	85 ug/g	-
Methylnaphthalene (1&2)	0.03 ug/g	<0.03	<0.03	<0.03	-	85 ug/g	-
Naphthalene	0.01 ug/g	<0.01	<0.01	<0.01	-	28 ug/g	-
Phenanthrene	0.02 ug/g	<0.02	<0.02	<0.02	-	16 ug/g	-
Pyrene	0.02 ug/g	<0.02	<0.02	<0.02	-	96 ug/g	-
2-Fluorobiphenyl	Surrogate	76.2%	84.0%	79.5%	-	-	-
Terphenyl-d14	Surrogate	88.3%	87.0%	85.1%	-	-	-
PCBs							
PCBs, total	0.05 ug/g	-	-	-	<0.05	1.1 ug/g	-
Decachlorobiphenyl	Surrogate	-	-	-	77.1%	-	-

Certificate of Analysis

Report Date: 15-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	7-4	2-1B	2-4	2-7	Criteria:	
	Sample Date:	08-Sep-25 14:30	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-16	2537136-22	2537136-26	2537136-29		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	91.4	90.2	92.4	89.0	-	-
General Inorganics							
SAR	0.01 N/A	0.50	1.67	0.26	-	12 N/A	-
Conductivity	5 uS/cm	289	366	163	-	1.4 mS/cm	-
pH	0.05 pH Units	7.59	7.19	7.41	-	5.00 - 9.00 pH Units	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	<1.0	-	50 ug/g	-
Arsenic	1.0 ug/g	7.3	7.2	9.4	-	18 ug/g	-
Barium	1.0 ug/g	69.3	72.5	79.0	-	670 ug/g	-
Beryllium	0.5 ug/g	0.5	0.6	0.7	-	10 ug/g	-
Boron	5.0 ug/g	14.8	7.4	15.3	-	120 ug/g	-
Boron, available	0.5 ug/g	<0.5	1.1	<0.5	-	2 ug/g	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	-	1.9 ug/g	-
Chromium (VI)	0.2 ug/g	<0.2	<0.2	<0.2	-	10 ug/g	-
Chromium	5.0 ug/g	18.4	19.8	24.0	-	160 ug/g	-
Cobalt	1.0 ug/g	11.0	7.1	13.7	-	100 ug/g	-
Copper	5.0 ug/g	15.8	20.1	21.2	-	300 ug/g	-
Lead	1.0 ug/g	9.8	31.6	11.3	-	120 ug/g	-
Mercury	0.1 ug/g	<0.1	<0.1	<0.1	-	20 ug/g	-
Molybdenum	1.0 ug/g	4.1	2.0	4.0	-	40 ug/g	-
Nickel	5.0 ug/g	28.2	19.0	33.3	-	340 ug/g	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	-	5.5 ug/g	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	-	50 ug/g	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	-	3.3 ug/g	-
Uranium	1.0 ug/g	1.2	1.1	1.4	-	33 ug/g	-

Certificate of Analysis

Report Date: 15-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	7-4	2-1B	2-4	2-7	Criteria:	
	Sample Date:	08-Sep-25 14:30	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-16	2537136-22	2537136-26	2537136-29		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Vanadium	10.0 ug/g	28.7	29.8	37.9	-	86 ug/g	-
Zinc	20.0 ug/g	53.0	70.3	62.1	-	340 ug/g	-
Volatiles							
Acetone	0.50 ug/g	<0.50	<0.50	-	-	28 ug/g	-
Benzene	0.02 ug/g	<0.02	<0.02	-	-	0.4 ug/g	-
Bromodichloromethane	0.05 ug/g	<0.05	<0.05	-	-	18 ug/g	-
Bromoform	0.05 ug/g	<0.05	<0.05	-	-	1.7 ug/g	-
Bromomethane	0.05 ug/g	<0.05	<0.05	-	-	0.05 ug/g	-
Carbon Tetrachloride	0.05 ug/g	<0.05	<0.05	-	-	1.5 ug/g	-
Chlorobenzene	0.05 ug/g	<0.05	<0.05	-	-	2.7 ug/g	-
Chloroform	0.05 ug/g	<0.05	<0.05	-	-	0.18 ug/g	-
Dibromochloromethane	0.05 ug/g	<0.05	<0.05	-	-	13 ug/g	-
Dichlorodifluoromethane	0.05 ug/g	<0.05	<0.05	-	-	25 ug/g	-
1,2-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	-	-	8.5 ug/g	-
1,3-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	-	-	12 ug/g	-
1,4-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	-	-	0.84 ug/g	-
1,1-Dichloroethane	0.05 ug/g	<0.05	<0.05	-	-	21 ug/g	-
1,2-Dichloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.05 ug/g	-
1,1-Dichloroethylene	0.05 ug/g	<0.05	<0.05	-	-	0.48 ug/g	-
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	-	-	37 ug/g	-
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	-	-	9.3 ug/g	-
1,2-Dichloropropane	0.05 ug/g	<0.05	<0.05	-	-	0.68 ug/g	-
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	-	-	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	-	-	-	-
1,3-Dichloropropene, total	0.05 ug/g	<0.05	<0.05	-	-	0.21 ug/g	-

	Client ID:	7-4	2-1B	2-4	2-7	Criteria:	
	Sample Date:	08-Sep-25 14:30	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-16	2537136-22	2537136-26	2537136-29		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Ethylene dibromide (dibromoethane,	0.05 ug/g	<0.05	<0.05	-	-	0.05 ug/g	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	-	-	19 ug/g	-
Hexane	0.05 ug/g	<0.05	<0.05	-	-	88 ug/g	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	<0.50	-	-	88 ug/g	-
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	<0.50	-	-	210 ug/g	-
Methyl tert-butyl ether	0.05 ug/g	<0.05	<0.05	-	-	3.2 ug/g	-
Methylene Chloride	0.05 ug/g	<0.05	<0.05	-	-	2 ug/g	-
Styrene	0.05 ug/g	<0.05	<0.05	-	-	43 ug/g	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.11 ug/g	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.094 ug/g	-
Tetrachloroethylene	0.05 ug/g	<0.05	<0.05	-	-	21 ug/g	-
Toluene	0.05 ug/g	<0.05	<0.05	-	-	78 ug/g	-
1,1,1-Trichloroethane	0.05 ug/g	<0.05	<0.05	-	-	12 ug/g	-
1,1,2-Trichloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.11 ug/g	-
Trichloroethylene	0.05 ug/g	<0.05	<0.05	-	-	0.61 ug/g	-
Trichlorofluoromethane	0.05 ug/g	<0.05	<0.05	-	-	5.8 ug/g	-
Vinyl chloride	0.02 ug/g	<0.02	<0.02	-	-	0.25 ug/g	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	-	-	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	-	-	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	-	-	30 ug/g	-
Toluene-d8	Surrogate	102%	103%	-	-	-	-
4-Bromofluorobenzene	Surrogate	104%	103%	-	-	-	-
Dibromofluoromethane	Surrogate	114%	114%	-	-	-	-
Benzene	0.02 ug/g	-	-	-	<0.02	0.4 ug/g	-
Ethylbenzene	0.05 ug/g	-	-	-	<0.05	19 ug/g	-

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Report Date: 15-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	7-4	2-1B	2-4	2-7	Criteria:	
	Sample Date:	08-Sep-25 14:30	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-16	2537136-22	2537136-26	2537136-29		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Toluene	0.05 ug/g	-	-	-	<0.05	78 ug/g	-
m,p-Xylenes	0.05 ug/g	-	-	-	<0.05	-	-
o-Xylene	0.05 ug/g	-	-	-	<0.05	-	-
Xylenes, total	0.05 ug/g	-	-	-	<0.05	30 ug/g	-
Toluene-d8	Surrogate	-	-	-	102%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	-	<7	65 ug/g	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	-	6	250 ug/g	-
F3 PHCs (C16-C34)	8 ug/g	<8	39	-	38	2500 ug/g	-
F4 PHCs (C34-C50)	6 ug/g	<6	91 [1]	-	<6	6600 ug/g	-
F4G-sg PHCs (gravimetric)	50 ug/g	-	421	-	-	6600 ug/g	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	-	<0.02	<0.02	-	96 ug/g	-
Acenaphthylene	0.02 ug/g	-	<0.02	<0.02	-	0.17 ug/g	-
Anthracene	0.02 ug/g	-	<0.02	<0.02	-	0.74 ug/g	-
Benzo [a] anthracene	0.02 ug/g	-	0.02	<0.02	-	0.96 ug/g	-
Benzo [a] pyrene	0.02 ug/g	-	0.03	<0.02	-	0.3 ug/g	-
Benzo [b] fluoranthene	0.02 ug/g	-	0.04	<0.02	-	0.96 ug/g	-
Benzo [g,h,i] perylene	0.02 ug/g	-	0.03	<0.02	-	9.6 ug/g	-
Benzo [k] fluoranthene	0.02 ug/g	-	<0.02	<0.02	-	0.96 ug/g	-
Chrysene	0.02 ug/g	-	0.03	<0.02	-	9.6 ug/g	-
Dibenzo [a,h] anthracene	0.02 ug/g	-	<0.02	<0.02	-	0.1 ug/g	-
Fluoranthene	0.02 ug/g	-	0.06	<0.02	-	9.6 ug/g	-
Fluorene	0.02 ug/g	-	<0.02	<0.02	-	69 ug/g	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	-	0.03	<0.02	-	0.95 ug/g	-

Certificate of Analysis

Report Date: 15-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	7-4	2-1B	2-4	2-7	Criteria:	
	Sample Date:	08-Sep-25 14:30	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-16	2537136-22	2537136-26	2537136-29		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Semi-Volatiles							
1-Methylnaphthalene	0.02 ug/g	-	<0.02	<0.02	-	85 ug/g	-
2-Methylnaphthalene	0.02 ug/g	-	<0.02	<0.02	-	85 ug/g	-
Methylnaphthalene (1&2)	0.03 ug/g	-	<0.03	<0.03	-	85 ug/g	-
Naphthalene	0.01 ug/g	-	<0.01	<0.01	-	28 ug/g	-
Phenanthrene	0.02 ug/g	-	<0.02	<0.02	-	16 ug/g	-
Pyrene	0.02 ug/g	-	0.05	<0.02	-	96 ug/g	-
2-Fluorobiphenyl	Surrogate	-	72.9%	77.4%	-	-	-
Terphenyl-d14	Surrogate	-	80.2%	81.0%	-	-	-
PCBs							
PCBs, total	0.05 ug/g	<0.05	-	-	-	1.1 ug/g	-
Decachlorobiphenyl	Surrogate	82.2%	-	-	-	-	-

Certificate of Analysis

Report Date: 15-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	DUP2				Criteria:	
	Sample Date:	08-Sep-25 07:30				Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-31					
	Matrix:	Soil					
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	88.5	-	-	-	-	-
PCBs							
PCBs, total	0.05 ug/g	<0.05	-	-	-	1.1 ug/g	-
Decachlorobiphenyl	Surrogate	77.0%	-	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics								
SAR	ND	0.01	N/A					
Conductivity	ND	5	uS/cm					
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
F4G-sg PHCs (gravimetric)	ND	50	ug/g					
Metals								
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron, available	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium (VI)	ND	0.2	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Mercury	ND	0.1	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
PCBs								
PCBs, total	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: Decachlorobiphenyl	*0.0761*		*%*	*76.9*	*60-140*			
Semi-Volatiles								
Acenaphthene	ND	0.02	ug/g					
Acenaphthylene	ND	0.02	ug/g					
Anthracene	ND	0.02	ug/g					
Benzo [a] anthracene	ND	0.02	ug/g					
Benzo [a] pyrene	ND	0.02	ug/g					
Benzo [b] fluoranthene	ND	0.02	ug/g					
Benzo [g,h,i] perylene	ND	0.02	ug/g					
Benzo [k] fluoranthene	ND	0.02	ug/g					
Chrysene	ND	0.02	ug/g					
Dibenzo [a,h] anthracene	ND	0.02	ug/g					
Fluoranthene	ND	0.02	ug/g					
Fluorene	ND	0.02	ug/g					
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g					
1-Methylnaphthalene	ND	0.02	ug/g					
2-Methylnaphthalene	ND	0.02	ug/g					
Methylnaphthalene (1&2)	ND	0.03	ug/g					
Naphthalene	ND	0.01	ug/g					
Phenanthrene	ND	0.02	ug/g					
Pyrene	ND	0.02	ug/g					
Surrogate: 2-Fluorobiphenyl	*0.413*		*%*	*81.8*	*50-140*			
Surrogate: Terphenyl-d14	*0.423*		*%*	*83.8*	*50-140*			
Volatiles								
Acetone	ND	0.50	ug/g					
Benzene	ND	0.02	ug/g					
Bromodichloromethane	ND	0.05	ug/g					
Bromoform	ND	0.05	ug/g					
Bromomethane	ND	0.05	ug/g					
Carbon Tetrachloride	ND	0.05	ug/g					
Chlorobenzene	ND	0.05	ug/g					
Chloroform	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Dibromochloromethane	ND	0.05	ug/g					
Dichlorodifluoromethane	ND	0.05	ug/g					
1,2-Dichlorobenzene	ND	0.05	ug/g					
1,3-Dichlorobenzene	ND	0.05	ug/g					
1,4-Dichlorobenzene	ND	0.05	ug/g					
1,1-Dichloroethane	ND	0.05	ug/g					
1,2-Dichloroethane	ND	0.05	ug/g					
1,1-Dichloroethylene	ND	0.05	ug/g					
cis-1,2-Dichloroethylene	ND	0.05	ug/g					
trans-1,2-Dichloroethylene	ND	0.05	ug/g					
1,2-Dichloropropane	ND	0.05	ug/g					
cis-1,3-Dichloropropylene	ND	0.05	ug/g					
trans-1,3-Dichloropropylene	ND	0.05	ug/g					
1,3-Dichloropropene, total	ND	0.05	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g					
Hexane	ND	0.05	ug/g					
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g					
Methyl Isobutyl Ketone	ND	0.50	ug/g					
Methyl tert-butyl ether	ND	0.05	ug/g					
Methylene Chloride	ND	0.05	ug/g					
Styrene	ND	0.05	ug/g					
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g					
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g					
Tetrachloroethylene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
1,1,1-Trichloroethane	ND	0.05	ug/g					
1,1,2-Trichloroethane	ND	0.05	ug/g					
Trichloroethylene	ND	0.05	ug/g					
Trichlorofluoromethane	ND	0.05	ug/g					
Vinyl chloride	ND	0.02	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Xylenes, total	ND	0.05	ug/g					
Surrogate: 4-Bromofluorobenzene	*8.48*		*%*	*106*	*50-140*			
Surrogate: Dibromofluoromethane	*9.32*		*%*	*116*	*50-140*			
Surrogate: Toluene-d8	*8.17*		*%*	*102*	*50-140*			
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: Toluene-d8	*8.17*		*%*	*102*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	0.82	0.01	N/A	0.80			2.5	30	
Conductivity	372	5	uS/cm	374			0.3	5	
pH	7.35	0.05	pH Units	7.31			0.5	10	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	84	4	ug/g	84			0.1	30	
F3 PHCs (C16-C34)	482	8	ug/g	498			3.3	30	
F4 PHCs (C34-C50)	339	6	ug/g	389			13.7	30	
F4G-sg PHCs (gravimetric)	972	50	ug/g	1060			8.2	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	68.6	1.0	ug/g	70.3			2.3	30	
Barium	88.2	1.0	ug/g	98.6			11.1	30	
Beryllium	0.8	0.5	ug/g	0.8			0.1	30	
Boron, available	ND	0.5	ug/g	ND			NC	35	
Boron	32.9	5.0	ug/g	32.6			0.9	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	241	5.0	ug/g	239			0.9	30	
Cobalt	14.5	1.0	ug/g	15.3			4.8	30	
Copper	49.0	5.0	ug/g	50.0			2.0	30	
Lead	31.1	1.0	ug/g	30.8			1.0	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	9.7	1.0	ug/g	9.8			2.0	30	
Nickel	184	5.0	ug/g	183			0.7	30	
Selenium	1.1	1.0	ug/g	1.3			21.6	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	ND	1.0	ug/g	ND			NC	30	
Vanadium	48.5	10.0	ug/g	51.7			6.3	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Zinc	120	20.0	ug/g	122			1.9	30	
PCBs									
PCBs, total	ND	0.05	ug/g	ND			NC	40	
Surrogate: Decachlorobiphenyl	*0.0762*		*%*		*74.7*	*60-140*			
Physical Characteristics									
% Solids	81.8	0.1	% by Wt.	83.2			1.8	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g	ND			NC	40	
Acenaphthylene	ND	0.02	ug/g	ND			NC	40	
Anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] pyrene	ND	0.02	ug/g	ND			NC	40	
Benzo [b] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g	ND			NC	40	
Benzo [k] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Chrysene	ND	0.02	ug/g	ND			NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g	ND			NC	40	
Fluoranthene	0.022	0.02	ug/g	ND			NC	40	
Fluorene	ND	0.02	ug/g	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g	ND			NC	40	
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
Naphthalene	ND	0.01	ug/g	ND			NC	40	
Phenanthrene	ND	0.02	ug/g	ND			NC	40	
Pyrene	ND	0.02	ug/g	ND			NC	40	
Surrogate: 2-Fluorobiphenyl	*0.370*		*%*		*70.9*	*50-140*			
Surrogate: Terphenyl-d14	*0.369*		*%*		*70.7*	*50-140*			
Volatiles									
Acetone	ND	0.50	ug/g	ND			NC	50	
Benzene	ND	0.02	ug/g	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Bromoform	ND	0.05	ug/g	ND			NC	50	
Bromomethane	ND	0.05	ug/g	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g	ND			NC	50	
Chloroform	ND	0.05	ug/g	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g	ND			NC	50	
Hexane	ND	0.05	ug/g	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g	ND			NC	50	
Styrene	ND	0.05	ug/g	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,2-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	*9.35*		*%*		*104*	*50-140*			
Surrogate: Dibromofluoromethane	*10.6*		*%*		*117*	*50-140*			
Surrogate: Toluene-d8	*9.24*		*%*		*103*	*50-140*			
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: Toluene-d8	*9.24*		*%*		*103*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	68	7	ug/g	ND	81.0	0-200			
F2 PHCs (C10-C16)	168	4	ug/g	84	76.4	60-140			
F3 PHCs (C16-C34)	647	8	ug/g	498	63.2	60-140			
F4 PHCs (C34-C50)	139	6	ug/g	23	77.2	60-140			
F4G-sg PHCs (gravimetric)	1160	50	ug/g	ND	116	80-120			
Metals									
Antimony	50.0	1.0	ug/g	ND	100	70-130			
Arsenic	77.4	1.0	ug/g	28.1	98.6	70-130			
Barium	97.6	1.0	ug/g	39.4	116	70-130			
Beryllium	49.8	0.5	ug/g	ND	98.9	70-130			
Boron, available	5.30	0.5	ug/g	ND	106	70-122			
Boron	58.9	5.0	ug/g	13.1	91.7	70-130			
Cadmium	53.4	0.5	ug/g	ND	107	70-130			
Chromium (VI)	3.7	0.2	ug/g	ND	71.5	70-130			
Chromium	147	5.0	ug/g	95.5	102	70-130			
Cobalt	58.2	1.0	ug/g	6.1	104	70-130			
Copper	72.9	5.0	ug/g	20.0	106	70-130			
Lead	69.2	1.0	ug/g	12.3	114	70-130			
Mercury	1.53	0.1	ug/g	ND	102	70-130			
Molybdenum	49.2	1.0	ug/g	3.9	90.4	70-130			
Nickel	120	5.0	ug/g	73.2	93.6	70-130			
Selenium	47.5	1.0	ug/g	ND	93.9	70-130			
Silver	41.4	0.3	ug/g	ND	82.7	70-130			
Thallium	52.3	1.0	ug/g	ND	104	70-130			
Uranium	52.5	1.0	ug/g	ND	104	70-130			
Vanadium	70.3	10.0	ug/g	20.7	99.3	70-130			
Zinc	103	20.0	ug/g	49.0	108	70-130			
PCBs									
PCBs, total	0.37	0.05	ug/g	ND	89.4	60-140			
Surrogate: Decachlorobiphenyl	*0.0761*		*%*		*74.6*	*60-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Semi-Volatiles									
Acenaphthene	0.473	0.02	ug/g	ND	91.5	50-140			
Acenaphthylene	0.495	0.02	ug/g	ND	95.8	50-140			
Anthracene	0.452	0.02	ug/g	ND	87.4	50-140			
Benzo [a] anthracene	0.442	0.02	ug/g	ND	85.5	50-140			
Benzo [a] pyrene	0.475	0.02	ug/g	ND	92.1	50-140			
Benzo [b] fluoranthene	0.476	0.02	ug/g	ND	92.2	50-140			
Benzo [g,h,i] perylene	0.439	0.02	ug/g	ND	85.0	50-140			
Benzo [k] fluoranthene	0.438	0.02	ug/g	ND	84.8	50-140			
Chrysene	0.427	0.02	ug/g	ND	82.7	50-140			
Dibenzo [a,h] anthracene	0.457	0.02	ug/g	ND	88.4	50-140			
Fluoranthene	0.495	0.02	ug/g	ND	95.9	50-140			
Fluorene	0.494	0.02	ug/g	ND	95.7	50-140			
Indeno [1,2,3-cd] pyrene	0.502	0.02	ug/g	ND	97.3	50-140			
1-Methylnaphthalene	0.465	0.02	ug/g	ND	90.0	50-140			
2-Methylnaphthalene	0.476	0.02	ug/g	ND	92.2	50-140			
Naphthalene	0.464	0.01	ug/g	ND	89.9	50-140			
Phenanthrene	0.475	0.02	ug/g	ND	92.0	50-140			
Pyrene	0.475	0.02	ug/g	ND	92.0	50-140			
Surrogate: 2-Fluorobiphenyl	*0.378*		*%*		*72.5*	*50-140*			
Surrogate: Terphenyl-d14	*0.364*		*%*		*69.9*	*50-140*			
Volatiles									
Acetone	157	0.50	ug/g	17.6	139	50-140			
Benzene	46.5	0.02	ug/g	0.249	115	50-140			
Bromodichloromethane	47.5	0.05	ug/g	ND	118	50-140			
Bromoform	41.9	0.05	ug/g	ND	105	50-140			
Bromomethane	55.7	0.05	ug/g	ND	137	50-140			
Carbon Tetrachloride	48.8	0.05	ug/g	ND	122	50-140			
Chlorobenzene	38.5	0.05	ug/g	ND	95.9	50-140			
Chloroform	53.6	0.05	ug/g	ND	134	50-140			
Dibromochloromethane	44.8	0.05	ug/g	ND	112	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Dichlorodifluoromethane	67.7	0.05	ug/g	ND	168	50-140			QS-02
1,2-Dichlorobenzene	35.9	0.05	ug/g	ND	89.6	50-140			
1,3-Dichlorobenzene	37.7	0.05	ug/g	ND	94.3	50-140			
1,4-Dichlorobenzene	36.2	0.05	ug/g	ND	90.1	50-140			
1,1-Dichloroethane	51.6	0.05	ug/g	ND	129	50-140			
1,2-Dichloroethane	51.9	0.05	ug/g	ND	130	50-140			
1,1-Dichloroethylene	43.8	0.05	ug/g	ND	109	50-140			
cis-1,2-Dichloroethylene	50.8	0.05	ug/g	ND	127	50-140			
trans-1,2-Dichloroethylene	51.3	0.05	ug/g	ND	128	50-140			
1,2-Dichloropropane	45.8	0.05	ug/g	ND	114	50-140			
cis-1,3-Dichloropropylene	44.5	0.05	ug/g	ND	111	50-140			
trans-1,3-Dichloropropylene	45.7	0.05	ug/g	ND	114	50-140			
Ethylbenzene	38.9	0.05	ug/g	0.432	96.4	50-140			
Ethylene dibromide (dibromoethane, 1,2-)	48.6	0.05	ug/g	ND	122	50-140			
Hexane	41.8	0.05	ug/g	0.756	103	50-140			
Methyl Ethyl Ketone (2-Butanone)	136	0.50	ug/g	ND	136	50-140			
Methyl Isobutyl Ketone	89.9	0.50	ug/g	ND	90.1	50-140			
Methyl tert-butyl ether	103	0.05	ug/g	ND	103	50-140			
Methylene Chloride	55.6	0.05	ug/g	ND	139	50-140			
Styrene	44.7	0.05	ug/g	ND	112	50-140			
1,1,1,2-Tetrachloroethane	38.5	0.05	ug/g	ND	96.4	50-140			
1,1,2,2-Tetrachloroethane	36.8	0.05	ug/g	ND	92.1	50-140			
Tetrachloroethylene	40.0	0.05	ug/g	ND	99.8	50-140			
Toluene	41.0	0.05	ug/g	2.13	97.0	50-140			
1,1,1-Trichloroethane	50.1	0.05	ug/g	ND	125	50-140			
1,1,2-Trichloroethane	42.7	0.05	ug/g	ND	107	50-140			
Trichloroethylene	43.8	0.05	ug/g	ND	110	50-140			
Trichlorofluoromethane	36.0	0.05	ug/g	ND	89.7	50-140			
Vinyl chloride	54.8	0.02	ug/g	ND	135	50-140			
m,p-Xylenes	81.7	0.05	ug/g	2.40	98.9	50-140			
o-Xylene	40.8	0.05	ug/g	1.41	98.7	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: 4-Bromofluorobenzene	*8.86*		*%*		*95.5*	*50-140*			
Surrogate: Dibromofluoromethane	*11.9*		*%*		*128*	*50-140*			
Surrogate: Toluene-d8	*9.07*		*%*		*97.7*	*50-140*			
Benzene	46.5	0.02	ug/g	0.249	115	50-140			
Ethylbenzene	38.9	0.05	ug/g	0.432	96.4	50-140			
Toluene	41.0	0.05	ug/g	2.13	97.0	50-140			
m,p-Xylenes	81.7	0.05	ug/g	2.40	98.9	50-140			
o-Xylene	40.8	0.05	ug/g	1.41	98.7	50-140			
Surrogate: Toluene-d8	*9.07*		*%*		*97.7*	*50-140*			

Qualifier Notes:

Sample Qualifiers :

1: GC-FID signal did not return to baseline by C50

Applies to Samples: 7-2, 2-1B

QC Qualifiers:

QS-02 Spike level outside of control limits. Analysis batch accepted based on other QC included in the batch.

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

PARACEL LABORATORIES LTD. | T R R

Paracel ID: 2537136

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2537136	

Client Name: SERTAS Group	Project Ref: 2501E038	Page 1 of 1
Contact Name: Paige Sarafin	Quote #: Erwin	**Turnaround Time**
Address: 4510 Rhodes Drive, Unit 210, Windsor, ON	PO #:	☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular
	E-mail: paige.sarafin@sertas.ca; clay.sereres@sertas.ca	Date Required:
Telephone: 519 981 2724		

☒ REG 153/04 ☐ REG 406/19

☐ Table 1 ☐ Agri/Other ☒ Med/Fine
☐ Table 2 ☐ Res/Park ☐ Coarse
☒ Table 3 ☒ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☒ No

Other Regulation

☐ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU - Storm
Mun: ___
☐ Other: ___

Matrix Type: S (Soil/Sed.) **GW** (Ground Water) **SW** (Surface Water) **SS** (Storm/Sanitary Sewer) **P** (Paint) **A** (Air) **O** (Other)

Required Analysis

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full Metals	EC, SAR, pH	PAHs	PHCs	BTEXs	VOCs	PCBs	OCs			HOLD
1	3-1B	S		2	-	Sept. 8 2025	9 00											X
2	3-2	S		2	-	Sept. 8 2025	9 10											X
3	3-3A	S		2	-	Sept. 8 2025	9 20											X
4	6-1	S		2	-	Sept. 8 2025	11 00											X
5	6-2	S		2	-	Sept. 8 2025	11 10											X
6	6-3	S		2	-	Sept. 8 2025	11 30	X	X	X	X	X						
7	DUP1	S		2	-	Sept. 8 2025	7 00	X	X	X	X	X						
8	6-4	S		2	-	Sept. 8 2025	11 30											X
9	6-5	S			-	Sept. 8 2025	11 40	X	X	X	X	X						X
10	6-6	S			-	Sept. 8 2025	11 50											X

Comments:

Method of Delivery: Walkin

Unless otherwise negotiated by the parties, by signing Paracel's Chain of Custody form, you are agreeing to Paracel Laboratories Terms and Conditions and are subject to the terms and conditions thereof. Available at www.paracellabs.com

Relinquished By (Sign):	Received at Depot: K. Jakobson	Received at Lab:	Verified By: K. Jakobson
Relinquished By (Print): Paige Sarafin	Date/Time: Sept 9/25 11:00	Date/Time: 9/10/25 9:45	Date/Time: Sept. 9/25 11:0
Date/Time:	Temperature: 9.9 °C	Temperature: 8.7 C	pH Verified: ☐ By:

PARACEL LABORATORIES LTD.

Paracel ID: 2537136

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2537136	

Client Name: SERTAS Group	Project Ref: 2501E038	Page 2 of 4
Contact Name: Paige Sarafin	Quote #: RAWIN	Turnaround Time: ☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular
Address: 4510 Rhodes Drive, Unit 210, Windsor, ON	PO #:	Date Required:
Telephone: 519 981 2724	E-mail: paige.sarafin@sertas.ca; clay.sereres@sertas.ca	

☒ REG 153/04 ☐ REG 406/19 | Other Regulation

☐ Table 1 ☐ Agri/Other ☒ Med/Fine | ☐ REG 558 ☐ PWQO

☐ Table 2 ☐ Res/Park ☐ Coarse | ☐ CCME ☐ MISA

☒ Table 3 ☐ Ind/Comm | ☐ SU - Sani ☐ SU - Storm

☐ Table ___ | Mun: ___

For RSC: ☐ Yes ☒ No | ☐ Other: ___

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full Metals	EC, SAR, pH	PAHs	PHCs	BTEXs	VOCs	PCBs	OCs			HOLD
1	6-7	S		2	-	Sept. 8 2025	12 00											
2	6-8	S		2	-	Sept. 8 2025	12 10											X
3	7-1	S		2	-	Sept. 8 2025	200											X
4	7-2	S		2	-	Sept. 8 2025	2 10	X	X		X		X	X				
5	7-3	S		2	-	Sept. 8 2025	2 20											X
6	7-4	S		2	-	Sept. 8 2025	2 30	X	X		X		X	X				X
7	7-5	S		2	-	Sept. 8 2025	2 40											X
8	7-6	S		2	-	Sept. 8 2025	2 50											X
9	7-7	S		2	-	Sept. 8 2025	2 60											X
10	7-8	S		2	-	Sept. 8 2025	300											X

Comments:

Method of Delivery: WALK IN

Unless otherwise negotiated by the parties, by signing Paracel's Chain of Custody form, you are agreeing to Paracel Laboratories Terms and Conditions and are subject to the terms and conditions thereof. Available at www.paracellabs.com

Relinquished By (Sign):	Received at Depot: K. Jakobsen	Received at Lab: JW
Relinquished By (Print): Paige Sarafin	Date/Time: Sept. 9/25 10:00	Date/Time: Sept. 9/25 9:45
Date/Time:	Temperature: 9.9 °C	Temperature: 8.7
		Verified By: K. Jakobsen
		Date/Time: Sept. 9/25 14:00
		pH Verified: ☐ By:

PARACEL LABORATORIES LTD. | T R R

Paracel ID: 2537136

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2537136	

Client Name: SERTAS Group	Project Ref: 2501E038	Page 3 of 4
Contact Name: Paige Sarafin	Quote #: enwin	Turnaround Time
Address: 4510 Rhodes Drive, Unit 210, Windsor, ON	PO #:	☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular
Telephone: 519 981 2724	E-mail: paige.sarafin@sertas.ca; clay.sereres@sertas.ca	Date Required:

☒ REG 153/04 ☐ REG 406/19

Table 1 ☐ Agri/Other ☒ Med/Fine
Table 2 ☐ Res/Park ☐ Coarse
☒ Table 3 ☒ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☒ No

Other Regulation: ☐ REG 558 ☐ PWQO ☐ CCME ☐ MISA ☐ SU - Sani ☐ SU - Storm ☐ Mun: ☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full Metals	EC, SAR, pH	PAHs	PHCs	BTEXs	VOCs	PCBs	OCs			HOLD
1	2-1A	S		2	-	Sept. 8 2025	3 30											X
2	2-1B	S		2	-	Sept. 8 2025	3 35	X	X	X	X		X					
3	2-2	S		2	-	Sept. 8 2025	3 40											X
4	2-3A	S		2	-	Sept. 8 2025	3 45											X
5	2-3B	S		2	-	Sept. 8 2025	3 50											X
6	2-4	S		2	-	Sept. 8 2025	4 00	X	X	X								
7	2-5	S		2	-	Sept. 8 2025	4 10											X
8	2-6	S		2	-	Sept. 8 2025	4 15											X
9	2-7	S		2	-	Sept. 8 2025	4 20				X	X						
10	2-8	S		2	-	Sept. 8 2025	4 30											X

Comments:

Method of Delivery: Walk in

Unless otherwise negotiated by the parties, by signing Paracel's Chain of Custody form, you are agreeing to Paracel Laboratories Terms and Conditions and are subject to the terms and conditions thereof. Available at www.paracellabs.com

Relinquished By (Sign):	Received at Depot: K. Jakobsen	Received at Lab: JW	Verified By: K. Jakobsen
Relinquished By (Print): Paige Sarafin	Date/Time: Sept 9/25 10:00	Date/Time: Sept 9/25 14:45	Date/Time: Sept. 9/25 14:00
Date/Time:	Temperature: 9.9 °C	Temperature: 8.7C	pH Verified: ☐ By:

PARACEL LABORATORIES LTD.
TRUSTED. RESPONSIVE. RELIABLE.

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Hamilton, ON L8H 7P4
1-800-749-1947
www.paracellabs.com

Certificate of Analysis

SERTAS
4510 Rhodes Drive, Unit 210
Windsor, ON N8W 5K5
Attn: Paige Sarafin

Client PO:
Project: 2501E038
Custody:

Report Date: 19-Sep-2025
Order Date: 9-Sep-2025

Revised Report

Order #: 2537136

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2537136-04	6-1
2537136-06	6-3
2537136-07	DUP1
2537136-09	6-5
2537136-13	7-1
2537136-14	7-2
2537136-16	7-4
2537136-21	2-1A
2537136-22	2-1B
2537136-26	2-4
2537136-29	2-7
2537136-31	DUP2

Approved By:



Milan Ralitsch, PhD
Senior Technical Manager

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	19-Sep-25	19-Sep-25
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	17-Sep-25	18-Sep-25
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	19-Sep-25	19-Sep-25
Conductivity	MOE E3138 - probe @25 °C, water ext	19-Sep-25	19-Sep-25
Cyanide, free	MOE E3015 - Auto Colour, water extraction	19-Sep-25	19-Sep-25
Mercury by CVAA	EPA 7471B - CVAA, digestion	18-Sep-25	18-Sep-25
PCBs, total	SW846 8082A - GC-ECD	16-Sep-25	18-Sep-25
PHC F1	CWS Tier 1 - P&T GC-FID	17-Sep-25	18-Sep-25
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	16-Sep-25	18-Sep-25
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	18-Sep-25	18-Sep-25
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	18-Sep-25	19-Sep-25
REG 153: pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	18-Sep-25	18-Sep-25
REG 153: PHC F4(g)	CWS Tier 1 - Extraction Gravimetric	19-Sep-25	19-Sep-25
REG 153: VOCs by P&T GC-MS	EPA 8260 - P&T GC-MS	17-Sep-25	18-Sep-25
SAR	Calculated	19-Sep-25	19-Sep-25
Solids, %	CWS Tier 1 - Gravimetric	18-Sep-25	19-Sep-25

Summary of Criteria Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in red

Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances.

Sample	Analyte	MDL / Units	Result	Reg 153/04 -T3 Ind/Com, fine	-
6-1	F4G-sg PHCs (gravimetric)	50 ug/g	19300	6600 ug/g	-
7-2	Boron, available	0.5 ug/g	6.4	2 ug/g	-
2-1A	F4G-sg PHCs (gravimetric)	50 ug/g	14500	6600 ug/g	-

Certificate of Analysis

Report Date: 19-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	6-1	6-3	DUP1	6-5	Criteria:	
	Sample Date:	08-Sep-25 11:00	08-Sep-25 11:20	08-Sep-25 07:00	08-Sep-25 11:40	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-04	2537136-06	2537136-07	2537136-09		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	96.8	84.9	90.1	96.8	-	-
General Inorganics							
SAR	0.01 N/A	0.11	0.34	0.40	0.27	12 N/A	-
Conductivity	5 uS/cm	120	157	279	160	1.4 mS/cm	-
Cyanide, free	0.03 ug/g	<0.03	-	-	-	0.051 ug/g	-
pH	0.05 pH Units	7.75	6.71	6.68	7.42	5.00 - 9.00 pH Units	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	50 ug/g	-
Arsenic	1.0 ug/g	5.7	11.6	7.2	9.6	18 ug/g	-
Barium	1.0 ug/g	97.6	79.4	64.6	82.1	670 ug/g	-
Beryllium	0.5 ug/g	<0.5	0.8	0.7	0.6	10 ug/g	-
Boron	5.0 ug/g	<5.0	9.2	11.8	13.5	120 ug/g	-
Boron, available	0.5 ug/g	0.6	0.9	1.1	<0.5	2 ug/g	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	1.9 ug/g	-
Chromium	5.0 ug/g	11.2	25.3	22.4	20.5	160 ug/g	-
Chromium (VI)	0.2 ug/g	<0.2	<0.2	<0.2	<0.2	10 ug/g	-
Cobalt	1.0 ug/g	3.6	11.0	8.7	11.2	100 ug/g	-
Copper	5.0 ug/g	17.9	21.1	18.3	17.3	300 ug/g	-
Lead	1.0 ug/g	19.5	13.6	18.2	10.9	120 ug/g	-
Mercury	0.1 ug/g	<0.1	<0.1	<0.1	<0.1	20 ug/g	-
Molybdenum	1.0 ug/g	2.0	2.3	2.1	3.8	40 ug/g	-
Nickel	5.0 ug/g	13.8	28.4	21.3	26.9	340 ug/g	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	5.5 ug/g	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	50 ug/g	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	3.3 ug/g	-

Certificate of Analysis

Report Date: 19-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	6-1	6-3	DUP1	6-5	Criteria:	
	Sample Date:	08-Sep-25 11:00	08-Sep-25 11:20	08-Sep-25 07:00	08-Sep-25 11:40	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-04	2537136-06	2537136-07	2537136-09		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Uranium	1.0 ug/g	<1.0	1.6	1.8	1.2	33 ug/g	-
Vanadium	10.0 ug/g	48.8	40.1	33.7	31.7	86 ug/g	-
Zinc	20.0 ug/g	43.7	58.8	71.3	51.1	340 ug/g	-
Volatiles							
Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	0.4 ug/g	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	19 ug/g	-
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	78 ug/g	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	30 ug/g	-
Toluene-d8	Surrogate	88.7%	102%	103%	102%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	65 ug/g	-
F2 PHCs (C10-C16)	4 ug/g	<40 [1]	<4	<4	<4	250 ug/g	-
F3 PHCs (C16-C34)	8 ug/g	411	<8	<8	<8	2500 ug/g	-
F4 PHCs (C34-C50)	6 ug/g	4910 [2]	<6	<6	<6	6600 ug/g	-
F4G-sg PHCs (gravimetric)	50 ug/g	19300	-	-	-	6600 ug/g	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	96 ug/g	-
Acenaphthylene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	0.17 ug/g	-
Anthracene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	0.74 ug/g	-
Benzo [a] anthracene	0.02 ug/g	0.08	<0.02	<0.02	<0.02	0.96 ug/g	-
Benzo [a] pyrene	0.02 ug/g	0.09	<0.02	<0.02	<0.02	0.3 ug/g	-
Benzo [b] fluoranthene	0.02 ug/g	0.13	<0.02	<0.02	<0.02	0.96 ug/g	-
Benzo [g,h,i] perylene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	9.6 ug/g	-

Certificate of Analysis

Report Date: 19-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	6-1	6-3	DUP1	6-5	Criteria:	
	Sample Date:	08-Sep-25 11:00	08-Sep-25 11:20	08-Sep-25 07:00	08-Sep-25 11:40	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-04	2537136-06	2537136-07	2537136-09		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Semi-Volatiles							
Benzo [k] fluoranthene	0.02 ug/g	0.04	<0.02	<0.02	<0.02	0.96 ug/g	-
Chrysene	0.02 ug/g	0.12	<0.02	<0.02	<0.02	9.6 ug/g	-
Dibenzo [a,h] anthracene	0.02 ug/g	0.05	<0.02	<0.02	<0.02	0.1 ug/g	-
Fluoranthene	0.02 ug/g	0.17	0.02	<0.02	<0.02	9.6 ug/g	-
Fluorene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	69 ug/g	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	0.08	<0.02	<0.02	<0.02	0.95 ug/g	-
1-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	85 ug/g	-
2-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	85 ug/g	-
Methylnaphthalene (1&2)	0.03 ug/g	<0.03	<0.03	<0.03	<0.03	85 ug/g	-
Naphthalene	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	28 ug/g	-
Phenanthrene	0.02 ug/g	0.08	<0.02	<0.02	<0.02	16 ug/g	-
Pyrene	0.02 ug/g	0.13	<0.02	<0.02	<0.02	96 ug/g	-
2-Fluorobiphenyl	Surrogate	81.7%	76.2%	84.0%	79.5%	-	-
Terphenyl-d14	Surrogate	61.8%	88.3%	87.0%	85.1%	-	-

PARACEL LABORATORIES LTD.

Order #: 2537136

Certificate of Analysis

Report Date: 19-Sep-2025

Client: SERTAS

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	7-1	7-2	7-4	2-1A	Criteria:	
	Sample Date:	08-Sep-25 14:00	08-Sep-25 14:10	08-Sep-25 14:30	08-Sep-25 15:30	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-13	2537136-14	2537136-16	2537136-21		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	96.7	91.6	91.4	96.0	-	-
General Inorganics							
SAR	0.01 N/A	0.16	3.06	0.50	0.09	12 N/A	-
Conductivity	5 uS/cm	137	396	289	115	1.4 mS/cm	-
Cyanide, free	0.03 ug/g	<0.03	-	-	<0.03	0.051 ug/g	-
pH	0.05 pH Units	7.71	8.09	7.59	7.68	5.00 - 9.00 pH Units	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	50 ug/g	-
Arsenic	1.0 ug/g	1.9	4.4	7.3	2.9	18 ug/g	-
Barium	1.0 ug/g	306	39.0	69.3	78.7	670 ug/g	-
Beryllium	0.5 ug/g	<0.5	<0.5	0.5	<0.5	10 ug/g	-
Boron	5.0 ug/g	<5.0	21.8	14.8	<5.0	120 ug/g	-
Boron, available	0.5 ug/g	<0.5	6.4	<0.5	<0.5	2 ug/g	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	1.9 ug/g	-
Chromium (VI)	0.2 ug/g	<0.2	<0.2	<0.2	0.3	10 ug/g	-
Chromium	5.0 ug/g	6.3	47.6	18.4	8.0	160 ug/g	-
Cobalt	1.0 ug/g	1.7	7.8	11.0	5.1	100 ug/g	-
Copper	5.0 ug/g	7.2	113	15.8	19.5	300 ug/g	-
Lead	1.0 ug/g	18.0	11.3	9.8	12.5	120 ug/g	-
Mercury	0.1 ug/g	<0.1	<0.1	<0.1	<0.1	20 ug/g	-
Molybdenum	1.0 ug/g	1.2	5.6	4.1	1.2	40 ug/g	-
Nickel	5.0 ug/g	7.6	28.5	28.2	10.8	340 ug/g	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	5.5 ug/g	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	50 ug/g	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	3.3 ug/g	-

Certificate of Analysis

Report Date: 19-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	7-1	7-2	7-4	2-1A	Criteria:	
	Sample Date:	08-Sep-25 14:00	08-Sep-25 14:10	08-Sep-25 14:30	08-Sep-25 15:30	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-13	2537136-14	2537136-16	2537136-21		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Uranium	1.0 ug/g	1.1	1.4	1.2	1.0	33 ug/g	-
Vanadium	10.0 ug/g	13.7	19.2	28.7	23.6	86 ug/g	-
Zinc	20.0 ug/g	41.5	42.6	53.0	21.9	340 ug/g	-
Volatiles							
Acetone	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	28 ug/g	-
Benzene	0.02 ug/g	<0.02	0.14	<0.02	<0.02	0.4 ug/g	-
Bromodichloromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	18 ug/g	-
Bromoform	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	1.7 ug/g	-
Bromomethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05 ug/g	-
Carbon Tetrachloride	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	1.5 ug/g	-
Chlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	2.7 ug/g	-
Chloroform	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.18 ug/g	-
Dibromochloromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	13 ug/g	-
Dichlorodifluoromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	25 ug/g	-
1,2-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	8.5 ug/g	-
1,3-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	12 ug/g	-
1,4-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.84 ug/g	-
1,1-Dichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	21 ug/g	-
1,2-Dichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05 ug/g	-
1,1-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.48 ug/g	-
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	37 ug/g	-
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	9.3 ug/g	-
1,2-Dichloropropane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.68 ug/g	-
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-

	Client ID:	7-1	7-2	7-4	2-1A	Criteria:	
	Sample Date:	08-Sep-25 14:00	08-Sep-25 14:10	08-Sep-25 14:30	08-Sep-25 15:30	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-13	2537136-14	2537136-16	2537136-21		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
1,3-Dichloropropene, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.21 ug/g	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	19 ug/g	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05 ug/g	-
Hexane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	88 ug/g	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	88 ug/g	-
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	210 ug/g	-
Methyl tert-butyl ether	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	3.2 ug/g	-
Methylene Chloride	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	2 ug/g	-
Styrene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	43 ug/g	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.11 ug/g	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.094 ug/g	-
Tetrachloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	21 ug/g	-
Toluene	0.05 ug/g	<0.05	0.22	<0.05	<0.05	78 ug/g	-
1,1,1-Trichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	12 ug/g	-
1,1,2-Trichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.11 ug/g	-
Trichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.61 ug/g	-
Trichlorofluoromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	5.8 ug/g	-
Vinyl chloride	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	0.25 ug/g	-
m,p-Xylenes	0.05 ug/g	<0.05	0.18	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	0.23	<0.05	<0.05	30 ug/g	-
Toluene-d8	Surrogate	89.7%	101%	102%	88.1%	-	-
Dibromofluoromethane	Surrogate	57.9%	119%	114%	57.3%	-	-
4-Bromofluorobenzene	Surrogate	86.7%	95.7%	104%	85.5%	-	-
Hydrocarbons							

Certificate of Analysis

Report Date: 19-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	7-1	7-2	7-4	2-1A	Criteria:	
	Sample Date:	08-Sep-25 14:00	08-Sep-25 14:10	08-Sep-25 14:30	08-Sep-25 15:30	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-13	2537136-14	2537136-16	2537136-21		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	65 ug/g	-
F2 PHCs (C10-C16)	4 ug/g	<40 [1]	84	<4	<40 [1]	250 ug/g	-
F3 PHCs (C16-C34)	8 ug/g	365	498	<8	720	2500 ug/g	-
F4 PHCs (C34-C50)	6 ug/g	2110 [2]	389 [2]	<6	5420 [2]	6600 ug/g	-
F4G-sg PHCs (gravimetric)	50 ug/g	5340	917	-	14500	6600 ug/g	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	-	0.06	<0.02	<0.02	96 ug/g	-
Acenaphthylene	0.02 ug/g	-	<0.02	<0.02	<0.02	0.17 ug/g	-
Anthracene	0.02 ug/g	-	<0.02	<0.02	<0.02	0.74 ug/g	-
Benzo [a] anthracene	0.02 ug/g	-	<0.02	<0.02	<0.02	0.96 ug/g	-
Benzo [a] pyrene	0.02 ug/g	-	<0.02	<0.02	<0.02	0.3 ug/g	-
Benzo [b] fluoranthene	0.02 ug/g	-	<0.02	<0.02	<0.02	0.96 ug/g	-
Benzo [g,h,i] perylene	0.02 ug/g	-	<0.02	<0.02	<0.02	9.6 ug/g	-
Benzo [k] fluoranthene	0.02 ug/g	-	<0.02	<0.02	0.17	0.96 ug/g	-
Chrysene	0.02 ug/g	-	<0.02	<0.02	<0.02	9.6 ug/g	-
Dibenzo [a,h] anthracene	0.02 ug/g	-	<0.02	<0.02	<0.02	0.1 ug/g	-
Fluoranthene	0.02 ug/g	-	0.04	<0.02	0.23	9.6 ug/g	-
Fluorene	0.02 ug/g	-	0.03	<0.02	<0.02	69 ug/g	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	-	<0.02	<0.02	<0.02	0.95 ug/g	-
1-Methylnaphthalene	0.02 ug/g	-	0.14	<0.02	<0.02	85 ug/g	-
2-Methylnaphthalene	0.02 ug/g	-	0.14	<0.02	<0.02	85 ug/g	-
Methylnaphthalene (1&2)	0.03 ug/g	-	0.28	<0.03	<0.03	85 ug/g	-
Naphthalene	0.01 ug/g	-	0.31	<0.01	<0.01	28 ug/g	-
Phenanthrene	0.02 ug/g	-	0.04	<0.02	0.06	16 ug/g	-
Pyrene	0.02 ug/g	-	<0.02	<0.02	0.11	96 ug/g	-

Certificate of Analysis

Report Date: 19-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	7-1	7-2	7-4	2-1A	Criteria:	
	Sample Date:	08-Sep-25 14:00	08-Sep-25 14:10	08-Sep-25 14:30	08-Sep-25 15:30	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-13	2537136-14	2537136-16	2537136-21		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Semi-Volatiles							
2-Fluorobiphenyl	Surrogate	-	51.5%	90.0%	84.6%	-	-
Terphenyl-d14	Surrogate	-	35.4% [6]	56.0%	50.7%	-	-
PCBs							
PCBs, total	0.05 ug/g	<0.05	<0.05	<0.05	-	1.1 ug/g	-
Decachlorobiphenyl	Surrogate	103%	77.1%	82.2%	-	-	-

Certificate of Analysis

Report Date: 19-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	2-1B	2-4	2-7	DUP2	Criteria:	
	Sample Date:	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	08-Sep-25 07:30	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-22	2537136-26	2537136-29	2537136-31		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	90.2	92.4	89.0	88.5	-	-
General Inorganics							
SAR	0.01 N/A	1.67	0.26	-	-	12 N/A	-
Conductivity	5 uS/cm	366	163	-	-	1.4 mS/cm	-
pH	0.05 pH Units	7.19	7.41	-	-	5.00 - 9.00 pH Units	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	-	-	50 ug/g	-
Arsenic	1.0 ug/g	7.2	9.4	-	-	18 ug/g	-
Barium	1.0 ug/g	72.5	79.0	-	-	670 ug/g	-
Beryllium	0.5 ug/g	0.6	0.7	-	-	10 ug/g	-
Boron	5.0 ug/g	7.4	15.3	-	-	120 ug/g	-
Boron, available	0.5 ug/g	1.1	<0.5	-	-	2 ug/g	-
Cadmium	0.5 ug/g	<0.5	<0.5	-	-	1.9 ug/g	-
Chromium (VI)	0.2 ug/g	<0.2	<0.2	-	-	10 ug/g	-
Chromium	5.0 ug/g	19.8	24.0	-	-	160 ug/g	-
Cobalt	1.0 ug/g	7.1	13.7	-	-	100 ug/g	-
Copper	5.0 ug/g	20.1	21.2	-	-	300 ug/g	-
Lead	1.0 ug/g	31.6	11.3	-	-	120 ug/g	-
Mercury	0.1 ug/g	<0.1	<0.1	-	-	20 ug/g	-
Molybdenum	1.0 ug/g	2.0	4.0	-	-	40 ug/g	-
Nickel	5.0 ug/g	19.0	33.3	-	-	340 ug/g	-
Selenium	1.0 ug/g	<1.0	<1.0	-	-	5.5 ug/g	-
Silver	0.3 ug/g	<0.3	<0.3	-	-	50 ug/g	-
Thallium	1.0 ug/g	<1.0	<1.0	-	-	3.3 ug/g	-
Uranium	1.0 ug/g	1.1	1.4	-	-	33 ug/g	-

Certificate of Analysis

Report Date: 19-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	2-1B	2-4	2-7	DUP2	Criteria:	
	Sample Date:	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	08-Sep-25 07:30	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-22	2537136-26	2537136-29	2537136-31		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Vanadium	10.0 ug/g	29.8	37.9	-	-	86 ug/g	-
Zinc	20.0 ug/g	70.3	62.1	-	-	340 ug/g	-
Volatiles							
Acetone	0.50 ug/g	<0.50	-	-	-	28 ug/g	-
Benzene	0.02 ug/g	<0.02	-	-	-	0.4 ug/g	-
Bromodichloromethane	0.05 ug/g	<0.05	-	-	-	18 ug/g	-
Bromoform	0.05 ug/g	<0.05	-	-	-	1.7 ug/g	-
Bromomethane	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	-
Carbon Tetrachloride	0.05 ug/g	<0.05	-	-	-	1.5 ug/g	-
Chlorobenzene	0.05 ug/g	<0.05	-	-	-	2.7 ug/g	-
Chloroform	0.05 ug/g	<0.05	-	-	-	0.18 ug/g	-
Dibromochloromethane	0.05 ug/g	<0.05	-	-	-	13 ug/g	-
Dichlorodifluoromethane	0.05 ug/g	<0.05	-	-	-	25 ug/g	-
1,2-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	8.5 ug/g	-
1,3-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	12 ug/g	-
1,4-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	0.84 ug/g	-
1,1-Dichloroethane	0.05 ug/g	<0.05	-	-	-	21 ug/g	-
1,2-Dichloroethane	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	-
1,1-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	0.48 ug/g	-
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	37 ug/g	-
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	9.3 ug/g	-
1,2-Dichloropropane	0.05 ug/g	<0.05	-	-	-	0.68 ug/g	-
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	-	-	-	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	-	-	-	-	-
1,3-Dichloropropene, total	0.05 ug/g	<0.05	-	-	-	0.21 ug/g	-

Certificate of Analysis

Report Date: 19-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	2-1B	2-4	2-7	DUP2	Criteria:	
	Sample Date:	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	08-Sep-25 07:30	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-22	2537136-26	2537136-29	2537136-31		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Ethylbenzene	0.05 ug/g	<0.05	-	-	-	19 ug/g	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	-
Hexane	0.05 ug/g	<0.05	-	-	-	88 ug/g	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	-	-	-	88 ug/g	-
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	-	-	-	210 ug/g	-
Methyl tert-butyl ether	0.05 ug/g	<0.05	-	-	-	3.2 ug/g	-
Methylene Chloride	0.05 ug/g	<0.05	-	-	-	2 ug/g	-
Styrene	0.05 ug/g	<0.05	-	-	-	43 ug/g	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	-	-	-	0.11 ug/g	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	-	-	-	0.094 ug/g	-
Tetrachloroethylene	0.05 ug/g	<0.05	-	-	-	21 ug/g	-
Toluene	0.05 ug/g	<0.05	-	-	-	78 ug/g	-
1,1,1-Trichloroethane	0.05 ug/g	<0.05	-	-	-	12 ug/g	-
1,1,2-Trichloroethane	0.05 ug/g	<0.05	-	-	-	0.11 ug/g	-
Trichloroethylene	0.05 ug/g	<0.05	-	-	-	0.61 ug/g	-
Trichlorofluoromethane	0.05 ug/g	<0.05	-	-	-	5.8 ug/g	-
Vinyl chloride	0.02 ug/g	<0.02	-	-	-	0.25 ug/g	-
m,p-Xylenes	0.05 ug/g	<0.05	-	-	-	-	-
o-Xylene	0.05 ug/g	<0.05	-	-	-	-	-
Xylenes, total	0.05 ug/g	<0.05	-	-	-	30 ug/g	-
4-Bromofluorobenzene	Surrogate	103%	-	-	-	-	-
Dibromofluoromethane	Surrogate	114%	-	-	-	-	-
Toluene-d8	Surrogate	103%	-	-	-	-	-
Benzene	0.02 ug/g	-	-	<0.02	-	0.4 ug/g	-
Ethylbenzene	0.05 ug/g	-	-	<0.05	-	19 ug/g	-

	Client ID:	2-1B	2-4	2-7	DUP2	Criteria:	
	Sample Date:	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	08-Sep-25 07:30	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-22	2537136-26	2537136-29	2537136-31		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Toluene	0.05 ug/g	-	-	<0.05	-	78 ug/g	-
m,p-Xylenes	0.05 ug/g	-	-	<0.05	-	-	-
o-Xylene	0.05 ug/g	-	-	<0.05	-	-	-
Xylenes, total	0.05 ug/g	-	-	<0.05	-	30 ug/g	-
Toluene-d8	Surrogate	-	-	102%	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	-	<7	-	65 ug/g	-
F2 PHCs (C10-C16)	4 ug/g	<4	-	6	-	250 ug/g	-
F3 PHCs (C16-C34)	8 ug/g	39	-	38	-	2500 ug/g	-
F4 PHCs (C34-C50)	6 ug/g	91 [2]	-	<6	-	6600 ug/g	-
F4G-sg PHCs (gravimetric)	50 ug/g	421	-	-	-	6600 ug/g	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	<0.02	-	-	96 ug/g	-
Acenaphthylene	0.02 ug/g	<0.02	<0.02	-	-	0.17 ug/g	-
Anthracene	0.02 ug/g	<0.02	<0.02	-	-	0.74 ug/g	-
Benzo [a] anthracene	0.02 ug/g	0.02	<0.02	-	-	0.96 ug/g	-
Benzo [a] pyrene	0.02 ug/g	0.03	<0.02	-	-	0.3 ug/g	-
Benzo [b] fluoranthene	0.02 ug/g	0.04	<0.02	-	-	0.96 ug/g	-
Benzo [g,h,i] perylene	0.02 ug/g	0.03	<0.02	-	-	9.6 ug/g	-
Benzo [k] fluoranthene	0.02 ug/g	<0.02	<0.02	-	-	0.96 ug/g	-
Chrysene	0.02 ug/g	0.03	<0.02	-	-	9.6 ug/g	-
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	<0.02	-	-	0.1 ug/g	-
Fluoranthene	0.02 ug/g	0.06	<0.02	-	-	9.6 ug/g	-
Fluorene	0.02 ug/g	<0.02	<0.02	-	-	69 ug/g	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	0.03	<0.02	-	-	0.95 ug/g	-

Certificate of Analysis

Report Date: 19-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	2-1B	2-4	2-7	DUP2	Criteria:	
	Sample Date:	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	08-Sep-25 07:30	Reg 153/04 -T3 Ind/Com, fine	-
	Sample ID:	2537136-22	2537136-26	2537136-29	2537136-31		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Semi-Volatiles							
1-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	-	-	85 ug/g	-
2-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	-	-	85 ug/g	-
Methylnaphthalene (1&2)	0.03 ug/g	<0.03	<0.03	-	-	85 ug/g	-
Naphthalene	0.01 ug/g	<0.01	<0.01	-	-	28 ug/g	-
Phenanthrene	0.02 ug/g	<0.02	<0.02	-	-	16 ug/g	-
Pyrene	0.02 ug/g	0.05	<0.02	-	-	96 ug/g	-
2-Fluorobiphenyl	Surrogate	72.9%	77.4%	-	-	-	-
Terphenyl-d14	Surrogate	80.2%	81.0%	-	-	-	-
PCBs							
PCBs, total	0.05 ug/g	-	-	-	<0.05	1.1 ug/g	-
Decachlorobiphenyl	Surrogate	-	-	-	77.0%	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics								
Conductivity	ND	5	uS/cm					
Cyanide, free	ND	0.03	ug/g					
SAR	ND	0.01	N/A					
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
F4G-sg PHCs (gravimetric)	ND	50	ug/g					
Metals								
Boron, available	ND	0.5	ug/g					
Chromium (VI)	ND	0.2	ug/g					
Mercury	ND	0.1	ug/g					
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
PCBs								

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs, total	ND	0.05	ug/g					
Surrogate: Decachlorobiphenyl	*0.0761*		*%*	*76.9*	*60-140*			
Semi-Volatiles								
Acenaphthene	ND	0.02	ug/g					
Acenaphthylene	ND	0.02	ug/g					
Anthracene	ND	0.02	ug/g					
Benzo [a] anthracene	ND	0.02	ug/g					
Benzo [a] pyrene	ND	0.02	ug/g					
Benzo [b] fluoranthene	ND	0.02	ug/g					
Benzo [g,h,i] perylene	ND	0.02	ug/g					
Benzo [k] fluoranthene	ND	0.02	ug/g					
Chrysene	ND	0.02	ug/g					
Dibenzo [a,h] anthracene	ND	0.02	ug/g					
Fluoranthene	ND	0.02	ug/g					
Fluorene	ND	0.02	ug/g					
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g					
1-Methylnaphthalene	ND	0.02	ug/g					
2-Methylnaphthalene	ND	0.02	ug/g					
Methylnaphthalene (1&2)	ND	0.03	ug/g					
Naphthalene	ND	0.01	ug/g					
Phenanthrene	ND	0.02	ug/g					
Pyrene	ND	0.02	ug/g					
Surrogate: 2-Fluorobiphenyl	*0.413*		*%*	*81.8*	*50-140*			
Surrogate: Terphenyl-d14	*0.423*		*%*	*83.8*	*50-140*			
Volatiles								
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: Toluene-d8	*8.17*		*%*	*102*	*50-140*			

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Acetone	ND	0.50	ug/g					
Benzene	ND	0.02	ug/g					
Bromodichloromethane	ND	0.05	ug/g					
Bromoform	ND	0.05	ug/g					
Bromomethane	ND	0.05	ug/g					
Carbon Tetrachloride	ND	0.05	ug/g					
Chlorobenzene	ND	0.05	ug/g					
Chloroform	ND	0.05	ug/g					
Dibromochloromethane	ND	0.05	ug/g					
Dichlorodifluoromethane	ND	0.05	ug/g					
1,2-Dichlorobenzene	ND	0.05	ug/g					
1,3-Dichlorobenzene	ND	0.05	ug/g					
1,4-Dichlorobenzene	ND	0.05	ug/g					
1,1-Dichloroethane	ND	0.05	ug/g					
1,2-Dichloroethane	ND	0.05	ug/g					
1,1-Dichloroethylene	ND	0.05	ug/g					
cis-1,2-Dichloroethylene	ND	0.05	ug/g					
trans-1,2-Dichloroethylene	ND	0.05	ug/g					
1,2-Dichloropropane	ND	0.05	ug/g					
cis-1,3-Dichloropropylene	ND	0.05	ug/g					
trans-1,3-Dichloropropylene	ND	0.05	ug/g					
1,3-Dichloropropene, total	ND	0.05	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g					
Hexane	ND	0.05	ug/g					
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g					
Methyl Isobutyl Ketone	ND	0.50	ug/g					
Methyl tert-butyl ether	ND	0.05	ug/g					
Methylene Chloride	ND	0.05	ug/g					
Styrene	ND	0.05	ug/g					
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g					
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g					
Tetrachloroethylene	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Toluene	ND	0.05	ug/g					
1,1,1-Trichloroethane	ND	0.05	ug/g					
1,1,2-Trichloroethane	ND	0.05	ug/g					
Trichloroethylene	ND	0.05	ug/g					
Trichlorofluoromethane	ND	0.05	ug/g					
Vinyl chloride	ND	0.02	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: 4-Bromofluorobenzene	*8.48*		*%*	*106*	*50-140*			
Surrogate: Dibromofluoromethane	*9.32*		*%*	*116*	*50-140*			
Surrogate: Toluene-d8	*8.17*		*%*	*102*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	0.82	0.01	N/A	0.80			2.5	30	
Conductivity	372	5	uS/cm	374			0.3	5	
Cyanide, free	ND	0.03	ug/g	ND			NC	35	
pH	7.35	0.05	pH Units	7.31			0.5	10	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	84	4	ug/g	84			0.1	30	
F3 PHCs (C16-C34)	482	8	ug/g	498			3.3	30	
F4 PHCs (C34-C50)	339	6	ug/g	389			13.7	30	
F4G-sg PHCs (gravimetric)	972	50	ug/g	1060			8.2	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	68.6	1.0	ug/g	70.3			2.3	30	
Barium	88.2	1.0	ug/g	98.6			11.1	30	
Beryllium	0.8	0.5	ug/g	0.8			0.1	30	
Boron, available	ND	0.5	ug/g	ND			NC	35	
Boron	32.9	5.0	ug/g	32.6			0.9	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	241	5.0	ug/g	239			0.9	30	
Cobalt	14.5	1.0	ug/g	15.3			4.8	30	
Copper	49.0	5.0	ug/g	50.0			2.0	30	
Lead	31.1	1.0	ug/g	30.8			1.0	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	9.7	1.0	ug/g	9.8			2.0	30	
Nickel	184	5.0	ug/g	183			0.7	30	
Selenium	1.1	1.0	ug/g	1.3			21.6	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	ND	1.0	ug/g	ND			NC	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Vanadium	48.5	10.0	ug/g	51.7			6.3	30	
Zinc	120	20.0	ug/g	122			1.9	30	
PCBs									
PCBs, total	ND	0.05	ug/g	ND			NC	40	
Surrogate: Decachlorobiphenyl	*0.0762*		*%*		*74.7*	*60-140*			
Physical Characteristics									
% Solids	81.8	0.1	% by Wt.	83.2			1.8	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g	ND			NC	40	
Acenaphthylene	ND	0.02	ug/g	ND			NC	40	
Anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] pyrene	ND	0.02	ug/g	ND			NC	40	
Benzo [b] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g	ND			NC	40	
Benzo [k] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Chrysene	ND	0.02	ug/g	ND			NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g	ND			NC	40	
Fluoranthene	0.022	0.02	ug/g	ND			NC	40	
Fluorene	ND	0.02	ug/g	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g	ND			NC	40	
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
Naphthalene	ND	0.01	ug/g	ND			NC	40	
Phenanthrene	ND	0.02	ug/g	ND			NC	40	
Pyrene	ND	0.02	ug/g	ND			NC	40	
Surrogate: 2-Fluorobiphenyl	*0.370*		*%*		*70.9*	*50-140*			
Surrogate: Terphenyl-d14	*0.369*		*%*		*70.7*	*50-140*			
Volatiles									
Acetone	ND	0.50	ug/g	ND			NC	50	
Benzene	ND	0.02	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Bromodichloromethane	ND	0.05	ug/g	ND			NC	50	
Bromoform	ND	0.05	ug/g	ND			NC	50	
Bromomethane	ND	0.05	ug/g	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g	ND			NC	50	
Chloroform	ND	0.05	ug/g	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g	ND			NC	50	
Hexane	ND	0.05	ug/g	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g	ND			NC	50	
Styrene	ND	0.05	ug/g	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	*9.35*		*%*		*104*	*50-140*			
Surrogate: Dibromofluoromethane	*10.6*		*%*		*117*	*50-140*			
Surrogate: Toluene-d8	*9.24*		*%*		*103*	*50-140*			
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: Toluene-d8	*9.24*		*%*		*103*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	0.365	0.03	ug/g	ND	88.3	70-130			
Hydrocarbons									
F1 PHCs (C6-C10)	68	7	ug/g	ND	81.0	0-200			
F2 PHCs (C10-C16)	168	4	ug/g	84	76.4	60-140			
F3 PHCs (C16-C34)	647	8	ug/g	498	63.2	60-140			
F4 PHCs (C34-C50)	157	6	ug/g	26	77.2	60-140			
F4G-sg PHCs (gravimetric)	1160	50	ug/g	ND	116	80-120			
Metals									
Antimony	50.0	1.0	ug/g	ND	100	70-130			
Arsenic	77.4	1.0	ug/g	28.1	98.6	70-130			
Barium	97.6	1.0	ug/g	39.4	116	70-130			
Beryllium	49.8	0.5	ug/g	ND	98.9	70-130			
Boron, available	5.30	0.5	ug/g	ND	106	70-122			
Boron	58.9	5.0	ug/g	13.1	91.7	70-130			
Cadmium	53.4	0.5	ug/g	ND	107	70-130			
Chromium (VI)	3.7	0.2	ug/g	ND	71.5	70-130			
Chromium	147	5.0	ug/g	95.5	102	70-130			
Cobalt	58.2	1.0	ug/g	6.1	104	70-130			
Copper	72.9	5.0	ug/g	20.0	106	70-130			
Lead	69.2	1.0	ug/g	12.3	114	70-130			
Mercury	1.53	0.1	ug/g	ND	102	70-130			
Molybdenum	49.2	1.0	ug/g	3.9	90.4	70-130			
Nickel	120	5.0	ug/g	73.2	93.6	70-130			
Selenium	47.5	1.0	ug/g	ND	93.9	70-130			
Silver	41.4	0.3	ug/g	ND	82.7	70-130			
Thallium	52.3	1.0	ug/g	ND	104	70-130			
Uranium	52.5	1.0	ug/g	ND	104	70-130			
Vanadium	70.3	10.0	ug/g	20.7	99.3	70-130			
Zinc	103	20.0	ug/g	49.0	108	70-130			
PCBs									

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs, total	0.37	0.05	ug/g	ND	89.4	60-140			
Surrogate: Decachlorobiphenyl	*0.0761*		*%*		*74.6*	*60-140*			
Semi-Volatiles									
Acenaphthene	0.473	0.02	ug/g	ND	91.5	50-140			
Acenaphthylene	0.495	0.02	ug/g	ND	95.8	50-140			
Anthracene	0.452	0.02	ug/g	ND	87.4	50-140			
Benzo [a] anthracene	0.442	0.02	ug/g	ND	85.5	50-140			
Benzo [a] pyrene	0.475	0.02	ug/g	ND	92.1	50-140			
Benzo [b] fluoranthene	0.476	0.02	ug/g	ND	92.2	50-140			
Benzo [g,h,i] perylene	0.439	0.02	ug/g	ND	85.0	50-140			
Benzo [k] fluoranthene	0.438	0.02	ug/g	ND	84.8	50-140			
Chrysene	0.427	0.02	ug/g	ND	82.7	50-140			
Dibenzo [a,h] anthracene	0.457	0.02	ug/g	ND	88.4	50-140			
Fluoranthene	0.495	0.02	ug/g	ND	95.9	50-140			
Fluorene	0.494	0.02	ug/g	ND	95.7	50-140			
Indeno [1,2,3-cd] pyrene	0.502	0.02	ug/g	ND	97.3	50-140			
1-Methylnaphthalene	0.465	0.02	ug/g	ND	90.0	50-140			
2-Methylnaphthalene	0.476	0.02	ug/g	ND	92.2	50-140			
Naphthalene	0.464	0.01	ug/g	ND	89.9	50-140			
Phenanthrene	0.475	0.02	ug/g	ND	92.0	50-140			
Pyrene	0.475	0.02	ug/g	ND	92.0	50-140			
Surrogate: 2-Fluorobiphenyl	*0.378*		*%*		*72.5*	*50-140*			
Surrogate: Terphenyl-d14	*0.364*		*%*		*69.9*	*50-140*			
Volatiles									
Acetone	157	0.50	ug/g	17.6	139	50-140			
Benzene	46.5	0.02	ug/g	0.249	115	50-140			
Bromodichloromethane	47.5	0.05	ug/g	ND	118	50-140			
Bromoform	41.9	0.05	ug/g	ND	105	50-140			
Bromomethane	2.63	0.05	ug/g	ND	90.1	50-140			
Carbon Tetrachloride	48.8	0.05	ug/g	ND	122	50-140			
Chlorobenzene	38.5	0.05	ug/g	ND	95.9	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Chloroform	53.6	0.05	ug/g	ND	134	50-140			
Dibromochloromethane	44.8	0.05	ug/g	ND	112	50-140			
Dichlorodifluoromethane	3.34	0.05	ug/g	ND	115	50-140			
1,2-Dichlorobenzene	35.9	0.05	ug/g	ND	89.6	50-140			
1,3-Dichlorobenzene	37.7	0.05	ug/g	ND	94.3	50-140			
1,4-Dichlorobenzene	36.2	0.05	ug/g	ND	90.1	50-140			
1,1-Dichloroethane	51.6	0.05	ug/g	ND	129	50-140			
1,2-Dichloroethane	51.9	0.05	ug/g	ND	130	50-140			
1,1-Dichloroethylene	43.8	0.05	ug/g	ND	109	50-140			
cis-1,2-Dichloroethylene	50.8	0.05	ug/g	ND	127	50-140			
trans-1,2-Dichloroethylene	51.3	0.05	ug/g	ND	128	50-140			
1,2-Dichloropropane	45.8	0.05	ug/g	ND	114	50-140			
cis-1,3-Dichloropropylene	44.5	0.05	ug/g	ND	111	50-140			
trans-1,3-Dichloropropylene	45.7	0.05	ug/g	ND	114	50-140			
Ethylbenzene	38.9	0.05	ug/g	0.432	96.4	50-140			
Ethylene dibromide (dibromoethane, 1,2-)	48.6	0.05	ug/g	ND	122	50-140			
Hexane	41.8	0.05	ug/g	0.756	103	50-140			
Methyl Ethyl Ketone (2-Butanone)	136	0.50	ug/g	ND	136	50-140			
Methyl Isobutyl Ketone	89.9	0.50	ug/g	ND	90.1	50-140			
Methyl tert-butyl ether	103	0.05	ug/g	ND	103	50-140			
Methylene Chloride	55.6	0.05	ug/g	ND	139	50-140			
Styrene	44.7	0.05	ug/g	ND	112	50-140			
1,1,1,2-Tetrachloroethane	38.5	0.05	ug/g	ND	96.4	50-140			
1,1,2,2-Tetrachloroethane	36.8	0.05	ug/g	ND	92.1	50-140			
Tetrachloroethylene	40.0	0.05	ug/g	ND	99.8	50-140			
Toluene	41.0	0.05	ug/g	2.13	97.0	50-140			
1,1,1-Trichloroethane	50.1	0.05	ug/g	ND	125	50-140			
1,1,2-Trichloroethane	42.7	0.05	ug/g	ND	107	50-140			
Trichloroethylene	43.8	0.05	ug/g	ND	110	50-140			
Trichlorofluoromethane	36.0	0.05	ug/g	ND	89.7	50-140			
Vinyl chloride	54.8	0.02	ug/g	ND	135	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
m,p-Xylenes	81.7	0.05	ug/g	2.40	98.9	50-140			
o-Xylene	40.8	0.05	ug/g	1.41	98.7	50-140			
Surrogate: 4-Bromofluorobenzene	*8.86*		*%*		*95.5*	*50-140*			
Surrogate: Dibromofluoromethane	*11.9*		*%*		*128*	*50-140*			
Surrogate: Toluene-d8	*9.07*		*%*		*97.7*	*50-140*			
Benzene	46.5	0.02	ug/g	0.249	115	50-140			
Ethylbenzene	38.9	0.05	ug/g	0.432	96.4	50-140			
Toluene	41.0	0.05	ug/g	2.13	97.0	50-140			
m,p-Xylenes	81.7	0.05	ug/g	2.40	98.9	50-140			
o-Xylene	40.8	0.05	ug/g	1.41	98.7	50-140			
Surrogate: Toluene-d8	*9.07*		*%*		*97.7*	*50-140*			

Qualifier Notes:

Sample Qualifiers :

1: Elevated reporting limit due to dilution required because of high target analyte concentration.

Applies to Samples: 6-1, 7-1, 2-1A

2: GC-FID signal did not return to baseline by C50

Applies to Samples: 6-1, 7-1, 7-2, 2-1A, 2-1B

6: Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

Applies to Samples: 7-2

Sample Data Revisions:

None

Work Order Revisions / Comments:

Revision - 1: This report has been revised to contain additional data to samples 4, 13, 14, 16 and 21.

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

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Paracel ID: 2537136

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2537136	

Client Name: SERTAS Group	Project Ref: 2501E038	Page 1 of 1
Contact Name: Paige Sarafin	Quote #: Erwin	**Turnaround Time**
Address: 4510 Rhodes Drive, Unit 210, Windsor, ON	PO #:	☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular
	E-mail: paige.sarafin@sertas.ca; clay.sereres@sertas.ca	Date Required:
Telephone: 519 981 2724		

☒ REG 153/04 ☐ REG 406/19

☐ Table 1 ☐ Agri/Other ☒ Med/Fine
☐ Table 2 ☐ Res/Park ☐ Coarse
☒ Table 3 ☒ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☒ No

Other Regulation

☐ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU - Storm
Mun: ___
☐ Other: ___

Matrix Type: S (Soil/Sed.) **GW** (Ground Water) **SW** (Surface Water) **SS** (Storm/Sanitary Sewer) **P** (Paint) **A** (Air) **O** (Other)

Required Analysis

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full Metals	EC, SAR, pH	PAHs	PHCs	BTEXs	VOCs	PCBs	OCs			HOLD
1	3-1B	S		2	-	Sept. 8 2025	9 00											X
2	3-2	S		2	-	Sept. 8 2025	9 10											X
3	3-3A	S		2	-	Sept. 8 2025	9 20											X
4	6-1	S		2	-	Sept. 8 2025	11 00											X
5	6-2	S		2	-	Sept. 8 2025	11 10											X
6	6-3	S		2	-	Sept. 8 2025	11 30	X	X	X	X	X						
7	DUP1	S		2	-	Sept. 8 2025	7 00	X	X	X	X	X						
8	6-4	S		2	-	Sept. 8 2025	11 30											X
9	6-5	S			-	Sept. 8 2025	11 40	X	X	X	X	X						X
10	6-6	S			-	Sept. 8 2025	11 50											X

Comments:

Method of Delivery: Walkin

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Relinquished By (Sign):	Received at Depot: K. Jakobson	Received at Lab:	Verified By: K. Jakobson
Relinquished By (Print): Paige Sarafin	Date/Time: Sept 9/25 11:00	Date/Time: 9/10/25 9:45	Date/Time: Sept. 9/25 11:0
Date/Time:	Temperature: 9.9 °C	Temperature: 8.7 C	pH Verified: ☐ By:

PARACEL LABORATORIES LTD.

Paracel ID: 2537136

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2537136	

Client Name: SERTAS Group	Project Ref: 2501E038	Page 2 of 4
Contact Name: Paige Sarafin	Quote #: RAWIN	Turnaround Time: ☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular
Address: 4510 Rhodes Drive, Unit 210, Windsor, ON	PO #:	Date Required:
Telephone: 519 981 2724	E-mail: paige.sarafin@sertas.ca; clay.sereres@sertas.ca	

☒ REG 153/04 ☐ REG 406/19 | Other Regulation

☐ Table 1 ☐ Agri/Other ☒ Med/Fine | ☐ REG 558 ☐ PWQO

☐ Table 2 ☐ Res/Park ☐ Coarse | ☐ CCME ☐ MISA

☒ Table 3 ☐ Ind/Comm | ☐ SU - Sani ☐ SU - Storm

☐ Table ___ | Mun: ___

For RSC: ☐ Yes ☒ No | ☐ Other: ___

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full Metals	EC, SAR, pH	PAHs	PHCs	BTEXs	VOCs	PCBs	OCs			HOLD
1	6-7	S		2	-	Sept. 8 2025	12 00											
2	6-8	S		2	-	Sept. 8 2025	12 10											X
3	7-1	S		2	-	Sept. 8 2025	200											X
4	7-2	S		2	-	Sept. 8 2025	2 10	X	X		X		X	X				
5	7-3	S		2	-	Sept. 8 2025	2 20											X
6	7-4	S		2	-	Sept. 8 2025	2 30	X	X		X		X	X				X
7	7-5	S		2	-	Sept. 8 2025	2 40											X
8	7-6	S		2	-	Sept. 8 2025	2 50											X
9	7-7	S		2	-	Sept. 8 2025	2 60											X
10	7-8	S		2	-	Sept. 8 2025	300											X

Comments:

Method of Delivery: WALK IN

Unless otherwise negotiated by the parties, by signing Paracel's Chain of Custody form, you are agreeing to Paracel Laboratories Terms and Conditions and are subject to the terms and conditions thereof. Available at www.paracellabs.com

Relinquished By (Sign):	Received at Depot: K. Jakobsen	Received at Lab: JW
Relinquished By (Print): Paige Sarafin	Date/Time: Sept. 9/25 10:00	Date/Time: Sept. 9/25 9:45
Date/Time:	Temperature: 9.9 °C	Temperature: 8.7
		Verified By: K. Jakobsen
		Date/Time: Sept. 9/25 14:00
		pH Verified: ☐ By:

PARACEL LABORATORIES LTD. | T R R

Paracel ID: 2537136

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2537136	

Client Name: SERTAS Group	Project Ref: 2501E038	Page 3 of 4
Contact Name: Paige Sarafin	Quote #: enwin	Turnaround Time
Address: 4510 Rhodes Drive, Unit 210, Windsor, ON	PO #:	☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular
Telephone: 519 981 2724	E-mail: paige.sarafin@sertas.ca; clay.sereres@sertas.ca	Date Required:

☒ REG 153/04 ☐ REG 406/19

Table 1 ☐ Agri/Other ☒ Med/Fine
Table 2 ☐ Res/Park ☐ Coarse
☒ Table 3 ☒ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☒ No

Other Regulation: ☐ REG 558 ☐ PWQO ☐ CCME ☐ MISA ☐ SU - Sani ☐ SU - Storm ☐ Mun: ☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full Metals	EC, SAR, pH	PAHs	PHCs	BTEXs	VOCs	PCBs	OCs			HOLD
1	2-1A	S		2	-	Sept. 8 2025	3 30											X
2	2-1B	S		2	-	Sept. 8 2025	3 35	X	X	X	X		X					
3	2-2	S		2	-	Sept. 8 2025	3 40											X
4	2-3A	S		2	-	Sept. 8 2025	3 45											X
5	2-3B	S		2	-	Sept. 8 2025	3 50											X
6	2-4	S		2	-	Sept. 8 2025	4 00	X	X	X								
7	2-5	S		2	-	Sept. 8 2025	4 10											X
8	2-6	S		2	-	Sept. 8 2025	4 15											X
9	2-7	S		2	-	Sept. 8 2025	4 20				X	X						
10	2-8	S		2	-	Sept. 8 2025	4 30											X

Comments:

Method of Delivery: Walk in

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Relinquished By (Sign):	Received at Depot: K. Jakobsen	Received at Lab: JW	Verified By: K. Jakobsen
Relinquished By (Print): Paige Sarafin	Date/Time: Sept 9/25 10:00	Date/Time: Sept 9/25 14:45	Date/Time: Sept. 9/25 14:00
Date/Time:	Temperature: 9.9 °C	Temperature: 8.7C	pH Verified: ☐ By:

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Certificate of Analysis

SERTAS
4510 Rhodes Drive, Unit 210
Windsor, ON N8W 5K5
Attn: Paige Sarafin

Client PO:
Project: 2501E038
Custody:

Report Date: 30-Sep-2025
Order Date: 9-Sep-2025

Revised Report

Order #: 2537136

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2537136-04	6-1
2537136-06	6-3
2537136-07	DUP1
2537136-09	6-5
2537136-13	7-1
2537136-14	7-2
2537136-16	7-4
2537136-21	2-1A
2537136-22	2-1B
2537136-26	2-4
2537136-29	2-7
2537136-31	DUP2

Approved By:



Milan Ralitsch, PhD
Senior Technical Manager

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	19-Sep-25	19-Sep-25
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	17-Sep-25	18-Sep-25
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	19-Sep-25	19-Sep-25
Conductivity	MOE E3138 - probe @25 °C, water ext	19-Sep-25	19-Sep-25
Cyanide, free	MOE E3015 - Auto Colour, water extraction	19-Sep-25	19-Sep-25
Mercury by CVAA	EPA 7471B - CVAA, digestion	18-Sep-25	18-Sep-25
PCBs, total	SW846 8082A - GC-ECD	16-Sep-25	18-Sep-25
PHC F1	CWS Tier 1 - P&T GC-FID	17-Sep-25	18-Sep-25
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	16-Sep-25	18-Sep-25
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	18-Sep-25	18-Sep-25
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	18-Sep-25	19-Sep-25
REG 153: pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	18-Sep-25	18-Sep-25
REG 153: PHC F4(g)	CWS Tier 1 - Extraction Gravimetric	19-Sep-25	19-Sep-25
REG 153: VOCs by P&T GC-MS	EPA 8260 - P&T GC-MS	17-Sep-25	18-Sep-25
REG 406: Leachate - Metals by ICP-MS	mSPLP EPA 6020 - Digestion - ICP-MS	30-Sep-25	30-Sep-25
SAR	Calculated	19-Sep-25	19-Sep-25
Solids, %	CWS Tier 1 - Gravimetric	18-Sep-25	19-Sep-25

Summary of Criteria Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in red

Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances.

Sample	Analyte	MDL / Units	Result	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
6-1	F4G-sg PHCs (gravimetric)	50 ug/g	19300	6600 ug/g	-
7-2	Boron, available	0.5 ug/g	6.4	2 ug/g	-
2-1A	F4G-sg PHCs (gravimetric)	50 ug/g	14500	6600 ug/g	-

Certificate of Analysis

Report Date: 30-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	6-1	6-3	DUP1	6-5	Criteria:	
	Sample Date:	08-Sep-25 11:00	08-Sep-25 11:20	08-Sep-25 07:00	08-Sep-25 11:40	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-04	2537136-06	2537136-07	2537136-09		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	96.8	84.9	90.1	96.8	-	-
mSPLP Leachate Metals							
Antimony	0.5 ug/L	-	-	-	<0.5	-	-
Arsenic	1.0 ug/L	-	-	-	<1.0	-	-
Barium	1.0 ug/L	-	-	-	2.4	-	4600 ug/L
Beryllium	0.5 ug/L	-	-	-	<0.5	-	11 ug/L
Boron	10.0 ug/L	-	-	-	<10.0	-	-
Cadmium	0.2 ug/L	-	-	-	<0.2	-	0.5 ug/L
Chromium	1.0 ug/L	-	-	-	<1.0	-	130 ug/L
Cobalt	0.5 ug/L	-	-	-	<0.5	-	10 ug/L
Copper	0.5 ug/L	-	-	-	<0.5	-	14 ug/L
Lead	0.2 ug/L	-	-	-	<0.2	-	-
Molybdenum	0.5 ug/L	-	-	-	7.2	-	1500 ug/L
Nickel	1.0 ug/L	-	-	-	<1.0	-	78 ug/L
Selenium	1.0 ug/L	-	-	-	<1.0	-	10 ug/L
Silver	0.2 ug/L	-	-	-	<0.2	-	0.3 ug/L
Thallium	0.5 ug/L	-	-	-	<0.5	-	80 ug/L
Uranium	0.2 ug/L	-	-	-	<0.2	-	66 ug/L
Vanadium	0.5 ug/L	-	-	-	0.8	-	-
Zinc	5.0 ug/L	-	-	-	<5.0	-	180 ug/L
General Inorganics							
SAR	0.01 N/A	0.11	0.34	0.40	0.27	12 N/A	-
Conductivity	5 uS/cm	120	157	279	160	1.4 mS/cm	-
Cyanide, free	0.03 ug/g	<0.03	-	-	-	0.051 ug/g	-
pH	0.05 pH Units	7.75	6.71	6.68	7.42	5.00 - 9.00 pH Units	-

Certificate of Analysis

Report Date: 30-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	6-1	6-3	DUP1	6-5	Criteria:	
	Sample Date:	08-Sep-25 11:00	08-Sep-25 11:20	08-Sep-25 07:00	08-Sep-25 11:40	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-04	2537136-06	2537136-07	2537136-09		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	50 ug/g	-
Arsenic	1.0 ug/g	5.7	11.6	7.2	9.6	18 ug/g	-
Barium	1.0 ug/g	97.6	79.4	64.6	82.1	670 ug/g	-
Beryllium	0.5 ug/g	<0.5	0.8	0.7	0.6	10 ug/g	-
Boron	5.0 ug/g	<5.0	9.2	11.8	13.5	120 ug/g	-
Boron, available	0.5 ug/g	0.6	0.9	1.1	<0.5	2 ug/g	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	1.9 ug/g	-
Chromium (VI)	0.2 ug/g	<0.2	<0.2	<0.2	<0.2	10 ug/g	-
Chromium	5.0 ug/g	11.2	25.3	22.4	20.5	160 ug/g	-
Cobalt	1.0 ug/g	3.6	11.0	8.7	11.2	100 ug/g	-
Copper	5.0 ug/g	17.9	21.1	18.3	17.3	300 ug/g	-
Lead	1.0 ug/g	19.5	13.6	18.2	10.9	120 ug/g	-
Mercury	0.1 ug/g	<0.1	<0.1	<0.1	<0.1	20 ug/g	-
Molybdenum	1.0 ug/g	2.0	2.3	2.1	3.8	40 ug/g	-
Nickel	5.0 ug/g	13.8	28.4	21.3	26.9	340 ug/g	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	5.5 ug/g	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	50 ug/g	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	3.3 ug/g	-
Uranium	1.0 ug/g	<1.0	1.6	1.8	1.2	33 ug/g	-
Vanadium	10.0 ug/g	48.8	40.1	33.7	31.7	86 ug/g	-
Zinc	20.0 ug/g	43.7	58.8	71.3	51.1	340 ug/g	-
Volatiles							
Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	0.4 ug/g	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	19 ug/g	-
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	78 ug/g	-

Certificate of Analysis

Report Date: 30-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	6-1	6-3	DUP1	6-5	Criteria:	
	Sample Date:	08-Sep-25 11:00	08-Sep-25 11:20	08-Sep-25 07:00	08-Sep-25 11:40	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-04	2537136-06	2537136-07	2537136-09		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	30 ug/g	-
Toluene-d8	Surrogate	88.7%	102%	103%	102%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	65 ug/g	-
F2 PHCs (C10-C16)	4 ug/g	<40 [1]	<4	<4	<4	250 ug/g	-
F3 PHCs (C16-C34)	8 ug/g	411	<8	<8	<8	2500 ug/g	-
F4 PHCs (C34-C50)	6 ug/g	4910 [2]	<6	<6	<6	6600 ug/g	-
F4G-sg PHCs (gravimetric)	50 ug/g	19300	-	-	-	6600 ug/g	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	96 ug/g	-
Acenaphthylene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	0.17 ug/g	-
Anthracene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	0.74 ug/g	-
Benzo [a] anthracene	0.02 ug/g	0.08	<0.02	<0.02	<0.02	0.96 ug/g	-
Benzo [a] pyrene	0.02 ug/g	0.09	<0.02	<0.02	<0.02	0.3 ug/g	-
Benzo [b] fluoranthene	0.02 ug/g	0.13	<0.02	<0.02	<0.02	0.96 ug/g	-
Benzo [g,h,i] perylene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	9.6 ug/g	-
Benzo [k] fluoranthene	0.02 ug/g	0.04	<0.02	<0.02	<0.02	0.96 ug/g	-
Chrysene	0.02 ug/g	0.12	<0.02	<0.02	<0.02	9.6 ug/g	-
Dibenzo [a,h] anthracene	0.02 ug/g	0.05	<0.02	<0.02	<0.02	0.1 ug/g	-
Fluoranthene	0.02 ug/g	0.17	0.02	<0.02	<0.02	9.6 ug/g	-
Fluorene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	69 ug/g	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	0.08	<0.02	<0.02	<0.02	0.95 ug/g	-
1-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	85 ug/g	-

Certificate of Analysis

Report Date: 30-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	6-1	6-3	DUP1	6-5	Criteria:	
	Sample Date:	08-Sep-25 11:00	08-Sep-25 11:20	08-Sep-25 07:00	08-Sep-25 11:40	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-04	2537136-06	2537136-07	2537136-09		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Semi-Volatiles							
2-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	85 ug/g	-
Methylnaphthalene (1&2)	0.03 ug/g	<0.03	<0.03	<0.03	<0.03	85 ug/g	-
Naphthalene	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	28 ug/g	-
Phenanthrene	0.02 ug/g	0.08	<0.02	<0.02	<0.02	16 ug/g	-
Pyrene	0.02 ug/g	0.13	<0.02	<0.02	<0.02	96 ug/g	-
2-Fluorobiphenyl	Surrogate	81.7%	76.2%	84.0%	79.5%	-	-
Terphenyl-d14	Surrogate	61.8%	88.3%	87.0%	85.1%	-	-

Certificate of Analysis

Report Date: 30-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	7-1	7-2	7-4	2-1A	Criteria:	
	Sample Date:	08-Sep-25 14:00	08-Sep-25 14:10	08-Sep-25 14:30	08-Sep-25 15:30	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-13	2537136-14	2537136-16	2537136-21		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	96.7	91.6	91.4	96.0	-	-
mSPLP Leachate Metals							
Antimony	0.5 ug/L	-	-	<0.5	-	-	-
Arsenic	1.0 ug/L	-	-	<1.0	-	-	-
Barium	1.0 ug/L	-	-	2.2	-	-	4600 ug/L
Beryllium	0.5 ug/L	-	-	<0.5	-	-	11 ug/L
Boron	10.0 ug/L	-	-	<10.0	-	-	-
Cadmium	0.2 ug/L	-	-	<0.2	-	-	0.5 ug/L
Chromium	1.0 ug/L	-	-	<1.0	-	-	130 ug/L
Cobalt	0.5 ug/L	-	-	<0.5	-	-	10 ug/L
Copper	0.5 ug/L	-	-	<0.5	-	-	14 ug/L
Lead	0.2 ug/L	-	-	<0.2	-	-	-
Molybdenum	0.5 ug/L	-	-	7.7	-	-	1500 ug/L
Nickel	1.0 ug/L	-	-	<1.0	-	-	78 ug/L
Selenium	1.0 ug/L	-	-	<1.0	-	-	10 ug/L
Silver	0.2 ug/L	-	-	<0.2	-	-	0.3 ug/L
Thallium	0.5 ug/L	-	-	<0.5	-	-	80 ug/L
Uranium	0.2 ug/L	-	-	<0.2	-	-	66 ug/L
Vanadium	0.5 ug/L	-	-	0.9	-	-	-
Zinc	5.0 ug/L	-	-	<5.0	-	-	180 ug/L
General Inorganics							
SAR	0.01 N/A	0.16	3.06	0.50	0.09	12 N/A	-
Conductivity	5 uS/cm	137	396	289	115	1.4 mS/cm	-
Cyanide, free	0.03 ug/g	<0.03	-	-	<0.03	0.051 ug/g	-
pH	0.05 pH Units	7.71	8.09	7.59	7.68	5.00 - 9.00 pH Units	-

Certificate of Analysis

Report Date: 30-Sep-2025

Client: SERTAS

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	7-1	7-2	7-4	2-1A	Criteria:	
	Sample Date:	08-Sep-25 14:00	08-Sep-25 14:10	08-Sep-25 14:30	08-Sep-25 15:30	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-13	2537136-14	2537136-16	2537136-21		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	50 ug/g	-
Arsenic	1.0 ug/g	1.9	4.4	7.3	2.9	18 ug/g	-
Barium	1.0 ug/g	306	39.0	69.3	78.7	670 ug/g	-
Beryllium	0.5 ug/g	<0.5	<0.5	0.5	<0.5	10 ug/g	-
Boron	5.0 ug/g	<5.0	21.8	14.8	<5.0	120 ug/g	-
Boron, available	0.5 ug/g	<0.5	6.4	<0.5	<0.5	2 ug/g	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	1.9 ug/g	-
Chromium (VI)	0.2 ug/g	<0.2	<0.2	<0.2	0.3	10 ug/g	-
Chromium	5.0 ug/g	6.3	47.6	18.4	8.0	160 ug/g	-
Cobalt	1.0 ug/g	1.7	7.8	11.0	5.1	100 ug/g	-
Copper	5.0 ug/g	7.2	113	15.8	19.5	300 ug/g	-
Lead	1.0 ug/g	18.0	11.3	9.8	12.5	120 ug/g	-
Mercury	0.1 ug/g	<0.1	<0.1	<0.1	<0.1	20 ug/g	-
Molybdenum	1.0 ug/g	1.2	5.6	4.1	1.2	40 ug/g	-
Nickel	5.0 ug/g	7.6	28.5	28.2	10.8	340 ug/g	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	5.5 ug/g	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	50 ug/g	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	3.3 ug/g	-
Uranium	1.0 ug/g	1.1	1.4	1.2	1.0	33 ug/g	-
Vanadium	10.0 ug/g	13.7	19.2	28.7	23.6	86 ug/g	-
Zinc	20.0 ug/g	41.5	42.6	53.0	21.9	340 ug/g	-
Volatiles							
Acetone	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	28 ug/g	-
Benzene	0.02 ug/g	<0.02	0.14	<0.02	<0.02	0.4 ug/g	-
Bromodichloromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	18 ug/g	-

Certificate of Analysis

Report Date: 30-Sep-2025

Client: SERTAS

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	7-1	7-2	7-4	2-1A	Criteria:	
	Sample Date:	08-Sep-25 14:00	08-Sep-25 14:10	08-Sep-25 14:30	08-Sep-25 15:30	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-13	2537136-14	2537136-16	2537136-21		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Bromoform	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	1.7 ug/g	-
Bromomethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05 ug/g	-
Carbon Tetrachloride	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	1.5 ug/g	-
Chlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	2.7 ug/g	-
Chloroform	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.18 ug/g	-
Dibromochloromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	13 ug/g	-
Dichlorodifluoromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	25 ug/g	-
1,2-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	8.5 ug/g	-
1,3-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	12 ug/g	-
1,4-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.84 ug/g	-
1,1-Dichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	21 ug/g	-
1,2-Dichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05 ug/g	-
1,1-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.48 ug/g	-
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	37 ug/g	-
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	9.3 ug/g	-
1,2-Dichloropropane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.68 ug/g	-
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,3-Dichloropropene, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.21 ug/g	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	19 ug/g	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05 ug/g	-
Hexane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	88 ug/g	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	88 ug/g	-
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	210 ug/g	-
Methyl tert-butyl ether	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	3.2 ug/g	-

Certificate of Analysis

Report Date: 30-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	7-1	7-2	7-4	2-1A	Criteria:	
	Sample Date:	08-Sep-25 14:00	08-Sep-25 14:10	08-Sep-25 14:30	08-Sep-25 15:30	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-13	2537136-14	2537136-16	2537136-21		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Methylene Chloride	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	2 ug/g	-
Styrene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	43 ug/g	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.11 ug/g	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.094 ug/g	-
Tetrachloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	21 ug/g	-
Toluene	0.05 ug/g	<0.05	0.22	<0.05	<0.05	78 ug/g	-
1,1,1-Trichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	12 ug/g	-
1,1,2-Trichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.11 ug/g	-
Trichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.61 ug/g	-
Trichlorofluoromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	5.8 ug/g	-
Vinyl chloride	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	0.25 ug/g	-
m,p-Xylenes	0.05 ug/g	<0.05	0.18	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	0.23	<0.05	<0.05	30 ug/g	-
Toluene-d8	Surrogate	89.7%	101%	102%	88.1%	-	-
4-Bromofluorobenzene	Surrogate	86.7%	95.7%	104%	85.5%	-	-
Dibromofluoromethane	Surrogate	57.9%	119%	114%	57.3%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	65 ug/g	-
F2 PHCs (C10-C16)	4 ug/g	<40 [1]	84	<4	<40 [1]	250 ug/g	-
F3 PHCs (C16-C34)	8 ug/g	365	498	<8	720	2500 ug/g	-
F4 PHCs (C34-C50)	6 ug/g	2110 [2]	389 [2]	<6	5420 [2]	6600 ug/g	-
F4G-sg PHCs (gravimetric)	50 ug/g	5340	917	-	14500	6600 ug/g	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	-	0.06	<0.02	<0.02	96 ug/g	-

Certificate of Analysis

Report Date: 30-Sep-2025

Client: SERTAS

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	7-1	7-2	7-4	2-1A	Criteria:	
	Sample Date:	08-Sep-25 14:00	08-Sep-25 14:10	08-Sep-25 14:30	08-Sep-25 15:30	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-13	2537136-14	2537136-16	2537136-21		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Semi-Volatiles							
Acenaphthylene	0.02 ug/g	-	<0.02	<0.02	<0.02	0.17 ug/g	-
Anthracene	0.02 ug/g	-	<0.02	<0.02	<0.02	0.74 ug/g	-
Benzo [a] anthracene	0.02 ug/g	-	<0.02	<0.02	<0.02	0.96 ug/g	-
Benzo [a] pyrene	0.02 ug/g	-	<0.02	<0.02	<0.02	0.3 ug/g	-
Benzo [b] fluoranthene	0.02 ug/g	-	<0.02	<0.02	<0.02	0.96 ug/g	-
Benzo [g,h,i] perylene	0.02 ug/g	-	<0.02	<0.02	<0.02	9.6 ug/g	-
Benzo [k] fluoranthene	0.02 ug/g	-	<0.02	<0.02	0.17	0.96 ug/g	-
Chrysene	0.02 ug/g	-	<0.02	<0.02	<0.02	9.6 ug/g	-
Dibenzo [a,h] anthracene	0.02 ug/g	-	<0.02	<0.02	<0.02	0.1 ug/g	-
Fluoranthene	0.02 ug/g	-	0.04	<0.02	0.23	9.6 ug/g	-
Fluorene	0.02 ug/g	-	0.03	<0.02	<0.02	69 ug/g	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	-	<0.02	<0.02	<0.02	0.95 ug/g	-
1-Methylnaphthalene	0.02 ug/g	-	0.14	<0.02	<0.02	85 ug/g	-
2-Methylnaphthalene	0.02 ug/g	-	0.14	<0.02	<0.02	85 ug/g	-
Methylnaphthalene (1&2)	0.03 ug/g	-	0.28	<0.03	<0.03	85 ug/g	-
Naphthalene	0.01 ug/g	-	0.31	<0.01	<0.01	28 ug/g	-
Phenanthrene	0.02 ug/g	-	0.04	<0.02	0.06	16 ug/g	-
Pyrene	0.02 ug/g	-	<0.02	<0.02	0.11	96 ug/g	-
2-Fluorobiphenyl	Surrogate	-	51.5%	90.0%	84.6%	-	-
Terphenyl-d14	Surrogate	-	35.4% [6]	56.0%	50.7%	-	-
PCBs							
PCBs, total	0.05 ug/g	<0.05	<0.05	<0.05	-	1.1 ug/g	-
Decachlorobiphenyl	Surrogate	103%	77.1%	82.2%	-	-	-

Certificate of Analysis

Report Date: 30-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	2-1B	2-4	2-7	DUP2	Criteria:	
	Sample Date:	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	08-Sep-25 07:30	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-22	2537136-26	2537136-29	2537136-31		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	90.2	92.4	89.0	88.5	-	-
mSPLP Leachate Metals							
Antimony	0.5 ug/L	-	<0.5	-	-	-	-
Arsenic	1.0 ug/L	-	<1.0	-	-	-	-
Barium	1.0 ug/L	-	2.7	-	-	-	4600 ug/L
Beryllium	0.5 ug/L	-	<0.5	-	-	-	11 ug/L
Boron	10.0 ug/L	-	<10.0	-	-	-	-
Cadmium	0.2 ug/L	-	<0.2	-	-	-	0.5 ug/L
Chromium	1.0 ug/L	-	<1.0	-	-	-	130 ug/L
Cobalt	0.5 ug/L	-	<0.5	-	-	-	10 ug/L
Copper	0.5 ug/L	-	<0.5	-	-	-	14 ug/L
Lead	0.2 ug/L	-	<0.2	-	-	-	-
Molybdenum	0.5 ug/L	-	4.7	-	-	-	1500 ug/L
Nickel	1.0 ug/L	-	<1.0	-	-	-	78 ug/L
Selenium	1.0 ug/L	-	<1.0	-	-	-	10 ug/L
Silver	0.2 ug/L	-	<0.2	-	-	-	0.3 ug/L
Thallium	0.5 ug/L	-	<0.5	-	-	-	80 ug/L
Uranium	0.2 ug/L	-	<0.2	-	-	-	66 ug/L
Vanadium	0.5 ug/L	-	0.7	-	-	-	-
Zinc	5.0 ug/L	-	<5.0	-	-	-	180 ug/L
General Inorganics							
SAR	0.01 N/A	1.67	0.26	-	-	12 N/A	-
Conductivity	5 uS/cm	366	163	-	-	1.4 mS/cm	-
pH	0.05 pH Units	7.19	7.41	-	-	5.00 - 9.00 pH Units	-
Metals							

Certificate of Analysis

Report Date: 30-Sep-2025

Client: SERTAS

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	2-1B	2-4	2-7	DUP2	Criteria:	
	Sample Date:	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	08-Sep-25 07:30	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-22	2537136-26	2537136-29	2537136-31		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	-	-	50 ug/g	-
Arsenic	1.0 ug/g	7.2	9.4	-	-	18 ug/g	-
Barium	1.0 ug/g	72.5	79.0	-	-	670 ug/g	-
Beryllium	0.5 ug/g	0.6	0.7	-	-	10 ug/g	-
Boron, available	0.5 ug/g	1.1	<0.5	-	-	2 ug/g	-
Boron	5.0 ug/g	7.4	15.3	-	-	120 ug/g	-
Cadmium	0.5 ug/g	<0.5	<0.5	-	-	1.9 ug/g	-
Chromium	5.0 ug/g	19.8	24.0	-	-	160 ug/g	-
Chromium (VI)	0.2 ug/g	<0.2	<0.2	-	-	10 ug/g	-
Cobalt	1.0 ug/g	7.1	13.7	-	-	100 ug/g	-
Copper	5.0 ug/g	20.1	21.2	-	-	300 ug/g	-
Lead	1.0 ug/g	31.6	11.3	-	-	120 ug/g	-
Mercury	0.1 ug/g	<0.1	<0.1	-	-	20 ug/g	-
Molybdenum	1.0 ug/g	2.0	4.0	-	-	40 ug/g	-
Nickel	5.0 ug/g	19.0	33.3	-	-	340 ug/g	-
Selenium	1.0 ug/g	<1.0	<1.0	-	-	5.5 ug/g	-
Silver	0.3 ug/g	<0.3	<0.3	-	-	50 ug/g	-
Thallium	1.0 ug/g	<1.0	<1.0	-	-	3.3 ug/g	-
Uranium	1.0 ug/g	1.1	1.4	-	-	33 ug/g	-
Vanadium	10.0 ug/g	29.8	37.9	-	-	86 ug/g	-
Zinc	20.0 ug/g	70.3	62.1	-	-	340 ug/g	-
Volatiles							
Acetone	0.50 ug/g	<0.50	-	-	-	28 ug/g	-
Benzene	0.02 ug/g	<0.02	-	-	-	0.4 ug/g	-
Bromodichloromethane	0.05 ug/g	<0.05	-	-	-	18 ug/g	-

	Client ID:	2-1B	2-4	2-7	DUP2	Criteria:	
	Sample Date:	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	08-Sep-25 07:30	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-22	2537136-26	2537136-29	2537136-31		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Bromoform	0.05 ug/g	<0.05	-	-	-	1.7 ug/g	-
Bromomethane	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	-
Carbon Tetrachloride	0.05 ug/g	<0.05	-	-	-	1.5 ug/g	-
Chlorobenzene	0.05 ug/g	<0.05	-	-	-	2.7 ug/g	-
Chloroform	0.05 ug/g	<0.05	-	-	-	0.18 ug/g	-
Dibromochloromethane	0.05 ug/g	<0.05	-	-	-	13 ug/g	-
Dichlorodifluoromethane	0.05 ug/g	<0.05	-	-	-	25 ug/g	-
1,2-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	8.5 ug/g	-
1,3-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	12 ug/g	-
1,4-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	0.84 ug/g	-
1,1-Dichloroethane	0.05 ug/g	<0.05	-	-	-	21 ug/g	-
1,2-Dichloroethane	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	-
1,1-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	0.48 ug/g	-
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	37 ug/g	-
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	9.3 ug/g	-
1,2-Dichloropropane	0.05 ug/g	<0.05	-	-	-	0.68 ug/g	-
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	-	-	-	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	-	-	-	-	-
1,3-Dichloropropene, total	0.05 ug/g	<0.05	-	-	-	0.21 ug/g	-
Ethylbenzene	0.05 ug/g	<0.05	-	-	-	19 ug/g	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	-
Hexane	0.05 ug/g	<0.05	-	-	-	88 ug/g	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	-	-	-	88 ug/g	-
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	-	-	-	210 ug/g	-
Methyl tert-butyl ether	0.05 ug/g	<0.05	-	-	-	3.2 ug/g	-

	Client ID:	2-1B	2-4	2-7	DUP2	Criteria:	
	Sample Date:	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	08-Sep-25 07:30	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-22	2537136-26	2537136-29	2537136-31		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Methylene Chloride	0.05 ug/g	<0.05	-	-	-	2 ug/g	-
Styrene	0.05 ug/g	<0.05	-	-	-	43 ug/g	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	-	-	-	0.11 ug/g	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	-	-	-	0.094 ug/g	-
Tetrachloroethylene	0.05 ug/g	<0.05	-	-	-	21 ug/g	-
Toluene	0.05 ug/g	<0.05	-	-	-	78 ug/g	-
1,1,1-Trichloroethane	0.05 ug/g	<0.05	-	-	-	12 ug/g	-
1,1,2-Trichloroethane	0.05 ug/g	<0.05	-	-	-	0.11 ug/g	-
Trichloroethylene	0.05 ug/g	<0.05	-	-	-	0.61 ug/g	-
Trichlorofluoromethane	0.05 ug/g	<0.05	-	-	-	5.8 ug/g	-
Vinyl chloride	0.02 ug/g	<0.02	-	-	-	0.25 ug/g	-
m,p-Xylenes	0.05 ug/g	<0.05	-	-	-	-	-
o-Xylene	0.05 ug/g	<0.05	-	-	-	-	-
Xylenes, total	0.05 ug/g	<0.05	-	-	-	30 ug/g	-
Dibromofluoromethane	Surrogate	114%	-	-	-	-	-
Toluene-d8	Surrogate	103%	-	-	-	-	-
4-Bromofluorobenzene	Surrogate	103%	-	-	-	-	-
Benzene	0.02 ug/g	-	-	<0.02	-	0.4 ug/g	-
Ethylbenzene	0.05 ug/g	-	-	<0.05	-	19 ug/g	-
Toluene	0.05 ug/g	-	-	<0.05	-	78 ug/g	-
m,p-Xylenes	0.05 ug/g	-	-	<0.05	-	-	-
o-Xylene	0.05 ug/g	-	-	<0.05	-	-	-
Xylenes, total	0.05 ug/g	-	-	<0.05	-	30 ug/g	-
Toluene-d8	Surrogate	-	-	102%	-	-	-
Hydrocarbons							

Certificate of Analysis

Report Date: 30-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	2-1B	2-4	2-7	DUP2	Criteria:	
	Sample Date:	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	08-Sep-25 07:30	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-22	2537136-26	2537136-29	2537136-31		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	-	<7	-	65 ug/g	-
F2 PHCs (C10-C16)	4 ug/g	<4	-	6	-	250 ug/g	-
F3 PHCs (C16-C34)	8 ug/g	39	-	38	-	2500 ug/g	-
F4 PHCs (C34-C50)	6 ug/g	91 [2]	-	<6	-	6600 ug/g	-
F4G-sg PHCs (gravimetric)	50 ug/g	421	-	-	-	6600 ug/g	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	<0.02	-	-	96 ug/g	-
Acenaphthylene	0.02 ug/g	<0.02	<0.02	-	-	0.17 ug/g	-
Anthracene	0.02 ug/g	<0.02	<0.02	-	-	0.74 ug/g	-
Benzo [a] anthracene	0.02 ug/g	0.02	<0.02	-	-	0.96 ug/g	-
Benzo [a] pyrene	0.02 ug/g	0.03	<0.02	-	-	0.3 ug/g	-
Benzo [b] fluoranthene	0.02 ug/g	0.04	<0.02	-	-	0.96 ug/g	-
Benzo [g,h,i] perylene	0.02 ug/g	0.03	<0.02	-	-	9.6 ug/g	-
Benzo [k] fluoranthene	0.02 ug/g	<0.02	<0.02	-	-	0.96 ug/g	-
Chrysene	0.02 ug/g	0.03	<0.02	-	-	9.6 ug/g	-
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	<0.02	-	-	0.1 ug/g	-
Fluoranthene	0.02 ug/g	0.06	<0.02	-	-	9.6 ug/g	-
Fluorene	0.02 ug/g	<0.02	<0.02	-	-	69 ug/g	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	0.03	<0.02	-	-	0.95 ug/g	-
1-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	-	-	85 ug/g	-
2-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	-	-	85 ug/g	-
Methylnaphthalene (1&2)	0.03 ug/g	<0.03	<0.03	-	-	85 ug/g	-
Naphthalene	0.01 ug/g	<0.01	<0.01	-	-	28 ug/g	-
Phenanthrene	0.02 ug/g	<0.02	<0.02	-	-	16 ug/g	-
Pyrene	0.02 ug/g	0.05	<0.02	-	-	96 ug/g	-

Certificate of Analysis

Report Date: 30-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	2-1B	2-4	2-7	DUP2	Criteria:	
	Sample Date:	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	08-Sep-25 07:30	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-22	2537136-26	2537136-29	2537136-31		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Semi-Volatiles							
2-Fluorobiphenyl	Surrogate	72.9%	77.4%	-	-	-	-
Terphenyl-d14	Surrogate	80.2%	81.0%	-	-	-	-
PCBs							
PCBs, total	0.05 ug/g	-	-	-	<0.05	1.1 ug/g	-
Decachlorobiphenyl	Surrogate	-	-	-	77.0%	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics								
Conductivity	ND	5	uS/cm					
Cyanide, free	ND	0.03	ug/g					
SAR	ND	0.01	N/A					
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
F4G-sg PHCs (gravimetric)	ND	50	ug/g					
Metals								
Boron, available	ND	0.5	ug/g					
Chromium (VI)	ND	0.2	ug/g					
Mercury	ND	0.1	ug/g					
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
mSPLP Leachate Metals								

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Antimony	ND	0.5	ug/L					
Arsenic	ND	1.0	ug/L					
Barium	ND	1.0	ug/L					
Beryllium	ND	0.5	ug/L					
Boron	ND	10.0	ug/L					
Cadmium	ND	0.2	ug/L					
Chromium	ND	1.0	ug/L					
Cobalt	ND	0.5	ug/L					
Copper	ND	0.5	ug/L					
Lead	ND	0.2	ug/L					
Molybdenum	ND	0.5	ug/L					
Nickel	ND	1.0	ug/L					
Selenium	ND	1.0	ug/L					
Silver	ND	0.2	ug/L					
Thallium	ND	0.5	ug/L					
Uranium	ND	0.2	ug/L					
Vanadium	ND	0.5	ug/L					
Zinc	ND	5.0	ug/L					
PCBs								
PCBs, total	ND	0.05	ug/g					
Surrogate: Decachlorobiphenyl	*0.0761*		*%*	*76.9*	*60-140*			
Semi-Volatiles								
Acenaphthene	ND	0.02	ug/g					
Acenaphthylene	ND	0.02	ug/g					
Anthracene	ND	0.02	ug/g					
Benzo [a] anthracene	ND	0.02	ug/g					
Benzo [a] pyrene	ND	0.02	ug/g					
Benzo [b] fluoranthene	ND	0.02	ug/g					
Benzo [g,h,i] perylene	ND	0.02	ug/g					
Benzo [k] fluoranthene	ND	0.02	ug/g					
Chrysene	ND	0.02	ug/g					
Dibenzo [a,h] anthracene	ND	0.02	ug/g					
Fluoranthene	ND	0.02	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Fluorene	ND	0.02	ug/g					
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g					
1-Methylnaphthalene	ND	0.02	ug/g					
2-Methylnaphthalene	ND	0.02	ug/g					
Methylnaphthalene (1&2)	ND	0.03	ug/g					
Naphthalene	ND	0.01	ug/g					
Phenanthrene	ND	0.02	ug/g					
Pyrene	ND	0.02	ug/g					
Surrogate: 2-Fluorobiphenyl	*0.413*		*%*	*81.8*	*50-140*			
Surrogate: Terphenyl-d14	*0.423*		*%*	*83.8*	*50-140*			
Volatiles								
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: Toluene-d8	*8.17*		*%*	*102*	*50-140*			
Acetone	ND	0.50	ug/g					
Benzene	ND	0.02	ug/g					
Bromodichloromethane	ND	0.05	ug/g					
Bromoform	ND	0.05	ug/g					
Bromomethane	ND	0.05	ug/g					
Carbon Tetrachloride	ND	0.05	ug/g					
Chlorobenzene	ND	0.05	ug/g					
Chloroform	ND	0.05	ug/g					
Dibromochloromethane	ND	0.05	ug/g					
Dichlorodifluoromethane	ND	0.05	ug/g					
1,2-Dichlorobenzene	ND	0.05	ug/g					
1,3-Dichlorobenzene	ND	0.05	ug/g					
1,4-Dichlorobenzene	ND	0.05	ug/g					
1,1-Dichloroethane	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
1,2-Dichloroethane	ND	0.05	ug/g					
1,1-Dichloroethylene	ND	0.05	ug/g					
cis-1,2-Dichloroethylene	ND	0.05	ug/g					
trans-1,2-Dichloroethylene	ND	0.05	ug/g					
1,2-Dichloropropane	ND	0.05	ug/g					
cis-1,3-Dichloropropylene	ND	0.05	ug/g					
trans-1,3-Dichloropropylene	ND	0.05	ug/g					
1,3-Dichloropropene, total	ND	0.05	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g					
Hexane	ND	0.05	ug/g					
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g					
Methyl Isobutyl Ketone	ND	0.50	ug/g					
Methyl tert-butyl ether	ND	0.05	ug/g					
Methylene Chloride	ND	0.05	ug/g					
Styrene	ND	0.05	ug/g					
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g					
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g					
Tetrachloroethylene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
1,1,1-Trichloroethane	ND	0.05	ug/g					
1,1,2-Trichloroethane	ND	0.05	ug/g					
Trichloroethylene	ND	0.05	ug/g					
Trichlorofluoromethane	ND	0.05	ug/g					
Vinyl chloride	ND	0.02	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: 4-Bromofluorobenzene	*8.48*		*%*	*106*	*50-140*			
Surrogate: Dibromofluoromethane	*9.32*		*%*	*116*	*50-140*			
Surrogate: Toluene-d8	*8.17*		*%*	*102*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	0.82	0.01	N/A	0.80			2.5	30	
Conductivity	372	5	uS/cm	374			0.3	5	
Cyanide, free	ND	0.03	ug/g	ND			NC	35	
pH	7.35	0.05	pH Units	7.31			0.5	10	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	84	4	ug/g	84			0.1	30	
F3 PHCs (C16-C34)	482	8	ug/g	498			3.3	30	
F4 PHCs (C34-C50)	339	6	ug/g	389			13.7	30	
F4G-sg PHCs (gravimetric)	972	50	ug/g	1060			8.2	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	68.6	1.0	ug/g	70.3			2.3	30	
Barium	88.2	1.0	ug/g	98.6			11.1	30	
Beryllium	0.8	0.5	ug/g	0.8			0.1	30	
Boron, available	ND	0.5	ug/g	ND			NC	35	
Boron	32.9	5.0	ug/g	32.6			0.9	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	241	5.0	ug/g	239			0.9	30	
Cobalt	14.5	1.0	ug/g	15.3			4.8	30	
Copper	49.0	5.0	ug/g	50.0			2.0	30	
Lead	31.1	1.0	ug/g	30.8			1.0	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	9.7	1.0	ug/g	9.8			2.0	30	
Nickel	184	5.0	ug/g	183			0.7	30	
Selenium	1.1	1.0	ug/g	1.3			21.6	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	ND	1.0	ug/g	ND			NC	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Vanadium	48.5	10.0	ug/g	51.7			6.3	30	
Zinc	120	20.0	ug/g	122			1.9	30	
mSPLP Leachate Metals									
Antimony	ND	0.5	ug/L	ND			NC	50	
Arsenic	ND	1.0	ug/L	ND			NC	50	
Barium	2.50	1.0	ug/L	2.36			6.0	50	
Beryllium	ND	0.5	ug/L	ND			NC	50	
Boron	ND	10.0	ug/L	ND			NC	50	
Cadmium	ND	0.2	ug/L	ND			NC	50	
Chromium	ND	1.0	ug/L	ND			NC	50	
Cobalt	ND	0.5	ug/L	ND			NC	50	
Copper	ND	0.5	ug/L	ND			NC	50	
Lead	ND	0.2	ug/L	ND			NC	50	
Molybdenum	7.81	0.5	ug/L	7.21			8.0	50	
Nickel	ND	1.0	ug/L	ND			NC	50	
Selenium	ND	1.0	ug/L	ND			NC	50	
Silver	ND	0.2	ug/L	ND			NC	50	
Thallium	ND	0.5	ug/L	ND			NC	50	
Uranium	ND	0.2	ug/L	ND			NC	50	
Vanadium	0.88	0.5	ug/L	0.80			9.2	50	
Zinc	ND	5.0	ug/L	ND			NC	50	
PCBs									
PCBs, total	ND	0.05	ug/g	ND			NC	40	
Surrogate: Decachlorobiphenyl	*0.0762*		*%*		*74.7*	*60-140*			
Physical Characteristics									
% Solids	81.8	0.1	% by Wt.	83.2			1.8	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g	ND			NC	40	
Acenaphthylene	ND	0.02	ug/g	ND			NC	40	
Anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] anthracene	ND	0.02	ug/g	ND			NC	40	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [a] pyrene	ND	0.02	ug/g	ND			NC	40	
Benzo [b] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g	ND			NC	40	
Benzo [k] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Chrysene	ND	0.02	ug/g	ND			NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g	ND			NC	40	
Fluoranthene	0.022	0.02	ug/g	ND			NC	40	
Fluorene	ND	0.02	ug/g	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g	ND			NC	40	
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
Naphthalene	ND	0.01	ug/g	ND			NC	40	
Phenanthrene	ND	0.02	ug/g	ND			NC	40	
Pyrene	ND	0.02	ug/g	ND			NC	40	
Surrogate: 2-Fluorobiphenyl	*0.370*		*%*		*70.9*	*50-140*			
Surrogate: Terphenyl-d14	*0.369*		*%*		*70.7*	*50-140*			
Volatiles									
Acetone	ND	0.50	ug/g	ND			NC	50	
Benzene	ND	0.02	ug/g	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g	ND			NC	50	
Bromoform	ND	0.05	ug/g	ND			NC	50	
Bromomethane	ND	0.05	ug/g	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g	ND			NC	50	
Chloroform	ND	0.05	ug/g	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,2-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g	ND			NC	50	
Hexane	ND	0.05	ug/g	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g	ND			NC	50	
Styrene	ND	0.05	ug/g	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	*9.35*		*%*		*104*	*50-140*			
Surrogate: Dibromofluoromethane	*10.6*		*%*		*117*	*50-140*			
Surrogate: Toluene-d8	*9.24*		*%*		*103*	*50-140*			
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: Toluene-d8	*9.24*		*%*		*103*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	0.365	0.03	ug/g	ND	88.3	70-130			
Hydrocarbons									
F1 PHCs (C6-C10)	68	7	ug/g	ND	81.0	0-200			
F2 PHCs (C10-C16)	168	4	ug/g	84	76.4	60-140			
F3 PHCs (C16-C34)	647	8	ug/g	498	63.2	60-140			
F4 PHCs (C34-C50)	157	6	ug/g	26	77.2	60-140			
F4G-sg PHCs (gravimetric)	1160	50	ug/g	ND	116	80-120			
Metals									
Antimony	50.0	1.0	ug/g	ND	100	70-130			
Arsenic	77.4	1.0	ug/g	28.1	98.6	70-130			
Barium	97.6	1.0	ug/g	39.4	116	70-130			
Beryllium	49.8	0.5	ug/g	ND	98.9	70-130			
Boron, available	5.30	0.5	ug/g	ND	106	70-122			
Boron	58.9	5.0	ug/g	13.1	91.7	70-130			
Cadmium	53.4	0.5	ug/g	ND	107	70-130			
Chromium (VI)	3.7	0.2	ug/g	ND	71.5	70-130			
Chromium	147	5.0	ug/g	95.5	102	70-130			
Cobalt	58.2	1.0	ug/g	6.1	104	70-130			
Copper	72.9	5.0	ug/g	20.0	106	70-130			
Lead	69.2	1.0	ug/g	12.3	114	70-130			
Mercury	1.53	0.1	ug/g	ND	102	70-130			
Molybdenum	49.2	1.0	ug/g	3.9	90.4	70-130			
Nickel	120	5.0	ug/g	73.2	93.6	70-130			
Selenium	47.5	1.0	ug/g	ND	93.9	70-130			
Silver	41.4	0.3	ug/g	ND	82.7	70-130			
Thallium	52.3	1.0	ug/g	ND	104	70-130			
Uranium	52.5	1.0	ug/g	ND	104	70-130			
Vanadium	70.3	10.0	ug/g	20.7	99.3	70-130			
Zinc	103	20.0	ug/g	49.0	108	70-130			
mSPLP Leachate Metals									

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Antimony	45.8	0.5	ug/L	ND	91.6	70-130			
Arsenic	50.3	1.0	ug/L	ND	100	70-130			
Barium	49.3	1.0	ug/L	2.36	93.9	70-130			
Beryllium	45.5	0.5	ug/L	ND	91.0	70-130			
Boron	55.2	10.0	ug/L	ND	96.0	70-130			
Cadmium	47.9	0.2	ug/L	ND	95.8	70-130			
Chromium	49.7	1.0	ug/L	ND	98.6	70-130			
Cobalt	48.5	0.5	ug/L	ND	96.8	70-130			
Copper	50.4	0.5	ug/L	ND	101	70-130			
Lead	49.3	0.2	ug/L	ND	98.3	70-130			
Molybdenum	57.6	0.5	ug/L	7.21	101	70-130			
Nickel	49.2	1.0	ug/L	ND	97.8	70-130			
Selenium	46.4	1.0	ug/L	ND	92.6	70-130			
Silver	43.3	0.2	ug/L	ND	86.5	70-130			
Thallium	47.7	0.5	ug/L	ND	95.3	70-130			
Uranium	47.9	0.2	ug/L	ND	95.5	70-130			
Vanadium	51.6	0.5	ug/L	0.80	102	70-130			
Zinc	52.1	5.0	ug/L	ND	99.3	70-130			
PCBs									
PCBs, total	0.37	0.05	ug/g	ND	89.4	60-140			
Surrogate: Decachlorobiphenyl	*0.0761*		*%*		*74.6*	*60-140*			
Semi-Volatiles									
Acenaphthene	0.473	0.02	ug/g	ND	91.5	50-140			
Acenaphthylene	0.495	0.02	ug/g	ND	95.8	50-140			
Anthracene	0.452	0.02	ug/g	ND	87.4	50-140			
Benzo [a] anthracene	0.442	0.02	ug/g	ND	85.5	50-140			
Benzo [a] pyrene	0.475	0.02	ug/g	ND	92.1	50-140			
Benzo [b] fluoranthene	0.476	0.02	ug/g	ND	92.2	50-140			
Benzo [g,h,i] perylene	0.439	0.02	ug/g	ND	85.0	50-140			
Benzo [k] fluoranthene	0.438	0.02	ug/g	ND	84.8	50-140			
Chrysene	0.427	0.02	ug/g	ND	82.7	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Dibenzo [a,h] anthracene	0.457	0.02	ug/g	ND	88.4	50-140			
Fluoranthene	0.495	0.02	ug/g	ND	95.9	50-140			
Fluorene	0.494	0.02	ug/g	ND	95.7	50-140			
Indeno [1,2,3-cd] pyrene	0.502	0.02	ug/g	ND	97.3	50-140			
1-Methylnaphthalene	0.465	0.02	ug/g	ND	90.0	50-140			
2-Methylnaphthalene	0.476	0.02	ug/g	ND	92.2	50-140			
Naphthalene	0.464	0.01	ug/g	ND	89.9	50-140			
Phenanthrene	0.475	0.02	ug/g	ND	92.0	50-140			
Pyrene	0.475	0.02	ug/g	ND	92.0	50-140			
Surrogate: 2-Fluorobiphenyl	*0.378*		*%*		*72.5*	*50-140*			
Surrogate: Terphenyl-d14	*0.364*		*%*		*69.9*	*50-140*			
Volatiles									
Acetone	157	0.50	ug/g	17.6	139	50-140			
Benzene	46.5	0.02	ug/g	0.249	115	50-140			
Bromodichloromethane	47.5	0.05	ug/g	ND	118	50-140			
Bromoform	41.9	0.05	ug/g	ND	105	50-140			
Bromomethane	2.63	0.05	ug/g	ND	90.1	50-140			
Carbon Tetrachloride	48.8	0.05	ug/g	ND	122	50-140			
Chlorobenzene	38.5	0.05	ug/g	ND	95.9	50-140			
Chloroform	53.6	0.05	ug/g	ND	134	50-140			
Dibromochloromethane	44.8	0.05	ug/g	ND	112	50-140			
Dichlorodifluoromethane	3.34	0.05	ug/g	ND	115	50-140			
1,2-Dichlorobenzene	35.9	0.05	ug/g	ND	89.6	50-140			
1,3-Dichlorobenzene	37.7	0.05	ug/g	ND	94.3	50-140			
1,4-Dichlorobenzene	36.2	0.05	ug/g	ND	90.1	50-140			
1,1-Dichloroethane	51.6	0.05	ug/g	ND	129	50-140			
1,2-Dichloroethane	51.9	0.05	ug/g	ND	130	50-140			
1,1-Dichloroethylene	43.8	0.05	ug/g	ND	109	50-140			
cis-1,2-Dichloroethylene	50.8	0.05	ug/g	ND	127	50-140			
trans-1,2-Dichloroethylene	51.3	0.05	ug/g	ND	128	50-140			
1,2-Dichloropropane	45.8	0.05	ug/g	ND	114	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
cis-1,3-Dichloropropylene	44.5	0.05	ug/g	ND	111	50-140			
trans-1,3-Dichloropropylene	45.7	0.05	ug/g	ND	114	50-140			
Ethylbenzene	38.9	0.05	ug/g	0.432	96.4	50-140			
Ethylene dibromide (dibromoethane, 1,2-)	48.6	0.05	ug/g	ND	122	50-140			
Hexane	41.8	0.05	ug/g	0.756	103	50-140			
Methyl Ethyl Ketone (2-Butanone)	136	0.50	ug/g	ND	136	50-140			
Methyl Isobutyl Ketone	89.9	0.50	ug/g	ND	90.1	50-140			
Methyl tert-butyl ether	103	0.05	ug/g	ND	103	50-140			
Methylene Chloride	55.6	0.05	ug/g	ND	139	50-140			
Styrene	44.7	0.05	ug/g	ND	112	50-140			
1,1,1,2-Tetrachloroethane	38.5	0.05	ug/g	ND	96.4	50-140			
1,1,2,2-Tetrachloroethane	36.8	0.05	ug/g	ND	92.1	50-140			
Tetrachloroethylene	40.0	0.05	ug/g	ND	99.8	50-140			
Toluene	41.0	0.05	ug/g	2.13	97.0	50-140			
1,1,1-Trichloroethane	50.1	0.05	ug/g	ND	125	50-140			
1,1,2-Trichloroethane	42.7	0.05	ug/g	ND	107	50-140			
Trichloroethylene	43.8	0.05	ug/g	ND	110	50-140			
Trichlorofluoromethane	36.0	0.05	ug/g	ND	89.7	50-140			
Vinyl chloride	54.8	0.02	ug/g	ND	135	50-140			
m,p-Xylenes	81.7	0.05	ug/g	2.40	98.9	50-140			
o-Xylene	40.8	0.05	ug/g	1.41	98.7	50-140			
Surrogate: 4-Bromofluorobenzene	*8.86*		*%*		*95.5*	*50-140*			
Surrogate: Dibromofluoromethane	*11.9*		*%*		*128*	*50-140*			
Surrogate: Toluene-d8	*9.07*		*%*		*97.7*	*50-140*			
Benzene	46.5	0.02	ug/g	0.249	115	50-140			
Ethylbenzene	38.9	0.05	ug/g	0.432	96.4	50-140			
Toluene	41.0	0.05	ug/g	2.13	97.0	50-140			
m,p-Xylenes	81.7	0.05	ug/g	2.40	98.9	50-140			
o-Xylene	40.8	0.05	ug/g	1.41	98.7	50-140			
Surrogate: Toluene-d8	*9.07*		*%*		*97.7*	*50-140*			

Qualifier Notes:

Sample Qualifiers :

1: Elevated reporting limit due to dilution required because of high target analyte concentration.

Applies to Samples: 6-1, 7-1, 2-1A

2: GC-FID signal did not return to baseline by C50

Applies to Samples: 6-1, 7-1, 7-2, 2-1A, 2-1B

6: Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

Applies to Samples: 7-2

Sample Data Revisions:

None

Certificate of Analysis

Report Date: 30-Sep-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

Work Order Revisions / Comments:

Revision - 1: This report has been revised to contain additional data to samples 4, 13, 14, 16 and 21.

Revision - 2: This report has been revised to contain additional data to samples 9, 16 and 26.

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

PARACEL LABORATORIES LTD. | T R R

Paracel ID: 2537136

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2537136	

Client Name: SERTAS Group	Project Ref: 2501E038	Page 1 of 1
Contact Name: Paige Sarafin	Quote #: Erwin	**Turnaround Time**
Address: 4510 Rhodes Drive, Unit 210, Windsor, ON	PO #:	☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular
	E-mail: paige.sarafin@sertas.ca; clay.sereres@sertas.ca	Date Required:
Telephone: 519 981 2724		

☒ REG 153/04 ☐ REG 406/19

☐ Table 1 ☐ Agri/Other ☒ Med/Fine
☐ Table 2 ☐ Res/Park ☐ Coarse
☒ Table 3 ☒ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☒ No

Other Regulation

☐ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU - Storm
Mun: ___
☐ Other: ___

Matrix Type: S (Soil/Sed.) **GW** (Ground Water) **SW** (Surface Water) **SS** (Storm/Sanitary Sewer) **P** (Paint) **A** (Air) **O** (Other)

Required Analysis

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full Metals	EC, SAR, pH	PAHs	PHCs	BTEXs	VOCs	PCBs	OCs			HOLD
1	3-1B	S		2	-	Sept. 8 2025	9 00											X
2	3-2	S		2	-	Sept. 8 2025	9 10											X
3	3-3A	S		2	-	Sept. 8 2025	9 20											X
4	6-1	S		2	-	Sept. 8 2025	11 00											X
5	6-2	S		2	-	Sept. 8 2025	11 10											X
6	6-3	S		2	-	Sept. 8 2025	11 30	X	X	X	X	X						
7	DUP1	S		2	-	Sept. 8 2025	7 00	X	X	X	X	X						
8	6-4	S		2	-	Sept. 8 2025	11 30											X
9	6-5	S			-	Sept. 8 2025	11 40	X	X	X	X	X						X
10	6-6	S			-	Sept. 8 2025	11 50											X

Comments:

Method of Delivery: Walkin

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Relinquished By (Sign):	Received at Depot: K. Jakobson	Received at Lab:	Verified By: K. Jakobson
Relinquished By (Print): Paige Sarafin	Date/Time: Sept 9/25 11:00	Date/Time: 9/10/25 9:45	Date/Time: Sept. 9/25 11:0
Date/Time:	Temperature: 9.9 °C	Temperature: 8.7 C	pH Verified: ☐ By:

PARACEL LABORATORIES LTD.

Paracel ID: 2537136

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2537136	

Client Name: SERTAS Group	Project Ref: 2501E038	Page 2 of 4
Contact Name: Paige Sarafin	Quote #: RAWIN	Turnaround Time: ☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular
Address: 4510 Rhodes Drive, Unit 210, Windsor, ON	PO #:	Date Required:
Telephone: 519 981 2724	E-mail: paige.sarafin@sertas.ca; clay.sereres@sertas.ca	

☒ REG 153/04 ☐ REG 406/19 | Other Regulation

☐ Table 1 ☐ Agri/Other ☒ Med/Fine | ☐ REG 558 ☐ PWQO

☐ Table 2 ☐ Res/Park ☐ Coarse | ☐ CCME ☐ MISA

☒ Table 3 ☐ Ind/Comm | ☐ SU - Sani ☐ SU - Storm

☐ Table ___ | Mun: ___

For RSC: ☐ Yes ☒ No | ☐ Other: ___

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full Metals	EC, SAR, pH	PAHs	PHCs	BTEXs	VOCs	PCBs	OCs			HOLD
1	6-7	S		2	-	Sept. 8 2025	12 00											
2	6-8	S		2	-	Sept. 8 2025	12 10											X
3	7-1	S		2	-	Sept. 8 2025	200											X
4	7-2	S		2	-	Sept. 8 2025	2 10	X	X		X		X	X				
5	7-3	S		2	-	Sept. 8 2025	2 20											X
6	7-4	S		2	-	Sept. 8 2025	2 30	X	X		X		X	X				X
7	7-5	S		2	-	Sept. 8 2025	2 40											X
8	7-6	S		2	-	Sept. 8 2025	2 50											X
9	7-7	S		2	-	Sept. 8 2025	2 60											X
10	7-8	S		2	-	Sept. 8 2025	300											X

Comments:

Method of Delivery: WALK IN

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Relinquished By (Sign):	Received at Depot: K. Jakobsen	Received at Lab: JW
Relinquished By (Print): Paige Sarafin	Date/Time: Sept. 9/25 10:00	Date/Time: Sept. 9/25 9:45
Date/Time:	Temperature: 9.9 °C	Temperature: 8.7
		Verified By: K. Jakobsen
		Date/Time: Sept. 9/25 14:00
		pH Verified: ☐ By:

PARACEL LABORATORIES LTD. | T R R

Paracel ID: 2537136

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2537136	

Client Name: SERTAS Group	Project Ref: 2501E038	Page 3 of 4
Contact Name: Paige Sarafin	Quote #: enwin	Turnaround Time
Address: 4510 Rhodes Drive, Unit 210, Windsor, ON	PO #:	☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular
Telephone: 519 981 2724	E-mail: paige.sarafin@sertas.ca; clay.sereres@sertas.ca	Date Required:

☒ REG 153/04 ☐ REG 406/19

Table 1 ☐ Agri/Other ☒ Med/Fine
Table 2 ☐ Res/Park ☐ Coarse
☒ Table 3 ☒ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☒ No

Other Regulation: ☐ REG 558 ☐ PWQO ☐ CCME ☐ MISA ☐ SU - Sani ☐ SU - Storm ☐ Mun: ☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full Metals	EC, SAR, pH	PAHs	PHCs	BTEXs	VOCs	PCBs	OCs			HOLD
1	2-1A	S		2	-	Sept. 8 2025	3 30											X
2	2-1B	S		2	-	Sept. 8 2025	3 35	X	X	X	X		X					
3	2-2	S		2	-	Sept. 8 2025	3 40											X
4	2-3A	S		2	-	Sept. 8 2025	3 45											X
5	2-3B	S		2	-	Sept. 8 2025	3 50											X
6	2-4	S		2	-	Sept. 8 2025	4 00	X	X	X								
7	2-5	S		2	-	Sept. 8 2025	4 10											X
8	2-6	S		2	-	Sept. 8 2025	4 15											X
9	2-7	S		2	-	Sept. 8 2025	4 20				X	X						
10	2-8	S		2	-	Sept. 8 2025	4 30											X

Comments:

Method of Delivery: Walk in

Unless otherwise negotiated by the parties, by signing Paracel's Chain of Custody form, you are agreeing to Paracel Laboratories Terms and Conditions and are subject to the terms and conditions thereof. Available at www.paracellabs.com

Relinquished By (Sign):	Received at Depot: K. Jakobsen	Received at Lab: JW	Verified By: K. Jakobsen
Relinquished By (Print): Paige Sarafin	Date/Time: Sept 9/25 10:00	Date/Time: Sept 9/25 14:45	Date/Time: Sept. 9/25 14:00
Date/Time:	Temperature: 9.9 °C	Temperature: 8.7C	pH Verified: ☐ By:

PARACEL LABORATORIES LTD.
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Certificate of Analysis

SERTAS
4510 Rhodes Drive, Unit 210
Windsor, ON N8W 5K5
Attn: Paige Sarafin

Client PO:
Project: 2501E038
Custody:

Report Date: 3-Oct-2025
Order Date: 9-Sep-2025

Revised Report

Order #: 2537136

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2537136-04	6-1
2537136-06	6-3
2537136-06	6-3
2537136-07	DUP1
2537136-09	6-5
2537136-13	7-1
2537136-14	7-2
2537136-16	7-4
2537136-21	2-1A
2537136-22	2-1B
2537136-26	2-4
2537136-29	2-7
2537136-31	DUP2

Approved By:



Alex Enfield, MSc
Lab Manager

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	19-Sep-25	19-Sep-25
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	17-Sep-25	18-Sep-25
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	19-Sep-25	19-Sep-25
Conductivity	MOE E3138 - probe @25 °C, water ext	19-Sep-25	19-Sep-25
Cyanide, free	MOE E3015 - Auto Colour, water extraction	19-Sep-25	19-Sep-25
Mercury by CVAA	EPA 7471B - CVAA, digestion	18-Sep-25	18-Sep-25
PCBs, total	SW846 8082A - GC-ECD	16-Sep-25	18-Sep-25
PHC F1	CWS Tier 1 - P&T GC-FID	17-Sep-25	18-Sep-25
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	16-Sep-25	18-Sep-25
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	18-Sep-25	18-Sep-25
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	18-Sep-25	19-Sep-25
REG 153: pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	18-Sep-25	18-Sep-25
REG 153: PHC F4(g)	CWS Tier 1 - Extraction Gravimetric	19-Sep-25	19-Sep-25
REG 153: VOCs by P&T GC-MS	EPA 8260 - P&T GC-MS	17-Sep-25	18-Sep-25
REG 406: Leachate - Metals by ICP-MS	mSPLP EPA 6020 - Digestion - ICP-MS	30-Sep-25	30-Sep-25
SAR	Calculated	19-Sep-25	19-Sep-25
Solids, %	CWS Tier 1 - Gravimetric	18-Sep-25	19-Sep-25

Certificate of Analysis

Report Date: 03-Oct-2025

Client: SERTAS

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

Summary of Criteria Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in red

Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances.

Sample	Analyte	MDL / Units	Result	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
6-1	F4G-sg PHCs (gravimetric)	50 ug/g	19300	6600 ug/g	-
7-2	Boron, available	0.5 ug/g	6.4	2 ug/g	-
2-1A	F4G-sg PHCs (gravimetric)	50 ug/g	14500	6600 ug/g	-

Certificate of Analysis

Report Date: 03-Oct-2025

Client: SERTAS

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	6-1	6-3	6-3	DUP1	Criteria:	
	Sample Date:	08-Sep-25 11:00	08-Sep-25 11:20	08-Sep-25 11:20	08-Sep-25 07:00	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-04	2537136-06	2537136-06RE1	2537136-07		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	96.8	84.9	-	90.1	-	-
General Inorganics							
SAR	0.01 N/A	0.11	0.34	-	0.40	12 N/A	-
Conductivity	5 uS/cm	120	157	-	279	1.4 mS/cm	-
Cyanide, free	0.03 ug/g	<0.03	-	-	-	0.051 ug/g	-
pH	0.05 pH Units	7.75	6.71	-	6.68	5.00 - 9.00 pH Units	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	-	<1.0	50 ug/g	-
Arsenic	1.0 ug/g	5.7	11.6	10.7	7.2	18 ug/g	-
Barium	1.0 ug/g	97.6	79.4	-	64.6	670 ug/g	-
Beryllium	0.5 ug/g	<0.5	0.8	-	0.7	10 ug/g	-
Boron, available	0.5 ug/g	0.6	0.9	-	1.1	2 ug/g	-
Boron	5.0 ug/g	<5.0	9.2	-	11.8	120 ug/g	-
Cadmium	0.5 ug/g	<0.5	<0.5	-	<0.5	1.9 ug/g	-
Chromium	5.0 ug/g	11.2	25.3	-	22.4	160 ug/g	-
Chromium (VI)	0.2 ug/g	<0.2	<0.2	-	<0.2	10 ug/g	-
Cobalt	1.0 ug/g	3.6	11.0	-	8.7	100 ug/g	-
Copper	5.0 ug/g	17.9	21.1	-	18.3	300 ug/g	-
Lead	1.0 ug/g	19.5	13.6	-	18.2	120 ug/g	-
Mercury	0.1 ug/g	<0.1	<0.1	-	<0.1	20 ug/g	-
Molybdenum	1.0 ug/g	2.0	2.3	-	2.1	40 ug/g	-
Nickel	5.0 ug/g	13.8	28.4	-	21.3	340 ug/g	-
Selenium	1.0 ug/g	<1.0	<1.0	-	<1.0	5.5 ug/g	-
Silver	0.3 ug/g	<0.3	<0.3	-	<0.3	50 ug/g	-
Thallium	1.0 ug/g	<1.0	<1.0	-	<1.0	3.3 ug/g	-

Certificate of Analysis

Report Date: 03-Oct-2025

Client: SERTAS

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	6-1	6-3	6-3	DUP1	Criteria:	
	Sample Date:	08-Sep-25 11:00	08-Sep-25 11:20	08-Sep-25 11:20	08-Sep-25 07:00	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-04	2537136-06	2537136-06RE1	2537136-07		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Uranium	1.0 ug/g	<1.0	1.6	-	1.8	33 ug/g	-
Vanadium	10.0 ug/g	48.8	40.1	-	33.7	86 ug/g	-
Zinc	20.0 ug/g	43.7	58.8	-	71.3	340 ug/g	-
Volatiles							
Benzene	0.02 ug/g	<0.02	<0.02	-	<0.02	0.4 ug/g	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	-	<0.05	19 ug/g	-
Toluene	0.05 ug/g	<0.05	<0.05	-	<0.05	78 ug/g	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	-	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	-	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	-	<0.05	30 ug/g	-
Toluene-d8	Surrogate	88.7%	102%	-	103%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	-	<7	65 ug/g	-
F2 PHCs (C10-C16)	4 ug/g	<40 [1]	<4	-	<4	250 ug/g	-
F3 PHCs (C16-C34)	8 ug/g	411	<8	-	<8	2500 ug/g	-
F4 PHCs (C34-C50)	6 ug/g	4910 [2]	<6	-	<6	6600 ug/g	-
F4G-sg PHCs (gravimetric)	50 ug/g	19300	-	-	-	6600 ug/g	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	<0.02	-	<0.02	96 ug/g	-
Acenaphthylene	0.02 ug/g	<0.02	<0.02	-	<0.02	0.17 ug/g	-
Anthracene	0.02 ug/g	<0.02	<0.02	-	<0.02	0.74 ug/g	-
Benzo [a] anthracene	0.02 ug/g	0.08	<0.02	-	<0.02	0.96 ug/g	-
Benzo [a] pyrene	0.02 ug/g	0.09	<0.02	-	<0.02	0.3 ug/g	-
Benzo [b] fluoranthene	0.02 ug/g	0.13	<0.02	-	<0.02	0.96 ug/g	-
Benzo [g,h,i] perylene	0.02 ug/g	<0.02	<0.02	-	<0.02	9.6 ug/g	-

Certificate of Analysis

Report Date: 03-Oct-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	6-1	6-3	6-3	DUP1	Criteria:	
	Sample Date:	08-Sep-25 11:00	08-Sep-25 11:20	08-Sep-25 11:20	08-Sep-25 07:00	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-04	2537136-06	2537136-06RE1	2537136-07		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Semi-Volatiles							
Benzo [k] fluoranthene	0.02 ug/g	0.04	<0.02	-	<0.02	0.96 ug/g	-
Chrysene	0.02 ug/g	0.12	<0.02	-	<0.02	9.6 ug/g	-
Dibenzo [a,h] anthracene	0.02 ug/g	0.05	<0.02	-	<0.02	0.1 ug/g	-
Fluoranthene	0.02 ug/g	0.17	0.02	-	<0.02	9.6 ug/g	-
Fluorene	0.02 ug/g	<0.02	<0.02	-	<0.02	69 ug/g	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	0.08	<0.02	-	<0.02	0.95 ug/g	-
1-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	-	<0.02	85 ug/g	-
2-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	-	<0.02	85 ug/g	-
Methylnaphthalene (1&2)	0.03 ug/g	<0.03	<0.03	-	<0.03	85 ug/g	-
Naphthalene	0.01 ug/g	<0.01	<0.01	-	<0.01	28 ug/g	-
Phenanthrene	0.02 ug/g	0.08	<0.02	-	<0.02	16 ug/g	-
Pyrene	0.02 ug/g	0.13	<0.02	-	<0.02	96 ug/g	-
2-Fluorobiphenyl	Surrogate	81.7%	76.2%	-	84.0%	-	-
Terphenyl-d14	Surrogate	61.8%	88.3%	-	87.0%	-	-

Certificate of Analysis

Report Date: 03-Oct-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	6-5	7-1	7-2	7-4	Criteria:	
	Sample Date:	08-Sep-25 11:40	08-Sep-25 14:00	08-Sep-25 14:10	08-Sep-25 14:30	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-09	2537136-13	2537136-14	2537136-16		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	96.8	96.7	91.6	91.4	-	-
mSPLP Leachate Metals							
Antimony	0.5 ug/L	<0.5	-	-	<0.5	-	-
Arsenic	1.0 ug/L	<1.0	-	-	<1.0	-	-
Barium	1.0 ug/L	2.4	-	-	2.2	-	4600 ug/L
Beryllium	0.5 ug/L	<0.5	-	-	<0.5	-	11 ug/L
Boron	10.0 ug/L	<10.0	-	-	<10.0	-	-
Cadmium	0.2 ug/L	<0.2	-	-	<0.2	-	0.5 ug/L
Chromium	1.0 ug/L	<1.0	-	-	<1.0	-	130 ug/L
Cobalt	0.5 ug/L	<0.5	-	-	<0.5	-	10 ug/L
Copper	0.5 ug/L	<0.5	-	-	<0.5	-	14 ug/L
Lead	0.2 ug/L	<0.2	-	-	<0.2	-	-
Molybdenum	0.5 ug/L	7.2	-	-	7.7	-	1500 ug/L
Nickel	1.0 ug/L	<1.0	-	-	<1.0	-	78 ug/L
Selenium	1.0 ug/L	<1.0	-	-	<1.0	-	10 ug/L
Silver	0.2 ug/L	<0.2	-	-	<0.2	-	0.3 ug/L
Thallium	0.5 ug/L	<0.5	-	-	<0.5	-	80 ug/L
Uranium	0.2 ug/L	<0.2	-	-	<0.2	-	66 ug/L
Vanadium	0.5 ug/L	0.8	-	-	0.9	-	-
Zinc	5.0 ug/L	<5.0	-	-	<5.0	-	180 ug/L
General Inorganics							
SAR	0.01 N/A	0.27	0.16	3.06	0.50	12 N/A	-
Conductivity	5 uS/cm	160	137	396	289	1.4 mS/cm	-
Cyanide, free	0.03 ug/g	-	<0.03	-	-	0.051 ug/g	-
pH	0.05 pH Units	7.42	7.71	8.09	7.59	5.00 - 9.00 pH Units	-

Certificate of Analysis

Report Date: 03-Oct-2025

Client: SERTAS

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	6-5	7-1	7-2	7-4	Criteria:	
	Sample Date:	08-Sep-25 11:40	08-Sep-25 14:00	08-Sep-25 14:10	08-Sep-25 14:30	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-09	2537136-13	2537136-14	2537136-16		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	50 ug/g	-
Arsenic	1.0 ug/g	9.6	1.9	4.4	7.3	18 ug/g	-
Barium	1.0 ug/g	82.1	306	39.0	69.3	670 ug/g	-
Beryllium	0.5 ug/g	0.6	<0.5	<0.5	0.5	10 ug/g	-
Boron, available	0.5 ug/g	<0.5	<0.5	6.4	<0.5	2 ug/g	-
Boron	5.0 ug/g	13.5	<5.0	21.8	14.8	120 ug/g	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	1.9 ug/g	-
Chromium (VI)	0.2 ug/g	<0.2	<0.2	<0.2	<0.2	10 ug/g	-
Chromium	5.0 ug/g	20.5	6.3	47.6	18.4	160 ug/g	-
Cobalt	1.0 ug/g	11.2	1.7	7.8	11.0	100 ug/g	-
Copper	5.0 ug/g	17.3	7.2	113	15.8	300 ug/g	-
Lead	1.0 ug/g	10.9	18.0	11.3	9.8	120 ug/g	-
Mercury	0.1 ug/g	<0.1	<0.1	<0.1	<0.1	20 ug/g	-
Molybdenum	1.0 ug/g	3.8	1.2	5.6	4.1	40 ug/g	-
Nickel	5.0 ug/g	26.9	7.6	28.5	28.2	340 ug/g	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	5.5 ug/g	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	50 ug/g	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	3.3 ug/g	-
Uranium	1.0 ug/g	1.2	1.1	1.4	1.2	33 ug/g	-
Vanadium	10.0 ug/g	31.7	13.7	19.2	28.7	86 ug/g	-
Zinc	20.0 ug/g	51.1	41.5	42.6	53.0	340 ug/g	-
Volatiles							
Acetone	0.50 ug/g	-	<0.50	<0.50	<0.50	28 ug/g	-
Benzene	0.02 ug/g	-	<0.02	0.14	<0.02	0.4 ug/g	-
Bromodichloromethane	0.05 ug/g	-	<0.05	<0.05	<0.05	18 ug/g	-

	Client ID:	6-5	7-1	7-2	7-4	Criteria:	
	Sample Date:	08-Sep-25 11:40	08-Sep-25 14:00	08-Sep-25 14:10	08-Sep-25 14:30	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-09	2537136-13	2537136-14	2537136-16		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Bromoform	0.05 ug/g	-	<0.05	<0.05	<0.05	1.7 ug/g	-
Bromomethane	0.05 ug/g	-	<0.05	<0.05	<0.05	0.05 ug/g	-
Carbon Tetrachloride	0.05 ug/g	-	<0.05	<0.05	<0.05	1.5 ug/g	-
Chlorobenzene	0.05 ug/g	-	<0.05	<0.05	<0.05	2.7 ug/g	-
Chloroform	0.05 ug/g	-	<0.05	<0.05	<0.05	0.18 ug/g	-
Dibromochloromethane	0.05 ug/g	-	<0.05	<0.05	<0.05	13 ug/g	-
Dichlorodifluoromethane	0.05 ug/g	-	<0.05	<0.05	<0.05	25 ug/g	-
1,2-Dichlorobenzene	0.05 ug/g	-	<0.05	<0.05	<0.05	8.5 ug/g	-
1,3-Dichlorobenzene	0.05 ug/g	-	<0.05	<0.05	<0.05	12 ug/g	-
1,4-Dichlorobenzene	0.05 ug/g	-	<0.05	<0.05	<0.05	0.84 ug/g	-
1,1-Dichloroethane	0.05 ug/g	-	<0.05	<0.05	<0.05	21 ug/g	-
1,2-Dichloroethane	0.05 ug/g	-	<0.05	<0.05	<0.05	0.05 ug/g	-
1,1-Dichloroethylene	0.05 ug/g	-	<0.05	<0.05	<0.05	0.48 ug/g	-
cis-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	<0.05	<0.05	37 ug/g	-
trans-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	<0.05	<0.05	9.3 ug/g	-
1,2-Dichloropropane	0.05 ug/g	-	<0.05	<0.05	<0.05	0.68 ug/g	-
cis-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
1,3-Dichloropropene, total	0.05 ug/g	-	<0.05	<0.05	<0.05	0.21 ug/g	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	-	<0.05	<0.05	<0.05	0.05 ug/g	-
Ethylbenzene	0.05 ug/g	-	<0.05	<0.05	<0.05	19 ug/g	-
Hexane	0.05 ug/g	-	<0.05	<0.05	<0.05	88 ug/g	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	-	<0.50	<0.50	<0.50	88 ug/g	-
Methyl Isobutyl Ketone	0.50 ug/g	-	<0.50	<0.50	<0.50	210 ug/g	-
Methyl tert-butyl ether	0.05 ug/g	-	<0.05	<0.05	<0.05	3.2 ug/g	-

	Client ID:	6-5	7-1	7-2	7-4	Criteria:	
	Sample Date:	08-Sep-25 11:40	08-Sep-25 14:00	08-Sep-25 14:10	08-Sep-25 14:30	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-09	2537136-13	2537136-14	2537136-16		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Methylene Chloride	0.05 ug/g	-	<0.05	<0.05	<0.05	2 ug/g	-
Styrene	0.05 ug/g	-	<0.05	<0.05	<0.05	43 ug/g	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	-	<0.05	<0.05	<0.05	0.11 ug/g	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	-	<0.05	<0.05	<0.05	0.094 ug/g	-
Tetrachloroethylene	0.05 ug/g	-	<0.05	<0.05	<0.05	21 ug/g	-
Toluene	0.05 ug/g	-	<0.05	0.22	<0.05	78 ug/g	-
1,1,1-Trichloroethane	0.05 ug/g	-	<0.05	<0.05	<0.05	12 ug/g	-
1,1,2-Trichloroethane	0.05 ug/g	-	<0.05	<0.05	<0.05	0.11 ug/g	-
Trichloroethylene	0.05 ug/g	-	<0.05	<0.05	<0.05	0.61 ug/g	-
Trichlorofluoromethane	0.05 ug/g	-	<0.05	<0.05	<0.05	5.8 ug/g	-
Vinyl chloride	0.02 ug/g	-	<0.02	<0.02	<0.02	0.25 ug/g	-
m,p-Xylenes	0.05 ug/g	-	<0.05	0.18	<0.05	-	-
o-Xylene	0.05 ug/g	-	<0.05	0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	-	<0.05	0.23	<0.05	30 ug/g	-
4-Bromofluorobenzene	Surrogate	-	86.7%	95.7%	104%	-	-
Toluene-d8	Surrogate	-	89.7%	101%	102%	-	-
Dibromofluoromethane	Surrogate	-	57.9%	119%	114%	-	-
Benzene	0.02 ug/g	<0.02	-	-	-	0.4 ug/g	-
Ethylbenzene	0.05 ug/g	<0.05	-	-	-	19 ug/g	-
Toluene	0.05 ug/g	<0.05	-	-	-	78 ug/g	-
m,p-Xylenes	0.05 ug/g	<0.05	-	-	-	-	-
o-Xylene	0.05 ug/g	<0.05	-	-	-	-	-
Xylenes, total	0.05 ug/g	<0.05	-	-	-	30 ug/g	-
Toluene-d8	Surrogate	102%	-	-	-	-	-
Hydrocarbons							

Certificate of Analysis

Report Date: 03-Oct-2025

Client: SERTAS

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	6-5	7-1	7-2	7-4	Criteria:	
	Sample Date:	08-Sep-25 11:40	08-Sep-25 14:00	08-Sep-25 14:10	08-Sep-25 14:30	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-09	2537136-13	2537136-14	2537136-16		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	65 ug/g	-
F2 PHCs (C10-C16)	4 ug/g	<4	<40 [1]	84	<4	250 ug/g	-
F3 PHCs (C16-C34)	8 ug/g	<8	365	498	<8	2500 ug/g	-
F4 PHCs (C34-C50)	6 ug/g	<6	2110 [2]	389 [2]	<6	6600 ug/g	-
F4G-sg PHCs (gravimetric)	50 ug/g	-	5340	917	-	6600 ug/g	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	-	0.06	<0.02	96 ug/g	-
Acenaphthylene	0.02 ug/g	<0.02	-	<0.02	<0.02	0.17 ug/g	-
Anthracene	0.02 ug/g	<0.02	-	<0.02	<0.02	0.74 ug/g	-
Benzo [a] anthracene	0.02 ug/g	<0.02	-	<0.02	<0.02	0.96 ug/g	-
Benzo [a] pyrene	0.02 ug/g	<0.02	-	<0.02	<0.02	0.3 ug/g	-
Benzo [b] fluoranthene	0.02 ug/g	<0.02	-	<0.02	<0.02	0.96 ug/g	-
Benzo [g,h,i] perylene	0.02 ug/g	<0.02	-	<0.02	<0.02	9.6 ug/g	-
Benzo [k] fluoranthene	0.02 ug/g	<0.02	-	<0.02	<0.02	0.96 ug/g	-
Chrysene	0.02 ug/g	<0.02	-	<0.02	<0.02	9.6 ug/g	-
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	-	<0.02	<0.02	0.1 ug/g	-
Fluoranthene	0.02 ug/g	<0.02	-	0.04	<0.02	9.6 ug/g	-
Fluorene	0.02 ug/g	<0.02	-	0.03	<0.02	69 ug/g	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	<0.02	-	<0.02	<0.02	0.95 ug/g	-
1-Methylnaphthalene	0.02 ug/g	<0.02	-	0.14	<0.02	85 ug/g	-
2-Methylnaphthalene	0.02 ug/g	<0.02	-	0.14	<0.02	85 ug/g	-
Methylnaphthalene (1&2)	0.03 ug/g	<0.03	-	0.28	<0.03	85 ug/g	-
Naphthalene	0.01 ug/g	<0.01	-	0.31	<0.01	28 ug/g	-
Phenanthrene	0.02 ug/g	<0.02	-	0.04	<0.02	16 ug/g	-
Pyrene	0.02 ug/g	<0.02	-	<0.02	<0.02	96 ug/g	-

Certificate of Analysis

Report Date: 03-Oct-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	6-5	7-1	7-2	7-4	Criteria:	
	Sample Date:	08-Sep-25 11:40	08-Sep-25 14:00	08-Sep-25 14:10	08-Sep-25 14:30	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-09	2537136-13	2537136-14	2537136-16		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Semi-Volatiles							
2-Fluorobiphenyl	Surrogate	79.5%	-	51.5%	90.0%	-	-
Terphenyl-d14	Surrogate	85.1%	-	35.4% [6]	56.0%	-	-
PCBs							
PCBs, total	0.05 ug/g	-	<0.05	<0.05	<0.05	1.1 ug/g	-
Decachlorobiphenyl	Surrogate	-	103%	77.1%	82.2%	-	-

Certificate of Analysis

Report Date: 03-Oct-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	2-1A	2-1B	2-4	2-7	Criteria:	
	Sample Date:	08-Sep-25 15:30	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-21	2537136-22	2537136-26	2537136-29		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	96.0	90.2	92.4	89.0	-	-
mSPLP Leachate Metals							
Antimony	0.5 ug/L	-	-	<0.5	-	-	-
Arsenic	1.0 ug/L	-	-	<1.0	-	-	-
Barium	1.0 ug/L	-	-	2.7	-	-	4600 ug/L
Beryllium	0.5 ug/L	-	-	<0.5	-	-	11 ug/L
Boron	10.0 ug/L	-	-	<10.0	-	-	-
Cadmium	0.2 ug/L	-	-	<0.2	-	-	0.5 ug/L
Chromium	1.0 ug/L	-	-	<1.0	-	-	130 ug/L
Cobalt	0.5 ug/L	-	-	<0.5	-	-	10 ug/L
Copper	0.5 ug/L	-	-	<0.5	-	-	14 ug/L
Lead	0.2 ug/L	-	-	<0.2	-	-	-
Molybdenum	0.5 ug/L	-	-	4.7	-	-	1500 ug/L
Nickel	1.0 ug/L	-	-	<1.0	-	-	78 ug/L
Selenium	1.0 ug/L	-	-	<1.0	-	-	10 ug/L
Silver	0.2 ug/L	-	-	<0.2	-	-	0.3 ug/L
Thallium	0.5 ug/L	-	-	<0.5	-	-	80 ug/L
Uranium	0.2 ug/L	-	-	<0.2	-	-	66 ug/L
Vanadium	0.5 ug/L	-	-	0.7	-	-	-
Zinc	5.0 ug/L	-	-	<5.0	-	-	180 ug/L
General Inorganics							
SAR	0.01 N/A	0.09	1.67	0.26	-	12 N/A	-
Conductivity	5 uS/cm	115	366	163	-	1.4 mS/cm	-
Cyanide, free	0.03 ug/g	<0.03	-	-	-	0.051 ug/g	-
pH	0.05 pH Units	7.68	7.19	7.41	-	5.00 - 9.00 pH Units	-

Certificate of Analysis

Report Date: 03-Oct-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	2-1A	2-1B	2-4	2-7	Criteria:	
	Sample Date:	08-Sep-25 15:30	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-21	2537136-22	2537136-26	2537136-29		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	<1.0	-	50 ug/g	-
Arsenic	1.0 ug/g	2.9	7.2	9.4	-	18 ug/g	-
Barium	1.0 ug/g	78.7	72.5	79.0	-	670 ug/g	-
Beryllium	0.5 ug/g	<0.5	0.6	0.7	-	10 ug/g	-
Boron	5.0 ug/g	<5.0	7.4	15.3	-	120 ug/g	-
Boron, available	0.5 ug/g	<0.5	1.1	<0.5	-	2 ug/g	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	-	1.9 ug/g	-
Chromium	5.0 ug/g	8.0	19.8	24.0	-	160 ug/g	-
Chromium (VI)	0.2 ug/g	0.3	<0.2	<0.2	-	10 ug/g	-
Cobalt	1.0 ug/g	5.1	7.1	13.7	-	100 ug/g	-
Copper	5.0 ug/g	19.5	20.1	21.2	-	300 ug/g	-
Lead	1.0 ug/g	12.5	31.6	11.3	-	120 ug/g	-
Mercury	0.1 ug/g	<0.1	<0.1	<0.1	-	20 ug/g	-
Molybdenum	1.0 ug/g	1.2	2.0	4.0	-	40 ug/g	-
Nickel	5.0 ug/g	10.8	19.0	33.3	-	340 ug/g	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	-	5.5 ug/g	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	-	50 ug/g	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	-	3.3 ug/g	-
Uranium	1.0 ug/g	1.0	1.1	1.4	-	33 ug/g	-
Vanadium	10.0 ug/g	23.6	29.8	37.9	-	86 ug/g	-
Zinc	20.0 ug/g	21.9	70.3	62.1	-	340 ug/g	-
Volatiles							
Acetone	0.50 ug/g	<0.50	<0.50	-	-	28 ug/g	-
Benzene	0.02 ug/g	<0.02	<0.02	-	-	0.4 ug/g	-
Bromodichloromethane	0.05 ug/g	<0.05	<0.05	-	-	18 ug/g	-

Certificate of Analysis

Report Date: 03-Oct-2025

Client: SERTAS

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	2-1A	2-1B	2-4	2-7	Criteria:	
	Sample Date:	08-Sep-25 15:30	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-21	2537136-22	2537136-26	2537136-29		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Bromoform	0.05 ug/g	<0.05	<0.05	-	-	1.7 ug/g	-
Bromomethane	0.05 ug/g	<0.05	<0.05	-	-	0.05 ug/g	-
Carbon Tetrachloride	0.05 ug/g	<0.05	<0.05	-	-	1.5 ug/g	-
Chlorobenzene	0.05 ug/g	<0.05	<0.05	-	-	2.7 ug/g	-
Chloroform	0.05 ug/g	<0.05	<0.05	-	-	0.18 ug/g	-
Dibromochloromethane	0.05 ug/g	<0.05	<0.05	-	-	13 ug/g	-
Dichlorodifluoromethane	0.05 ug/g	<0.05	<0.05	-	-	25 ug/g	-
1,2-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	-	-	8.5 ug/g	-
1,3-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	-	-	12 ug/g	-
1,4-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	-	-	0.84 ug/g	-
1,1-Dichloroethane	0.05 ug/g	<0.05	<0.05	-	-	21 ug/g	-
1,2-Dichloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.05 ug/g	-
1,1-Dichloroethylene	0.05 ug/g	<0.05	<0.05	-	-	0.48 ug/g	-
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	-	-	37 ug/g	-
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	-	-	9.3 ug/g	-
1,2-Dichloropropane	0.05 ug/g	<0.05	<0.05	-	-	0.68 ug/g	-
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	-	-	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	-	-	-	-
1,3-Dichloropropene, total	0.05 ug/g	<0.05	<0.05	-	-	0.21 ug/g	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	<0.05	<0.05	-	-	0.05 ug/g	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	-	-	19 ug/g	-
Hexane	0.05 ug/g	<0.05	<0.05	-	-	88 ug/g	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	<0.50	-	-	88 ug/g	-
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	<0.50	-	-	210 ug/g	-
Methyl tert-butyl ether	0.05 ug/g	<0.05	<0.05	-	-	3.2 ug/g	-

	Client ID:	2-1A	2-1B	2-4	2-7	Criteria:	
	Sample Date:	08-Sep-25 15:30	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-21	2537136-22	2537136-26	2537136-29		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Methylene Chloride	0.05 ug/g	<0.05	<0.05	-	-	2 ug/g	-
Styrene	0.05 ug/g	<0.05	<0.05	-	-	43 ug/g	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.11 ug/g	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.094 ug/g	-
Tetrachloroethylene	0.05 ug/g	<0.05	<0.05	-	-	21 ug/g	-
Toluene	0.05 ug/g	<0.05	<0.05	-	-	78 ug/g	-
1,1,1-Trichloroethane	0.05 ug/g	<0.05	<0.05	-	-	12 ug/g	-
1,1,2-Trichloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.11 ug/g	-
Trichloroethylene	0.05 ug/g	<0.05	<0.05	-	-	0.61 ug/g	-
Trichlorofluoromethane	0.05 ug/g	<0.05	<0.05	-	-	5.8 ug/g	-
Vinyl chloride	0.02 ug/g	<0.02	<0.02	-	-	0.25 ug/g	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	-	-	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	-	-	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	-	-	30 ug/g	-
Dibromofluoromethane	Surrogate	57.3%	114%	-	-	-	-
Toluene-d8	Surrogate	88.1%	103%	-	-	-	-
4-Bromofluorobenzene	Surrogate	85.5%	103%	-	-	-	-
Benzene	0.02 ug/g	-	-	-	<0.02	0.4 ug/g	-
Ethylbenzene	0.05 ug/g	-	-	-	<0.05	19 ug/g	-
Toluene	0.05 ug/g	-	-	-	<0.05	78 ug/g	-
m,p-Xylenes	0.05 ug/g	-	-	-	<0.05	-	-
o-Xylene	0.05 ug/g	-	-	-	<0.05	-	-
Xylenes, total	0.05 ug/g	-	-	-	<0.05	30 ug/g	-
Toluene-d8	Surrogate	-	-	-	102%	-	-
Hydrocarbons							

Certificate of Analysis

Report Date: 03-Oct-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	2-1A	2-1B	2-4	2-7	Criteria:	
	Sample Date:	08-Sep-25 15:30	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-21	2537136-22	2537136-26	2537136-29		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	-	<7	65 ug/g	-
F2 PHCs (C10-C16)	4 ug/g	<40 [1]	<4	-	6	250 ug/g	-
F3 PHCs (C16-C34)	8 ug/g	720	39	-	38	2500 ug/g	-
F4 PHCs (C34-C50)	6 ug/g	5420 [2]	91 [2]	-	<6	6600 ug/g	-
F4G-sg PHCs (gravimetric)	50 ug/g	14500	421	-	-	6600 ug/g	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	<0.02	<0.02	-	96 ug/g	-
Acenaphthylene	0.02 ug/g	<0.02	<0.02	<0.02	-	0.17 ug/g	-
Anthracene	0.02 ug/g	<0.02	<0.02	<0.02	-	0.74 ug/g	-
Benzo [a] anthracene	0.02 ug/g	<0.02	0.02	<0.02	-	0.96 ug/g	-
Benzo [a] pyrene	0.02 ug/g	<0.02	0.03	<0.02	-	0.3 ug/g	-
Benzo [b] fluoranthene	0.02 ug/g	<0.02	0.04	<0.02	-	0.96 ug/g	-
Benzo [g,h,i] perylene	0.02 ug/g	<0.02	0.03	<0.02	-	9.6 ug/g	-
Benzo [k] fluoranthene	0.02 ug/g	0.17	<0.02	<0.02	-	0.96 ug/g	-
Chrysene	0.02 ug/g	<0.02	0.03	<0.02	-	9.6 ug/g	-
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	<0.02	<0.02	-	0.1 ug/g	-
Fluoranthene	0.02 ug/g	0.23	0.06	<0.02	-	9.6 ug/g	-
Fluorene	0.02 ug/g	<0.02	<0.02	<0.02	-	69 ug/g	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	<0.02	0.03	<0.02	-	0.95 ug/g	-
1-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	<0.02	-	85 ug/g	-
2-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	<0.02	-	85 ug/g	-
Methylnaphthalene (1&2)	0.03 ug/g	<0.03	<0.03	<0.03	-	85 ug/g	-
Naphthalene	0.01 ug/g	<0.01	<0.01	<0.01	-	28 ug/g	-
Phenanthrene	0.02 ug/g	0.06	<0.02	<0.02	-	16 ug/g	-
Pyrene	0.02 ug/g	0.11	0.05	<0.02	-	96 ug/g	-

Certificate of Analysis

Report Date: 03-Oct-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	2-1A	2-1B	2-4	2-7	Criteria:	
	Sample Date:	08-Sep-25 15:30	08-Sep-25 15:35	08-Sep-25 16:00	08-Sep-25 16:20	Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-21	2537136-22	2537136-26	2537136-29		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Semi-Volatiles							
2-Fluorobiphenyl	Surrogate	84.6%	72.9%	77.4%	-	-	-
Terphenyl-d14	Surrogate	50.7%	80.2%	81.0%	-	-	-

Certificate of Analysis

Report Date: 03-Oct-2025

Client: **SERTAS**

Order Date: 9-Sep-2025

Client PO:

Project Description: 2501E038

	Client ID:	DUP2				Criteria:	
	Sample Date:	08-Sep-25 07:30				Reg 153/04 -T3 Ind/Com, fine	Reg 406/19 -Leachate T3.1 , Ind/Com
	Sample ID:	2537136-31					
	Matrix:	Soil					
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	88.5	-	-	-	-	-
PCBs							
PCBs, total	0.05 ug/g	<0.05	-	-	-	1.1 ug/g	-
Decachlorobiphenyl	Surrogate	77.0%	-	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics								
Conductivity	ND	5	uS/cm					
Cyanide, free	ND	0.03	ug/g					
SAR	ND	0.01	N/A					
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
F4G-sg PHCs (gravimetric)	ND	50	ug/g					
Metals								
Boron, available	ND	0.5	ug/g					
Chromium (VI)	ND	0.2	ug/g					
Mercury	ND	0.1	ug/g					
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
mSPLP Leachate Metals								

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Antimony	ND	0.5	ug/L					
Arsenic	ND	1.0	ug/L					
Barium	ND	1.0	ug/L					
Beryllium	ND	0.5	ug/L					
Boron	ND	10.0	ug/L					
Cadmium	ND	0.2	ug/L					
Chromium	ND	1.0	ug/L					
Cobalt	ND	0.5	ug/L					
Copper	ND	0.5	ug/L					
Lead	ND	0.2	ug/L					
Molybdenum	ND	0.5	ug/L					
Nickel	ND	1.0	ug/L					
Selenium	ND	1.0	ug/L					
Silver	ND	0.2	ug/L					
Thallium	ND	0.5	ug/L					
Uranium	ND	0.2	ug/L					
Vanadium	ND	0.5	ug/L					
Zinc	ND	5.0	ug/L					
PCBs								
PCBs, total	ND	0.05	ug/g					
Surrogate: Decachlorobiphenyl	*0.0761*		*%*	*76.9*	*60-140*			
Semi-Volatiles								
Acenaphthene	ND	0.02	ug/g					
Acenaphthylene	ND	0.02	ug/g					
Anthracene	ND	0.02	ug/g					
Benzo [a] anthracene	ND	0.02	ug/g					
Benzo [a] pyrene	ND	0.02	ug/g					
Benzo [b] fluoranthene	ND	0.02	ug/g					
Benzo [g,h,i] perylene	ND	0.02	ug/g					
Benzo [k] fluoranthene	ND	0.02	ug/g					
Chrysene	ND	0.02	ug/g					
Dibenzo [a,h] anthracene	ND	0.02	ug/g					
Fluoranthene	ND	0.02	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Fluorene	ND	0.02	ug/g					
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g					
1-Methylnaphthalene	ND	0.02	ug/g					
2-Methylnaphthalene	ND	0.02	ug/g					
Methylnaphthalene (1&2)	ND	0.03	ug/g					
Naphthalene	ND	0.01	ug/g					
Phenanthrene	ND	0.02	ug/g					
Pyrene	ND	0.02	ug/g					
Surrogate: 2-Fluorobiphenyl	*0.413*		*%*	*81.8*	*50-140*			
Surrogate: Terphenyl-d14	*0.423*		*%*	*83.8*	*50-140*			
Volatiles								
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: Toluene-d8	*8.17*		*%*	*102*	*50-140*			
Acetone	ND	0.50	ug/g					
Benzene	ND	0.02	ug/g					
Bromodichloromethane	ND	0.05	ug/g					
Bromoform	ND	0.05	ug/g					
Bromomethane	ND	0.05	ug/g					
Carbon Tetrachloride	ND	0.05	ug/g					
Chlorobenzene	ND	0.05	ug/g					
Chloroform	ND	0.05	ug/g					
Dibromochloromethane	ND	0.05	ug/g					
Dichlorodifluoromethane	ND	0.05	ug/g					
1,2-Dichlorobenzene	ND	0.05	ug/g					
1,3-Dichlorobenzene	ND	0.05	ug/g					
1,4-Dichlorobenzene	ND	0.05	ug/g					
1,1-Dichloroethane	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
1,2-Dichloroethane	ND	0.05	ug/g					
1,1-Dichloroethylene	ND	0.05	ug/g					
cis-1,2-Dichloroethylene	ND	0.05	ug/g					
trans-1,2-Dichloroethylene	ND	0.05	ug/g					
1,2-Dichloropropane	ND	0.05	ug/g					
cis-1,3-Dichloropropylene	ND	0.05	ug/g					
trans-1,3-Dichloropropylene	ND	0.05	ug/g					
1,3-Dichloropropene, total	ND	0.05	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g					
Hexane	ND	0.05	ug/g					
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g					
Methyl Isobutyl Ketone	ND	0.50	ug/g					
Methyl tert-butyl ether	ND	0.05	ug/g					
Methylene Chloride	ND	0.05	ug/g					
Styrene	ND	0.05	ug/g					
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g					
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g					
Tetrachloroethylene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
1,1,1-Trichloroethane	ND	0.05	ug/g					
1,1,2-Trichloroethane	ND	0.05	ug/g					
Trichloroethylene	ND	0.05	ug/g					
Trichlorofluoromethane	ND	0.05	ug/g					
Vinyl chloride	ND	0.02	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: 4-Bromofluorobenzene	*8.48*		*%*	*106*	*50-140*			
Surrogate: Dibromofluoromethane	*9.32*		*%*	*116*	*50-140*			
Surrogate: Toluene-d8	*8.17*		*%*	*102*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	0.82	0.01	N/A	0.80			2.5	30	
Conductivity	372	5	uS/cm	374			0.3	5	
Cyanide, free	ND	0.03	ug/g	ND			NC	35	
pH	7.35	0.05	pH Units	7.31			0.5	10	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	84	4	ug/g	84			0.1	30	
F3 PHCs (C16-C34)	482	8	ug/g	498			3.3	30	
F4 PHCs (C34-C50)	339	6	ug/g	389			13.7	30	
F4G-sg PHCs (gravimetric)	972	50	ug/g	1060			8.2	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	68.6	1.0	ug/g	70.3			2.3	30	
Barium	88.2	1.0	ug/g	98.6			11.1	30	
Beryllium	0.8	0.5	ug/g	0.8			0.1	30	
Boron, available	ND	0.5	ug/g	ND			NC	35	
Boron	32.9	5.0	ug/g	32.6			0.9	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	241	5.0	ug/g	239			0.9	30	
Cobalt	14.5	1.0	ug/g	15.3			4.8	30	
Copper	49.0	5.0	ug/g	50.0			2.0	30	
Lead	31.1	1.0	ug/g	30.8			1.0	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	9.7	1.0	ug/g	9.8			2.0	30	
Nickel	184	5.0	ug/g	183			0.7	30	
Selenium	1.1	1.0	ug/g	1.3			21.6	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	ND	1.0	ug/g	ND			NC	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Vanadium	48.5	10.0	ug/g	51.7			6.3	30	
Zinc	120	20.0	ug/g	122			1.9	30	
mSPLP Leachate Metals									
Antimony	ND	0.5	ug/L	ND			NC	50	
Arsenic	ND	1.0	ug/L	ND			NC	50	
Barium	2.50	1.0	ug/L	2.36			6.0	50	
Beryllium	ND	0.5	ug/L	ND			NC	50	
Boron	ND	10.0	ug/L	ND			NC	50	
Cadmium	ND	0.2	ug/L	ND			NC	50	
Chromium	ND	1.0	ug/L	ND			NC	50	
Cobalt	ND	0.5	ug/L	ND			NC	50	
Copper	ND	0.5	ug/L	ND			NC	50	
Lead	ND	0.2	ug/L	ND			NC	50	
Molybdenum	7.81	0.5	ug/L	7.21			8.0	50	
Nickel	ND	1.0	ug/L	ND			NC	50	
Selenium	ND	1.0	ug/L	ND			NC	50	
Silver	ND	0.2	ug/L	ND			NC	50	
Thallium	ND	0.5	ug/L	ND			NC	50	
Uranium	ND	0.2	ug/L	ND			NC	50	
Vanadium	0.88	0.5	ug/L	0.80			9.2	50	
Zinc	ND	5.0	ug/L	ND			NC	50	
PCBs									
PCBs, total	ND	0.05	ug/g	ND			NC	40	
Surrogate: Decachlorobiphenyl	*0.0762*		*%*		*74.7*	*60-140*			
Physical Characteristics									
% Solids	81.8	0.1	% by Wt.	83.2			1.8	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g	ND			NC	40	
Acenaphthylene	ND	0.02	ug/g	ND			NC	40	
Anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] anthracene	ND	0.02	ug/g	ND			NC	40	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [a] pyrene	ND	0.02	ug/g	ND			NC	40	
Benzo [b] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g	ND			NC	40	
Benzo [k] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Chrysene	ND	0.02	ug/g	ND			NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g	ND			NC	40	
Fluoranthene	0.022	0.02	ug/g	ND			NC	40	
Fluorene	ND	0.02	ug/g	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g	ND			NC	40	
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
Naphthalene	ND	0.01	ug/g	ND			NC	40	
Phenanthrene	ND	0.02	ug/g	ND			NC	40	
Pyrene	ND	0.02	ug/g	ND			NC	40	
Surrogate: 2-Fluorobiphenyl	*0.370*		*%*		*70.9*	*50-140*			
Surrogate: Terphenyl-d14	*0.369*		*%*		*70.7*	*50-140*			
Volatiles									
Acetone	ND	0.50	ug/g	ND			NC	50	
Benzene	ND	0.02	ug/g	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g	ND			NC	50	
Bromoform	ND	0.05	ug/g	ND			NC	50	
Bromomethane	ND	0.05	ug/g	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g	ND			NC	50	
Chloroform	ND	0.05	ug/g	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,2-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g	ND			NC	50	
Hexane	ND	0.05	ug/g	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g	ND			NC	50	
Styrene	ND	0.05	ug/g	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	*9.35*		*%*		*104*	*50-140*			
Surrogate: Dibromofluoromethane	*10.6*		*%*		*117*	*50-140*			
Surrogate: Toluene-d8	*9.24*		*%*		*103*	*50-140*			
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: Toluene-d8	*9.24*		*%*		*103*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	0.365	0.03	ug/g	ND	88.3	70-130			
Hydrocarbons									
F1 PHCs (C6-C10)	68	7	ug/g	ND	81.0	0-200			
F2 PHCs (C10-C16)	168	4	ug/g	84	76.4	60-140			
F3 PHCs (C16-C34)	647	8	ug/g	498	63.2	60-140			
F4 PHCs (C34-C50)	157	6	ug/g	26	77.2	60-140			
F4G-sg PHCs (gravimetric)	1160	50	ug/g	ND	116	80-120			
Metals									
Antimony	50.0	1.0	ug/g	ND	100	70-130			
Arsenic	77.4	1.0	ug/g	28.1	98.6	70-130			
Barium	97.6	1.0	ug/g	39.4	116	70-130			
Beryllium	49.8	0.5	ug/g	ND	98.9	70-130			
Boron, available	5.30	0.5	ug/g	ND	106	70-122			
Boron	58.9	5.0	ug/g	13.1	91.7	70-130			
Cadmium	53.4	0.5	ug/g	ND	107	70-130			
Chromium (VI)	3.7	0.2	ug/g	ND	71.5	70-130			
Chromium	147	5.0	ug/g	95.5	102	70-130			
Cobalt	58.2	1.0	ug/g	6.1	104	70-130			
Copper	72.9	5.0	ug/g	20.0	106	70-130			
Lead	69.2	1.0	ug/g	12.3	114	70-130			
Mercury	1.53	0.1	ug/g	ND	102	70-130			
Molybdenum	49.2	1.0	ug/g	3.9	90.4	70-130			
Nickel	120	5.0	ug/g	73.2	93.6	70-130			
Selenium	47.5	1.0	ug/g	ND	93.9	70-130			
Silver	41.4	0.3	ug/g	ND	82.7	70-130			
Thallium	52.3	1.0	ug/g	ND	104	70-130			
Uranium	52.5	1.0	ug/g	ND	104	70-130			
Vanadium	70.3	10.0	ug/g	20.7	99.3	70-130			
Zinc	103	20.0	ug/g	49.0	108	70-130			
mSPLP Leachate Metals									

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Antimony	45.8	0.5	ug/L	ND	91.6	70-130			
Arsenic	50.3	1.0	ug/L	ND	100	70-130			
Barium	49.3	1.0	ug/L	2.36	93.9	70-130			
Beryllium	45.5	0.5	ug/L	ND	91.0	70-130			
Boron	55.2	10.0	ug/L	ND	96.0	70-130			
Cadmium	47.9	0.2	ug/L	ND	95.8	70-130			
Chromium	49.7	1.0	ug/L	ND	98.6	70-130			
Cobalt	48.5	0.5	ug/L	ND	96.8	70-130			
Copper	50.4	0.5	ug/L	ND	101	70-130			
Lead	49.3	0.2	ug/L	ND	98.3	70-130			
Molybdenum	57.6	0.5	ug/L	7.21	101	70-130			
Nickel	49.2	1.0	ug/L	ND	97.8	70-130			
Selenium	46.4	1.0	ug/L	ND	92.6	70-130			
Silver	43.3	0.2	ug/L	ND	86.5	70-130			
Thallium	47.7	0.5	ug/L	ND	95.3	70-130			
Uranium	47.9	0.2	ug/L	ND	95.5	70-130			
Vanadium	51.6	0.5	ug/L	0.80	102	70-130			
Zinc	52.1	5.0	ug/L	ND	99.3	70-130			
PCBs									
PCBs, total	0.37	0.05	ug/g	ND	89.4	60-140			
Surrogate: Decachlorobiphenyl	*0.0761*		*%*		*74.6*	*60-140*			
Semi-Volatiles									
Acenaphthene	0.473	0.02	ug/g	ND	91.5	50-140			
Acenaphthylene	0.495	0.02	ug/g	ND	95.8	50-140			
Anthracene	0.452	0.02	ug/g	ND	87.4	50-140			
Benzo [a] anthracene	0.442	0.02	ug/g	ND	85.5	50-140			
Benzo [a] pyrene	0.475	0.02	ug/g	ND	92.1	50-140			
Benzo [b] fluoranthene	0.476	0.02	ug/g	ND	92.2	50-140			
Benzo [g,h,i] perylene	0.439	0.02	ug/g	ND	85.0	50-140			
Benzo [k] fluoranthene	0.438	0.02	ug/g	ND	84.8	50-140			
Chrysene	0.427	0.02	ug/g	ND	82.7	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Dibenzo [a,h] anthracene	0.457	0.02	ug/g	ND	88.4	50-140			
Fluoranthene	0.495	0.02	ug/g	ND	95.9	50-140			
Fluorene	0.494	0.02	ug/g	ND	95.7	50-140			
Indeno [1,2,3-cd] pyrene	0.502	0.02	ug/g	ND	97.3	50-140			
1-Methylnaphthalene	0.465	0.02	ug/g	ND	90.0	50-140			
2-Methylnaphthalene	0.476	0.02	ug/g	ND	92.2	50-140			
Naphthalene	0.464	0.01	ug/g	ND	89.9	50-140			
Phenanthrene	0.475	0.02	ug/g	ND	92.0	50-140			
Pyrene	0.475	0.02	ug/g	ND	92.0	50-140			
Surrogate: 2-Fluorobiphenyl	*0.378*		*%*		*72.5*	*50-140*			
Surrogate: Terphenyl-d14	*0.364*		*%*		*69.9*	*50-140*			
Volatiles									
Acetone	157	0.50	ug/g	17.6	139	50-140			
Benzene	46.5	0.02	ug/g	0.249	115	50-140			
Bromodichloromethane	47.5	0.05	ug/g	ND	118	50-140			
Bromoform	41.9	0.05	ug/g	ND	105	50-140			
Bromomethane	2.63	0.05	ug/g	ND	90.1	50-140			
Carbon Tetrachloride	48.8	0.05	ug/g	ND	122	50-140			
Chlorobenzene	38.5	0.05	ug/g	ND	95.9	50-140			
Chloroform	53.6	0.05	ug/g	ND	134	50-140			
Dibromochloromethane	44.8	0.05	ug/g	ND	112	50-140			
Dichlorodifluoromethane	3.34	0.05	ug/g	ND	115	50-140			
1,2-Dichlorobenzene	35.9	0.05	ug/g	ND	89.6	50-140			
1,3-Dichlorobenzene	37.7	0.05	ug/g	ND	94.3	50-140			
1,4-Dichlorobenzene	36.2	0.05	ug/g	ND	90.1	50-140			
1,1-Dichloroethane	51.6	0.05	ug/g	ND	129	50-140			
1,2-Dichloroethane	51.9	0.05	ug/g	ND	130	50-140			
1,1-Dichloroethylene	43.8	0.05	ug/g	ND	109	50-140			
cis-1,2-Dichloroethylene	50.8	0.05	ug/g	ND	127	50-140			
trans-1,2-Dichloroethylene	51.3	0.05	ug/g	ND	128	50-140			
1,2-Dichloropropane	45.8	0.05	ug/g	ND	114	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
cis-1,3-Dichloropropylene	44.5	0.05	ug/g	ND	111	50-140			
trans-1,3-Dichloropropylene	45.7	0.05	ug/g	ND	114	50-140			
Ethylbenzene	38.9	0.05	ug/g	0.432	96.4	50-140			
Ethylene dibromide (dibromoethane, 1,2-)	48.6	0.05	ug/g	ND	122	50-140			
Hexane	41.8	0.05	ug/g	0.756	103	50-140			
Methyl Ethyl Ketone (2-Butanone)	136	0.50	ug/g	ND	136	50-140			
Methyl Isobutyl Ketone	89.9	0.50	ug/g	ND	90.1	50-140			
Methyl tert-butyl ether	103	0.05	ug/g	ND	103	50-140			
Methylene Chloride	55.6	0.05	ug/g	ND	139	50-140			
Styrene	44.7	0.05	ug/g	ND	112	50-140			
1,1,1,2-Tetrachloroethane	38.5	0.05	ug/g	ND	96.4	50-140			
1,1,2,2-Tetrachloroethane	36.8	0.05	ug/g	ND	92.1	50-140			
Tetrachloroethylene	40.0	0.05	ug/g	ND	99.8	50-140			
Toluene	41.0	0.05	ug/g	2.13	97.0	50-140			
1,1,1-Trichloroethane	50.1	0.05	ug/g	ND	125	50-140			
1,1,2-Trichloroethane	42.7	0.05	ug/g	ND	107	50-140			
Trichloroethylene	43.8	0.05	ug/g	ND	110	50-140			
Trichlorofluoromethane	36.0	0.05	ug/g	ND	89.7	50-140			
Vinyl chloride	54.8	0.02	ug/g	ND	135	50-140			
m,p-Xylenes	81.7	0.05	ug/g	2.40	98.9	50-140			
o-Xylene	40.8	0.05	ug/g	1.41	98.7	50-140			
Surrogate: 4-Bromofluorobenzene	*8.86*		*%*		*95.5*	*50-140*			
Surrogate: Dibromofluoromethane	*11.9*		*%*		*128*	*50-140*			
Surrogate: Toluene-d8	*9.07*		*%*		*97.7*	*50-140*			
Benzene	46.5	0.02	ug/g	0.249	115	50-140			
Ethylbenzene	38.9	0.05	ug/g	0.432	96.4	50-140			
Toluene	41.0	0.05	ug/g	2.13	97.0	50-140			
m,p-Xylenes	81.7	0.05	ug/g	2.40	98.9	50-140			
o-Xylene	40.8	0.05	ug/g	1.41	98.7	50-140			
Surrogate: Toluene-d8	*9.07*		*%*		*97.7*	*50-140*			

Qualifier Notes:

Sample Qualifiers :

1: Elevated reporting limit due to dilution required because of high target analyte concentration.

Applies to Samples: 6-1, 7-1, 2-1A

2: GC-FID signal did not return to baseline by C50

Applies to Samples: 6-1, 7-1, 7-2, 2-1A, 2-1B

6: Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

Applies to Samples: 7-2

Sample Data Revisions:

None

Work Order Revisions / Comments:

Revision - 1: This report has been revised to contain additional data to samples 4, 13, 14, 16 and 21.

Revision - 2: This report has been revised to contain additional data to samples 9, 16 and 26.

Revision - 3: This report has been revised to contain reanalyzed data for sample 6.

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

PARACEL LABORATORIES LTD. | T R R

Paracel ID: 2537136

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2537136	

Client Name: SERTAS Group	Project Ref: 2501E038	Page 1 of 1
Contact Name: Paige Sarafin	Quote #: Erwin	**Turnaround Time**
Address: 4510 Rhodes Drive, Unit 210, Windsor, ON	PO #:	☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular
	E-mail: paige.sarafin@sertas.ca; clay.sereres@sertas.ca	Date Required:
Telephone: 519 981 2724		

☒ REG 153/04 ☐ REG 406/19

☐ Table 1 ☐ Agri/Other ☒ Med/Fine
☐ Table 2 ☐ Res/Park ☐ Coarse
☒ Table 3 ☒ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☒ No

Other Regulation

☐ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU - Storm
Mun: ___
☐ Other: ___

Matrix Type: S (Soil/Sed.) **GW** (Ground Water) **SW** (Surface Water) **SS** (Storm/Sanitary Sewer) **P** (Paint) **A** (Air) **O** (Other)

Required Analysis

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full Metals	EC, SAR, pH	PAHs	PHCs	BTEXs	VOCs	PCBs	OCs			HOLD
1	3-1B	S		2	-	Sept. 8 2025	9 00											X
2	3-2	S		2	-	Sept. 8 2025	9 10											X
3	3-3A	S		2	-	Sept. 8 2025	9 20											X
4	6-1	S		2	-	Sept. 8 2025	11 00											X
5	6-2	S		2	-	Sept. 8 2025	11 10											X
6	6-3	S		2	-	Sept. 8 2025	11 30	X	X	X	X	X						
7	DUP1	S		2	-	Sept. 8 2025	7 00	X	X	X	X	X						
8	6-4	S		2	-	Sept. 8 2025	11 30											X
9	6-5	S			-	Sept. 8 2025	11 40	X	X	X	X	X						X
10	6-6	S			-	Sept. 8 2025	11 50											X

Comments:

Method of Delivery: Walkin

Unless otherwise negotiated by the parties, by signing Paracel's Chain of Custody form, you are agreeing to Paracel Laboratories Terms and Conditions and are subject to the terms and conditions thereof. Available at www.paracellabs.com

Relinquished By (Sign):	Received at Depot: K. Jakobson	Received at Lab:	Verified By: K. Jakobson
Relinquished By (Print): Paige Sarafin	Date/Time: Sept 9/25 11:00	Date/Time: 9/10/25 9:45	Date/Time: Sept. 9/25 11:0
Date/Time:	Temperature: 9.9 °C	Temperature: 8.7 C	pH Verified: ☐ By:

PARACEL LABORATORIES LTD.

Paracel ID: 2537136

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2537136	

Client Name: SERTAS Group	Project Ref: 2501E038	Page 2 of 4
Contact Name: Paige Sarafin	Quote #: RAWIN	Turnaround Time: ☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular
Address: 4510 Rhodes Drive, Unit 210, Windsor, ON	PO #:	Date Required:
Telephone: 519 981 2724	E-mail: paige.sarafin@sertas.ca; clay.sereres@sertas.ca	

☒ REG 153/04 ☐ REG 406/19 | Other Regulation

☐ Table 1 ☐ Agri/Other ☒ Med/Fine | ☐ REG 558 ☐ PWQO

☐ Table 2 ☐ Res/Park ☐ Coarse | ☐ CCME ☐ MISA

☒ Table 3 ☐ Ind/Comm | ☐ SU - Sani ☐ SU - Storm

☐ Table ___ | Mun: ___

For RSC: ☐ Yes ☒ No | ☐ Other: ___

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full Metals	EC, SAR, pH	PAHs	PHCs	BTEXs	VOCs	PCBs	OCs			HOLD
1	6-7	S		2	-	Sept. 8 2025	12 00											
2	6-8	S		2	-	Sept. 8 2025	12 10											X
3	7-1	S		2	-	Sept. 8 2025	200											X
4	7-2	S		2	-	Sept. 8 2025	2 10	X	X		X		X	X				
5	7-3	S		2	-	Sept. 8 2025	2 20											X
6	7-4	S		2	-	Sept. 8 2025	2 30	X	X		X		X	X				X
7	7-5	S		2	-	Sept. 8 2025	2 40											X
8	7-6	S		2	-	Sept. 8 2025	2 50											X
9	7-7	S		2	-	Sept. 8 2025	2 60											X
10	7-8	S		2	-	Sept. 8 2025	300											X

Comments:

Method of Delivery: WALK IN

Unless otherwise negotiated by the parties, by signing Paracel's Chain of Custody form, you are agreeing to Paracel Laboratories Terms and Conditions and are subject to the terms and conditions thereof. Available at www.paracellabs.com

Relinquished By (Sign):	Received at Depot: K. Jakobsen	Received at Lab: JW
Relinquished By (Print): Paige Sarafin	Date/Time: Sept. 9/25 10:00	Date/Time: Sept. 9/25 9:45
Date/Time:	Temperature: 9.9 °C	Temperature: 8.7
		Verified By: K. Jakobsen
		Date/Time: Sept. 9/25 14:00
		pH Verified: ☐ By:

PARACEL LABORATORIES LTD. | T R R

Paracel ID: 2537136

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2537136	

Client Name: SERTAS Group	Project Ref: 2501E038	Page 3 of 4
Contact Name: Paige Sarafin	Quote #: enwin	Turnaround Time
Address: 4510 Rhodes Drive, Unit 210, Windsor, ON	PO #:	☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular
Telephone: 519 981 2724	E-mail: paige.sarafin@sertas.ca; clay.sereres@sertas.ca	Date Required:

☒ REG 153/04 ☐ REG 406/19

Table 1 ☐ Agri/Other ☒ Med/Fine
Table 2 ☐ Res/Park ☐ Coarse
☒ Table 3 ☒ Ind/Comm
☐ Table ___
For RSC: ☐ Yes ☒ No

Other Regulation: ☐ REG 558 ☐ PWQO ☐ CCME ☐ MISA ☐ SU - Sani ☐ SU - Storm ☐ Mun: ☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Full Metals	EC, SAR, pH	PAHs	PHCs	BTEXs	VOCs	PCBs	OCs			HOLD
1	2-1A	S		2	-	Sept. 8 2025	3 30											X
2	2-1B	S		2	-	Sept. 8 2025	3 35	X	X	X	X		X					
3	2-2	S		2	-	Sept. 8 2025	3 40											X
4	2-3A	S		2	-	Sept. 8 2025	3 45											X
5	2-3B	S		2	-	Sept. 8 2025	3 50											X
6	2-4	S		2	-	Sept. 8 2025	4 00	X	X	X								
7	2-5	S		2	-	Sept. 8 2025	4 10											X
8	2-6	S		2	-	Sept. 8 2025	4 15											X
9	2-7	S		2	-	Sept. 8 2025	4 20				X	X						
10	2-8	S		2	-	Sept. 8 2025	4 30											X

Comments:

Method of Delivery: Walk in

Unless otherwise negotiated by the parties, by signing Paracel's Chain of Custody form, you are agreeing to Paracel Laboratories Terms and Conditions and are subject to the terms and conditions thereof. Available at www.paracellabs.com

Relinquished By (Sign):	Received at Depot: K. Jakobsen	Received at Lab: JW	Verified By: K. Jakobsen
Relinquished By (Print): Paige Sarafin	Date/Time: Sept 9/25 10:00	Date/Time: Sept 9/25 14:45	Date/Time: Sept. 9/25 14:00
Date/Time:	Temperature: 9.9 °C	Temperature: 8.7C	pH Verified: ☐ By:

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Sample Chromatograms

SERTAS

Report Date: 25-Sep-25
Order Date: 09-Sep-25

Project Description: **2501E038**

Order #: 2537136

GC-FID chromatograms for the samples listed below are included in the following pages. These chromatograms are a supplement to the Certificate of Analysis from the same work order

Paracel ID:	Client ID:
2537136-04	6-1
2537136-21	2-1A

PARACEL LABORATORIES LTD.

Order #: 2537136

Sample Chromatograms

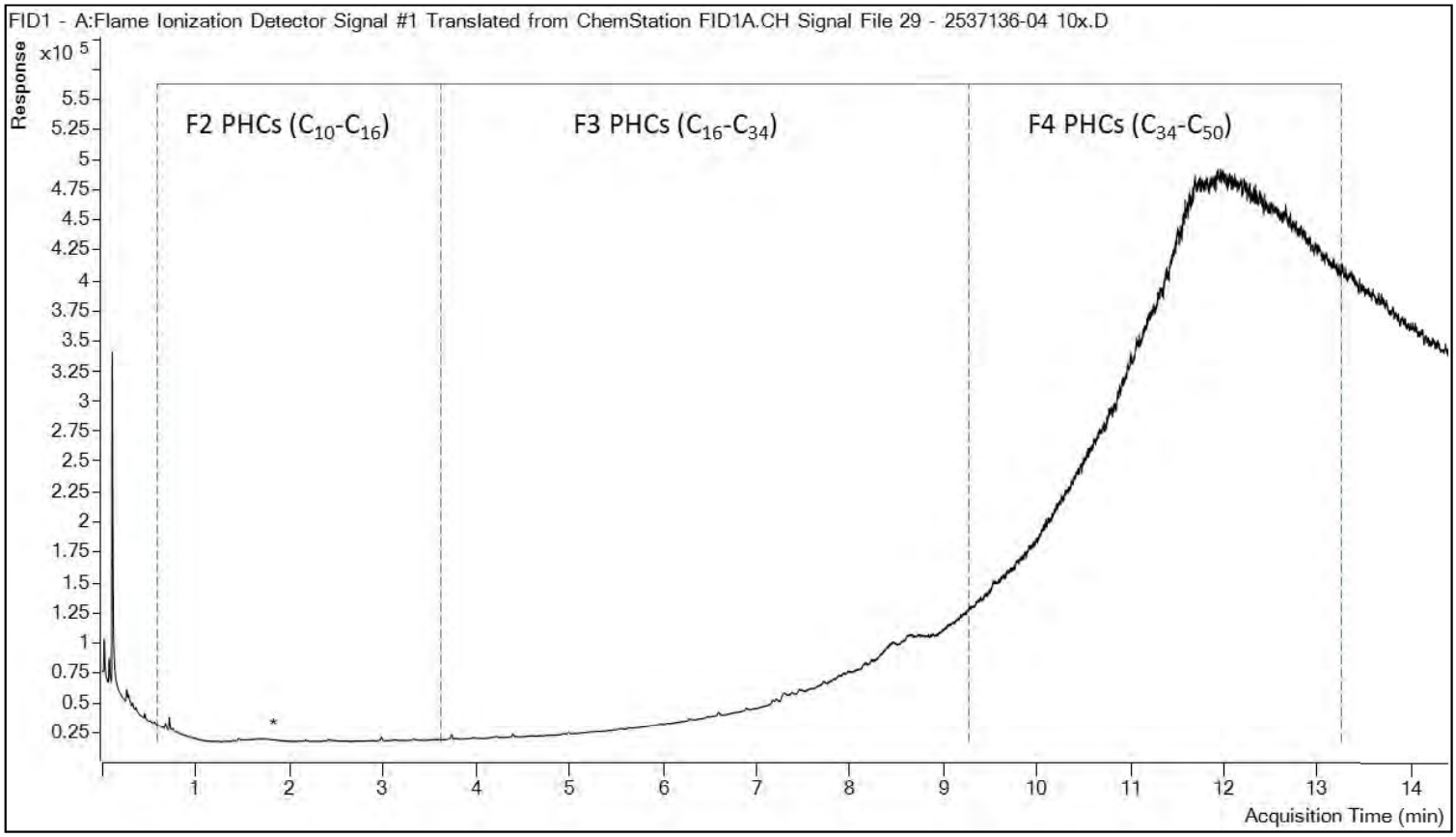
Client: **SERTAS**

Project Description: **2501E038**

Report Date: 25-Sep-25

Order Date: 09-Sep-25

Figure 1: GC-FID Chromatogram for the sample *6-1*; Paracel ID: *2537136-04*



PARACEL LABORATORIES LTD.

Order #: 2537136

Sample Chromatograms

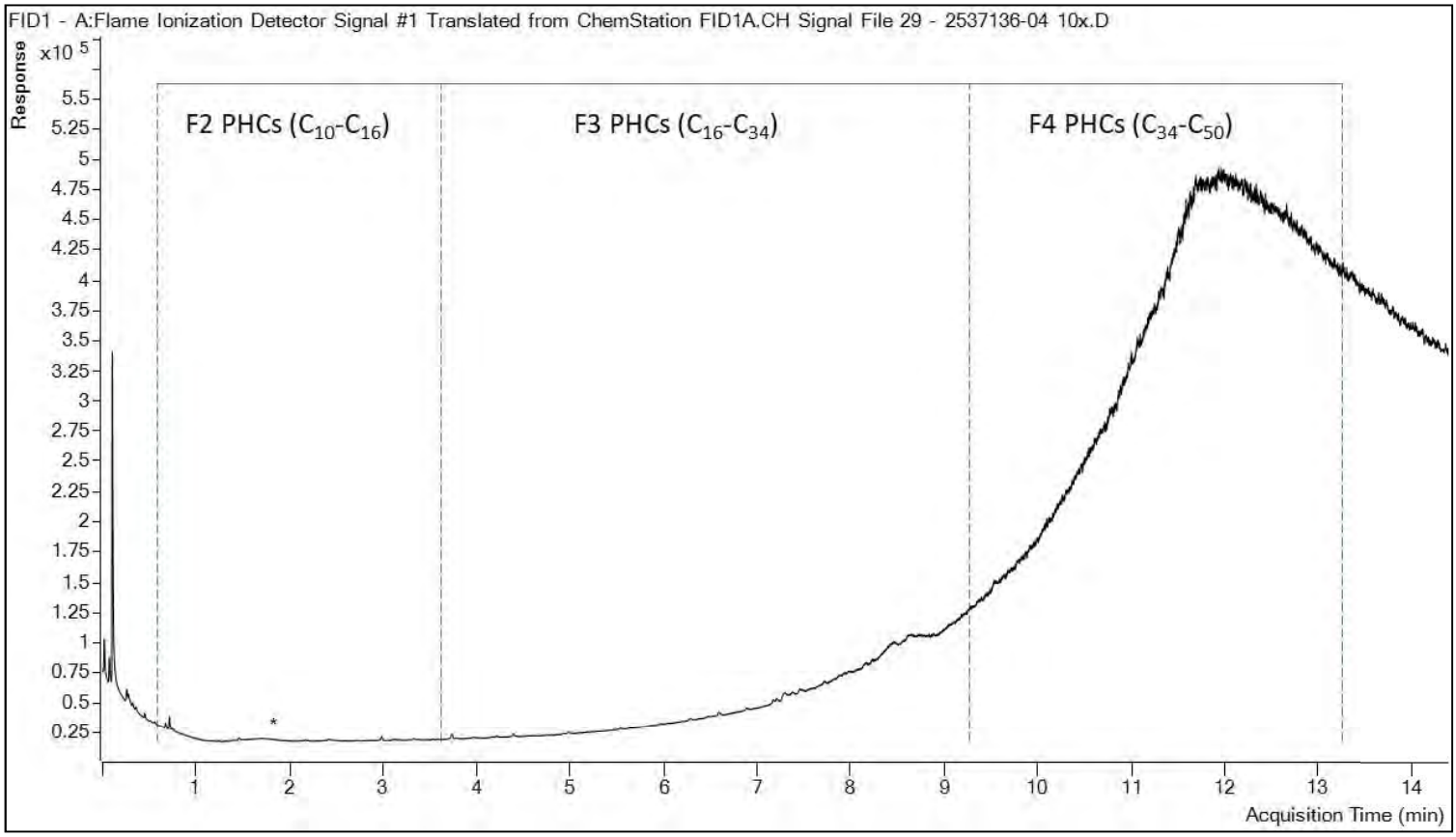
Client: **SERTAS**

Project Description: **2501E038**

Report Date: 25-Sep-25

Order Date: 09-Sep-25

Figure 2: GC-FID Chromatogram for the sample *2-1A*; Paracel ID: *2537136-21*



PARACEL LABORATORIES LTD. | TRUSTED. RESPONSIVE. RELIABLE.

Sample Chromatograms

SERTAS

Report Date: 25-Sep-25
Order Date: 09-Sep-25

Project Description: **2501E038**

Order #: 2537264

GC-FID chromatograms for the samples listed below are included in the following pages. These chromatograms are a supplement to the Certificate of Analysis from the same work order

Paracel ID:	Client ID:
2537264-01	5-1A
2537264-13	8-1

PARACEL LABORATORIES LTD.

Order #: 2537264

Sample Chromatograms

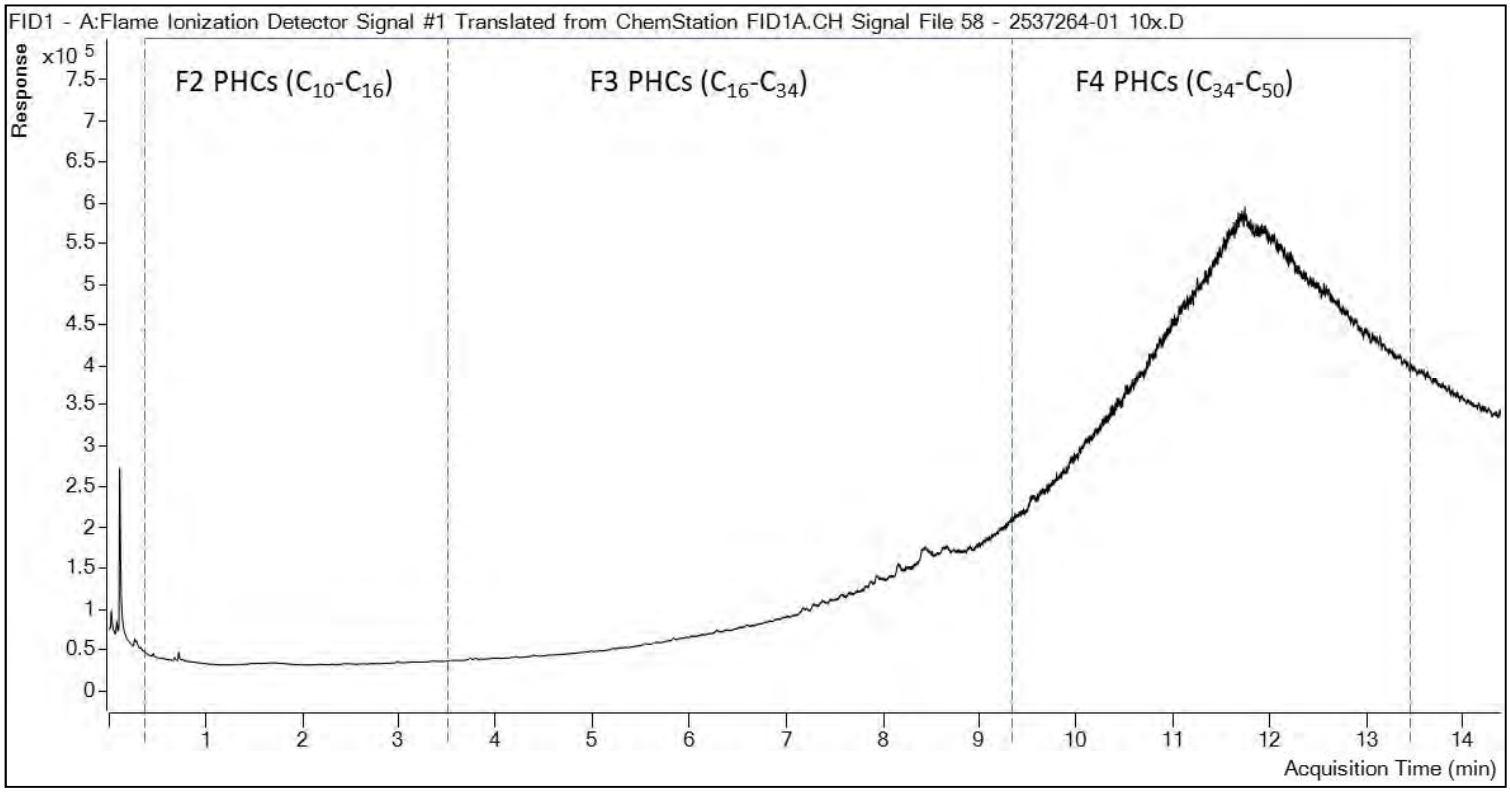
Client: **SERTAS**

Project Description: **2501E038**

Report Date: 25-Sep-25

Order Date: 09-Sep-25

Figure 1: GC-FID Chromatogram for the sample *5-1A*; Paracel ID: *2537264-01*



PARACEL LABORATORIES LTD.

Order #: 2537264

Sample Chromatograms

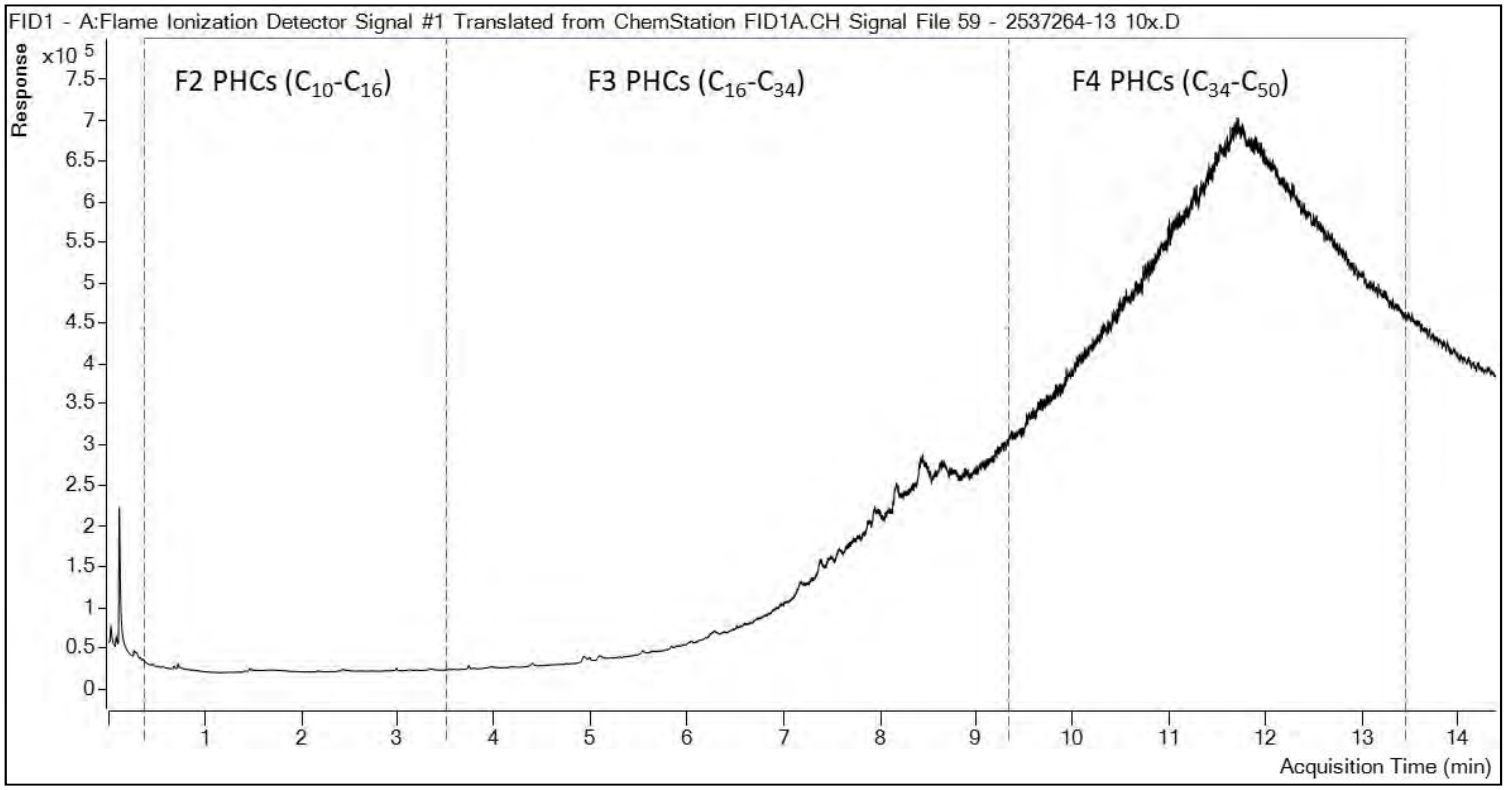
Client: **SERTAS**

Project Description: **2501E038**

Report Date: 25-Sep-25

Order Date: 09-Sep-25

Figure 2: GC-FID Chromatogram for the sample *8-1*; Paracel ID: *2537264-13*



Sertas Group Limited
4510 Rhodes Dr. Windsor, Ont.
N8W 5K5

Wash loss Passing 75µm

MTO LS-601 / ASTM C117

Project Details

Project Number: 2501E038.2000
Project Client: Enwin
Project Name: Water Tower - Phase 2

Lab number: 337
Method: Plain Water Used

Date Sampled: 9-Sep-2025
Date Received: 9-Sep-2025
Date Tested: 24-Sep-2025

Location: Soil
Source of Material: BH 5, Sa. 3

Sampled by: SS
Tested by: JP

Test Results

Moisture content of sample	**13.1%**	
Total weight of sample	**369.7**	g
Total weight of sample after wash	**136.2**	g
Wash loss percent Passing 80µm	**63.2%**	

Signed by: _____
Justin P., C.Tech. / Lab Manager

SGL-WL-0048A

More information available upon request

Sertas Group Limited
4510 Rhodes Dr. Windsor, Ont.
N8W 5K5

Wash loss Passing 75µm

MTO LS-601 / ASTM C117

Project Details

Project Number: 2501E038.2000
Project Client: Enwin
Project Name: Water Tower - Phase 2

Lab number: 338
Method: Plain Water Used

Date Sampled: 9-Sep-2025
Date Received: 9-Sep-2025
Date Tested: 24-Sep-2025

Location: Soil
Source of Material: BH 8, Sa. 7

Sampled by: SS
Tested by: JP

Test Results

Moisture content of sample	**15.0%**
Total weight of sample	**481.1** g
Total weight of sample after wash	**165.1** g
Wash loss percent Passing 80µm	**65.7%**

Signed by: _____
Justin P., C.Tech. / Lab Manager

SGL-WL-0048A

More information available upon request

Sertas Group Limited
4510 Rhodes Dr. Windsor, Ont.
N8W 5K5

Wash loss Passing 75µm

MTO LS-601 / ASTM C117

Project Details

Project Number: 2501E038.2000
Project Client: Enwin
Project Name: Water Tower - Phase 2

Lab number: 339
Method: Plain Water Used

Date Sampled: 9-Sep-2025
Date Received: 9-Sep-2025
Date Tested: 24-Sep-2025

Location: Soil
Source of Material: BH 2, Sa. 4

Sampled by: SS
Tested by: JP

Test Results

Moisture content of sample	**12.8%**	
Total weight of sample	**422.7**	g
Total weight of sample after wash	**131.7**	g
Wash loss percent Passing 80µm	**68.8%**	

Signed by: _____
Justin P., C.Tech. / Lab Manager

SGL-WL-0048A

More information available upon request

APPENDIX C

Notification of Intent to Use Non-Potable Groundwater Standards

Paige Sarafin

From: Webb, Kevin <KWebb@citywindsor.ca>
Sent: October 6, 2025 2:29 PM
To: Clay Sereres; clerks
Cc: Paige Sarafin; Manzon, Chris (Enwin); Azzopardi, Taryn
Subject: RE: Non-Potable GW Standards
Attachments: Map - Water Wells.pdf

Afternoon Clay,

Thanks for speaking with me today regarding your request below.

After Taryn's review of our records in the City files, and the well records, we do **confirm that the City of Windsor does not have any objections to the application of Table 3 ICC SCS for this Site**, as requested.

We also discussed the two wells that exist near Staples and a neighbouring farmland (which both of these wells are not located on the potential property which consists of two (2) adjoining parcels: Parcel A (4450 Concession 7) and Parcel B (no assigned municipal address), both legally described as portions of Part W ½ Lot 15, Concession 7, Sandwich East, City of Windsor, and referenced collectively as **4450 7th Concession Road, Windsor**.). You informed me that these two wells would not be an issue when completing your Table 3 ICC SCS for this site. I have included our research for the 3 wells and have attached the information we recovered during our research. Confirmation should be performed by your group to ensure that all of these wells are not in use.

The information below is what was shared with us.

- A Phase Two ESA has been completed, he mentioned potential contamination, and said they are looking to apply the Table 3 Non-Potable Standards.
- They are not redeveloping to a more sensitive use and no RSC is required. Property is vacant, sounds like previously commercial or industrial. Sounds like they are looking to develop the property with a water tower.
- Chris indicated that there was a potable water well record identified on or near the property, but they were unable to locate it, and it is inferred that the well was abandoned.

I do hope that this email provides you with the approval that you require.

Kevin Webb I Manager Environmental Quality

THE CITY OF WINDSOR ONTARIO, CANADA

Office of the Commissioner of Infrastructure Services I Pollution Control
4155 Ojibway Parkway I Windsor ON I N9C 4A5
Office: 519 253 7217 ext 3330
Cell: 519 791 7844
kwebb@citywindsor.ca

www.citywindsor.ca

From: Clay Sereres <clay.sereres@sertas.ca>
Sent: Friday, October 3, 2025 10:11 AM
To: Webb, Kevin <KWebb@citywindsor.ca>
Cc: Paige Sarafin <paige.sarafin@sertas.ca>; Manzon, Chris (Enwin) <cmanzon@enwin.com>; Azzopardi, Taryn <TAzzopardi@citywindsor.ca>
Subject: FW: Non-Potable GW Standards
Importance: High

Some people who received this message don't often get email from clay.sereres@sertas.ca. Learn why this is important

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Kevin – Sending this to you directly in the event that you have any questions during the City's review. Understanding you are out of office until next week, but feel free to call my cell at any time.

Thanks,

Clay

Clayton Sereres, P.Geo., ENV SP
Director – Environmental
He/Him/His

1-519-822-3442, ext. 1 1-519-563-9118
www.sertas.ca clay.sereres@sertas.ca
4510 Rhodes Drive, Unit 210, Windsor, ON N8W 5K5

From: Paige Sarafin
Sent: September 30, 2025 10:04 AM
To: 'clerks@citywindsor.ca' <clerks@citywindsor.ca>
Subject: Non-Potable GW Standards
Importance: High

Dear City Clerk,

Please note that this evaluation is **not** intended for the filing of a Record of Site Condition under Ontario Regulation 153/04 and is for due diligence purposes.

The Site under review consists of two (2) adjoining parcels: Parcel A (4450 Concession 7) and Parcel B (no assigned municipal address), both legally described as portions of Part W ½ Lot 15, Concession 7, Sandwich East, City of Windsor, and referenced collectively as **4450 7th Concession Road, Windsor**. Together, the parcels form a triangular-shaped property comprising grassed areas and compacted fill with gravel and remnants of concrete and asphalt. An entrance is located along the western boundary. Evidence of a former structure was noted during reconnaissance, including small footings and concrete blocks. I've attached a Site Plan below for reference.

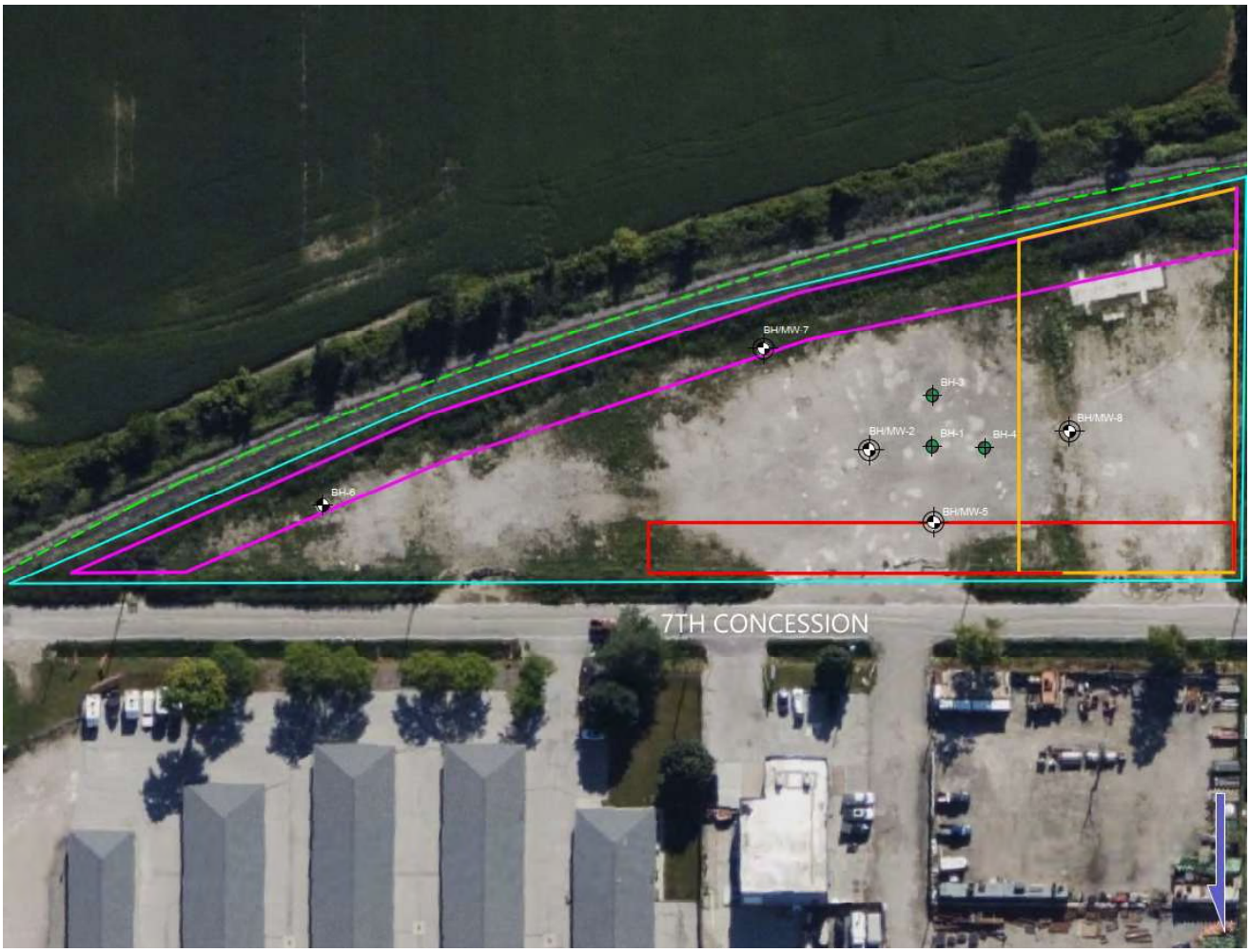
Current use: Vacant, with the exception of a small residential trailer.
Proposed use: Community Use

A potable (domestic) well record was identified for the property (installed in 1960); however, the well could not be located during multiple site visits, including reconnaissance on July 24, 2025. Two additional well records were identified off-site: one for agricultural use on farmland south of the property, and another installed in 1952 for domestic use within Staples Plaza at 4511 Walker Road. The latter is considered abandoned and no longer in use, as the area is serviced by the municipal drinking water system.

The property is not located within a wellhead protection area or any other designation identified in the municipal official plan for groundwater protection.

Given the Site's location within a mixed urban/agricultural area, and the proposed redevelopment for Community Use, analytical results have been evaluated against **Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition for Industrial/Commercial/Community land use, fine-medium textured soils (Table 3 ICC SCS).**

We kindly request confirmation from the City of Windsor if there are any objections to the application of Table 3 ICC SCS for this Site.



Thank you,

Paige Sarafin, MSc., EPt
Senior Environmental Specialist
She/her

1-519-822-3442 1-519-981-2724
www.sertas.ca paige.sarafin@sertas.ca
4510 Rhodes Drive, Unit 210, Windsor, ON N8X 5K5



Latitude:42.26021, Longitude:-82.96895 (UTM Zone:17, Easting:337599, Northing:4680544)

APPENDIX D

Environmental Limitations

ENVIRNMENTAL REPORT LIMITATIONS

No additional warranties or representations, whether expressed or implied, are made regarding the professional services provided under the terms of our Contract or the conclusions presented herein.

The conclusions in this report are partially based on visual observations of the Site and related structures. Our findings do not extend to portions of the Site or structures that, in our opinion, were not reasonably accessible for direct observation.

The environmental conditions at the Site were assessed within the above limitations, taking into account applicable environmental regulations as of the inspection date. No review of compliance by past owners or occupants with local, provincial, or federal laws and regulations was performed.

Site history research included information obtained from third parties and representatives of the owner. Unless specifically noted, no attempt has been made to independently verify the accuracy of this information.

Testing was conducted according to the terms outlined in our Contract. Additional substances or varying quantities of those tested for may exist on-site and could be revealed through other testing methods not included in our Contract.

Due to the limitations noted above, different environmental conditions from those presented in this report may be present. If different conditions are encountered, we must be notified to determine if modifications to the report's conclusions are necessary.

Engaging our services during any remedial actions will allow us to monitor compliance with our recommendations and make adjustments as needed based on field conditions.

This report is intended solely for the use of the addressee unless otherwise stated in the report or Contract. Any third-party use, reliance, or decisions based on the information or conclusions in this report are at the third party's own risk. We accept no liability for any loss or damage suffered by third parties due to actions taken or not taken based on this report.

This report may not be shared with any third party without our written permission.

Provided the report is deemed reliable and is less than 12 months old, we will issue a third-party reliance letter to parties identified by the client in writing, upon payment of the applicable fee. All third parties relying on this report agree to be bound by our proposal and standard reliance terms. Our standard reliance letter specifies that we are not liable for any damages arising from third-party reliance on the report. No third-party reliance is permitted without such an agreement.





www.sertas.ca

Stantec

Stantec is a global leader in sustainable engineering, architecture, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.

Stantec Consulting Ltd.
100-2555 Ouellette Avenue
Windsor ON N8X 1L9
stantec.com