Hydrogeological Assessment Report

Proposed 8-Storey Multi-Unit Apartment Building

424 Churchill Avenue North
Ottawa, ON

Prepared for:
Churchill Properties Inc.
145 Select Ave, Unit 5
Scarborough, ON
M1V 5M8

Englobe Reference No. 02103035.000
Final Report | Version 01

December 2023

Churchill Properties Inc.

Englobe Reference No. 02103035.000

Prepared by:

Adam Kvas, EIT
Project Manager

Reviewed by:

Kevin Bailey, M.A.Sc., P.Eng.
Team Lead – Environment

Approved by:

Sonny Sundaram, Ph. D, P. Geo.
Senior Technical Director, Environment

Property and Confidentiality

“This document is intended solely for the purposes stated herein. Any use of the report must take into consideration the purpose and scope of the mandate under which the report was prepared, as well as the limitations and conditions specified therein and the state of scientific knowledge at the time the report is issued. Englobe Corp. does not make any warranties or representations other than those expressly contained in the report.

This document is the work of Englobe Corp. Any reproduction, distribution, or adaptation, in whole or in part, is strictly prohibited without the prior written permission of Englobe and its Client. For greater certainty, the use of report excerpts is strictly prohibited without the written permission of Englobe and its Client, and the report should be read and considered in its entirety.

No information contained in this report may be used by any third party without the written permission of Englobe and its Client. Englobe Corp. disclaims all liability for any unauthorized reproduction, distribution, adaptation, or use of the report.

If tests have been performed, the results of these tests are valid only for the sample described in this report.

Subcontractors of Englobe who may have performed laboratory work are duly evaluated according to the purchasing procedure of our quality system. For further information or details, please contact your project manager.”

TABLE OF CONTENTS

TABLES

APPENDICES

1 INTRODUCTION

Englobe Corporation (Englobe) was retained by Churchill Properties Inc. (the "Client") to prepare a Hydrogeological Assessment Report ("Report") for the property located at 424 Churchill Avenue North in Ottawa, Ontario (the "Site"), in support of a proposed mixed-use development project.

Englobe, formerly DST, had previously conducted geotechnical and environmental investigations to evaluate the subsurface conditions at the Site of the proposed Project. At the time of the preliminary investigation, the Project was in the concept design stage and was based on a proposed six-storey residential building with up to 2 levels of underground parking, founded at an approximate elevation of El. 68.3 meters above sea level (masl).

It is Englobe's understanding that the project has moved to the detailed design phase and is now comprised of an eight-storey multi-unit apartment building with two levels of underground parking. Based on available architectural and civil drawings, the proposed new founding depth will be approximately El 64.6 masl. Groundwater levels measured during the July 2021 geotechnical report range from approximate elevations of El. 68.4 to 68.8 masl, indicating that the excavation of the new building will be approximately 4.0 meters below the measured groundwater table. Based on this understanding, Englobe recommended a hydrogeological assessment and supplementary geotechnical and environmental investigations, which was authorized by Ms. Jemmy Taing on behalf of the Client on June 5, 2023. The results of the geotechnical investigation and supplementary environmental investigation are provided under separate cover.

The Ministry of the Environment, Conservation, and Parks (MECP) requires a Category 3 Permit to Take Water (PTTW) for construction dewatering in excess of 400,000 Litres per day (L/day), while construction dewatering between 50,000 and 400,000 L/day is eligible for registration under the Environmental Activity and Sector Registry (EASR). Englobe understands that dewatering rates for the Site have yet to be estimated. Therefore, the purpose of this Report is to provide estimated groundwater dewatering volumes in support of determining which type of permit or registration will be required during construction.

This Report has the following main objectives:

- Provide a summary of background information on soil, surface water, and groundwater through online databases and existing and/or concurrent investigation reports;
- Process the field test data and laboratory analytical data;
- Estimate temporary groundwater dewatering volumes based on the obtained data and the assumed excavation dimensions based on the provided conceptual site plans; and,
- Provide recommendations to obtain an EASR or PTTW, as required, along with recommendations for additional reporting work to support the associated permit application.

This Report has been prepared specifically and solely for the Project described herein. It presents the factual results of the field investigation and provides temporary dewatering estimates based on the assumed construction methodologies and duration. This Report is also subject to the statement of limitations included in **Section 9.**

2 BACKGROUND

2.1 Document Review

To support the drafting of this Report, the following historical reports were reviewed:

2.1.1 Phase I & Phase II Environmental Site Assessment, 424 Churchill Avenue North, (DST, 2021).

A combined Phase I/II Environmental Site Assessment conducted by DST Consulting Engineers (DST; now operating as Englobe) in 2021 identified 6 areas of potential environmental concern on Site. The potentially contaminating activities identified were the following:

- Existing and former laundromat and dry cleaning facility
- Historical presence of an electric rail line right of way
- Historical presence of a plate-making and engraver workshop, as well as the historical presence of commercial printers
- Historical presence of suspected laundromat and/or dry cleaner
- Historical presence of gasoline service station
- Historical presence of gasoline service station and USTs as well as historical automotive repair shop and underground storage tanks (USTs)

Based on this evaluation, DST advanced a drill program that consisted of advancing three boreholes all instrumented as groundwater monitoring wells. Englobe collected soil and groundwater samples and compared them to the Ontario Ministry of the Environment, Conservation and Parks (MECP) "*Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act*", April 2011 applicable Site Condition Standards (SCSs).

- Based on the laboratory analytical results, concentrations of all analyzed parameters [petroleum hydrocarbon (PHC) fractions F1 to F4 and volatile organic compounds (VOCs)] in the laboratory-submitted soil samples met the applicable MECP Table 7 standard.
- Concentrations of 1,1- dichloroethylene, 1,2-dichloroethylene (cis), 1,2-dichloroethylene (trans), tetrachloroethylene, trichloroethylene, vinyl chloride, PHC fraction 2 (PHC F2) and PHC F3 in submitted groundwater samples exceeded the applicable MECP Table 7 standard.

2.1.2 Preliminary Geotechnical Investigation Report for Proposed Multi-Storey Residential Development at 424 Churchill Avenue North, (DST, 2021).

A Preliminary Geotechnical Investigation conducted by DST was completed in conjunction with the Phase II ESA above. It was understood that the Project was in the concept design stage and consisted of a proposed six-storey residential building with up to two underground levels with footings at an approximate depth of seven m below ground surface (mbgs). The geotechnical investigation report described the Site stratigraphy encountered in three boreholes (MW21-01, MW21-02, and MW21-03) as generally consisting of surficial asphalt overlying a shallow sandy silt layer silty followed by limestone bedrock encountered 1.0 to 1.5 m below ground surface (mbgs). MW21-01 and MW21-03 were advanced through the bedrock using pneumatic drilling methods. Therefore, rock core samples could not be collected to confirm bedrock type and quality at these locations. DST noted that heavily weathered limestone bedrock

was encountered in MW21-02 between 1.0 and 1.5 mbgs and slightly weathered to intact bedrock between 1.5 to 10.0 mbgs.

The groundwater level was between 6.5 to 6.9 mbgs in April 2021. Based on DST's understanding of the Project at the time, excavations extending below the groundwater table were anticipated, and a Hydrogeological Assessment was recommended to assess the expected groundwater inflows during the construction.

2.1.3 Due Diligence Risk Assessment, 424 Churchill Avenue North, (Englobe, 2023).

Englobe completed a Due Diligence Risk Assessment (DDRA) in general compliance with the format of the human health risk assessment (HHRA) and Ecological Risk Assessment (ERA) conducted under Ontario Regulation 153/04. The results of the risk assessment determined the Site was suitable for future residential use with the use of suitable MECP approved Risk Management Measures (RMMs). A key RMM presented was a health and safety plan for subsurface workers operating at the Site that required additional ventilation of trench environments since unacceptable risks were identified for construction workers for inhalation of trench air.

2.1.4 Phase One Environmental Site Assessment, 424 Churchill Avenue North, (Englobe, 2023).

This Phase One ESA report was prepared in accordance with O. Reg. 153/04 (as amended) since it was understood that the report would be utilized as supporting documentation for the filing of an record of site condition (RSC) in accordance with O. Reg. 153/04, as amended. Three areas of Potential Environmental Concern (APECs) were identified at the Phase One Property:

- Operation of Dry-Cleaning Equipment (where chemicals are used)
- Undefined No. 1. Application of salt for de-icing purposes for the safety of vehicular or pedestrian traffic
- Importation of Fill Material of Unknown Quality

Further investigation in the form of a Phase Two ESA was recommended to assess the environmental quality of the soil and groundwater at the Site.

2.1.5 Phase Two Environmental Site Assessment, 424 Churchill Avenue North, (Englobe, 2023).

Englobe prepared an updated Phase Two ESA report in accordance with O. Reg. 153/04, as amended, utilizing the field investigation results completed in 2021. The results of the field investigation are presented in Section 2.1.1.

2.1.6 Design Drawings

In addition to the above background documentation, the following design drawings were also reviewed :

- "Topographic Plan of Survey of Lot 1 and Part of Lot 2 (South Danforth Avenue), Registered Plan 204, City of Ottawa", Amended July 12, 2022, prepared by Annis, O'Sullivan, Vollebekk Ltd.
- Site Plan Drawings, Drawing Nos. A000 to A003 inclusive, dated January 06, 2022, prepared by Open Plan Architects Inc.
- Plan Drawings, Drawing Nos. A100 to A106 inclusive, dated January 06, 2022, to October 20, 2022, prepared by Open Plan Architects Inc.

- Elevation Drawings, Drawing Nos. A200 and A201, dated September 12, 2022, prepared by Open Plan Architects Inc.;
- Civil Drawings, Drawings Nos. C101 to C901, dated August 2022, prepared by LRL Associates Ltd.

2.2 Site Description

The Site is located at 424 Churchill Avenue North in Ottawa, Ontario, and is in an area zoned as TM H(24) – Traditional Mainstreet Zone. The Site consists of an irregularly shaped parcel of land that covers an area of approximately 1,000 m^2. It is developed with a single-storey, one underground basement level, a single-tenant commercial building and an asphalt parking lot. From approximately 1960 to 2020, the Site building was used as a laundromat and dry cleaning facility; however, these operations are no longer ongoing. It is bound to the North by Danforth Avenue, to the East by Churchill Avenue North, to the South by Byron Avenue, and the West by 352 Danforth Avenue.

Please refer to **Figures 1 and 2** in **Appendix A**.

The paved area of the Site is at an approximate elevation of between El. 74.8 and 75.7 masl. The existing topography of the Site slopes downwards approximately 0.3 m to the east and south towards the adjacent streets. There is also a steep slope along the north perimeter of the Site dropping approximately 6 m from the Site down to Danforth Avenue South. The elevation along the north perimeter of the Site ranges from approximately El. 69.1 to 72.0 masl.

The proposed building is expected to cover an approximate area of 882.3 m^2 and will be comprised of an eight-storey multi-unit residential building with 2 underground parking levels. Based on the architectural and civil Site plans received, the ground floor of the building will be at an approximate elevation of El. 75.92 masl. Therefore, the 2nd partial basement level will be approximately 10.6 meters deeper at an approximate elevation of El. 65.32 masl. The completed building will have a finished average grade of approximately El. 73.10 masl. Due to the split grade of the Site, both basement levels will be partially exposed along the north perimeter of the proposed building.

Based on Englobe's current understanding of the Project, it is anticipated that the excavations will extend to an approximate depth of 12 mbgs, based on the grade difference between the Site and Danforth Avenue to the north. Excavations will extend through the overburden soils and weathered bedrock surface and into the limestone bedrock.

3 METHODOLOGY

This hydrogeological assessment included collecting a groundwater sample for laboratory analysis, completing measurements of groundwater depths, performing short-duration recovery tests, and estimating temporary construction-related groundwater dewatering to identify appropriate provincial permitting and municipal discharge requirements.

The groundwater sampling and short-duration recovery tests utilized groundwater monitoring wells established at the Site as part of previous subsurface investigations by Englobe and additional monitoring wells established within the footprint of the existing building in 2023. The methodologies and procedures applied to perform these key hydrogeological evaluation tasks are described in this Section.

3.1 Previous DST Boreholes (2021)

The drilling component of the preliminary geotechnical and environmental investigation was performed on April 21 and 22, 2021. The drilling consisted of the advancement of three boreholes as monitoring wells, designated as Borehole/Monitoring well Nos. MW21-01 through MW21-03, to approximate depths ranging from 0.0 to 12.8 meters below ground surface (mbgs). All boreholes were terminated within the bedrock underlying the overburden. The

locations of the 2021 boreholes are provided in **Figure 2** in **Appendix A** while their borehole logs are provided in **Appendix B**.

A drilling subcontractor, CCC Geotechnical and Environmental Drilling Ltd. was retained to perform the drilling. All boreholes were drilled using a truck-mounted drill rig. The boreholes were advanced through the overburden using hollow-stem augers. Borehole Nos. MW21-01 and MW21-03 were continued into the bedrock using pneumatic drilling. Borehole No. MW21-02 was advanced through the bedrock using wireline diamond coring methods. 50 mm outer diameter monitoring wells were installed in all boreholes, with screens sealed into the bedrock. The monitoring wells were backfilled with a combination of bentonite hole-plug and silica sand as necessary, and protective flush mount coverings were placed at the ground surface and sealed using an asphalt cold patch.

Overburden soil samples were collected using a standard 50 mm outside diameter split-spoon sampler driven by an automatic Standard Penetration Test (SPT) hammer. The compaction of the cohesionless soils was assessed using recorded SPT N-values.

The subsurface conditions encountered in the boreholes were described by Englobe field staff based on the samples that were recovered. The recovered soil and rock core samples were labelled and submitted to Englobe's Ottawa geotechnical laboratory for further visual review and geotechnical laboratory testing on selected soil samples. One groundwater sample was sent to an external certified environmental laboratory for standard corrosion package testing.

3.2 Supplementary Drilling Fieldwork

The drilling component of the supplementary investigation was performed on July 11, 12, 19, and 20, 2023. Englobe retained Strata Drilling Group Inc. of Ottawa, Ontario (Strata) to complete the drilling program and install the monitoring wells. The locations MW23-01 and MW23-04 were advanced using a Geoprobe Direct Push drilling rig, and locations MW23-2 and MW23-3 within the interior of the building were advanced using a compact drilling rig. Within the overburden, soil samples were collected at 0.75 m intervals using a direct push sampling system (1.5 m macro-core polyvinyl chloride (PVC) liners). Bedrock drilling at exterior locations was completed using a rock air hammer and within the interior by water rotary method. Coring water was potable water from the Ottawa municipal system supplied by Strata.

The monitoring wells consisted of 51 millimetres (mm) or 42.2 mm, schedule 40 PVC riser pipe and 0.010-inch slotted screen sections. The bottom cap was threaded or slip-on 51 mm or 42.2 mm schedule 40 PVC and the top of the riser was capped with a 51 mm or 42.2 mm j-plug. The size of the piping of the wells installed within the interior building monitoring wells (MW23-02 and MW23-3) was 42.2 mm.

Each well was completed with a 3 m well screen installed in the bedrock, and an appropriate length of solid PVC riser pipe with threaded joint connections extending to grade. A sand pack consisting of washed silica sand was backfilled in the annular space around the screened portion of the wells and to approximately 0.3 m above the top of the screen, followed by activated bentonite chips backfilled to within 0.3 m of the ground surface to prevent surface water from infiltrating into the well. All wells installed at the Site were completed with flush-mounted aluminum casing protectors concreted into the ground. The well installation and registration activities were completed by the drilling contractor in accordance with 1990, Regulation 903. The subsurface soil, bedrock, and groundwater conditions at the borehole locations were logged by Englobe field staff based on the samples that were recovered.

All relevant borehole and monitoring well locations are shown in **Figure 2** in **Appendix A** of this Report. Monitoring well construction details are presented schematically on the borehole logs in **Appendix B** of this Report.

3.3 Elevation Survey of Boreholes

Englobe completed a geodetic elevation survey of the boreholes and monitoring wells at the Site using a Trimble™ S7 total station. The borehole and monitoring well locations were referenced to Universal Transverse Mercator North American Datum of 1983 (UTM NAD83) coordinates (zone 18T). Geodetic ground surface elevations were established based on GNSS and local base station telemetry.

The reference coordinates and ground surface elevations obtained for each borehole advanced as part of Englobe's supplementary investigation is shown in Table 3-1 and on the attached borehole and monitoring well logs, provided in **Appendix B**.

Table 3-1 Summary of the geodetic and elevation survey results for completed boreholes

Well ID	Ground Surface Elevation (masl [1])	Northing (m [2]) [3]	Easting (m [2]) [3]
MW23-01	75.27	5026692.732	441016.497
MW23-02	73.57	5026684.758	441023.163
MW23-03	75.92	5026673.617	440996.601
MW23-04	75.77	5026672.722	441014.891

[1] Meters above sea level.
[2] Meters.
[3] UTM (Universal Transverse Mercator), North American Datum 83, Zone 18.

3.4 Groundwater Level Measurements

Groundwater level measurements involved taking both water level and well depth measurements from the top of the well casing. Groundwater level readings were recorded to the nearest 0.1 m and converted into geodetic elevations.

During Englobe's field investigation, groundwater depth measurements were taken upon completion of each borehole on August 14, 2023, and the groundwater depths were measured again by an Englobe technician on August 17, 2023, for the wells that were assessed as part of the Hydraulic Conductivity Testing program described below.

The water levels were measured using a Solinst Canada Ltd. Model 122 oil/water interface meter. The electronic interface probe was decontaminated before the collection of each water level measurement.

3.5 Hydraulic Conductivity Testing

Hydraulic conductivity tests were used to estimate the Site-specific in-situ horizontal hydraulic conductivity of the geological materials intercepted at the well screens of MW23-02, MW23-03, and MW23-04. These hydraulic conductivity tests were performed using short-duration pumping and recovery test methods on August 17, 2023.

At MW23-02, MW23-03, and MW23-04, the hydraulic conductivity tests were performed using a submersible pump to stress the bedrock aquifer to induce the drawdown and then measure the groundwater responses during the pumping

and recovery. Water levels were recorded electronically with a datalogger during the recovery phases of the hydraulic conductivity tests.

The hydraulic conductivity test results are provided in **Appendix C**.

3.6 Groundwater Sampling

3.6.1 Groundwater Sampling Program Completed as Part of the Hydrogeological Assessment

A groundwater sample was collected from monitoring well MW23-02 on September 13, 2023.

Before sampling, the monitoring well was purged using a bladder pump. Englobe used an AquaTROLL™ 400 water quality multi-meter connected to a flow-through cell on the discharge hose to monitor water quality parameters including pH, conductivity, dissolved oxygen (DO), temperature, turbidity, and oxygen redox potential (ORP). The water quality parameters were measured and recorded approximately every 30 seconds during purging. When three consecutive field parameter readings (focusing on temperature, conductivity, and pH) were within 10% of each other, the flow-through cell was removed, and the groundwater sample was collected directly from the dedicated tubing into appropriate laboratory-supplied containers.

The groundwater samples were submitted to Bureau Veritas (BV) for laboratory analytical testing. BV is certified by the Canadian Association for Laboratory Accreditation Inc. (CALA). Each of the submitted groundwater samples was tested based on the required parameters outlined in the City of Ottawa Sanitary Sewer Use Bylaw (No. 2003-514). This included the following chemical parameters:

- Petroleum hydrocarbon (PHC) including Total Oil & Grease & Grease Mineral/Synthetic
- Semi-volatile organics (sVOCs) and Volatile organic compounds (VOCs);
- Total Polychlorinated Biphenyls;
- Total Animal/Vegetable Oil and Greases;
- Escherichia coli;
- Hexachlorobenzene;
- Polycyclic aromatic hydrocarbons (PAHs); and,
- Metals (Total) and inorganic chemical parameters.

The results of the groundwater analytical testing are discussed in Section 6 of this Report, including a comparison to the limits described in the City of Ottawa Sewer Use Bylaw (No. 2003-514). The laboratory Certificates of Analysis are provided for reference in **Appendix D**. A tabulated summary of groundwater sampling results compared to the limits described in the City of Ottawa Sewer Use Bylaw (No. 2003-514) is provided as Table D-1 for reference in **Appendix D.**

3.6.2 Groundwater Sampling Program Completed as Part of the 2023 Phase II ESA Program

As part of Englobe's Phase II ESA efforts, groundwater samples were collected on August 14, 2023 and 28, 2023 from MW23-01 to MW23-04, and submitted for laboratory analysis of PHCs F1 – F4, VOCs, Polycyclic Aromatic Hydrocarbons (PAHs) and metals. The results of the groundwater analytical testing are discussed in the updated Phase II ESA under a separate cover. As noted in Section 2.1.2, groundwater samples were also collected from the monitoring wells MW21-01, MW21-02, and MW21-03 installed as part of ESA completed in 2021. A tabulated summary of groundwater sampling results from 2021 and 2023 ESAs is provided in Table D-2 for reference in **Appendix D**.

3.1 Estimation of Groundwater Dewatering Rates

3.1.1 Dupuit-Forchheimer Flow Approximation

This Section presents the methodology employed in estimating temporary construction groundwater inflow volumes from the bedrock at the Site as well as the potential radius of drawdown in bedrock. Based on the Site conditions and available information on the proposed development, groundwater is expected to be encountered in the Project's construction excavation.

Based on the results of the field investigation and data analysis, an analytical approach based on the Dupuit-Forchheimer approximation for an unconfined aquifer (Powers et al., 2007) was used to estimate construction-related groundwater dewatering volumes. Using the assumed excavation dimensions of the proposed building footprint and the assumption that groundwater flows radially from all sides of the excavation, an estimate of groundwater inflows to the proposed excavation can be obtained using the following equation:

$$Q = \frac{\pi K\left(H^2 - {h_w}^2\right)}{ln\left(\frac{R_O}{R_w}\right)}$$

Where:

Q = Groundwater extraction (pumping) rate (m^3/s)

K = Hydraulic conductivity (m/s)

H = Initial groundwater level (m)

h_w = Groundwater level at the base of the excavation (m)

R_O = Radius of Influence for a point source (m)

R_s = Equivalent radius of the source (m)

The lateral extent of groundwater drawdown or radius of influence associated with groundwater dewatering was estimated using the groundwater flow model and the Sichart and Kryieleis relationship (Powers et al., 2007):

$$R_o = 3000(H\text{-}h_w)\sqrt{K}$$

Where:

Ro = Radius of influence for a radial flow structure (m)

K = Hydraulic conductivity (m/s)

H = Initial groundwater level (m)

h_w = Groundwater level at the base of excavation (m)

Based on the length and width of the excavation, the equivalent radius of influence for a point source can be calculated based on the following equation:

$$R_w = \sqrt{\frac{ab}{\pi}}$$

Where:

R_w = Equivalent radius of influence of a point source (m)

a = Length of exaction area (m)

b = Width of exaction area (m)

The values of temporary construction-related groundwater dewatering volumes were estimated using the preceding analytical approximations and were based on the assumed construction methodologies, sequencing, and duration. Further, the preceding analytical approximation assumes an unlined vertically walled excavation.

During construction, the Contractor will have to manage water that accumulates in the open excavation during a rainfall event. These incidental precipitation volumes were calculated volumetrically based on a review of Intensity-duration-frequency (IDF) curves (Ontario Ministry of Transportation, December 2021) for the Site. The analysis determined the rainfall over 24 hours for 5-year, 10-year, 25-year, 50-year, and 100-year events was 68.7 mm, 79.9 mm, 94.0 mm, 104.4 mm, and 114.8 mm respectively. A value of 114.8 mm was used to determine the incidental precipitation volumes for the proposed excavation.

The purpose of using the highest observed one-day rainfall event in the last 100 years is to ensure that the construction Contractor is prepared to handle a similar rainfall event during construction without impeding construction progress. Therefore, the daily maximum groundwater-taking rates include groundwater inflow volume estimates from the Dupuit-Forchheimer approximations plus the incidental precipitation volume estimates.

The following general assumptions were made when estimating temporary groundwater dewatering rates during construction:

- It was assumed that the hydraulic conductivity of the geological materials is the same throughout the Site and does not vary by location (isotropic conditions).
- It was assumed that there is no upward hydraulic pressure or artesian conditions requiring pressure relief.
- Groundwater inflow rates were estimated based on the proposed development construction as a stand-alone project, with no other groundwater-taking or dewatering activities within 500 m of the Site.
- The extent of construction dewatering will vary depending on the type of material encountered in the actual excavation, excavation dimensions, the depth to groundwater, and the required depth of dewatering. The groundwater dewatering estimates presented in this Report are based on the assumptions described herein regarding the excavation dimensions, construction method, groundwater levels, and hydraulic conductivity.
- Contractors bidding on the construction and dewatering services should make their own interpretation of the information presented in this Report and other Project documents, including bid design drawings, and draw their own conclusions as to how the conditions may affect their work or design.
- Changes in the design will require the recalculation of estimates presented in this Report.
- Should significant water-bearing zones be encountered during excavation, Englobe recommends that supplementary hydraulic conductivity testing of the newly encountered water-bearing permeable materials be completed to update the groundwater inflow estimates presented in this Report.

It is important to emphasize that groundwater levels are subject to seasonal fluctuations and in response to precipitation and snowmelt events. They are generally anticipated to be at their highest level during the thaw in early spring.

Contractors and Designers are cautioned that in addition to the above, the estimated groundwater estimates presented for the excavation associated with the proposed eight-storey multi-unit apartment building and underground garages do not include groundwater dewatering estimates associated with the excavations for sanitary and storm sewers or manholes or other underground infrastructure.

4 DESCRIPTION OF SUBSURFACE CONDITIONS

4.1 Regional Geology

Englobe completed a brief review of publicly available information for the Site, including databases published by the Ontario Geological Survey (OGS) and the Ministry of Northern Development and Mines. Based on this review, the Site is located within the paleozoic geology region of Ottawa known as the Gull River formation, which includes interbedded silty dolostone, lithographic to fine crystalline limestone, oolitic limestone shale and fine-grained calcareous quartz sandstone (William, et al, 1984). The bedrock geology consists of limestone, dolostone, shale, arkose, and sandstone as part of the Ottawa Group, Simcoe Group, and Shadow Lake Formation (Ontario Geological Survey, 2011).

4.2 Site-Specific Stratigraphy

Details of the subsurface soil conditions encountered in the boreholes advanced during previous subsurface investigations by DST and Englobe are presented on the borehole logs in **Appendix B**. A general overview of the soil stratigraphy is provided in this Section.

It should be noted that the boundaries between strata have been inferred from observations made during drilling. The strata boundaries generally represent a *transition* from one soil type to another and should not be inferred to represent an exact plane of geological change. Conditions may vary between and beyond the borehole locations.

Considering the results of the field and laboratory investigations, as described by others, the following descriptions provide a generalized overview of the different subsoils encountered in the boreholes at the Site:

Surficial Cover: Asphalt pavement was present surficially in boreholes MW21-01 through MW21-03, and MW23-01. The surficial cover at these locations consisted of asphalt pavement with approximate thicknesses ranging from 100 to 140 mm. A concrete slab was present surficially in boreholes MW23-02 and MW23-03. The surficial cover at these locations consisted of a concrete slab with an approximate thickness of 25 mm.

Fill Materials: Cohesionless fill material was encountered superficially in borehole MW23-04 and underlying the surficial asphalt/concrete pavement at all other borehole locations, extending to approximate depths ranging from 0.3 to 0.5 mbgs. The fill material was heterogeneous and consisted of silty sand to sandy gravel, with a trace of some gravel and a trace of some silt.

Native Sandy Silt: A deposit of native sandy silt was encountered underlying the FILL material in Borehole Nos. MW21-01 through MW21-03, MW23-02, and MW23-04, at approximate depths ranging from 0.3 to 0.5 mbgs and extended to approximate depths ranging from 0.8 to 1.2 mbgs. The native sandy silt deposit was described as damp and brown in colour.

Bedrock: Auger refusal on bedrock was encountered in all boreholes at approximate depths ranging from 0.2 mbgs to 1.4 mbgs. All boreholes were terminated within the bedrock at approximate depths ranging from 8.2 to 16.8 mbgs. Boreholes MW21-01, MW21-03, and MW23-02 through MW23-04 were continued into the bedrock using pneumatic drilling methods for environmental purposes for the Phase II ESA performed in conjunction with this investigation, therefore bedrock type and quality could not be confirmed at these locations.

Boreholes MW21-02 and MW23-04 were advanced into bedrock using HQ-size wireline diamond coring methods. The upper approximately 0.5 to 1.0 m of the bedrock consisted of highly weathered and fractured limestone. The intact portions of the bedrock consisted predominantly of grey, slightly weathered limestone becoming fresh with depth and medium to thickly bedded. The measured Rock Quality Designation (RQD) ranged from 37 to 100 percent. The bedrock was generally in poor to good condition with areas of excellent quality. Boreholes MW21-02 and MW 23-04 were terminated within the limestone bedrock at approximate depths of 10.0 and 16.8 mbgs, respectively.

4.3 Hydrogeology

During drilling activities completed in 2021 and 2023, the thickness of the fill material at the borehole locations ranged between 0.2 – 0.4 m. The soil recovery during the drilling was minimal, and thus, a perched water table within the overburden materials of the Site was not identified at these borehole locations. Groundwater was only intercepted in the bedrock at the borehole locations completed in 2021 and 2023. As discussed in the preceding Sections of this report, groundwater levels were obtained in 2021 and 2023. Observed groundwater levels from 2021 and 2023 in the monitoring wells screened in the bedrock are summarized in **Table 4-1.**

Table 4-1 Summary of groundwater level observations (historical and current)

Borehole ID	Approx. Ground Elevation	Screened Interval Depth		Screened Stratigraphic Layer(s)	Approximate Groundwater Level (m bgs)							
					Previous Observations				Current Observations			
					Date	Approx. Water Level			Date	Approx. Water Level		
	[m asl]	[m bgs]	[m asl]			[m btoc]	[m bgs]	[m asl]		[m btoc]	[m bgs]	[m asl]
Historical Boreholes/Monitoring Wells												
MW21-01	75.36	8.1	67.3	Bedrock (assume Limestone)	30-Apr-21	6.45	6.50	68.86	15-Aug-23	NM	NM	NM
		11.1	64.3									
MW21-02	75.53	7.0	68.5	Limestone - with shale parting, grey. Excellent Quality.	30-Apr-21	6.74	6.80	68.73	15-Aug-23	5.65	5.71	69.82
		10.0	65.5									
MW21-03	75.35	9.8	65.6	Bedrock (assume Limestone)	30-Apr-21	6.86	6.90	68.45	15-Aug-23	6.71	6.75	68.60
		12.8	62.6									
Supplementary Investigation Boreholes/Monitoring Wells												
MW23-01	75.27	13.8	61.5	Limestone - with shale parting, grey.	14-Aug-23	5.89	5.98	69.29	17-Aug-23	NM	NM	NM
		16.8	58.5									
MW23-02	73.57	6.2	67.4	Bedrock (assume Limestone)	14-Aug-23	3.90	4.00	69.57	17-Aug-23	4.22	4.32	69.25
		9	64.6									
MW23-03	75.92	6.2	69.7	Bedrock (assume Limestone)	14-Aug-23	6.23	6.33	69.59	17-Aug-23	6.56	6.66	69.26
		9	66.9									
MW23-04	75.77	4.6	71.2	Bedrock (assume Limestone)	14-Aug-23	5.99	6.07	69.70	17-Aug-23	6.33	6.41	69.36
		7.6	68.2									

Notes:

1) "masl" means metres above sea level.

2) "mbgs' means metres below ground surface

3) "mbtoc" mean metres below the top of the well casing.

4) "NM" means not measured.

5) Ground elevation for MW23-02 is located within the basement of the building footprint

It should be noted that groundwater levels are transient and tend to fluctuate with the seasons and periods of precipitation. In addition, the groundwater conditions encountered during the limited monitoring period for this investigation may not be representative of the groundwater conditions during the construction period. Furthermore, groundwater conditions may vary between and beyond the borehole locations.

Based on the observed groundwater conditions, one unconfined aquifer is present at the Site. The groundwater levels in wells screened within the bedrock at the Site have been measured between approximately 5.71 mbgs and 6.86 mbgs.

The hydraulic conductivity testing results indicated that the estimated horizontal hydraulic conductivity values ranged from 4.76 x 10^{-8} m/s to 5.91 x 10^{-8} m/s for the monitoring wells MW23-02 and MW23-03, respectively, while values ranging from 1.08 x 10^{-5} m/s (observation well data) to 5.51 x 10^{-5} m/s (pumping well data) were estimated from the results of a short duration recovery test carried out in MW23-04. The hydraulic conductivity test results are provided in **Appendix C** and a summary is provided in **Table 4-2** below.

Table 4-2 Summary of estimated hydraulic conductivity values

Well ID	Screened Interval [m bgs / m asl]	Sample Number/ Description	Horizontal Hydraulic Conductivity [m/s]	Data Analysis Method
WELLS SCREENED IN BEDROCK				
MW23-02	6.2 - 9.2 / 67.4 - 64.4	N/A = Assumed Limstone similar to MW23-01	4.76E-08	Bouwer-Rice (1976)
MW23-03	6.2 - 9.2 / 69.8 - 66.7	N/A = Assumed Limstone similar to MW23-01	5.91E-08	Dagan (1978)
MW23-04	4.6 - 8.2 / 71.2 - 67.6	N/A = Assumed Limstone similar to MW23-01	1.08E-05	Theis (1935) - Observation wells
MW23-04	4.6 - 8.2 / 71.2 - 67.6	N/A = Assumed Limstone similar to MW23-01	5.51E-05	Theis (1935) - Pumping Well
Bedrock Mean Hydraulic Conductivity (m/s)			1.14E-06	

5 ASSUMED CONSTRUCTION-RELATED TEMPORARY GROUNDWATER DEWATERING

To facilitate the construction of the proposed building, an excavation extending below the observed groundwater levels is anticipated. Based on Englobe's understanding of the proposed development and the Site-specific stratigraphy, the excavation is expected to extend into the existing limestone bedrock (12 mbgs), at an approximate elevation of 63.8 masl. However, it is recommended that Englobe be provided the final design drawings and associated specifications for the proposed excavation activities for review to confirm the validity of these assumptions before commencing.

The following Sections provide temporary construction-related groundwater dewatering estimates for a single building excavation covering the extent of the proposed building depicted in the design drawings reviewed as part of this assessment and based on the Dupuit-Forchheimer method discussed in the preceding Sections of this report.

The geotechnical investigation report by Englobe in September 2023 stated: "*Given that the founding depth of the proposed foundations will extend up to approximately 12 mbgs, consideration should be given to designing the building basement as a fully waterproof 'bath-tub' design (without external perimeter drains) to avoid potential adverse impacts due to moisture movements in the immediate areas around the proposed building footprint*.". Therefore, no estimates of long-term steady-state groundwater inflow to a perimeter drainage system for the underground levels are not provided.

5.1 Groundwater Inflows from the Bedrock to the Excavation

Based on the observed Site conditions, it appears that the groundwater in the overburden on Site consists of an unconfined aquifer. The Dupuit-Forchheimer approximation for an unconfined aquifer respects the following assumptions and parameters. Groundwater inflow rates under the steady state conditions for two separate scenarios (assumed average conditions case and assumed worst-case scenarios) were estimated based on the following information and assumptions:

– The excavation works associated with the proposed building construction are assumed to be carried out at once, with only one excavation open at a time requiring dewatering.

- All scenarios for the excavation involve water taking from a single unconfined aquifer in the bedrock identified in Englobe's boreholes.
- It is Englobe's current understanding, based on the latest Site plans available at the time of this report, that foundations will be founded at an approximate depth of 12 mbgs (approximately El. 63.8 masl). It is assumed the water level will be lowered down to approximately 0.5 m below the excavation floor, therefore at a depth of 12.5 mbgs or an elevation of 63.3 masl.
- For the average conditions case scenario, it was assumed that the hydraulic conductivity of the geological materials would be the geometric mean hydraulic conductivity value estimated from the *in-situ* hydraulic conductivity tests that were completed in MW23-02, MW23-03 and MW23-04 within the bedrock (i.e., 1.14×10^{-6} m/s).
- For the worst conditions case scenario, it was assumed that the hydraulic conductivity of the geological materials would be the highest hydraulic conductivity value estimated from the hydraulic conductivity test that was completed at MW21-04 (i.e., 5.51×10^{-5} m/s) and analyzed using the Theis solution.
- For the average case scenario, the groundwater level in the vicinity of the proposed excavation was assumed to be the average of groundwater levels (i.e., 69.26 masl or 6.3 mbgs) observed in the bedrock from MW21-02 (August 15, 2023), MW21-03 (August 15, 2023), MW23-01 (August 14, 2023), MW23-03 (August 14, 2023), and MW23-04 (August 14, 2023) except for MW23-02, which is located in the basement of the building).
- For the assumed worst-case scenario, the groundwater level in the vicinity of the proposed excavation was assumed to be the highest water level measured in the bedrock (69.82 masl or 5.71 mbgs in MW21-02 on August 15, 2023).
- Based on the results of bedrock core evaluations completed on limestone bedrock core samples obtained from MW21-02 and MW23-01, higher quality bedrock is anticipated to act as an aquitard beneath the shallow weathered bedrock aquifer, which generally starts at 6 mbgs. The bottom of the aquifer was therefore assumed to be at 14.0 mbgs. The aquifer thickness in each of the cases was assumed to be approximately 8.29 m (measured from the highest groundwater level measured of 5.71 mbgs, and the bottom of the aquifer, 14.0 mbgs).
- For ease of calculation, an open excavation was assumed and upward seepage or pressure from the observed geological units was assumed to be negligible (absence of artesian pressure).
- It was assumed that surface water runoff from precipitation would be diverted or bypassed before the commencement of dewatering and surface water contribution to the dewatering is assumed to be negligible, however, the water volume from precipitation from a 100-year storm event (114.8 mm) falling directly within the excavation area of 1225 m^2 was included in the calculations.
- Groundwater will travel easily through the overburden soils and weathered bedrock. Existing utility trenches which join or intersect the excavations may act as a drain and supply off-site water into the excavation. It was assumed that these existing utility trenches would be plugged at the outset of construction to mitigate this possibility.
- A safety factor of two to account for the variabilities in the hydraulic properties and account for remaining transient groundwater inflows during the initial phase of the groundwater taking from the native materials before the groundwater system reaches steady-state.
- These calculations apply only to the construction dewatering phase of the project and do not apply to the post-construction stages of the project.

5.2 Summary of Estimates

Table 5-1 details the inflow estimates for the case of the average condition and assumed worst-case scenarios, the incidental precipitation volumes, and the total daily volumes. Incidental precipitation into the excavation will need to be managed during construction. A 114.8 mm rain event (the highest observed one-day precipitation amount in the last 100 years for the Site) over a 24-hour period would increase groundwater-taking rates by the volumes indicated in **Table 5-1**.

Table 5-1 Estimates of groundwater taking volumes

Excavation Description	Scenario	Estimated Inflows [L/day]	Incidental Precipitation [1] [L/day]	Total Daily Volumes [2] [L/day]
Groundwater Inflows from the bedrock to the Excavation				
Excavation Area: 1225 m^2 / Excavation Depth: 12 mbgs	Average Conditions Case	50,699	140,580	191,279
	Assumed Worst Case	921,158	140,580	1,061,738

[1] Volumetric estimate of water that could accumulate in an open excavation because of direct precipitation. Estimated based on the assumed excavation dimensions and the highest recorded 24-hour rainfall in the last 100 years (Site).
[2] Based on the assumed excavation dimensions, estimated from provided current design drawings.

Groundwater taking estimates are based on the assumed construction duration, excavation dimensions, construction sequencing, and methodology; therefore, should there be changes in these items, revised groundwater-taking volumes will be required. It is the dewatering Contractor's responsibility to determine the type and extent of the dewatering system required.

Based on the above the Contractor performing the proposed construction and excavation on Site will require a Category 3 Permit to Take Water (PTTW) for construction dewatering, as the anticipated worst-case scenario dewatering rate exceeds 400,000 L/day. Given the minimum review period of 90 days for a PTTW, Englobe recommends applying for a Category 3 PTTW based on the worst-case scenario assumptions at least three months in advance of the construction start date to avoid potential significant delays in construction if groundwater inflow rates encountered during excavation work exceed 400,000 L/day. It should be noted that it is the responsibility of the Client and their dewatering Contractor to ensure that taking volumes are within applicable permit limits.

The predicted radius of influence of groundwater taking associated with the excavation for the proposed development is anticipated to range approximately from 40 m (average case) to 171 m (worst case).

Further details on the estimates of groundwater-taking volumes are provided in **Appendix E.**

6 GROUNDWATER SAMPLING RESULTS AND DISCHARGE OF RECOVERED GROUNDWATER

As summarized in Section 3.6.1, groundwater samples were collected at the Site as part of separate Englobe subsurface environmental investigations. Additionally, as summarized in Section 3.6.2, a groundwater sample obtained from MW23-02 was submitted for analysis of the parameters listed in the City of Ottawa Sewer Use By-law No. 2003-514.

A summary of the parameters exceeding the City of Ottawa Sewer Use By-law No. 2003-514 and the MECP Table 7 Standards are presented in Error! Reference source not found..

Table 6-1 Summary of parameter exceedances for tested groundwater samples

Sample Location	Parameters Exceeding City of Ottawa Sewer Use By-law No. 2003-514 for:		Parameters Exceeding MECP Table 7 Standards[3]
	Sanitary Sewer Discharge Limits [1]	Storm Sewer Discharge Limits [2]	
MW21-01[4]	Cis-1,2-dichloroethylene, Tetrachloroethylene, Trichloroethylene	Cis-1,2-dichloroethylene, Tetrachloroethylene, Trichloroethylene	Cis-1,2-dichloroethylene, Trans-1,2-dichloroethylene, Tetrachloroethylene, Trichloroethylene, Vinyl Chloride
MW21-02	Cis-1,2-dichloroethylene, Tetrachloroethylene, Trichloroethylene	Cis-1,2-dichloroethylene, Tetrachloroethylene, Trichloroethylene	PHC F2, PHC F3, 1,1-Dichloroethylene, Cis-1,2-dichloroethylene, Trans-1,2-dichloroethylene, Tetrachloroethylene, Trichloroethylene, Vinyl Chloride
MW21-03[4]	--	Tetrachloroethylene	Tetrachloroethylene, Trichloroethylene
MW23-01[4]	Cis-1,2-dichloroethylene, Trichloroethylene	Cis-1,2-dichloroethylene, Tetrachloroethylene, Trichloroethylene	1,1-Dichloroethylene, Cis-1,2-dichloroethylene, Trans-1,2-dichloroethylene, Tetrachloroethylene, Trichloroethylene, Vinyl Chloride
MW23-02	Tetrachloroethylene, Trichlorethylene	Cis-1,2-dichloroethylene, Tetrachloroethylene, Trichloroethylene	PHC F1, 1,1-Dichloroethylene, Cis-1,2-dichloroethylene, Trans-1,2-dichloroethylene, Tetrachloroethylene, Trichloroethylene, Vinyl Chloride
MW23-03[4]	Cis-1,2-dichloroethylene	Cis-1,2-dichloroethylene, Tetrachloroethylene, Trichloroethylene	1,1-Dichloroethylene, Cis-1,2-dichloroethylene, Trans-1,2-dichloroethylene, Tetrachloroethylene, Trichloroethylene, Vinyl Chloride
MW23-04[4]	--	Tetrachloroethylene	Tetrachloroethylene, Trichloroethylene

[1] The City of Ottawa Sewer Use By-law No. 2003-514, Table 1 Limits for Sanitary and Combined Sewers Discharge.
[2] The City of Ottawa Sewer Use By-law No. 2003-514, Table 2 Limits for Storm Sewer Discharge.
[3] MECP "Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act", April 2011, Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition – All Types of Property Use, Medium-Fine Textured Soils
[4] The analysis included only selected parameters in comparison to The City of Ottawa Sewer Use By-Law Parameters.

Laboratory analytical summary tables for the groundwater sampling completed as part of separate Englobe subsurface environmental investigations as well as for the groundwater sampling completed as part of this Hydrogeological Assessment Data and the laboratory certificates of analysis are presented in **Appendix D**.

The concentrations of various chlorinated VOCs (1,1-dichloroethylene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, tetrachloroethylene, trichloroethylene, vinyl chloride) were detected at concentrations exceeding the MECP Table 7 Standards generally at locations across the Site. These exceedances are likely related to the historical operations of a dry-cleaning facility at the Site.

In our opinion, it is reasonable to expect that chlorinated VOC vapours will migrate from groundwater to excavations associated with construction activities. Englobe recommends that a Project-Specific Health and Safety Plan (HASP) be required for the construction work. The development of a HASP is typically the responsibility of the contractor.

Englobe recommends that the contractor addresses the occurrence of these chlorinated VOCs in groundwater in the HASP by way of developing task-appropriate personal protective measures and establishing real-time vapour monitoring, trigger levels, and associated mitigation measures.

Based on the above-noted groundwater analytical results, it is anticipated that treatment of dewatering effluent will be required to reduce the concentrations of the various chlorinated VOCs to below the applicable discharge limits before discharge to the municipal sewer system. It is recommended that the contractor retain the services of a specialized dewatering water treatment contractor to supply, maintain, and monitor a suitable water treatment system operated under Environmental Compliance Approval. The construction contractor is solely responsible for obtaining a permit from the City of Ottawa for the discharge of water to the sanitary or storm sewer. Englobe recommends that a project-specific groundwater management plan be required for the construction work.

It should be noted that the temporary storage of extracted groundwater on-site may be required depending on the capacity of the treatment system and local sewer system.

It is also recommended that the contractor develop a spill management and control plan to implement during construction, to limit the potential for introduction of groundwater contamination from spills related to construction activities.

7 POTENTIAL FOR POSSIBLE MOBILIZATION OF CONTAMINANTS

Englobe completed an environmental database review of federal, provincial and private sources database records for the Site to identify issues of potential environmental concern related to groundwater contamination. The environmental database review was completed by obtaining an EcoLog ERIS™ report for an area with a radius of approximately 250 m from the Site.

A summary of potentially contaminating activities, as identified in the EcoLog ERIS™ database review and the DST Phase I ESA within a 250-m radius of the Site is provided in **Table 7-1** below. A copy of the EcoLog ERIS™ report has been provided in **Appendix F**.

Table 7-1 Summary of potentially contaminating activities from Ecolog Eris™ database review

Name/Location	Approximate Distance from the Site	Details
Laundry Land 424 Churchill Avenue North	On-Site	- Laundry Land was registered in the Hazardous Waste Generators (GEN) database as a waste generator (generator number ON0550900) of halogenated solvents (241 H) from 1986 to Jan 2021. Laundry Land was described as a power laundry/cleaner from 1986 to 2008 and a coin-operated laundry and dry cleaners from 2008 to Jan 2021. -One record was identified in the Dry-Cleaning Facilities database (CDRY) under Laundry Land Dry Cleaning, as an active dry-cleaning facility listed for 2018.
Blyth Academy Ottawa 352 Danforth Ave	Directly adjacent to the west of the Site	-Four records were identified in the GEN database, registered under generator number ON7687172 as an Elementary and Secondary School, for generating inorganic (148) and organic (263) laboratory chemicals from 2013 to 2016
Albert & Son Engravers 412B Churchill Ave North	30 m north of the Site	-One record was identified in the GEN database, registered under generator number ON2135900 as plate making, etc., for generating acid waste-heavy metals (112), aromatic solvents (211), and aliphatic solvents (212) from 1996 to 1998

Name/Location	Approximate Distance from the Site	Details
Pearl Cleaners 354B Richmond Road	65 m north of the Site	-One record was identified in the GEN database, registered under generator number ON1984500 as Other Clothing etc., for generating halogenated solvents (241) from 1995 to 2001
Velo Sportable Cycle / 1534244 Ontario Inc. 358 Richmond Road	50 m northwest of the Site	-One record was identified in the GEN database, registered as Velo Sportable Cycle under generator number ON1830701 as a Sporting Goods Store, for generating paint/pigment/coating residues (145), aliphatic solvents (212), petroleum distillates (213), light fuels (221), oil skimmings and sludges (251), and waste oils and lubricants (252) from 2000 to 2001 -One record was identified in the GEN database, registered as 1534244 Ontario Inc. under generator number ON5993376 as a Sporting Goods Store, for generating aromatic solvents (211) and petroleum distillates (213) in 2003, 2004, and 2006.
Ottawa-Carleton District School Board 345 Ravenhill Ave	20 m south of the Site	-Eleven records were identified in the GEN database, registered as Ottawa-Carleton District School Board under generator number ON6810332 as an Elementary and Secondary School, for generating paint/pigment/coating residues (145) and other specified inorganics (146) from 2009 to Jan 2021
Mountain Equipment Co-op 366 Richmond Road	45 m northwest of the Site	-Eight records were identified in the GEN database, registered under generator number ON6336429 as a Sporting Goods Store, Other Personal and Household Goods Repair and Maintenance, for generating oil skimmings and sludges (251), waste oil and lubricants (252), and other specified inorganics (146) from 2011 to 2019
Private Residence 518 Byron Avenue	80 m southwest of the Site	-One record was identified in the Ontario Spills (SPL) database for 400 L of Furnace oil spilled to the ground due to tank corrosion on October 28, 1989. Environmental impact was deemed as “Not Anticipated” in the record.
Frederick Grodde Ltd. 379 Danforth Ave	130 m west of the Site	-Three records were identified in the GEN database, registered under generator number ON1788600, for generating aromatic solvents (211) and petroleum distillates (213) from 1993 to 2004.
Joseph C. Gaffney 372 Richmond Rd.	110 m northwest of the Site	-Two records were identified in the GEN database, registered under generator number ON1338700 as a Gasoline service station, for generating light fuel (221) from 1990 to 1998
Mr. Arnold Midgley, The Trustees of Kitchissippi United Church 450 Churchill Ave. North	120 m south of the Site	- One record in the Record of Site Condition (RSC) database for the property indicating that a record of site condition was filed on June 16, 2011, for a change in property use from institutional to residential.
Ottawa Carleton Construction Group Ltd. 386 Richmond Rd.	130 m west of the Site	-One record was identified in the GEN database, registered under generator number ON3053460, for generating light fuels (221) in 2019
Bank of Nova Scotia 388 Richmond Rd.	135 m west of the Site	-Four records were identified in the Ontario Spills (SPL) database. One spill was 2L of furnace oil to the ground on May 4, 1993. The second spill was of an unknown quantity of fuel oil in the parking lot on March 8, 2002. The third spill was 50L of furnace oil to the ground on March 8, 2002. The fourth spill was of

Name/Location	Approximate Distance from the Site	Details
		an unknown quantity of furnace oil to the ground on Nov 8, 2005. Possible soil contamination was noted in the records for these spills.
Avenues Garage Ltd. 319 Richmond Rd.	150 m north of the Site	-Eight records were listed in fuel storage tank databases identifying the presence of three underground storage tanks (USTs), installed in 1984. These tanks were listed as expired in 2009. -One record was identified in the GEN database, registered under generator number ON3859040 for General Automotive Repair, for generating light fuels (221) in 2013
Al Parsons 376 Madison Ave.	170 m northwest of the Site	-Two records were identified in the GEN database, registered under generator number ON1029900 for Electronic HH. APP., for generating petroleum distillates (213) from 1988 to 1998
Private Residence 389 Danforth Ave.	155 m west of the Site	-One record was identified in the SPL database for an unknown quantity of Furnace oil spilled to the ground due to tank corrosion on March 29, 1990. Environmental impact on vegetation was deemed as “Possible” in the record.
Imagnan Corp. 376 Churchill Ave. North	175 m north of the Site	-One record was identified in the SCT Directory in 1995 for Industrial machinery manufacturing.
Gold Cast 377 Churchill Ave. North	180 m north of the Site	-One record was identified in the SCT Directory in 1993 for Jewellery and Silverware Manufacturing.
393 Richmond Rd.	195 m west of the Site	-Two records were identified in the SCT Directory in 1987 for Simply Wood Furnishing Ltd. For Wood Kitchen Cabinet and Counter Top Manufacturing -One record was identified in the GEN database, registered under Mike Steinberg under generator number ON1851952, for light fuels (221) and waste oils and lubricants (252) from 2002 to 2005
District Realty 411 Roosevelt Ave.	200 m west of the Site	-One record was identified in the GEN database, registered under generator number ON9318155 as Lessors of residential buildings and dwellings, for waste oils and lubricants (252) in 2014
Tubman Funeral Homes and Cremation 403 Richmond Rd.	210 m west of the Site	-Sixteen records were identified in the GEN database, registered under generator number ONF017100, for pharmaceuticals (261) and pathological wastes (312) from 1988 to Jan 2021.
Private Residence 356 Whitby Ave.	215 m north of the Site	-One record was identified in the SPL database for an unknown quantity of Furnace oil spilled to the ground on August 1, 1996. Environmental impact on soil was deemed as “Possible” in the record.
Cameron Veterinary Professional Corp 348 Whitby Ave.	210 m north of the Site	-Four records were identified in the GEN database, registered under generator number ON3065966, for pharmaceuticals (261), pathological wastes (312), waste crankcase oils and lubricants (252), aliphatic solvents and residues (212), and photo processing wastes (264) from 2016 to Jan 2021.
364 Churchill Ave. North	220 m north of the Site	-Four records were identified in the GEN database, registered under generator number ON0785600 under Metrotype Graphics for Platemaking, etc., for photo processing wastes (264) from 1988 to 1998 and 2007 to 2015. - Eight records were identified in the GEN database, registered under generator number ON2549408 under Cameron Veterinary Professional

Name/Location	Approximate Distance from the Site	Details
		Corporation for Veterinary Services, for pathological wastes (312) and pharmaceutical wastes (261) from 2007 to 2015.
Canadian Waste Services 363 Churchill Ave. North	220 m northeast of the Site	-One record was identified in the SPL database for 140L of hydraulic fluid spilled onto the road on August 2, 2001. Environmental impact on soil was deemed as "Not Anticipated" in the record.
8596239 Canada Inc. 400 Athlone Ave.	250 m northeast of the Site	- One record was identified in the SPL database for an unknown quantity of hydraulic oil spilled to the ground on Nov. 14, 2013. Environmental impact on soil was deemed as "Possible" in the record.
J. Clark Pharmacy Care Ltd. 410 Richmond Rd.	235 m west of the Site	- Five records were identified in the GEN database, registered under generator number ON7312008, for pathological wastes (312) and pharmaceutical wastes from 2015 to Jan 2021.
290 Picton Ave.	240 m northeast of the Site	-One record was identified in the SCT Directory in 1981 for Y's Owl Co-operative Inc. for plastic products manufacturing. -One record was identified in the SCT Directory in 1987 for Orezone Gold Corporation for support activities for mining.
Double L Printers 416 Richmond Rd.	250 m west of the Site	-Two records were identified in the SCT Directory in 1969 for commercial printing

Englobe's 2023 Phase II ESA identified PHCs and VOCs as the primary contaminants of concern in groundwater at the Site. The exceedances (i.e., contaminant concentrations exceeding the applicable site condition standard) of PHCs in 2023 were limited to groundwater samples collected from MW21-02 and MW23-02. The exceedances of chlorinated VOCs were identified in groundwater samples collected from all monitoring wells located onsite (i.e., MW21-01, MW21-02, MW21-03, MW23-01, MW23-02, MW23-03, and MW23-04). The detected concentrations of tetrachloroethylene in 2023 groundwater samples ranged from 1,400 µg/L (MW23-02) to 2.4 µg/L (MW21-03). The daughter products of tetrachloroethylene such as trichloroethylene and vinyl chloride also exceeded the applicable site condition standards in groundwater samples from the majority of the monitoring wells onsite. It should be noted that the majority of chlorinated VOC contaminant mass in groundwater would be situated within the footprint of proposed underground garages associated with the planned development onsite.

The vertical and horizontal extents of the chlorinated VOC plume in groundwater at the Site and surrounding area are not fully known, further, the reported concentrations of chlorinated VOCs such as tetrachloroethylene, trichloroethylene, and vinyl chloride exceed the component values (i.e., GW2 groundwater-to-indoor-air transport pathway industrial and/or residential component values for the medium to fine-textured soils) specified in the MECP document titled "*Rationale for the development of soil and groundwater standards for use at contaminated sites in Ontario*" dated April 15, 2011. The purpose of comparing the groundwater sampling results to the MECP component values is to evaluate the potential for VOC exposure risks to the construction workers involved in the subsurface work and the potential for VOC exposure risks via groundwater-to-indoor-air transport pathway to the surrounding properties during the construction dewatering induced migration of chlorinated VOC plume. It should be further noted that chlorinated VOCs are highly soluble in groundwater and capable of mobilizing and migrating in the bedrock unit underlying the Site.

During the construction, the hydraulic gradients between the planned excavation area within the Site and surrounding properties are expected to change given the lowering of the groundwater table with groundwater extraction and resulting in the formation of a hydraulic sink with faster contaminant travel times. Further, the potential presence of

man-made preferential pathways and interconnected bedrock fracture pathways within the Site and surrounding area could accelerate the movement of groundwater.

Thus, based on the above assessment and estimated radius of influence of groundwater dewatering, the potential for the mobilization of chlorinated VOCs as a result of groundwater dewatering could not be ruled out during the construction.

Englobe recommends that the appropriate engineered groundwater control systems to minimize groundwater extraction be selected in consultation with a qualified geotechnical engineer and specialized contractor considering the space requirements, the cost, the depth to bedrock, soil conditions, and availability of materials.

Regardless of the type of engineered groundwater control technique selected, as a risk management measure and to confirm the effectiveness of groundwater control techniques, the following groundwater monitoring activities are recommended:

- Installation of monitoring wells along the boundary of the proposed development. The exact number of monitoring wells is to be determined on the final excavation configuration, however, based on the currently available information, it is estimated that approximately nine monitoring wells (minimum) would be required.
- Collection of groundwater samples daily for three consecutive days from monitoring wells installed at the property boundary before the initiation of groundwater taking for VOCs to establish the baseline pre-construction concentrations and groundwater levels.
- Collection of groundwater samples and groundwater levels from monitoring wells installed at the property boundary for the analysis of VOCs twice weekly for the duration of groundwater-taking activities.

In the event of a decreasing trend in groundwater levels from the baseline static groundwater levels and/or an increasing trend in the concentration of contaminants of concern (PHCs and VOCs), it is suggested that immediate corrective action (cease all groundwater taking activities) be undertaken until groundwater levels and concentrations of contaminants (PHCs and VOCs) meet the average pre-construction baseline levels.

Englobe's geotechnical investigation completed in 2023 stated" *Given that the founding depth of the proposed foundations will extend up to approximately 12 mbgs, consideration should be given to designing the building basement as a fully waterproof 'bath-tub' design (without external perimeter drains) to avoid potential adverse impacts due to moisture movements in the immediate areas around the proposed building footprint*", it should be noted that these adverse impacts could include the potential movement of VOCs in groundwater to the underground levels after construction and consideration of a bath-tub' design would limit movement of VOCs in groundwater after construction.

8 KEY FINDINGS AND RECOMMENDATIONS

Based on the information and analysis presented in the preceding Sections, the following conclusions and recommendations are provided:

- Dewatering volumes presented in this report are based on the assumed excavation dimensions and construction methods, duration, sequence, and schedule during the project design stage before the issue of bid-ready design and specifications. Therefore, changes in construction methods and duration, excavation dimension, and construction sequence may require recalculation of dewatering rates before construction.
- Based on the information available at the time of preparation of this report, estimates of total daily groundwater takings from the planned excavation associated with the proposed building are approximately 1,062 m^3/day or 1,061,738 L/day. Groundwater taking estimates are based on the assumed excavation dimensions, construction sequencing, and methodology, therefore should there be changes in these items, revised groundwater taking volumes will be required. It is the dewatering contractor's responsibility to determine the type and extent of the dewatering system required.

- Based on the estimated daily groundwater-taking volumes, a Category III PTTW will be required. This report contains most of the information required for a Category III PTTW technical study report and this report can be transformed into a Category III PTTW technical study report with additional figures showing the location of nearby water wells and hydrologic features, impact assessment evaluation with respect to water wells, surface water features, and soil settlements, and recommendations for monitoring and trigger levels.
- Should significant water-bearing zones be encountered during excavation, Englobe recommends that supplementary hydraulic conductivity testing of the newly encountered water-bearing permeable materials be completed to update the groundwater inflow estimates presented in this Report. Groundwater dewatering estimates presented in this Report do not account for artesian conditions, potential hydraulic uplift, and associated aquifer depressurization.
- Englobe's 2023 Phase II ESA identified PHCs and VOCs as the primary contaminants of concern in groundwater at the Site. The exceedances (i.e., contaminant concentrations exceeding the applicable site condition standard) of PHCs in 2023 were limited to groundwater samples collected from MW21-02 and MW23-02. The exceedances of chlorinated VOCs were identified in groundwater samples collected from all monitoring wells located onsite (i.e., MW21-01, MW21-02, MW21-03, MW23-01, MW23-02, MW23-03, and MW23-04). The detected concentrations of tetrachloroethylene in 2023 groundwater samples ranged from 1,400 µg/L (MW23-02) to 2.4 µg/L (MW21-03). The daughter products of tetrachloroethylene such as trichloroethylene and vinyl chloride also exceeded the applicable site condition standards in groundwater samples from the majority of the monitoring wells onsite. It should be noted that the majority of chlorinated VOC contaminant mass in groundwater would be situated within the footprint of proposed underground garages associated with the planned development onsite.
- In our opinion, it is reasonable to expect that chlorinated VOC vapours will migrate from groundwater to excavations associated with construction activities. Englobe recommends that a Project-Specific Health and Safety Plan (HASP) be required for the construction work. The development of a HASP is typically the responsibility of the contractor. Englobe recommends that the contractor addresses the occurrence of these chlorinated VOCs in groundwater in the HASP by way of developing task-appropriate personal protective measures and establishing real-time vapour monitoring, trigger levels, and associated mitigation measures.
- Based on the groundwater analytical results, it is anticipated that treatment of dewatering effluent will be required to reduce the concentrations of the various chlorinated VOCs to below the applicable discharge limits before discharge to the municipal sewer system. It is recommended that the contractor retain the services of a specialized dewatering water treatment contractor to supply, maintain, and monitor a suitable water treatment system operated under Environmental Compliance Approval. The construction contractor is solely responsible for obtaining a permit from the City of Ottawa for the discharge of water to the sanitary or storm sewer. Englobe recommends that a project-specific groundwater management plan be required for the construction work. It should be noted that the temporary storage of extracted groundwater on-site may be required depending on the capacity of the treatment system and local sewer system. It is also recommended that the contractor develop a spill management and control plan to implement during construction, to limit the potential for introduction of groundwater contamination from spills related to construction activities.
- During the construction, the hydraulic gradients between the planned excavation area within the Site and surrounding properties are expected to change given the lowering of the groundwater table with groundwater extraction and resulting in the formation of a hydraulic sink with faster contaminant travel times. Further, the potential presence of man-made preferential pathways and interconnected bedrock fracture pathways within the Site and surrounding area could accelerate the movement of groundwater. Thus, based on this assessment and estimated radius of influence of groundwater dewatering ranging from 40 m (average case scenario) to 171 m (worst case scenario), the potential for the mobilization of chlorinated VOCs as a result of groundwater dewatering could not be ruled out during the construction. Englobe recommends that the appropriate engineered groundwater control systems to minimize groundwater extraction be selected in

consultation with a qualified geotechnical engineer and specialized contractor considering the space requirements, the cost, the depth to bedrock, soil conditions, and availability of materials. Furthermore, it is recommended that the excavation and dewatering designs for this project focus on providing watertight shoring in order to minimize the groundwater into the excavation. Regardless of the type of engineered groundwater control technique selected, as a risk management measure and to confirm the effectiveness of groundwater control techniques, the following groundwater monitoring activities are recommended:

- Installation of monitoring wells along the boundary of the proposed development. The exact number of monitoring wells is to be determined on the final excavation configuration, however, based on the currently available information, it is estimated that approximately nine monitoring wells (minimum) would be required.
- Collection of groundwater samples daily for three consecutive days from monitoring wells installed at the property boundary before the initiation of groundwater taking for VOCs to establish the baseline pre-construction concentrations and groundwater levels.
- Collection of groundwater samples and groundwater levels from monitoring wells installed at the property boundary for the analysis of VOCs twice weekly for the duration of groundwater-taking activities.

In the event of a decreasing trend in groundwater levels from the baseline static groundwater levels and/or an increasing trend in the concentration of contaminants of concern (PHCs and VOCs), it is suggested that immediate corrective action (cease all groundwater taking activities) be undertaken until groundwater levels and concentrations of contaminants (PHCs and VOCs) meet the average pre-construction baseline levels.

- Englobe's geotechnical investigation completed in 2023 stated" Given that the founding depth of the proposed foundations will extend up to approximately 12 mbgs, consideration should be given to designing the building basement as a fully waterproof 'bath-tub' design (without external perimeter drains) to avoid potential adverse impacts due to moisture movements in the immediate areas around the proposed building footprint", it should be noted that these adverse impacts could include the potential movement of VOCs in groundwater to the underground levels after construction and consideration of a bath-tub' design would limit movement of VOCs in groundwater after construction.
- Groundwater quality is variable over time, the municipal sewer use program may require supplemental groundwater sampling results at the time of sewer use permit application. The municipal sewer use Program may also require an assessment of chemical parameters not tested in this assessment.

9 LIMITATIONS

This report (hereinafter, the "Report") was prepared by *Englobe Corp*. (herein the "Company") and is provided for the sole exclusive use and benefit of *Churchill Properties Inc.* (the "Client"). Ownership in and copyright for the contents of the Report belong to the Company.

No other person is authorized to rely on, use, copy, duplicate, reproduce, or disseminate this Report, in whole or in part and for any reason whatsoever, without the express prior written consent of the Company. Any person using this Report, other than the person(s) to whom it is directly addressed, does so entirely at its own risk. The Company assumes no responsibility or liability in connection with decisions made or actions taken based on the Report, or the observations and/or comments contained within the Report. Others with an interest in the site and/or subject matter of this Report should undertake their own investigations and studies to determine how or if they or their plans could be affected.

This Report should be considered in its entirety; selecting specific portions of the Report may result in the misinterpretation of the content.

The work performed by the Company was carried out in accordance with the terms and conditions specified in the Professional Services Agreement between the Company and the Client, in accordance with currently accepted engineering standards and practices and in a manner consistent with the level of skill, care and competence ordinarily exercised by members of the same profession currently practicing under similar conditions and like circumstances in the same jurisdiction in which the services were provided. Standards, guidelines, and practices may change over time; those which were applied to produce this Report may be obsolete or unacceptable at a later date.

The findings, recommendations, suggestions, or opinions expressed in this Report reflect the Company's best professional judgement based on observations and/or information reasonably available at the time the work was performed, as appropriate for the scope, work schedule and budgetary constraints established by the Client. No other warranty or representation, expressed or implied, is included in this Report including, but not limited to, that the Report deals with all issues potentially applicable to the site and/or that the Report deals with any and all of the important features of the Site, except as expressly provided in the scope of work.

This report has been prepared for the specific site, development, building, design or building assessment objectives and/or purposes that were described to the Company by the Client. The applicability and reliability of the content of this Report, subject to the limitations provided herein, are only valid to the extent that there has been no material alteration or variation thereto, and the Company expressly disclaims any obligation to update the Report. However, the Company reserves the right to amend or supplement this Report based on additional information, documentation or evidence made available to it.

The Company makes no representation concerning the legal significance of its findings, nor as to the present or future value of the property, or its fitness for a particular purpose and hereby disclaims any responsibility or liability for consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

Since the passage of time, natural occurrences, and direct or indirect human intervention may affect the views, conclusions, and recommendations (if any) provided in the Report, it is intended for immediate use.

This Statement of Limitations forms an integral part of the Report.

In preparing this Report, the Company has relied in good faith on information provided by others and has assumed that such information is factual, accurate, and complete. The Company accepts no responsibility or liability for any deficiency, misstatement, or inaccuracy in this Report resulting from the information provided, concealed, or not fully disclosed by those individuals.

The conclusions presented herein are based on information gathered from a limited historical review of readily available geological, historical, and regulatory information and a field inspection program. Sampling and analysis of soil, groundwater, or any other material was not carried out as part of this assessment. Consequently, the presence and/or

extent of any adverse environmental impact cannot be verified. The potential for environmental liability and/or environmental impact is an opinion that has been arrived at within the scope of this assessment.

Unless otherwise noted, the information contained herein in no way reflects on environmental aspects of either the site or the subsurface conditions.

The assessment should not be considered a comprehensive audit that covers and eliminates all present, past and future risks. The information presented in this Report is based on data collected during the completion of the monitoring conducted. The overall site/building/subsurface/groundwater conditions were extrapolated based on information collected at specific sampling locations. Professional judgement was exercised in gathering and analyzing data; however, no monitoring method can completely eliminate the possibility of obtaining partially imprecise or incomplete information; it can only reduce the possibility to an acceptable level. Consequently, the actual site/building/subsurface/groundwater conditions between the sampling points may vary. In addition, analysis has been carried out only for the chemical and physical parameters identified, and it should not be inferred that other chemical species or physical conditions are not present.

It is recommended practice that the Company be retained during subsequent phases of the project, to confirm that the conditions throughout the site do not deviate materially from those encountered throughout the sampling program.

Any description of the site and its physical setting documented in this Report is presented for informational purposes only, to provide the reader with a better understanding of the site and scope of work. Any topographic benchmarks and elevations are primarily to establish relative elevation differences between sampling locations and should not be used for other purposes such as grading, excavation, planning, development, or similar purposes.

Any results from the laboratory or other sub-Contractors reported herein have been carried out by others, and the Company cannot warrant their accuracy.

This Report is based on the assumption that the design features relevant to our work will be in accordance with applicable codes, standards and guidelines of practice and constructed substantially in accordance with the Report. If there are any changes to the site development features, or there is any additional information that was not otherwise available at the time the work was performed, the Company should be retained to review the implications thereof to the contents of this Report. The design recommendations expressed in this Report are applicable only to the project described therein

10 REFERENCES

Annis O'Sullivan, Vollebekk Ltd, 2022. Topographic Plan of Survey of Lot 1 and Part of Lot 2 (South Danforth Avenue), Registered Plan 204, City of Ottawa", Amended July 12, 2022

Bouwer, H. and R.C. Rice (Bouwer and Rice), 1976. A slug test method for determining hydraulic conductivity of unconfined aquifers with completely or partially penetrating wells, Water Resources Research, vol. 12, no. 3, pp. 423-428.

City of Ottawa Sewer Use By-Law No. 2003-41, Table 1 Limits for Sanitary and Combined Sewers Discharge & Table 2 Limits for Storm Sewer Discharge.

DST Consulting Engineers., a division of Englobe, 2021. Phase I & II Environmental Site Assessment 424 Churchill Avenue North, Ottawa, Ontario. Dated May 2021.

DST Consulting Engineers., a division of Englobe, 2021. Preliminary Geotecnical Investigation Report For Proposed Multi-Storey Residential Development at 424 Churchill Avenue North, Ottawa, Ontario. Dated July 2021.

Englobe Corp., 2022. Due Diligence Risk Assessment, 424 Churchill Avenue North, Ottawa, Ontario. Dated January 18, 2022.

Englobe Corp., 2023. Phase One Environmental Site Assessment, 424 Churchill Avenue North, Ottawa, Ontario. Dated February 2023.

Englobe Corp., 2023. Phase Two Environmental Site Assessment, 424 Churchill Avenue North, Ottawa, Ontario. Dated February 2023.

LRL Associates Ltd., 2022. Proposed 7-Storey Condo Re-Development 424 Churchill Avenue North, Ottawa, Ontario. Dated August 2022.

Ontario Geological Survey (OGS), 2010. Surficial Geology of Ontario 1: 50,000 (OGS MRD-128-Rev 2010).

Ontario Geological Survey, 2011. *Bedrock Geology of Ontario 1: 250,000* (OGS MRD-126-Rev 1 2011).

Ontario Ministry of Transportation, 2016. *IDF Curve Lookup, Coordinate:* 45.387500*,* ,-75.754167*, IDF curve year: 2010.* Available from https://idfcurves.mto.gov.on.ca/results_out.shtml?coords=45.391156,-75.75359 [Accessed September 2023].

Ontario Ministry of the Environment and Climate Change, as amended January 2014. Ontario Resources Act R.R.O. 1990, Regulation 903 – Wells.

Open Plan Architects Inc.,2022, 424 Churchill Ave N., Apartment Building, dated October 20, 2022.

Powers, J.P., Corwin, A.B., Schmall, P.C., Walter, E.K., Kaeck, W.E., 2007. *Construction Dewatering and Groundwater Control: New Methods and Applications.* Third Edition. Copyright 2007 John Wiley & Sons, Inc.

Shih-Meng Hsu; hung-Chieh Lo; Shue-Teong Chi and Cheng-Yu Ku (2011). Rock mass hydraulic Conductivity Estimated by Two Empirical Models, Developments in Hydraulic Conductivity Research, Dr. Oagile Dikinya (Ed.), ISBN:978-953-307-470-4, InTech, Available from: http://www.intechopen.com/books/developments-in-hydraulic-conductivity-research/rock-mass-hydraulic-conductivity-estimated-by-two-empirical-models

Williams, D.A., Rae, A.M., and Wolf, R.R, 1984. *Paleozoic Geology of the Ottawa Area, Southern Ontario; Ontario Geological Survey, Map P.2716, Geological Series-Preliminary Map, scale 1:50 000. Geology 1982.*

Appendix A
Figures

ENGLOBE

Note

1. This drawing shall be read in conjunction with the associated technical report.

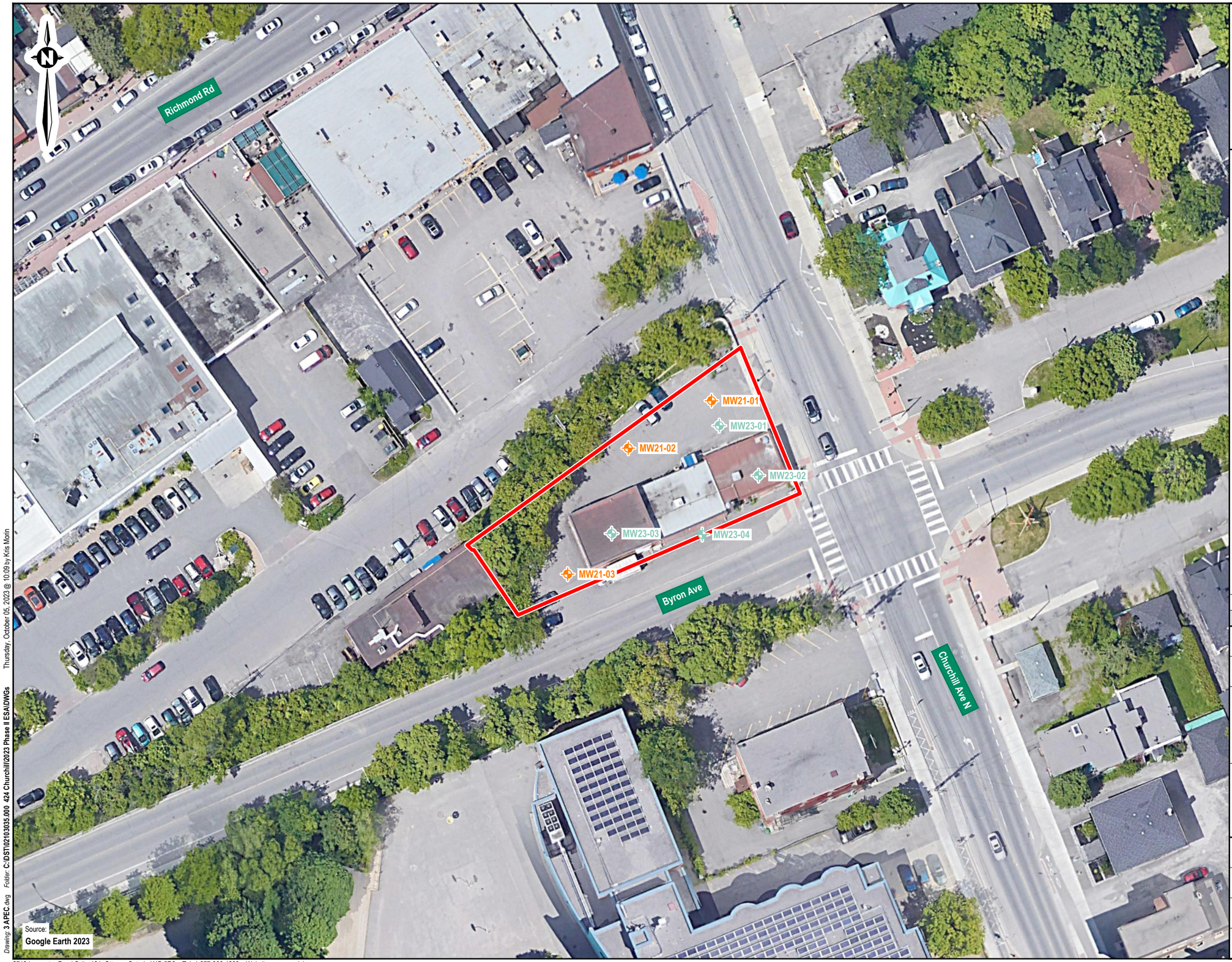
Revision	Date	Issue	Approval
D	10/05/2023	Original	S.S.

Client: Churchill Properties Inc.	Site: 424 Churchill Avenue North, Ottawa, ON
Report Title: Hydrogeological Assessment	Designed By: C.O. / Date: October 2023
	Drawn By: K.M. / Project No.: 02103035.000
Drawing Title: Site Location Map	Approved By: S.S. / Figure No.: 1
	Scale: As shown

ENGLOBE

Drawing: 1 site location.dwg Folder: C:\DST\02103035.000 424 Churchill\2023 Phase II ESA\DWGs Thursday, October 05, 2023 @ 10:08 by Kris Morin

2713 Lancaster Road Suite 101, Ottawa, Ontario K1B 5R6 Tel: 1-877-300-4800 Website: www.englobecorp.com
Copyright © 2023 Englobe Corp.



ENGLOBE

Note

1. This drawing shall be read in conjunction with the associated technical report.

Legend

- Property Boundary
- Location of Monitoring Well (Englobe, 2021)
- Location of Monitoring Well (Englobe, 2023)

1:600

0 10 20 30 m

0 1:1 5 cm

Scale accurate when printed at 100% using paper size ANSI full bleed B (11.0 x 17.0 Inches)

Revision	Date	Issue	Approval
D	10/05/2023	Original	S.S.

Client
Churchill Properties Inc.

Site
424 Churchill Avenue North, Ottawa, ON

Report Title
Hydrogeological Assessment

Drawing Title
Site Plan

Designed By: C.O.	Scale: As shown
Drawn By: K.M.	Date: October 2023
Approved By: S.S.	Project No.: 02103035.000
Figure No.: 2	

Drawing: 3 APEC.dwg Folder: C:\DST\02103035.000 424 Churchill\2023 Phase II ESA\DWGs Thursday, October 05, 2023 @ 10:09 by Kris Morin

2713 Lancaster Road Suite 101, Ottawa, Ontario K1B 5R6 Tel: 1-877-300-4800 Website: www.englobecorp.com

Copyright © 2023 Englobe Corp.

Appendix B
Borehole and Monitoring Well Logs

ENGLOBE

LIST OF SYMBOLS AND DEFINITIONS FOR GEOTECHNICAL SAMPLING AND COMMON LITHOLOGIES

The following is a reference sheet for commonly used symbols and definitions within this report and in any figures or appendices, including borehole logs and test results. Symbols and definitions conform to the standard proposed by the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE) wherever possible. Discrepancies may exist when comparing to third-party results using the Unified Soil Classification System (USCS).

PART A – SOILS

Standard Penetration Test (SPT) 'N'

The number of blows required to drive a 50-mm (2 in) split barrel sampler 300 mm (12 in). The standard hammer has a mass of 63.5 kg (140 lbs) and is dropped vertically from a height of 760 mm (30 in). Additional information can be found in ASTM D1586-11 and in §4.5.2 of the CFEM 4th Ed.

For penetration less than 300 mm, 'N' is recorded with the penetration that was achieved.

Non-Cohesive Soils

The relative density of non-cohesive soils relates empirically to SPT 'N' as follows:

Relative Density	'N'
Very Loose	0 – 4
Loose	4 – 10
Compact	10 – 30
Dense	30 – 50
Very Dense	> 50

Cohesive Soils

The consistency and undrained shear strength of cohesive soils relates empirically to SPT 'N' as follows:

Consistency	Undrained Shear Strength (kPa)	'N'
Very Soft	< 12	0 – 2
Soft	12 – 25	2 – 4
Firm	25 – 50	4 – 8
Stiff	50 – 100	8 – 15
Very Stiff	100 – 200	15 – 30
Hard	> 200	> 30

PART B – ROCK

The following parameters are used to describe core recovery and to infer the quality of a rockmass.

Total Core Recovery, TCR (%)

The total length of solid drill core recovered, regardless of the quality or length of the pieces, taken as a percentage of the length of the core run.

Solid Core Recovery, SCR (%)

The total length of solid, full-diameter drill core recovered, taken as a percentage of the length of the core run.

Rock Quality Designation, RQD (%)

The sum of the lengths of solid drill core greater than 100 mm long, taken as a percentage of the length of the core run. RQD is commonly used to infer the quality of the rockmass, as follows:

Rockmass Quality	RQD (%)
Very Poor	< 25
Poor	25 – 50
Fair	50 – 75
Good	75 – 90
Excellent	> 90

Weathering

The terminology used to describe the degree of weathering for recovered rock core is defined as follows, as suggested by the *Geological Society of London*:

Completely weathered: All rock material is decomposed and/or disintegrated to soil. The original mass structure is largely intact.

Highly weathered: More than half the rock material is decomposed and/or disintegrated to soil. Fresh or discolored rock is present either as a discontinuous framework or as core stone.

Moderately weathered: Less than half the rock material is decomposed and/or disintegrates to soil. Fresh or discolored rock is present ether as a continuous framework or as core stone.

Slightly weathered: Discoloration indicates weathering of rock material and discontinuity of surfaces. All the rock material may be discolored by weathering and may be somewhat weaker than its fresh condition.

Fresh: No visible signs of weathering.

PART C – SAMPLING SYMBOLS

Symbol	Description
SS	Split spoon sample
TW	Thin-walled (Shelby Tube) sample
PH	Sampler advanced by hydraulic pressure
WH	Sampler advanced by static weight
SC	Soil core

PART D – IN-SITU AND LAB TESTING

SOIL NAMING CONVENTIONS

Particle sizes are described as follows:

Particle Size Descriptor		Size (mm)
Boulder		> 300
Cobble		75 – 300
Gravel	Coarse	19 – 75
	Fine	4.75 – 19
Sand	Coarse	2.0 – 4.75
	Medium	0.425 – 2.0
	Fine	0.075 – 0425
Silt		0.002 – 0.075
Clay		< 0.002

The principle constituent of a soil is written in uppercase. The minor constituents of a soil are written according to the following convention:

Descriptive Term	Proportion of Soil (%)
Trace	1 – 10
Some	10 – 20
(ey) or (y)	20 – 35
And	35 – 50

Eg.: A soil comprising 65% Silt, 21% Sand and 14% Clay would be described as a: Sandy SILT, Some Clay

LOG OF BOREHOLE MW23-01

DST REF. No.: **02103035.001**
CLIENT: **Churchill Properties Inc.**
PROJECT: **Geotechnical Investigation**
LOCATION: **424 Churchill Ave. N, Ottawa**
SURFACE ELEV.: **75.27 metres**
**Elevations are not geodetic, for reference within this report only.*

Drilling Data
METHOD: **Massenza MI3 Track Mount - HSA**
START DATE: **07/11/2023**
COMPLETION DATE: **07/11/2023**
COORDINATES: **5026692.732** m N, **441016.497** m E

DEPTH (m)	ELEV. (m)	Water Data	% MOISTURE (Wp, W, Wl; 20 40 60 80)	Symbol	MATERIAL DESCRIPTION	SAMPLE #	SAMPLE TYPE	'N' VALUE / RECOVERY %	Su (kPa) VANE ✖ PP ✳ (40 80 120 160); SPT (N) □ Blows/0.3m DCPT ◆ (20 40 60 80)	CHVC 1 (ppm)	CHVC 2 (ppm)	REMARKS & GRAINSIZE DISTRIBUTION (%) GR SA SI CL
0.0	75				**APPROX. 100mm THICK ASPHALT**	GS1		43 100%				
					FILL: silty sand, some gravel, brown, damp	SS1		73 83%				
1.0	74				**SILTY SAND:** trace to some gravel, brown, damp, (very dense) Auger refusal at 0.9 mbgs, continue with rock coring	RC1		50%				RQD = 53% SCR = 72% TCR = 100% FFI = 4/8/1
2.0	73				**LIMESTONE:** fair quality, grey, weathered Becoming good quality							
						RC2		100%				RQD= 78% SCR= 98% TCR= 100% FFI = 8/2/2/5/1
3.0	72											
4.0	71					RC3		96%				RQD= 48% SCR= 94% TCR= 96% FFI = 8/1/3/5/13
5.0	70											
6.0	69					RC4		100%				RQD = 86% SCR = 93% TCR = 100% FFI = 8/3/0/2/2
7.0	68					RC5		93%				RQD = 82% SCR = 92% TCR = 93% FFI = 3/0/2/1/9
8.0	67											
9.0	66					RC6		87%				RQD = 69% SCR = 87% TCR = 87% FFI = 8/3/1/4/3
10.0	65				Becoming fair quality							
						RC7		98%				RQD = 71% SCR = 88% TCR= 98% FFI = 12/3/5/5/3
11.0	64											

BOREHOLE (THUNDER BAY) 02103035.000-424 CHURCHILL AVE N.GPJ DATA TEMPLATE.GDT 23-09-01

ENGLOBE
101-2713 LANCASTER ROAD
OTTAWA, ON, K1B 5R6
PH: 1-877-300-4800
FX: 1-888-979-6772
Web: www.englobecorp.com

SAMPLE TYPE LEGEND
- Auger Sample
- Split Spoon Sample
- Bulk Sample
- Rock Core
- Core Sample
- Shelby Tube

WELL LEGEND
- Bentonite
- Sand
- Screen

✖3 Numbers refers to Sensitivity
PP: Pocket Penetrometer
CHVC: Combustable Headspace Vapor Concentration
NFP: No Further Penetration

LOG OF BOREHOLE MW23-01

DST REF. No.: **02103035.001**
CLIENT: **Churchill Properties Inc.**
PROJECT: **Geotechnical Investigation**
LOCATION: **424 Churchill Ave. N, Ottawa**
SURFACE ELEV.: **75.27 metres**
**Elevations are not geodetic, for reference within this report only.*

Drilling Data
METHOD: **Massenza MI3 Track Mount - HSA**
START DATE: **07/11/2023**
COMPLETION DATE: **07/11/2023**
COORDINATES: **5026692.732** m N, **441016.497** m E

DEPTH (m)	ELEV. (m)	Water Data	% MOISTURE W_p W W_l (20 40 60 80)	Symbol	MATERIAL DESCRIPTION	SAMPLE #	SAMPLE TYPE	'N' VALUE / RECOVERY %	Su (kPa) VANE ✖ PP ✳ (40 80 120 160) SPT (N) □ Blows/0.3m DCPT ◆ (20 40 60 80)	CHVC 1 (ppm)	CHVC 2 (ppm)	REMARKS & GRAINSIZE DISTRIBUTION (%) GR SA SI CL
	63					RC8		100%				RQD = 89% SCR = 94% TCR = 100% FFI = 0/0/0/4/1
13.0	62											
						RC9		100%				RQD = 72% SCR = 85% TCR = 100% FFI = 1/6/3/2/1
14.0	61				Becoming excellent quality							
15.0	60					RC10		100%				RQD = 100% SCR = 100% TCR = 100% FFI = 0/0/1/2/2
16.0	59					RC11		100%				RQD = 72% SCR = 81% TCR = 100% FFI = 3/4/6
17.0	58				**End of borehole at approximately 16.7 mbgs (~Elev. 58.7 masl) in limestone.** Water level measured in monitoring well was approximately 5.9 mbgs (~Elev. 69.4 masl) on August 14, 2023.							
18.0	57											
19.0	56											
20.0	55											
21.0	54											
22.0	53											
23.0	52											

BOREHOLE (THUNDER BAY) 02103035.000-424 CHURCHILL AVE N.GPJ DATA TEMPLATE.GDT 23-09-01

ENGLOBE
ENGLOBE
101-2713 LANCASTER ROAD
OTTAWA, ON, K1B 5R6
PH: 1-877-300-4800
FX: 1-888-979-6772
Web: www.englobecorp.com

SAMPLE TYPE LEGEND
- Auger Sample
- Split Spoon Sample
- Bulk Sample
- Rock Core
- Core Sample
- Shelby Tube

WELL LEGEND
- Bentonite
- Sand
- Screen

✖[3] Numbers refers to Sensitivity
PP: Pocket Penetrometer
CHVC: Combustable Headspace Vapor Concentration
NFP: No Further Penetration

LOG OF BOREHOLE MW23-02

DST REF. No.: **02103035.001**
CLIENT: **Churchill Properties Inc.**
PROJECT: **Geotechnical Investigation**
LOCATION: **424 Churchill Ave. N, Ottawa**
SURFACE ELEV.: **73.57 metres**
**Elevations are not geodetic, for reference within this report only.*

Drilling Data
METHOD: **Hilti Portable Core Drill - Direct Push**
START DATE: **07/19/2023**
COMPLETION DATE: **07/19/2023**
COORDINATES: **5026684.758** m N, **441023.163** m E

DEPTH (m)	ELEV. (m)	Water Data	% MOISTURE (W_p W W_l) 20 40 60 80	Symbol	MATERIAL DESCRIPTION	SAMPLE #	SAMPLE TYPE	'N' VALUE / RECOVERY %	Su (kPa) VANE ✕ PP ✳ 40 80 120 160 SPT (N) □ Blows/0.3m DCPT ◆ 20 40 60 80	CHVC 1 (ppm)	CHVC 2 (ppm)	REMARKS & GRAINSIZE DISTRIBUTION (%) GR SA SI CL
0.0	73.57				**APPROX. 25mm THICK CONCRETE SLAB**	AS1		100%				
0.1	73.47				**FILL:** sand and gravel, loose, brown, damp Auger refusal at 0.1 mbgs, continue with rock coring							
1.0	72.57				**BEDROCK** Inferred, no recovery due to drilling method							
2.0	71.57											
3.0	70.57											
4.0	69.57	▽										
5.0	68.57											
6.0	67.57											
7.0	66.57											
8.0	65.57											
9.0	64.57											
9.2	64.37				**End of borehole at approximately 9.2mbgs (~Elev. 64.4 masl) in inferred bedrock.** Water level measured in monitoring well was approximatley 3.9mbgs (~Elev. 69.8masl) on August 14, 2023.							
10.0	63.57											
11.0	62.57											

BOREHOLE (THUNDER BAY) 02103035.000-424 CHURCHILL AVE N.GPJ DATA TEMPLATE.GDT 23-09-01

ENGLOBE
ENGLOBE
101-2713 LANCASTER ROAD
OTTAWA, ON, K1B 5R6
PH: 1-877-300-4800
FX: 1-888-979-6772
Web: www.englobecorp.com

SAMPLE TYPE LEGEND
- Auger Sample
- Split Spoon Sample
- Bulk Sample
- Rock Core
- Core Sample
- Shelby Tube

WELL LEGEND
- Bentonite
- Sand
- Screen

✕[3] Numbers refers to Sensitivity
PP: Pocket Penetrometer
CHVC: Combustable Headspace Vapor Concentration
NFP: No Further Penetration

LOG OF BOREHOLE MW23-03

DST REF. No.: **02103035.001**
CLIENT: **Churchill Properties Inc.**
PROJECT: **Geotechnical Investigation**
LOCATION: **424 Churchill Ave. N, Ottawa**
SURFACE ELEV.: **75.92 metres**
**Elevations are not geodetic, for reference within this report only.*

Drilling Data
METHOD: **Hilti Portable Core Drill - Direct Push**
START DATE: **07/20/2023**
COMPLETION DATE: **07/20/2023**
COORDINATES: **5026673.617** m N, **440996.601** m E

DEPTH (m)	ELEV. (m)	Water Data	% MOISTURE (W_p W W_l) 20 40 60 80	Symbol	MATERIAL DESCRIPTION	SAMPLE #	SAMPLE TYPE	'N' VALUE / RECOVERY %	Su (kPa) VANE ✖ PP ✳ 40 80 120 160 / SPT (N) □ Blows/0.3m DCPT ◆ 20 40 60 80	CHVC 1 (ppm)	CHVC 2 (ppm)	REMARKS & GRAINSIZE DISTRIBUTION (%) GR SA SI CL
0.0	75.92				**APPROX. 25mm THICK CONCRETE SLAB**	SS1		100%				
0.1					**FILL:** sand and gravel, grey, damp							
1.0	75				**SILTY SAND:** brown, damp, (dense to very dense) Auger refusal at 0.8 mbgs, continue with rock coring							
2.0	74				**BEDROCK** Inferred, no recovery due to drilling method							
3.0	73											
4.0	72											
5.0	71											
6.0	70											
7.0	69											
8.0	68											
9.0	67											
9.2					**End of borehole at approximately 9.2mbgs (~Elev. 66.7 masl) in inferred bedrock.** Water level measured in monitoring well was approximately 6.2mbgs (~Elev. 69.7masl) on August 14, 2023.							
10.0	66											
11.0	65											
	64											

BOREHOLE (THUNDER BAY) 02103035.000-424 CHURCHILL AVE N.GPJ DATA TEMPLATE.GDT 23-09-01

ENGLOBE
101-2713 LANCASTER ROAD
OTTAWA, ON, K1B 5R6
PH: 1-877-300-4800
FX: 1-888-979-6772
Web: www.englobecorp.com

SAMPLE TYPE LEGEND
- Auger Sample
- Split Spoon Sample
- Bulk Sample
- Rock Core
- Core Sample
- Shelby Tube

WELL LEGEND
- Bentonite
- Sand
- Screen

✖[3] Numbers refers to Sensitivity
PP: Pocket Penetrometer
CHVC: Combustable Headspace Vapor Concentration
NFP: No Further Penetration

LOG OF BOREHOLE MW23-04

DST REF. No.: **02103035.001**
CLIENT: **Churchill Properties Inc.**
PROJECT: **Geotechnical Investigation**
LOCATION: **424 Churchill Ave. N, Ottawa**
SURFACE ELEV.: **75.77 metres**
**Elevations are not geodetic, for reference within this report only.*

Drilling Data
METHOD: **Massenza MI3 Track Mount - HSA**
START DATE: **07/12/2023**
COMPLETION DATE: **07/12/2023**
COORDINATES: **5026672.722** m N, **441014.891** m E

DEPTH (m)	ELEV. (m)	Water Data	% MOISTURE (W_p W W_l) 20 40 60 80	Symbol	MATERIAL DESCRIPTION	SAMPLE #	SAMPLE TYPE	'N' VALUE / RECOVERY %	Su (kPa) VANE ✕ PP ✳ 40 80 120 160 / SPT (N) □ Blows/0.3m DCPT ◆ 20 40 60 80	CHVC 1 (ppm)	CHVC 2 (ppm)	REMARKS & GRAINSIZE DISTRIBUTION (%) GR SA SI CL
0.0	75				**APPROX. 100mm THICK ASPHALT**	SS1		50%				
					FILL: sand, trace gravel, brown, damp - Auger refusal at 0.2 mbgs, continue with rock coring							
1.0					**BEDROCK** Inferred, no recovery due to drilling method							
	74											
2.0												
	73											
3.0												
	72											
4.0												
	71											
5.0												
	70											
6.0												
	69											
7.0												
	68											
8.0					**End of borehole at approximately 8.2mbgs (~Elev. 67.6 masl) in inferred bedrock.**							
	67				Water level measured in monitoring well was approximately 5.9mbgs (~Elev. 69.8masl) on August 14, 2023.							
9.0												
	66											
10.0												
	65											
11.0												
	64											

BOREHOLE (THUNDER BAY) 02103035.000-424 CHURCHILL AVE N.GPJ DATA TEMPLATE.GDT 23-09-01

ENGLOBE
ENGLOBE
101-2713 LANCASTER ROAD
OTTAWA, ON, K1B 5R6
PH: 1-877-300-4800
FX: 1-888-979-6772
Web: www.englobecorp.com

SAMPLE TYPE LEGEND
- Auger Sample
- Split Spoon Sample
- Bulk Sample
- Rock Core
- Core Sample
- Shelby Tube

WELL LEGEND
- Bentonite
- Sand
- Screen

✕[3] Numbers refers to Sensitivity
PP: Pocket Penetrometer
CHVC: Combustable Headspace Vapor Concentration
NFP: No Further Penetration

MW21-01

consulting engineers
a division of Englobe

DST Project No. 02103035.000
Client GSI Group Cold Storage Ltd.
Project Preliminary Geotechnical Investigation
Address 424 Churchill Avenue North, Ottawa, ON

Date April 21, 2021
Method Hollow Stem Auger & Pneumatic Drilling

Depth (m)	Elevation (m)	Water level (mREL)	Well construction	Depth (m) / Elevation (m)	Symbol	Material Description	Sample #	Sample Type	'N' Value/RQD %	CCGD / PID Reading: CCGD	CCGD / PID Reading: PID	Analysis (Submitted for laboratory analysis): PAHs	PHCs	Metals	VOCs	pH	Remarks
0				0		ASPHALT - (140 mm thickness)	GS1										
				0.1		FILL - Silty sand, trace gravel, loose, brown, damp											
0.5				0.5		SANDY SILT - trace gravel, compact, brown, damp	SS1		6	25 ppm	0 ppm						
1.0							SS2		50+	210 ppm	1 ppm		✓		✓		
1.5				1.2		BEDROCK - Borehole advanced into bedrock using Tri-cone air drilling methods (bedrock type and quality could not be confirmed)											
2.0																	
2.5																	
3.0																	
3.5																	
4.0																	
4.5																	
5.0																	
5.5																	
6.0																	
6.5		▼															Groundwater level at 6.5 mbgs on April 30, 2021.
7.0																	
7.5																	
8.0																	
8.5																	
9.0																	
9.5																	
10.0																	
10.5																	
11.0						End of Borehole at 11.1 m.											
11.5																	
12.0																	
12.5																	

MW21-02

DST consulting engineers
a division of Englobe

DST Project No. 02103035.000
Client GSI Group Cold Storage Ltd.
Project Preliminary Geotechnical Investigation
Address 424 Churchill Avenue North, Ottawa, ON

Date April 21, 2021
Method Hollow Stem Auger & Wireline Diamond coring

Depth (m)	Elevation (m)	Water level (mREL)	Well construction	Depth (m) Elevation (m)	Symbol	Material Description	Sample #	Sample Type	'N' Value/RQD %	CCGD / PID Reading: CCGD	CCGD / PID Reading: PID	Analysis: PAHs	Analysis: PHCs	Analysis: Metals	Analysis: VOCs	Analysis: pH	Remarks
0				0		ASPHALT - (120 mm thickness)	GS1										
				0.1		FILL - Sand, some gravel, compact, brown, damp												
0.5				0.5		SANDY SILT - trace gravel, compact, brown, damp,	SS1		11	360 ppm	1 ppm							
							SS2		50+	710 ppm	3 ppm		✔		✔	✔	
1.0				1		LIMESTONE - highly weathered and fractured, grey											
						Auger refusal encountered at 1.4 mbgs											
1.5				1.4		LIMESTONE - poor quality based on RQD, slightly weathered, strong, medium to thickly bedded											
2.0							RC1		43								
2.5																	
3.0							RC2		37								
3.5																	
4.0				3.8		- 0.1m thick shale bed											
4.5				4.5		- fair quality based on RQD, fresh	RC3		68								
5.0																	
5.5																	
6.0				6.1		- excellent quality based on RQD											
6.5		▼					RC4		93								Groundwater level at 6.8 mbgs on April 29, 2021.
7.0																	
7.5							RC5		92								
8.0																	
8.5																	
9.0				9		- fair quality based on RQD											
9.5							RC6		50								
10.0						End of Borehole at 10.0 m.											
10.5																	
11.0																	
11.5																	
12.0																	
12.5																	

MW21-03

DST consulting engineers
a division of Englobe

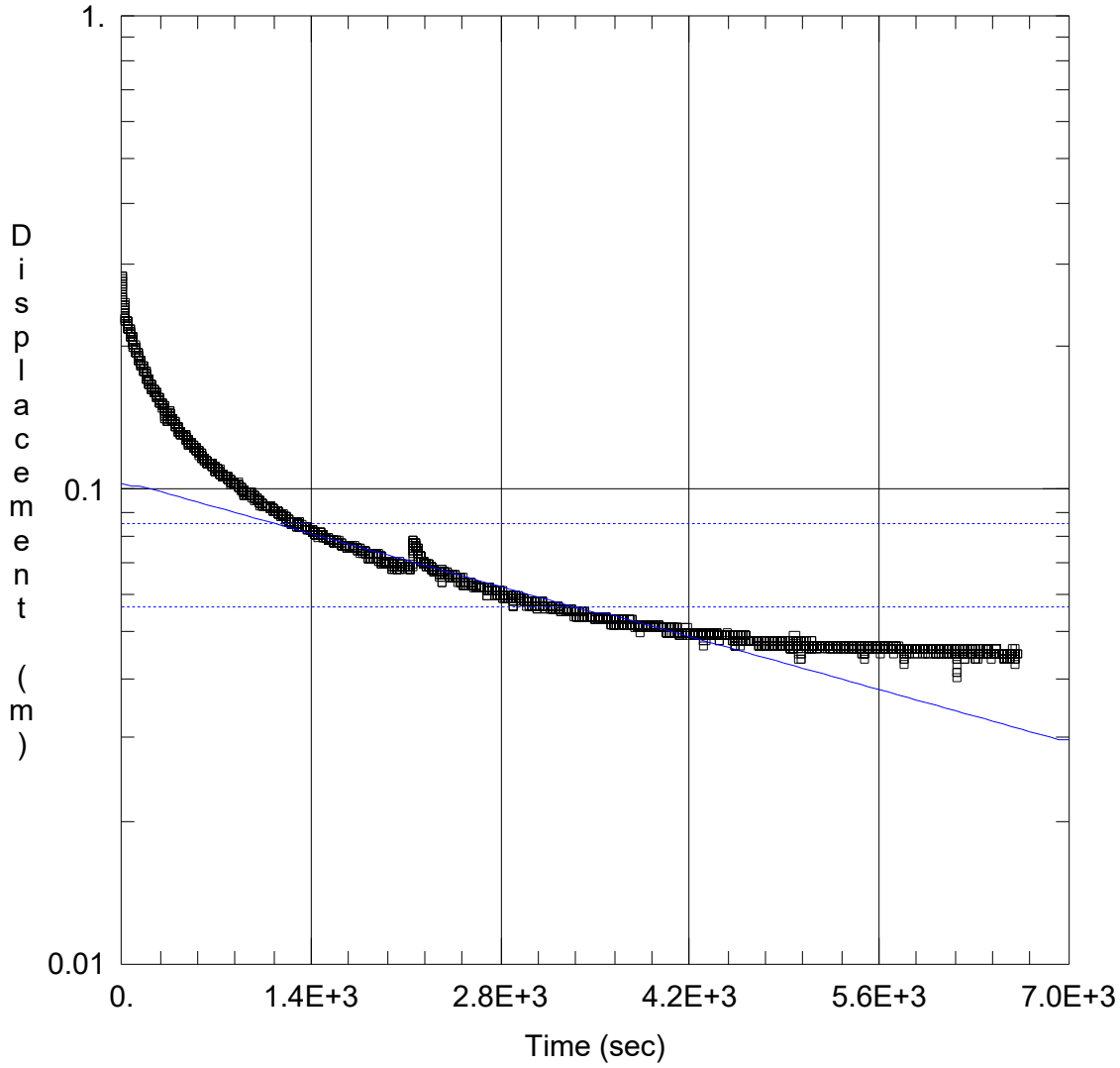
DST Project No. 02103035.000
Client GSI Group Cold Storage Ltd.
Project Preliminary Geotechnical Investigation
Address 424 Churchill Avenue North, Ottawa, ON

Date April 22, 2021
Method Hollow Stem Auger & Pneumatic Drilling

Depth (m)	Elevation (m)	Water level (mREL)	Well construction	Depth (m) / Elevation (m)	Symbol	Material Description	Sample #	Sample Type	'N' Value/RQD %	CCGD / PID Reading: CCGD	CCGD / PID Reading: PID	Analysis (Submitted for laboratory analysis): PAHs	PHCs	Metals	VOCs	pH	Remarks
0				0		ASPHALT - (140 mm thickness)	GS1										
				0.1		FILL - Silty sand, trace gravel, brown, compact, damp	SS1		50+	5 ppm	0 ppm		✓		✓		
0.5				0.3		SANDY SILT - trace gravel, brown, compact, damp											
1.0				0.8		BEDROCK - Borehole advanced into bedrock using Tri-cone air drilling methods (bedrock type and quality could not be confirmed)											
1.5																	
2.0																	
2.5																	
3.0																	
3.5																	
4.0																	
4.5																	
5.0																	
5.5																	
6.0																	
6.5																	
7.0		▼															Groundwater level at 6.9 mbgs on April 30, 2021.
7.5																	
8.0																	
8.5																	
9.0																	
9.5																	
10.0																	
10.5																	
11.0																	
11.5																	
12.0																	
12.5						End of Borehole at 12.8 m.											

Appendix C
Hydraulic Conductivity Estimate Results

ENGLOBE



FAILING HEAD

Data Set: C:\...\2. MW23-02 Slug test Wizard- Rising Head.aqt
Date: 10/19/23 Time: 16:39:34

PROJECT INFORMATION

Company: Englobe Corp.
Client: Churchill Properties Inc.
Project: 02103035
Location: 424 Churchill
Test Well: MW23-02
Test Date: Augustr 17, 2023

AQUIFER DATA

Saturated Thickness: 14.08 m
Anisotropy Ratio (Kz/Kr): 1.

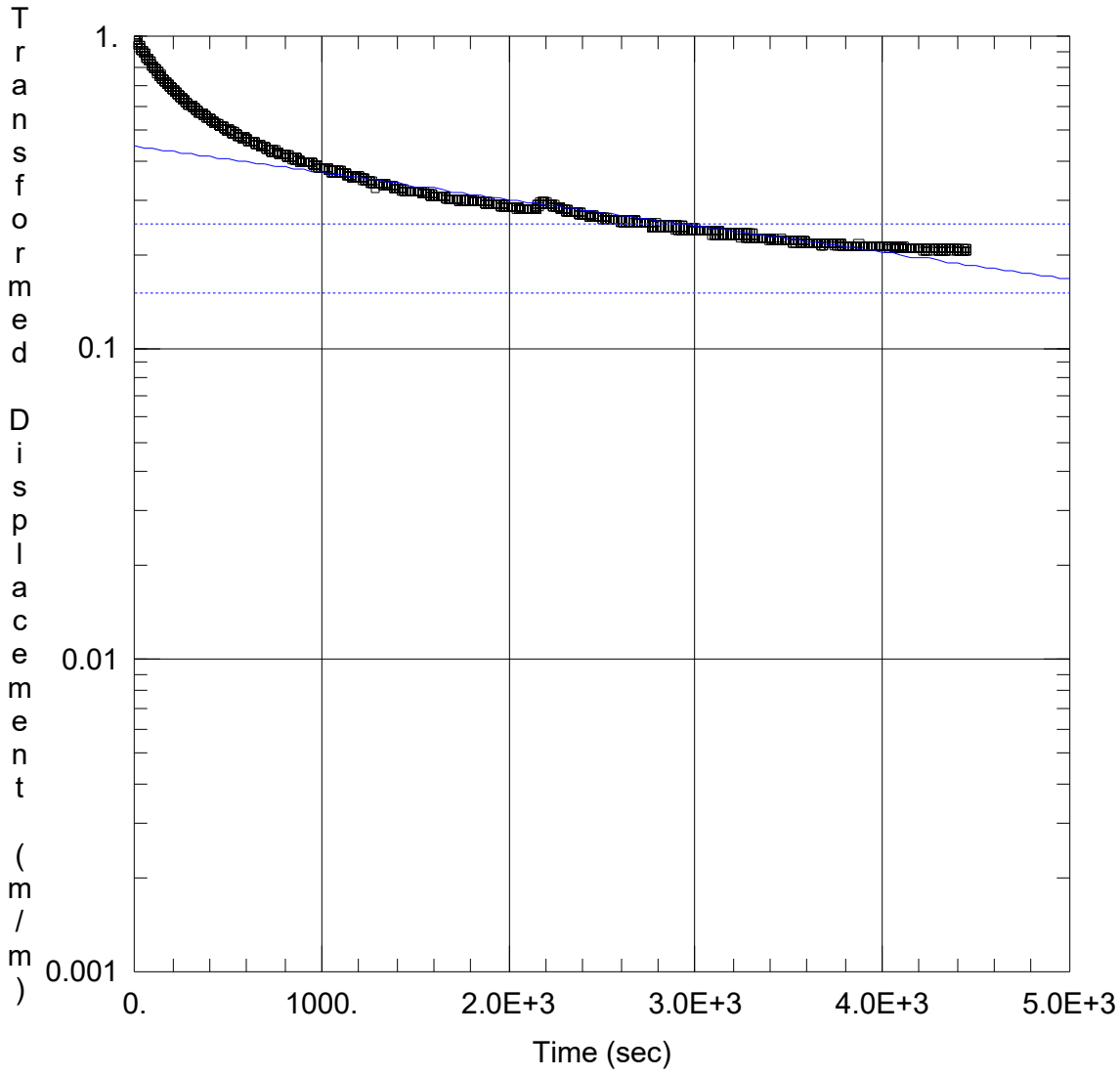
WELL DATA (MW23-2)

Initial Displacement: 0.283 m
Total Well Penetration Depth: 4.78 m
Casing Radius: 0.021 m
Static Water Column Height: 4.88 m
Screen Length: 3. m
Well Radius: 0.021 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 4.756E-8 m/sec
y0 = 0.1037 m



WELL TEST ANALYSIS

Data Set: C:\...\3. MW23-03 Slug test Wizard- Rising Head_jpg.aqt
Date: 10/19/23 Time: 16:42:23

PROJECT INFORMATION

Company: Englobe Corp.
Client: Churchill Properties Inc.
Project: 02103035
Location: 424 Churchill
Test Well: MW23-03
Test Date: Augustr 17, 2023

AQUIFER DATA

Saturated Thickness: 11.74 m Anisotropy Ratio (Kz/Kr): 1.

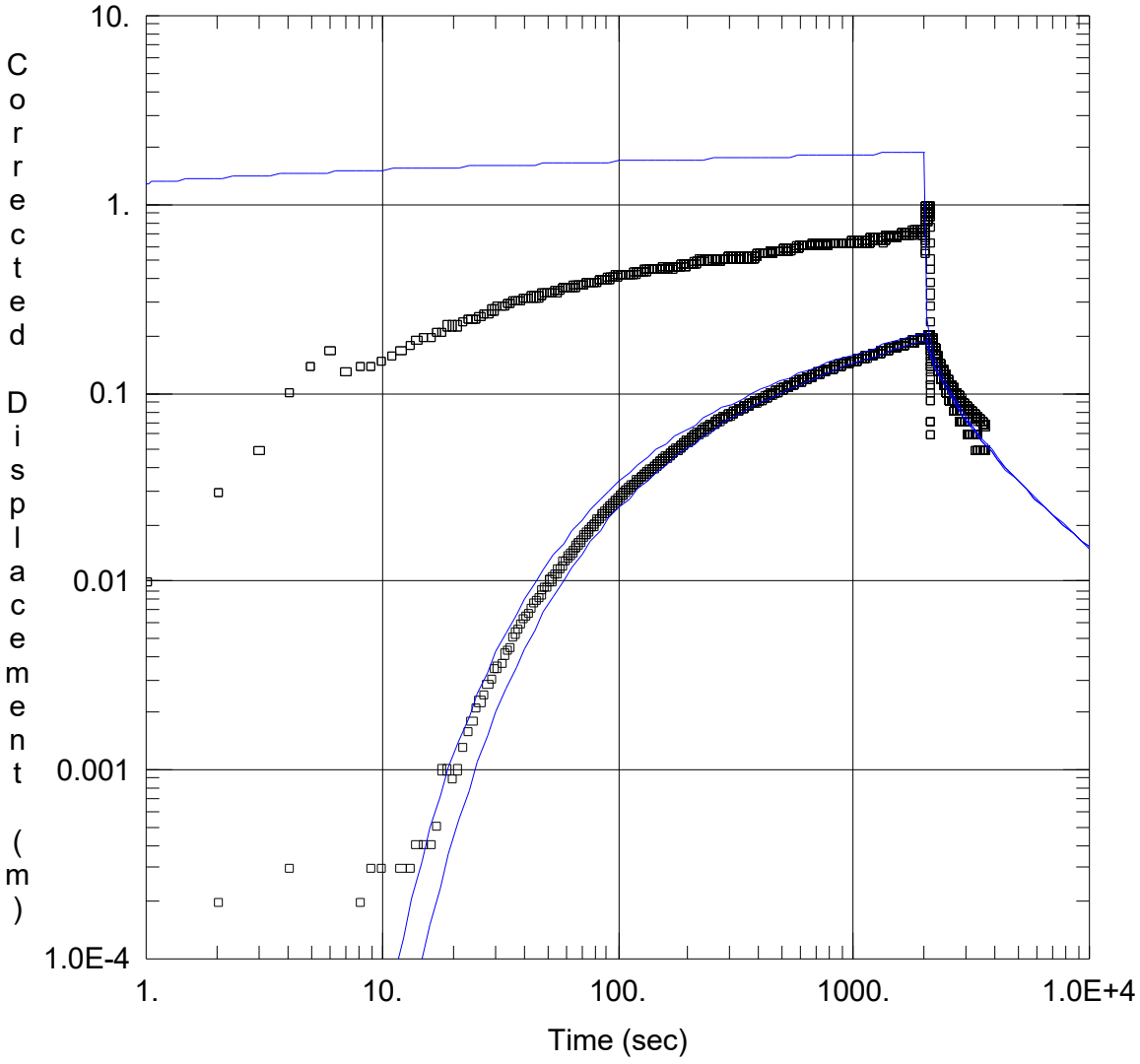
WELL DATA (MW23-03)

Initial Displacement: 0.21 m
Total Well Penetration Depth: 3.56 m
Casing Radius: 0.021 m
Static Water Column Height: 2.54 m
Screen Length: 3. m
Well Radius: 0.021 m

SOLUTION

Aquifer Model: Unconfined Solution Method: Dagan

K = 5.911E-8 m/sec y0 = 0.09512 m



WELL TEST ANALYSIS

Data Set: C:\...\4. MW23-04 Pump Test Wizard- observation wells_jpg.aqt
Date: 10/19/23 Time: 16:54:01

PROJECT INFORMATION

Company: Englobe Corp.
Client: Churchill Properties Inc.
Project: 02103035
Location: 424 Churchill
Test Well: MW23-04
Test Date: Augustr 17, 2023

WELL DATA

Pumping Wells

Well Name	X (m)	Y (m)
MW23-04	18	0

Observation Wells

Well Name	X (m)	Y (m)
MW23-04	18	0
MW23-02	27	13
MW23-03	0	2

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

T = 9.808E-5 m^2/sec
S = 8.757E-5
Kz/Kr = 1.
b = 9.1 m

Data Set: C:\Projects\Churchill Ave\HydroG Assesment - 2023\Appendix C - Hydraulic Conductivity Estimates\AQUESTO
Date: 10/19/23
Time: 16:32:28

PROJECT INFORMATION

Company: Englobe Corp.
Client: Churchill Properties Inc.
Project: 02103035
Location: 424 Churchill
Test Date: Augustr 17, 2023
Test Well: MW23-04

AQUIFER DATA

Saturated Thickness: 9.1 m
Anisotropy Ratio (Kz/Kr): 1.

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: MW23-04

X Location: 18. m
Y Location: 0. m

Casing Radius: 0.0254 m
Well Radius: 0.045 m

Partially Penetrating Well
Depth to Top of Screen: 4.6 m
Depth to Bottom of Screen: 7.6 m

No. of pumping periods: 4

Pumping Period Data

Time (sec)	Rate (L/min)	Time (sec)	Rate (L/min)	Time (sec)	Rate (L/min)
0.	5.	2007.	0.		
2006.	5.	3678.	0.		

OBSERVATION WELL DATA

No. of observation wells: 3

Observation Well No. 1: MW23-04

X Location: 18. m
Y Location: 0. m

Radial distance from MW23-04: 0. m

Partially Penetrating Well
Depth to Top of Screen: 4.6 m
Depth to Bottom of Screen: 7.6 m

No. of Observations: 3678

Observation Data

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1.	0.01	1227.	0.68	2453.	0.11
2.	0.03	1228.	0.68	2454.	0.11
3.	0.05	1229.	0.68	2455.	0.11
4.	0.1	1230.	0.68	2456.	0.11
5.	0.14	1231.	0.68	2457.	0.11
6.	0.17	1232.	0.68	2458.	0.11
7.	0.13	1233.	0.68	2459.	0.11
8.	0.14	1234.	0.69	2460.	0.11
9.	0.14	1235.	0.69	2461.	0.11
10.	0.15	1236.	0.68	2462.	0.11
11.	0.16	1237.	0.69	2463.	0.11
12.	0.17	1238.	0.68	2464.	0.11
13.	0.18	1239.	0.69	2465.	0.11
14.	0.19	1240.	0.69	2466.	0.11
15.	0.2	1241.	0.68	2467.	0.11
16.	0.2	1242.	0.69	2468.	0.11
17.	0.21	1243.	0.68	2469.	0.11
18.	0.21	1244.	0.69	2470.	0.11
19.	0.23	1245.	0.68	2471.	0.11
20.	0.23	1246.	0.69	2472.	0.11
21.	0.23	1247.	0.69	2473.	0.11
22.	0.24	1248.	0.68	2474.	0.11
23.	0.25	1249.	0.69	2475.	0.11
24.	0.25	1250.	0.69	2476.	0.11
25.	0.25	1251.	0.69	2477.	0.11
26.	0.26	1252.	0.68	2478.	0.11
27.	0.27	1253.	0.68	2479.	0.11
28.	0.27	1254.	0.68	2480.	0.11
29.	0.28	1255.	0.69	2481.	0.11
30.	0.28	1256.	0.69	2482.	0.11
31.	0.29	1257.	0.68	2483.	0.11
32.	0.29	1258.	0.69	2484.	0.1
33.	0.29	1259.	0.69	2485.	0.1
34.	0.3	1260.	0.69	2486.	0.1
35.	0.3	1261.	0.69	2487.	0.1
36.	0.31	1262.	0.69	2488.	0.1
37.	0.31	1263.	0.69	2489.	0.1
38.	0.31	1264.	0.68	2490.	0.1
39.	0.31	1265.	0.69	2491.	0.1
40.	0.32	1266.	0.69	2492.	0.1
41.	0.32	1267.	0.68	2493.	0.1
42.	0.32	1268.	0.68	2494.	0.1
43.	0.33	1269.	0.68	2495.	0.1
44.	0.33	1270.	0.68	2496.	0.1
45.	0.33	1271.	0.69	2497.	0.1
46.	0.33	1272.	0.68	2498.	0.1
47.	0.34	1273.	0.69	2499.	0.1
48.	0.34	1274.	0.69	2500.	0.1
49.	0.35	1275.	0.68	2501.	0.1
50.	0.35	1276.	0.68	2502.	0.1
51.	0.35	1277.	0.69	2503.	0.1
52.	0.35	1278.	0.69	2504.	0.1
53.	0.35	1279.	0.68	2505.	0.1
54.	0.36	1280.	0.68	2506.	0.1
55.	0.35	1281.	0.68	2507.	0.1
56.	0.36	1282.	0.68	2508.	0.1

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
57.	0.36	1283.	0.68	2509.	0.1
58.	0.37	1284.	0.68	2510.	0.1
59.	0.37	1285.	0.69	2511.	0.1
60.	0.37	1286.	0.68	2512.	0.1
61.	0.37	1287.	0.69	2513.	0.1
62.	0.37	1288.	0.68	2514.	0.1
63.	0.37	1289.	0.68	2515.	0.1
64.	0.37	1290.	0.68	2516.	0.1
65.	0.38	1291.	0.68	2517.	0.1
66.	0.37	1292.	0.69	2518.	0.1
67.	0.38	1293.	0.68	2519.	0.1
68.	0.38	1294.	0.69	2520.	0.1
69.	0.38	1295.	0.69	2521.	0.1
70.	0.38	1296.	0.68	2522.	0.1
71.	0.38	1297.	0.68	2523.	0.1
72.	0.38	1298.	0.68	2524.	0.1
73.	0.39	1299.	0.69	2525.	0.1
74.	0.39	1300.	0.68	2526.	0.1
75.	0.39	1301.	0.68	2527.	0.1
76.	0.39	1302.	0.68	2528.	0.1
77.	0.39	1303.	0.68	2529.	0.1
78.	0.39	1304.	0.69	2530.	0.1
79.	0.39	1305.	0.68	2531.	0.1
80.	0.4	1306.	0.68	2532.	0.1
81.	0.4	1307.	0.68	2533.	0.1
82.	0.4	1308.	0.68	2534.	0.1
83.	0.41	1309.	0.68	2535.	0.1
84.	0.41	1310.	0.68	2536.	0.1
85.	0.41	1311.	0.69	2537.	0.1
86.	0.41	1312.	0.69	2538.	0.1
87.	0.41	1313.	0.68	2539.	0.1
88.	0.41	1314.	0.68	2540.	0.1
89.	0.41	1315.	0.68	2541.	0.1
90.	0.41	1316.	0.69	2542.	0.1
91.	0.42	1317.	0.68	2543.	0.1
92.	0.41	1318.	0.69	2544.	0.1
93.	0.42	1319.	0.69	2545.	0.1
94.	0.42	1320.	0.69	2546.	0.1
95.	0.42	1321.	0.69	2547.	0.1
96.	0.42	1322.	0.69	2548.	0.1
97.	0.42	1323.	0.69	2549.	0.1
98.	0.43	1324.	0.69	2550.	0.1
99.	0.42	1325.	0.69	2551.	0.1
100.	0.43	1326.	0.68	2552.	0.1
101.	0.43	1327.	0.68	2553.	0.1
102.	0.43	1328.	0.69	2554.	0.1
103.	0.43	1329.	0.68	2555.	0.1
104.	0.43	1330.	0.69	2556.	0.1
105.	0.44	1331.	0.69	2557.	0.1
106.	0.43	1332.	0.69	2558.	0.1
107.	0.43	1333.	0.69	2559.	0.1
108.	0.44	1334.	0.68	2560.	0.1
109.	0.43	1335.	0.68	2561.	0.1
110.	0.44	1336.	0.68	2562.	0.1
111.	0.44	1337.	0.69	2563.	0.1
112.	0.44	1338.	0.69	2564.	0.1
113.	0.44	1339.	0.68	2565.	0.1

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
114.	0.44	1340.	0.69	2566.	0.1
115.	0.44	1341.	0.69	2567.	0.1
116.	0.44	1342.	0.69	2568.	0.09
117.	0.44	1343.	0.68	2569.	0.09
118.	0.45	1344.	0.68	2570.	0.09
119.	0.44	1345.	0.68	2571.	0.09
120.	0.45	1346.	0.68	2572.	0.09
121.	0.45	1347.	0.68	2573.	0.09
122.	0.45	1348.	0.68	2574.	0.09
123.	0.45	1349.	0.69	2575.	0.09
124.	0.45	1350.	0.68	2576.	0.09
125.	0.45	1351.	0.68	2577.	0.09
126.	0.45	1352.	0.68	2578.	0.09
127.	0.45	1353.	0.68	2579.	0.09
128.	0.46	1354.	0.68	2580.	0.09
129.	0.45	1355.	0.68	2581.	0.09
130.	0.46	1356.	0.66	2582.	0.09
131.	0.46	1357.	0.68	2583.	0.09
132.	0.46	1358.	0.68	2584.	0.09
133.	0.45	1359.	0.68	2585.	0.09
134.	0.46	1360.	0.69	2586.	0.09
135.	0.46	1361.	0.69	2587.	0.09
136.	0.46	1362.	0.69	2588.	0.09
137.	0.46	1363.	0.69	2589.	0.09
138.	0.46	1364.	0.69	2590.	0.09
139.	0.46	1365.	0.7	2591.	0.09
140.	0.46	1366.	0.69	2592.	0.09
141.	0.47	1367.	0.69	2593.	0.09
142.	0.46	1368.	0.69	2594.	0.09
143.	0.46	1369.	0.7	2595.	0.09
144.	0.46	1370.	0.7	2596.	0.09
145.	0.46	1371.	0.7	2597.	0.09
146.	0.46	1372.	0.7	2598.	0.09
147.	0.47	1373.	0.7	2599.	0.09
148.	0.47	1374.	0.7	2600.	0.09
149.	0.47	1375.	0.7	2601.	0.09
150.	0.47	1376.	0.7	2602.	0.09
151.	0.47	1377.	0.71	2603.	0.09
152.	0.47	1378.	0.7	2604.	0.09
153.	0.47	1379.	0.7	2605.	0.09
154.	0.48	1380.	0.7	2606.	0.09
155.	0.48	1381.	0.7	2607.	0.09
156.	0.47	1382.	0.7	2608.	0.09
157.	0.47	1383.	0.7	2609.	0.09
158.	0.47	1384.	0.7	2610.	0.09
159.	0.47	1385.	0.7	2611.	0.09
160.	0.47	1386.	0.7	2612.	0.09
161.	0.47	1387.	0.7	2613.	0.09
162.	0.47	1388.	0.7	2614.	0.09
163.	0.47	1389.	0.7	2615.	0.09
164.	0.48	1390.	0.71	2616.	0.09
165.	0.48	1391.	0.7	2617.	0.09
166.	0.48	1392.	0.7	2618.	0.09
167.	0.48	1393.	0.7	2619.	0.09
168.	0.48	1394.	0.71	2620.	0.09
169.	0.48	1395.	0.71	2621.	0.09
170.	0.48	1396.	0.71	2622.	0.09

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
171.	0.48	1397.	0.71	2623.	0.09
172.	0.48	1398.	0.7	2624.	0.09
173.	0.47	1399.	0.7	2625.	0.09
174.	0.48	1400.	0.71	2626.	0.09
175.	0.48	1401.	0.7	2627.	0.09
176.	0.48	1402.	0.71	2628.	0.09
177.	0.48	1403.	0.7	2629.	0.09
178.	0.48	1404.	0.7	2630.	0.09
179.	0.48	1405.	0.7	2631.	0.09
180.	0.48	1406.	0.71	2632.	0.09
181.	0.48	1407.	0.71	2633.	0.09
182.	0.48	1408.	0.71	2634.	0.09
183.	0.48	1409.	0.7	2635.	0.09
184.	0.48	1410.	0.7	2636.	0.09
185.	0.48	1411.	0.71	2637.	0.09
186.	0.48	1412.	0.7	2638.	0.09
187.	0.48	1413.	0.7	2639.	0.09
188.	0.49	1414.	0.71	2640.	0.09
189.	0.49	1415.	0.7	2641.	0.09
190.	0.49	1416.	0.7	2642.	0.09
191.	0.49	1417.	0.71	2643.	0.09
192.	0.49	1418.	0.71	2644.	0.09
193.	0.48	1419.	0.7	2645.	0.09
194.	0.48	1420.	0.7	2646.	0.09
195.	0.49	1421.	0.7	2647.	0.09
196.	0.49	1422.	0.71	2648.	0.09
197.	0.48	1423.	0.7	2649.	0.09
198.	0.49	1424.	0.7	2650.	0.09
199.	0.49	1425.	0.7	2651.	0.09
200.	0.49	1426.	0.7	2652.	0.09
201.	0.49	1427.	0.7	2653.	0.09
202.	0.49	1428.	0.7	2654.	0.09
203.	0.5	1429.	0.71	2655.	0.09
204.	0.5	1430.	0.71	2656.	0.09
205.	0.49	1431.	0.7	2657.	0.09
206.	0.5	1432.	0.7	2658.	0.09
207.	0.5	1433.	0.7	2659.	0.09
208.	0.5	1434.	0.71	2660.	0.09
209.	0.5	1435.	0.7	2661.	0.09
210.	0.5	1436.	0.71	2662.	0.09
211.	0.5	1437.	0.71	2663.	0.09
212.	0.5	1438.	0.7	2664.	0.09
213.	0.5	1439.	0.71	2665.	0.09
214.	0.51	1440.	0.7	2666.	0.09
215.	0.5	1441.	0.7	2667.	0.09
216.	0.51	1442.	0.7	2668.	0.09
217.	0.51	1443.	0.7	2669.	0.09
218.	0.51	1444.	0.7	2670.	0.09
219.	0.51	1445.	0.7	2671.	0.09
220.	0.51	1446.	0.7	2672.	0.09
221.	0.51	1447.	0.7	2673.	0.09
222.	0.51	1448.	0.7	2674.	0.09
223.	0.52	1449.	0.7	2675.	0.09
224.	0.51	1450.	0.7	2676.	0.09
225.	0.51	1451.	0.7	2677.	0.09
226.	0.51	1452.	0.7	2678.	0.09
227.	0.51	1453.	0.71	2679.	0.09

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
228.	0.52	1454.	0.71	2680.	0.09
229.	0.51	1455.	0.71	2681.	0.09
230.	0.51	1456.	0.7	2682.	0.09
231.	0.51	1457.	0.7	2683.	0.09
232.	0.52	1458.	0.7	2684.	0.09
233.	0.52	1459.	0.7	2685.	0.09
234.	0.51	1460.	0.7	2686.	0.09
235.	0.52	1461.	0.7	2687.	0.09
236.	0.52	1462.	0.71	2688.	0.08
237.	0.52	1463.	0.7	2689.	0.09
238.	0.52	1464.	0.7	2690.	0.08
239.	0.52	1465.	0.7	2691.	0.08
240.	0.52	1466.	0.71	2692.	0.08
241.	0.52	1467.	0.7	2693.	0.08
242.	0.52	1468.	0.71	2694.	0.08
243.	0.52	1469.	0.71	2695.	0.08
244.	0.52	1470.	0.7	2696.	0.08
245.	0.52	1471.	0.71	2697.	0.08
246.	0.52	1472.	0.71	2698.	0.08
247.	0.52	1473.	0.7	2699.	0.08
248.	0.52	1474.	0.7	2700.	0.08
249.	0.52	1475.	0.71	2701.	0.08
250.	0.52	1476.	0.71	2702.	0.08
251.	0.52	1477.	0.7	2703.	0.08
252.	0.52	1478.	0.7	2704.	0.08
253.	0.52	1479.	0.7	2705.	0.08
254.	0.52	1480.	0.7	2706.	0.08
255.	0.53	1481.	0.71	2707.	0.08
256.	0.52	1482.	0.7	2708.	0.08
257.	0.53	1483.	0.7	2709.	0.08
258.	0.52	1484.	0.7	2710.	0.08
259.	0.53	1485.	0.7	2711.	0.08
260.	0.53	1486.	0.7	2712.	0.08
261.	0.52	1487.	0.7	2713.	0.08
262.	0.53	1488.	0.7	2714.	0.08
263.	0.53	1489.	0.7	2715.	0.08
264.	0.53	1490.	0.7	2716.	0.08
265.	0.52	1491.	0.7	2717.	0.08
266.	0.53	1492.	0.71	2718.	0.08
267.	0.53	1493.	0.7	2719.	0.08
268.	0.53	1494.	0.7	2720.	0.08
269.	0.53	1495.	0.7	2721.	0.08
270.	0.53	1496.	0.7	2722.	0.08
271.	0.52	1497.	0.71	2723.	0.08
272.	0.52	1498.	0.71	2724.	0.08
273.	0.52	1499.	0.7	2725.	0.08
274.	0.53	1500.	0.71	2726.	0.08
275.	0.53	1501.	0.71	2727.	0.08
276.	0.53	1502.	0.71	2728.	0.08
277.	0.53	1503.	0.71	2729.	0.08
278.	0.53	1504.	0.71	2730.	0.08
279.	0.53	1505.	0.71	2731.	0.08
280.	0.53	1506.	0.7	2732.	0.08
281.	0.53	1507.	0.71	2733.	0.08
282.	0.53	1508.	0.71	2734.	0.08
283.	0.53	1509.	0.71	2735.	0.08
284.	0.53	1510.	0.71	2736.	0.08

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
285.	0.53	1511.	0.7	2737.	0.08
286.	0.53	1512.	0.7	2738.	0.08
287.	0.53	1513.	0.71	2739.	0.08
288.	0.53	1514.	0.71	2740.	0.08
289.	0.53	1515.	0.71	2741.	0.08
290.	0.53	1516.	0.71	2742.	0.08
291.	0.53	1517.	0.7	2743.	0.08
292.	0.54	1518.	0.7	2744.	0.08
293.	0.54	1519.	0.71	2745.	0.08
294.	0.53	1520.	0.7	2746.	0.08
295.	0.53	1521.	0.71	2747.	0.08
296.	0.53	1522.	0.71	2748.	0.08
297.	0.53	1523.	0.7	2749.	0.08
298.	0.53	1524.	0.7	2750.	0.08
299.	0.53	1525.	0.7	2751.	0.08
300.	0.54	1526.	0.7	2752.	0.08
301.	0.53	1527.	0.7	2753.	0.08
302.	0.54	1528.	0.7	2754.	0.08
303.	0.54	1529.	0.7	2755.	0.08
304.	0.54	1530.	0.7	2756.	0.08
305.	0.54	1531.	0.7	2757.	0.08
306.	0.53	1532.	0.7	2758.	0.08
307.	0.54	1533.	0.7	2759.	0.08
308.	0.54	1534.	0.7	2760.	0.08
309.	0.54	1535.	0.7	2761.	0.08
310.	0.53	1536.	0.71	2762.	0.08
311.	0.54	1537.	0.7	2763.	0.08
312.	0.54	1538.	0.7	2764.	0.08
313.	0.53	1539.	0.7	2765.	0.08
314.	0.54	1540.	0.71	2766.	0.08
315.	0.54	1541.	0.71	2767.	0.08
316.	0.54	1542.	0.71	2768.	0.08
317.	0.53	1543.	0.71	2769.	0.08
318.	0.53	1544.	0.71	2770.	0.08
319.	0.54	1545.	0.71	2771.	0.08
320.	0.53	1546.	0.71	2772.	0.08
321.	0.53	1547.	0.71	2773.	0.08
322.	0.54	1548.	0.71	2774.	0.08
323.	0.54	1549.	0.71	2775.	0.08
324.	0.54	1550.	0.71	2776.	0.08
325.	0.54	1551.	0.71	2777.	0.08
326.	0.54	1552.	0.71	2778.	0.08
327.	0.53	1553.	0.71	2779.	0.08
328.	0.54	1554.	0.71	2780.	0.08
329.	0.54	1555.	0.71	2781.	0.08
330.	0.54	1556.	0.71	2782.	0.08
331.	0.54	1557.	0.71	2783.	0.08
332.	0.54	1558.	0.71	2784.	0.08
333.	0.53	1559.	0.71	2785.	0.08
334.	0.54	1560.	0.71	2786.	0.08
335.	0.54	1561.	0.71	2787.	0.08
336.	0.54	1562.	0.71	2788.	0.08
337.	0.53	1563.	0.71	2789.	0.08
338.	0.54	1564.	0.71	2790.	0.08
339.	0.54	1565.	0.72	2791.	0.08
340.	0.54	1566.	0.71	2792.	0.08
341.	0.54	1567.	0.72	2793.	0.08

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
342.	0.54	1568.	0.72	2794.	0.08
343.	0.54	1569.	0.72	2795.	0.08
344.	0.54	1570.	0.71	2796.	0.08
345.	0.54	1571.	0.72	2797.	0.08
346.	0.54	1572.	0.71	2798.	0.08
347.	0.54	1573.	0.71	2799.	0.08
348.	0.54	1574.	0.71	2800.	0.08
349.	0.54	1575.	0.71	2801.	0.08
350.	0.54	1576.	0.72	2802.	0.08
351.	0.54	1577.	0.72	2803.	0.08
352.	0.54	1578.	0.72	2804.	0.08
353.	0.54	1579.	0.71	2805.	0.08
354.	0.54	1580.	0.72	2806.	0.08
355.	0.54	1581.	0.71	2807.	0.08
356.	0.54	1582.	0.72	2808.	0.08
357.	0.54	1583.	0.71	2809.	0.08
358.	0.54	1584.	0.72	2810.	0.08
359.	0.54	1585.	0.72	2811.	0.08
360.	0.54	1586.	0.72	2812.	0.08
361.	0.54	1587.	0.72	2813.	0.08
362.	0.54	1588.	0.71	2814.	0.08
363.	0.54	1589.	0.71	2815.	0.08
364.	0.54	1590.	0.72	2816.	0.08
365.	0.54	1591.	0.71	2817.	0.08
366.	0.54	1592.	0.72	2818.	0.08
367.	0.54	1593.	0.71	2819.	0.08
368.	0.53	1594.	0.72	2820.	0.08
369.	0.54	1595.	0.72	2821.	0.08
370.	0.54	1596.	0.72	2822.	0.08
371.	0.54	1597.	0.72	2823.	0.08
372.	0.54	1598.	0.72	2824.	0.08
373.	0.54	1599.	0.72	2825.	0.08
374.	0.54	1600.	0.72	2826.	0.08
375.	0.54	1601.	0.73	2827.	0.08
376.	0.54	1602.	0.72	2828.	0.08
377.	0.54	1603.	0.72	2829.	0.08
378.	0.55	1604.	0.73	2830.	0.08
379.	0.55	1605.	0.72	2831.	0.08
380.	0.54	1606.	0.73	2832.	0.08
381.	0.54	1607.	0.73	2833.	0.08
382.	0.54	1608.	0.73	2834.	0.08
383.	0.55	1609.	0.73	2835.	0.08
384.	0.55	1610.	0.73	2836.	0.08
385.	0.55	1611.	0.73	2837.	0.08
386.	0.55	1612.	0.73	2838.	0.08
387.	0.55	1613.	0.72	2839.	0.08
388.	0.55	1614.	0.73	2840.	0.07
389.	0.55	1615.	0.73	2841.	0.07
390.	0.56	1616.	0.73	2842.	0.07
391.	0.55	1617.	0.73	2843.	0.07
392.	0.55	1618.	0.72	2844.	0.07
393.	0.56	1619.	0.72	2845.	0.07
394.	0.55	1620.	0.73	2846.	0.07
395.	0.56	1621.	0.73	2847.	0.07
396.	0.56	1622.	0.73	2848.	0.07
397.	0.56	1623.	0.73	2849.	0.07
398.	0.56	1624.	0.73	2850.	0.07

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
399.	0.56	1625.	0.72	2851.	0.07
400.	0.56	1626.	0.73	2852.	0.07
401.	0.56	1627.	0.73	2853.	0.07
402.	0.56	1628.	0.73	2854.	0.07
403.	0.56	1629.	0.73	2855.	0.07
404.	0.56	1630.	0.72	2856.	0.07
405.	0.56	1631.	0.73	2857.	0.07
406.	0.56	1632.	0.73	2858.	0.07
407.	0.56	1633.	0.73	2859.	0.07
408.	0.57	1634.	0.73	2860.	0.07
409.	0.56	1635.	0.73	2861.	0.07
410.	0.57	1636.	0.73	2862.	0.07
411.	0.57	1637.	0.73	2863.	0.07
412.	0.57	1638.	0.73	2864.	0.07
413.	0.57	1639.	0.73	2865.	0.07
414.	0.57	1640.	0.73	2866.	0.07
415.	0.57	1641.	0.73	2867.	0.07
416.	0.57	1642.	0.72	2868.	0.07
417.	0.57	1643.	0.73	2869.	0.07
418.	0.57	1644.	0.73	2870.	0.07
419.	0.57	1645.	0.73	2871.	0.07
420.	0.57	1646.	0.73	2872.	0.07
421.	0.57	1647.	0.73	2873.	0.07
422.	0.57	1648.	0.73	2874.	0.07
423.	0.57	1649.	0.73	2875.	0.07
424.	0.57	1650.	0.72	2876.	0.07
425.	0.57	1651.	0.73	2877.	0.07
426.	0.57	1652.	0.73	2878.	0.07
427.	0.57	1653.	0.73	2879.	0.07
428.	0.57	1654.	0.73	2880.	0.07
429.	0.57	1655.	0.73	2881.	0.07
430.	0.57	1656.	0.73	2882.	0.07
431.	0.57	1657.	0.73	2883.	0.07
432.	0.57	1658.	0.73	2884.	0.07
433.	0.57	1659.	0.73	2885.	0.07
434.	0.57	1660.	0.73	2886.	0.07
435.	0.57	1661.	0.73	2887.	0.07
436.	0.57	1662.	0.73	2888.	0.07
437.	0.57	1663.	0.73	2889.	0.07
438.	0.57	1664.	0.73	2890.	0.07
439.	0.57	1665.	0.73	2891.	0.07
440.	0.57	1666.	0.73	2892.	0.07
441.	0.57	1667.	0.73	2893.	0.07
442.	0.58	1668.	0.73	2894.	0.07
443.	0.57	1669.	0.73	2895.	0.07
444.	0.58	1670.	0.73	2896.	0.07
445.	0.58	1671.	0.73	2897.	0.07
446.	0.57	1672.	0.73	2898.	0.07
447.	0.57	1673.	0.73	2899.	0.07
448.	0.57	1674.	0.73	2900.	0.07
449.	0.57	1675.	0.73	2901.	0.07
450.	0.58	1676.	0.73	2902.	0.07
451.	0.57	1677.	0.73	2903.	0.07
452.	0.58	1678.	0.73	2904.	0.07
453.	0.57	1679.	0.73	2905.	0.07
454.	0.57	1680.	0.73	2906.	0.07
455.	0.58	1681.	0.73	2907.	0.07

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
456.	0.58	1682.	0.73	2908.	0.07
457.	0.58	1683.	0.73	2909.	0.07
458.	0.58	1684.	0.73	2910.	0.07
459.	0.58	1685.	0.73	2911.	0.07
460.	0.58	1686.	0.72	2912.	0.07
461.	0.58	1687.	0.72	2913.	0.07
462.	0.58	1688.	0.72	2914.	0.07
463.	0.58	1689.	0.73	2915.	0.07
464.	0.59	1690.	0.73	2916.	0.07
465.	0.58	1691.	0.73	2917.	0.07
466.	0.58	1692.	0.73	2918.	0.07
467.	0.59	1693.	0.72	2919.	0.07
468.	0.58	1694.	0.73	2920.	0.07
469.	0.59	1695.	0.72	2921.	0.07
470.	0.59	1696.	0.72	2922.	0.07
471.	0.58	1697.	0.73	2923.	0.07
472.	0.58	1698.	0.73	2924.	0.07
473.	0.58	1699.	0.73	2925.	0.07
474.	0.58	1700.	0.72	2926.	0.07
475.	0.58	1701.	0.73	2927.	0.07
476.	0.58	1702.	0.73	2928.	0.07
477.	0.58	1703.	0.72	2929.	0.07
478.	0.58	1704.	0.73	2930.	0.07
479.	0.58	1705.	0.73	2931.	0.07
480.	0.59	1706.	0.72	2932.	0.07
481.	0.58	1707.	0.73	2933.	0.07
482.	0.59	1708.	0.73	2934.	0.07
483.	0.58	1709.	0.73	2935.	0.07
484.	0.59	1710.	0.73	2936.	0.07
485.	0.59	1711.	0.72	2937.	0.07
486.	0.59	1712.	0.72	2938.	0.07
487.	0.58	1713.	0.72	2939.	0.07
488.	0.59	1714.	0.73	2940.	0.07
489.	0.59	1715.	0.72	2941.	0.07
490.	0.59	1716.	0.73	2942.	0.07
491.	0.59	1717.	0.73	2943.	0.07
492.	0.59	1718.	0.73	2944.	0.07
493.	0.59	1719.	0.73	2945.	0.07
494.	0.59	1720.	0.72	2946.	0.07
495.	0.59	1721.	0.72	2947.	0.07
496.	0.59	1722.	0.73	2948.	0.07
497.	0.59	1723.	0.72	2949.	0.07
498.	0.59	1724.	0.73	2950.	0.07
499.	0.59	1725.	0.73	2951.	0.07
500.	0.6	1726.	0.73	2952.	0.07
501.	0.59	1727.	0.73	2953.	0.07
502.	0.59	1728.	0.73	2954.	0.07
503.	0.59	1729.	0.73	2955.	0.07
504.	0.59	1730.	0.73	2956.	0.07
505.	0.59	1731.	0.73	2957.	0.07
506.	0.59	1732.	0.73	2958.	0.07
507.	0.6	1733.	0.73	2959.	0.07
508.	0.59	1734.	0.73	2960.	0.07
509.	0.6	1735.	0.72	2961.	0.07
510.	0.59	1736.	0.73	2962.	0.07
511.	0.59	1737.	0.73	2963.	0.07
512.	0.59	1738.	0.73	2964.	0.07

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
513.	0.59	1739.	0.73	2965.	0.07
514.	0.59	1740.	0.72	2966.	0.07
515.	0.59	1741.	0.72	2967.	0.07
516.	0.59	1742.	0.72	2968.	0.07
517.	0.59	1743.	0.72	2969.	0.07
518.	0.6	1744.	0.72	2970.	0.07
519.	0.59	1745.	0.72	2971.	0.07
520.	0.59	1746.	0.73	2972.	0.07
521.	0.59	1747.	0.72	2973.	0.07
522.	0.6	1748.	0.72	2974.	0.07
523.	0.6	1749.	0.73	2975.	0.07
524.	0.59	1750.	0.72	2976.	0.07
525.	0.59	1751.	0.73	2977.	0.07
526.	0.59	1752.	0.73	2978.	0.07
527.	0.59	1753.	0.72	2979.	0.07
528.	0.59	1754.	0.72	2980.	0.07
529.	0.6	1755.	0.73	2981.	0.07
530.	0.59	1756.	0.72	2982.	0.07
531.	0.59	1757.	0.73	2983.	0.07
532.	0.59	1758.	0.73	2984.	0.07
533.	0.59	1759.	0.74	2985.	0.07
534.	0.59	1760.	0.73	2986.	0.07
535.	0.59	1761.	0.73	2987.	0.07
536.	0.6	1762.	0.74	2988.	0.07
537.	0.6	1763.	0.74	2989.	0.07
538.	0.59	1764.	0.74	2990.	0.07
539.	0.6	1765.	0.74	2991.	0.07
540.	0.59	1766.	0.74	2992.	0.07
541.	0.6	1767.	0.74	2993.	0.07
542.	0.6	1768.	0.74	2994.	0.07
543.	0.6	1769.	0.74	2995.	0.07
544.	0.6	1770.	0.74	2996.	0.07
545.	0.6	1771.	0.74	2997.	0.07
546.	0.6	1772.	0.75	2998.	0.07
547.	0.6	1773.	0.74	2999.	0.07
548.	0.6	1774.	0.74	3000.	0.07
549.	0.6	1775.	0.74	3001.	0.07
550.	0.6	1776.	0.75	3002.	0.07
551.	0.6	1777.	0.74	3003.	0.07
552.	0.6	1778.	0.75	3004.	0.07
553.	0.6	1779.	0.75	3005.	0.07
554.	0.6	1780.	0.75	3006.	0.07
555.	0.6	1781.	0.75	3007.	0.07
556.	0.6	1782.	0.75	3008.	0.07
557.	0.6	1783.	0.75	3009.	0.07
558.	0.6	1784.	0.75	3010.	0.07
559.	0.6	1785.	0.75	3011.	0.07
560.	0.6	1786.	0.75	3012.	0.07
561.	0.6	1787.	0.75	3013.	0.07
562.	0.6	1788.	0.76	3014.	0.07
563.	0.6	1789.	0.75	3015.	0.07
564.	0.6	1790.	0.75	3016.	0.07
565.	0.6	1791.	0.75	3017.	0.07
566.	0.6	1792.	0.75	3018.	0.07
567.	0.6	1793.	0.75	3019.	0.07
568.	0.6	1794.	0.75	3020.	0.07
569.	0.6	1795.	0.75	3021.	0.07

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
570.	0.6	1796.	0.75	3022.	0.07
571.	0.61	1797.	0.75	3023.	0.07
572.	0.61	1798.	0.75	3024.	0.07
573.	0.61	1799.	0.75	3025.	0.07
574.	0.6	1800.	0.75	3026.	0.07
575.	0.61	1801.	0.75	3027.	0.07
576.	0.61	1802.	0.75	3028.	0.07
577.	0.61	1803.	0.75	3029.	0.07
578.	0.61	1804.	0.75	3030.	0.07
579.	0.61	1805.	0.75	3031.	0.07
580.	0.61	1806.	0.75	3032.	0.07
581.	0.62	1807.	0.75	3033.	0.07
582.	0.61	1808.	0.75	3034.	0.07
583.	0.61	1809.	0.75	3035.	0.07
584.	0.61	1810.	0.75	3036.	0.07
585.	0.62	1811.	0.76	3037.	0.07
586.	0.62	1812.	0.75	3038.	0.07
587.	0.62	1813.	0.76	3039.	0.07
588.	0.62	1814.	0.75	3040.	0.07
589.	0.62	1815.	0.75	3041.	0.07
590.	0.62	1816.	0.76	3042.	0.07
591.	0.62	1817.	0.75	3043.	0.07
592.	0.62	1818.	0.75	3044.	0.07
593.	0.62	1819.	0.76	3045.	0.06
594.	0.62	1820.	0.75	3046.	0.06
595.	0.62	1821.	0.75	3047.	0.06
596.	0.62	1822.	0.75	3048.	0.06
597.	0.62	1823.	0.75	3049.	0.07
598.	0.62	1824.	0.75	3050.	0.07
599.	0.62	1825.	0.75	3051.	0.07
600.	0.62	1826.	0.75	3052.	0.07
601.	0.62	1827.	0.75	3053.	0.07
602.	0.62	1828.	0.75	3054.	0.07
603.	0.62	1829.	0.75	3055.	0.07
604.	0.62	1830.	0.75	3056.	0.06
605.	0.62	1831.	0.75	3057.	0.07
606.	0.62	1832.	0.75	3058.	0.06
607.	0.62	1833.	0.75	3059.	0.06
608.	0.63	1834.	0.75	3060.	0.06
609.	0.63	1835.	0.75	3061.	0.06
610.	0.62	1836.	0.75	3062.	0.06
611.	0.63	1837.	0.75	3063.	0.06
612.	0.62	1838.	0.75	3064.	0.06
613.	0.63	1839.	0.75	3065.	0.07
614.	0.63	1840.	0.75	3066.	0.06
615.	0.63	1841.	0.75	3067.	0.06
616.	0.63	1842.	0.75	3068.	0.06
617.	0.62	1843.	0.75	3069.	0.06
618.	0.63	1844.	0.75	3070.	0.06
619.	0.63	1845.	0.75	3071.	0.06
620.	0.63	1846.	0.75	3072.	0.06
621.	0.62	1847.	0.75	3073.	0.06
622.	0.63	1848.	0.75	3074.	0.06
623.	0.63	1849.	0.75	3075.	0.06
624.	0.63	1850.	0.74	3076.	0.06
625.	0.63	1851.	0.75	3077.	0.06
626.	0.63	1852.	0.75	3078.	0.06

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
627.	0.63	1853.	0.75	3079.	0.06
628.	0.63	1854.	0.75	3080.	0.06
629.	0.63	1855.	0.75	3081.	0.06
630.	0.62	1856.	0.75	3082.	0.06
631.	0.62	1857.	0.75	3083.	0.06
632.	0.63	1858.	0.74	3084.	0.06
633.	0.63	1859.	0.75	3085.	0.06
634.	0.63	1860.	0.75	3086.	0.06
635.	0.63	1861.	0.75	3087.	0.06
636.	0.63	1862.	0.75	3088.	0.06
637.	0.63	1863.	0.75	3089.	0.06
638.	0.63	1864.	0.75	3090.	0.06
639.	0.63	1865.	0.75	3091.	0.06
640.	0.63	1866.	0.75	3092.	0.06
641.	0.63	1867.	0.74	3093.	0.06
642.	0.63	1868.	0.75	3094.	0.06
643.	0.63	1869.	0.75	3095.	0.06
644.	0.62	1870.	0.75	3096.	0.06
645.	0.63	1871.	0.75	3097.	0.06
646.	0.63	1872.	0.75	3098.	0.06
647.	0.63	1873.	0.75	3099.	0.06
648.	0.63	1874.	0.75	3100.	0.06
649.	0.63	1875.	0.74	3101.	0.06
650.	0.63	1876.	0.75	3102.	0.06
651.	0.63	1877.	0.75	3103.	0.06
652.	0.63	1878.	0.75	3104.	0.06
653.	0.63	1879.	0.75	3105.	0.06
654.	0.63	1880.	0.75	3106.	0.06
655.	0.63	1881.	0.75	3107.	0.06
656.	0.62	1882.	0.75	3108.	0.06
657.	0.63	1883.	0.75	3109.	0.06
658.	0.63	1884.	0.75	3110.	0.06
659.	0.63	1885.	0.75	3111.	0.06
660.	0.63	1886.	0.75	3112.	0.06
661.	0.63	1887.	0.75	3113.	0.06
662.	0.63	1888.	0.75	3114.	0.06
663.	0.63	1889.	0.75	3115.	0.06
664.	0.63	1890.	0.76	3116.	0.06
665.	0.63	1891.	0.75	3117.	0.06
666.	0.63	1892.	0.75	3118.	0.06
667.	0.63	1893.	0.75	3119.	0.06
668.	0.64	1894.	0.75	3120.	0.06
669.	0.63	1895.	0.75	3121.	0.06
670.	0.63	1896.	0.75	3122.	0.06
671.	0.63	1897.	0.75	3123.	0.06
672.	0.63	1898.	0.76	3124.	0.06
673.	0.63	1899.	0.76	3125.	0.06
674.	0.63	1900.	0.76	3126.	0.06
675.	0.63	1901.	0.75	3127.	0.06
676.	0.63	1902.	0.75	3128.	0.06
677.	0.64	1903.	0.75	3129.	0.06
678.	0.63	1904.	0.75	3130.	0.06
679.	0.64	1905.	0.75	3131.	0.06
680.	0.63	1906.	0.75	3132.	0.06
681.	0.63	1907.	0.75	3133.	0.06
682.	0.63	1908.	0.75	3134.	0.06
683.	0.63	1909.	0.76	3135.	0.06

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
684.	0.64	1910.	0.75	3136.	0.06
685.	0.63	1911.	0.75	3137.	0.06
686.	0.64	1912.	0.75	3138.	0.06
687.	0.63	1913.	0.75	3139.	0.06
688.	0.64	1914.	0.75	3140.	0.06
689.	0.63	1915.	0.75	3141.	0.06
690.	0.63	1916.	0.75	3142.	0.06
691.	0.63	1917.	0.75	3143.	0.06
692.	0.64	1918.	0.75	3144.	0.06
693.	0.63	1919.	0.75	3145.	0.06
694.	0.64	1920.	0.75	3146.	0.06
695.	0.64	1921.	0.75	3147.	0.06
696.	0.63	1922.	0.75	3148.	0.06
697.	0.64	1923.	0.75	3149.	0.06
698.	0.64	1924.	0.75	3150.	0.06
699.	0.64	1925.	0.75	3151.	0.06
700.	0.63	1926.	0.76	3152.	0.06
701.	0.64	1927.	0.75	3153.	0.06
702.	0.64	1928.	0.74	3154.	0.06
703.	0.63	1929.	0.75	3155.	0.06
704.	0.64	1930.	0.75	3156.	0.06
705.	0.64	1931.	0.75	3157.	0.06
706.	0.64	1932.	0.75	3158.	0.06
707.	0.63	1933.	0.74	3159.	0.06
708.	0.63	1934.	0.74	3160.	0.06
709.	0.64	1935.	0.74	3161.	0.06
710.	0.64	1936.	0.73	3162.	0.06
711.	0.63	1937.	0.73	3163.	0.06
712.	0.64	1938.	0.73	3164.	0.06
713.	0.64	1939.	0.73	3165.	0.06
714.	0.64	1940.	0.73	3166.	0.06
715.	0.64	1941.	0.73	3167.	0.06
716.	0.63	1942.	0.73	3168.	0.06
717.	0.64	1943.	0.73	3169.	0.06
718.	0.63	1944.	0.73	3170.	0.06
719.	0.64	1945.	0.72	3171.	0.06
720.	0.64	1946.	0.72	3172.	0.06
721.	0.64	1947.	0.72	3173.	0.06
722.	0.64	1948.	0.72	3174.	0.06
723.	0.64	1949.	0.72	3175.	0.06
724.	0.64	1950.	0.72	3176.	0.06
725.	0.64	1951.	0.73	3177.	0.06
726.	0.64	1952.	0.72	3178.	0.06
727.	0.64	1953.	0.72	3179.	0.06
728.	0.64	1954.	0.72	3180.	0.06
729.	0.64	1955.	0.72	3181.	0.06
730.	0.64	1956.	0.72	3182.	0.06
731.	0.64	1957.	0.72	3183.	0.06
732.	0.63	1958.	0.72	3184.	0.06
733.	0.64	1959.	0.72	3185.	0.06
734.	0.64	1960.	0.71	3186.	0.06
735.	0.64	1961.	0.72	3187.	0.06
736.	0.64	1962.	0.72	3188.	0.06
737.	0.64	1963.	0.72	3189.	0.06
738.	0.64	1964.	0.72	3190.	0.06
739.	0.64	1965.	0.72	3191.	0.06
740.	0.64	1966.	0.72	3192.	0.06

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
741.	0.64	1967.	0.73	3193.	0.06
742.	0.64	1968.	0.72	3194.	0.06
743.	0.64	1969.	0.72	3195.	0.06
744.	0.64	1970.	0.72	3196.	0.06
745.	0.64	1971.	0.72	3197.	0.06
746.	0.64	1972.	0.72	3198.	0.06
747.	0.64	1973.	0.73	3199.	0.06
748.	0.64	1974.	0.72	3200.	0.06
749.	0.64	1975.	0.72	3201.	0.06
750.	0.64	1976.	0.72	3202.	0.06
751.	0.64	1977.	0.72	3203.	0.06
752.	0.64	1978.	0.72	3204.	0.06
753.	0.64	1979.	0.73	3205.	0.06
754.	0.64	1980.	0.73	3206.	0.06
755.	0.64	1981.	0.72	3207.	0.06
756.	0.64	1982.	0.73	3208.	0.06
757.	0.64	1983.	0.72	3209.	0.06
758.	0.64	1984.	0.73	3210.	0.06
759.	0.64	1985.	0.72	3211.	0.06
760.	0.64	1986.	0.72	3212.	0.06
761.	0.64	1987.	0.73	3213.	0.06
762.	0.64	1988.	0.72	3214.	0.06
763.	0.63	1989.	0.72	3215.	0.06
764.	0.64	1990.	0.72	3216.	0.06
765.	0.64	1991.	0.73	3217.	0.06
766.	0.63	1992.	0.73	3218.	0.06
767.	0.63	1993.	0.73	3219.	0.06
768.	0.64	1994.	0.74	3220.	0.06
769.	0.64	1995.	0.72	3221.	0.06
770.	0.64	1996.	0.73	3222.	0.06
771.	0.63	1997.	0.73	3223.	0.06
772.	0.63	1998.	0.73	3224.	0.06
773.	0.63	1999.	0.74	3225.	0.06
774.	0.63	2000.	0.72	3226.	0.06
775.	0.63	2001.	0.56	3227.	0.06
776.	0.64	2002.	0.58	3228.	0.06
777.	0.63	2003.	0.64	3229.	0.06
778.	0.64	2004.	0.67	3230.	0.06
779.	0.64	2005.	0.7	3231.	0.06
780.	0.64	2006.	0.72	3232.	0.06
781.	0.64	2007.	0.75	3233.	0.06
782.	0.64	2008.	0.78	3234.	0.06
783.	0.64	2009.	0.79	3235.	0.06
784.	0.64	2010.	0.82	3236.	0.06
785.	0.64	2011.	0.84	3237.	0.06
786.	0.64	2012.	0.85	3238.	0.06
787.	0.64	2013.	0.88	3239.	0.06
788.	0.64	2014.	0.9	3240.	0.06
789.	0.65	2015.	0.93	3241.	0.06
790.	0.65	2016.	0.96	3242.	0.06
791.	0.64	2017.	0.99	3243.	0.06
792.	0.65	2018.	1.02	3244.	0.06
793.	0.65	2019.	1.04	3245.	0.06
794.	0.65	2020.	1.	3246.	0.06
795.	0.65	2021.	0.99	3247.	0.06
796.	0.65	2022.	1.	3248.	0.06
797.	0.65	2023.	1.03	3249.	0.06

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
798.	0.65	2024.	1.03	3250.	0.06
799.	0.65	2025.	0.99	3251.	0.06
800.	0.65	2026.	0.98	3252.	0.06
801.	0.65	2027.	0.98	3253.	0.06
802.	0.65	2028.	1.01	3254.	0.06
803.	0.65	2029.	1.04	3255.	0.06
804.	0.65	2030.	1.01	3256.	0.06
805.	0.64	2031.	0.96	3257.	0.06
806.	0.64	2032.	0.95	3258.	0.06
807.	0.65	2033.	0.96	3259.	0.06
808.	0.64	2034.	0.98	3260.	0.06
809.	0.64	2035.	1.01	3261.	0.06
810.	0.64	2036.	1.04	3262.	0.06
811.	0.64	2037.	1.	3263.	0.06
812.	0.64	2038.	0.98	3264.	0.06
813.	0.64	2039.	0.97	3265.	0.06
814.	0.64	2040.	0.99	3266.	0.06
815.	0.64	2041.	1.02	3267.	0.06
816.	0.64	2042.	1.04	3268.	0.06
817.	0.64	2043.	0.99	3269.	0.06
818.	0.64	2044.	0.97	3270.	0.06
819.	0.64	2045.	0.97	3271.	0.06
820.	0.64	2046.	0.99	3272.	0.06
821.	0.64	2047.	1.02	3273.	0.06
822.	0.64	2048.	1.03	3274.	0.06
823.	0.64	2049.	0.96	3275.	0.06
824.	0.64	2050.	0.9	3276.	0.06
825.	0.64	2051.	0.87	3277.	0.06
826.	0.64	2052.	0.87	3278.	0.06
827.	0.65	2053.	0.88	3279.	0.06
828.	0.64	2054.	0.91	3280.	0.06
829.	0.64	2055.	0.94	3281.	0.06
830.	0.64	2056.	0.97	3282.	0.06
831.	0.65	2057.	1.01	3283.	0.06
832.	0.65	2058.	1.04	3284.	0.06
833.	0.64	2059.	1.01	3285.	0.06
834.	0.64	2060.	0.96	3286.	0.06
835.	0.65	2061.	0.95	3287.	0.06
836.	0.65	2062.	0.96	3288.	0.06
837.	0.65	2063.	0.99	3289.	0.06
838.	0.64	2064.	1.02	3290.	0.06
839.	0.64	2065.	1.04	3291.	0.06
840.	0.64	2066.	0.99	3292.	0.06
841.	0.64	2067.	0.97	3293.	0.06
842.	0.65	2068.	0.98	3294.	0.06
843.	0.64	2069.	0.99	3295.	0.06
844.	0.64	2070.	1.02	3296.	0.06
845.	0.64	2071.	1.03	3297.	0.06
846.	0.64	2072.	0.98	3298.	0.06
847.	0.65	2073.	0.94	3299.	0.06
848.	0.64	2074.	0.94	3300.	0.06
849.	0.64	2075.	0.95	3301.	0.06
850.	0.65	2076.	0.97	3302.	0.06
851.	0.65	2077.	1.01	3303.	0.06
852.	0.65	2078.	1.04	3304.	0.06
853.	0.65	2079.	0.99	3305.	0.06
854.	0.65	2080.	0.9	3306.	0.06

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
855.	0.64	2081.	0.86	3307.	0.06
856.	0.64	2082.	0.84	3308.	0.06
857.	0.64	2083.	0.85	3309.	0.06
858.	0.64	2084.	0.86	3310.	0.06
859.	0.64	2085.	0.89	3311.	0.06
860.	0.65	2086.	0.92	3312.	0.06
861.	0.65	2087.	0.95	3313.	0.06
862.	0.64	2088.	0.98	3314.	0.05
863.	0.65	2089.	1.02	3315.	0.06
864.	0.65	2090.	1.04	3316.	0.06
865.	0.65	2091.	0.98	3317.	0.06
866.	0.65	2092.	0.94	3318.	0.06
867.	0.64	2093.	0.93	3319.	0.06
868.	0.65	2094.	0.93	3320.	0.06
869.	0.65	2095.	0.96	3321.	0.06
870.	0.64	2096.	0.99	3322.	0.06
871.	0.65	2097.	1.03	3323.	0.06
872.	0.65	2098.	1.03	3324.	0.06
873.	0.64	2099.	0.97	3325.	0.06
874.	0.64	2100.	0.93	3326.	0.06
875.	0.65	2101.	0.93	3327.	0.06
876.	0.64	2102.	0.95	3328.	0.06
877.	0.64	2103.	0.97	3329.	0.06
878.	0.64	2104.	1.01	3330.	0.06
879.	0.65	2105.	1.03	3331.	0.06
880.	0.64	2106.	1.03	3332.	0.06
881.	0.64	2107.	1.01	3333.	0.06
882.	0.64	2108.	1.02	3334.	0.06
883.	0.64	2109.	1.04	3335.	0.05
884.	0.64	2110.	0.99	3336.	0.06
885.	0.64	2111.	0.93	3337.	0.06
886.	0.64	2112.	0.92	3338.	0.06
887.	0.64	2113.	0.92	3339.	0.05
888.	0.65	2114.	0.95	3340.	0.06
889.	0.64	2115.	0.98	3341.	0.06
890.	0.64	2116.	0.8	3342.	0.05
891.	0.65	2117.	0.64	3343.	0.05
892.	0.64	2118.	0.52	3344.	0.05
893.	0.64	2119.	0.46	3345.	0.05
894.	0.64	2120.	0.39	3346.	0.05
895.	0.65	2121.	0.34	3347.	0.05
896.	0.64	2122.	0.29	3348.	0.05
897.	0.65	2123.	0.24	3349.	0.05
898.	0.64	2124.	0.19	3350.	0.05
899.	0.64	2125.	0.14	3351.	0.05
900.	0.64	2126.	0.11	3352.	0.05
901.	0.64	2127.	0.09	3353.	0.05
902.	0.64	2128.	0.07	3354.	0.05
903.	0.64	2129.	0.06	3355.	0.05
904.	0.64	2130.	0.06	3356.	0.05
905.	0.64	2131.	0.07	3357.	0.05
906.	0.64	2132.	0.07	3358.	0.05
907.	0.64	2133.	0.09	3359.	0.05
908.	0.64	2134.	0.1	3360.	0.05
909.	0.64	2135.	0.11	3361.	0.05
910.	0.64	2136.	0.12	3362.	0.05
911.	0.64	2137.	0.13	3363.	0.05

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
912.	0.64	2138.	0.14	3364.	0.05
913.	0.64	2139.	0.14	3365.	0.05
914.	0.64	2140.	0.15	3366.	0.05
915.	0.64	2141.	0.15	3367.	0.05
916.	0.64	2142.	0.16	3368.	0.05
917.	0.64	2143.	0.16	3369.	0.05
918.	0.64	2144.	0.17	3370.	0.05
919.	0.64	2145.	0.17	3371.	0.05
920.	0.64	2146.	0.17	3372.	0.05
921.	0.64	2147.	0.17	3373.	0.05
922.	0.64	2148.	0.18	3374.	0.05
923.	0.64	2149.	0.18	3375.	0.05
924.	0.64	2150.	0.18	3376.	0.05
925.	0.64	2151.	0.18	3377.	0.05
926.	0.64	2152.	0.18	3378.	0.05
927.	0.64	2153.	0.18	3379.	0.05
928.	0.64	2154.	0.18	3380.	0.05
929.	0.64	2155.	0.19	3381.	0.05
930.	0.64	2156.	0.19	3382.	0.05
931.	0.64	2157.	0.19	3383.	0.05
932.	0.64	2158.	0.19	3384.	0.05
933.	0.64	2159.	0.19	3385.	0.05
934.	0.64	2160.	0.19	3386.	0.05
935.	0.64	2161.	0.19	3387.	0.05
936.	0.64	2162.	0.19	3388.	0.05
937.	0.64	2163.	0.19	3389.	0.05
938.	0.64	2164.	0.19	3390.	0.05
939.	0.64	2165.	0.19	3391.	0.05
940.	0.64	2166.	0.19	3392.	0.05
941.	0.64	2167.	0.19	3393.	0.05
942.	0.64	2168.	0.19	3394.	0.05
943.	0.64	2169.	0.19	3395.	0.05
944.	0.64	2170.	0.19	3396.	0.05
945.	0.64	2171.	0.19	3397.	0.05
946.	0.65	2172.	0.18	3398.	0.05
947.	0.64	2173.	0.18	3399.	0.05
948.	0.65	2174.	0.18	3400.	0.05
949.	0.64	2175.	0.18	3401.	0.05
950.	0.64	2176.	0.18	3402.	0.05
951.	0.64	2177.	0.18	3403.	0.05
952.	0.64	2178.	0.18	3404.	0.05
953.	0.64	2179.	0.18	3405.	0.05
954.	0.65	2180.	0.18	3406.	0.05
955.	0.64	2181.	0.18	3407.	0.05
956.	0.64	2182.	0.18	3408.	0.05
957.	0.64	2183.	0.18	3409.	0.05
958.	0.64	2184.	0.18	3410.	0.05
959.	0.64	2185.	0.18	3411.	0.05
960.	0.64	2186.	0.18	3412.	0.05
961.	0.64	2187.	0.18	3413.	0.05
962.	0.64	2188.	0.18	3414.	0.05
963.	0.64	2189.	0.18	3415.	0.05
964.	0.64	2190.	0.18	3416.	0.05
965.	0.64	2191.	0.17	3417.	0.05
966.	0.64	2192.	0.17	3418.	0.05
967.	0.64	2193.	0.17	3419.	0.05
968.	0.64	2194.	0.17	3420.	0.05

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
969.	0.64	2195.	0.17	3421.	0.05
970.	0.64	2196.	0.17	3422.	0.05
971.	0.64	2197.	0.17	3423.	0.05
972.	0.64	2198.	0.17	3424.	0.05
973.	0.64	2199.	0.17	3425.	0.05
974.	0.64	2200.	0.17	3426.	0.05
975.	0.64	2201.	0.17	3427.	0.05
976.	0.64	2202.	0.17	3428.	0.05
977.	0.64	2203.	0.17	3429.	0.05
978.	0.64	2204.	0.17	3430.	0.05
979.	0.64	2205.	0.17	3431.	0.05
980.	0.64	2206.	0.17	3432.	0.05
981.	0.64	2207.	0.17	3433.	0.05
982.	0.64	2208.	0.17	3434.	0.05
983.	0.65	2209.	0.17	3435.	0.05
984.	0.65	2210.	0.17	3436.	0.05
985.	0.64	2211.	0.17	3437.	0.05
986.	0.65	2212.	0.17	3438.	0.05
987.	0.65	2213.	0.17	3439.	0.05
988.	0.65	2214.	0.16	3440.	0.05
989.	0.65	2215.	0.16	3441.	0.05
990.	0.66	2216.	0.16	3442.	0.05
991.	0.65	2217.	0.16	3443.	0.05
992.	0.65	2218.	0.16	3444.	0.05
993.	0.65	2219.	0.16	3445.	0.05
994.	0.65	2220.	0.16	3446.	0.05
995.	0.66	2221.	0.16	3447.	0.05
996.	0.65	2222.	0.16	3448.	0.05
997.	0.66	2223.	0.16	3449.	0.05
998.	0.66	2224.	0.16	3450.	0.05
999.	0.65	2225.	0.16	3451.	0.05
1000.	0.66	2226.	0.16	3452.	0.05
1001.	0.66	2227.	0.16	3453.	0.05
1002.	0.66	2228.	0.16	3454.	0.05
1003.	0.66	2229.	0.16	3455.	0.05
1004.	0.66	2230.	0.16	3456.	0.05
1005.	0.66	2231.	0.16	3457.	0.05
1006.	0.66	2232.	0.16	3458.	0.05
1007.	0.66	2233.	0.16	3459.	0.05
1008.	0.66	2234.	0.16	3460.	0.05
1009.	0.66	2235.	0.16	3461.	0.05
1010.	0.66	2236.	0.16	3462.	0.05
1011.	0.66	2237.	0.16	3463.	0.05
1012.	0.66	2238.	0.16	3464.	0.05
1013.	0.66	2239.	0.16	3465.	0.05
1014.	0.66	2240.	0.15	3466.	0.05
1015.	0.66	2241.	0.15	3467.	0.05
1016.	0.66	2242.	0.15	3468.	0.05
1017.	0.66	2243.	0.15	3469.	0.05
1018.	0.66	2244.	0.15	3470.	0.05
1019.	0.66	2245.	0.15	3471.	0.05
1020.	0.66	2246.	0.15	3472.	0.05
1021.	0.66	2247.	0.15	3473.	0.05
1022.	0.66	2248.	0.15	3474.	0.05
1023.	0.66	2249.	0.15	3475.	0.05
1024.	0.66	2250.	0.15	3476.	0.05
1025.	0.65	2251.	0.15	3477.	0.05

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1026.	0.66	2252.	0.15	3478.	0.05
1027.	0.66	2253.	0.15	3479.	0.05
1028.	0.66	2254.	0.15	3480.	0.05
1029.	0.66	2255.	0.15	3481.	0.05
1030.	0.66	2256.	0.15	3482.	0.05
1031.	0.66	2257.	0.15	3483.	0.05
1032.	0.65	2258.	0.15	3484.	0.05
1033.	0.66	2259.	0.15	3485.	0.05
1034.	0.65	2260.	0.15	3486.	0.05
1035.	0.66	2261.	0.15	3487.	0.05
1036.	0.66	2262.	0.15	3488.	0.05
1037.	0.66	2263.	0.15	3489.	0.05
1038.	0.66	2264.	0.15	3490.	0.05
1039.	0.66	2265.	0.15	3491.	0.05
1040.	0.66	2266.	0.15	3492.	0.05
1041.	0.66	2267.	0.15	3493.	0.05
1042.	0.66	2268.	0.15	3494.	0.05
1043.	0.66	2269.	0.15	3495.	0.05
1044.	0.66	2270.	0.15	3496.	0.05
1045.	0.65	2271.	0.14	3497.	0.05
1046.	0.66	2272.	0.14	3498.	0.05
1047.	0.66	2273.	0.14	3499.	0.05
1048.	0.66	2274.	0.14	3500.	0.05
1049.	0.66	2275.	0.14	3501.	0.05
1050.	0.65	2276.	0.14	3502.	0.05
1051.	0.66	2277.	0.14	3503.	0.05
1052.	0.65	2278.	0.14	3504.	0.05
1053.	0.65	2279.	0.14	3505.	0.05
1054.	0.66	2280.	0.14	3506.	0.05
1055.	0.66	2281.	0.14	3507.	0.05
1056.	0.66	2282.	0.14	3508.	0.05
1057.	0.66	2283.	0.14	3509.	0.05
1058.	0.66	2284.	0.14	3510.	0.05
1059.	0.66	2285.	0.14	3511.	0.05
1060.	0.66	2286.	0.14	3512.	0.05
1061.	0.66	2287.	0.14	3513.	0.05
1062.	0.66	2288.	0.14	3514.	0.05
1063.	0.66	2289.	0.14	3515.	0.05
1064.	0.65	2290.	0.14	3516.	0.05
1065.	0.66	2291.	0.14	3517.	0.05
1066.	0.66	2292.	0.14	3518.	0.05
1067.	0.66	2293.	0.14	3519.	0.05
1068.	0.66	2294.	0.14	3520.	0.05
1069.	0.65	2295.	0.14	3521.	0.05
1070.	0.66	2296.	0.14	3522.	0.05
1071.	0.66	2297.	0.14	3523.	0.05
1072.	0.66	2298.	0.14	3524.	0.05
1073.	0.66	2299.	0.14	3525.	0.05
1074.	0.66	2300.	0.14	3526.	0.05
1075.	0.66	2301.	0.14	3527.	0.05
1076.	0.66	2302.	0.14	3528.	0.05
1077.	0.65	2303.	0.14	3529.	0.05
1078.	0.66	2304.	0.14	3530.	0.05
1079.	0.66	2305.	0.14	3531.	0.05
1080.	0.66	2306.	0.14	3532.	0.05
1081.	0.66	2307.	0.14	3533.	0.05
1082.	0.66	2308.	0.14	3534.	0.05

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1083.	0.66	2309.	0.13	3535.	0.05
1084.	0.66	2310.	0.13	3536.	0.05
1085.	0.66	2311.	0.13	3537.	0.05
1086.	0.66	2312.	0.13	3538.	0.05
1087.	0.67	2313.	0.13	3539.	0.05
1088.	0.66	2314.	0.13	3540.	0.05
1089.	0.66	2315.	0.13	3541.	0.05
1090.	0.66	2316.	0.13	3542.	0.05
1091.	0.66	2317.	0.13	3543.	0.05
1092.	0.66	2318.	0.13	3544.	0.05
1093.	0.66	2319.	0.13	3545.	0.05
1094.	0.66	2320.	0.13	3546.	0.05
1095.	0.66	2321.	0.13	3547.	0.05
1096.	0.66	2322.	0.13	3548.	0.05
1097.	0.66	2323.	0.13	3549.	0.05
1098.	0.66	2324.	0.13	3550.	0.05
1099.	0.65	2325.	0.13	3551.	0.05
1100.	0.65	2326.	0.13	3552.	0.05
1101.	0.66	2327.	0.13	3553.	0.05
1102.	0.66	2328.	0.13	3554.	0.05
1103.	0.65	2329.	0.13	3555.	0.05
1104.	0.66	2330.	0.13	3556.	0.05
1105.	0.65	2331.	0.13	3557.	0.05
1106.	0.65	2332.	0.13	3558.	0.05
1107.	0.65	2333.	0.13	3559.	0.05
1108.	0.66	2334.	0.13	3560.	0.05
1109.	0.66	2335.	0.13	3561.	0.05
1110.	0.66	2336.	0.13	3562.	0.05
1111.	0.65	2337.	0.13	3563.	0.05
1112.	0.66	2338.	0.13	3564.	0.05
1113.	0.66	2339.	0.13	3565.	0.05
1114.	0.66	2340.	0.13	3566.	0.05
1115.	0.66	2341.	0.13	3567.	0.05
1116.	0.66	2342.	0.13	3568.	0.05
1117.	0.66	2343.	0.13	3569.	0.05
1118.	0.66	2344.	0.13	3570.	0.05
1119.	0.66	2345.	0.13	3571.	0.05
1120.	0.66	2346.	0.13	3572.	0.05
1121.	0.66	2347.	0.13	3573.	0.05
1122.	0.66	2348.	0.13	3574.	0.05
1123.	0.66	2349.	0.13	3575.	0.05
1124.	0.66	2350.	0.13	3576.	0.05
1125.	0.66	2351.	0.13	3577.	0.05
1126.	0.66	2352.	0.13	3578.	0.05
1127.	0.66	2353.	0.13	3579.	0.05
1128.	0.66	2354.	0.12	3580.	0.05
1129.	0.66	2355.	0.12	3581.	0.05
1130.	0.66	2356.	0.12	3582.	0.05
1131.	0.66	2357.	0.12	3583.	0.05
1132.	0.66	2358.	0.12	3584.	0.05
1133.	0.66	2359.	0.12	3585.	0.05
1134.	0.66	2360.	0.12	3586.	0.05
1135.	0.66	2361.	0.12	3587.	0.05
1136.	0.66	2362.	0.12	3588.	0.05
1137.	0.66	2363.	0.12	3589.	0.05
1138.	0.66	2364.	0.12	3590.	0.05
1139.	0.66	2365.	0.12	3591.	0.05

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1140.	0.65	2366.	0.12	3592.	0.05
1141.	0.66	2367.	0.12	3593.	0.05
1142.	0.66	2368.	0.12	3594.	0.05
1143.	0.65	2369.	0.12	3595.	0.05
1144.	0.66	2370.	0.12	3596.	0.05
1145.	0.66	2371.	0.12	3597.	0.05
1146.	0.66	2372.	0.12	3598.	0.05
1147.	0.66	2373.	0.12	3599.	0.05
1148.	0.66	2374.	0.12	3600.	0.05
1149.	0.66	2375.	0.12	3601.	0.05
1150.	0.66	2376.	0.12	3602.	0.05
1151.	0.66	2377.	0.12	3603.	0.05
1152.	0.66	2378.	0.12	3604.	0.05
1153.	0.66	2379.	0.12	3605.	0.05
1154.	0.66	2380.	0.12	3606.	0.05
1155.	0.65	2381.	0.12	3607.	0.05
1156.	0.66	2382.	0.12	3608.	0.05
1157.	0.66	2383.	0.12	3609.	0.05
1158.	0.66	2384.	0.12	3610.	0.05
1159.	0.66	2385.	0.12	3611.	0.05
1160.	0.66	2386.	0.12	3612.	0.05
1161.	0.66	2387.	0.12	3613.	0.05
1162.	0.66	2388.	0.12	3614.	0.05
1163.	0.66	2389.	0.12	3615.	0.05
1164.	0.66	2390.	0.12	3616.	0.05
1165.	0.66	2391.	0.12	3617.	0.05
1166.	0.66	2392.	0.12	3618.	0.05
1167.	0.66	2393.	0.12	3619.	0.05
1168.	0.66	2394.	0.12	3620.	0.05
1169.	0.67	2395.	0.12	3621.	0.05
1170.	0.67	2396.	0.12	3622.	0.05
1171.	0.67	2397.	0.12	3623.	0.05
1172.	0.67	2398.	0.12	3624.	0.05
1173.	0.67	2399.	0.12	3625.	0.05
1174.	0.67	2400.	0.12	3626.	0.05
1175.	0.67	2401.	0.12	3627.	0.05
1176.	0.67	2402.	0.12	3628.	0.05
1177.	0.67	2403.	0.12	3629.	0.05
1178.	0.68	2404.	0.12	3630.	0.05
1179.	0.67	2405.	0.12	3631.	0.05
1180.	0.67	2406.	0.12	3632.	0.05
1181.	0.68	2407.	0.12	3633.	0.05
1182.	0.68	2408.	0.12	3634.	0.05
1183.	0.68	2409.	0.12	3635.	0.05
1184.	0.68	2410.	0.12	3636.	0.05
1185.	0.68	2411.	0.12	3637.	0.05
1186.	0.68	2412.	0.12	3638.	0.05
1187.	0.68	2413.	0.12	3639.	0.05
1188.	0.68	2414.	0.11	3640.	0.05
1189.	0.68	2415.	0.11	3641.	0.05
1190.	0.68	2416.	0.11	3642.	0.05
1191.	0.68	2417.	0.11	3643.	0.05
1192.	0.68	2418.	0.11	3644.	0.05
1193.	0.68	2419.	0.11	3645.	0.05
1194.	0.68	2420.	0.11	3646.	0.05
1195.	0.68	2421.	0.11	3647.	0.05
1196.	0.68	2422.	0.11	3648.	0.05

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1197.	0.68	2423.	0.11	3649.	0.05
1198.	0.68	2424.	0.11	3650.	0.05
1199.	0.68	2425.	0.11	3651.	0.05
1200.	0.68	2426.	0.11	3652.	0.05
1201.	0.68	2427.	0.11	3653.	0.05
1202.	0.68	2428.	0.11	3654.	0.05
1203.	0.68	2429.	0.11	3655.	0.05
1204.	0.68	2430.	0.11	3656.	0.05
1205.	0.68	2431.	0.11	3657.	0.05
1206.	0.68	2432.	0.11	3658.	0.05
1207.	0.68	2433.	0.11	3659.	0.05
1208.	0.68	2434.	0.11	3660.	0.05
1209.	0.68	2435.	0.11	3661.	0.05
1210.	0.68	2436.	0.11	3662.	0.05
1211.	0.68	2437.	0.11	3663.	0.05
1212.	0.68	2438.	0.11	3664.	0.05
1213.	0.68	2439.	0.11	3665.	0.05
1214.	0.68	2440.	0.11	3666.	0.05
1215.	0.68	2441.	0.11	3667.	0.05
1216.	0.68	2442.	0.11	3668.	0.05
1217.	0.68	2443.	0.11	3669.	0.05
1218.	0.68	2444.	0.11	3670.	0.05
1219.	0.68	2445.	0.11	3671.	0.05
1220.	0.68	2446.	0.11	3672.	0.05
1221.	0.68	2447.	0.11	3673.	0.05
1222.	0.68	2448.	0.11	3674.	0.05
1223.	0.68	2449.	0.11	3675.	0.05
1224.	0.68	2450.	0.11	3676.	0.05
1225.	0.69	2451.	0.11	3677.	0.05
1226.	0.68	2452.	0.11	3678.	0.05

Observation Well No. 2: MW23-02

X Location: 27. m
Y Location: 13. m

Radial distance from MW23-04: 15.8113883 m

Fully Penetrating Well

No. of Observations: 3678

Observation Data

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1.	0.01	1227.	0.68	2453.	0.11
2.	0.03	1228.	0.68	2454.	0.11
3.	0.05	1229.	0.68	2455.	0.11
4.	0.1	1230.	0.68	2456.	0.11
5.	0.14	1231.	0.68	2457.	0.11
6.	0.17	1232.	0.68	2458.	0.11
7.	0.13	1233.	0.68	2459.	0.11
8.	0.14	1234.	0.69	2460.	0.11
9.	0.14	1235.	0.69	2461.	0.11
10.	0.15	1236.	0.68	2462.	0.11
11.	0.16	1237.	0.69	2463.	0.11
12.	0.17	1238.	0.68	2464.	0.11
13.	0.18	1239.	0.69	2465.	0.11

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
14.	0.19	1240.	0.69	2466.	0.11
15.	0.2	1241.	0.68	2467.	0.11
16.	0.2	1242.	0.69	2468.	0.11
17.	0.21	1243.	0.68	2469.	0.11
18.	0.21	1244.	0.69	2470.	0.11
19.	0.23	1245.	0.68	2471.	0.11
20.	0.23	1246.	0.69	2472.	0.11
21.	0.23	1247.	0.69	2473.	0.11
22.	0.24	1248.	0.68	2474.	0.11
23.	0.25	1249.	0.69	2475.	0.11
24.	0.25	1250.	0.69	2476.	0.11
25.	0.25	1251.	0.69	2477.	0.11
26.	0.26	1252.	0.68	2478.	0.11
27.	0.27	1253.	0.68	2479.	0.11
28.	0.27	1254.	0.68	2480.	0.11
29.	0.28	1255.	0.69	2481.	0.11
30.	0.28	1256.	0.69	2482.	0.11
31.	0.29	1257.	0.68	2483.	0.11
32.	0.29	1258.	0.69	2484.	0.1
33.	0.29	1259.	0.69	2485.	0.1
34.	0.3	1260.	0.69	2486.	0.1
35.	0.3	1261.	0.69	2487.	0.1
36.	0.31	1262.	0.69	2488.	0.1
37.	0.31	1263.	0.69	2489.	0.1
38.	0.31	1264.	0.68	2490.	0.1
39.	0.31	1265.	0.69	2491.	0.1
40.	0.32	1266.	0.69	2492.	0.1
41.	0.32	1267.	0.68	2493.	0.1
42.	0.32	1268.	0.68	2494.	0.1
43.	0.33	1269.	0.68	2495.	0.1
44.	0.33	1270.	0.68	2496.	0.1
45.	0.33	1271.	0.69	2497.	0.1
46.	0.33	1272.	0.68	2498.	0.1
47.	0.34	1273.	0.69	2499.	0.1
48.	0.34	1274.	0.69	2500.	0.1
49.	0.35	1275.	0.68	2501.	0.1
50.	0.35	1276.	0.68	2502.	0.1
51.	0.35	1277.	0.69	2503.	0.1
52.	0.35	1278.	0.69	2504.	0.1
53.	0.35	1279.	0.68	2505.	0.1
54.	0.36	1280.	0.68	2506.	0.1
55.	0.35	1281.	0.68	2507.	0.1
56.	0.36	1282.	0.68	2508.	0.1
57.	0.36	1283.	0.68	2509.	0.1
58.	0.37	1284.	0.68	2510.	0.1
59.	0.37	1285.	0.69	2511.	0.1
60.	0.37	1286.	0.68	2512.	0.1
61.	0.37	1287.	0.69	2513.	0.1
62.	0.37	1288.	0.68	2514.	0.1
63.	0.37	1289.	0.68	2515.	0.1
64.	0.37	1290.	0.68	2516.	0.1
65.	0.38	1291.	0.68	2517.	0.1
66.	0.37	1292.	0.69	2518.	0.1
67.	0.38	1293.	0.68	2519.	0.1
68.	0.38	1294.	0.69	2520.	0.1
69.	0.38	1295.	0.69	2521.	0.1
70.	0.38	1296.	0.68	2522.	0.1

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
71.	0.38	1297.	0.68	2523.	0.1
72.	0.38	1298.	0.68	2524.	0.1
73.	0.39	1299.	0.69	2525.	0.1
74.	0.39	1300.	0.68	2526.	0.1
75.	0.39	1301.	0.68	2527.	0.1
76.	0.39	1302.	0.68	2528.	0.1
77.	0.39	1303.	0.68	2529.	0.1
78.	0.39	1304.	0.69	2530.	0.1
79.	0.39	1305.	0.68	2531.	0.1
80.	0.4	1306.	0.68	2532.	0.1
81.	0.4	1307.	0.68	2533.	0.1
82.	0.4	1308.	0.68	2534.	0.1
83.	0.41	1309.	0.68	2535.	0.1
84.	0.41	1310.	0.68	2536.	0.1
85.	0.41	1311.	0.69	2537.	0.1
86.	0.41	1312.	0.69	2538.	0.1
87.	0.41	1313.	0.68	2539.	0.1
88.	0.41	1314.	0.68	2540.	0.1
89.	0.41	1315.	0.68	2541.	0.1
90.	0.41	1316.	0.69	2542.	0.1
91.	0.42	1317.	0.68	2543.	0.1
92.	0.41	1318.	0.69	2544.	0.1
93.	0.42	1319.	0.69	2545.	0.1
94.	0.42	1320.	0.69	2546.	0.1
95.	0.42	1321.	0.69	2547.	0.1
96.	0.42	1322.	0.69	2548.	0.1
97.	0.42	1323.	0.69	2549.	0.1
98.	0.43	1324.	0.69	2550.	0.1
99.	0.42	1325.	0.69	2551.	0.1
100.	0.43	1326.	0.68	2552.	0.1
101.	0.43	1327.	0.68	2553.	0.1
102.	0.43	1328.	0.69	2554.	0.1
103.	0.43	1329.	0.68	2555.	0.1
104.	0.43	1330.	0.69	2556.	0.1
105.	0.44	1331.	0.69	2557.	0.1
106.	0.43	1332.	0.69	2558.	0.1
107.	0.43	1333.	0.69	2559.	0.1
108.	0.44	1334.	0.68	2560.	0.1
109.	0.43	1335.	0.68	2561.	0.1
110.	0.44	1336.	0.68	2562.	0.1
111.	0.44	1337.	0.69	2563.	0.1
112.	0.44	1338.	0.69	2564.	0.1
113.	0.44	1339.	0.68	2565.	0.1
114.	0.44	1340.	0.69	2566.	0.1
115.	0.44	1341.	0.69	2567.	0.1
116.	0.44	1342.	0.69	2568.	0.09
117.	0.44	1343.	0.68	2569.	0.09
118.	0.45	1344.	0.68	2570.	0.09
119.	0.44	1345.	0.68	2571.	0.09
120.	0.45	1346.	0.68	2572.	0.09
121.	0.45	1347.	0.68	2573.	0.09
122.	0.45	1348.	0.68	2574.	0.09
123.	0.45	1349.	0.69	2575.	0.09
124.	0.45	1350.	0.68	2576.	0.09
125.	0.45	1351.	0.68	2577.	0.09
126.	0.45	1352.	0.68	2578.	0.09
127.	0.45	1353.	0.68	2579.	0.09

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
128.	0.46	1354.	0.68	2580.	0.09
129.	0.45	1355.	0.68	2581.	0.09
130.	0.46	1356.	0.66	2582.	0.09
131.	0.46	1357.	0.68	2583.	0.09
132.	0.46	1358.	0.68	2584.	0.09
133.	0.45	1359.	0.68	2585.	0.09
134.	0.46	1360.	0.69	2586.	0.09
135.	0.46	1361.	0.69	2587.	0.09
136.	0.46	1362.	0.69	2588.	0.09
137.	0.46	1363.	0.69	2589.	0.09
138.	0.46	1364.	0.69	2590.	0.09
139.	0.46	1365.	0.7	2591.	0.09
140.	0.46	1366.	0.69	2592.	0.09
141.	0.47	1367.	0.69	2593.	0.09
142.	0.46	1368.	0.69	2594.	0.09
143.	0.46	1369.	0.7	2595.	0.09
144.	0.46	1370.	0.7	2596.	0.09
145.	0.46	1371.	0.7	2597.	0.09
146.	0.46	1372.	0.7	2598.	0.09
147.	0.47	1373.	0.7	2599.	0.09
148.	0.47	1374.	0.7	2600.	0.09
149.	0.47	1375.	0.7	2601.	0.09
150.	0.47	1376.	0.7	2602.	0.09
151.	0.47	1377.	0.71	2603.	0.09
152.	0.47	1378.	0.7	2604.	0.09
153.	0.47	1379.	0.7	2605.	0.09
154.	0.48	1380.	0.7	2606.	0.09
155.	0.48	1381.	0.7	2607.	0.09
156.	0.47	1382.	0.7	2608.	0.09
157.	0.47	1383.	0.7	2609.	0.09
158.	0.47	1384.	0.7	2610.	0.09
159.	0.47	1385.	0.7	2611.	0.09
160.	0.47	1386.	0.7	2612.	0.09
161.	0.47	1387.	0.7	2613.	0.09
162.	0.47	1388.	0.7	2614.	0.09
163.	0.47	1389.	0.7	2615.	0.09
164.	0.48	1390.	0.71	2616.	0.09
165.	0.48	1391.	0.7	2617.	0.09
166.	0.48	1392.	0.7	2618.	0.09
167.	0.48	1393.	0.7	2619.	0.09
168.	0.48	1394.	0.71	2620.	0.09
169.	0.48	1395.	0.71	2621.	0.09
170.	0.48	1396.	0.71	2622.	0.09
171.	0.48	1397.	0.71	2623.	0.09
172.	0.48	1398.	0.7	2624.	0.09
173.	0.47	1399.	0.7	2625.	0.09
174.	0.48	1400.	0.71	2626.	0.09
175.	0.48	1401.	0.7	2627.	0.09
176.	0.48	1402.	0.71	2628.	0.09
177.	0.48	1403.	0.7	2629.	0.09
178.	0.48	1404.	0.7	2630.	0.09
179.	0.48	1405.	0.7	2631.	0.09
180.	0.48	1406.	0.71	2632.	0.09
181.	0.48	1407.	0.71	2633.	0.09
182.	0.48	1408.	0.71	2634.	0.09
183.	0.48	1409.	0.7	2635.	0.09
184.	0.48	1410.	0.7	2636.	0.09

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
185.	0.48	1411.	0.71	2637.	0.09
186.	0.48	1412.	0.7	2638.	0.09
187.	0.48	1413.	0.7	2639.	0.09
188.	0.49	1414.	0.71	2640.	0.09
189.	0.49	1415.	0.7	2641.	0.09
190.	0.49	1416.	0.7	2642.	0.09
191.	0.49	1417.	0.71	2643.	0.09
192.	0.49	1418.	0.71	2644.	0.09
193.	0.48	1419.	0.7	2645.	0.09
194.	0.48	1420.	0.7	2646.	0.09
195.	0.49	1421.	0.7	2647.	0.09
196.	0.49	1422.	0.71	2648.	0.09
197.	0.48	1423.	0.7	2649.	0.09
198.	0.49	1424.	0.7	2650.	0.09
199.	0.49	1425.	0.7	2651.	0.09
200.	0.49	1426.	0.7	2652.	0.09
201.	0.49	1427.	0.7	2653.	0.09
202.	0.49	1428.	0.7	2654.	0.09
203.	0.5	1429.	0.71	2655.	0.09
204.	0.5	1430.	0.71	2656.	0.09
205.	0.49	1431.	0.7	2657.	0.09
206.	0.5	1432.	0.7	2658.	0.09
207.	0.5	1433.	0.7	2659.	0.09
208.	0.5	1434.	0.71	2660.	0.09
209.	0.5	1435.	0.7	2661.	0.09
210.	0.5	1436.	0.71	2662.	0.09
211.	0.5	1437.	0.71	2663.	0.09
212.	0.5	1438.	0.7	2664.	0.09
213.	0.5	1439.	0.71	2665.	0.09
214.	0.51	1440.	0.7	2666.	0.09
215.	0.5	1441.	0.7	2667.	0.09
216.	0.51	1442.	0.7	2668.	0.09
217.	0.51	1443.	0.7	2669.	0.09
218.	0.51	1444.	0.7	2670.	0.09
219.	0.51	1445.	0.7	2671.	0.09
220.	0.51	1446.	0.7	2672.	0.09
221.	0.51	1447.	0.7	2673.	0.09
222.	0.51	1448.	0.7	2674.	0.09
223.	0.52	1449.	0.7	2675.	0.09
224.	0.51	1450.	0.7	2676.	0.09
225.	0.51	1451.	0.7	2677.	0.09
226.	0.51	1452.	0.7	2678.	0.09
227.	0.51	1453.	0.71	2679.	0.09
228.	0.52	1454.	0.71	2680.	0.09
229.	0.51	1455.	0.71	2681.	0.09
230.	0.51	1456.	0.7	2682.	0.09
231.	0.51	1457.	0.7	2683.	0.09
232.	0.52	1458.	0.7	2684.	0.09
233.	0.52	1459.	0.7	2685.	0.09
234.	0.51	1460.	0.7	2686.	0.09
235.	0.52	1461.	0.7	2687.	0.09
236.	0.52	1462.	0.71	2688.	0.08
237.	0.52	1463.	0.7	2689.	0.09
238.	0.52	1464.	0.7	2690.	0.08
239.	0.52	1465.	0.7	2691.	0.08
240.	0.52	1466.	0.71	2692.	0.08
241.	0.52	1467.	0.7	2693.	0.08

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
242.	0.52	1468.	0.71	2694.	0.08
243.	0.52	1469.	0.71	2695.	0.08
244.	0.52	1470.	0.7	2696.	0.08
245.	0.52	1471.	0.71	2697.	0.08
246.	0.52	1472.	0.71	2698.	0.08
247.	0.52	1473.	0.7	2699.	0.08
248.	0.52	1474.	0.7	2700.	0.08
249.	0.52	1475.	0.71	2701.	0.08
250.	0.52	1476.	0.71	2702.	0.08
251.	0.52	1477.	0.7	2703.	0.08
252.	0.52	1478.	0.7	2704.	0.08
253.	0.52	1479.	0.7	2705.	0.08
254.	0.52	1480.	0.7	2706.	0.08
255.	0.53	1481.	0.71	2707.	0.08
256.	0.52	1482.	0.7	2708.	0.08
257.	0.53	1483.	0.7	2709.	0.08
258.	0.52	1484.	0.7	2710.	0.08
259.	0.53	1485.	0.7	2711.	0.08
260.	0.53	1486.	0.7	2712.	0.08
261.	0.52	1487.	0.7	2713.	0.08
262.	0.53	1488.	0.7	2714.	0.08
263.	0.53	1489.	0.7	2715.	0.08
264.	0.53	1490.	0.7	2716.	0.08
265.	0.52	1491.	0.7	2717.	0.08
266.	0.53	1492.	0.71	2718.	0.08
267.	0.53	1493.	0.7	2719.	0.08
268.	0.53	1494.	0.7	2720.	0.08
269.	0.53	1495.	0.7	2721.	0.08
270.	0.53	1496.	0.7	2722.	0.08
271.	0.52	1497.	0.71	2723.	0.08
272.	0.52	1498.	0.71	2724.	0.08
273.	0.52	1499.	0.7	2725.	0.08
274.	0.53	1500.	0.71	2726.	0.08
275.	0.53	1501.	0.71	2727.	0.08
276.	0.53	1502.	0.71	2728.	0.08
277.	0.53	1503.	0.71	2729.	0.08
278.	0.53	1504.	0.71	2730.	0.08
279.	0.53	1505.	0.71	2731.	0.08
280.	0.53	1506.	0.7	2732.	0.08
281.	0.53	1507.	0.71	2733.	0.08
282.	0.53	1508.	0.71	2734.	0.08
283.	0.53	1509.	0.71	2735.	0.08
284.	0.53	1510.	0.71	2736.	0.08
285.	0.53	1511.	0.7	2737.	0.08
286.	0.53	1512.	0.7	2738.	0.08
287.	0.53	1513.	0.71	2739.	0.08
288.	0.53	1514.	0.71	2740.	0.08
289.	0.53	1515.	0.71	2741.	0.08
290.	0.53	1516.	0.71	2742.	0.08
291.	0.53	1517.	0.7	2743.	0.08
292.	0.54	1518.	0.7	2744.	0.08
293.	0.54	1519.	0.71	2745.	0.08
294.	0.53	1520.	0.7	2746.	0.08
295.	0.53	1521.	0.71	2747.	0.08
296.	0.53	1522.	0.71	2748.	0.08
297.	0.53	1523.	0.7	2749.	0.08
298.	0.53	1524.	0.7	2750.	0.08

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
299.	0.53	1525.	0.7	2751.	0.08
300.	0.54	1526.	0.7	2752.	0.08
301.	0.53	1527.	0.7	2753.	0.08
302.	0.54	1528.	0.7	2754.	0.08
303.	0.54	1529.	0.7	2755.	0.08
304.	0.54	1530.	0.7	2756.	0.08
305.	0.54	1531.	0.7	2757.	0.08
306.	0.53	1532.	0.7	2758.	0.08
307.	0.54	1533.	0.7	2759.	0.08
308.	0.54	1534.	0.7	2760.	0.08
309.	0.54	1535.	0.7	2761.	0.08
310.	0.53	1536.	0.71	2762.	0.08
311.	0.54	1537.	0.7	2763.	0.08
312.	0.54	1538.	0.7	2764.	0.08
313.	0.53	1539.	0.7	2765.	0.08
314.	0.54	1540.	0.71	2766.	0.08
315.	0.54	1541.	0.71	2767.	0.08
316.	0.54	1542.	0.71	2768.	0.08
317.	0.53	1543.	0.71	2769.	0.08
318.	0.53	1544.	0.71	2770.	0.08
319.	0.54	1545.	0.71	2771.	0.08
320.	0.53	1546.	0.71	2772.	0.08
321.	0.53	1547.	0.71	2773.	0.08
322.	0.54	1548.	0.71	2774.	0.08
323.	0.54	1549.	0.71	2775.	0.08
324.	0.54	1550.	0.71	2776.	0.08
325.	0.54	1551.	0.71	2777.	0.08
326.	0.54	1552.	0.71	2778.	0.08
327.	0.53	1553.	0.71	2779.	0.08
328.	0.54	1554.	0.71	2780.	0.08
329.	0.54	1555.	0.71	2781.	0.08
330.	0.54	1556.	0.71	2782.	0.08
331.	0.54	1557.	0.71	2783.	0.08
332.	0.54	1558.	0.71	2784.	0.08
333.	0.53	1559.	0.71	2785.	0.08
334.	0.54	1560.	0.71	2786.	0.08
335.	0.54	1561.	0.71	2787.	0.08
336.	0.54	1562.	0.71	2788.	0.08
337.	0.53	1563.	0.71	2789.	0.08
338.	0.54	1564.	0.71	2790.	0.08
339.	0.54	1565.	0.72	2791.	0.08
340.	0.54	1566.	0.71	2792.	0.08
341.	0.54	1567.	0.72	2793.	0.08
342.	0.54	1568.	0.72	2794.	0.08
343.	0.54	1569.	0.72	2795.	0.08
344.	0.54	1570.	0.71	2796.	0.08
345.	0.54	1571.	0.72	2797.	0.08
346.	0.54	1572.	0.71	2798.	0.08
347.	0.54	1573.	0.71	2799.	0.08
348.	0.54	1574.	0.71	2800.	0.08
349.	0.54	1575.	0.71	2801.	0.08
350.	0.54	1576.	0.72	2802.	0.08
351.	0.54	1577.	0.72	2803.	0.08
352.	0.54	1578.	0.72	2804.	0.08
353.	0.54	1579.	0.71	2805.	0.08
354.	0.54	1580.	0.72	2806.	0.08
355.	0.54	1581.	0.71	2807.	0.08

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
356.	0.54	1582.	0.72	2808.	0.08
357.	0.54	1583.	0.71	2809.	0.08
358.	0.54	1584.	0.72	2810.	0.08
359.	0.54	1585.	0.72	2811.	0.08
360.	0.54	1586.	0.72	2812.	0.08
361.	0.54	1587.	0.72	2813.	0.08
362.	0.54	1588.	0.71	2814.	0.08
363.	0.54	1589.	0.71	2815.	0.08
364.	0.54	1590.	0.72	2816.	0.08
365.	0.54	1591.	0.71	2817.	0.08
366.	0.54	1592.	0.72	2818.	0.08
367.	0.54	1593.	0.71	2819.	0.08
368.	0.53	1594.	0.72	2820.	0.08
369.	0.54	1595.	0.72	2821.	0.08
370.	0.54	1596.	0.72	2822.	0.08
371.	0.54	1597.	0.72	2823.	0.08
372.	0.54	1598.	0.72	2824.	0.08
373.	0.54	1599.	0.72	2825.	0.08
374.	0.54	1600.	0.72	2826.	0.08
375.	0.54	1601.	0.73	2827.	0.08
376.	0.54	1602.	0.72	2828.	0.08
377.	0.54	1603.	0.72	2829.	0.08
378.	0.55	1604.	0.73	2830.	0.08
379.	0.55	1605.	0.72	2831.	0.08
380.	0.54	1606.	0.73	2832.	0.08
381.	0.54	1607.	0.73	2833.	0.08
382.	0.54	1608.	0.73	2834.	0.08
383.	0.55	1609.	0.73	2835.	0.08
384.	0.55	1610.	0.73	2836.	0.08
385.	0.55	1611.	0.73	2837.	0.08
386.	0.55	1612.	0.73	2838.	0.08
387.	0.55	1613.	0.72	2839.	0.08
388.	0.55	1614.	0.73	2840.	0.07
389.	0.55	1615.	0.73	2841.	0.07
390.	0.56	1616.	0.73	2842.	0.07
391.	0.55	1617.	0.73	2843.	0.07
392.	0.55	1618.	0.72	2844.	0.07
393.	0.56	1619.	0.72	2845.	0.07
394.	0.55	1620.	0.73	2846.	0.07
395.	0.56	1621.	0.73	2847.	0.07
396.	0.56	1622.	0.73	2848.	0.07
397.	0.56	1623.	0.73	2849.	0.07
398.	0.56	1624.	0.73	2850.	0.07
399.	0.56	1625.	0.72	2851.	0.07
400.	0.56	1626.	0.73	2852.	0.07
401.	0.56	1627.	0.73	2853.	0.07
402.	0.56	1628.	0.73	2854.	0.07
403.	0.56	1629.	0.73	2855.	0.07
404.	0.56	1630.	0.72	2856.	0.07
405.	0.56	1631.	0.73	2857.	0.07
406.	0.56	1632.	0.73	2858.	0.07
407.	0.56	1633.	0.73	2859.	0.07
408.	0.57	1634.	0.73	2860.	0.07
409.	0.56	1635.	0.73	2861.	0.07
410.	0.57	1636.	0.73	2862.	0.07
411.	0.57	1637.	0.73	2863.	0.07
412.	0.57	1638.	0.73	2864.	0.07

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
413.	0.57	1639.	0.73	2865.	0.07
414.	0.57	1640.	0.73	2866.	0.07
415.	0.57	1641.	0.73	2867.	0.07
416.	0.57	1642.	0.72	2868.	0.07
417.	0.57	1643.	0.73	2869.	0.07
418.	0.57	1644.	0.73	2870.	0.07
419.	0.57	1645.	0.73	2871.	0.07
420.	0.57	1646.	0.73	2872.	0.07
421.	0.57	1647.	0.73	2873.	0.07
422.	0.57	1648.	0.73	2874.	0.07
423.	0.57	1649.	0.73	2875.	0.07
424.	0.57	1650.	0.72	2876.	0.07
425.	0.57	1651.	0.73	2877.	0.07
426.	0.57	1652.	0.73	2878.	0.07
427.	0.57	1653.	0.73	2879.	0.07
428.	0.57	1654.	0.73	2880.	0.07
429.	0.57	1655.	0.73	2881.	0.07
430.	0.57	1656.	0.73	2882.	0.07
431.	0.57	1657.	0.73	2883.	0.07
432.	0.57	1658.	0.73	2884.	0.07
433.	0.57	1659.	0.73	2885.	0.07
434.	0.57	1660.	0.73	2886.	0.07
435.	0.57	1661.	0.73	2887.	0.07
436.	0.57	1662.	0.73	2888.	0.07
437.	0.57	1663.	0.73	2889.	0.07
438.	0.57	1664.	0.73	2890.	0.07
439.	0.57	1665.	0.73	2891.	0.07
440.	0.57	1666.	0.73	2892.	0.07
441.	0.57	1667.	0.73	2893.	0.07
442.	0.58	1668.	0.73	2894.	0.07
443.	0.57	1669.	0.73	2895.	0.07
444.	0.58	1670.	0.73	2896.	0.07
445.	0.58	1671.	0.73	2897.	0.07
446.	0.57	1672.	0.73	2898.	0.07
447.	0.57	1673.	0.73	2899.	0.07
448.	0.57	1674.	0.73	2900.	0.07
449.	0.57	1675.	0.73	2901.	0.07
450.	0.58	1676.	0.73	2902.	0.07
451.	0.57	1677.	0.73	2903.	0.07
452.	0.58	1678.	0.73	2904.	0.07
453.	0.57	1679.	0.73	2905.	0.07
454.	0.57	1680.	0.73	2906.	0.07
455.	0.58	1681.	0.73	2907.	0.07
456.	0.58	1682.	0.73	2908.	0.07
457.	0.58	1683.	0.73	2909.	0.07
458.	0.58	1684.	0.73	2910.	0.07
459.	0.58	1685.	0.73	2911.	0.07
460.	0.58	1686.	0.72	2912.	0.07
461.	0.58	1687.	0.72	2913.	0.07
462.	0.58	1688.	0.72	2914.	0.07
463.	0.58	1689.	0.73	2915.	0.07
464.	0.59	1690.	0.73	2916.	0.07
465.	0.58	1691.	0.73	2917.	0.07
466.	0.58	1692.	0.73	2918.	0.07
467.	0.59	1693.	0.72	2919.	0.07
468.	0.58	1694.	0.73	2920.	0.07
469.	0.59	1695.	0.72	2921.	0.07

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
470.	0.59	1696.	0.72	2922.	0.07
471.	0.58	1697.	0.73	2923.	0.07
472.	0.58	1698.	0.73	2924.	0.07
473.	0.58	1699.	0.73	2925.	0.07
474.	0.58	1700.	0.72	2926.	0.07
475.	0.58	1701.	0.73	2927.	0.07
476.	0.58	1702.	0.73	2928.	0.07
477.	0.58	1703.	0.72	2929.	0.07
478.	0.58	1704.	0.73	2930.	0.07
479.	0.58	1705.	0.73	2931.	0.07
480.	0.59	1706.	0.72	2932.	0.07
481.	0.58	1707.	0.73	2933.	0.07
482.	0.59	1708.	0.73	2934.	0.07
483.	0.58	1709.	0.73	2935.	0.07
484.	0.59	1710.	0.73	2936.	0.07
485.	0.59	1711.	0.72	2937.	0.07
486.	0.59	1712.	0.72	2938.	0.07
487.	0.58	1713.	0.72	2939.	0.07
488.	0.59	1714.	0.73	2940.	0.07
489.	0.59	1715.	0.72	2941.	0.07
490.	0.59	1716.	0.73	2942.	0.07
491.	0.59	1717.	0.73	2943.	0.07
492.	0.59	1718.	0.73	2944.	0.07
493.	0.59	1719.	0.73	2945.	0.07
494.	0.59	1720.	0.72	2946.	0.07
495.	0.59	1721.	0.72	2947.	0.07
496.	0.59	1722.	0.73	2948.	0.07
497.	0.59	1723.	0.72	2949.	0.07
498.	0.59	1724.	0.73	2950.	0.07
499.	0.59	1725.	0.73	2951.	0.07
500.	0.6	1726.	0.73	2952.	0.07
501.	0.59	1727.	0.73	2953.	0.07
502.	0.59	1728.	0.73	2954.	0.07
503.	0.59	1729.	0.73	2955.	0.07
504.	0.59	1730.	0.73	2956.	0.07
505.	0.59	1731.	0.73	2957.	0.07
506.	0.59	1732.	0.73	2958.	0.07
507.	0.6	1733.	0.73	2959.	0.07
508.	0.59	1734.	0.73	2960.	0.07
509.	0.6	1735.	0.72	2961.	0.07
510.	0.59	1736.	0.73	2962.	0.07
511.	0.59	1737.	0.73	2963.	0.07
512.	0.59	1738.	0.73	2964.	0.07
513.	0.59	1739.	0.73	2965.	0.07
514.	0.59	1740.	0.72	2966.	0.07
515.	0.59	1741.	0.72	2967.	0.07
516.	0.59	1742.	0.72	2968.	0.07
517.	0.59	1743.	0.72	2969.	0.07
518.	0.6	1744.	0.72	2970.	0.07
519.	0.59	1745.	0.72	2971.	0.07
520.	0.59	1746.	0.73	2972.	0.07
521.	0.59	1747.	0.72	2973.	0.07
522.	0.6	1748.	0.72	2974.	0.07
523.	0.6	1749.	0.73	2975.	0.07
524.	0.59	1750.	0.72	2976.	0.07
525.	0.59	1751.	0.73	2977.	0.07
526.	0.59	1752.	0.73	2978.	0.07

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
527.	0.59	1753.	0.72	2979.	0.07
528.	0.59	1754.	0.72	2980.	0.07
529.	0.6	1755.	0.73	2981.	0.07
530.	0.59	1756.	0.72	2982.	0.07
531.	0.59	1757.	0.73	2983.	0.07
532.	0.59	1758.	0.73	2984.	0.07
533.	0.59	1759.	0.74	2985.	0.07
534.	0.59	1760.	0.73	2986.	0.07
535.	0.59	1761.	0.73	2987.	0.07
536.	0.6	1762.	0.74	2988.	0.07
537.	0.6	1763.	0.74	2989.	0.07
538.	0.59	1764.	0.74	2990.	0.07
539.	0.6	1765.	0.74	2991.	0.07
540.	0.59	1766.	0.74	2992.	0.07
541.	0.6	1767.	0.74	2993.	0.07
542.	0.6	1768.	0.74	2994.	0.07
543.	0.6	1769.	0.74	2995.	0.07
544.	0.6	1770.	0.74	2996.	0.07
545.	0.6	1771.	0.74	2997.	0.07
546.	0.6	1772.	0.75	2998.	0.07
547.	0.6	1773.	0.74	2999.	0.07
548.	0.6	1774.	0.74	3000.	0.07
549.	0.6	1775.	0.74	3001.	0.07
550.	0.6	1776.	0.75	3002.	0.07
551.	0.6	1777.	0.74	3003.	0.07
552.	0.6	1778.	0.75	3004.	0.07
553.	0.6	1779.	0.75	3005.	0.07
554.	0.6	1780.	0.75	3006.	0.07
555.	0.6	1781.	0.75	3007.	0.07
556.	0.6	1782.	0.75	3008.	0.07
557.	0.6	1783.	0.75	3009.	0.07
558.	0.6	1784.	0.75	3010.	0.07
559.	0.6	1785.	0.75	3011.	0.07
560.	0.6	1786.	0.75	3012.	0.07
561.	0.6	1787.	0.75	3013.	0.07
562.	0.6	1788.	0.76	3014.	0.07
563.	0.6	1789.	0.75	3015.	0.07
564.	0.6	1790.	0.75	3016.	0.07
565.	0.6	1791.	0.75	3017.	0.07
566.	0.6	1792.	0.75	3018.	0.07
567.	0.6	1793.	0.75	3019.	0.07
568.	0.6	1794.	0.75	3020.	0.07
569.	0.6	1795.	0.75	3021.	0.07
570.	0.6	1796.	0.75	3022.	0.07
571.	0.61	1797.	0.75	3023.	0.07
572.	0.61	1798.	0.75	3024.	0.07
573.	0.61	1799.	0.75	3025.	0.07
574.	0.6	1800.	0.75	3026.	0.07
575.	0.61	1801.	0.75	3027.	0.07
576.	0.61	1802.	0.75	3028.	0.07
577.	0.61	1803.	0.75	3029.	0.07
578.	0.61	1804.	0.75	3030.	0.07
579.	0.61	1805.	0.75	3031.	0.07
580.	0.61	1806.	0.75	3032.	0.07
581.	0.62	1807.	0.75	3033.	0.07
582.	0.61	1808.	0.75	3034.	0.07
583.	0.61	1809.	0.75	3035.	0.07

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
584.	0.61	1810.	0.75	3036.	0.07
585.	0.62	1811.	0.76	3037.	0.07
586.	0.62	1812.	0.75	3038.	0.07
587.	0.62	1813.	0.76	3039.	0.07
588.	0.62	1814.	0.75	3040.	0.07
589.	0.62	1815.	0.75	3041.	0.07
590.	0.62	1816.	0.76	3042.	0.07
591.	0.62	1817.	0.75	3043.	0.07
592.	0.62	1818.	0.75	3044.	0.07
593.	0.62	1819.	0.76	3045.	0.06
594.	0.62	1820.	0.75	3046.	0.06
595.	0.62	1821.	0.75	3047.	0.06
596.	0.62	1822.	0.75	3048.	0.06
597.	0.62	1823.	0.75	3049.	0.07
598.	0.62	1824.	0.75	3050.	0.07
599.	0.62	1825.	0.75	3051.	0.07
600.	0.62	1826.	0.75	3052.	0.07
601.	0.62	1827.	0.75	3053.	0.07
602.	0.62	1828.	0.75	3054.	0.07
603.	0.62	1829.	0.75	3055.	0.07
604.	0.62	1830.	0.75	3056.	0.06
605.	0.62	1831.	0.75	3057.	0.07
606.	0.62	1832.	0.75	3058.	0.06
607.	0.62	1833.	0.75	3059.	0.06
608.	0.63	1834.	0.75	3060.	0.06
609.	0.63	1835.	0.75	3061.	0.06
610.	0.62	1836.	0.75	3062.	0.06
611.	0.63	1837.	0.75	3063.	0.06
612.	0.62	1838.	0.75	3064.	0.06
613.	0.63	1839.	0.75	3065.	0.07
614.	0.63	1840.	0.75	3066.	0.06
615.	0.63	1841.	0.75	3067.	0.06
616.	0.63	1842.	0.75	3068.	0.06
617.	0.62	1843.	0.75	3069.	0.06
618.	0.63	1844.	0.75	3070.	0.06
619.	0.63	1845.	0.75	3071.	0.06
620.	0.63	1846.	0.75	3072.	0.06
621.	0.62	1847.	0.75	3073.	0.06
622.	0.63	1848.	0.75	3074.	0.06
623.	0.63	1849.	0.75	3075.	0.06
624.	0.63	1850.	0.74	3076.	0.06
625.	0.63	1851.	0.75	3077.	0.06
626.	0.63	1852.	0.75	3078.	0.06
627.	0.63	1853.	0.75	3079.	0.06
628.	0.63	1854.	0.75	3080.	0.06
629.	0.63	1855.	0.75	3081.	0.06
630.	0.62	1856.	0.75	3082.	0.06
631.	0.62	1857.	0.75	3083.	0.06
632.	0.63	1858.	0.74	3084.	0.06
633.	0.63	1859.	0.75	3085.	0.06
634.	0.63	1860.	0.75	3086.	0.06
635.	0.63	1861.	0.75	3087.	0.06
636.	0.63	1862.	0.75	3088.	0.06
637.	0.63	1863.	0.75	3089.	0.06
638.	0.63	1864.	0.75	3090.	0.06
639.	0.63	1865.	0.75	3091.	0.06
640.	0.63	1866.	0.75	3092.	0.06

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
641.	0.63	1867.	0.74	3093.	0.06
642.	0.63	1868.	0.75	3094.	0.06
643.	0.63	1869.	0.75	3095.	0.06
644.	0.62	1870.	0.75	3096.	0.06
645.	0.63	1871.	0.75	3097.	0.06
646.	0.63	1872.	0.75	3098.	0.06
647.	0.63	1873.	0.75	3099.	0.06
648.	0.63	1874.	0.75	3100.	0.06
649.	0.63	1875.	0.74	3101.	0.06
650.	0.63	1876.	0.75	3102.	0.06
651.	0.63	1877.	0.75	3103.	0.06
652.	0.63	1878.	0.75	3104.	0.06
653.	0.63	1879.	0.75	3105.	0.06
654.	0.63	1880.	0.75	3106.	0.06
655.	0.63	1881.	0.75	3107.	0.06
656.	0.62	1882.	0.75	3108.	0.06
657.	0.63	1883.	0.75	3109.	0.06
658.	0.63	1884.	0.75	3110.	0.06
659.	0.63	1885.	0.75	3111.	0.06
660.	0.63	1886.	0.75	3112.	0.06
661.	0.63	1887.	0.75	3113.	0.06
662.	0.63	1888.	0.75	3114.	0.06
663.	0.63	1889.	0.75	3115.	0.06
664.	0.63	1890.	0.76	3116.	0.06
665.	0.63	1891.	0.75	3117.	0.06
666.	0.63	1892.	0.75	3118.	0.06
667.	0.63	1893.	0.75	3119.	0.06
668.	0.64	1894.	0.75	3120.	0.06
669.	0.63	1895.	0.75	3121.	0.06
670.	0.63	1896.	0.75	3122.	0.06
671.	0.63	1897.	0.75	3123.	0.06
672.	0.63	1898.	0.76	3124.	0.06
673.	0.63	1899.	0.76	3125.	0.06
674.	0.63	1900.	0.76	3126.	0.06
675.	0.63	1901.	0.75	3127.	0.06
676.	0.63	1902.	0.75	3128.	0.06
677.	0.64	1903.	0.75	3129.	0.06
678.	0.63	1904.	0.75	3130.	0.06
679.	0.64	1905.	0.75	3131.	0.06
680.	0.63	1906.	0.75	3132.	0.06
681.	0.63	1907.	0.75	3133.	0.06
682.	0.63	1908.	0.75	3134.	0.06
683.	0.63	1909.	0.76	3135.	0.06
684.	0.64	1910.	0.75	3136.	0.06
685.	0.63	1911.	0.75	3137.	0.06
686.	0.64	1912.	0.75	3138.	0.06
687.	0.63	1913.	0.75	3139.	0.06
688.	0.64	1914.	0.75	3140.	0.06
689.	0.63	1915.	0.75	3141.	0.06
690.	0.63	1916.	0.75	3142.	0.06
691.	0.63	1917.	0.75	3143.	0.06
692.	0.64	1918.	0.75	3144.	0.06
693.	0.63	1919.	0.75	3145.	0.06
694.	0.64	1920.	0.75	3146.	0.06
695.	0.64	1921.	0.75	3147.	0.06
696.	0.63	1922.	0.75	3148.	0.06
697.	0.64	1923.	0.75	3149.	0.06

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
698.	0.64	1924.	0.75	3150.	0.06
699.	0.64	1925.	0.75	3151.	0.06
700.	0.63	1926.	0.76	3152.	0.06
701.	0.64	1927.	0.75	3153.	0.06
702.	0.64	1928.	0.74	3154.	0.06
703.	0.63	1929.	0.75	3155.	0.06
704.	0.64	1930.	0.75	3156.	0.06
705.	0.64	1931.	0.75	3157.	0.06
706.	0.64	1932.	0.75	3158.	0.06
707.	0.63	1933.	0.74	3159.	0.06
708.	0.63	1934.	0.74	3160.	0.06
709.	0.64	1935.	0.74	3161.	0.06
710.	0.64	1936.	0.73	3162.	0.06
711.	0.63	1937.	0.73	3163.	0.06
712.	0.64	1938.	0.73	3164.	0.06
713.	0.64	1939.	0.73	3165.	0.06
714.	0.64	1940.	0.73	3166.	0.06
715.	0.64	1941.	0.73	3167.	0.06
716.	0.63	1942.	0.73	3168.	0.06
717.	0.64	1943.	0.73	3169.	0.06
718.	0.63	1944.	0.73	3170.	0.06
719.	0.64	1945.	0.72	3171.	0.06
720.	0.64	1946.	0.72	3172.	0.06
721.	0.64	1947.	0.72	3173.	0.06
722.	0.64	1948.	0.72	3174.	0.06
723.	0.64	1949.	0.72	3175.	0.06
724.	0.64	1950.	0.72	3176.	0.06
725.	0.64	1951.	0.73	3177.	0.06
726.	0.64	1952.	0.72	3178.	0.06
727.	0.64	1953.	0.72	3179.	0.06
728.	0.64	1954.	0.72	3180.	0.06
729.	0.64	1955.	0.72	3181.	0.06
730.	0.64	1956.	0.72	3182.	0.06
731.	0.64	1957.	0.72	3183.	0.06
732.	0.63	1958.	0.72	3184.	0.06
733.	0.64	1959.	0.72	3185.	0.06
734.	0.64	1960.	0.71	3186.	0.06
735.	0.64	1961.	0.72	3187.	0.06
736.	0.64	1962.	0.72	3188.	0.06
737.	0.64	1963.	0.72	3189.	0.06
738.	0.64	1964.	0.72	3190.	0.06
739.	0.64	1965.	0.72	3191.	0.06
740.	0.64	1966.	0.72	3192.	0.06
741.	0.64	1967.	0.73	3193.	0.06
742.	0.64	1968.	0.72	3194.	0.06
743.	0.64	1969.	0.72	3195.	0.06
744.	0.64	1970.	0.72	3196.	0.06
745.	0.64	1971.	0.72	3197.	0.06
746.	0.64	1972.	0.72	3198.	0.06
747.	0.64	1973.	0.73	3199.	0.06
748.	0.64	1974.	0.72	3200.	0.06
749.	0.64	1975.	0.72	3201.	0.06
750.	0.64	1976.	0.72	3202.	0.06
751.	0.64	1977.	0.72	3203.	0.06
752.	0.64	1978.	0.72	3204.	0.06
753.	0.64	1979.	0.73	3205.	0.06
754.	0.64	1980.	0.73	3206.	0.06

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
755.	0.64	1981.	0.72	3207.	0.06
756.	0.64	1982.	0.73	3208.	0.06
757.	0.64	1983.	0.72	3209.	0.06
758.	0.64	1984.	0.73	3210.	0.06
759.	0.64	1985.	0.72	3211.	0.06
760.	0.64	1986.	0.72	3212.	0.06
761.	0.64	1987.	0.73	3213.	0.06
762.	0.64	1988.	0.72	3214.	0.06
763.	0.63	1989.	0.72	3215.	0.06
764.	0.64	1990.	0.72	3216.	0.06
765.	0.64	1991.	0.73	3217.	0.06
766.	0.63	1992.	0.73	3218.	0.06
767.	0.63	1993.	0.73	3219.	0.06
768.	0.64	1994.	0.74	3220.	0.06
769.	0.64	1995.	0.72	3221.	0.06
770.	0.64	1996.	0.73	3222.	0.06
771.	0.63	1997.	0.73	3223.	0.06
772.	0.63	1998.	0.73	3224.	0.06
773.	0.63	1999.	0.74	3225.	0.06
774.	0.63	2000.	0.72	3226.	0.06
775.	0.63	2001.	0.56	3227.	0.06
776.	0.64	2002.	0.58	3228.	0.06
777.	0.63	2003.	0.64	3229.	0.06
778.	0.64	2004.	0.67	3230.	0.06
779.	0.64	2005.	0.7	3231.	0.06
780.	0.64	2006.	0.72	3232.	0.06
781.	0.64	2007.	0.75	3233.	0.06
782.	0.64	2008.	0.78	3234.	0.06
783.	0.64	2009.	0.79	3235.	0.06
784.	0.64	2010.	0.82	3236.	0.06
785.	0.64	2011.	0.84	3237.	0.06
786.	0.64	2012.	0.85	3238.	0.06
787.	0.64	2013.	0.88	3239.	0.06
788.	0.64	2014.	0.9	3240.	0.06
789.	0.65	2015.	0.93	3241.	0.06
790.	0.65	2016.	0.96	3242.	0.06
791.	0.64	2017.	0.99	3243.	0.06
792.	0.65	2018.	1.02	3244.	0.06
793.	0.65	2019.	1.04	3245.	0.06
794.	0.65	2020.	1.	3246.	0.06
795.	0.65	2021.	0.99	3247.	0.06
796.	0.65	2022.	1.	3248.	0.06
797.	0.65	2023.	1.03	3249.	0.06
798.	0.65	2024.	1.03	3250.	0.06
799.	0.65	2025.	0.99	3251.	0.06
800.	0.65	2026.	0.98	3252.	0.06
801.	0.65	2027.	0.98	3253.	0.06
802.	0.65	2028.	1.01	3254.	0.06
803.	0.65	2029.	1.04	3255.	0.06
804.	0.65	2030.	1.01	3256.	0.06
805.	0.64	2031.	0.96	3257.	0.06
806.	0.64	2032.	0.95	3258.	0.06
807.	0.65	2033.	0.96	3259.	0.06
808.	0.64	2034.	0.98	3260.	0.06
809.	0.64	2035.	1.01	3261.	0.06
810.	0.64	2036.	1.04	3262.	0.06
811.	0.64	2037.	1.	3263.	0.06

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
812.	0.64	2038.	0.98	3264.	0.06
813.	0.64	2039.	0.97	3265.	0.06
814.	0.64	2040.	0.99	3266.	0.06
815.	0.64	2041.	1.02	3267.	0.06
816.	0.64	2042.	1.04	3268.	0.06
817.	0.64	2043.	0.99	3269.	0.06
818.	0.64	2044.	0.97	3270.	0.06
819.	0.64	2045.	0.97	3271.	0.06
820.	0.64	2046.	0.99	3272.	0.06
821.	0.64	2047.	1.02	3273.	0.06
822.	0.64	2048.	1.03	3274.	0.06
823.	0.64	2049.	0.96	3275.	0.06
824.	0.64	2050.	0.9	3276.	0.06
825.	0.64	2051.	0.87	3277.	0.06
826.	0.64	2052.	0.87	3278.	0.06
827.	0.65	2053.	0.88	3279.	0.06
828.	0.64	2054.	0.91	3280.	0.06
829.	0.64	2055.	0.94	3281.	0.06
830.	0.64	2056.	0.97	3282.	0.06
831.	0.65	2057.	1.01	3283.	0.06
832.	0.65	2058.	1.04	3284.	0.06
833.	0.64	2059.	1.01	3285.	0.06
834.	0.64	2060.	0.96	3286.	0.06
835.	0.65	2061.	0.95	3287.	0.06
836.	0.65	2062.	0.96	3288.	0.06
837.	0.65	2063.	0.99	3289.	0.06
838.	0.64	2064.	1.02	3290.	0.06
839.	0.64	2065.	1.04	3291.	0.06
840.	0.64	2066.	0.99	3292.	0.06
841.	0.64	2067.	0.97	3293.	0.06
842.	0.65	2068.	0.98	3294.	0.06
843.	0.64	2069.	0.99	3295.	0.06
844.	0.64	2070.	1.02	3296.	0.06
845.	0.64	2071.	1.03	3297.	0.06
846.	0.64	2072.	0.98	3298.	0.06
847.	0.65	2073.	0.94	3299.	0.06
848.	0.64	2074.	0.94	3300.	0.06
849.	0.64	2075.	0.95	3301.	0.06
850.	0.65	2076.	0.97	3302.	0.06
851.	0.65	2077.	1.01	3303.	0.06
852.	0.65	2078.	1.04	3304.	0.06
853.	0.65	2079.	0.99	3305.	0.06
854.	0.65	2080.	0.9	3306.	0.06
855.	0.64	2081.	0.86	3307.	0.06
856.	0.64	2082.	0.84	3308.	0.06
857.	0.64	2083.	0.85	3309.	0.06
858.	0.64	2084.	0.86	3310.	0.06
859.	0.64	2085.	0.89	3311.	0.06
860.	0.65	2086.	0.92	3312.	0.06
861.	0.65	2087.	0.95	3313.	0.06
862.	0.64	2088.	0.98	3314.	0.05
863.	0.65	2089.	1.02	3315.	0.06
864.	0.65	2090.	1.04	3316.	0.06
865.	0.65	2091.	0.98	3317.	0.06
866.	0.65	2092.	0.94	3318.	0.06
867.	0.64	2093.	0.93	3319.	0.06
868.	0.65	2094.	0.93	3320.	0.06

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
869.	0.65	2095.	0.96	3321.	0.06
870.	0.64	2096.	0.99	3322.	0.06
871.	0.65	2097.	1.03	3323.	0.06
872.	0.65	2098.	1.03	3324.	0.06
873.	0.64	2099.	0.97	3325.	0.06
874.	0.64	2100.	0.93	3326.	0.06
875.	0.65	2101.	0.93	3327.	0.06
876.	0.64	2102.	0.95	3328.	0.06
877.	0.64	2103.	0.97	3329.	0.06
878.	0.64	2104.	1.01	3330.	0.06
879.	0.65	2105.	1.03	3331.	0.06
880.	0.64	2106.	1.03	3332.	0.06
881.	0.64	2107.	1.01	3333.	0.06
882.	0.64	2108.	1.02	3334.	0.06
883.	0.64	2109.	1.04	3335.	0.05
884.	0.64	2110.	0.99	3336.	0.06
885.	0.64	2111.	0.93	3337.	0.06
886.	0.64	2112.	0.92	3338.	0.06
887.	0.64	2113.	0.92	3339.	0.05
888.	0.65	2114.	0.95	3340.	0.06
889.	0.64	2115.	0.98	3341.	0.06
890.	0.64	2116.	0.8	3342.	0.05
891.	0.65	2117.	0.64	3343.	0.05
892.	0.64	2118.	0.52	3344.	0.05
893.	0.64	2119.	0.46	3345.	0.05
894.	0.64	2120.	0.39	3346.	0.05
895.	0.65	2121.	0.34	3347.	0.05
896.	0.64	2122.	0.29	3348.	0.05
897.	0.65	2123.	0.24	3349.	0.05
898.	0.64	2124.	0.19	3350.	0.05
899.	0.64	2125.	0.14	3351.	0.05
900.	0.64	2126.	0.11	3352.	0.05
901.	0.64	2127.	0.09	3353.	0.05
902.	0.64	2128.	0.07	3354.	0.05
903.	0.64	2129.	0.06	3355.	0.05
904.	0.64	2130.	0.06	3356.	0.05
905.	0.64	2131.	0.07	3357.	0.05
906.	0.64	2132.	0.07	3358.	0.05
907.	0.64	2133.	0.09	3359.	0.05
908.	0.64	2134.	0.1	3360.	0.05
909.	0.64	2135.	0.11	3361.	0.05
910.	0.64	2136.	0.12	3362.	0.05
911.	0.64	2137.	0.13	3363.	0.05
912.	0.64	2138.	0.14	3364.	0.05
913.	0.64	2139.	0.14	3365.	0.05
914.	0.64	2140.	0.15	3366.	0.05
915.	0.64	2141.	0.15	3367.	0.05
916.	0.64	2142.	0.16	3368.	0.05
917.	0.64	2143.	0.16	3369.	0.05
918.	0.64	2144.	0.17	3370.	0.05
919.	0.64	2145.	0.17	3371.	0.05
920.	0.64	2146.	0.17	3372.	0.05
921.	0.64	2147.	0.17	3373.	0.05
922.	0.64	2148.	0.18	3374.	0.05
923.	0.64	2149.	0.18	3375.	0.05
924.	0.64	2150.	0.18	3376.	0.05
925.	0.64	2151.	0.18	3377.	0.05

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
926.	0.64	2152.	0.18	3378.	0.05
927.	0.64	2153.	0.18	3379.	0.05
928.	0.64	2154.	0.18	3380.	0.05
929.	0.64	2155.	0.19	3381.	0.05
930.	0.64	2156.	0.19	3382.	0.05
931.	0.64	2157.	0.19	3383.	0.05
932.	0.64	2158.	0.19	3384.	0.05
933.	0.64	2159.	0.19	3385.	0.05
934.	0.64	2160.	0.19	3386.	0.05
935.	0.64	2161.	0.19	3387.	0.05
936.	0.64	2162.	0.19	3388.	0.05
937.	0.64	2163.	0.19	3389.	0.05
938.	0.64	2164.	0.19	3390.	0.05
939.	0.64	2165.	0.19	3391.	0.05
940.	0.64	2166.	0.19	3392.	0.05
941.	0.64	2167.	0.19	3393.	0.05
942.	0.64	2168.	0.19	3394.	0.05
943.	0.64	2169.	0.19	3395.	0.05
944.	0.64	2170.	0.19	3396.	0.05
945.	0.64	2171.	0.19	3397.	0.05
946.	0.65	2172.	0.18	3398.	0.05
947.	0.64	2173.	0.18	3399.	0.05
948.	0.65	2174.	0.18	3400.	0.05
949.	0.64	2175.	0.18	3401.	0.05
950.	0.64	2176.	0.18	3402.	0.05
951.	0.64	2177.	0.18	3403.	0.05
952.	0.64	2178.	0.18	3404.	0.05
953.	0.64	2179.	0.18	3405.	0.05
954.	0.65	2180.	0.18	3406.	0.05
955.	0.64	2181.	0.18	3407.	0.05
956.	0.64	2182.	0.18	3408.	0.05
957.	0.64	2183.	0.18	3409.	0.05
958.	0.64	2184.	0.18	3410.	0.05
959.	0.64	2185.	0.18	3411.	0.05
960.	0.64	2186.	0.18	3412.	0.05
961.	0.64	2187.	0.18	3413.	0.05
962.	0.64	2188.	0.18	3414.	0.05
963.	0.64	2189.	0.18	3415.	0.05
964.	0.64	2190.	0.18	3416.	0.05
965.	0.64	2191.	0.17	3417.	0.05
966.	0.64	2192.	0.17	3418.	0.05
967.	0.64	2193.	0.17	3419.	0.05
968.	0.64	2194.	0.17	3420.	0.05
969.	0.64	2195.	0.17	3421.	0.05
970.	0.64	2196.	0.17	3422.	0.05
971.	0.64	2197.	0.17	3423.	0.05
972.	0.64	2198.	0.17	3424.	0.05
973.	0.64	2199.	0.17	3425.	0.05
974.	0.64	2200.	0.17	3426.	0.05
975.	0.64	2201.	0.17	3427.	0.05
976.	0.64	2202.	0.17	3428.	0.05
977.	0.64	2203.	0.17	3429.	0.05
978.	0.64	2204.	0.17	3430.	0.05
979.	0.64	2205.	0.17	3431.	0.05
980.	0.64	2206.	0.17	3432.	0.05
981.	0.64	2207.	0.17	3433.	0.05
982.	0.64	2208.	0.17	3434.	0.05

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
983.	0.65	2209.	0.17	3435.	0.05
984.	0.65	2210.	0.17	3436.	0.05
985.	0.64	2211.	0.17	3437.	0.05
986.	0.65	2212.	0.17	3438.	0.05
987.	0.65	2213.	0.17	3439.	0.05
988.	0.65	2214.	0.16	3440.	0.05
989.	0.65	2215.	0.16	3441.	0.05
990.	0.66	2216.	0.16	3442.	0.05
991.	0.65	2217.	0.16	3443.	0.05
992.	0.65	2218.	0.16	3444.	0.05
993.	0.65	2219.	0.16	3445.	0.05
994.	0.65	2220.	0.16	3446.	0.05
995.	0.66	2221.	0.16	3447.	0.05
996.	0.65	2222.	0.16	3448.	0.05
997.	0.66	2223.	0.16	3449.	0.05
998.	0.66	2224.	0.16	3450.	0.05
999.	0.65	2225.	0.16	3451.	0.05
1000.	0.66	2226.	0.16	3452.	0.05
1001.	0.66	2227.	0.16	3453.	0.05
1002.	0.66	2228.	0.16	3454.	0.05
1003.	0.66	2229.	0.16	3455.	0.05
1004.	0.66	2230.	0.16	3456.	0.05
1005.	0.66	2231.	0.16	3457.	0.05
1006.	0.66	2232.	0.16	3458.	0.05
1007.	0.66	2233.	0.16	3459.	0.05
1008.	0.66	2234.	0.16	3460.	0.05
1009.	0.66	2235.	0.16	3461.	0.05
1010.	0.66	2236.	0.16	3462.	0.05
1011.	0.66	2237.	0.16	3463.	0.05
1012.	0.66	2238.	0.16	3464.	0.05
1013.	0.66	2239.	0.16	3465.	0.05
1014.	0.66	2240.	0.15	3466.	0.05
1015.	0.66	2241.	0.15	3467.	0.05
1016.	0.66	2242.	0.15	3468.	0.05
1017.	0.66	2243.	0.15	3469.	0.05
1018.	0.66	2244.	0.15	3470.	0.05
1019.	0.66	2245.	0.15	3471.	0.05
1020.	0.66	2246.	0.15	3472.	0.05
1021.	0.66	2247.	0.15	3473.	0.05
1022.	0.66	2248.	0.15	3474.	0.05
1023.	0.66	2249.	0.15	3475.	0.05
1024.	0.66	2250.	0.15	3476.	0.05
1025.	0.65	2251.	0.15	3477.	0.05
1026.	0.66	2252.	0.15	3478.	0.05
1027.	0.66	2253.	0.15	3479.	0.05
1028.	0.66	2254.	0.15	3480.	0.05
1029.	0.66	2255.	0.15	3481.	0.05
1030.	0.66	2256.	0.15	3482.	0.05
1031.	0.66	2257.	0.15	3483.	0.05
1032.	0.65	2258.	0.15	3484.	0.05
1033.	0.66	2259.	0.15	3485.	0.05
1034.	0.65	2260.	0.15	3486.	0.05
1035.	0.66	2261.	0.15	3487.	0.05
1036.	0.66	2262.	0.15	3488.	0.05
1037.	0.66	2263.	0.15	3489.	0.05
1038.	0.66	2264.	0.15	3490.	0.05
1039.	0.66	2265.	0.15	3491.	0.05

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1040.	0.66	2266.	0.15	3492.	0.05
1041.	0.66	2267.	0.15	3493.	0.05
1042.	0.66	2268.	0.15	3494.	0.05
1043.	0.66	2269.	0.15	3495.	0.05
1044.	0.66	2270.	0.15	3496.	0.05
1045.	0.65	2271.	0.14	3497.	0.05
1046.	0.66	2272.	0.14	3498.	0.05
1047.	0.66	2273.	0.14	3499.	0.05
1048.	0.66	2274.	0.14	3500.	0.05
1049.	0.66	2275.	0.14	3501.	0.05
1050.	0.65	2276.	0.14	3502.	0.05
1051.	0.66	2277.	0.14	3503.	0.05
1052.	0.65	2278.	0.14	3504.	0.05
1053.	0.65	2279.	0.14	3505.	0.05
1054.	0.66	2280.	0.14	3506.	0.05
1055.	0.66	2281.	0.14	3507.	0.05
1056.	0.66	2282.	0.14	3508.	0.05
1057.	0.66	2283.	0.14	3509.	0.05
1058.	0.66	2284.	0.14	3510.	0.05
1059.	0.66	2285.	0.14	3511.	0.05
1060.	0.66	2286.	0.14	3512.	0.05
1061.	0.66	2287.	0.14	3513.	0.05
1062.	0.66	2288.	0.14	3514.	0.05
1063.	0.66	2289.	0.14	3515.	0.05
1064.	0.65	2290.	0.14	3516.	0.05
1065.	0.66	2291.	0.14	3517.	0.05
1066.	0.66	2292.	0.14	3518.	0.05
1067.	0.66	2293.	0.14	3519.	0.05
1068.	0.66	2294.	0.14	3520.	0.05
1069.	0.65	2295.	0.14	3521.	0.05
1070.	0.66	2296.	0.14	3522.	0.05
1071.	0.66	2297.	0.14	3523.	0.05
1072.	0.66	2298.	0.14	3524.	0.05
1073.	0.66	2299.	0.14	3525.	0.05
1074.	0.66	2300.	0.14	3526.	0.05
1075.	0.66	2301.	0.14	3527.	0.05
1076.	0.66	2302.	0.14	3528.	0.05
1077.	0.65	2303.	0.14	3529.	0.05
1078.	0.66	2304.	0.14	3530.	0.05
1079.	0.66	2305.	0.14	3531.	0.05
1080.	0.66	2306.	0.14	3532.	0.05
1081.	0.66	2307.	0.14	3533.	0.05
1082.	0.66	2308.	0.14	3534.	0.05
1083.	0.66	2309.	0.13	3535.	0.05
1084.	0.66	2310.	0.13	3536.	0.05
1085.	0.66	2311.	0.13	3537.	0.05
1086.	0.66	2312.	0.13	3538.	0.05
1087.	0.67	2313.	0.13	3539.	0.05
1088.	0.66	2314.	0.13	3540.	0.05
1089.	0.66	2315.	0.13	3541.	0.05
1090.	0.66	2316.	0.13	3542.	0.05
1091.	0.66	2317.	0.13	3543.	0.05
1092.	0.66	2318.	0.13	3544.	0.05
1093.	0.66	2319.	0.13	3545.	0.05
1094.	0.66	2320.	0.13	3546.	0.05
1095.	0.66	2321.	0.13	3547.	0.05
1096.	0.66	2322.	0.13	3548.	0.05

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1097.	0.66	2323.	0.13	3549.	0.05
1098.	0.66	2324.	0.13	3550.	0.05
1099.	0.65	2325.	0.13	3551.	0.05
1100.	0.65	2326.	0.13	3552.	0.05
1101.	0.66	2327.	0.13	3553.	0.05
1102.	0.66	2328.	0.13	3554.	0.05
1103.	0.65	2329.	0.13	3555.	0.05
1104.	0.66	2330.	0.13	3556.	0.05
1105.	0.65	2331.	0.13	3557.	0.05
1106.	0.65	2332.	0.13	3558.	0.05
1107.	0.65	2333.	0.13	3559.	0.05
1108.	0.66	2334.	0.13	3560.	0.05
1109.	0.66	2335.	0.13	3561.	0.05
1110.	0.66	2336.	0.13	3562.	0.05
1111.	0.65	2337.	0.13	3563.	0.05
1112.	0.66	2338.	0.13	3564.	0.05
1113.	0.66	2339.	0.13	3565.	0.05
1114.	0.66	2340.	0.13	3566.	0.05
1115.	0.66	2341.	0.13	3567.	0.05
1116.	0.66	2342.	0.13	3568.	0.05
1117.	0.66	2343.	0.13	3569.	0.05
1118.	0.66	2344.	0.13	3570.	0.05
1119.	0.66	2345.	0.13	3571.	0.05
1120.	0.66	2346.	0.13	3572.	0.05
1121.	0.66	2347.	0.13	3573.	0.05
1122.	0.66	2348.	0.13	3574.	0.05
1123.	0.66	2349.	0.13	3575.	0.05
1124.	0.66	2350.	0.13	3576.	0.05
1125.	0.66	2351.	0.13	3577.	0.05
1126.	0.66	2352.	0.13	3578.	0.05
1127.	0.66	2353.	0.13	3579.	0.05
1128.	0.66	2354.	0.12	3580.	0.05
1129.	0.66	2355.	0.12	3581.	0.05
1130.	0.66	2356.	0.12	3582.	0.05
1131.	0.66	2357.	0.12	3583.	0.05
1132.	0.66	2358.	0.12	3584.	0.05
1133.	0.66	2359.	0.12	3585.	0.05
1134.	0.66	2360.	0.12	3586.	0.05
1135.	0.66	2361.	0.12	3587.	0.05
1136.	0.66	2362.	0.12	3588.	0.05
1137.	0.66	2363.	0.12	3589.	0.05
1138.	0.66	2364.	0.12	3590.	0.05
1139.	0.66	2365.	0.12	3591.	0.05
1140.	0.65	2366.	0.12	3592.	0.05
1141.	0.66	2367.	0.12	3593.	0.05
1142.	0.66	2368.	0.12	3594.	0.05
1143.	0.65	2369.	0.12	3595.	0.05
1144.	0.66	2370.	0.12	3596.	0.05
1145.	0.66	2371.	0.12	3597.	0.05
1146.	0.66	2372.	0.12	3598.	0.05
1147.	0.66	2373.	0.12	3599.	0.05
1148.	0.66	2374.	0.12	3600.	0.05
1149.	0.66	2375.	0.12	3601.	0.05
1150.	0.66	2376.	0.12	3602.	0.05
1151.	0.66	2377.	0.12	3603.	0.05
1152.	0.66	2378.	0.12	3604.	0.05
1153.	0.66	2379.	0.12	3605.	0.05

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1154.	0.66	2380.	0.12	3606.	0.05
1155.	0.65	2381.	0.12	3607.	0.05
1156.	0.66	2382.	0.12	3608.	0.05
1157.	0.66	2383.	0.12	3609.	0.05
1158.	0.66	2384.	0.12	3610.	0.05
1159.	0.66	2385.	0.12	3611.	0.05
1160.	0.66	2386.	0.12	3612.	0.05
1161.	0.66	2387.	0.12	3613.	0.05
1162.	0.66	2388.	0.12	3614.	0.05
1163.	0.66	2389.	0.12	3615.	0.05
1164.	0.66	2390.	0.12	3616.	0.05
1165.	0.66	2391.	0.12	3617.	0.05
1166.	0.66	2392.	0.12	3618.	0.05
1167.	0.66	2393.	0.12	3619.	0.05
1168.	0.66	2394.	0.12	3620.	0.05
1169.	0.67	2395.	0.12	3621.	0.05
1170.	0.67	2396.	0.12	3622.	0.05
1171.	0.67	2397.	0.12	3623.	0.05
1172.	0.67	2398.	0.12	3624.	0.05
1173.	0.67	2399.	0.12	3625.	0.05
1174.	0.67	2400.	0.12	3626.	0.05
1175.	0.67	2401.	0.12	3627.	0.05
1176.	0.67	2402.	0.12	3628.	0.05
1177.	0.67	2403.	0.12	3629.	0.05
1178.	0.68	2404.	0.12	3630.	0.05
1179.	0.67	2405.	0.12	3631.	0.05
1180.	0.67	2406.	0.12	3632.	0.05
1181.	0.68	2407.	0.12	3633.	0.05
1182.	0.68	2408.	0.12	3634.	0.05
1183.	0.68	2409.	0.12	3635.	0.05
1184.	0.68	2410.	0.12	3636.	0.05
1185.	0.68	2411.	0.12	3637.	0.05
1186.	0.68	2412.	0.12	3638.	0.05
1187.	0.68	2413.	0.12	3639.	0.05
1188.	0.68	2414.	0.11	3640.	0.05
1189.	0.68	2415.	0.11	3641.	0.05
1190.	0.68	2416.	0.11	3642.	0.05
1191.	0.68	2417.	0.11	3643.	0.05
1192.	0.68	2418.	0.11	3644.	0.05
1193.	0.68	2419.	0.11	3645.	0.05
1194.	0.68	2420.	0.11	3646.	0.05
1195.	0.68	2421.	0.11	3647.	0.05
1196.	0.68	2422.	0.11	3648.	0.05
1197.	0.68	2423.	0.11	3649.	0.05
1198.	0.68	2424.	0.11	3650.	0.05
1199.	0.68	2425.	0.11	3651.	0.05
1200.	0.68	2426.	0.11	3652.	0.05
1201.	0.68	2427.	0.11	3653.	0.05
1202.	0.68	2428.	0.11	3654.	0.05
1203.	0.68	2429.	0.11	3655.	0.05
1204.	0.68	2430.	0.11	3656.	0.05
1205.	0.68	2431.	0.11	3657.	0.05
1206.	0.68	2432.	0.11	3658.	0.05
1207.	0.68	2433.	0.11	3659.	0.05
1208.	0.68	2434.	0.11	3660.	0.05
1209.	0.68	2435.	0.11	3661.	0.05
1210.	0.68	2436.	0.11	3662.	0.05

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1211.	0.68	2437.	0.11	3663.	0.05
1212.	0.68	2438.	0.11	3664.	0.05
1213.	0.68	2439.	0.11	3665.	0.05
1214.	0.68	2440.	0.11	3666.	0.05
1215.	0.68	2441.	0.11	3667.	0.05
1216.	0.68	2442.	0.11	3668.	0.05
1217.	0.68	2443.	0.11	3669.	0.05
1218.	0.68	2444.	0.11	3670.	0.05
1219.	0.68	2445.	0.11	3671.	0.05
1220.	0.68	2446.	0.11	3672.	0.05
1221.	0.68	2447.	0.11	3673.	0.05
1222.	0.68	2448.	0.11	3674.	0.05
1223.	0.68	2449.	0.11	3675.	0.05
1224.	0.68	2450.	0.11	3676.	0.05
1225.	0.69	2451.	0.11	3677.	0.05
1226.	0.68	2452.	0.11	3678.	0.05

Observation Well No. 3: MW23-03

X Location: 0. m
Y Location: 2. m

Radial distance from MW23-04: 18.11077028 m

Partially Penetrating Well
Depth to Top of Screen: 6.1 m
Depth to Bottom of Screen: 9.1 m

No. of Observations: 3678

Observation Data

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1.	0.0001	1227.	0.1613	2453.	0.125
2.	0.0002	1228.	0.1615	2454.	0.1249
3.	0.	1229.	0.1614	2455.	0.1248
4.	0.0003	1230.	0.1615	2456.	0.1247
5.	0.	1231.	0.1615	2457.	0.1245
6.	0.	1232.	0.1617	2458.	0.1244
7.	0.0001	1233.	0.1616	2459.	0.1244
8.	0.0002	1234.	0.1619	2460.	0.124
9.	0.0003	1235.	0.1618	2461.	0.1241
10.	0.0003	1236.	0.1616	2462.	0.1238
11.	0.0001	1237.	0.1618	2463.	0.1237
12.	0.0003	1238.	0.1618	2464.	0.1238
13.	0.0003	1239.	0.1621	2465.	0.1236
14.	0.0004	1240.	0.1619	2466.	0.1233
15.	0.0004	1241.	0.1619	2467.	0.1232
16.	0.0004	1242.	0.1622	2468.	0.1231
17.	0.0005	1243.	0.1622	2469.	0.1231
18.	0.001	1244.	0.1622	2470.	0.123
19.	0.001	1245.	0.1623	2471.	0.1228
20.	0.0009	1246.	0.1623	2472.	0.1227
21.	0.001	1247.	0.1627	2473.	0.1224
22.	0.0013	1248.	0.1628	2474.	0.1223
23.	0.0016	1249.	0.1625	2475.	0.1221
24.	0.0018	1250.	0.1629	2476.	0.1219
25.	0.0021	1251.	0.1628	2477.	0.122

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
26.	0.0023	1252.	0.163	2478.	0.122
27.	0.0025	1253.	0.163	2479.	0.1218
28.	0.0028	1254.	0.163	2480.	0.1216
29.	0.003	1255.	0.1632	2481.	0.1214
30.	0.0034	1256.	0.163	2482.	0.1212
31.	0.0035	1257.	0.1631	2483.	0.1212
32.	0.0037	1258.	0.1631	2484.	0.1212
33.	0.0041	1259.	0.1633	2485.	0.121
34.	0.0043	1260.	0.1633	2486.	0.1207
35.	0.0044	1261.	0.1632	2487.	0.1209
36.	0.005	1262.	0.1635	2488.	0.1209
37.	0.0053	1263.	0.1635	2489.	0.1206
38.	0.0056	1264.	0.1635	2490.	0.1205
39.	0.0059	1265.	0.1635	2491.	0.1202
40.	0.0064	1266.	0.1638	2492.	0.1202
41.	0.0065	1267.	0.1639	2493.	0.1201
42.	0.0067	1268.	0.1636	2494.	0.1202
43.	0.0072	1269.	0.1638	2495.	0.1199
44.	0.0077	1270.	0.164	2496.	0.1199
45.	0.008	1271.	0.164	2497.	0.1197
46.	0.0081	1272.	0.1641	2498.	0.1196
47.	0.0085	1273.	0.1643	2499.	0.1196
48.	0.0091	1274.	0.1642	2500.	0.1193
49.	0.0094	1275.	0.1645	2501.	0.1191
50.	0.0094	1276.	0.1643	2502.	0.1193
51.	0.0101	1277.	0.1645	2503.	0.1191
52.	0.0101	1278.	0.1644	2504.	0.1188
53.	0.0104	1279.	0.1646	2505.	0.119
54.	0.0108	1280.	0.1646	2506.	0.1186
55.	0.011	1281.	0.1646	2507.	0.1185
56.	0.0115	1282.	0.1644	2508.	0.1183
57.	0.0118	1283.	0.1648	2509.	0.1183
58.	0.012	1284.	0.1649	2510.	0.1184
59.	0.0127	1285.	0.1646	2511.	0.1181
60.	0.0127	1286.	0.165	2512.	0.118
61.	0.0133	1287.	0.165	2513.	0.1182
62.	0.0137	1288.	0.165	2514.	0.1179
63.	0.0139	1289.	0.1652	2515.	0.1177
64.	0.0143	1290.	0.1652	2516.	0.1176
65.	0.0148	1291.	0.1653	2517.	0.1176
66.	0.0149	1292.	0.1651	2518.	0.1177
67.	0.0153	1293.	0.1653	2519.	0.1174
68.	0.0158	1294.	0.1655	2520.	0.1173
69.	0.0163	1295.	0.1653	2521.	0.1171
70.	0.0165	1296.	0.1655	2522.	0.1172
71.	0.0169	1297.	0.1656	2523.	0.1169
72.	0.0176	1298.	0.1655	2524.	0.1168
73.	0.0176	1299.	0.1655	2525.	0.1167
74.	0.018	1300.	0.1657	2526.	0.1168
75.	0.0184	1301.	0.166	2527.	0.1166
76.	0.0187	1302.	0.1662	2528.	0.1165
77.	0.0192	1303.	0.1659	2529.	0.1165
78.	0.0194	1304.	0.166	2530.	0.1163
79.	0.0198	1305.	0.1659	2531.	0.1162
80.	0.0203	1306.	0.1661	2532.	0.116
81.	0.0205	1307.	0.1662	2533.	0.1159
82.	0.0212	1308.	0.1664	2534.	0.1157

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
83.	0.0215	1309.	0.1663	2535.	0.1158
84.	0.0217	1310.	0.1664	2536.	0.1156
85.	0.0222	1311.	0.1664	2537.	0.1154
86.	0.0226	1312.	0.1663	2538.	0.1153
87.	0.0227	1313.	0.1664	2539.	0.1154
88.	0.0231	1314.	0.1662	2540.	0.115
89.	0.0234	1315.	0.1665	2541.	0.1149
90.	0.0238	1316.	0.1666	2542.	0.1149
91.	0.0241	1317.	0.1666	2543.	0.1148
92.	0.0245	1318.	0.1667	2544.	0.1147
93.	0.0248	1319.	0.1669	2545.	0.1149
94.	0.0252	1320.	0.1667	2546.	0.1145
95.	0.0254	1321.	0.1667	2547.	0.1145
96.	0.0257	1322.	0.1668	2548.	0.1143
97.	0.0263	1323.	0.1668	2549.	0.1144
98.	0.0266	1324.	0.167	2550.	0.1143
99.	0.0269	1325.	0.167	2551.	0.1141
100.	0.0272	1326.	0.167	2552.	0.114
101.	0.0276	1327.	0.1671	2553.	0.1138
102.	0.028	1328.	0.1671	2554.	0.1138
103.	0.0284	1329.	0.1673	2555.	0.1137
104.	0.0287	1330.	0.1673	2556.	0.1136
105.	0.0292	1331.	0.1673	2557.	0.1135
106.	0.0297	1332.	0.1674	2558.	0.1134
107.	0.0299	1333.	0.1674	2559.	0.1136
108.	0.0302	1334.	0.1673	2560.	0.1133
109.	0.0302	1335.	0.1677	2561.	0.1131
110.	0.0306	1336.	0.1675	2562.	0.1131
111.	0.0309	1337.	0.1675	2563.	0.1129
112.	0.0312	1338.	0.1677	2564.	0.1127
113.	0.0317	1339.	0.1676	2565.	0.1126
114.	0.0319	1340.	0.1676	2566.	0.1125
115.	0.0323	1341.	0.1674	2567.	0.1125
116.	0.0326	1342.	0.1678	2568.	0.1124
117.	0.0329	1343.	0.1676	2569.	0.1122
118.	0.033	1344.	0.1677	2570.	0.1122
119.	0.0335	1345.	0.1682	2571.	0.1121
120.	0.0339	1346.	0.168	2572.	0.1119
121.	0.0341	1347.	0.1682	2573.	0.112
122.	0.0347	1348.	0.1683	2574.	0.1118
123.	0.0349	1349.	0.1685	2575.	0.1117
124.	0.0352	1350.	0.1685	2576.	0.1117
125.	0.0355	1351.	0.1685	2577.	0.1116
126.	0.036	1352.	0.1685	2578.	0.1115
127.	0.0357	1353.	0.1687	2579.	0.1114
128.	0.0364	1354.	0.1687	2580.	0.1113
129.	0.0367	1355.	0.1685	2581.	0.1112
130.	0.0369	1356.	0.1687	2582.	0.1112
131.	0.0373	1357.	0.1687	2583.	0.1112
132.	0.0373	1358.	0.1688	2584.	0.1109
133.	0.0378	1359.	0.169	2585.	0.111
134.	0.038	1360.	0.169	2586.	0.1111
135.	0.0383	1361.	0.169	2587.	0.1109
136.	0.0385	1362.	0.1691	2588.	0.1111
137.	0.0387	1363.	0.1691	2589.	0.1108
138.	0.0391	1364.	0.1694	2590.	0.1107
139.	0.0393	1365.	0.1691	2591.	0.1106

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
140.	0.0396	1366.	0.1693	2592.	0.1108
141.	0.0399	1367.	0.1692	2593.	0.1106
142.	0.0402	1368.	0.1694	2594.	0.1104
143.	0.0407	1369.	0.1696	2595.	0.1106
144.	0.0409	1370.	0.1695	2596.	0.1105
145.	0.0411	1371.	0.1694	2597.	0.1102
146.	0.0415	1372.	0.1695	2598.	0.1103
147.	0.0416	1373.	0.1695	2599.	0.11
148.	0.0419	1374.	0.1695	2600.	0.1097
149.	0.0422	1375.	0.1697	2601.	0.1098
150.	0.0427	1376.	0.1699	2602.	0.1098
151.	0.043	1377.	0.1697	2603.	0.1096
152.	0.0435	1378.	0.1696	2604.	0.1096
153.	0.0435	1379.	0.1698	2605.	0.1096
154.	0.0438	1380.	0.17	2606.	0.1092
155.	0.0441	1381.	0.1698	2607.	0.1092
156.	0.0445	1382.	0.1698	2608.	0.1091
157.	0.0449	1383.	0.1699	2609.	0.109
158.	0.0451	1384.	0.17	2610.	0.1089
159.	0.0453	1385.	0.17	2611.	0.1086
160.	0.0454	1386.	0.1701	2612.	0.1085
161.	0.0457	1387.	0.1707	2613.	0.1084
162.	0.0459	1388.	0.1704	2614.	0.1084
163.	0.0464	1389.	0.1708	2615.	0.1084
164.	0.0465	1390.	0.1705	2616.	0.1082
165.	0.047	1391.	0.1707	2617.	0.1081
166.	0.0471	1392.	0.1709	2618.	0.1082
167.	0.0475	1393.	0.1706	2619.	0.1079
168.	0.0476	1394.	0.1708	2620.	0.1079
169.	0.0481	1395.	0.1709	2621.	0.1079
170.	0.0482	1396.	0.1711	2622.	0.1075
171.	0.0484	1397.	0.1708	2623.	0.1077
172.	0.0487	1398.	0.171	2624.	0.1075
173.	0.0491	1399.	0.171	2625.	0.1074
174.	0.0492	1400.	0.1709	2626.	0.1074
175.	0.0495	1401.	0.171	2627.	0.1073
176.	0.0497	1402.	0.1711	2628.	0.1071
177.	0.0498	1403.	0.1713	2629.	0.1071
178.	0.0502	1404.	0.1714	2630.	0.107
179.	0.0501	1405.	0.1714	2631.	0.1068
180.	0.0505	1406.	0.1716	2632.	0.1069
181.	0.0507	1407.	0.1715	2633.	0.1065
182.	0.051	1408.	0.1715	2634.	0.1066
183.	0.0514	1409.	0.1717	2635.	0.1066
184.	0.0514	1410.	0.1716	2636.	0.1064
185.	0.0518	1411.	0.1716	2637.	0.1065
186.	0.0521	1412.	0.1717	2638.	0.1064
187.	0.0524	1413.	0.1717	2639.	0.1063
188.	0.0527	1414.	0.1718	2640.	0.1063
189.	0.0532	1415.	0.1717	2641.	0.1062
190.	0.0532	1416.	0.1719	2642.	0.1061
191.	0.0536	1417.	0.1718	2643.	0.106
192.	0.0539	1418.	0.1716	2644.	0.106
193.	0.0541	1419.	0.1719	2645.	0.1059
194.	0.0545	1420.	0.1719	2646.	0.1058
195.	0.0548	1421.	0.172	2647.	0.1059
196.	0.0549	1422.	0.1721	2648.	0.1057

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
197.	0.0554	1423.	0.172	2649.	0.1055
198.	0.0554	1424.	0.1723	2650.	0.1055
199.	0.0559	1425.	0.1723	2651.	0.1053
200.	0.0559	1426.	0.1723	2652.	0.1051
201.	0.0561	1427.	0.1724	2653.	0.1051
202.	0.0567	1428.	0.1724	2654.	0.105
203.	0.057	1429.	0.1725	2655.	0.1051
204.	0.0574	1430.	0.1725	2656.	0.105
205.	0.0579	1431.	0.1725	2657.	0.1048
206.	0.0577	1432.	0.1726	2658.	0.1047
207.	0.058	1433.	0.1727	2659.	0.1045
208.	0.0585	1434.	0.1726	2660.	0.1046
209.	0.0585	1435.	0.1728	2661.	0.1046
210.	0.0589	1436.	0.1726	2662.	0.1044
211.	0.0591	1437.	0.1729	2663.	0.1043
212.	0.059	1438.	0.1729	2664.	0.1041
213.	0.0595	1439.	0.1729	2665.	0.1041
214.	0.0596	1440.	0.1728	2666.	0.1042
215.	0.0596	1441.	0.173	2667.	0.1042
216.	0.0601	1442.	0.173	2668.	0.1042
217.	0.0601	1443.	0.1731	2669.	0.104
218.	0.0607	1444.	0.1731	2670.	0.1039
219.	0.0609	1445.	0.1733	2671.	0.1039
220.	0.0611	1446.	0.1734	2672.	0.1039
221.	0.0615	1447.	0.1732	2673.	0.1038
222.	0.0616	1448.	0.1734	2674.	0.1039
223.	0.0617	1449.	0.1734	2675.	0.1038
224.	0.0619	1450.	0.1735	2676.	0.1037
225.	0.0622	1451.	0.1736	2677.	0.1038
226.	0.0626	1452.	0.1736	2678.	0.1037
227.	0.0625	1453.	0.1737	2679.	0.1035
228.	0.0628	1454.	0.1736	2680.	0.1035
229.	0.0631	1455.	0.1739	2681.	0.1035
230.	0.0633	1456.	0.1737	2682.	0.1036
231.	0.0632	1457.	0.174	2683.	0.1032
232.	0.0637	1458.	0.1739	2684.	0.1031
233.	0.0638	1459.	0.1742	2685.	0.103
234.	0.0639	1460.	0.174	2686.	0.1032
235.	0.0644	1461.	0.1742	2687.	0.1031
236.	0.0648	1462.	0.1741	2688.	0.103
237.	0.0651	1463.	0.1745	2689.	0.1028
238.	0.0653	1464.	0.1742	2690.	0.1027
239.	0.0655	1465.	0.1742	2691.	0.1027
240.	0.0657	1466.	0.1743	2692.	0.1024
241.	0.066	1467.	0.1745	2693.	0.1025
242.	0.0661	1468.	0.1745	2694.	0.1024
243.	0.0664	1469.	0.1744	2695.	0.1024
244.	0.0665	1470.	0.1744	2696.	0.1024
245.	0.0669	1471.	0.1747	2697.	0.1024
246.	0.067	1472.	0.1749	2698.	0.1023
247.	0.0673	1473.	0.1747	2699.	0.102
248.	0.0675	1474.	0.1747	2700.	0.102
249.	0.0676	1475.	0.1748	2701.	0.102
250.	0.0677	1476.	0.1746	2702.	0.1019
251.	0.0677	1477.	0.1748	2703.	0.1018
252.	0.0682	1478.	0.1749	2704.	0.1018
253.	0.0683	1479.	0.175	2705.	0.1015

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
254.	0.0685	1480.	0.175	2706.	0.1015
255.	0.0688	1481.	0.1751	2707.	0.1014
256.	0.0691	1482.	0.1749	2708.	0.1016
257.	0.069	1483.	0.175	2709.	0.1013
258.	0.0692	1484.	0.175	2710.	0.1012
259.	0.0697	1485.	0.175	2711.	0.1011
260.	0.0697	1486.	0.1752	2712.	0.1011
261.	0.0698	1487.	0.1752	2713.	0.1009
262.	0.0699	1488.	0.1753	2714.	0.1009
263.	0.0702	1489.	0.1751	2715.	0.1009
264.	0.0704	1490.	0.1753	2716.	0.1008
265.	0.0707	1491.	0.1756	2717.	0.1007
266.	0.0709	1492.	0.1755	2718.	0.1005
267.	0.0714	1493.	0.1754	2719.	0.1007
268.	0.0716	1494.	0.1756	2720.	0.1004
269.	0.0716	1495.	0.1758	2721.	0.1006
270.	0.0719	1496.	0.1757	2722.	0.1004
271.	0.0721	1497.	0.1757	2723.	0.1005
272.	0.0723	1498.	0.1757	2724.	0.1004
273.	0.0725	1499.	0.1756	2725.	0.1004
274.	0.0725	1500.	0.1759	2726.	0.1002
275.	0.0727	1501.	0.1757	2727.	0.1001
276.	0.073	1502.	0.1758	2728.	0.1004
277.	0.0731	1503.	0.1761	2729.	0.1003
278.	0.0735	1504.	0.1761	2730.	0.1001
279.	0.0736	1505.	0.176	2731.	0.1
280.	0.0737	1506.	0.1763	2732.	0.0998
281.	0.0738	1507.	0.1763	2733.	0.0997
282.	0.0741	1508.	0.1767	2734.	0.0999
283.	0.0742	1509.	0.1766	2735.	0.0998
284.	0.0743	1510.	0.1765	2736.	0.0996
285.	0.0744	1511.	0.1766	2737.	0.0997
286.	0.0745	1512.	0.1768	2738.	0.0996
287.	0.0748	1513.	0.1768	2739.	0.0995
288.	0.0751	1514.	0.177	2740.	0.0995
289.	0.0751	1515.	0.1768	2741.	0.0994
290.	0.0754	1516.	0.1768	2742.	0.0995
291.	0.0757	1517.	0.177	2743.	0.0993
292.	0.0755	1518.	0.1771	2744.	0.0994
293.	0.0758	1519.	0.1771	2745.	0.0989
294.	0.0761	1520.	0.177	2746.	0.099
295.	0.0763	1521.	0.177	2747.	0.0987
296.	0.0763	1522.	0.1772	2748.	0.0989
297.	0.0765	1523.	0.1772	2749.	0.0988
298.	0.0767	1524.	0.1773	2750.	0.0988
299.	0.0768	1525.	0.1774	2751.	0.0986
300.	0.077	1526.	0.1775	2752.	0.0986
301.	0.0773	1527.	0.1778	2753.	0.0985
302.	0.0775	1528.	0.1775	2754.	0.0984
303.	0.0776	1529.	0.1777	2755.	0.0983
304.	0.0776	1530.	0.1777	2756.	0.0983
305.	0.0778	1531.	0.1775	2757.	0.0983
306.	0.0781	1532.	0.1777	2758.	0.0981
307.	0.0781	1533.	0.1777	2759.	0.0981
308.	0.0785	1534.	0.1778	2760.	0.0981
309.	0.0785	1535.	0.1776	2761.	0.0981
310.	0.0788	1536.	0.1777	2762.	0.0978

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
311.	0.079	1537.	0.178	2763.	0.0979
312.	0.0792	1538.	0.1779	2764.	0.0979
313.	0.0794	1539.	0.1779	2765.	0.0978
314.	0.0795	1540.	0.178	2766.	0.0977
315.	0.0796	1541.	0.1781	2767.	0.0978
316.	0.0798	1542.	0.178	2768.	0.0977
317.	0.08	1543.	0.178	2769.	0.0976
318.	0.08	1544.	0.178	2770.	0.0977
319.	0.0802	1545.	0.1781	2771.	0.0975
320.	0.0806	1546.	0.1781	2772.	0.0975
321.	0.0806	1547.	0.1781	2773.	0.0973
322.	0.0808	1548.	0.1783	2774.	0.0971
323.	0.0811	1549.	0.1782	2775.	0.0972
324.	0.0814	1550.	0.1784	2776.	0.0972
325.	0.0814	1551.	0.1782	2777.	0.097
326.	0.0815	1552.	0.1785	2778.	0.0971
327.	0.0815	1553.	0.1783	2779.	0.097
328.	0.0819	1554.	0.1784	2780.	0.097
329.	0.0816	1555.	0.1784	2781.	0.0971
330.	0.0822	1556.	0.1785	2782.	0.0969
331.	0.0822	1557.	0.1786	2783.	0.0969
332.	0.0824	1558.	0.1787	2784.	0.0969
333.	0.0824	1559.	0.1788	2785.	0.0967
334.	0.083	1560.	0.1788	2786.	0.0966
335.	0.0829	1561.	0.1789	2787.	0.0966
336.	0.0828	1562.	0.1789	2788.	0.0966
337.	0.083	1563.	0.179	2789.	0.0966
338.	0.0831	1564.	0.1791	2790.	0.0964
339.	0.0835	1565.	0.1791	2791.	0.0964
340.	0.0835	1566.	0.1793	2792.	0.0963
341.	0.0836	1567.	0.1793	2793.	0.0961
342.	0.084	1568.	0.1793	2794.	0.096
343.	0.0842	1569.	0.1793	2795.	0.0961
344.	0.0844	1570.	0.1794	2796.	0.096
345.	0.0845	1571.	0.1794	2797.	0.0961
346.	0.0846	1572.	0.1796	2798.	0.096
347.	0.0845	1573.	0.1796	2799.	0.0959
348.	0.0848	1574.	0.1796	2800.	0.0957
349.	0.0851	1575.	0.1797	2801.	0.0955
350.	0.0851	1576.	0.1798	2802.	0.0957
351.	0.0852	1577.	0.1796	2803.	0.0957
352.	0.0855	1578.	0.1798	2804.	0.0955
353.	0.0855	1579.	0.1797	2805.	0.0954
354.	0.0855	1580.	0.1797	2806.	0.0955
355.	0.0857	1581.	0.1798	2807.	0.0955
356.	0.0858	1582.	0.1797	2808.	0.0954
357.	0.0861	1583.	0.1798	2809.	0.0956
358.	0.0862	1584.	0.1802	2810.	0.0952
359.	0.0864	1585.	0.1799	2811.	0.0953
360.	0.0865	1586.	0.1801	2812.	0.0952
361.	0.0867	1587.	0.1801	2813.	0.0951
362.	0.087	1588.	0.1801	2814.	0.0951
363.	0.087	1589.	0.1801	2815.	0.095
364.	0.0869	1590.	0.1802	2816.	0.0952
365.	0.0872	1591.	0.1802	2817.	0.095
366.	0.0873	1592.	0.1803	2818.	0.0948
367.	0.0873	1593.	0.1804	2819.	0.0948

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
368.	0.0874	1594.	0.1804	2820.	0.0948
369.	0.0876	1595.	0.1804	2821.	0.0946
370.	0.0877	1596.	0.1805	2822.	0.0945
371.	0.088	1597.	0.1806	2823.	0.0947
372.	0.0881	1598.	0.1807	2824.	0.0945
373.	0.0882	1599.	0.1808	2825.	0.0944
374.	0.0885	1600.	0.1807	2826.	0.0942
375.	0.0888	1601.	0.1807	2827.	0.0944
376.	0.0887	1602.	0.1807	2828.	0.0942
377.	0.0889	1603.	0.1808	2829.	0.0942
378.	0.089	1604.	0.1809	2830.	0.0941
379.	0.0893	1605.	0.181	2831.	0.0942
380.	0.0892	1606.	0.181	2832.	0.0939
381.	0.0893	1607.	0.1811	2833.	0.0938
382.	0.0897	1608.	0.1813	2834.	0.0937
383.	0.0896	1609.	0.181	2835.	0.0938
384.	0.0896	1610.	0.181	2836.	0.0937
385.	0.0898	1611.	0.1813	2837.	0.0937
386.	0.0901	1612.	0.1811	2838.	0.0936
387.	0.0903	1613.	0.1816	2839.	0.0935
388.	0.0903	1614.	0.1814	2840.	0.0934
389.	0.0907	1615.	0.1814	2841.	0.0933
390.	0.0906	1616.	0.1815	2842.	0.0933
391.	0.0908	1617.	0.1815	2843.	0.0932
392.	0.0909	1618.	0.1816	2844.	0.0933
393.	0.0911	1619.	0.1818	2845.	0.0931
394.	0.0913	1620.	0.1816	2846.	0.0931
395.	0.0912	1621.	0.1817	2847.	0.0929
396.	0.0914	1622.	0.1818	2848.	0.0929
397.	0.0916	1623.	0.1818	2849.	0.093
398.	0.0919	1624.	0.1817	2850.	0.0927
399.	0.0917	1625.	0.1817	2851.	0.093
400.	0.0921	1626.	0.1821	2852.	0.0927
401.	0.0919	1627.	0.1819	2853.	0.0928
402.	0.0921	1628.	0.1819	2854.	0.0927
403.	0.0924	1629.	0.182	2855.	0.0925
404.	0.0925	1630.	0.1822	2856.	0.0925
405.	0.0928	1631.	0.1821	2857.	0.0926
406.	0.0927	1632.	0.1822	2858.	0.0925
407.	0.0927	1633.	0.1821	2859.	0.0925
408.	0.0931	1634.	0.1822	2860.	0.0922
409.	0.0932	1635.	0.1824	2861.	0.0922
410.	0.0933	1636.	0.1824	2862.	0.0921
411.	0.0934	1637.	0.1824	2863.	0.0922
412.	0.0935	1638.	0.1826	2864.	0.0923
413.	0.0935	1639.	0.1825	2865.	0.0921
414.	0.0937	1640.	0.1826	2866.	0.092
415.	0.094	1641.	0.1828	2867.	0.0922
416.	0.0941	1642.	0.1828	2868.	0.092
417.	0.0943	1643.	0.1828	2869.	0.0923
418.	0.0944	1644.	0.1828	2870.	0.0921
419.	0.0945	1645.	0.1829	2871.	0.092
420.	0.0947	1646.	0.1831	2872.	0.0921
421.	0.0947	1647.	0.1829	2873.	0.0922
422.	0.095	1648.	0.1831	2874.	0.0917
423.	0.0949	1649.	0.1832	2875.	0.0918
424.	0.0952	1650.	0.1831	2876.	0.0916

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
425.	0.0955	1651.	0.1832	2877.	0.0918
426.	0.0955	1652.	0.1832	2878.	0.0916
427.	0.0956	1653.	0.1832	2879.	0.0918
428.	0.0957	1654.	0.1834	2880.	0.0919
429.	0.0957	1655.	0.1836	2881.	0.0915
430.	0.0961	1656.	0.1836	2882.	0.0915
431.	0.0962	1657.	0.1836	2883.	0.0916
432.	0.0961	1658.	0.1836	2884.	0.0915
433.	0.0964	1659.	0.1836	2885.	0.0914
434.	0.0965	1660.	0.1837	2886.	0.0914
435.	0.0967	1661.	0.1838	2887.	0.0914
436.	0.0966	1662.	0.1838	2888.	0.0913
437.	0.0972	1663.	0.1839	2889.	0.0912
438.	0.0971	1664.	0.1839	2890.	0.0912
439.	0.0974	1665.	0.1839	2891.	0.0912
440.	0.0976	1666.	0.184	2892.	0.091
441.	0.0978	1667.	0.1841	2893.	0.0911
442.	0.0979	1668.	0.1841	2894.	0.0913
443.	0.0981	1669.	0.1842	2895.	0.0911
444.	0.0981	1670.	0.1843	2896.	0.091
445.	0.0985	1671.	0.1844	2897.	0.0909
446.	0.0984	1672.	0.1842	2898.	0.0908
447.	0.0987	1673.	0.1842	2899.	0.0907
448.	0.0988	1674.	0.1844	2900.	0.0908
449.	0.0989	1675.	0.1844	2901.	0.0908
450.	0.0992	1676.	0.1847	2902.	0.0906
451.	0.0992	1677.	0.1843	2903.	0.0905
452.	0.0994	1678.	0.1846	2904.	0.0905
453.	0.0997	1679.	0.1848	2905.	0.0904
454.	0.0997	1680.	0.1848	2906.	0.0904
455.	0.1	1681.	0.1846	2907.	0.0903
456.	0.1	1682.	0.1848	2908.	0.0902
457.	0.1003	1683.	0.1849	2909.	0.0903
458.	0.1002	1684.	0.185	2910.	0.0903
459.	0.1006	1685.	0.1849	2911.	0.0903
460.	0.1007	1686.	0.1851	2912.	0.0901
461.	0.1008	1687.	0.1851	2913.	0.09
462.	0.1009	1688.	0.1849	2914.	0.0901
463.	0.1009	1689.	0.185	2915.	0.09
464.	0.101	1690.	0.1851	2916.	0.0902
465.	0.1011	1691.	0.1851	2917.	0.0901
466.	0.1013	1692.	0.1853	2918.	0.09
467.	0.1016	1693.	0.1854	2919.	0.0901
468.	0.1017	1694.	0.1851	2920.	0.0898
469.	0.1019	1695.	0.1854	2921.	0.0898
470.	0.1021	1696.	0.1856	2922.	0.0897
471.	0.1021	1697.	0.1855	2923.	0.0898
472.	0.102	1698.	0.1855	2924.	0.0897
473.	0.1023	1699.	0.1856	2925.	0.0897
474.	0.1025	1700.	0.1859	2926.	0.0896
475.	0.1025	1701.	0.1856	2927.	0.0894
476.	0.1028	1702.	0.1857	2928.	0.0893
477.	0.1029	1703.	0.1855	2929.	0.0894
478.	0.1029	1704.	0.1858	2930.	0.0896
479.	0.1028	1705.	0.1857	2931.	0.0892
480.	0.1032	1706.	0.1857	2932.	0.0893
481.	0.1032	1707.	0.1857	2933.	0.0893

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
482.	0.1034	1708.	0.1857	2934.	0.0891
483.	0.1036	1709.	0.1859	2935.	0.0889
484.	0.1038	1710.	0.1861	2936.	0.0892
485.	0.1037	1711.	0.1862	2937.	0.0889
486.	0.1039	1712.	0.1859	2938.	0.0889
487.	0.1039	1713.	0.186	2939.	0.0889
488.	0.104	1714.	0.1862	2940.	0.0889
489.	0.1044	1715.	0.1861	2941.	0.0888
490.	0.1044	1716.	0.1862	2942.	0.0888
491.	0.1045	1717.	0.1864	2943.	0.0888
492.	0.1048	1718.	0.1862	2944.	0.0887
493.	0.1047	1719.	0.1862	2945.	0.0885
494.	0.1049	1720.	0.1861	2946.	0.0886
495.	0.105	1721.	0.1862	2947.	0.0886
496.	0.1053	1722.	0.1864	2948.	0.0884
497.	0.1052	1723.	0.1864	2949.	0.0885
498.	0.1055	1724.	0.1865	2950.	0.0884
499.	0.1054	1725.	0.1865	2951.	0.0886
500.	0.1054	1726.	0.1865	2952.	0.0886
501.	0.1058	1727.	0.1865	2953.	0.0885
502.	0.1059	1728.	0.1865	2954.	0.0885
503.	0.1058	1729.	0.1867	2955.	0.0884
504.	0.1062	1730.	0.1867	2956.	0.0886
505.	0.1061	1731.	0.1867	2957.	0.0881
506.	0.1062	1732.	0.1868	2958.	0.0881
507.	0.1065	1733.	0.1867	2959.	0.0882
508.	0.1065	1734.	0.1872	2960.	0.0883
509.	0.1065	1735.	0.1872	2961.	0.0884
510.	0.1068	1736.	0.1872	2962.	0.0881
511.	0.1068	1737.	0.1873	2963.	0.0883
512.	0.1069	1738.	0.1871	2964.	0.088
513.	0.1068	1739.	0.1872	2965.	0.088
514.	0.1073	1740.	0.1876	2966.	0.088
515.	0.1073	1741.	0.1873	2967.	0.0879
516.	0.1073	1742.	0.1872	2968.	0.0879
517.	0.1076	1743.	0.1872	2969.	0.0879
518.	0.1077	1744.	0.1874	2970.	0.0879
519.	0.1078	1745.	0.1876	2971.	0.0878
520.	0.1079	1746.	0.1875	2972.	0.0878
521.	0.108	1747.	0.1874	2973.	0.0875
522.	0.1082	1748.	0.1876	2974.	0.0874
523.	0.1082	1749.	0.1875	2975.	0.0876
524.	0.1081	1750.	0.1877	2976.	0.0875
525.	0.1085	1751.	0.1879	2977.	0.0875
526.	0.1087	1752.	0.1877	2978.	0.0877
527.	0.1086	1753.	0.1879	2979.	0.0876
528.	0.1089	1754.	0.1879	2980.	0.0875
529.	0.1091	1755.	0.1881	2981.	0.0876
530.	0.109	1756.	0.1881	2982.	0.0874
531.	0.1092	1757.	0.1882	2983.	0.0873
532.	0.1096	1758.	0.1882	2984.	0.0874
533.	0.1095	1759.	0.1883	2985.	0.0873
534.	0.1096	1760.	0.1882	2986.	0.0873
535.	0.1097	1761.	0.1883	2987.	0.0872
536.	0.11	1762.	0.1884	2988.	0.0873
537.	0.1099	1763.	0.1883	2989.	0.0873
538.	0.1102	1764.	0.1884	2990.	0.087

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
539.	0.1102	1765.	0.1885	2991.	0.087
540.	0.1101	1766.	0.1885	2992.	0.087
541.	0.1105	1767.	0.1885	2993.	0.087
542.	0.1104	1768.	0.1885	2994.	0.087
543.	0.1105	1769.	0.1885	2995.	0.0867
544.	0.1107	1770.	0.1886	2996.	0.087
545.	0.1109	1771.	0.1885	2997.	0.0869
546.	0.1111	1772.	0.1884	2998.	0.0867
547.	0.1112	1773.	0.1885	2999.	0.0866
548.	0.1112	1774.	0.1888	3000.	0.0866
549.	0.1115	1775.	0.1887	3001.	0.0868
550.	0.1114	1776.	0.1887	3002.	0.0866
551.	0.1115	1777.	0.1887	3003.	0.0865
552.	0.1115	1778.	0.1886	3004.	0.0866
553.	0.1117	1779.	0.1889	3005.	0.0862
554.	0.1119	1780.	0.1889	3006.	0.0863
555.	0.1119	1781.	0.1888	3007.	0.0863
556.	0.1122	1782.	0.1888	3008.	0.0862
557.	0.1122	1783.	0.1889	3009.	0.0862
558.	0.1124	1784.	0.1889	3010.	0.086
559.	0.1126	1785.	0.1888	3011.	0.086
560.	0.1126	1786.	0.1887	3012.	0.0857
561.	0.1126	1787.	0.1888	3013.	0.0858
562.	0.1128	1788.	0.1888	3014.	0.0856
563.	0.113	1789.	0.1889	3015.	0.0857
564.	0.1131	1790.	0.1887	3016.	0.0857
565.	0.1131	1791.	0.1887	3017.	0.0857
566.	0.1133	1792.	0.1887	3018.	0.0856
567.	0.1136	1793.	0.1889	3019.	0.0855
568.	0.1134	1794.	0.189	3020.	0.0857
569.	0.1136	1795.	0.1889	3021.	0.0854
570.	0.1138	1796.	0.1891	3022.	0.0854
571.	0.1139	1797.	0.1891	3023.	0.0854
572.	0.114	1798.	0.1891	3024.	0.0855
573.	0.1141	1799.	0.1891	3025.	0.0855
574.	0.1141	1800.	0.1893	3026.	0.0854
575.	0.1143	1801.	0.1892	3027.	0.0853
576.	0.1146	1802.	0.1895	3028.	0.0853
577.	0.1145	1803.	0.1893	3029.	0.0851
578.	0.1145	1804.	0.1895	3030.	0.0853
579.	0.1147	1805.	0.1894	3031.	0.0852
580.	0.1148	1806.	0.1893	3032.	0.0852
581.	0.1149	1807.	0.1893	3033.	0.0851
582.	0.115	1808.	0.1894	3034.	0.0851
583.	0.1152	1809.	0.1895	3035.	0.085
584.	0.1152	1810.	0.1895	3036.	0.085
585.	0.1153	1811.	0.1895	3037.	0.0851
586.	0.1155	1812.	0.1897	3038.	0.0849
587.	0.1157	1813.	0.1896	3039.	0.0849
588.	0.1155	1814.	0.1898	3040.	0.0851
589.	0.1158	1815.	0.1898	3041.	0.0849
590.	0.116	1816.	0.19	3042.	0.085
591.	0.116	1817.	0.1899	3043.	0.0848
592.	0.116	1818.	0.1902	3044.	0.0848
593.	0.1162	1819.	0.19	3045.	0.0847
594.	0.116	1820.	0.1902	3046.	0.0845
595.	0.1165	1821.	0.1903	3047.	0.0846

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
596.	0.1161	1822.	0.1902	3048.	0.0847
597.	0.1164	1823.	0.1901	3049.	0.0845
598.	0.1166	1824.	0.1904	3050.	0.0847
599.	0.1167	1825.	0.1902	3051.	0.0846
600.	0.1167	1826.	0.1903	3052.	0.0844
601.	0.1168	1827.	0.1904	3053.	0.0843
602.	0.117	1828.	0.1903	3054.	0.0844
603.	0.1172	1829.	0.1904	3055.	0.0844
604.	0.1174	1830.	0.1905	3056.	0.0845
605.	0.1175	1831.	0.1905	3057.	0.0843
606.	0.1179	1832.	0.1904	3058.	0.0843
607.	0.1178	1833.	0.1907	3059.	0.0846
608.	0.1181	1834.	0.1907	3060.	0.0843
609.	0.1181	1835.	0.1907	3061.	0.0843
610.	0.1183	1836.	0.191	3062.	0.0842
611.	0.1181	1837.	0.1907	3063.	0.0843
612.	0.1182	1838.	0.1909	3064.	0.0839
613.	0.1183	1839.	0.191	3065.	0.0842
614.	0.1185	1840.	0.191	3066.	0.084
615.	0.1185	1841.	0.191	3067.	0.0839
616.	0.1187	1842.	0.1912	3068.	0.0838
617.	0.1186	1843.	0.1912	3069.	0.0837
618.	0.1188	1844.	0.1912	3070.	0.0838
619.	0.1187	1845.	0.1911	3071.	0.0839
620.	0.1188	1846.	0.1914	3072.	0.0839
621.	0.1189	1847.	0.1916	3073.	0.0838
622.	0.1191	1848.	0.1916	3074.	0.0836
623.	0.1191	1849.	0.1914	3075.	0.0837
624.	0.1191	1850.	0.1916	3076.	0.0835
625.	0.1195	1851.	0.1915	3077.	0.0837
626.	0.1196	1852.	0.1917	3078.	0.0835
627.	0.1198	1853.	0.1917	3079.	0.0835
628.	0.1198	1854.	0.1918	3080.	0.0837
629.	0.1198	1855.	0.1918	3081.	0.0837
630.	0.12	1856.	0.1919	3082.	0.0836
631.	0.1201	1857.	0.1921	3083.	0.0835
632.	0.1203	1858.	0.192	3084.	0.0836
633.	0.1203	1859.	0.1922	3085.	0.0836
634.	0.1204	1860.	0.1921	3086.	0.0834
635.	0.1204	1861.	0.1924	3087.	0.0835
636.	0.1205	1862.	0.1922	3088.	0.0836
637.	0.1205	1863.	0.1922	3089.	0.0835
638.	0.1206	1864.	0.1924	3090.	0.0832
639.	0.1207	1865.	0.1926	3091.	0.0832
640.	0.1207	1866.	0.1927	3092.	0.0833
641.	0.1211	1867.	0.1925	3093.	0.0831
642.	0.1212	1868.	0.1926	3094.	0.0829
643.	0.1213	1869.	0.1929	3095.	0.083
644.	0.1214	1870.	0.1927	3096.	0.0829
645.	0.1216	1871.	0.1929	3097.	0.083
646.	0.1217	1872.	0.1928	3098.	0.083
647.	0.1219	1873.	0.1928	3099.	0.083
648.	0.122	1874.	0.1928	3100.	0.0829
649.	0.1222	1875.	0.1928	3101.	0.0826
650.	0.1222	1876.	0.1928	3102.	0.0827
651.	0.1225	1877.	0.1931	3103.	0.0827
652.	0.1225	1878.	0.1931	3104.	0.0825

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
653.	0.1225	1879.	0.1931	3105.	0.0826
654.	0.1224	1880.	0.1932	3106.	0.0825
655.	0.1225	1881.	0.1934	3107.	0.0825
656.	0.1226	1882.	0.1934	3108.	0.0825
657.	0.1229	1883.	0.1934	3109.	0.0826
658.	0.1228	1884.	0.1933	3110.	0.0822
659.	0.1228	1885.	0.1936	3111.	0.0826
660.	0.123	1886.	0.1935	3112.	0.0826
661.	0.1229	1887.	0.1936	3113.	0.0823
662.	0.1232	1888.	0.1937	3114.	0.0823
663.	0.1233	1889.	0.1938	3115.	0.0822
664.	0.1233	1890.	0.1938	3116.	0.0823
665.	0.1235	1891.	0.194	3117.	0.0823
666.	0.1236	1892.	0.1939	3118.	0.0821
667.	0.1234	1893.	0.1941	3119.	0.082
668.	0.1235	1894.	0.1941	3120.	0.0821
669.	0.1237	1895.	0.1943	3121.	0.082
670.	0.1239	1896.	0.1941	3122.	0.0819
671.	0.1239	1897.	0.1945	3123.	0.0819
672.	0.1239	1898.	0.1944	3124.	0.0821
673.	0.1242	1899.	0.1945	3125.	0.0819
674.	0.1242	1900.	0.1946	3126.	0.0819
675.	0.1244	1901.	0.1945	3127.	0.0818
676.	0.1244	1902.	0.1946	3128.	0.0818
677.	0.1244	1903.	0.1946	3129.	0.0816
678.	0.1245	1904.	0.1947	3130.	0.0819
679.	0.1247	1905.	0.1948	3131.	0.0816
680.	0.125	1906.	0.1948	3132.	0.0816
681.	0.125	1907.	0.1949	3133.	0.0816
682.	0.125	1908.	0.1948	3134.	0.0816
683.	0.1252	1909.	0.1948	3135.	0.0815
684.	0.1252	1910.	0.1949	3136.	0.0816
685.	0.1254	1911.	0.195	3137.	0.0816
686.	0.1257	1912.	0.1948	3138.	0.0813
687.	0.1256	1913.	0.1949	3139.	0.0814
688.	0.1258	1914.	0.1952	3140.	0.0813
689.	0.1257	1915.	0.1951	3141.	0.0813
690.	0.1259	1916.	0.1954	3142.	0.0811
691.	0.1259	1917.	0.1951	3143.	0.0814
692.	0.1258	1918.	0.195	3144.	0.0812
693.	0.126	1919.	0.1954	3145.	0.0813
694.	0.1261	1920.	0.1952	3146.	0.0813
695.	0.1263	1921.	0.1953	3147.	0.0812
696.	0.1263	1922.	0.1954	3148.	0.0812
697.	0.1265	1923.	0.1956	3149.	0.0811
698.	0.1267	1924.	0.1955	3150.	0.0811
699.	0.1268	1925.	0.1957	3151.	0.0812
700.	0.1267	1926.	0.1955	3152.	0.0809
701.	0.1268	1927.	0.1957	3153.	0.081
702.	0.1267	1928.	0.1957	3154.	0.081
703.	0.127	1929.	0.1957	3155.	0.0809
704.	0.1271	1930.	0.1958	3156.	0.0808
705.	0.1272	1931.	0.1958	3157.	0.0808
706.	0.1271	1932.	0.1958	3158.	0.081
707.	0.1274	1933.	0.1959	3159.	0.0806
708.	0.1276	1934.	0.196	3160.	0.0808
709.	0.1278	1935.	0.1958	3161.	0.0807

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
710.	0.1281	1936.	0.1961	3162.	0.0807
711.	0.128	1937.	0.1961	3163.	0.0805
712.	0.1282	1938.	0.1961	3164.	0.0806
713.	0.1282	1939.	0.1961	3165.	0.0808
714.	0.1283	1940.	0.1961	3166.	0.0807
715.	0.1281	1941.	0.1961	3167.	0.0805
716.	0.1285	1942.	0.196	3168.	0.0804
717.	0.1287	1943.	0.1963	3169.	0.0803
718.	0.1287	1944.	0.1964	3170.	0.0804
719.	0.129	1945.	0.1964	3171.	0.0804
720.	0.1291	1946.	0.1964	3172.	0.0803
721.	0.1291	1947.	0.1964	3173.	0.0803
722.	0.1291	1948.	0.1967	3174.	0.0802
723.	0.1292	1949.	0.1967	3175.	0.0804
724.	0.1295	1950.	0.1966	3176.	0.0801
725.	0.1294	1951.	0.1967	3177.	0.0801
726.	0.1295	1952.	0.1968	3178.	0.08
727.	0.1296	1953.	0.1966	3179.	0.0803
728.	0.1297	1954.	0.1967	3180.	0.0799
729.	0.1298	1955.	0.1968	3181.	0.0799
730.	0.1299	1956.	0.1968	3182.	0.0799
731.	0.1298	1957.	0.1969	3183.	0.0799
732.	0.1299	1958.	0.1966	3184.	0.0796
733.	0.1298	1959.	0.1969	3185.	0.0797
734.	0.1299	1960.	0.1968	3186.	0.0797
735.	0.13	1961.	0.1968	3187.	0.0794
736.	0.1304	1962.	0.1968	3188.	0.0793
737.	0.1302	1963.	0.1969	3189.	0.0793
738.	0.1303	1964.	0.1967	3190.	0.0793
739.	0.1304	1965.	0.1969	3191.	0.0793
740.	0.1305	1966.	0.1969	3192.	0.0793
741.	0.1307	1967.	0.197	3193.	0.0793
742.	0.1306	1968.	0.1967	3194.	0.0793
743.	0.1308	1969.	0.197	3195.	0.0793
744.	0.1309	1970.	0.197	3196.	0.0791
745.	0.131	1971.	0.1973	3197.	0.0793
746.	0.1312	1972.	0.1971	3198.	0.0793
747.	0.131	1973.	0.1973	3199.	0.0792
748.	0.1312	1974.	0.1974	3200.	0.0792
749.	0.1316	1975.	0.1974	3201.	0.0793
750.	0.1318	1976.	0.1975	3202.	0.0792
751.	0.1318	1977.	0.1976	3203.	0.0791
752.	0.1317	1978.	0.1975	3204.	0.0791
753.	0.1319	1979.	0.1974	3205.	0.0791
754.	0.1318	1980.	0.1977	3206.	0.079
755.	0.132	1981.	0.1975	3207.	0.079
756.	0.1321	1982.	0.1976	3208.	0.0789
757.	0.1319	1983.	0.1976	3209.	0.079
758.	0.1323	1984.	0.1975	3210.	0.0788
759.	0.1322	1985.	0.1978	3211.	0.0789
760.	0.1323	1986.	0.1979	3212.	0.0791
761.	0.1325	1987.	0.1978	3213.	0.0789
762.	0.1326	1988.	0.1977	3214.	0.079
763.	0.1328	1989.	0.1976	3215.	0.0788
764.	0.1328	1990.	0.1977	3216.	0.0788
765.	0.1329	1991.	0.1979	3217.	0.079
766.	0.1329	1992.	0.1976	3218.	0.079

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
767.	0.1329	1993.	0.1978	3219.	0.0789
768.	0.1331	1994.	0.1979	3220.	0.0789
769.	0.1332	1995.	0.198	3221.	0.0786
770.	0.1332	1996.	0.1976	3222.	0.0787
771.	0.1333	1997.	0.198	3223.	0.0787
772.	0.1334	1998.	0.1979	3224.	0.0785
773.	0.1337	1999.	0.1979	3225.	0.0785
774.	0.1336	2000.	0.198	3226.	0.0783
775.	0.1336	2001.	0.1979	3227.	0.0784
776.	0.1338	2002.	0.1979	3228.	0.0786
777.	0.1339	2003.	0.1978	3229.	0.0785
778.	0.1341	2004.	0.198	3230.	0.0784
779.	0.1343	2005.	0.1979	3231.	0.0785
780.	0.1343	2006.	0.1981	3232.	0.0785
781.	0.1342	2007.	0.1978	3233.	0.0785
782.	0.1345	2008.	0.1979	3234.	0.0785
783.	0.1345	2009.	0.198	3235.	0.0784
784.	0.1347	2010.	0.1979	3236.	0.0782
785.	0.1347	2011.	0.1981	3237.	0.0783
786.	0.1346	2012.	0.198	3238.	0.0782
787.	0.1348	2013.	0.1982	3239.	0.0782
788.	0.1345	2014.	0.1983	3240.	0.0781
789.	0.1347	2015.	0.1984	3241.	0.0782
790.	0.1346	2016.	0.1982	3242.	0.0782
791.	0.1348	2017.	0.1983	3243.	0.0783
792.	0.1348	2018.	0.1985	3244.	0.0782
793.	0.1348	2019.	0.1983	3245.	0.078
794.	0.135	2020.	0.1984	3246.	0.0781
795.	0.1353	2021.	0.1983	3247.	0.0781
796.	0.1353	2022.	0.1987	3248.	0.078
797.	0.1355	2023.	0.1985	3249.	0.0779
798.	0.1354	2024.	0.1985	3250.	0.078
799.	0.1358	2025.	0.1986	3251.	0.0779
800.	0.1356	2026.	0.1986	3252.	0.078
801.	0.136	2027.	0.1986	3253.	0.0778
802.	0.1361	2028.	0.1988	3254.	0.0777
803.	0.1361	2029.	0.1987	3255.	0.0777
804.	0.1356	2030.	0.1987	3256.	0.0775
805.	0.1357	2031.	0.1988	3257.	0.0775
806.	0.1361	2032.	0.199	3258.	0.0777
807.	0.1359	2033.	0.199	3259.	0.0775
808.	0.1362	2034.	0.199	3260.	0.0775
809.	0.1365	2035.	0.1992	3261.	0.0775
810.	0.1364	2036.	0.1991	3262.	0.0774
811.	0.1363	2037.	0.1992	3263.	0.0773
812.	0.1361	2038.	0.1995	3264.	0.0775
813.	0.136	2039.	0.1994	3265.	0.0774
814.	0.1363	2040.	0.1995	3266.	0.0772
815.	0.1363	2041.	0.1996	3267.	0.0772
816.	0.1363	2042.	0.1995	3268.	0.0771
817.	0.1366	2043.	0.1996	3269.	0.0772
818.	0.1364	2044.	0.1997	3270.	0.0772
819.	0.1366	2045.	0.1999	3271.	0.0772
820.	0.1365	2046.	0.1999	3272.	0.0773
821.	0.1369	2047.	0.2002	3273.	0.0773
822.	0.1368	2048.	0.2001	3274.	0.0772
823.	0.1368	2049.	0.2	3275.	0.0772

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
824.	0.137	2050.	0.2001	3276.	0.0771
825.	0.1371	2051.	0.2002	3277.	0.077
826.	0.1373	2052.	0.2002	3278.	0.077
827.	0.1374	2053.	0.2004	3279.	0.0769
828.	0.1374	2054.	0.2005	3280.	0.0768
829.	0.1373	2055.	0.2006	3281.	0.0769
830.	0.1373	2056.	0.2006	3282.	0.077
831.	0.1373	2057.	0.2007	3283.	0.0767
832.	0.1374	2058.	0.2009	3284.	0.0769
833.	0.1374	2059.	0.2007	3285.	0.0768
834.	0.1376	2060.	0.2012	3286.	0.0769
835.	0.1376	2061.	0.2012	3287.	0.0769
836.	0.1377	2062.	0.2012	3288.	0.0768
837.	0.1376	2063.	0.2013	3289.	0.0766
838.	0.1378	2064.	0.2013	3290.	0.0767
839.	0.1379	2065.	0.2014	3291.	0.0766
840.	0.1382	2066.	0.2016	3292.	0.0766
841.	0.1381	2067.	0.2016	3293.	0.0765
842.	0.1382	2068.	0.2017	3294.	0.0767
843.	0.1381	2069.	0.2017	3295.	0.0765
844.	0.1383	2070.	0.2017	3296.	0.0765
845.	0.1383	2071.	0.202	3297.	0.0764
846.	0.1385	2072.	0.2021	3298.	0.0763
847.	0.1388	2073.	0.2021	3299.	0.0765
848.	0.1388	2074.	0.2023	3300.	0.0763
849.	0.1388	2075.	0.2024	3301.	0.0762
850.	0.139	2076.	0.2025	3302.	0.0763
851.	0.1388	2077.	0.2027	3303.	0.0763
852.	0.1389	2078.	0.2028	3304.	0.0761
853.	0.1391	2079.	0.2028	3305.	0.0762
854.	0.1393	2080.	0.2027	3306.	0.0761
855.	0.1392	2081.	0.2031	3307.	0.0761
856.	0.1394	2082.	0.2032	3308.	0.0763
857.	0.1394	2083.	0.2031	3309.	0.0761
858.	0.1391	2084.	0.2032	3310.	0.076
859.	0.1393	2085.	0.2032	3311.	0.076
860.	0.1396	2086.	0.2034	3312.	0.0759
861.	0.1397	2087.	0.2031	3313.	0.0761
862.	0.1398	2088.	0.2033	3314.	0.0759
863.	0.1397	2089.	0.2033	3315.	0.0759
864.	0.1401	2090.	0.2036	3316.	0.0761
865.	0.1399	2091.	0.2036	3317.	0.076
866.	0.14	2092.	0.2037	3318.	0.076
867.	0.1399	2093.	0.2038	3319.	0.0757
868.	0.1403	2094.	0.2039	3320.	0.0757
869.	0.1402	2095.	0.2039	3321.	0.0758
870.	0.1406	2096.	0.2038	3322.	0.0755
871.	0.1406	2097.	0.2042	3323.	0.0758
872.	0.1408	2098.	0.2043	3324.	0.0757
873.	0.1409	2099.	0.2043	3325.	0.0755
874.	0.1409	2100.	0.2043	3326.	0.0755
875.	0.1411	2101.	0.2045	3327.	0.0756
876.	0.1411	2102.	0.2045	3328.	0.0755
877.	0.1413	2103.	0.2045	3329.	0.0756
878.	0.1411	2104.	0.2044	3330.	0.0755
879.	0.1413	2105.	0.2046	3331.	0.0753
880.	0.141	2106.	0.2047	3332.	0.0756

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
881.	0.1413	2107.	0.205	3333.	0.0753
882.	0.1411	2108.	0.2052	3334.	0.0754
883.	0.1411	2109.	0.2052	3335.	0.0752
884.	0.1412	2110.	0.2053	3336.	0.0753
885.	0.1415	2111.	0.2054	3337.	0.0752
886.	0.1415	2112.	0.2055	3338.	0.0753
887.	0.1416	2113.	0.2055	3339.	0.0753
888.	0.1417	2114.	0.2055	3340.	0.0752
889.	0.1419	2115.	0.2055	3341.	0.0753
890.	0.1421	2116.	0.2057	3342.	0.0751
891.	0.142	2117.	0.2057	3343.	0.0751
892.	0.1421	2118.	0.2059	3344.	0.0753
893.	0.1423	2119.	0.206	3345.	0.0751
894.	0.1422	2120.	0.2062	3346.	0.0749
895.	0.1422	2121.	0.2061	3347.	0.0751
896.	0.1423	2122.	0.2062	3348.	0.0748
897.	0.1424	2123.	0.2062	3349.	0.0751
898.	0.1426	2124.	0.2065	3350.	0.0749
899.	0.1425	2125.	0.2065	3351.	0.0749
900.	0.1424	2126.	0.2066	3352.	0.0749
901.	0.1424	2127.	0.2066	3353.	0.0746
902.	0.1426	2128.	0.2068	3354.	0.0747
903.	0.1428	2129.	0.2065	3355.	0.0746
904.	0.1429	2130.	0.2067	3356.	0.0744
905.	0.1428	2131.	0.2068	3357.	0.0748
906.	0.143	2132.	0.2065	3358.	0.0746
907.	0.143	2133.	0.2066	3359.	0.0747
908.	0.143	2134.	0.2067	3360.	0.0746
909.	0.1431	2135.	0.2065	3361.	0.0746
910.	0.1432	2136.	0.2064	3362.	0.0745
911.	0.1435	2137.	0.206	3363.	0.0744
912.	0.1436	2138.	0.2058	3364.	0.0745
913.	0.1436	2139.	0.2056	3365.	0.0745
914.	0.1437	2140.	0.2052	3366.	0.0743
915.	0.1438	2141.	0.2049	3367.	0.0744
916.	0.1438	2142.	0.2046	3368.	0.0743
917.	0.1438	2143.	0.204	3369.	0.0744
918.	0.1439	2144.	0.2036	3370.	0.0742
919.	0.144	2145.	0.2033	3371.	0.0743
920.	0.1439	2146.	0.2026	3372.	0.0741
921.	0.1443	2147.	0.2022	3373.	0.0743
922.	0.1442	2148.	0.2016	3374.	0.074
923.	0.1443	2149.	0.2012	3375.	0.074
924.	0.1443	2150.	0.2008	3376.	0.0742
925.	0.1446	2151.	0.2	3377.	0.0741
926.	0.1445	2152.	0.1996	3378.	0.074
927.	0.1447	2153.	0.1989	3379.	0.0738
928.	0.1447	2154.	0.1985	3380.	0.074
929.	0.1447	2155.	0.1978	3381.	0.074
930.	0.1446	2156.	0.1973	3382.	0.0739
931.	0.1447	2157.	0.1969	3383.	0.074
932.	0.1449	2158.	0.1965	3384.	0.074
933.	0.1448	2159.	0.1959	3385.	0.0739
934.	0.145	2160.	0.1954	3386.	0.0738
935.	0.145	2161.	0.1947	3387.	0.0738
936.	0.1449	2162.	0.1945	3388.	0.0738
937.	0.1452	2163.	0.194	3389.	0.0738

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
938.	0.1451	2164.	0.1935	3390.	0.0737
939.	0.1451	2165.	0.193	3391.	0.0738
940.	0.1453	2166.	0.1928	3392.	0.0737
941.	0.1453	2167.	0.1921	3393.	0.0736
942.	0.1453	2168.	0.1918	3394.	0.0735
943.	0.1454	2169.	0.1914	3395.	0.0736
944.	0.1456	2170.	0.1909	3396.	0.0734
945.	0.1454	2171.	0.1905	3397.	0.0734
946.	0.1454	2172.	0.1902	3398.	0.0733
947.	0.1454	2173.	0.1897	3399.	0.0735
948.	0.1456	2174.	0.1895	3400.	0.0733
949.	0.1458	2175.	0.1888	3401.	0.0732
950.	0.146	2176.	0.1885	3402.	0.0736
951.	0.146	2177.	0.188	3403.	0.0731
952.	0.1461	2178.	0.1876	3404.	0.0732
953.	0.146	2179.	0.1871	3405.	0.0731
954.	0.146	2180.	0.1869	3406.	0.073
955.	0.1462	2181.	0.1864	3407.	0.073
956.	0.1459	2182.	0.1863	3408.	0.0729
957.	0.1463	2183.	0.1856	3409.	0.073
958.	0.1463	2184.	0.1855	3410.	0.0729
959.	0.1465	2185.	0.185	3411.	0.0731
960.	0.1466	2186.	0.1848	3412.	0.0729
961.	0.1467	2187.	0.1843	3413.	0.073
962.	0.1468	2188.	0.1839	3414.	0.073
963.	0.1469	2189.	0.1835	3415.	0.073
964.	0.147	2190.	0.1831	3416.	0.0729
965.	0.1471	2191.	0.1827	3417.	0.0731
966.	0.147	2192.	0.1824	3418.	0.0732
967.	0.147	2193.	0.1821	3419.	0.0735
968.	0.1471	2194.	0.1817	3420.	0.0735
969.	0.147	2195.	0.1812	3421.	0.0702
970.	0.147	2196.	0.1809	3422.	0.0733
971.	0.1474	2197.	0.1806	3423.	0.0731
972.	0.1473	2198.	0.1803	3424.	0.0729
973.	0.1473	2199.	0.1799	3425.	0.0728
974.	0.1475	2200.	0.1796	3426.	0.0731
975.	0.1474	2201.	0.1793	3427.	0.0726
976.	0.1474	2202.	0.1788	3428.	0.0726
977.	0.1475	2203.	0.1786	3429.	0.0727
978.	0.1475	2204.	0.1783	3430.	0.0725
979.	0.1477	2205.	0.1778	3431.	0.0725
980.	0.1477	2206.	0.1775	3432.	0.0725
981.	0.1473	2207.	0.1772	3433.	0.0723
982.	0.1477	2208.	0.177	3434.	0.0725
983.	0.1477	2209.	0.1766	3435.	0.0726
984.	0.1479	2210.	0.1761	3436.	0.0725
985.	0.148	2211.	0.1758	3437.	0.0726
986.	0.148	2212.	0.1756	3438.	0.0723
987.	0.148	2213.	0.1753	3439.	0.0723
988.	0.1481	2214.	0.1747	3440.	0.0724
989.	0.1482	2215.	0.1746	3441.	0.0722
990.	0.1483	2216.	0.1743	3442.	0.0723
991.	0.1484	2217.	0.1739	3443.	0.0722
992.	0.1485	2218.	0.1735	3444.	0.0722
993.	0.1483	2219.	0.1736	3445.	0.0722
994.	0.1484	2220.	0.1728	3446.	0.072

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
995.	0.1486	2221.	0.1726	3447.	0.0719
996.	0.1487	2222.	0.1722	3448.	0.072
997.	0.1489	2223.	0.1718	3449.	0.0721
998.	0.1488	2224.	0.1716	3450.	0.0721
999.	0.1487	2225.	0.1713	3451.	0.0721
1000.	0.1488	2226.	0.1708	3452.	0.072
1001.	0.149	2227.	0.1707	3453.	0.072
1002.	0.1491	2228.	0.1702	3454.	0.0719
1003.	0.1492	2229.	0.1701	3455.	0.0719
1004.	0.1491	2230.	0.1697	3456.	0.0719
1005.	0.1494	2231.	0.1694	3457.	0.072
1006.	0.1493	2232.	0.169	3458.	0.0719
1007.	0.1493	2233.	0.1687	3459.	0.0719
1008.	0.1495	2234.	0.1684	3460.	0.0718
1009.	0.1497	2235.	0.168	3461.	0.0719
1010.	0.1497	2236.	0.1677	3462.	0.0718
1011.	0.1497	2237.	0.1676	3463.	0.0717
1012.	0.1498	2238.	0.1672	3464.	0.0717
1013.	0.1498	2239.	0.167	3465.	0.0715
1014.	0.1498	2240.	0.1664	3466.	0.0714
1015.	0.1499	2241.	0.166	3467.	0.0714
1016.	0.1498	2242.	0.1659	3468.	0.0713
1017.	0.15	2243.	0.1655	3469.	0.0714
1018.	0.1501	2244.	0.1653	3470.	0.0716
1019.	0.15	2245.	0.1651	3471.	0.0716
1020.	0.15	2246.	0.1649	3472.	0.0714
1021.	0.1501	2247.	0.1646	3473.	0.0716
1022.	0.1503	2248.	0.1643	3474.	0.0714
1023.	0.1504	2249.	0.1641	3475.	0.0715
1024.	0.1504	2250.	0.1636	3476.	0.0716
1025.	0.1504	2251.	0.1634	3477.	0.0714
1026.	0.1505	2252.	0.1631	3478.	0.0716
1027.	0.1505	2253.	0.1628	3479.	0.0714
1028.	0.1507	2254.	0.1626	3480.	0.0714
1029.	0.1508	2255.	0.1623	3481.	0.0712
1030.	0.1507	2256.	0.1622	3482.	0.0712
1031.	0.1508	2257.	0.1618	3483.	0.0713
1032.	0.1508	2258.	0.1614	3484.	0.0712
1033.	0.151	2259.	0.1611	3485.	0.0711
1034.	0.1511	2260.	0.1609	3486.	0.0713
1035.	0.1509	2261.	0.1605	3487.	0.0711
1036.	0.1512	2262.	0.1605	3488.	0.0711
1037.	0.1512	2263.	0.1602	3489.	0.0709
1038.	0.1513	2264.	0.1599	3490.	0.0711
1039.	0.1514	2265.	0.1596	3491.	0.071
1040.	0.1513	2266.	0.1595	3492.	0.071
1041.	0.1515	2267.	0.1589	3493.	0.071
1042.	0.1515	2268.	0.1587	3494.	0.071
1043.	0.1515	2269.	0.1582	3495.	0.071
1044.	0.1518	2270.	0.1581	3496.	0.071
1045.	0.1517	2271.	0.158	3497.	0.0711
1046.	0.1515	2272.	0.1578	3498.	0.0708
1047.	0.1517	2273.	0.1574	3499.	0.071
1048.	0.1514	2274.	0.1573	3500.	0.071
1049.	0.1516	2275.	0.1569	3501.	0.0711
1050.	0.1519	2276.	0.1568	3502.	0.0711
1051.	0.1519	2277.	0.1564	3503.	0.0711

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1052.	0.1519	2278.	0.1564	3504.	0.071
1053.	0.152	2279.	0.156	3505.	0.0712
1054.	0.152	2280.	0.1557	3506.	0.071
1055.	0.152	2281.	0.1555	3507.	0.071
1056.	0.1523	2282.	0.1554	3508.	0.071
1057.	0.1525	2283.	0.155	3509.	0.0708
1058.	0.1525	2284.	0.155	3510.	0.0708
1059.	0.1527	2285.	0.1545	3511.	0.0708
1060.	0.1524	2286.	0.1543	3512.	0.0706
1061.	0.1525	2287.	0.1541	3513.	0.0708
1062.	0.1527	2288.	0.1541	3514.	0.0705
1063.	0.1526	2289.	0.1535	3515.	0.0706
1064.	0.1526	2290.	0.1534	3516.	0.0706
1065.	0.1528	2291.	0.1531	3517.	0.0707
1066.	0.1528	2292.	0.1527	3518.	0.0708
1067.	0.153	2293.	0.1527	3519.	0.0706
1068.	0.1527	2294.	0.1527	3520.	0.0706
1069.	0.1529	2295.	0.1522	3521.	0.0706
1070.	0.1532	2296.	0.1522	3522.	0.0705
1071.	0.1534	2297.	0.1518	3523.	0.0704
1072.	0.1532	2298.	0.1515	3524.	0.0705
1073.	0.1534	2299.	0.1515	3525.	0.0704
1074.	0.1535	2300.	0.1511	3526.	0.0704
1075.	0.1535	2301.	0.1509	3527.	0.0703
1076.	0.1536	2302.	0.1507	3528.	0.0702
1077.	0.1535	2303.	0.1505	3529.	0.0703
1078.	0.1534	2304.	0.1501	3530.	0.0701
1079.	0.1536	2305.	0.1501	3531.	0.0701
1080.	0.1534	2306.	0.1499	3532.	0.0702
1081.	0.1534	2307.	0.1496	3533.	0.07
1082.	0.1535	2308.	0.1493	3534.	0.0701
1083.	0.1536	2309.	0.1492	3535.	0.07
1084.	0.1535	2310.	0.1488	3536.	0.07
1085.	0.1538	2311.	0.1486	3537.	0.07
1086.	0.1538	2312.	0.1484	3538.	0.07
1087.	0.1539	2313.	0.1484	3539.	0.0702
1088.	0.1543	2314.	0.1482	3540.	0.0701
1089.	0.1541	2315.	0.1478	3541.	0.0702
1090.	0.1541	2316.	0.1476	3542.	0.0701
1091.	0.1541	2317.	0.1475	3543.	0.0699
1092.	0.1542	2318.	0.1471	3544.	0.0699
1093.	0.1541	2319.	0.1471	3545.	0.0699
1094.	0.1541	2320.	0.1469	3546.	0.0698
1095.	0.1541	2321.	0.1466	3547.	0.0699
1096.	0.1544	2322.	0.1464	3548.	0.0698
1097.	0.1543	2323.	0.146	3549.	0.0697
1098.	0.1544	2324.	0.1459	3550.	0.0699
1099.	0.1544	2325.	0.1457	3551.	0.0698
1100.	0.1544	2326.	0.1455	3552.	0.0697
1101.	0.1545	2327.	0.1455	3553.	0.0699
1102.	0.1546	2328.	0.145	3554.	0.0699
1103.	0.1548	2329.	0.145	3555.	0.07
1104.	0.1547	2330.	0.1448	3556.	0.0698
1105.	0.1548	2331.	0.1448	3557.	0.0696
1106.	0.1549	2332.	0.1446	3558.	0.0697
1107.	0.1549	2333.	0.1443	3559.	0.0697
1108.	0.1549	2334.	0.1442	3560.	0.0695

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1109.	0.1551	2335.	0.1439	3561.	0.0697
1110.	0.1552	2336.	0.1438	3562.	0.0697
1111.	0.1552	2337.	0.1434	3563.	0.0696
1112.	0.1552	2338.	0.1431	3564.	0.0696
1113.	0.1554	2339.	0.143	3565.	0.0696
1114.	0.1553	2340.	0.1428	3566.	0.0695
1115.	0.1554	2341.	0.1425	3567.	0.0695
1116.	0.1554	2342.	0.1422	3568.	0.0695
1117.	0.1554	2343.	0.1423	3569.	0.0694
1118.	0.1554	2344.	0.1421	3570.	0.0694
1119.	0.1555	2345.	0.1419	3571.	0.0693
1120.	0.1556	2346.	0.1416	3572.	0.0693
1121.	0.1557	2347.	0.1415	3573.	0.0693
1122.	0.1557	2348.	0.1412	3574.	0.0693
1123.	0.1557	2349.	0.1409	3575.	0.0692
1124.	0.1559	2350.	0.1409	3576.	0.0691
1125.	0.156	2351.	0.1405	3577.	0.0692
1126.	0.1563	2352.	0.1405	3578.	0.0691
1127.	0.156	2353.	0.1403	3579.	0.0693
1128.	0.1562	2354.	0.1399	3580.	0.0694
1129.	0.1562	2355.	0.1399	3581.	0.0692
1130.	0.1562	2356.	0.1396	3582.	0.0691
1131.	0.1561	2357.	0.1395	3583.	0.069
1132.	0.1561	2358.	0.1394	3584.	0.069
1133.	0.1561	2359.	0.1393	3585.	0.069
1134.	0.156	2360.	0.139	3586.	0.069
1135.	0.1562	2361.	0.1388	3587.	0.069
1136.	0.1564	2362.	0.1385	3588.	0.0689
1137.	0.1563	2363.	0.1385	3589.	0.0691
1138.	0.1564	2364.	0.1382	3590.	0.0689
1139.	0.1568	2365.	0.138	3591.	0.0689
1140.	0.1565	2366.	0.138	3592.	0.0688
1141.	0.1568	2367.	0.1379	3593.	0.0688
1142.	0.157	2368.	0.1375	3594.	0.069
1143.	0.157	2369.	0.1375	3595.	0.069
1144.	0.1571	2370.	0.1371	3596.	0.069
1145.	0.157	2371.	0.1371	3597.	0.0692
1146.	0.1574	2372.	0.1369	3598.	0.0689
1147.	0.1574	2373.	0.1369	3599.	0.0691
1148.	0.1572	2374.	0.1367	3600.	0.0691
1149.	0.157	2375.	0.1366	3601.	0.0687
1150.	0.157	2376.	0.1363	3602.	0.0687
1151.	0.1571	2377.	0.136	3603.	0.0689
1152.	0.1573	2378.	0.1358	3604.	0.0688
1153.	0.1575	2379.	0.1357	3605.	0.0687
1154.	0.1576	2380.	0.1357	3606.	0.069
1155.	0.1577	2381.	0.1354	3607.	0.0686
1156.	0.1576	2382.	0.1354	3608.	0.0687
1157.	0.1577	2383.	0.1352	3609.	0.0687
1158.	0.1576	2384.	0.1351	3610.	0.0685
1159.	0.1578	2385.	0.1348	3611.	0.0684
1160.	0.158	2386.	0.1347	3612.	0.0686
1161.	0.1581	2387.	0.1344	3613.	0.0684
1162.	0.1579	2388.	0.1343	3614.	0.0686
1163.	0.1578	2389.	0.1341	3615.	0.0683
1164.	0.1581	2390.	0.134	3616.	0.0683
1165.	0.158	2391.	0.1338	3617.	0.0684

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1166.	0.1579	2392.	0.1336	3618.	0.0682
1167.	0.1581	2393.	0.1335	3619.	0.0684
1168.	0.1581	2394.	0.1333	3620.	0.0682
1169.	0.1583	2395.	0.1334	3621.	0.0684
1170.	0.1582	2396.	0.1331	3622.	0.0683
1171.	0.1583	2397.	0.1328	3623.	0.0684
1172.	0.1583	2398.	0.1327	3624.	0.0684
1173.	0.1584	2399.	0.1327	3625.	0.0684
1174.	0.1584	2400.	0.1325	3626.	0.0684
1175.	0.1585	2401.	0.1324	3627.	0.0684
1176.	0.1584	2402.	0.1321	3628.	0.0683
1177.	0.1587	2403.	0.132	3629.	0.0684
1178.	0.1587	2404.	0.1319	3630.	0.0684
1179.	0.1588	2405.	0.1316	3631.	0.0683
1180.	0.159	2406.	0.1315	3632.	0.0682
1181.	0.159	2407.	0.1313	3633.	0.0683
1182.	0.1588	2408.	0.1312	3634.	0.0681
1183.	0.159	2409.	0.131	3635.	0.0685
1184.	0.1588	2410.	0.1309	3636.	0.0683
1185.	0.1589	2411.	0.1308	3637.	0.0683
1186.	0.159	2412.	0.1304	3638.	0.0683
1187.	0.1589	2413.	0.1304	3639.	0.068
1188.	0.1592	2414.	0.1301	3640.	0.0683
1189.	0.1593	2415.	0.1302	3641.	0.0681
1190.	0.1593	2416.	0.1299	3642.	0.0682
1191.	0.1594	2417.	0.1299	3643.	0.0678
1192.	0.1593	2418.	0.1297	3644.	0.068
1193.	0.1593	2419.	0.1296	3645.	0.068
1194.	0.1593	2420.	0.1294	3646.	0.068
1195.	0.1594	2421.	0.1293	3647.	0.0681
1196.	0.1594	2422.	0.129	3648.	0.0679
1197.	0.1594	2423.	0.1292	3649.	0.0678
1198.	0.1595	2424.	0.1289	3650.	0.0677
1199.	0.1597	2425.	0.1287	3651.	0.0678
1200.	0.1597	2426.	0.1286	3652.	0.0675
1201.	0.1597	2427.	0.1285	3653.	0.0677
1202.	0.16	2428.	0.1283	3654.	0.0677
1203.	0.1601	2429.	0.1283	3655.	0.0675
1204.	0.16	2430.	0.1281	3656.	0.0676
1205.	0.16	2431.	0.1278	3657.	0.0676
1206.	0.1599	2432.	0.1277	3658.	0.0677
1207.	0.1598	2433.	0.1274	3659.	0.0676
1208.	0.16	2434.	0.1275	3660.	0.0675
1209.	0.1602	2435.	0.1274	3661.	0.0675
1210.	0.1603	2436.	0.1272	3662.	0.0676
1211.	0.1604	2437.	0.1271	3663.	0.0677
1212.	0.1604	2438.	0.1271	3664.	0.0676
1213.	0.1605	2439.	0.1269	3665.	0.0675
1214.	0.1607	2440.	0.1267	3666.	0.0675
1215.	0.1608	2441.	0.1265	3667.	0.0674
1216.	0.161	2442.	0.1263	3668.	0.0673
1217.	0.161	2443.	0.1261	3669.	0.0674
1218.	0.1608	2444.	0.1261	3670.	0.0674
1219.	0.161	2445.	0.1258	3671.	0.0672
1220.	0.1609	2446.	0.1256	3672.	0.0674
1221.	0.161	2447.	0.1257	3673.	0.0675
1222.	0.161	2448.	0.1257	3674.	0.0673

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1223.	0.1611	2449.	0.1255	3675.	0.0672
1224.	0.161	2450.	0.1255	3676.	0.0673
1225.	0.1611	2451.	0.1252	3677.	0.0671
1226.	0.1613	2452.	0.1249	3678.	0.0673

SOLUTION

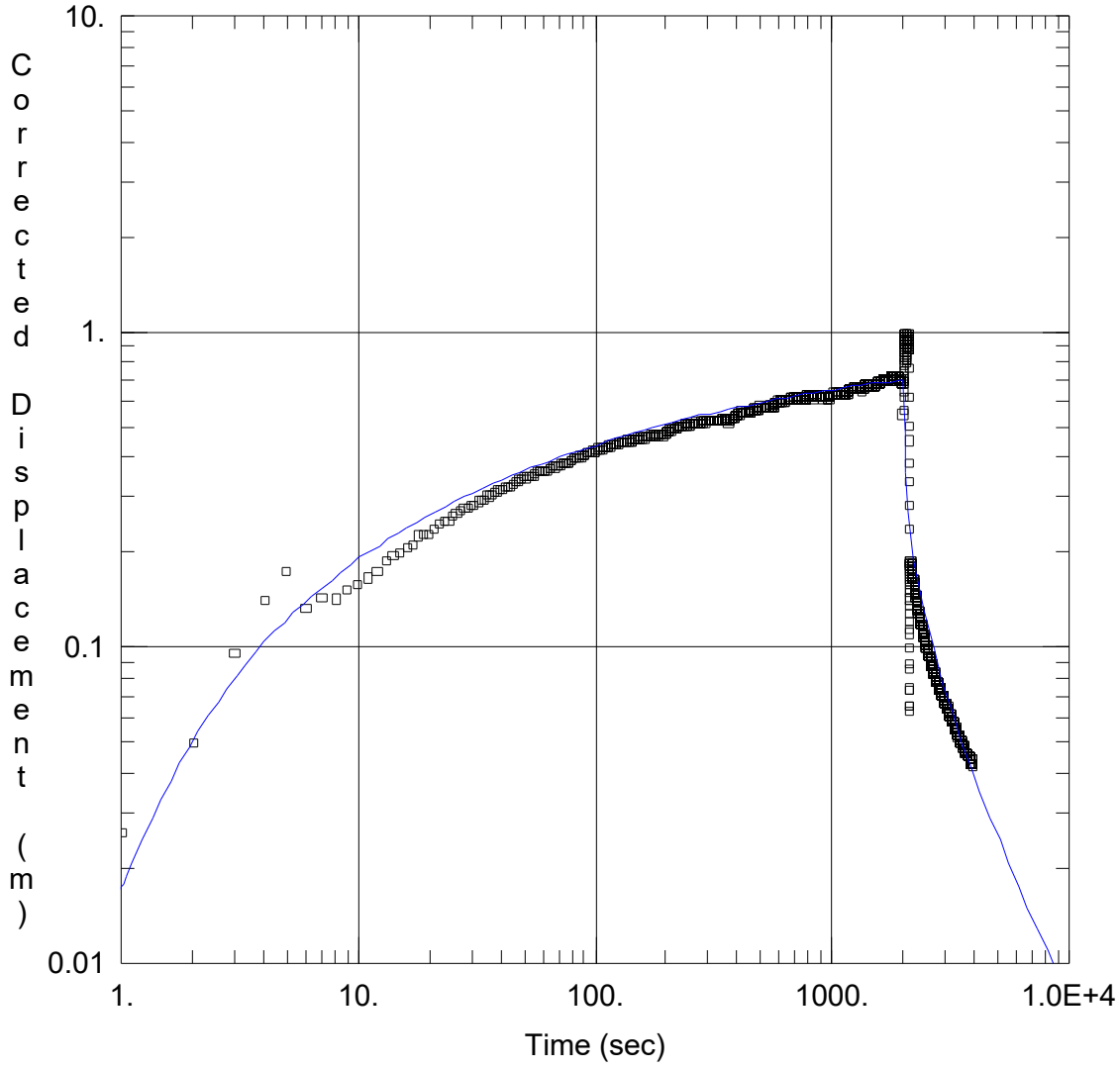
Pumping Test
Aquifer Model: Unconfined
Solution Method: Theis

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	9.808E-5	m^2/sec
S	8.757E-5	
Kz/Kr	1.	
b	9.1	m

K = T/b = 1.078E-5 m/sec (0.001078 cm/sec)
Ss = S/b = 9.623E-6 1/m



WELL TEST ANALYSIS

Data Set: C:\...\1. MW23-04 Pump Test Wizard_jpg.aqt
Date: 10/18/23 Time: 13:32:17

PROJECT INFORMATION

Company: Englobe Corp.
Client: Churchill Properties Inc.
Project: 02103035
Location: 424 Churchill
Test Well: MW23-04
Test Date: Augustr 17, 2023

WELL DATA

Pumping Wells

Well Name	X (m)	Y (m)
MW23-04	18	0

Observation Wells

Well Name	X (m)	Y (m)
▫ MW23-04	18	0

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

T = 0.0005009 m^2/sec
S = 1.253
Kz/Kr = 1.
b = 9.1 m

Data Set: C:\Users\gobeje\OneDrive - EnGlobe Corp\Documents\Churchill Avenue\HydroG Assesment - 2023\Appendix C
Date: 10/19/23
Time: 16:01:57

PROJECT INFORMATION

Company: Englobe Corp.
Client: Churchill Properties Inc.
Project: 02103035
Location: 424 Churchill
Test Date: Augustr 17, 2023
Test Well: MW23-04

AQUIFER DATA

Saturated Thickness: 9.1 m
Anisotropy Ratio (Kz/Kr): 1.

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: MW23-04

X Location: 18. m
Y Location: 0. m

Casing Radius: 0.0254 m
Well Radius: 0.045 m

Partially Penetrating Well
Depth to Top of Screen: 0. m
Depth to Bottom of Screen: 1. m

No. of pumping periods: 2

Pumping Period Data

Time (sec)	Rate (L/min)	Time (sec)	Rate (L/min)
0.	5.	2006.	0.

OBSERVATION WELL DATA

No. of observation wells: 1

Observation Well No. 1: MW23-04

X Location: 18. m
Y Location: 0. m

Radial distance from MW23-04: 0. m

Partially Penetrating Well
Depth to Top of Screen: 0. m
Depth to Bottom of Screen: 1. m

No. of Observations: 3930

Observation Data

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1.	0.026	1311.	0.687	2621.	0.09
2.	0.05	1312.	0.683	2622.	0.09
3.	0.096	1313.	0.684	2623.	0.09
4.	0.141	1314.	0.683	2624.	0.09
5.	0.174	1315.	0.688	2625.	0.09
6.	0.133	1316.	0.684	2626.	0.09
7.	0.144	1317.	0.686	2627.	0.09
8.	0.143	1318.	0.689	2628.	0.089
9.	0.154	1319.	0.688	2629.	0.089
10.	0.16	1320.	0.685	2630.	0.089
11.	0.167	1321.	0.686	2631.	0.089
12.	0.176	1322.	0.685	2632.	0.089
13.	0.188	1323.	0.687	2633.	0.089
14.	0.196	1324.	0.688	2634.	0.089
15.	0.202	1325.	0.682	2635.	0.089
16.	0.208	1326.	0.682	2636.	0.089
17.	0.214	1327.	0.687	2637.	0.089
18.	0.228	1328.	0.683	2638.	0.089
19.	0.23	1329.	0.687	2639.	0.088
20.	0.232	1330.	0.69	2640.	0.088
21.	0.24	1331.	0.686	2641.	0.088
22.	0.247	1332.	0.687	2642.	0.088
23.	0.252	1333.	0.684	2643.	0.088
24.	0.255	1334.	0.682	2644.	0.088
25.	0.265	1335.	0.683	2645.	0.088
26.	0.267	1336.	0.687	2646.	0.087
27.	0.273	1337.	0.685	2647.	0.087
28.	0.278	1338.	0.681	2648.	0.087
29.	0.278	1339.	0.687	2649.	0.087
30.	0.285	1340.	0.689	2650.	0.087
31.	0.288	1341.	0.687	2651.	0.087
32.	0.294	1342.	0.683	2652.	0.087
33.	0.297	1343.	0.682	2653.	0.087
34.	0.297	1344.	0.68	2654.	0.087
35.	0.307	1345.	0.682	2655.	0.087
36.	0.306	1346.	0.683	2656.	0.087
37.	0.309	1347.	0.679	2657.	0.087
38.	0.315	1348.	0.686	2658.	0.087
39.	0.318	1349.	0.682	2659.	0.087
40.	0.32	1350.	0.681	2660.	0.087
41.	0.324	1351.	0.679	2661.	0.087
42.	0.325	1352.	0.679	2662.	0.087
43.	0.33	1353.	0.683	2663.	0.087
44.	0.33	1354.	0.68	2664.	0.087
45.	0.334	1355.	0.663	2665.	0.087
46.	0.338	1356.	0.677	2666.	0.087
47.	0.341	1357.	0.685	2667.	0.087
48.	0.349	1358.	0.683	2668.	0.087
49.	0.346	1359.	0.686	2669.	0.087
50.	0.352	1360.	0.689	2670.	0.087
51.	0.347	1361.	0.692	2671.	0.086
52.	0.355	1362.	0.692	2672.	0.086
53.	0.356	1363.	0.691	2673.	0.086
54.	0.355	1364.	0.696	2674.	0.086
55.	0.355	1365.	0.693	2675.	0.086
56.	0.362	1366.	0.694	2676.	0.086
57.	0.367	1367.	0.691	2677.	0.086

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
58.	0.366	1368.	0.699	2678.	0.086
59.	0.369	1369.	0.695	2679.	0.086
60.	0.368	1370.	0.698	2680.	0.085
61.	0.368	1371.	0.696	2681.	0.086
62.	0.37	1372.	0.697	2682.	0.086
63.	0.37	1373.	0.7	2683.	0.085
64.	0.378	1374.	0.701	2684.	0.085
65.	0.375	1375.	0.699	2685.	0.085
66.	0.38	1376.	0.705	2686.	0.085
67.	0.38	1377.	0.699	2687.	0.085
68.	0.379	1378.	0.7	2688.	0.085
69.	0.381	1379.	0.698	2689.	0.085
70.	0.383	1380.	0.699	2690.	0.085
71.	0.384	1381.	0.698	2691.	0.085
72.	0.391	1382.	0.698	2692.	0.084
73.	0.391	1383.	0.699	2693.	0.084
74.	0.393	1384.	0.705	2694.	0.084
75.	0.392	1385.	0.7	2695.	0.084
76.	0.39	1386.	0.699	2696.	0.084
77.	0.388	1387.	0.703	2697.	0.084
78.	0.394	1388.	0.701	2698.	0.084
79.	0.401	1389.	0.706	2699.	0.084
80.	0.399	1390.	0.7	2700.	0.084
81.	0.405	1391.	0.703	2701.	0.084
82.	0.408	1392.	0.702	2702.	0.084
83.	0.405	1393.	0.709	2703.	0.083
84.	0.408	1394.	0.707	2704.	0.083
85.	0.409	1395.	0.706	2705.	0.083
86.	0.412	1396.	0.708	2706.	0.083
87.	0.41	1397.	0.704	2707.	0.083
88.	0.412	1398.	0.699	2708.	0.083
89.	0.413	1399.	0.707	2709.	0.083
90.	0.417	1400.	0.705	2710.	0.083
91.	0.415	1401.	0.708	2711.	0.083
92.	0.42	1402.	0.699	2712.	0.083
93.	0.423	1403.	0.7	2713.	0.083
94.	0.423	1404.	0.704	2714.	0.083
95.	0.422	1405.	0.708	2715.	0.083
96.	0.423	1406.	0.706	2716.	0.082
97.	0.426	1407.	0.705	2717.	0.083
98.	0.425	1408.	0.701	2718.	0.083
99.	0.427	1409.	0.699	2719.	0.082
100.	0.427	1410.	0.708	2720.	0.082
101.	0.43	1411.	0.701	2721.	0.082
102.	0.432	1412.	0.705	2722.	0.082
103.	0.434	1413.	0.707	2723.	0.082
104.	0.438	1414.	0.698	2724.	0.082
105.	0.433	1415.	0.702	2725.	0.082
106.	0.43	1416.	0.706	2726.	0.082
107.	0.437	1417.	0.705	2727.	0.082
108.	0.435	1418.	0.703	2728.	0.082
109.	0.442	1419.	0.704	2729.	0.082
110.	0.44	1420.	0.699	2730.	0.081
111.	0.441	1421.	0.705	2731.	0.082
112.	0.44	1422.	0.702	2732.	0.082
113.	0.44	1423.	0.703	2733.	0.081
114.	0.442	1424.	0.704	2734.	0.081

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
115.	0.444	1425.	0.7	2735.	0.081
116.	0.445	1426.	0.703	2736.	0.081
117.	0.448	1427.	0.703	2737.	0.081
118.	0.443	1428.	0.707	2738.	0.081
119.	0.449	1429.	0.706	2739.	0.081
120.	0.447	1430.	0.704	2740.	0.081
121.	0.45	1431.	0.702	2741.	0.08
122.	0.452	1432.	0.701	2742.	0.08
123.	0.45	1433.	0.705	2743.	0.08
124.	0.451	1434.	0.703	2744.	0.08
125.	0.453	1435.	0.705	2745.	0.08
126.	0.454	1436.	0.708	2746.	0.081
127.	0.457	1437.	0.702	2747.	0.08
128.	0.454	1438.	0.706	2748.	0.08
129.	0.461	1439.	0.705	2749.	0.08
130.	0.461	1440.	0.704	2750.	0.08
131.	0.455	1441.	0.701	2751.	0.08
132.	0.454	1442.	0.7	2752.	0.08
133.	0.456	1443.	0.704	2753.	0.08
134.	0.46	1444.	0.7	2754.	0.08
135.	0.461	1445.	0.7	2755.	0.08
136.	0.461	1446.	0.703	2756.	0.08
137.	0.463	1447.	0.702	2757.	0.08
138.	0.463	1448.	0.703	2758.	0.08
139.	0.462	1449.	0.704	2759.	0.08
140.	0.465	1450.	0.705	2760.	0.08
141.	0.461	1451.	0.7	2761.	0.08
142.	0.463	1452.	0.706	2762.	0.08
143.	0.463	1453.	0.708	2763.	0.08
144.	0.462	1454.	0.706	2764.	0.079
145.	0.464	1455.	0.702	2765.	0.079
146.	0.467	1456.	0.704	2766.	0.079
147.	0.467	1457.	0.703	2767.	0.079
148.	0.466	1458.	0.703	2768.	0.08
149.	0.466	1459.	0.702	2769.	0.079
150.	0.467	1460.	0.703	2770.	0.079
151.	0.468	1461.	0.705	2771.	0.079
152.	0.468	1462.	0.705	2772.	0.079
153.	0.477	1463.	0.701	2773.	0.079
154.	0.479	1464.	0.705	2774.	0.079
155.	0.469	1465.	0.707	2775.	0.079
156.	0.471	1466.	0.704	2776.	0.079
157.	0.473	1467.	0.706	2777.	0.079
158.	0.471	1468.	0.706	2778.	0.079
159.	0.473	1469.	0.703	2779.	0.078
160.	0.474	1470.	0.705	2780.	0.078
161.	0.472	1471.	0.708	2781.	0.078
162.	0.473	1472.	0.7	2782.	0.078
163.	0.475	1473.	0.705	2783.	0.078
164.	0.476	1474.	0.707	2784.	0.078
165.	0.475	1475.	0.705	2785.	0.078
166.	0.475	1476.	0.702	2786.	0.078
167.	0.476	1477.	0.704	2787.	0.078
168.	0.478	1478.	0.704	2788.	0.078
169.	0.478	1479.	0.703	2789.	0.078
170.	0.478	1480.	0.708	2790.	0.078
171.	0.483	1481.	0.702	2791.	0.078

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
172.	0.475	1482.	0.699	2792.	0.078
173.	0.479	1483.	0.705	2793.	0.077
174.	0.479	1484.	0.7	2794.	0.077
175.	0.481	1485.	0.705	2795.	0.078
176.	0.482	1486.	0.703	2796.	0.077
177.	0.479	1487.	0.7	2797.	0.077
178.	0.481	1488.	0.701	2798.	0.077
179.	0.481	1489.	0.703	2799.	0.078
180.	0.48	1490.	0.703	2800.	0.077
181.	0.48	1491.	0.708	2801.	0.077
182.	0.482	1492.	0.702	2802.	0.078
183.	0.485	1493.	0.704	2803.	0.077
184.	0.481	1494.	0.703	2804.	0.076
185.	0.482	1495.	0.703	2805.	0.078
186.	0.484	1496.	0.706	2806.	0.077
187.	0.485	1497.	0.709	2807.	0.077
188.	0.489	1498.	0.702	2808.	0.077
189.	0.487	1499.	0.709	2809.	0.077
190.	0.486	1500.	0.707	2810.	0.077
191.	0.486	1501.	0.708	2811.	0.076
192.	0.483	1502.	0.708	2812.	0.077
193.	0.48	1503.	0.709	2813.	0.076
194.	0.486	1504.	0.708	2814.	0.076
195.	0.486	1505.	0.7	2815.	0.076
196.	0.484	1506.	0.705	2816.	0.076
197.	0.487	1507.	0.707	2817.	0.076
198.	0.488	1508.	0.707	2818.	0.076
199.	0.487	1509.	0.708	2819.	0.076
200.	0.491	1510.	0.7	2820.	0.076
201.	0.493	1511.	0.703	2821.	0.075
202.	0.495	1512.	0.71	2822.	0.075
203.	0.498	1513.	0.705	2823.	0.075
204.	0.495	1514.	0.706	2824.	0.075
205.	0.498	1515.	0.706	2825.	0.076
206.	0.497	1516.	0.705	2826.	0.075
207.	0.501	1517.	0.704	2827.	0.075
208.	0.502	1518.	0.708	2828.	0.076
209.	0.502	1519.	0.705	2829.	0.076
210.	0.499	1520.	0.71	2830.	0.075
211.	0.505	1521.	0.705	2831.	0.075
212.	0.504	1522.	0.699	2832.	0.075
213.	0.507	1523.	0.703	2833.	0.075
214.	0.504	1524.	0.702	2834.	0.075
215.	0.506	1525.	0.704	2835.	0.075
216.	0.506	1526.	0.703	2836.	0.075
217.	0.508	1527.	0.701	2837.	0.075
218.	0.508	1528.	0.704	2838.	0.075
219.	0.507	1529.	0.7	2839.	0.075
220.	0.51	1530.	0.699	2840.	0.075
221.	0.512	1531.	0.701	2841.	0.075
222.	0.515	1532.	0.7	2842.	0.075
223.	0.508	1533.	0.703	2843.	0.075
224.	0.512	1534.	0.701	2844.	0.074
225.	0.515	1535.	0.707	2845.	0.075
226.	0.514	1536.	0.698	2846.	0.075
227.	0.516	1537.	0.705	2847.	0.075
228.	0.513	1538.	0.703	2848.	0.074

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
229.	0.514	1539.	0.709	2849.	0.075
230.	0.515	1540.	0.71	2850.	0.075
231.	0.517	1541.	0.707	2851.	0.075
232.	0.516	1542.	0.705	2852.	0.074
233.	0.515	1543.	0.709	2853.	0.074
234.	0.517	1544.	0.71	2854.	0.074
235.	0.516	1545.	0.71	2855.	0.074
236.	0.518	1546.	0.713	2856.	0.074
237.	0.52	1547.	0.71	2857.	0.074
238.	0.517	1548.	0.706	2858.	0.073
239.	0.523	1549.	0.71	2859.	0.074
240.	0.523	1550.	0.714	2860.	0.073
241.	0.523	1551.	0.71	2861.	0.074
242.	0.524	1552.	0.715	2862.	0.074
243.	0.519	1553.	0.709	2863.	0.074
244.	0.522	1554.	0.714	2864.	0.074
245.	0.519	1555.	0.713	2865.	0.074
246.	0.521	1556.	0.708	2866.	0.074
247.	0.524	1557.	0.715	2867.	0.074
248.	0.523	1558.	0.711	2868.	0.074
249.	0.518	1559.	0.714	2869.	0.074
250.	0.522	1560.	0.715	2870.	0.073
251.	0.52	1561.	0.71	2871.	0.073
252.	0.523	1562.	0.712	2872.	0.073
253.	0.521	1563.	0.711	2873.	0.073
254.	0.525	1564.	0.716	2874.	0.073
255.	0.522	1565.	0.715	2875.	0.073
256.	0.526	1566.	0.717	2876.	0.073
257.	0.524	1567.	0.718	2877.	0.073
258.	0.527	1568.	0.717	2878.	0.073
259.	0.526	1569.	0.712	2879.	0.073
260.	0.524	1570.	0.716	2880.	0.073
261.	0.527	1571.	0.714	2881.	0.073
262.	0.53	1572.	0.713	2882.	0.073
263.	0.529	1573.	0.714	2883.	0.073
264.	0.525	1574.	0.71	2884.	0.073
265.	0.528	1575.	0.718	2885.	0.073
266.	0.527	1576.	0.718	2886.	0.073
267.	0.525	1577.	0.718	2887.	0.072
268.	0.528	1578.	0.712	2888.	0.072
269.	0.531	1579.	0.715	2889.	0.072
270.	0.525	1580.	0.713	2890.	0.072
271.	0.524	1581.	0.718	2891.	0.072
272.	0.525	1582.	0.714	2892.	0.072
273.	0.529	1583.	0.718	2893.	0.072
274.	0.53	1584.	0.716	2894.	0.072
275.	0.527	1585.	0.72	2895.	0.072
276.	0.528	1586.	0.715	2896.	0.072
277.	0.526	1587.	0.712	2897.	0.072
278.	0.527	1588.	0.715	2898.	0.072
279.	0.535	1589.	0.718	2899.	0.072
280.	0.532	1590.	0.715	2900.	0.072
281.	0.528	1591.	0.722	2901.	0.072
282.	0.527	1592.	0.711	2902.	0.072
283.	0.531	1593.	0.718	2903.	0.072
284.	0.533	1594.	0.718	2904.	0.072
285.	0.532	1595.	0.722	2905.	0.072

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
286.	0.534	1596.	0.721	2906.	0.072
287.	0.533	1597.	0.724	2907.	0.072
288.	0.533	1598.	0.72	2908.	0.072
289.	0.533	1599.	0.719	2909.	0.071
290.	0.534	1600.	0.725	2910.	0.072
291.	0.535	1601.	0.722	2911.	0.071
292.	0.537	1602.	0.721	2912.	0.071
293.	0.533	1603.	0.726	2913.	0.071
294.	0.534	1604.	0.725	2914.	0.071
295.	0.532	1605.	0.728	2915.	0.071
296.	0.53	1606.	0.727	2916.	0.071
297.	0.534	1607.	0.727	2917.	0.071
298.	0.535	1608.	0.728	2918.	0.071
299.	0.535	1609.	0.725	2919.	0.071
300.	0.532	1610.	0.727	2920.	0.071
301.	0.535	1611.	0.726	2921.	0.071
302.	0.537	1612.	0.725	2922.	0.071
303.	0.537	1613.	0.728	2923.	0.071
304.	0.538	1614.	0.726	2924.	0.071
305.	0.534	1615.	0.729	2925.	0.071
306.	0.535	1616.	0.727	2926.	0.071
307.	0.536	1617.	0.724	2927.	0.071
308.	0.537	1618.	0.724	2928.	0.071
309.	0.532	1619.	0.729	2929.	0.07
310.	0.535	1620.	0.727	2930.	0.07
311.	0.535	1621.	0.728	2931.	0.07
312.	0.535	1622.	0.727	2932.	0.07
313.	0.54	1623.	0.729	2933.	0.07
314.	0.536	1624.	0.722	2934.	0.07
315.	0.539	1625.	0.726	2935.	0.07
316.	0.533	1626.	0.728	2936.	0.07
317.	0.533	1627.	0.727	2937.	0.07
318.	0.538	1628.	0.728	2938.	0.07
319.	0.533	1629.	0.722	2939.	0.07
320.	0.534	1630.	0.725	2940.	0.07
321.	0.536	1631.	0.726	2941.	0.07
322.	0.537	1632.	0.73	2942.	0.069
323.	0.535	1633.	0.73	2943.	0.069
324.	0.536	1634.	0.726	2944.	0.07
325.	0.536	1635.	0.726	2945.	0.069
326.	0.534	1636.	0.728	2946.	0.07
327.	0.535	1637.	0.731	2947.	0.07
328.	0.537	1638.	0.729	2948.	0.07
329.	0.537	1639.	0.733	2949.	0.07
330.	0.539	1640.	0.73	2950.	0.07
331.	0.537	1641.	0.721	2951.	0.07
332.	0.534	1642.	0.728	2952.	0.069
333.	0.54	1643.	0.731	2953.	0.069
334.	0.539	1644.	0.725	2954.	0.069
335.	0.539	1645.	0.728	2955.	0.069
336.	0.533	1646.	0.729	2956.	0.069
337.	0.539	1647.	0.729	2957.	0.069
338.	0.54	1648.	0.731	2958.	0.069
339.	0.538	1649.	0.725	2959.	0.069
340.	0.539	1650.	0.73	2960.	0.069
341.	0.539	1651.	0.73	2961.	0.069
342.	0.538	1652.	0.728	2962.	0.069

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
343.	0.541	1653.	0.731	2963.	0.069
344.	0.541	1654.	0.725	2964.	0.069
345.	0.542	1655.	0.733	2965.	0.069
346.	0.539	1656.	0.733	2966.	0.069
347.	0.54	1657.	0.727	2967.	0.069
348.	0.538	1658.	0.729	2968.	0.069
349.	0.541	1659.	0.731	2969.	0.069
350.	0.542	1660.	0.73	2970.	0.069
351.	0.541	1661.	0.73	2971.	0.069
352.	0.541	1662.	0.732	2972.	0.069
353.	0.541	1663.	0.735	2973.	0.069
354.	0.542	1664.	0.727	2974.	0.069
355.	0.539	1665.	0.73	2975.	0.069
356.	0.541	1666.	0.729	2976.	0.069
357.	0.543	1667.	0.733	2977.	0.069
358.	0.545	1668.	0.731	2978.	0.069
359.	0.544	1669.	0.731	2979.	0.069
360.	0.541	1670.	0.728	2980.	0.069
361.	0.54	1671.	0.732	2981.	0.069
362.	0.541	1672.	0.729	2982.	0.068
363.	0.541	1673.	0.732	2983.	0.068
364.	0.544	1674.	0.728	2984.	0.068
365.	0.541	1675.	0.735	2985.	0.068
366.	0.54	1676.	0.73	2986.	0.068
367.	0.53	1677.	0.731	2987.	0.068
368.	0.542	1678.	0.728	2988.	0.068
369.	0.544	1679.	0.726	2989.	0.068
370.	0.542	1680.	0.73	2990.	0.068
371.	0.545	1681.	0.729	2991.	0.068
372.	0.544	1682.	0.727	2992.	0.068
373.	0.538	1683.	0.729	2993.	0.068
374.	0.541	1684.	0.728	2994.	0.068
375.	0.544	1685.	0.724	2995.	0.068
376.	0.543	1686.	0.722	2996.	0.067
377.	0.545	1687.	0.722	2997.	0.067
378.	0.546	1688.	0.725	2998.	0.067
379.	0.544	1689.	0.725	2999.	0.067
380.	0.543	1690.	0.727	3000.	0.067
381.	0.545	1691.	0.729	3001.	0.067
382.	0.546	1692.	0.724	3002.	0.067
383.	0.547	1693.	0.727	3003.	0.067
384.	0.545	1694.	0.723	3004.	0.067
385.	0.547	1695.	0.725	3005.	0.067
386.	0.546	1696.	0.728	3006.	0.067
387.	0.551	1697.	0.727	3007.	0.067
388.	0.552	1698.	0.725	3008.	0.067
389.	0.557	1699.	0.722	3009.	0.067
390.	0.549	1700.	0.725	3010.	0.067
391.	0.555	1701.	0.728	3011.	0.067
392.	0.556	1702.	0.724	3012.	0.067
393.	0.554	1703.	0.727	3013.	0.066
394.	0.556	1704.	0.731	3014.	0.067
395.	0.556	1705.	0.723	3015.	0.066
396.	0.561	1706.	0.726	3016.	0.066
397.	0.559	1707.	0.73	3017.	0.066
398.	0.557	1708.	0.727	3018.	0.066
399.	0.56	1709.	0.726	3019.	0.066

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
400.	0.561	1710.	0.723	3020.	0.066
401.	0.558	1711.	0.72	3021.	0.066
402.	0.561	1712.	0.721	3022.	0.066
403.	0.562	1713.	0.726	3023.	0.066
404.	0.565	1714.	0.723	3024.	0.066
405.	0.564	1715.	0.725	3025.	0.066
406.	0.565	1716.	0.725	3026.	0.066
407.	0.568	1717.	0.728	3027.	0.066
408.	0.564	1718.	0.727	3028.	0.066
409.	0.566	1719.	0.722	3029.	0.066
410.	0.566	1720.	0.724	3030.	0.066
411.	0.568	1721.	0.73	3031.	0.066
412.	0.569	1722.	0.725	3032.	0.065
413.	0.568	1723.	0.73	3033.	0.065
414.	0.567	1724.	0.729	3034.	0.065
415.	0.574	1725.	0.73	3035.	0.065
416.	0.572	1726.	0.728	3036.	0.065
417.	0.568	1727.	0.731	3037.	0.065
418.	0.57	1728.	0.726	3038.	0.065
419.	0.569	1729.	0.726	3039.	0.065
420.	0.572	1730.	0.728	3040.	0.065
421.	0.567	1731.	0.731	3041.	0.065
422.	0.571	1732.	0.73	3042.	0.065
423.	0.569	1733.	0.727	3043.	0.065
424.	0.567	1734.	0.72	3044.	0.065
425.	0.57	1735.	0.726	3045.	0.065
426.	0.567	1736.	0.73	3046.	0.065
427.	0.568	1737.	0.728	3047.	0.065
428.	0.572	1738.	0.725	3048.	0.065
429.	0.57	1739.	0.722	3049.	0.065
430.	0.571	1740.	0.721	3050.	0.065
431.	0.57	1741.	0.722	3051.	0.065
432.	0.571	1742.	0.722	3052.	0.065
433.	0.572	1743.	0.724	3053.	0.065
434.	0.571	1744.	0.722	3054.	0.065
435.	0.57	1745.	0.728	3055.	0.065
436.	0.571	1746.	0.724	3056.	0.065
437.	0.573	1747.	0.723	3057.	0.065
438.	0.573	1748.	0.726	3058.	0.065
439.	0.574	1749.	0.723	3059.	0.065
440.	0.572	1750.	0.726	3060.	0.065
441.	0.575	1751.	0.726	3061.	0.065
442.	0.573	1752.	0.722	3062.	0.065
443.	0.575	1753.	0.722	3063.	0.065
444.	0.577	1754.	0.726	3064.	0.065
445.	0.573	1755.	0.72	3065.	0.065
446.	0.575	1756.	0.726	3066.	0.065
447.	0.575	1757.	0.731	3067.	0.065
448.	0.573	1758.	0.737	3068.	0.065
449.	0.576	1759.	0.733	3069.	0.065
450.	0.574	1760.	0.732	3070.	0.065
451.	0.577	1761.	0.739	3071.	0.065
452.	0.574	1762.	0.737	3072.	0.065
453.	0.573	1763.	0.736	3073.	0.065
454.	0.576	1764.	0.737	3074.	0.065
455.	0.576	1765.	0.74	3075.	0.065
456.	0.577	1766.	0.738	3076.	0.064

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
457.	0.578	1767.	0.738	3077.	0.065
458.	0.578	1768.	0.74	3078.	0.064
459.	0.578	1769.	0.738	3079.	0.065
460.	0.578	1770.	0.744	3080.	0.064
461.	0.578	1771.	0.745	3081.	0.065
462.	0.58	1772.	0.745	3082.	0.064
463.	0.588	1773.	0.743	3083.	0.064
464.	0.577	1774.	0.745	3084.	0.064
465.	0.582	1775.	0.747	3085.	0.064
466.	0.586	1776.	0.743	3086.	0.064
467.	0.58	1777.	0.746	3087.	0.064
468.	0.585	1778.	0.746	3088.	0.064
469.	0.587	1779.	0.746	3089.	0.064
470.	0.581	1780.	0.747	3090.	0.064
471.	0.578	1781.	0.746	3091.	0.064
472.	0.581	1782.	0.752	3092.	0.063
473.	0.58	1783.	0.754	3093.	0.064
474.	0.579	1784.	0.752	3094.	0.063
475.	0.585	1785.	0.748	3095.	0.063
476.	0.58	1786.	0.748	3096.	0.063
477.	0.58	1787.	0.756	3097.	0.064
478.	0.582	1788.	0.746	3098.	0.063
479.	0.586	1789.	0.75	3099.	0.064
480.	0.584	1790.	0.75	3100.	0.063
481.	0.586	1791.	0.748	3101.	0.063
482.	0.584	1792.	0.747	3102.	0.063
483.	0.585	1793.	0.751	3103.	0.063
484.	0.586	1794.	0.752	3104.	0.063
485.	0.587	1795.	0.753	3105.	0.063
486.	0.585	1796.	0.752	3106.	0.063
487.	0.587	1797.	0.748	3107.	0.063
488.	0.589	1798.	0.75	3108.	0.063
489.	0.587	1799.	0.749	3109.	0.063
490.	0.591	1800.	0.751	3110.	0.063
491.	0.588	1801.	0.747	3111.	0.063
492.	0.59	1802.	0.754	3112.	0.062
493.	0.588	1803.	0.75	3113.	0.062
494.	0.593	1804.	0.748	3114.	0.062
495.	0.592	1805.	0.752	3115.	0.062
496.	0.591	1806.	0.751	3116.	0.062
497.	0.592	1807.	0.751	3117.	0.063
498.	0.593	1808.	0.745	3118.	0.062
499.	0.599	1809.	0.754	3119.	0.062
500.	0.591	1810.	0.756	3120.	0.062
501.	0.594	1811.	0.749	3121.	0.062
502.	0.59	1812.	0.757	3122.	0.062
503.	0.593	1813.	0.751	3123.	0.062
504.	0.594	1814.	0.752	3124.	0.062
505.	0.591	1815.	0.758	3125.	0.062
506.	0.595	1816.	0.751	3126.	0.062
507.	0.591	1817.	0.754	3127.	0.062
508.	0.595	1818.	0.756	3128.	0.062
509.	0.593	1819.	0.75	3129.	0.062
510.	0.592	1820.	0.754	3130.	0.062
511.	0.592	1821.	0.75	3131.	0.062
512.	0.594	1822.	0.751	3132.	0.062
513.	0.594	1823.	0.754	3133.	0.062

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
514.	0.592	1824.	0.752	3134.	0.062
515.	0.593	1825.	0.752	3135.	0.062
516.	0.594	1826.	0.751	3136.	0.062
517.	0.597	1827.	0.751	3137.	0.062
518.	0.592	1828.	0.748	3138.	0.062
519.	0.593	1829.	0.752	3139.	0.062
520.	0.595	1830.	0.753	3140.	0.062
521.	0.597	1831.	0.75	3141.	0.062
522.	0.597	1832.	0.748	3142.	0.062
523.	0.594	1833.	0.749	3143.	0.062
524.	0.592	1834.	0.753	3144.	0.062
525.	0.595	1835.	0.752	3145.	0.062
526.	0.593	1836.	0.748	3146.	0.062
527.	0.592	1837.	0.746	3147.	0.062
528.	0.597	1838.	0.752	3148.	0.062
529.	0.595	1839.	0.749	3149.	0.062
530.	0.593	1840.	0.751	3150.	0.061
531.	0.592	1841.	0.747	3151.	0.061
532.	0.592	1842.	0.751	3152.	0.062
533.	0.593	1843.	0.751	3153.	0.061
534.	0.592	1844.	0.747	3154.	0.062
535.	0.597	1845.	0.747	3155.	0.061
536.	0.596	1846.	0.747	3156.	0.061
537.	0.591	1847.	0.749	3157.	0.061
538.	0.596	1848.	0.746	3158.	0.061
539.	0.593	1849.	0.744	3159.	0.061
540.	0.596	1850.	0.748	3160.	0.062
541.	0.597	1851.	0.747	3161.	0.061
542.	0.601	1852.	0.748	3162.	0.061
543.	0.599	1853.	0.748	3163.	0.061
544.	0.596	1854.	0.747	3164.	0.061
545.	0.598	1855.	0.746	3165.	0.061
546.	0.598	1856.	0.747	3166.	0.061
547.	0.596	1857.	0.745	3167.	0.061
548.	0.597	1858.	0.747	3168.	0.061
549.	0.596	1859.	0.745	3169.	0.061
550.	0.601	1860.	0.748	3170.	0.061
551.	0.598	1861.	0.749	3171.	0.06
552.	0.599	1862.	0.746	3172.	0.061
553.	0.599	1863.	0.745	3173.	0.06
554.	0.597	1864.	0.747	3174.	0.06
555.	0.599	1865.	0.749	3175.	0.06
556.	0.599	1866.	0.742	3176.	0.06
557.	0.597	1867.	0.749	3177.	0.06
558.	0.602	1868.	0.75	3178.	0.06
559.	0.6	1869.	0.745	3179.	0.06
560.	0.602	1870.	0.748	3180.	0.06
561.	0.597	1871.	0.753	3181.	0.06
562.	0.599	1872.	0.748	3182.	0.06
563.	0.601	1873.	0.749	3183.	0.06
564.	0.598	1874.	0.745	3184.	0.06
565.	0.602	1875.	0.75	3185.	0.06
566.	0.599	1876.	0.75	3186.	0.06
567.	0.596	1877.	0.748	3187.	0.06
568.	0.602	1878.	0.747	3188.	0.06
569.	0.595	1879.	0.745	3189.	0.06
570.	0.605	1880.	0.749	3190.	0.06

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
571.	0.606	1881.	0.751	3191.	0.06
572.	0.607	1882.	0.747	3192.	0.06
573.	0.602	1883.	0.747	3193.	0.06
574.	0.609	1884.	0.748	3194.	0.06
575.	0.61	1885.	0.748	3195.	0.06
576.	0.611	1886.	0.747	3196.	0.06
577.	0.609	1887.	0.752	3197.	0.059
578.	0.613	1888.	0.753	3198.	0.06
579.	0.609	1889.	0.758	3199.	0.06
580.	0.617	1890.	0.751	3200.	0.06
581.	0.612	1891.	0.75	3201.	0.06
582.	0.615	1892.	0.748	3202.	0.06
583.	0.612	1893.	0.749	3203.	0.06
584.	0.616	1894.	0.751	3204.	0.059
585.	0.617	1895.	0.749	3205.	0.06
586.	0.616	1896.	0.753	3206.	0.06
587.	0.616	1897.	0.756	3207.	0.059
588.	0.621	1898.	0.757	3208.	0.059
589.	0.622	1899.	0.756	3209.	0.059
590.	0.617	1900.	0.755	3210.	0.059
591.	0.619	1901.	0.752	3211.	0.059
592.	0.62	1902.	0.745	3212.	0.059
593.	0.619	1903.	0.748	3213.	0.06
594.	0.623	1904.	0.753	3214.	0.059
595.	0.622	1905.	0.746	3215.	0.059
596.	0.619	1906.	0.751	3216.	0.059
597.	0.622	1907.	0.752	3217.	0.059
598.	0.619	1908.	0.755	3218.	0.059
599.	0.623	1909.	0.746	3219.	0.059
600.	0.62	1910.	0.748	3220.	0.059
601.	0.619	1911.	0.747	3221.	0.059
602.	0.619	1912.	0.754	3222.	0.059
603.	0.625	1913.	0.751	3223.	0.059
604.	0.624	1914.	0.752	3224.	0.059
605.	0.622	1915.	0.749	3225.	0.059
606.	0.624	1916.	0.749	3226.	0.059
607.	0.626	1917.	0.752	3227.	0.059
608.	0.626	1918.	0.753	3228.	0.059
609.	0.623	1919.	0.751	3229.	0.058
610.	0.627	1920.	0.746	3230.	0.059
611.	0.624	1921.	0.752	3231.	0.058
612.	0.627	1922.	0.75	3232.	0.059
613.	0.625	1923.	0.751	3233.	0.059
614.	0.628	1924.	0.751	3234.	0.059
615.	0.627	1925.	0.755	3235.	0.059
616.	0.624	1926.	0.749	3236.	0.059
617.	0.63	1927.	0.745	3237.	0.059
618.	0.63	1928.	0.753	3238.	0.059
619.	0.627	1929.	0.75	3239.	0.059
620.	0.623	1930.	0.748	3240.	0.059
621.	0.626	1931.	0.747	3241.	0.058
622.	0.629	1932.	0.742	3242.	0.058
623.	0.63	1933.	0.739	3243.	0.058
624.	0.63	1934.	0.736	3244.	0.058
625.	0.631	1935.	0.733	3245.	0.058
626.	0.628	1936.	0.732	3246.	0.058
627.	0.631	1937.	0.731	3247.	0.058

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
628.	0.63	1938.	0.734	3248.	0.058
629.	0.625	1939.	0.731	3249.	0.058
630.	0.624	1940.	0.73	3250.	0.058
631.	0.629	1941.	0.727	3251.	0.058
632.	0.627	1942.	0.729	3252.	0.058
633.	0.627	1943.	0.726	3253.	0.058
634.	0.626	1944.	0.723	3254.	0.058
635.	0.625	1945.	0.723	3255.	0.058
636.	0.629	1946.	0.721	3256.	0.058
637.	0.63	1947.	0.724	3257.	0.058
638.	0.629	1948.	0.724	3258.	0.058
639.	0.626	1949.	0.723	3259.	0.057
640.	0.628	1950.	0.726	3260.	0.058
641.	0.629	1951.	0.723	3261.	0.057
642.	0.632	1952.	0.719	3262.	0.058
643.	0.624	1953.	0.722	3263.	0.058
644.	0.626	1954.	0.724	3264.	0.057
645.	0.628	1955.	0.716	3265.	0.058
646.	0.627	1956.	0.716	3266.	0.057
647.	0.625	1957.	0.717	3267.	0.057
648.	0.631	1958.	0.716	3268.	0.057
649.	0.629	1959.	0.714	3269.	0.057
650.	0.63	1960.	0.716	3270.	0.057
651.	0.63	1961.	0.717	3271.	0.057
652.	0.63	1962.	0.719	3272.	0.057
653.	0.629	1963.	0.718	3273.	0.057
654.	0.629	1964.	0.719	3274.	0.057
655.	0.625	1965.	0.722	3275.	0.057
656.	0.625	1966.	0.726	3276.	0.058
657.	0.628	1967.	0.718	3277.	0.057
658.	0.626	1968.	0.724	3278.	0.057
659.	0.63	1969.	0.722	3279.	0.057
660.	0.632	1970.	0.716	3280.	0.057
661.	0.631	1971.	0.724	3281.	0.057
662.	0.627	1972.	0.727	3282.	0.057
663.	0.627	1973.	0.722	3283.	0.057
664.	0.628	1974.	0.721	3284.	0.057
665.	0.628	1975.	0.719	3285.	0.057
666.	0.628	1976.	0.722	3286.	0.057
667.	0.636	1977.	0.725	3287.	0.057
668.	0.63	1978.	0.726	3288.	0.057
669.	0.627	1979.	0.727	3289.	0.057
670.	0.633	1980.	0.724	3290.	0.057
671.	0.632	1981.	0.73	3291.	0.057
672.	0.631	1982.	0.722	3292.	0.056
673.	0.631	1983.	0.727	3293.	0.056
674.	0.633	1984.	0.724	3294.	0.056
675.	0.632	1985.	0.724	3295.	0.056
676.	0.635	1986.	0.727	3296.	0.057
677.	0.633	1987.	0.723	3297.	0.056
678.	0.637	1988.	0.723	3298.	0.056
679.	0.631	1989.	0.725	3299.	0.056
680.	0.632	1990.	0.728	3300.	0.056
681.	0.633	1991.	0.726	3301.	0.056
682.	0.632	1992.	0.727	3302.	0.056
683.	0.636	1993.	0.735	3303.	0.056
684.	0.633	1994.	0.724	3304.	0.056

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
685.	0.637	1995.	0.725	3305.	0.056
686.	0.632	1996.	0.727	3306.	0.056
687.	0.638	1997.	0.725	3307.	0.056
688.	0.634	1998.	0.738	3308.	0.056
689.	0.633	1999.	0.716	3309.	0.056
690.	0.634	2000.	0.564	3310.	0.056
691.	0.638	2001.	0.582	3311.	0.056
692.	0.634	2002.	0.639	3312.	0.056
693.	0.636	2003.	0.673	3313.	0.055
694.	0.637	2004.	0.704	3314.	0.055
695.	0.635	2005.	0.72	3315.	0.055
696.	0.638	2006.	0.746	3316.	0.056
697.	0.638	2007.	0.776	3317.	0.056
698.	0.638	2008.	0.79	3318.	0.056
699.	0.634	2009.	0.815	3319.	0.056
700.	0.636	2010.	0.835	3320.	0.056
701.	0.637	2011.	0.853	3321.	0.056
702.	0.635	2012.	0.877	3322.	0.056
703.	0.639	2013.	0.902	3323.	0.056
704.	0.637	2014.	0.927	3324.	0.056
705.	0.638	2015.	0.959	3325.	0.056
706.	0.635	2016.	0.986	3326.	0.056
707.	0.635	2017.	1.02	3327.	0.055
708.	0.637	2018.	1.036	3328.	0.055
709.	0.637	2019.	1.	3329.	0.056
710.	0.631	2020.	0.99	3330.	0.055
711.	0.637	2021.	1.005	3331.	0.055
712.	0.635	2022.	1.027	3332.	0.056
713.	0.636	2023.	1.03	3333.	0.055
714.	0.638	2024.	0.992	3334.	0.055
715.	0.634	2025.	0.975	3335.	0.055
716.	0.638	2026.	0.984	3336.	0.055
717.	0.634	2027.	1.006	3337.	0.056
718.	0.638	2028.	1.035	3338.	0.055
719.	0.641	2029.	1.008	3339.	0.055
720.	0.635	2030.	0.962	3340.	0.055
721.	0.636	2031.	0.95	3341.	0.055
722.	0.638	2032.	0.957	3342.	0.055
723.	0.636	2033.	0.984	3343.	0.055
724.	0.64	2034.	1.013	3344.	0.055
725.	0.641	2035.	1.036	3345.	0.055
726.	0.639	2036.	0.998	3346.	0.055
727.	0.636	2037.	0.976	3347.	0.055
728.	0.638	2038.	0.97	3348.	0.055
729.	0.637	2039.	0.991	3349.	0.055
730.	0.641	2040.	1.016	3350.	0.054
731.	0.635	2041.	1.035	3351.	0.054
732.	0.639	2042.	0.994	3352.	0.054
733.	0.636	2043.	0.968	3353.	0.054
734.	0.638	2044.	0.972	3354.	0.054
735.	0.638	2045.	0.991	3355.	0.054
736.	0.639	2046.	1.02	3356.	0.055
737.	0.638	2047.	1.034	3357.	0.055
738.	0.636	2048.	0.964	3358.	0.055
739.	0.641	2049.	0.903	3359.	0.055
740.	0.637	2050.	0.869	3360.	0.055
741.	0.636	2051.	0.867	3361.	0.054

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
742.	0.64	2052.	0.878	3362.	0.054
743.	0.64	2053.	0.905	3363.	0.055
744.	0.64	2054.	0.938	3364.	0.054
745.	0.64	2055.	0.974	3365.	0.054
746.	0.638	2056.	1.005	3366.	0.054
747.	0.637	2057.	1.038	3367.	0.054
748.	0.642	2058.	1.007	3368.	0.054
749.	0.64	2059.	0.964	3369.	0.054
750.	0.638	2060.	0.951	3370.	0.054
751.	0.638	2061.	0.965	3371.	0.054
752.	0.639	2062.	0.987	3372.	0.054
753.	0.638	2063.	1.018	3373.	0.054
754.	0.639	2064.	1.036	3374.	0.054
755.	0.64	2065.	0.992	3375.	0.054
756.	0.637	2066.	0.969	3376.	0.054
757.	0.637	2067.	0.975	3377.	0.054
758.	0.641	2068.	0.993	3378.	0.054
759.	0.637	2069.	1.02	3379.	0.054
760.	0.636	2070.	1.034	3380.	0.054
761.	0.64	2071.	0.981	3381.	0.054
762.	0.635	2072.	0.939	3382.	0.054
763.	0.639	2073.	0.941	3383.	0.054
764.	0.641	2074.	0.951	3384.	0.054
765.	0.633	2075.	0.974	3385.	0.054
766.	0.634	2076.	1.007	3386.	0.054
767.	0.639	2077.	1.038	3387.	0.054
768.	0.639	2078.	0.987	3388.	0.054
769.	0.635	2079.	0.896	3389.	0.054
770.	0.632	2080.	0.857	3390.	0.054
771.	0.631	2081.	0.838	3391.	0.053
772.	0.635	2082.	0.847	3392.	0.053
773.	0.634	2083.	0.86	3393.	0.053
774.	0.631	2084.	0.886	3394.	0.053
775.	0.636	2085.	0.917	3395.	0.053
776.	0.631	2086.	0.949	3396.	0.053
777.	0.636	2087.	0.985	3397.	0.053
778.	0.64	2088.	1.019	3398.	0.053
779.	0.635	2089.	1.035	3399.	0.053
780.	0.64	2090.	0.976	3400.	0.053
781.	0.638	2091.	0.937	3401.	0.053
782.	0.64	2092.	0.927	3402.	0.053
783.	0.64	2093.	0.934	3403.	0.053
784.	0.637	2094.	0.961	3404.	0.053
785.	0.642	2095.	0.994	3405.	0.053
786.	0.644	2096.	1.026	3406.	0.053
787.	0.643	2097.	1.028	3407.	0.053
788.	0.646	2098.	0.967	3408.	0.053
789.	0.647	2099.	0.932	3409.	0.053
790.	0.644	2100.	0.931	3410.	0.053
791.	0.646	2101.	0.945	3411.	0.054
792.	0.649	2102.	0.974	3412.	0.055
793.	0.652	2103.	1.008	3413.	0.053
794.	0.648	2104.	1.034	3414.	0.053
795.	0.647	2105.	1.027	3415.	0.053
796.	0.65	2106.	1.011	3416.	0.053
797.	0.654	2107.	1.022	3417.	0.053
798.	0.652	2108.	1.037	3418.	0.053

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
799.	0.647	2109.	0.989	3419.	0.053
800.	0.653	2110.	0.931	3420.	0.053
801.	0.649	2111.	0.921	3421.	0.053
802.	0.649	2112.	0.919	3422.	0.053
803.	0.648	2113.	0.952	3423.	0.053
804.	0.64	2114.	0.982	3424.	0.053
805.	0.643	2115.	0.804	3425.	0.053
806.	0.647	2116.	0.639	3426.	0.053
807.	0.642	2117.	0.52	3427.	0.052
808.	0.641	2118.	0.463	3428.	0.053
809.	0.644	2119.	0.394	3429.	0.053
810.	0.64	2120.	0.338	3430.	0.053
811.	0.639	2121.	0.287	3431.	0.053
812.	0.643	2122.	0.24	3432.	0.052
813.	0.641	2123.	0.188	3433.	0.053
814.	0.642	2124.	0.143	3434.	0.052
815.	0.644	2125.	0.115	3435.	0.052
816.	0.639	2126.	0.089	3436.	0.052
817.	0.639	2127.	0.074	3437.	0.052
818.	0.644	2128.	0.065	3438.	0.052
819.	0.64	2129.	0.063	3439.	0.052
820.	0.642	2130.	0.065	3440.	0.052
821.	0.641	2131.	0.073	3441.	0.052
822.	0.644	2132.	0.086	3442.	0.052
823.	0.643	2133.	0.099	3443.	0.052
824.	0.643	2134.	0.111	3444.	0.052
825.	0.641	2135.	0.121	3445.	0.052
826.	0.646	2136.	0.129	3446.	0.052
827.	0.643	2137.	0.136	3447.	0.052
828.	0.638	2138.	0.143	3448.	0.052
829.	0.645	2139.	0.149	3449.	0.052
830.	0.646	2140.	0.154	3450.	0.052
831.	0.647	2141.	0.158	3451.	0.052
832.	0.643	2142.	0.163	3452.	0.052
833.	0.645	2143.	0.166	3453.	0.052
834.	0.646	2144.	0.169	3454.	0.051
835.	0.648	2145.	0.172	3455.	0.052
836.	0.649	2146.	0.175	3456.	0.052
837.	0.644	2147.	0.177	3457.	0.052
838.	0.64	2148.	0.179	3458.	0.052
839.	0.642	2149.	0.181	3459.	0.052
840.	0.641	2150.	0.182	3460.	0.052
841.	0.645	2151.	0.183	3461.	0.052
842.	0.645	2152.	0.184	3462.	0.052
843.	0.644	2153.	0.185	3463.	0.052
844.	0.636	2154.	0.186	3464.	0.052
845.	0.641	2155.	0.187	3465.	0.051
846.	0.646	2156.	0.187	3466.	0.051
847.	0.64	2157.	0.188	3467.	0.051
848.	0.643	2158.	0.187	3468.	0.052
849.	0.645	2159.	0.188	3469.	0.051
850.	0.647	2160.	0.187	3470.	0.051
851.	0.648	2161.	0.187	3471.	0.051
852.	0.649	2162.	0.187	3472.	0.051
853.	0.646	2163.	0.187	3473.	0.051
854.	0.642	2164.	0.187	3474.	0.051
855.	0.642	2165.	0.187	3475.	0.051

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
856.	0.642	2166.	0.186	3476.	0.051
857.	0.641	2167.	0.186	3477.	0.051
858.	0.644	2168.	0.186	3478.	0.051
859.	0.648	2169.	0.185	3479.	0.051
860.	0.648	2170.	0.185	3480.	0.051
861.	0.64	2171.	0.184	3481.	0.051
862.	0.647	2172.	0.184	3482.	0.051
863.	0.645	2173.	0.183	3483.	0.051
864.	0.649	2174.	0.183	3484.	0.051
865.	0.647	2175.	0.183	3485.	0.051
866.	0.643	2176.	0.182	3486.	0.051
867.	0.651	2177.	0.181	3487.	0.051
868.	0.646	2178.	0.18	3488.	0.051
869.	0.643	2179.	0.18	3489.	0.051
870.	0.65	2180.	0.18	3490.	0.051
871.	0.648	2181.	0.179	3491.	0.051
872.	0.642	2182.	0.178	3492.	0.051
873.	0.643	2183.	0.178	3493.	0.051
874.	0.647	2184.	0.178	3494.	0.051
875.	0.642	2185.	0.177	3495.	0.051
876.	0.645	2186.	0.177	3496.	0.051
877.	0.644	2187.	0.177	3497.	0.051
878.	0.646	2188.	0.176	3498.	0.051
879.	0.639	2189.	0.175	3499.	0.051
880.	0.643	2190.	0.175	3500.	0.051
881.	0.644	2191.	0.174	3501.	0.051
882.	0.643	2192.	0.174	3502.	0.051
883.	0.638	2193.	0.173	3503.	0.05
884.	0.644	2194.	0.173	3504.	0.05
885.	0.642	2195.	0.172	3505.	0.05
886.	0.641	2196.	0.172	3506.	0.05
887.	0.647	2197.	0.172	3507.	0.05
888.	0.641	2198.	0.171	3508.	0.05
889.	0.642	2199.	0.171	3509.	0.051
890.	0.646	2200.	0.17	3510.	0.051
891.	0.64	2201.	0.17	3511.	0.051
892.	0.64	2202.	0.169	3512.	0.051
893.	0.642	2203.	0.169	3513.	0.051
894.	0.645	2204.	0.169	3514.	0.051
895.	0.644	2205.	0.168	3515.	0.051
896.	0.646	2206.	0.168	3516.	0.05
897.	0.641	2207.	0.167	3517.	0.05
898.	0.643	2208.	0.167	3518.	0.05
899.	0.642	2209.	0.166	3519.	0.05
900.	0.644	2210.	0.166	3520.	0.05
901.	0.641	2211.	0.166	3521.	0.05
902.	0.641	2212.	0.165	3522.	0.05
903.	0.642	2213.	0.165	3523.	0.05
904.	0.644	2214.	0.164	3524.	0.05
905.	0.645	2215.	0.164	3525.	0.05
906.	0.641	2216.	0.163	3526.	0.05
907.	0.641	2217.	0.163	3527.	0.05
908.	0.639	2218.	0.163	3528.	0.049
909.	0.643	2219.	0.162	3529.	0.05
910.	0.644	2220.	0.162	3530.	0.05
911.	0.644	2221.	0.161	3531.	0.05
912.	0.641	2222.	0.161	3532.	0.049

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
913.	0.641	2223.	0.161	3533.	0.05
914.	0.642	2224.	0.16	3534.	0.05
915.	0.642	2225.	0.16	3535.	0.05
916.	0.636	2226.	0.159	3536.	0.05
917.	0.645	2227.	0.159	3537.	0.049
918.	0.639	2228.	0.159	3538.	0.049
919.	0.638	2229.	0.159	3539.	0.049
920.	0.637	2230.	0.158	3540.	0.05
921.	0.64	2231.	0.158	3541.	0.049
922.	0.64	2232.	0.157	3542.	0.049
923.	0.64	2233.	0.157	3543.	0.049
924.	0.644	2234.	0.156	3544.	0.049
925.	0.638	2235.	0.156	3545.	0.049
926.	0.642	2236.	0.156	3546.	0.049
927.	0.642	2237.	0.155	3547.	0.05
928.	0.639	2238.	0.155	3548.	0.049
929.	0.639	2239.	0.155	3549.	0.049
930.	0.638	2240.	0.154	3550.	0.049
931.	0.641	2241.	0.154	3551.	0.049
932.	0.64	2242.	0.154	3552.	0.049
933.	0.642	2243.	0.154	3553.	0.049
934.	0.644	2244.	0.153	3554.	0.049
935.	0.642	2245.	0.153	3555.	0.049
936.	0.639	2246.	0.152	3556.	0.049
937.	0.64	2247.	0.152	3557.	0.049
938.	0.64	2248.	0.152	3558.	0.05
939.	0.645	2249.	0.151	3559.	0.049
940.	0.639	2250.	0.151	3560.	0.049
941.	0.642	2251.	0.151	3561.	0.049
942.	0.641	2252.	0.15	3562.	0.049
943.	0.644	2253.	0.15	3563.	0.049
944.	0.644	2254.	0.15	3564.	0.049
945.	0.646	2255.	0.149	3565.	0.049
946.	0.643	2256.	0.149	3566.	0.049
947.	0.647	2257.	0.149	3567.	0.049
948.	0.643	2258.	0.148	3568.	0.049
949.	0.642	2259.	0.148	3569.	0.049
950.	0.643	2260.	0.148	3570.	0.049
951.	0.642	2261.	0.147	3571.	0.049
952.	0.642	2262.	0.147	3572.	0.049
953.	0.645	2263.	0.147	3573.	0.049
954.	0.645	2264.	0.147	3574.	0.049
955.	0.64	2265.	0.146	3575.	0.048
956.	0.643	2266.	0.146	3576.	0.049
957.	0.641	2267.	0.146	3577.	0.049
958.	0.636	2268.	0.145	3578.	0.049
959.	0.642	2269.	0.145	3579.	0.049
960.	0.644	2270.	0.145	3580.	0.049
961.	0.641	2271.	0.145	3581.	0.049
962.	0.638	2272.	0.144	3582.	0.049
963.	0.639	2273.	0.144	3583.	0.049
964.	0.637	2274.	0.144	3584.	0.049
965.	0.639	2275.	0.143	3585.	0.049
966.	0.639	2276.	0.143	3586.	0.049
967.	0.636	2277.	0.143	3587.	0.049
968.	0.639	2278.	0.142	3588.	0.049
969.	0.635	2279.	0.142	3589.	0.049

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
970.	0.641	2280.	0.142	3590.	0.049
971.	0.639	2281.	0.142	3591.	0.049
972.	0.643	2282.	0.141	3592.	0.049
973.	0.638	2283.	0.141	3593.	0.049
974.	0.638	2284.	0.141	3594.	0.049
975.	0.636	2285.	0.141	3595.	0.049
976.	0.643	2286.	0.141	3596.	0.049
977.	0.641	2287.	0.14	3597.	0.049
978.	0.639	2288.	0.14	3598.	0.049
979.	0.64	2289.	0.14	3599.	0.049
980.	0.638	2290.	0.139	3600.	0.049
981.	0.643	2291.	0.139	3601.	0.049
982.	0.646	2292.	0.139	3602.	0.049
983.	0.645	2293.	0.138	3603.	0.048
984.	0.645	2294.	0.138	3604.	0.048
985.	0.65	2295.	0.138	3605.	0.048
986.	0.649	2296.	0.138	3606.	0.048
987.	0.652	2297.	0.138	3607.	0.048
988.	0.653	2298.	0.138	3608.	0.048
989.	0.656	2299.	0.137	3609.	0.048
990.	0.654	2300.	0.137	3610.	0.048
991.	0.65	2301.	0.136	3611.	0.048
992.	0.655	2302.	0.137	3612.	0.048
993.	0.651	2303.	0.136	3613.	0.048
994.	0.658	2304.	0.136	3614.	0.048
995.	0.653	2305.	0.136	3615.	0.048
996.	0.657	2306.	0.135	3616.	0.048
997.	0.658	2307.	0.135	3617.	0.048
998.	0.655	2308.	0.135	3618.	0.048
999.	0.657	2309.	0.134	3619.	0.048
1000.	0.657	2310.	0.134	3620.	0.048
1001.	0.656	2311.	0.134	3621.	0.048
1002.	0.658	2312.	0.134	3622.	0.048
1003.	0.658	2313.	0.134	3623.	0.048
1004.	0.66	2314.	0.133	3624.	0.048
1005.	0.66	2315.	0.133	3625.	0.048
1006.	0.658	2316.	0.133	3626.	0.048
1007.	0.66	2317.	0.133	3627.	0.048
1008.	0.662	2318.	0.133	3628.	0.048
1009.	0.66	2319.	0.132	3629.	0.048
1010.	0.66	2320.	0.132	3630.	0.048
1011.	0.655	2321.	0.132	3631.	0.048
1012.	0.661	2322.	0.132	3632.	0.048
1013.	0.659	2323.	0.132	3633.	0.048
1014.	0.659	2324.	0.131	3634.	0.048
1015.	0.66	2325.	0.131	3635.	0.048
1016.	0.656	2326.	0.131	3636.	0.047
1017.	0.659	2327.	0.13	3637.	0.048
1018.	0.661	2328.	0.13	3638.	0.048
1019.	0.656	2329.	0.13	3639.	0.048
1020.	0.658	2330.	0.13	3640.	0.048
1021.	0.658	2331.	0.13	3641.	0.048
1022.	0.656	2332.	0.129	3642.	0.047
1023.	0.658	2333.	0.129	3643.	0.048
1024.	0.653	2334.	0.129	3644.	0.047
1025.	0.658	2335.	0.129	3645.	0.047
1026.	0.656	2336.	0.128	3646.	0.047

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1027.	0.656	2337.	0.128	3647.	0.047
1028.	0.657	2338.	0.128	3648.	0.047
1029.	0.658	2339.	0.128	3649.	0.047
1030.	0.657	2340.	0.127	3650.	0.047
1031.	0.654	2341.	0.127	3651.	0.047
1032.	0.663	2342.	0.127	3652.	0.047
1033.	0.654	2343.	0.127	3653.	0.047
1034.	0.659	2344.	0.127	3654.	0.047
1035.	0.659	2345.	0.127	3655.	0.047
1036.	0.656	2346.	0.126	3656.	0.047
1037.	0.662	2347.	0.126	3657.	0.047
1038.	0.659	2348.	0.126	3658.	0.047
1039.	0.658	2349.	0.126	3659.	0.047
1040.	0.658	2350.	0.125	3660.	0.047
1041.	0.655	2351.	0.125	3661.	0.047
1042.	0.658	2352.	0.125	3662.	0.047
1043.	0.658	2353.	0.125	3663.	0.047
1044.	0.654	2354.	0.125	3664.	0.047
1045.	0.658	2355.	0.124	3665.	0.047
1046.	0.658	2356.	0.125	3666.	0.047
1047.	0.657	2357.	0.124	3667.	0.047
1048.	0.659	2358.	0.124	3668.	0.047
1049.	0.653	2359.	0.124	3669.	0.047
1050.	0.656	2360.	0.124	3670.	0.047
1051.	0.654	2361.	0.124	3671.	0.047
1052.	0.653	2362.	0.123	3672.	0.047
1053.	0.657	2363.	0.123	3673.	0.047
1054.	0.656	2364.	0.123	3674.	0.047
1055.	0.659	2365.	0.123	3675.	0.047
1056.	0.659	2366.	0.123	3676.	0.047
1057.	0.66	2367.	0.123	3677.	0.047
1058.	0.656	2368.	0.123	3678.	0.047
1059.	0.662	2369.	0.123	3679.	0.047
1060.	0.659	2370.	0.122	3680.	0.047
1061.	0.659	2371.	0.122	3681.	0.047
1062.	0.656	2372.	0.122	3682.	0.047
1063.	0.652	2373.	0.122	3683.	0.047
1064.	0.664	2374.	0.121	3684.	0.047
1065.	0.656	2375.	0.121	3685.	0.047
1066.	0.657	2376.	0.121	3686.	0.047
1067.	0.655	2377.	0.121	3687.	0.047
1068.	0.654	2378.	0.12	3688.	0.047
1069.	0.658	2379.	0.12	3689.	0.047
1070.	0.655	2380.	0.12	3690.	0.046
1071.	0.661	2381.	0.12	3691.	0.047
1072.	0.659	2382.	0.12	3692.	0.046
1073.	0.661	2383.	0.12	3693.	0.047
1074.	0.66	2384.	0.12	3694.	0.046
1075.	0.66	2385.	0.12	3695.	0.046
1076.	0.655	2386.	0.119	3696.	0.046
1077.	0.662	2387.	0.119	3697.	0.046
1078.	0.658	2388.	0.119	3698.	0.046
1079.	0.657	2389.	0.119	3699.	0.046
1080.	0.659	2390.	0.119	3700.	0.046
1081.	0.659	2391.	0.118	3701.	0.046
1082.	0.656	2392.	0.118	3702.	0.046
1083.	0.661	2393.	0.118	3703.	0.046

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1084.	0.656	2394.	0.118	3704.	0.046
1085.	0.659	2395.	0.118	3705.	0.046
1086.	0.665	2396.	0.118	3706.	0.046
1087.	0.66	2397.	0.117	3707.	0.046
1088.	0.656	2398.	0.117	3708.	0.046
1089.	0.661	2399.	0.117	3709.	0.046
1090.	0.658	2400.	0.117	3710.	0.046
1091.	0.657	2401.	0.117	3711.	0.046
1092.	0.658	2402.	0.117	3712.	0.046
1093.	0.657	2403.	0.117	3713.	0.046
1094.	0.659	2404.	0.116	3714.	0.046
1095.	0.661	2405.	0.116	3715.	0.046
1096.	0.656	2406.	0.116	3716.	0.046
1097.	0.657	2407.	0.116	3717.	0.046
1098.	0.655	2408.	0.116	3718.	0.046
1099.	0.655	2409.	0.116	3719.	0.046
1100.	0.656	2410.	0.115	3720.	0.046
1101.	0.656	2411.	0.115	3721.	0.046
1102.	0.654	2412.	0.115	3722.	0.046
1103.	0.657	2413.	0.115	3723.	0.046
1104.	0.655	2414.	0.115	3724.	0.046
1105.	0.653	2415.	0.114	3725.	0.046
1106.	0.655	2416.	0.114	3726.	0.046
1107.	0.658	2417.	0.114	3727.	0.046
1108.	0.657	2418.	0.114	3728.	0.046
1109.	0.66	2419.	0.114	3729.	0.046
1110.	0.654	2420.	0.114	3730.	0.046
1111.	0.655	2421.	0.113	3731.	0.046
1112.	0.656	2422.	0.113	3732.	0.046
1113.	0.659	2423.	0.113	3733.	0.046
1114.	0.657	2424.	0.113	3734.	0.046
1115.	0.657	2425.	0.113	3735.	0.046
1116.	0.656	2426.	0.113	3736.	0.046
1117.	0.655	2427.	0.113	3737.	0.046
1118.	0.66	2428.	0.112	3738.	0.046
1119.	0.66	2429.	0.112	3739.	0.046
1120.	0.659	2430.	0.112	3740.	0.046
1121.	0.657	2431.	0.112	3741.	0.046
1122.	0.66	2432.	0.112	3742.	0.046
1123.	0.663	2433.	0.111	3743.	0.045
1124.	0.656	2434.	0.111	3744.	0.045
1125.	0.659	2435.	0.111	3745.	0.045
1126.	0.657	2436.	0.111	3746.	0.046
1127.	0.66	2437.	0.111	3747.	0.046
1128.	0.659	2438.	0.111	3748.	0.046
1129.	0.659	2439.	0.111	3749.	0.045
1130.	0.656	2440.	0.111	3750.	0.045
1131.	0.661	2441.	0.111	3751.	0.046
1132.	0.658	2442.	0.11	3752.	0.045
1133.	0.662	2443.	0.11	3753.	0.045
1134.	0.657	2444.	0.11	3754.	0.045
1135.	0.664	2445.	0.109	3755.	0.045
1136.	0.659	2446.	0.11	3756.	0.045
1137.	0.662	2447.	0.11	3757.	0.045
1138.	0.661	2448.	0.11	3758.	0.045
1139.	0.655	2449.	0.109	3759.	0.045
1140.	0.66	2450.	0.109	3760.	0.045

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1141.	0.663	2451.	0.109	3761.	0.045
1142.	0.655	2452.	0.109	3762.	0.045
1143.	0.662	2453.	0.108	3763.	0.045
1144.	0.661	2454.	0.108	3764.	0.045
1145.	0.658	2455.	0.108	3765.	0.045
1146.	0.662	2456.	0.108	3766.	0.045
1147.	0.658	2457.	0.107	3767.	0.046
1148.	0.66	2458.	0.107	3768.	0.045
1149.	0.661	2459.	0.107	3769.	0.045
1150.	0.658	2460.	0.107	3770.	0.045
1151.	0.66	2461.	0.107	3771.	0.045
1152.	0.657	2462.	0.107	3772.	0.045
1153.	0.659	2463.	0.107	3773.	0.045
1154.	0.655	2464.	0.106	3774.	0.045
1155.	0.658	2465.	0.106	3775.	0.045
1156.	0.66	2466.	0.106	3776.	0.045
1157.	0.663	2467.	0.106	3777.	0.045
1158.	0.656	2468.	0.106	3778.	0.045
1159.	0.657	2469.	0.106	3779.	0.045
1160.	0.66	2470.	0.106	3780.	0.045
1161.	0.66	2471.	0.106	3781.	0.045
1162.	0.659	2472.	0.106	3782.	0.045
1163.	0.658	2473.	0.106	3783.	0.045
1164.	0.656	2474.	0.106	3784.	0.045
1165.	0.663	2475.	0.106	3785.	0.045
1166.	0.664	2476.	0.106	3786.	0.045
1167.	0.661	2477.	0.105	3787.	0.045
1168.	0.666	2478.	0.106	3788.	0.045
1169.	0.667	2479.	0.105	3789.	0.045
1170.	0.667	2480.	0.105	3790.	0.045
1171.	0.673	2481.	0.105	3791.	0.045
1172.	0.67	2482.	0.105	3792.	0.045
1173.	0.671	2483.	0.105	3793.	0.045
1174.	0.673	2484.	0.105	3794.	0.045
1175.	0.673	2485.	0.105	3795.	0.045
1176.	0.672	2486.	0.105	3796.	0.045
1177.	0.675	2487.	0.105	3797.	0.045
1178.	0.674	2488.	0.104	3798.	0.045
1179.	0.669	2489.	0.104	3799.	0.045
1180.	0.676	2490.	0.104	3800.	0.045
1181.	0.676	2491.	0.104	3801.	0.044
1182.	0.679	2492.	0.103	3802.	0.045
1183.	0.683	2493.	0.103	3803.	0.045
1184.	0.679	2494.	0.103	3804.	0.045
1185.	0.682	2495.	0.103	3805.	0.045
1186.	0.679	2496.	0.104	3806.	0.044
1187.	0.679	2497.	0.103	3807.	0.045
1188.	0.679	2498.	0.104	3808.	0.044
1189.	0.682	2499.	0.103	3809.	0.044
1190.	0.679	2500.	0.103	3810.	0.044
1191.	0.675	2501.	0.103	3811.	0.044
1192.	0.68	2502.	0.103	3812.	0.044
1193.	0.685	2503.	0.102	3813.	0.044
1194.	0.677	2504.	0.103	3814.	0.044
1195.	0.681	2505.	0.102	3815.	0.044
1196.	0.679	2506.	0.102	3816.	0.044
1197.	0.683	2507.	0.102	3817.	0.045

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1198.	0.682	2508.	0.102	3818.	0.044
1199.	0.68	2509.	0.102	3819.	0.045
1200.	0.679	2510.	0.102	3820.	0.045
1201.	0.681	2511.	0.102	3821.	0.045
1202.	0.679	2512.	0.102	3822.	0.045
1203.	0.679	2513.	0.101	3823.	0.045
1204.	0.679	2514.	0.101	3824.	0.045
1205.	0.677	2515.	0.101	3825.	0.045
1206.	0.68	2516.	0.101	3826.	0.045
1207.	0.677	2517.	0.101	3827.	0.045
1208.	0.68	2518.	0.101	3828.	0.045
1209.	0.678	2519.	0.101	3829.	0.044
1210.	0.682	2520.	0.101	3830.	0.044
1211.	0.676	2521.	0.101	3831.	0.045
1212.	0.683	2522.	0.1	3832.	0.044
1213.	0.682	2523.	0.1	3833.	0.044
1214.	0.681	2524.	0.1	3834.	0.044
1215.	0.68	2525.	0.1	3835.	0.044
1216.	0.683	2526.	0.1	3836.	0.045
1217.	0.683	2527.	0.099	3837.	0.044
1218.	0.682	2528.	0.099	3838.	0.044
1219.	0.683	2529.	0.099	3839.	0.044
1220.	0.68	2530.	0.099	3840.	0.044
1221.	0.68	2531.	0.099	3841.	0.045
1222.	0.682	2532.	0.099	3842.	0.044
1223.	0.681	2533.	0.099	3843.	0.044
1224.	0.686	2534.	0.099	3844.	0.044
1225.	0.681	2535.	0.098	3845.	0.044
1226.	0.683	2536.	0.098	3846.	0.044
1227.	0.684	2537.	0.098	3847.	0.044
1228.	0.683	2538.	0.098	3848.	0.044
1229.	0.684	2539.	0.098	3849.	0.044
1230.	0.684	2540.	0.098	3850.	0.044
1231.	0.685	2541.	0.098	3851.	0.044
1232.	0.684	2542.	0.097	3852.	0.044
1233.	0.689	2543.	0.097	3853.	0.044
1234.	0.687	2544.	0.097	3854.	0.044
1235.	0.684	2545.	0.097	3855.	0.044
1236.	0.687	2546.	0.097	3856.	0.044
1237.	0.681	2547.	0.097	3857.	0.044
1238.	0.688	2548.	0.097	3858.	0.044
1239.	0.687	2549.	0.097	3859.	0.044
1240.	0.684	2550.	0.097	3860.	0.044
1241.	0.688	2551.	0.097	3861.	0.044
1242.	0.684	2552.	0.097	3862.	0.044
1243.	0.689	2553.	0.097	3863.	0.044
1244.	0.684	2554.	0.096	3864.	0.044
1245.	0.693	2555.	0.096	3865.	0.044
1246.	0.685	2556.	0.096	3866.	0.044
1247.	0.685	2557.	0.096	3867.	0.044
1248.	0.69	2558.	0.096	3868.	0.043
1249.	0.687	2559.	0.096	3869.	0.044
1250.	0.686	2560.	0.096	3870.	0.044
1251.	0.683	2561.	0.096	3871.	0.044
1252.	0.685	2562.	0.096	3872.	0.044
1253.	0.684	2563.	0.096	3873.	0.044
1254.	0.687	2564.	0.095	3874.	0.044

Time (sec)	Displacement (m)	Time (sec)	Displacement (m)	Time (sec)	Displacement (m)
1255.	0.691	2565.	0.095	3875.	0.043
1256.	0.683	2566.	0.095	3876.	0.043
1257.	0.688	2567.	0.095	3877.	0.043
1258.	0.687	2568.	0.095	3878.	0.043
1259.	0.686	2569.	0.095	3879.	0.043
1260.	0.687	2570.	0.095	3880.	0.043
1261.	0.687	2571.	0.095	3881.	0.043
1262.	0.689	2572.	0.095	3882.	0.043
1263.	0.682	2573.	0.094	3883.	0.043
1264.	0.685	2574.	0.094	3884.	0.043
1265.	0.687	2575.	0.095	3885.	0.043
1266.	0.685	2576.	0.095	3886.	0.043
1267.	0.681	2577.	0.095	3887.	0.043
1268.	0.682	2578.	0.095	3888.	0.043
1269.	0.683	2579.	0.095	3889.	0.043
1270.	0.686	2580.	0.094	3890.	0.043
1271.	0.681	2581.	0.094	3891.	0.043
1272.	0.686	2582.	0.094	3892.	0.043
1273.	0.687	2583.	0.094	3893.	0.043
1274.	0.682	2584.	0.094	3894.	0.043
1275.	0.683	2585.	0.094	3895.	0.043
1276.	0.685	2586.	0.094	3896.	0.043
1277.	0.686	2587.	0.094	3897.	0.043
1278.	0.683	2588.	0.094	3898.	0.043
1279.	0.683	2589.	0.093	3899.	0.043
1280.	0.683	2590.	0.093	3900.	0.043
1281.	0.68	2591.	0.093	3901.	0.043
1282.	0.68	2592.	0.093	3902.	0.043
1283.	0.679	2593.	0.093	3903.	0.043
1284.	0.685	2594.	0.093	3904.	0.043
1285.	0.684	2595.	0.093	3905.	0.043
1286.	0.685	2596.	0.093	3906.	0.043
1287.	0.684	2597.	0.093	3907.	0.043
1288.	0.682	2598.	0.092	3908.	0.043
1289.	0.684	2599.	0.092	3909.	0.043
1290.	0.682	2600.	0.092	3910.	0.043
1291.	0.688	2601.	0.092	3911.	0.043
1292.	0.684	2602.	0.092	3912.	0.044
1293.	0.69	2603.	0.092	3913.	0.044
1294.	0.688	2604.	0.092	3914.	0.044
1295.	0.684	2605.	0.092	3915.	0.043
1296.	0.683	2606.	0.091	3916.	0.043
1297.	0.683	2607.	0.091	3917.	0.043
1298.	0.689	2608.	0.091	3918.	0.043
1299.	0.685	2609.	0.091	3919.	0.043
1300.	0.685	2610.	0.091	3920.	0.043
1301.	0.683	2611.	0.091	3921.	0.043
1302.	0.682	2612.	0.091	3922.	0.043
1303.	0.686	2613.	0.091	3923.	0.043
1304.	0.685	2614.	0.091	3924.	0.043
1305.	0.685	2615.	0.091	3925.	0.043
1306.	0.683	2616.	0.09	3926.	0.043
1307.	0.684	2617.	0.09	3927.	0.043
1308.	0.683	2618.	0.09	3928.	0.043
1309.	0.681	2619.	0.09	3929.	0.043
1310.	0.686	2620.	0.09	3930.	0.042

SOLUTION

Pumping Test
Aquifer Model: Unconfined
Solution Method: Theis

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.0005009	m^2/sec
S	1.253	
Kz/Kr	1.	
b	9.1	m

K = T/b = 5.504E-5 m/sec (0.005504 cm/sec)
Ss = S/b = 0.1377 1/m

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
T	0.0004362	2.906E-6	+/- 5.696E-6	150.1	m^2/sec
S	3.005	0.09918	+/- 0.1944	30.3	
Kz/Kr	1.	not estimated			
b	9.1	not estimated			m

C.I. is approximate 95% confidence interval for parameter
t-ratio = estimate/std. error
No estimation window

K = T/b = 4.794E-5 m/sec (0.004794 cm/sec)
Ss = S/b = 0.3303 1/m

Parameter Correlations

	T	S
T	1.00	-0.84
S	-0.84	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . . 36.61 m^2
Variance . . . . . 0.009319 m^2
Std. Deviation . . . . . 0.09654 m
Mean . . . . . -0.01151 m
No. of Residuals . . 3930
No. of Estimates . . 2

Appendix D
Groundwater Sampling Results and Certificates of Analysis

ENGLOBE

Table D-1 - Groundwater Sampling Results - Hydrogeological Assessment

Parameter	Standards		Analytical Results (Sample ID / Sampling Date DD/MM/YYYY)
	Bylaw 2003-514 (Sanitary and Combined) Table 1	Bylaw 2003-514 (Storm Sewer Discharge) Table 2	MW23-02 09/13/2023
Calculated Parameters			
Oil & Grease . Animal & Vegetable	150000	NG	<500
Total PAHs	15	6	<0.96
Inorganics			
Biochemical Oxygen Demand	300000	25000	NM
Fluoride	10000	NG	300
Total Kjeldahl Nitrogen	100000	NG	150
pH	5.5 - 11	6-9	7.78
Phenolics (4AAP)	1000	8	<1
Total Suspended Solids	350000	15000	<10000
Sulphates	1500000	NG	130000
Sulphides	2000	NG	<20
Cyanide (total)	2000	20	<5
Metals			
Aluminum (total)	50000	NG	16
Antimony (total)	5000	NG	<0.50
Arsenic (total)	1000	20	<1.0
Bismuth (total)	5000	NG	<1.0
Boron (total)	25000	NG	200
Cadmium (total)	20	8	<0.090
Chromium (total)	5000	80	<5.0
Cobalt (total)	5000	NG	1.2
Copper (total)	3000	40	3.4
Lead (total)	5000	120	<0.50
Manganese (total)	5000	50	18
Mercury (total)	1	0.4	<0.1
Molybdenum (total)	5000	NG	1.7
Nickel (total)	3000	80	3.0
Phosphorous (total)	10000	400	<100
Selenium (total)	5000	20	<2.0
Silver (total)	5000	120	<0.090
Tin (total)	5000	NG	<1.0
Titanium (total)	5000	NG	<5.0
Vanadium	5000	NG	<0.50
Zinc (total)	3000	40	6.5
Miscellaneous Parameters			
Formaldehyde	300	NG	NA
Nonylphenol ethoxylates	25	10	NA
Nonylphenols	2.5	1	NA
Temperature	60 °C	40 °C	NA
Petroleum Hydrocarbons			
Oil & Grease . Mineral & Synthetic	15000	NG	<500
F1 (C6-C10)	NG	NG	NA
F2 (C10-C16 Hydrocarbons)	NG	NG	NA
F3 (C16-C34 Hydrocarbons)	NG	NG	NA
F4 (C34-C50 Hydrocarbons)	NG	NG	NA
Pesticides & Herbicides			
Hexachlorobenzene	0.1	0.04	<0.005
Polychlorinated Biphenyls			
Dioxins and Furans (total)	0.72	NG	NA
PCBs (total)	NG	0.4	<0.05
Semi Volatile Organics			
1-Methylnaphthalene	32	NG	<0.3
2-Methylnaphthalene	22	NG	<0.3
Bis(2-chloroethoxy)methane	36	NG	<0.50
Bis(2-ethylehexyl)phthalate	280	NG	<2
Benzylbutylphthalate	17	NG	<0.50
Diethylphthalate	200	NG	<1.0
Di-n-butylphthalate	57	NG	<2
Di-n-octylphthalate	30	NG	<1.0
2,4-Dichlorophenol	44	NG	<0.30
Fluorene	59	NG	<0.3
Indole	50	NG	<1.0
Naphthalene	59	6.4	<0.3
N-Nitrosodimethylamine	400	NG	NA

Table D-1 - Groundwater Sampling Results - Hydrogeological Assessment

Parameter	Standards		Analytical Results (Sample ID / Sampling Date DD/MM/YYYY)
	Bylaw 2003-514 (Sanitary and Combined) Table 1	Bylaw 2003-514 (Storm Sewer Discharge) Table 2	MW23-02 09/13/2023
Volatile Organics			
Benzene	10	2	<0.20
Bromodichloromethane	350	NG	<0.50
Bromoform	630	NG	<1.0
Bromomethane	110	NG	<0.50
Carbon Tetrachloride	57	NG	<0.19
Chlorobenzene	57	NG	<0.20
Chloroethane	270	NG	<1.0
Chloroform	80	2	0.82
Chloromethane	190	NG	<5.0
Dibromochloromethane	57	NG	<0.50
1,2.Dichlorobenzene / o	88	5.6	<0.40
1,3.Dichlorobenzene / m	36	NG	<0.40
1,4-Dichlorobenzene / p	17	6.8	<0.40
1,1-Dichloroethane	200	NG	<0.20
1,2-Dichloroethane	210	NG	<0.49
1,1-Dichloroethylene	40	NG	<0.20
cis-1,2-dichloroethylene	200	5.6	16
trans-1,2-dichloroethylene	200	NG	1.7
1, 2-Dichloropropane	850	NG	<0.20
1,2 Dibromoethane (Ethylene dibromide)	28	NG	<0.30
cis-1,3-Dichloropropylene	70	NG	<0.40
trans-1,3-Dichloropropylene	70	5.6	<0.20
Ethylbenzene	57	2	<0.19
Methylene Chloride	211	5.2	<2.0
Styrene	40	NG	<0.40
1,1,2,2-Tetrachloroethane	40	17	<0.40
Tetrachloroethylene	50	4.4	**720**
Toluene	80	2	<0.20
1,1,1-Trichloroethane	54	NG	<0.20
1,1,2-Trichloroethane	800	NG	<0.20
Trichloroethylene	54	7.6	<0.40
Trichlorofluoromethane	20	NG	**44**
1,3,5-Trimethylbenzene	3	NG	<0.50
Vinyl Chloride	400	NG	0.96
Xylene (total)	320	4.4	<0.20

Notes:	All units are expressed in micrograms per litre (µg/L).
MECP Table 9	Ontario Ministry of the Environment, Conservation and Parks (MECP), "Soil,
Bylaw 2003-514 Table 1	City of Ottawa Sewer Use (By-law No. 2003-514), Schedule "A" Table 1.
Bylaw 2003-514 Table 2	City of Ottawa Sewer Use (By-law No. 2003-514), Schedule "A"Table 2.
NA	Parameter not analysed.
<Value	Less than laboratory reportable dection limit (value indicated).
NG	No guideline/standard available.
Value	Sample result exceeds Bylaw 2003-514 Table 1 standards.
Value	Sample result exceeds Bylaw 2003-514 Table 2 standards.

Hydrogeologixal Assessment
424 Churchill Avenue North
Ottawa, Ontario
Englobe File No.: 02103035.000

Table D-2 Groundwater Sampling Results - Phase II Environmental Site Assessment Data

Sample ID	MECP Table 7 SCS	Units	MW21-01	MW21-02	MW21-03	MW21-03	F. BLANK	T. BLANK	MW23-01	MW23-11 (DUP OF MW23-01)	MW23-02	MW23-20 (DUP OF MW23-02)	MW23-02 (2)	MW23-02	MW23-03	MW23-03	T.BLANK	F.BLANK	MW23-04	F. BLANK	T. BLANK
Sample Date (yyyy-mm-dd)			2021-04-30	2021-04-30	2021-04-30	2023-08-15	2023-08-15	2023-08-15	2023-08-28	2023-08-28	2023-08-28	2023-08-28	2023-09-13	2023-11-29	2023-08-14	2023-08-28	2023-08-28	2023-08-28	2023-08-14	2023-08-14	2023-08-14
Inorganics																					
Dissolved Chloride (Cl-)	1800000	µg/L	-	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH	NG	µg/L	-	7.92	-	-	-	-	-	-	-	-	7.78	-	-	-	-	-	-	-	-
Metals and Hydride Forming Metals																					
Dissolved Antimony (Sb)	16000	µg/L	-	-	-	<0.50	-	-	<0.50	<0.50	-	-	-	-	<0.50	-	-	-	<0.50	-	-
Dissolved Arsenic (As)	1500	µg/L	-	-	-	<1.0	-	-	1.1	<1.0	-	-	-	-	<1.0	-	-	-	<1.0	-	-
Dissolved Barium (Ba)	23000	µg/L	-	-	-	64	-	-	100	110	-	-	-	-	65	-	-	-	76	-	-
Dissolved Beryllium (Be)	53	µg/L	-	-	-	<0.40	-	-	<0.40	<0.40	-	-	-	-	<0.40	-	-	-	<0.40	-	-
Dissolved Boron (B)	36000	µg/L	-	-	-	250	-	-	220	230	-	-	-	-	230	-	-	-	95	-	-
Dissolved Cadmium (Cd)	2.1	µg/L	-	-	-	<0.090	-	-	<0.090	<0.090	-	-	-	-	<0.090	-	-	-	<0.090	-	-
Dissolved Chromium (Cr)	640	µg/L	-	-	-	<5.0	-	-	<5.0	<5.0	-	-	-	-	<5.0	-	-	-	<5.0	-	-
Dissolved Cobalt (Co)	52	µg/L	-	-	-	<0.50	-	-	<0.50	<0.50	-	-	-	-	24	-	-	-	0.62	-	-
Dissolved Copper (Cu)	69	µg/L	-	-	-	3.4	-	-	<0.90	<0.90	-	-	-	-	1.4	-	-	-	4.7	-	-
Dissolved Lead (Pb)	20	µg/L	-	-	-	<0.50	-	-	<0.50	<0.50	-	-	-	-	<0.50	-	-	-	<0.50	-	-
Dissolved Molybdenum (Mo)	7300	µg/L	-	-	-	8.9	-	-	0.73	<0.50	-	-	-	-	6.9	-	-	-	1.9	-	-
Dissolved Nickel (Ni)	390	µg/L	-	-	-	5.5	-	-	<1.0	1.2	-	-	-	-	6.8	-	-	-	2.2	-	-
Dissolved Selenium (Se)	50	µg/L	-	-	-	<2.0	-	-	<2.0	<2.0	-	-	-	-	<2.0	-	-	-	<2.0	-	-
Dissolved Silver (Ag)	1.2	µg/L	-	-	-	<0.090	-	-	<0.090	<0.090	-	-	-	-	<0.090	-	-	-	<0.090	-	-
Dissolved Sodium (Na)	1800000	µg/L	-	-	-	340000	-	-	550000	540000	-	-	-	-	410000	-	-	-	490000	-	-
Dissolved Thallium (Tl)	400	µg/L	-	-	-	0.38	-	-	<0.050	<0.050	-	-	-	-	0.18	-	-	-	0.21	-	-
Dissolved Uranium (U)	330	µg/L	-	-	-	1.8	-	-	0.48	0.45	-	-	-	-	0.74	-	-	-	0.82	-	-
Dissolved Vanadium (V)	200	µg/L	-	-	-	<0.50	-	-	<0.50	<0.50	-	-	-	-	<0.50	-	-	-	<0.50	-	-
Dissolved Zinc (Zn)	890	µg/L	-	-	-	6.1	-	-	<5.0	<5.0	-	-	-	-	<5.0	-	-	-	<5.0	-	-
Petroleum Hydrocarbons (PHCs)																					
F1 (C6-C10) - BTEX	420	µg/L	320	340	<25	<25	-	-	54	61	**490**	**540**	-	**480**	-	100	<25	<25	<25	-	-
F1 (C6-C10)	420	µg/L	320	340	<25	<25	-	-	54 (1)	61 (1)	**500**	**540**	-	**480**	-	100	<25	<25	<25	-	-
F2 (C10-C16 Hydrocarbons)	150	µg/L	<100	**370**	<100	<100	-	-	<100	<100	-	-	-	<100	<100	-	-	-	<100	-	-
F3 (C16-C34 Hydrocarbons)	500	µg/L	240	**750**	<200	<200	-	-	<200	<200	-	-	-	<200	<200	-	-	-	<200	-	-
F4 (C34-C50 Hydrocarbons)	500	µg/L	<200	<200	<200	<200	-	-	<200	<200	-	-	-	<200	<200	-	-	-	<200	-	-
Polycyclic Aromatic Hydrocarbons (PAHs)																					
Acenaphthene	17	µg/L	-	-	-	<0.050	-	-	<0.050	<0.050	-	-	-	-	<0.050	-	-	-	<0.050	-	-
Acenaphthylene	1	µg/L	-	-	-	<0.050	-	-	<0.050	<0.050	-	-	-	-	<0.050	-	-	-	<0.050	-	-
Anthracene	1	µg/L	-	-	-	<0.050	-	-	<0.050	<0.050	-	-	<0.2	-	<0.050	-	-	-	<0.050	-	-
Benzo(a)anthracene	1.8	µg/L	-	-	-	<0.050	-	-	<0.050	<0.050	-	-	<0.2	-	<0.050	-	-	-	<0.050	-	-
Benzo(a)pyrene	0.81	µg/L	-	-	-	<0.0090	-	-	<0.0090	<0.0090	-	-	<0.2	-	<0.0090	-	-	-	<0.0090	-	-
Benzo(b/j)fluoranthene	0.75	µg/L	-	-	-	<0.050	-	-	<0.050	<0.050	-	-	<0.2	-	<0.050	-	-	-	<0.050	-	-
Benzo(g,h,i)perylene	0.2	µg/L	-	-	-	<0.050	-	-	<0.050	<0.050	-	-	<0.2	-	<0.050	-	-	-	<0.050	-	-
Benzo(k)fluoranthene	0.4	µg/L	-	-	-	<0.050	-	-	<0.050	<0.050	-	-	<0.2	-	<0.050	-	-	-	<0.050	-	-
Chrysene	0.7	µg/L	-	-	-	<0.050	-	-	<0.050	<0.050	-	-	<0.2	-	<0.050	-	-	-	<0.050	-	-
Dibenzo(a,h)anthracene	0.4	µg/L	-	-	-	<0.050	-	-	<0.050	<0.050	-	-	<0.2	-	<0.050	-	-	-	<0.050	-	-
Fluoranthene	44	µg/L	-	-	-	<0.050	-	-	<0.050	<0.050	-	-	<0.2	-	<0.050	-	-	-	<0.050	-	-
Fluorene	290	µg/L	-	-	-	<0.050	-	-	<0.050	<0.050	-	-	<0.3	-	<0.050	-	-	-	<0.050	-	-
Indeno(1,2,3-cd)pyrene	0.2	µg/L	-	-	-	<0.050	-	-	<0.050	<0.050	-	-	<0.2	-	<0.050	-	-	-	<0.050	-	-
1-Methylnaphthalene	1500	µg/L	-	-	-	<0.050	-	-	<0.050	<0.050	-	-	<0.3	-	<0.050	-	-	-	0.12	-	-
2-Methylnaphthalene	1500	µg/L	-	-	-	<0.050	-	-	<0.050	<0.050	-	-	<0.3	-	<0.050	-	-	-	0.16	-	-
Methylnaphthalene, 2-(1-)	1500	µg/L	-	-	-	<0.071	-	-	<0.071	<0.071	-	-	-	-	<0.071	-	-	-	0.28	-	-
Naphthalene	7	µg/L	-	-	-	<0.050	-	-	<0.050	<0.050	-	-	<0.3	-	<0.050	-	-	-	<0.050	-	-
Phenanthrene	380	µg/L	-	-	-	<0.030	-	-	<0.030	<0.030	-	-	<0.2	-	<0.030	-	-	-	0.044	-	-
Pyrene	5.7	µg/L	-	-	-	<0.050	-	-	<0.050	<0.050	-	-	<0.2	-	<0.050	-	-	-	<0.050	-	-
Semi-Volatile Organic Compounds (SVOCs)																					
Diethyl phthalate	30	µg/L	-	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	3700	µg/L	-	-	-	-	-	-	-	-	-	-	<0.30	-	-	-	-	-	-	-	-
Bis(2-ethylhexyl)phthalate	30	µg/L	-	-	-	-	-	-	-	-	-	-	<2	-	-	-	-	-	-	-	-

Hydrogeologixal Assessment
424 Churchill Avenue North
Ottawa, Ontario
Englobe File No.: 02103035.000

Table D-2 Groundwater Sampling Results - Phase II Environmental Site Assessment Data

Sample ID	MECP Table 7 SCS	Units	MW21-01	MW21-02	MW21-03	MW21-03	F. BLANK	T. BLANK	MW23-01	MW23-11 (DUP OF MW23-01)	MW23-02	MW23-20 (DUP OF MW23-02)	MW23-02 (2)	MW23-02	MW23-03	MW23-03	T.BLANK	F.BLANK	MW23-04	F. BLANK	T. BLANK
Sample Date (yyyy-mm-dd)			2021-04-30	2021-04-30	2021-04-30	2023-08-15	2023-08-15	2023-08-15	2023-08-28	2023-08-28	2023-08-28	2023-08-28	2023-09-13	2023-11-29	2023-08-14	2023-08-28	2023-08-28	2023-08-28	2023-08-14	2023-08-14	2023-08-14
Volatile Organic Compounds (VOCs)																					
Acetone (2-Propanone)	100000	µg/L	<50	<50	<10	<10	<10	<10	<10	<10	-	-	-	<10	<10	-	-	-	<10	<10	<10
Benzene	0.5	µg/L	<0.20	<0.20	<0.20	<0.17	<0.20	<0.20	0.22	0.25	0.33	0.38	<0.20	<0.17	<0.20	<0.20	<0.20	<0.20	<0.17	<0.20	<0.20
Bromodichloromethane	67000	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	<0.50	-	-	-	<0.50	<0.50	<0.50
Bromoform	5	µg/L	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-	<1.0	<1.0	<1.0	-	-	-	<1.0	<1.0	<1.0
Bromomethane	0.89	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	<0.50	-	-	-	<0.50	<0.50	<0.50
Carbon Tetrachloride	0.2	µg/L	<0.20	<0.20	<0.20	<0.20	<0.19	<0.19	<0.20	<0.20	-	-	<0.19	<0.20	<0.19	-	-	-	<0.20	<0.19	<0.19
Chlorobenzene	140	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-	-	<0.20	<0.20	<0.20	-	-	-	<0.20	<0.20	<0.20
Chloroform	2	µg/L	<1.0	<1.0	<0.20	0.27	<0.20	<0.20	1	0.96	-	-	0.82	0.55	0.45	-	-	-	<0.20	<0.20	<0.20
Dibromochloromethane	65000	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	<0.50	-	-	-	<0.50	<0.50	<0.50
1,2-Dichlorobenzene	150	µg/L	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.50	<0.50	-	-	<0.40	<0.50	<0.40	-	-	-	<0.50	<0.40	<0.40
1,3-Dichlorobenzene	7600	µg/L	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.50	<0.50	-	-	<0.40	<0.50	<0.40	-	-	-	<0.50	<0.40	<0.40
1,4-Dichlorobenzene	0.5	µg/L	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.50	<0.50	-	-	<0.40	<0.50	<0.40	-	-	-	<0.50	<0.40	<0.40
Dichlorodifluoromethane (FREON 12)	3500	µg/L	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-	-	<1.0	<1.0	-	-	-	<1.0	<1.0	<1.0
1,1-Dichloroethane	11	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-	-	<0.20	0.26	<0.20	-	-	-	<0.20	<0.20	<0.20
1,2-Dichloroethane	0.5	µg/L	<0.50	<0.50	<0.50	<0.50	<0.49	<0.49	<0.50	<0.50	-	-	<0.49	<0.50	<0.49	-	-	-	<0.50	<0.49	<0.49
1,1-Dichloroethylene	0.5	µg/L	<0.20	**0.66**	<0.20	<0.20	<0.20	<0.20	**1.2**	**1.2**	-	-	<0.20	0.25	**2**	-	-	-	<0.20	<0.20	<0.20
cis-1,2-Dichloroethylene	1.6	µg/L	**220**	**860**	1.5	<0.50	<0.50	<0.50	**630**	**590**	-	-	**16**	**33**	**940**	-	-	-	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	1.6	µg/L	**3.7**	**12**	<0.50	<0.50	<0.50	<0.50	**4.7**	**4.6**	-	-	**1.7**	0.94	**14**	-	-	-	<0.50	<0.50	<0.50
1,2-Dichloropropane	0.58	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-	-	<0.20	<0.20	<0.20	-	-	-	<0.20	<0.20	<0.20
cis-1,3-Dichloropropene	NG	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	-	-	<0.30	<0.30	<0.30	-	-	-	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	NG	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	-	-	<0.40	<0.40	<0.40	-	-	-	<0.40	<0.40	<0.40
1,3-Dichloropropene (cis+trans)	0.5	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	<0.50	<0.50	-	-	-	<0.50	<0.50	<0.50
Ethylbenzene	54	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylene Dibromide	0.2	µg/L	<0.20	<0.20	<0.20	<0.20	<0.19	<0.19	<0.20	<0.20	-	-	<0.19	<0.20	<0.19	-	-	-	<0.20	<0.19	<0.19
Hexane	5	µg/L	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-	-	<1.0	<1.0	-	-	-	<1.0	<1.0	<1.0
Methylene Chloride(Dichloromethane)	26	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	-	-	<2.0	<2.0	<2.0	-	-	-	<2.0	<2.0	<2.0
Methyl Ethyl Ketone (2-Butanone)	21000	µg/L	<50	<50	<10	<10	<10	<10	<10	<10	-	-	-	<10	<10	-	-	-	<10	<10	<10
Methyl Isobutyl Ketone	5200	µg/L	<25	<25	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	-	-	<5.0	<5.0	-	-	-	<5.0	<5.0	<5.0
Methyl t-butyl ether (MTBE)	15	µg/L	<2.5	<2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	<0.50	<0.50	-	-	-	<0.50	<0.50	<0.50
Styrene	43	µg/L	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.50	<0.50	-	-	<0.40	<0.50	<0.40	-	-	-	<0.50	<0.40	<0.40
1,1,1,2-Tetrachloroethane	1.1	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	<0.50	<0.50	-	-	-	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	0.5	µg/L	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.50	<0.50	-	-	<0.40	<0.50	<0.40	-	-	-	<0.50	<0.40	<0.40
Tetrachloroethylene	0.5	µg/L	**930**	**890**	**32**	**2.4**	<0.20	<0.20	**13**	**12**	-	-	**720**	**1400**	**9.6**	-	-	-	**8.4**	<0.20	<0.20
Toluene	320	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.25	0.27	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	23	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-	-	<0.20	<0.20	<0.20	-	-	-	<0.20	<0.20	<0.20
1,1,2-Trichloroethane	0.5	µg/L	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.50	<0.50	-	-	<0.40	<0.50	<0.40	-	-	-	<0.50	<0.40	<0.40
Trichloroethylene	0.5	µg/L	**100**	**160**	**2**	**0.72**	<0.20	<0.20	**110**	**110**	-	-	**44**	**120**	**23**	-	-	-	**0.65**	<0.20	<0.20
Trichlorofluoromethane (FREON 11)	2000	µg/L	<2.5	<2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	<0.50	-	-	-	<0.50	<0.50	<0.50
Vinyl Chloride	0.5	µg/L	**7**	**31**	<0.20	<0.20	<0.20	<0.20	**100**	**100**	-	-	**0.96**	**4.0**	**88**	-	-	-	<0.20	<0.20	<0.20
p+m-Xylene	NG	µg/L	<1.0	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.40	<0.40	<0.20	<0.20	<0.20	<0.40	<0.40	<0.40	<0.20	<0.20	<0.20
o-Xylene	NG	µg/L	<1.0	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Total Xylenes	72	µg/L	<1.0	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.40	<0.40	<0.20	<0.20	<0.20	<0.40	<0.40	<0.40	<0.20	<0.20	<0.20
Organchlorine Pesticides (OCPs)																					
Hexachlorobenzene	3.1	µg/L	-	-	-	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-
Polychlorinated Biphenyls (PCBs)																					
Total PCBs	0.2	µg/L	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-

Notes	
MECP Table 7 SCS	Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for all Types of Property Use, medium-fine textured soil, Ontario Ministry of the Environment "Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the ENGironmental Protection Act" (MECP July 2011).
NG	No Guideline Available
-	Parameter Not Analyzed
<	Less Than Reportable Detection Limit
X	Exceeds MECP Table 7 SCS
F. Blank	Field Blank
T. Blank	Trip Blank
(1) Result reported was mainly due to chlorinated compounds eluting inside the F1 range.	
(2) Conducted in Support of Evaluating Potential Discharge to Municipal Sewer System for Development Purposes Only.	

Your Project #: 02103035.000
Site Location: 424 Churchill Ave North
Your C.O.C. #: 953656-01-01

Attention: Colette Ogilvie

Englobe Corp.
Ottawa - Standing Offer
2713 Lancaster Road
Unit 101
Ottawa, ON
CANADA K1B 5R6

Report Date: 2023/09/18
Report #: R7819659
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3S1843
Received: 2023/09/13, 15:59

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS (1)	1	2023/09/15	2023/09/15	CAM SOP-00301	EPA 8270 m
Sewer Use By-Law Semivolatile Organics (1)	1	2023/09/16	2023/09/18	CAM SOP 00301	EPA 8270 m
Total Cyanide (1)	1	2023/09/15	2023/09/15	CAM SOP-00457	OMOE E3015 5 m
Fluoride (1)	1	2023/09/14	2023/09/15	CAM SOP-00449	SM 23 4500-F C m
Mercury in Water by CVAA (1)	1	2023/09/15	2023/09/18	CAM SOP-00453	EPA 7470A m
Total Metals Analysis by ICPMS (1)	1	2023/09/18	2023/09/18	CAM SOP-00447	EPA 6020B m
E.coli, (CFU/100mL) (1)	1	N/A	2023/09/14	CAM SOP-00552	MECP E3371
Animal and Vegetable Oil and Grease (1)	1	N/A	2023/09/18	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease (1)	1	2023/09/17	2023/09/17	CAM SOP-00326	EPA1664B m,SM5520B m
OC Pesticides (Selected) & PCB (1, 2)	1	2023/09/15	2023/09/17	CAM SOP-00307	EPA 8081B/ 8082A
OC Pesticides Summed Parameters (1)	1	N/A	2023/09/15	CAM SOP-00307	EPA 8081B/ 8082A
pH (1)	1	2023/09/14	2023/09/15	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP) (1)	1	N/A	2023/09/15	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Turbidimetry (1)	1	N/A	2023/09/15	CAM SOP-00464	SM 23 4500-SO42- E m
Sulphide (1)	1	N/A	2023/09/15	CAM SOP-00455	SM 23 4500-S G m
Total Kjeldahl Nitrogen in Water (1)	1	2023/09/14	2023/09/18	CAM SOP-00938	OMOE E3516 m
Total PAHs (Hamilton, Ottawa S.U.B.) (1, 3)	1	N/A	2023/09/18	CAM SOP - 00301	
Mineral/Synthetic O & G (TPH Heavy Oil) (1, 4)	1	2023/09/17	2023/09/17	CAM SOP-00326	EPA1664B m,SM5520F m
Total Suspended Solids (1)	1	2023/09/15	2023/09/18	CAM SOP-00428	SM 23 2540D m
Volatile Organic Compounds in Water (1)	1	N/A	2023/09/15	CAM SOP-00228	EPA 8260D
Non-Routine Volatile Organic Compounds (1)	1	N/A	2023/09/15	CAM SOP-00226	EPA 8260D m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCCFP, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Your Project #: 02103035.000
Site Location: 424 Churchill Ave North
Your C.O.C. #: 953656-01-01

Attention: Colette Ogilvie

Englobe Corp.
Ottawa - Standing Offer
2713 Lancaster Road
Unit 101
Ottawa, ON
CANADA K1B 5R6

Report Date: 2023/09/18
Report #: R7819659
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3S1843
Received: 2023/09/13, 15:59

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd , Mississauga, ON, L5N 2L8
(2) Chlordane (Total) = Alpha Chlordane + Gamma Chlordane
(3) Total PAHs include only those PAHs specified in the sewer use by-by-law.
(4) Note: TPH (Heavy Oil) is equivalent to Mineral / Synthetic Oil & Grease

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Katherine Szozda, Project Manager
Email: Katherine.Szozda@bureauveritas.com
Phone# (613)274-0573 Ext:7063633
==========
This report has been generated and distributed using a secure automated process.
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvna.com

OTTAWA SAN&STORM SEWER BYLAW (2003-514)

Bureau Veritas ID		WZE422			WZE422		
Sampling Date		2023/09/13 13:00			2023/09/13 13:00		
COC Number		953656-01-01			953656-01-01		
	UNITS	MW23-2	RDL	QC Batch	MW23-2 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Total Animal/Vegetable Oil and Grease	mg/L	<0.50	0.50	8916468			
Inorganics							
Total Kjeldahl Nitrogen (TKN)	mg/L	0.15	0.10	8915997			
pH	pH	7.78		8918550			
Phenols-4AAP	mg/L	<0.0010	0.0010	8919650	<0.0010	0.0010	8919650
Total Suspended Solids	mg/L	<10	10	8919511	<10	10	8919511
Petroleum Hydrocarbons							
Total Oil & Grease	mg/L	<0.50	0.50	8922558			
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	8922560			
Metals							
Mercury (Hg)	mg/L	<0.00010	0.00010	8919601			
Total Aluminum (Al)	ug/L	16	4.9	8922919			
Total Antimony (Sb)	ug/L	<0.50	0.50	8922919			
Total Arsenic (As)	ug/L	<1.0	1.0	8922919			
Total Bismuth (Bi)	ug/L	<1.0	1.0	8922919			
Total Boron (B)	ug/L	200	10	8922919			
Total Cadmium (Cd)	ug/L	<0.090	0.090	8922919			
Total Chromium (Cr)	ug/L	<5.0	5.0	8922919			
Total Cobalt (Co)	ug/L	1.2	0.50	8922919			
Total Copper (Cu)	ug/L	3.4	0.90	8922919			
Total Lead (Pb)	ug/L	<0.50	0.50	8922919			
Total Manganese (Mn)	ug/L	18	2.0	8922919			
Total Molybdenum (Mo)	ug/L	1.7	0.50	8922919			
Total Nickel (Ni)	ug/L	3.0	1.0	8922919			
Total Phosphorus (P)	ug/L	<100	100	8922919			
Total Selenium (Se)	ug/L	<2.0	2.0	8922919			
Total Silver (Ag)	ug/L	<0.090	0.090	8922919			
Total Tin (Sn)	ug/L	<1.0	1.0	8922919			
Total Titanium (Ti)	ug/L	<5.0	5.0	8922919			
Total Vanadium (V)	ug/L	<0.50	0.50	8922919			
Total Zinc (Zn)	ug/L	6.5	5.0	8922919			
Semivolatile Organics							
1-Methylnaphthalene	ug/L	<0.3	0.3	8921699			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

OTTAWA SAN&STORM SEWER BYLAW (2003-514)

Bureau Veritas ID		WZE422			WZE422		
Sampling Date		2023/09/13 13:00			2023/09/13 13:00		
COC Number		953656-01-01			953656-01-01		
	UNITS	MW23-2	RDL	QC Batch	MW23-2 Lab-Dup	RDL	QC Batch
2-Methylnaphthalene	ug/L	<0.3	0.3	8921699			
Fluorene	ug/L	<0.3	0.3	8921699			
Naphthalene	ug/L	<0.3	0.3	8921699			
Di-N-butyl phthalate	ug/L	<2	2	8921699			
Bis(2-ethylhexyl)phthalate	ug/L	<2	2	8921699			
Phenanthrene	ug/L	<0.2	0.2	8921699			
Anthracene	ug/L	<0.2	0.2	8921699			
Fluoranthene	ug/L	<0.2	0.2	8921699			
Pyrene	ug/L	<0.2	0.2	8921699			
Benzo(a)anthracene	ug/L	<0.2	0.2	8921699			
Chrysene	ug/L	<0.2	0.2	8921699			
Benzo(b/j)fluoranthene	ug/L	<0.2	0.2	8921699			
Benzo(k)fluoranthene	ug/L	<0.2	0.2	8921699			
Benzo(a)pyrene	ug/L	<0.2	0.2	8921699			
Indeno(1,2,3-cd)pyrene	ug/L	<0.2	0.2	8921699			
Dibenzo(a,h)anthracene	ug/L	<0.2	0.2	8921699			
Benzo(g,h,i)perylene	ug/L	<0.2	0.2	8921699			
Dibenzo(a,i)pyrene	ug/L	<0.2	0.2	8921699			
Benzo(e)pyrene	ug/L	<0.2	0.2	8921699			
Perylene	ug/L	<0.2	0.2	8921699			
Dibenzo(a,j) acridine	ug/L	<0.4	0.4	8921699			
7H-Dibenzo(c,g) Carbazole	ug/L	<0.4	0.4	8921699			
2,4-Dichlorophenol	ug/L	<0.30	0.30	8918819			
Benzyl butyl phthalate	ug/L	<0.50	0.50	8918819			
Bis(2-chloroethoxy)methane	ug/L	<0.50	0.50	8918819			
di-n-octyl phthalate	ug/L	<0.80	0.80	8918819			
Diethyl phthalate	ug/L	<1.0	1.0	8918819			
Indole	ug/L	<1.0	1.0	8918819			
Calculated Parameters							
Total PAHs (18 PAHs)	ug/L	<0.96	0.96	8916470			
Volatile Organics							
Benzene	ug/L	<0.20	0.20	8916724			
Bromodichloromethane	ug/L	<0.50	0.50	8916724			
Bromoform	ug/L	<1.0	1.0	8916724			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

OTTAWA SAN&STORM SEWER BYLAW (2003-514)

Bureau Veritas ID		WZE422			WZE422		
Sampling Date		2023/09/13 13:00			2023/09/13 13:00		
COC Number		953656-01-01			953656-01-01		
	UNITS	MW23-2	RDL	QC Batch	MW23-2 Lab-Dup	RDL	QC Batch
Bromomethane	ug/L	<0.50	0.50	8916724			
Carbon Tetrachloride	ug/L	<0.19	0.19	8916724			
Chlorobenzene	ug/L	<0.20	0.20	8916724			
Chloroethane	ug/L	<1.0	1.0	8916724			
Chloroform	ug/L	0.82	0.20	8916724			
Chloromethane	ug/L	<5.0	5.0	8916724			
Dibromochloromethane	ug/L	<0.50	0.50	8916724			
1,2-Dichlorobenzene	ug/L	<0.40	0.40	8916724			
1,3-Dichlorobenzene	ug/L	<0.40	0.40	8916724			
1,4-Dichlorobenzene	ug/L	<0.40	0.40	8916724			
1,1-Dichloroethane	ug/L	<0.20	0.20	8916724			
1,2-Dichloroethane	ug/L	<0.49	0.49	8916724			
1,1-Dichloroethylene	ug/L	<0.20	0.20	8916724			
cis-1,2-Dichloroethylene	ug/L	16	0.50	8916724			
trans-1,2-Dichloroethylene	ug/L	1.7	0.50	8916724			
1,2-Dichloropropane	ug/L	<0.20	0.20	8916724			
cis-1,3-Dichloropropene	ug/L	<0.30	0.30	8916724			
trans-1,3-Dichloropropene	ug/L	<0.40	0.40	8916724			
Ethylbenzene	ug/L	<0.20	0.20	8916724			
Ethylene Dibromide	ug/L	<0.19	0.19	8916724			
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	8916724			
Styrene	ug/L	<0.40	0.40	8916724			
1,1,2,2-Tetrachloroethane	ug/L	<0.40	0.40	8916724			
Tetrachloroethylene	ug/L	720	0.40	8916724			
1,3,5-Trimethylbenzene	ug/L	<0.20	0.20	8911263			
Toluene	ug/L	<0.20	0.20	8916724			
1,1,1-Trichloroethane	ug/L	<0.20	0.20	8916724			
1,1,2-Trichloroethane	ug/L	<0.40	0.40	8916724			
Trichloroethylene	ug/L	44	0.20	8916724			
Trichlorofluoromethane (FREON 11)	ug/L	<0.50	0.50	8916724			
Vinyl Chloride	ug/L	0.96	0.20	8916724			
p+m-Xylene	ug/L	<0.20	0.20	8916724			
o-Xylene	ug/L	<0.20	0.20	8916724			
Total Xylenes	ug/L	<0.20	0.20	8916724			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

OTTAWA SAN&STORM SEWER BYLAW (2003-514)

Bureau Veritas ID		WZE422			WZE422		
Sampling Date		2023/09/13 13:00			2023/09/13 13:00		
COC Number		953656-01-01			953656-01-01		
	UNITS	MW23-2	RDL	QC Batch	MW23-2 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Total PCB	ug/L	<0.05	0.05	8916469			
Pesticides & Herbicides							
Hexachlorobenzene	ug/L	<0.005	0.005	8918788			
Microbiological							
Escherichia coli	CFU/100mL	<10	10	8917776			
Surrogate Recovery (%)							
2,4,6-Tribromophenol	%	71		8918819			
2-Fluorobiphenyl	%	85		8918819			
2-Fluorophenol	%	37		8918819			
D14-Terphenyl	%	89		8918819			
D5-Nitrobenzene	%	94		8918819			
D5-Phenol	%	27		8918819			
2,4,6-Tribromophenol	%	57		8921699			
2-Fluorobiphenyl	%	79		8921699			
D14-Terphenyl (FS)	%	101		8921699			
D5-Nitrobenzene	%	99		8921699			
D8-Acenaphthylene	%	75		8921699			
2,4,5,6-Tetrachloro-m-xylene	%	66		8918788			
Decachlorobiphenyl	%	72		8918788			
4-Bromofluorobenzene	%	96		8916724			
D4-1,2-Dichloroethane	%	109		8916724			
D8-Toluene	%	94		8916724			
4-Bromofluorobenzene	%	114		8911263			
D4-1,2-Dichloroethane	%	87		8911263			
D8-Toluene	%	111		8911263			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Job #: C3S1843
Report Date: 2023/09/18

Englobe Corp.
Client Project #: 02103035.000
Site Location: 424 Churchill Ave North
Sampler Initials: JB

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		WZE422			WZE422		
Sampling Date		2023/09/13 13:00			2023/09/13 13:00		
COC Number		953656-01-01			953656-01-01		
	UNITS	MW23-2	RDL	QC Batch	MW23-2 Lab-Dup	RDL	QC Batch
Inorganics							
Fluoride (F-)	mg/L	0.30	0.10	8918551			
Dissolved Sulphate (SO4)	mg/L	130	1.0	8918530			
Sulphide	mg/L	<0.020	0.020	8919642	<0.020	0.020	8919642
Total Cyanide (CN)	mg/L	<0.0050	0.0050	8918822			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Job #: C3S1843
Report Date: 2023/09/18

Englobe Corp.
Client Project #: 02103035.000
Site Location: 424 Churchill Ave North
Sampler Initials: JB

TEST SUMMARY

Bureau Veritas ID: WZE422
Sample ID: MW23-2
Matrix: Water

Collected: 2023/09/13
Shipped:
Received: 2023/09/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
ABN Compounds in Water by GC/MS	GC/MS	8918819	2023/09/15	2023/09/15	Kathy Horvat
Sewer Use By-Law Semivolatile Organics	GC/MS	8921699	2023/09/16	2023/09/18	Kathy Horvat
Total Cyanide	SKAL/CN	8918822	2023/09/15	2023/09/15	Prgya Panchal
Fluoride	ISE	8918551	2023/09/14	2023/09/15	Nachiketa Gohil
Mercury in Water by CVAA	CV/AA	8919601	2023/09/15	2023/09/18	Thuy Linh Nguyen
Total Metals Analysis by ICPMS	ICP/MS	8922919	2023/09/18	2023/09/18	Arefa Dabhad
E.coli, (CFU/100mL)	PL	8917776	N/A	2023/09/14	Soham Patel
Animal and Vegetable Oil and Grease	BAL	8916468	N/A	2023/09/18	Automated Statchk
Total Oil and Grease	BAL	8922558	2023/09/17	2023/09/17	Navneet Singh
OC Pesticides (Selected) & PCB	GC/ECD	8918788	2023/09/15	2023/09/17	Li Peng
OC Pesticides Summed Parameters	CALC	8916469	N/A	2023/09/15	Automated Statchk
pH	AT	8918550	2023/09/14	2023/09/15	Nachiketa Gohil
Phenols (4AAP)	TECH/PHEN	8919650	N/A	2023/09/15	Chloe Pollock
Sulphate by Automated Turbidimetry	KONE	8918530	N/A	2023/09/15	Massarat Jan
Sulphide	ISE/S	8919642	N/A	2023/09/15	Taslima Aktar
Total Kjeldahl Nitrogen in Water	SKAL	8915997	2023/09/14	2023/09/18	Rajni Tyagi
Total PAHs (Hamilton, Ottawa S.U.B.)	CALC	8916470	N/A	2023/09/18	Automated Statchk
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8922560	2023/09/17	2023/09/17	Navneet Singh
Total Suspended Solids	BAL	8919511	2023/09/15	2023/09/18	Razieh Tabesh
Volatile Organic Compounds in Water	GC/MS	8916724	N/A	2023/09/15	Narayan Ghimire
Non-Routine Volatile Organic Compounds	P&T/MS	8911263	N/A	2023/09/15	Zi Wang

Bureau Veritas ID: WZE422 Dup
Sample ID: MW23-2
Matrix: Water

Collected: 2023/09/13
Shipped:
Received: 2023/09/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Phenols (4AAP)	TECH/PHEN	8919650	N/A	2023/09/15	Chloe Pollock
Sulphide	ISE/S	8919642	N/A	2023/09/15	Taslima Aktar
Total Suspended Solids	BAL	8919511	2023/09/15	2023/09/18	Razieh Tabesh

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.3°C

Sample WZE422 [MW23-2] : VOC Analysis: Due to high concentrations of target analytes, sample required dilution. Detection limits were adjusted accordingly. In order to meet required regulatory criteria or to achieve lower reporting limits, results for selected compounds (obtained by a separate analysis using an appropriate low dilution) are included in the report.

Results relate only to the items tested.

Bureau Veritas 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvna.com

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8911263	4-Bromofluorobenzene	2023/09/15	114	70 - 130	118	70 - 130	108	%				
8911263	D4-1,2-Dichloroethane	2023/09/15	81	70 - 130	87	70 - 130	86	%				
8911263	D8-Toluene	2023/09/15	108	70 - 130	104	70 - 130	108	%				
8916724	4-Bromofluorobenzene	2023/09/15	99	70 - 130	98	70 - 130	98	%				
8916724	D4-1,2-Dichloroethane	2023/09/15	109	70 - 130	106	70 - 130	103	%				
8916724	D8-Toluene	2023/09/15	97	70 - 130	97	70 - 130	99	%				
8918788	2,4,5,6-Tetrachloro-m-xylene	2023/09/17	72	50 - 130	71	50 - 130	74	%				
8918788	Decachlorobiphenyl	2023/09/17	122	50 - 130	105	50 - 130	112	%				
8918819	2,4,6-Tribromophenol	2023/09/15	89	10 - 130	91	10 - 130	68	%				
8918819	2-Fluorobiphenyl	2023/09/15	80	30 - 130	77	30 - 130	78	%				
8918819	2-Fluorophenol	2023/09/15	46	10 - 130	48	10 - 130	40	%				
8918819	D14-Terphenyl	2023/09/15	95	30 - 130	93	30 - 130	89	%				
8918819	D5-Nitrobenzene	2023/09/15	91	30 - 130	93	30 - 130	87	%				
8918819	D5-Phenol	2023/09/15	30	10 - 130	32	10 - 130	27	%				
8921699	2,4,6-Tribromophenol	2023/09/18	88	10 - 130	82	10 - 130	55	%				
8921699	2-Fluorobiphenyl	2023/09/18	72	30 - 130	71	30 - 130	83	%				
8921699	D14-Terphenyl (FS)	2023/09/18	103	30 - 130	100	30 - 130	100	%				
8921699	D5-Nitrobenzene	2023/09/18	98	30 - 130	98	30 - 130	98	%				
8921699	D8-Acenaphthylene	2023/09/18	76	30 - 130	76	30 - 130	77	%				
8911263	1,3,5-Trimethylbenzene	2023/09/15	114	60 - 140	108	60 - 140	<0.20	ug/L	NC	30		
8915997	Total Kjeldahl Nitrogen (TKN)	2023/09/18	NC	80 - 120	98	80 - 120	<0.10	mg/L	20	20	96	N/A
8916724	1,1,1-Trichloroethane	2023/09/15	94	70 - 130	95	70 - 130	<0.20	ug/L	NC	30		
8916724	1,1,2,2-Tetrachloroethane	2023/09/15	103	70 - 130	93	70 - 130	<0.40	ug/L	NC	30		
8916724	1,1,2-Trichloroethane	2023/09/15	98	70 - 130	90	70 - 130	<0.40	ug/L	NC	30		
8916724	1,1-Dichloroethane	2023/09/15	98	70 - 130	98	70 - 130	<0.20	ug/L	NC	30		
8916724	1,1-Dichloroethylene	2023/09/15	96	70 - 130	97	70 - 130	<0.20	ug/L	5.0	30		
8916724	1,2-Dichlorobenzene	2023/09/15	92	70 - 130	87	70 - 130	<0.40	ug/L	NC	30		
8916724	1,2-Dichloroethane	2023/09/15	95	70 - 130	92	70 - 130	<0.49	ug/L	4.8	30		
8916724	1,2-Dichloropropane	2023/09/15	97	70 - 130	94	70 - 130	<0.20	ug/L	NC	30		
8916724	1,3-Dichlorobenzene	2023/09/15	92	70 - 130	90	70 - 130	<0.40	ug/L	NC	30		
8916724	1,4-Dichlorobenzene	2023/09/15	104	70 - 130	98	70 - 130	<0.40	ug/L	NC	30		
8916724	Benzene	2023/09/15	87	70 - 130	87	70 - 130	<0.20	ug/L	NC	30		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8916724	Bromodichloromethane	2023/09/15	103	70 - 130	101	70 - 130	<0.50	ug/L	NC	30		
8916724	Bromoform	2023/09/15	89	70 - 130	80	70 - 130	<1.0	ug/L	NC	30		
8916724	Bromomethane	2023/09/15	95	60 - 140	94	60 - 140	<0.50	ug/L	NC	30		
8916724	Carbon Tetrachloride	2023/09/15	91	70 - 130	91	70 - 130	<0.19	ug/L	NC	30		
8916724	Chlorobenzene	2023/09/15	98	70 - 130	93	70 - 130	<0.20	ug/L	NC	30		
8916724	Chloroethane	2023/09/15	94	70 - 130	94	70 - 130	<1.0	ug/L				
8916724	Chloroform	2023/09/15	101	70 - 130	100	70 - 130	<0.20	ug/L	NC	30		
8916724	Chloromethane	2023/09/15	96	60 - 140	91	60 - 140	<5.0	ug/L				
8916724	cis-1,2-Dichloroethylene	2023/09/15	93	70 - 130	92	70 - 130	<0.50	ug/L	NC	30		
8916724	cis-1,3-Dichloropropene	2023/09/15	101	70 - 130	99	70 - 130	<0.30	ug/L	NC	30		
8916724	Dibromochloromethane	2023/09/15	94	70 - 130	87	70 - 130	<0.50	ug/L	NC	30		
8916724	Ethylbenzene	2023/09/15	89	70 - 130	85	70 - 130	<0.20	ug/L	NC	30		
8916724	Ethylene Dibromide	2023/09/15	96	70 - 130	89	70 - 130	<0.19	ug/L	NC	30		
8916724	Methylene Chloride(Dichloromethane)	2023/09/15	95	70 - 130	93	70 - 130	<2.0	ug/L	NC	30		
8916724	o-Xylene	2023/09/15	83	70 - 130	80	70 - 130	<0.20	ug/L	NC	30		
8916724	p+m-Xylene	2023/09/15	96	70 - 130	93	70 - 130	<0.20	ug/L	NC	30		
8916724	Styrene	2023/09/15	98	70 - 130	93	70 - 130	<0.40	ug/L	NC	30		
8916724	Tetrachloroethylene	2023/09/15	88	70 - 130	85	70 - 130	<0.20	ug/L	NC	30		
8916724	Toluene	2023/09/15	88	70 - 130	86	70 - 130	<0.20	ug/L	3.0	30		
8916724	Total Xylenes	2023/09/15					<0.20	ug/L	NC	30		
8916724	trans-1,2-Dichloroethylene	2023/09/15	90	70 - 130	91	70 - 130	<0.50	ug/L	NC	30		
8916724	trans-1,3-Dichloropropene	2023/09/15	96	70 - 130	102	70 - 130	<0.40	ug/L	NC	30		
8916724	Trichloroethylene	2023/09/15	91	70 - 130	91	70 - 130	<0.20	ug/L	NC	30		
8916724	Trichlorofluoromethane (FREON 11)	2023/09/15	95	70 - 130	95	70 - 130	<0.50	ug/L	NC	30		
8916724	Vinyl Chloride	2023/09/15	NC	70 - 130	93	70 - 130	<0.20	ug/L	1.3	30		
8918530	Dissolved Sulphate (SO4)	2023/09/15	NC	75 - 125	101	80 - 120	<1.0	mg/L	0.63	20		
8918550	pH	2023/09/15			103	98 - 103			0.35	N/A		
8918551	Fluoride (F-)	2023/09/15	101	80 - 120	103	80 - 120	<0.10	mg/L	NC	20		
8918788	Hexachlorobenzene	2023/09/17	70	50 - 130	78	50 - 130	<0.005	ug/L	2.8	30		
8918819	2,4-Dichlorophenol	2023/09/15	85	10 - 130	86	10 - 130	<0.30	ug/L	2.1	40		
8918819	Benzyl butyl phthalate	2023/09/15	84	30 - 130	84	30 - 130	<0.50	ug/L	1.6	40		
8918819	Bis(2-chloroethoxy)methane	2023/09/15	75	30 - 130	76	30 - 130	<0.50	ug/L	1.6	40		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8918819	Diethyl phthalate	2023/09/15	81	30 - 130	83	30 - 130	<1.0	ug/L	2.5	40		
8918819	di-n-octyl phthalate	2023/09/15	84	30 - 130	78	30 - 130	<0.80	ug/L	1.3	40		
8918819	Indole	2023/09/15	35	30 - 130	45	30 - 130	<1.0	ug/L	3.5	40		
8918822	Total Cyanide (CN)	2023/09/15	107	80 - 120	103	80 - 120	<0.0050	mg/L	NC	20		
8919511	Total Suspended Solids	2023/09/18			101	85 - 115	<10	mg/L	NC	20		
8919601	Mercury (Hg)	2023/09/18	98	75 - 125	98	80 - 120	<0.00010	mg/L	NC	20		
8919642	Sulphide	2023/09/15	87	80 - 120	87	80 - 120	<0.020	mg/L	NC	20		
8919650	Phenols-4AAP	2023/09/15	104	80 - 120	103	80 - 120	<0.0010	mg/L	NC	20		
8921699	1-Methylnaphthalene	2023/09/18	70	30 - 130	77	30 - 130	<0.3	ug/L				
8921699	2-Methylnaphthalene	2023/09/18	61	30 - 130	68	30 - 130	<0.3	ug/L				
8921699	7H-Dibenzo(c,g) Carbazole	2023/09/18	86	30 - 130	80	30 - 130	<0.4	ug/L	NC	40		
8921699	Anthracene	2023/09/18	86	30 - 130	86	30 - 130	<0.2	ug/L	NC	40		
8921699	Benzo(a)anthracene	2023/09/18	102	30 - 130	102	30 - 130	<0.2	ug/L	NC	40		
8921699	Benzo(a)pyrene	2023/09/18	107	30 - 130	107	30 - 130	<0.2	ug/L	NC	40		
8921699	Benzo(b/j)fluoranthene	2023/09/18	105	30 - 130	103	30 - 130	<0.2	ug/L	NC	40		
8921699	Benzo(e)pyrene	2023/09/18	103	30 - 130	104	30 - 130	<0.2	ug/L	NC	40		
8921699	Benzo(g,h,i)perylene	2023/09/18	105	30 - 130	106	30 - 130	<0.2	ug/L	NC	40		
8921699	Benzo(k)fluoranthene	2023/09/18	101	30 - 130	98	30 - 130	<0.2	ug/L	NC	40		
8921699	Bis(2-ethylhexyl)phthalate	2023/09/18	119	30 - 130	115	30 - 130	<2	ug/L	NC	40		
8921699	Chrysene	2023/09/18	98	30 - 130	99	30 - 130	<0.2	ug/L	NC	40		
8921699	Dibenzo(a,h)anthracene	2023/09/18	93	30 - 130	95	30 - 130	<0.2	ug/L	NC	40		
8921699	Dibenzo(a,i)pyrene	2023/09/18	45	30 - 130	58	30 - 130	<0.2	ug/L	NC	40		
8921699	Dibenzo(a,j) acridine	2023/09/18	89	30 - 130	90	30 - 130	<0.4	ug/L	NC	40		
8921699	Di-N-butyl phthalate	2023/09/18	97	30 - 130	93	30 - 130	<2	ug/L	NC	40		
8921699	Fluoranthene	2023/09/18	101	30 - 130	98	30 - 130	<0.2	ug/L	NC	40		
8921699	Fluorene	2023/09/18	88	30 - 130	90	30 - 130	<0.3	ug/L				
8921699	Indeno(1,2,3-cd)pyrene	2023/09/18	108	30 - 130	115	30 - 130	<0.2	ug/L	NC	40		
8921699	Naphthalene	2023/09/18	64	30 - 130	69	30 - 130	<0.3	ug/L	NC	40		
8921699	Perylene	2023/09/18	99	30 - 130	99	30 - 130	<0.2	ug/L	NC	40		
8921699	Phenanthrene	2023/09/18	86	30 - 130	87	30 - 130	<0.2	ug/L	NC	40		
8921699	Pyrene	2023/09/18	102	30 - 130	100	30 - 130	<0.2	ug/L	NC	40		
8922558	Total Oil & Grease	2023/09/17			99	85 - 115	<0.50	mg/L	0.51	25		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8922560	Total Oil & Grease Mineral/Synthetic	2023/09/17			97	85 - 115	<0.50	mg/L	0.52	25		
8922919	Total Aluminum (Al)	2023/09/18	97	80 - 120	105	80 - 120	<4.9	ug/L	NC	20		
8922919	Total Antimony (Sb)	2023/09/18	106	80 - 120	104	80 - 120	<0.50	ug/L	NC	20		
8922919	Total Arsenic (As)	2023/09/18	102	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
8922919	Total Bismuth (Bi)	2023/09/18	98	80 - 120	96	80 - 120	<1.0	ug/L	NC	20		
8922919	Total Boron (B)	2023/09/18	97	80 - 120	97	80 - 120	<10	ug/L	NC	20		
8922919	Total Cadmium (Cd)	2023/09/18	100	80 - 120	98	80 - 120	<0.090	ug/L	NC	20		
8922919	Total Chromium (Cr)	2023/09/18	99	80 - 120	95	80 - 120	<5.0	ug/L	NC	20		
8922919	Total Cobalt (Co)	2023/09/18	98	80 - 120	93	80 - 120	<0.50	ug/L	NC	20		
8922919	Total Copper (Cu)	2023/09/18	105	80 - 120	100	80 - 120	<0.90	ug/L	NC	20		
8922919	Total Lead (Pb)	2023/09/18	102	80 - 120	102	80 - 120	<0.50	ug/L	NC	20		
8922919	Total Manganese (Mn)	2023/09/18	100	80 - 120	98	80 - 120	<2.0	ug/L	2.2	20		
8922919	Total Molybdenum (Mo)	2023/09/18	110	80 - 120	101	80 - 120	<0.50	ug/L	NC	20		
8922919	Total Nickel (Ni)	2023/09/18	97	80 - 120	96	80 - 120	<1.0	ug/L	NC	20		
8922919	Total Phosphorus (P)	2023/09/18	99	80 - 120	94	80 - 120	<100	ug/L				
8922919	Total Selenium (Se)	2023/09/18	102	80 - 120	104	80 - 120	<2.0	ug/L	NC	20		
8922919	Total Silver (Ag)	2023/09/18	103	80 - 120	98	80 - 120	<0.090	ug/L	NC	20		
8922919	Total Tin (Sn)	2023/09/18	104	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8922919	Total Titanium (Ti)	2023/09/18	101	80 - 120	101	80 - 120	<5.0	ug/L	NC	20		
8922919	Total Vanadium (V)	2023/09/18	96	80 - 120	93	80 - 120	<0.50	ug/L	NC	20		
8922919	Total Zinc (Zn)	2023/09/18	101	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

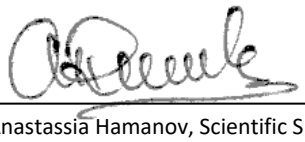
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

Bureau Veritas Job #: C3S1843
Report Date: 2023/09/18

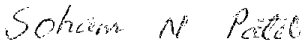
Englobe Corp.
Client Project #: 02103035.000
Site Location: 424 Churchill Ave North
Sampler Initials: JB

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist



Soham Patel, Senior Analyst

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5777 www.bvna.com

RUSH

Received in Ottawa

Page 1 of 1

CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#3824 Englobe Corp.	Company Name:		Quotation #:	C30975	Bureau Veritas Job #:	Bottle Order #:
Attention:	Accounts Payable	Attention:	Colette Ogilvie	P.O. #:			953656
Address:	2713 Lancaster Road Unit 101 Ottawa ON K1B 5R6	Address:		Project:	02103035.000	COC #:	Project Manager:
Tel:	(613) 853-9570 Fax:	Tel:	cc: Jim.Brooks@englobecorp.com	Project Name:	424 Churchill	C#953656-01-01	Katherine Szozda
Email:	ap-ONT@englobecorp.com	Email:	colette.ogilvie@englobecorp.com	Site #:			
				Sampled By:	Jim Brooks		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)
- ☐ Table 1 ☐ Res/Park ☐ Medium/Fine
- ☐ Table 2 ☐ Ind/Comm ☐ Coarse
- ☐ Table 3 ☐ Agri/Other ☐ For RSC
- ☐ Table ___

Other Regulations
- ☐ CCME ☐ Sanitary Sewer Bylaw
- ☐ Reg 558 ☐ Storm Sewer Bylaw
- ☐ MISA Municipality ___
- ☐ PWQO ☐ Reg 406 Table ___
- ☐ Other ___

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	Reduced Ottawa Sewer Parameters									# of Bottles	Comments
1		MW23-2	13-Sep-2023	1300	GW	N/A	X									18	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT:
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

13-Sep-23 15:59
Katherine Szozda
C3S1843

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	ICE PACKS	Laboratory Use Only			
Jim Brooks	23/09/13	1430	Samuel Durand	2023/09/13	15:59		Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
			ANERJ	2023/09/14	08:45				Present		
									Intact		

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/CHAIN-CUSTODY-FORMS-COCS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

White: Bureau Veritas Yellow: Client

4/2/1 onice

Bureau Veritas Canada (2019) Inc.

Appendix E
Construction-Related Groundwater Inflow Estimates

ENGLOBE

Proposed Building Excavation
Method: Dupuit-Forcheimer Equation - Worst-Case Scenario Estimate

To calculate flow from a **point source** in an unconfined aquifer:

Equation

$$Q = \frac{\pi K\left(H^2 - {h_w}^2\right)}{ln\frac{R_o}{r_w}}$$

Where:

Q =	Pumping Rate (m^3/s)
K =	Hydraulic Conductivity (m/s)
H =	Hydraulic head of the original water table (m)
h_w =	Hydraullic head at maximum dewatering (m)
R_O =	Radius of influence of Well or Point Source (m)
r_w =	Equivalent radius of the well (m)

To calculate the equivalent radius of influence for a Well or Point Source. (Approximated using the Sichart and Kryieleis Method):

Equation

$$R_O = 3000(H - h_W)\sqrt{K}$$

Where:

R_o =	Radius of Influence for a radial flow structure (m)
K =	Hydraulic Conductivity (m/s)
H =	Initial Groundwater Level (m)
h_w =	Groundwater Level at the Base of the Excavation (m)

To calculate the equivalent radius of the well:

Equation

$$r_w = \sqrt{\frac{ab}{\pi}}$$

Where:

r_w =	Equivalent radius of the well (m)
a =	Length of excavation area (m)
b =	Width of excavation area (m)

Parameters

Excavation Parameters				Aquifer Parameters			Calcuated Parameters				
Excavation Length, a (m)	Excavation Width, b (m)	Excavation Depth (m bgs)	Depth Requiring Dewatering (m bgs)	Depth to Aquitard (m bgs)	Groundwater Level (m bgs)	K (m/s)	H (m)	h_w (m)	r_w (m)	R_o (m)	$R_{o'}$ (m)
29.7	41.2	12	12.5	14	5.71	5.51E-05	8.29	1.5	19.74	151.21	170.95

$R_{o'}$ (m) = $R_O + r_w$ (When R_O estimate is within excavation)

Dewatering Calculations

Q =	0.005331	m^3/s	GW Flow Rate per Second
Q =	460.58	m^3/day	GW Flow Rate per day
Q =	460,579	L/day	GW Flow Rate
2 Q =	921,158	L/day	GW Flow Rate with 2x Safety Factor
Q =	1,061,738	L/day	Total Volumes with Incidental Precipitation Volume

Incidental Precipitation

Precipitation (m)	0.1148
Excavation Area (m^2)	1225
Precipitation Volume (m^3/day)	141
Precipitation Volume (L/day)	140,580

Proposed Building Excavation
Method: Dupuit-Forcheimer Equation - Average Conditions Case Scenario Estimate

To calculate flow from a **point source** in an unconfined aquifer:

Equation

$$Q = \frac{\pi K\left(H^2 - {h_w}^2\right)}{ln\frac{R_o}{r_w}}$$

Where:

Q =	Pumping Rate (m^3/s)
K =	Hydraulic Conductivity (m/s)
H =	Hydraulic head of the original water table (m)
h_w =	Hydraullic head at maximum dewatering (m)
R_O =	Radius of influence of Well or Point Source (m)
r_w =	Equivalent radius of the well (m)

To calculate the equivalent radius of influence for a Well or Point Source. (Approximated using the Sichart and Kryieleis Method):

Equation

$$R_O = 3000(H - h_W)\sqrt{K}$$

Where:

R_o =	Radius of Influence for a radial flow structure (m)
K =	Hydraulic Conductivity (m/s)
H =	Initial Groundwater Level (m)
h_w =	Groundwater Level at the Base of the Excavation (m)

To calculate the equivalent radius of the well:

Equation

$$r_w = \sqrt{\frac{ab}{\pi}}$$

Where:

r_w =	Equivalent radius of the well (m)
a =	Length of excavation area (m)
b =	Width of excavation area (m)

Parameters

Excavation Parameters				Aquifer Parameters			Calcuated Parameters				
Length, a (m)	Width, b (m)	Depth (m bgs)	Depth Requiring Dewatering (m bgs)	Depth to Aquitard (m bgs)	Groundwater Level (m bgs)	K (m/s)	H (m)	h_w (m)	r_w (m)	R_o (m)	R_{o*} (m)
29.7	41.2	12	12.5	14	6.30	1.14E-06	7.70	1.5	19.74	19.86	39.60

R_{o*} (m) = $R_O + r_w$ (When R_O estimate is within excavation)

Dewatering Calculations

Q =	0.000293	m^3/s	GW Flow Rate per Second
Q =	25.35	m^3/day	GW Flow Rate per day
Q =	25,349	L/day	GW Flow Rate
2 Q =	50,699	L/day	GW Flow Rate with 2x Safety Factor
Q =	191,279	L/day	Total Volumes with Incidental Precipitation Volume

Incidental Precipitation

Precipitation (m)	0.1148
Excavation Area (m^2)	1225
Precipitation Volume (m^3/day)	141
Precipitation Volume (L/day)	140,580

Appendix F
ERIS EcoLog Report

ENGLOBE

ENVIRONMENTAL RISK INFORMATION SERVICES

DATABASE REPORT

Project Property:	*Phase I ESA - 424 Churchill Ave N, Ottawa, ON* *424 Churchill Avenue North* *Ottawa ON K1Z 5C8*
Project No:	
Report Type:	*Quote - Custom-Build Your Own Report*
Order No:	*21032600178*
Requested by:	*DST Consulting Engineers Inc.*
Date Completed:	*March 31, 2021*

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

Table of Contents

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.

License for use of information in Report: No page of this report can be used without this cover page, this notice and the project property identifier. The information in Report(s) may not be modified or re-sold.

Your Liability for misuse: Using this Service and/or its reports in a manner contrary to this Notice or your agreement will be in breach of copyright and contract and ERIS may obtain damages for such mis-use, including damages caused to third parties, and gives ERIS the right to terminate your account, rescind your license to any previous reports and to bar you from future use of the Service.

No warranty of Accuracy or Liability for ERIS: The information contained in this report has been produced by ERIS Information Limited Partnership ("ERIS") using various sources of information, including information provided by Federal and Provincial government departments. The report applies only to the address and up to the date specified on the cover of this report, and any alterations or deviation from this description will require a new report. This report and the data contained herein does not purport to be and does not constitute a guarantee of the accuracy of the information contained herein and does not constitute a legal opinion nor medical advice. Although ERIS has endeavored to present you with information that is accurate, ERIS disclaims, any and all liability for any errors, omissions, or inaccuracies in such information and data, whether attributable to inadvertence, negligence or otherwise, and for any consequences arising therefrom. Liability on the part of ERIS is limited to the monetary value paid for this report.

Trademark and Copyright: You may not use the ERIS trademarks or attribute any work to ERIS other than as outlined above. This Service and Report (s) are protected by copyright owned by ERIS Information Limited Partnership. Copyright in data used in the Service or Report(s) (the "Data") is owned by ERIS or its licensors. The Service, Report(s) and Data may not be copied or reproduced in whole or in any substantial part without prior written consent of ERIS.

Executive Summary

Property Information:

Project Property:	*Phase I ESA - 424 Churchill Ave N, Ottawa, ON* *424 Churchill Avenue North Ottawa ON K1Z 5C8*
Project No:	

Order Information:

Order No:	*21032600178*
Date Requested:	*March 26, 2021*
Requested by:	*DST Consulting Engineers Inc.*
Report Type:	*Quote - Custom-Build Your Own Report*

Historical/Products:

City Directory Search	*CD - Subject Site plus 5 Adjacent Properties*
Insurance Products	*Fire Insurance Maps/Inspection Reports/Site Plans*

Executive Summary: Report Summary

Database	Name	Searched	Project Property	Boundary to 0.25km	Total
AAGR	Abandoned Aggregate Inventory	N	-	-	-
AGR	Aggregate Inventory	N	-	-	-
AMIS	Abandoned Mine Information System	N	-	-	-
ANDR	Anderson's Waste Disposal Sites	Y	0	0	0
AST	Aboveground Storage Tanks	N	-	-	-
AUWR	Automobile Wrecking & Supplies	N	-	-	-
BORE	Borehole	N	-	-	-
CA	Certificates of Approval	N	-	-	-
CDRY	Dry Cleaning Facilities	Y	1	0	1
CFOT	Commercial Fuel Oil Tanks	Y	0	0	0
CHEM	Chemical Manufacturers and Distributors	N	-	-	-
CHM	Chemical Register	N	-	-	-
CNG	Compressed Natural Gas Stations	N	-	-	-
COAL	Inventory of Coal Gasification Plants and Coal Tar Sites	Y	0	0	0
CONV	Compliance and Convictions	N	-	-	-
CPU	Certificates of Property Use	N	-	-	-
DRL	Drill Hole Database	N	-	-	-
DTNK	Delisted Fuel Tanks	N	-	-	-
EASR	Environmental Activity and Sector Registry	N	-	-	-
EBR	Environmental Registry	N	-	-	-
ECA	Environmental Compliance Approval	N	-	-	-
EEM	Environmental Effects Monitoring	N	-	-	-
EHS	ERIS Historical Searches	N	-	-	-
EIIS	Environmental Issues Inventory System	N	-	-	-
EMHE	Emergency Management Historical Event	N	-	-	-
EPAR	Environmental Penalty Annual Report	N	-	-	-
EXP	List of Expired Fuels Safety Facilities	Y	0	3	3
FCON	Federal Convictions	N	-	-	-
FCS	Contaminated Sites on Federal Land	N	-	-	-
FOFT	Fisheries & Oceans Fuel Tanks	N	-	-	-
FRST	Federal Identification Registry for Storage Tank Systems (FIRSTS)	N	-	-	-
FST	Fuel Storage Tank	Y	0	3	3
FSTH	Fuel Storage Tank - Historic	Y	0	2	2
GEN	Ontario Regulation 347 Waste Generators Summary	Y	14	84	98
GHG	Greenhouse Gas Emissions from Large Facilities	N	-	-	-
HINC	TSSA Historic Incidents	Y	0	2	2

Database	Name	Searched	Project Property	Boundary to 0.25km	Total
IAFT	Indian & Northern Affairs Fuel Tanks	N	-	-	-
INC	Fuel Oil Spills and Leaks	Y	0	1	1
LIMO	Landfill Inventory Management Ontario	N	-	-	-
MINE	Canadian Mine Locations	N	-	-	-
MNR	Mineral Occurrences	N	-	-	-
NATE	National Analysis of Trends in Emergencies System (NATES)	N	-	-	-
NCPL	Non-Compliance Reports	N	-	-	-
NDFT	National Defense & Canadian Forces Fuel Tanks	N	-	-	-
NDSP	National Defense & Canadian Forces Spills	N	-	-	-
NDWD	National Defence & Canadian Forces Waste Disposal Sites	N	-	-	-
NEBI	National Energy Board Pipeline Incidents	N	-	-	-
NEBP	National Energy Board Wells	N	-	-	-
NEES	National Environmental Emergencies System (NEES)	N	-	-	-
NPCB	National PCB Inventory	Y	0	0	0
NPRI	National Pollutant Release Inventory	N	-	-	-
OGWE	Oil and Gas Wells	N	-	-	-
OOGW	Ontario Oil and Gas Wells	N	-	-	-
OPCB	Inventory of PCB Storage Sites	Y	0	0	0
ORD	Orders	N	-	-	-
PAP	Canadian Pulp and Paper	N	-	-	-
PCFT	Parks Canada Fuel Storage Tanks	N	-	-	-
PES	Pesticide Register	N	-	-	-
PINC	Pipeline Incidents	Y	0	7	7
PRT	Private and Retail Fuel Storage Tanks	Y	0	1	1
PTTW	Permit to Take Water	N	-	-	-
REC	Ontario Regulation 347 Waste Receivers Summary	Y	0	0	0
RSC	Record of Site Condition	Y	0	1	1
RST	Retail Fuel Storage Tanks	Y	0	0	0
SCT	Scott's Manufacturing Directory	Y	0	15	15
SPL	Ontario Spills	Y	0	16	16
SRDS	Wastewater Discharger Registration Database	N	-	-	-
TANK	Anderson's Storage Tanks	Y	0	0	0
TCFT	Transport Canada Fuel Storage Tanks	N	-	-	-
VAR	Variances for Abandonment of Underground Storage Tanks	Y	0	0	0
WDS	Waste Disposal Sites - MOE CA Inventory	Y	0	0	0
WDSH	Waste Disposal Sites - MOE 1991 Historical Approval Inventory	Y	0	0	0
WWIS	Water Well Information System	N	-	-	-
	Total:		15	135	150

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev diff (m)	Page Number
1	GEN	LAUNDRY LAND	424 CHURCHILL AVENUE OTTAWA ON K1N 6B5	ENE/0.0	-0.14	38
1	GEN	LAUNDRY LAND 24-215	424 CHURCHILL AVENUE OTTAWA ON K1Z 5C8	ENE/0.0	-0.14	38
1	GEN	LAUNDRY LAND	424 CHURCHILL AVENUE OTTAWA ON K1Z 5C8	ENE/0.0	-0.14	38
1	GEN	LAUNDRY LAND	424 CHURCHILL AVENUE OTTAWA ON K1Z 5C8	ENE/0.0	-0.14	39
1	GEN	LAUNDRY LAND	424 CHURCHILL AVENUE OTTAWA ON K1Z 5C8	ENE/0.0	-0.14	39
1	GEN	LAUNDRY LAND	424 CHURCHILL AVENUE OTTAWA ON K1Z 5C8	ENE/0.0	-0.14	39
1	GEN	LAUNDRY LAND	424 CHURCHILL AVENUE OTTAWA ON K1Z 5C8	ENE/0.0	-0.14	39
1	GEN	LAUNDRY LAND	424 CHURCHILL AVENUE OTTAWA ON	ENE/0.0	-0.14	40

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev diff (m)	Page Number
1	GEN	LAUNDRY LAND	424 Churchill ave. Ottawa ON K1Z 5C8	ENE/0.0	-0.14	40
1	GEN	LAUNDRY LAND	424 Churchill ave. Ottawa ON K1Z 5C8	ENE/0.0	-0.14	40
1	GEN	LAUNDRY LAND	424 Churchill ave. Ottawa ON K1Z 5C8	ENE/0.0	-0.14	41
1	GEN	LAUNDRY LAND	424 Churchill ave. Ottawa ON K1Z 5C8	ENE/0.0	-0.14	41
1	CDRY	Laundry Land Cleaning	424 Churchill Ave N Ottawa ON K1Z5C8	ENE/0.0	-0.14	41
1	GEN	LAUNDRY LAND	424 Churchill ave. Ottawa ON K1Z 5C8	ENE/0.0	-0.14	41
1	GEN	LAUNDRY LAND	424 Churchill ave. Ottawa ON K1Z 5C8	ENE/0.0	-0.14	42

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
2	GEN	Blyth Academy Ottawa	352 Danforth Ave Ottawa ON	WSW/16.0	-0.05	42
2	GEN	Blyth Academy Ottawa	352 Danforth Ave Ottawa ON K2A 0E2	WSW/16.0	-0.05	42
2	GEN	Blyth Academy Ottawa	352 Danforth Ave Ottawa ON K2A 0E2	WSW/16.0	-0.05	43
2	GEN	Blyth Academy Ottawa	352 Danforth Ave Ottawa ON K2A 0E2	WSW/16.0	-0.05	43
3	SPL	Enbridge Gas Distribution Inc.	412 & 414 Churchill Ave. Ottawa ON	NNW/30.9	-0.14	43
3	INC		412 & 414 Churchill Avenue, Ottawa ON	NNW/30.9	-0.14	44
4	GEN	ALBERT & SON ENGRAVERS	412B CHURCHILL AVE. OTTAWA ON K1Z 5C6	NNW/30.9	-0.14	44
5	GEN	PEARL CLEANERS	354B RICHMOND ROAD OTTAWA ON K2A 0E8	NW/48.7	-1.10	45
6	GEN	VELO SPORTABLE CYCLE	358 RICHMOND ROAD OTTAWA ON K2A 0E8	WNW/51.9	-1.04	45
6	GEN	1534244 Ontario Inc	358 Richmond Road Ottawa ON	WNW/51.9	-1.04	46
7	GEN	Ottawa-Carleton District School Board	345 Ravenhill Ave. Ottawa ON K2A 0J5	SSE/59.9	1.64	46
7	GEN	Ottawa-Carleton District School Board	345 Ravenhill Ave. Ottawa ON K2A 0J5	SSE/59.9	1.64	46

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
7	GEN	Ottawa-Carleton District School Board	345 Ravenhill Ave. Ottawa ON K2A 0J5	SSE/59.9	1.64	46
7	GEN	Ottawa-Carleton District School Board	345 Ravenhill Ave. Ottawa ON K2A 0J5	SSE/59.9	1.64	47
7	GEN	Ottawa-Carleton District School Board	345 Ravenhill Ave. Ottawa ON	SSE/59.9	1.64	47
7	GEN	Ottawa-Carleton District School Board	345 Ravenhill Ave. Ottawa ON K2A 0J5	SSE/59.9	1.64	47
7	GEN	Ottawa-Carleton District School Board	345 Ravenhill Ave. Ottawa ON K2A 0J5	SSE/59.9	1.64	48
7	GEN	Ottawa-Carleton District School Board	345 Ravenhill Ave. Ottawa ON K2A 0J5	SSE/59.9	1.64	48
7	GEN	Ottawa-Carleton District School Board Health & Safety	345 Ravenhill Ave. Ottawa ON K2A 0J5	SSE/59.9	1.64	48
7	GEN	Ottawa-Carleton District School Board Health & Safety	345 Ravenhill Ave. Ottawa ON K2A 0J5	SSE/59.9	1.64	49
7	GEN	Ottawa-Carleton District School Board Health & Safety	345 Ravenhill Ave. Ottawa ON K2A 0J5	SSE/59.9	1.64	49
8	GEN	Mountain Equipment Co-op	366 Richmond Road Ottawa ON	W/62.6	-1.03	50
8	GEN	Mountain Equipment Co-op	366 Richmond Road Ottawa ON K2A 0E8	W/62.6	-1.03	50
8	GEN	Mountain Equipment Co-op	366 Richmond Road Ottawa ON K2A 0E8	W/62.6	-1.03	50
8	GEN	Mountain Equipment Co-op	366 Richmond Road Ottawa ON K2A 0E8	W/62.6	-1.03	50

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
8	GEN	Mountain Equipment Co-op	366 Richmond Road Ottawa ON K2A 0E8	W/62.6	-1.03	51
8	GEN	Mountain Equipment Co-op	366 Richmond Road Ottawa ON K2A 0E8	W/62.6	-1.03	51
8	GEN	Mountain Equipment Co-op Ottawa	366 Richmond Road Ottawa ON K2A 0E8	W/62.6	-1.03	51
8	GEN	Mountain Equipment Co-op Ottawa	366 Richmond Road Ottawa ON K2A 0E8	W/62.6	-1.03	52
9	GEN	WESTBOROUGH PHARMASAVE	340 RICHMOND ROAD OTTAWA ON K2A 0E8	NNW/71.6	-1.02	52
9	GEN	WESTBORO PHARMACY LTD	WESTBORO PHARMACY LIMITED 340 RICHMOND ROAD OTTAWA ON K2A 0E8	NNW/71.6	-1.02	52
10	SCT	BlackCherry Digital Media Inc.	346 Richmond Rd Suite 210 Ottawa ON K2A 0E8	NNW/72.0	-1.02	53
11	GEN	561391 Ontario Inc.	350 Richmond Road Ottawa ON K2A 0E8	NNW/72.6	-1.02	53
12	SPL	PRIVATE RESIDENCE	518 BYRON AVE. STORAGE TANK/BARREL OTTAWA CITY ON K2A 0E3	SW/78.9	0.27	53
13	SCT	Valberg Imaging	322 Richmond Rd Ottawa ON K1Z 6X6	NNE/84.6	-0.11	54
14	GEN	FREDERICK GRODDE LTD.	379 DANFORTH AVENUE OTTAWA ON K2A 0E1	WSW/87.9	-0.58	54
14	GEN	FREDERICK GRODDE LTD.	379 DANFORTH AVENUE OTTAWA ON K2A 0E1	WSW/87.9	-0.58	54

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
14	GEN	FREDERICK GRODDE LTD.	379 DANFORTH AVENUE OTTAWA ON K2A 0E1	WSW/87.9	-0.58	54
15	GEN	JOSEPH C. GAFFNEY	372 RICHMOND ROAD OTTAWA ON K2A 0E8	W/93.0	-1.01	55
15	GEN	JOSEPH C. GAFFNEY 22-433	372 RICHMOND ROAD OTTAWA ON K2A 0E8	W/93.0	-1.01	55
16	HINC		343 RICHMOND ROAD Ottawa ON K2A 0E7	NNW/96.6	-1.04	55
17	GEN	HYBRID PHRARM INC	318 RICHMOND RD OTTAWA ON K1Z6X6	NNE/105.6	-1.17	56
17	GEN	HYBRID PHRARM INC	318 RICHMOND RD OTTAWA ON K1Z6X6	NNE/105.6	-1.17	56
17	GEN	HYBRID PHRARM INC	318 RICHMOND RD OTTAWA ON K1Z6X6	NNE/105.6	-1.17	56
18	GEN	First General Services (URA)	528 Byron St Ottawa ON K2A 0E3	SW/121.4	-0.05	57
19	RSC	Mr. Arnold Midgley, The Trustees of Kitchissippi United Church	450 Churchill Avenue North, Ottawa, Ontario, K1Z 5E2 ON K1Z 5E2	SSE/121.9	2.46	57
20	SCT	Forbie Activewear	314 Richmond Rd Ottawa ON K1Z 6X6	NNE/124.6	-1.17	57
21	SPL		386 Richmond Rd S21 RESIDENCE<UNOFFICIAL> Ottawa ON K2A 0E8	W/135.1	-0.96	58
21	GEN	Ottawa Carleton Construction Group Ltd.	386 Richmond Road Ottawa ON K2A 0E8	W/135.1	-0.96	58
22	SPL	BANK OF NOVA SCOTIA	388 RICHMOND ROAD BRANCH 388 RICHMOND ST, OTTAWA OTTAWA CITY ON K2A 0E8	W/141.0	-1.05	58

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
22	SPL	PRIVATE BUSINESS	388 RICHMOND RD. OTTAWA BANK OF NOVA SCOTIA STORAGE TANK OTTAWA CITY ON K2A 0E8	W/141.0	-1.05	59
22	SPL	PRIVATE BUSINESS	BANK OF NOVA SCOTIA, 388 RICHMOND ST STORAGE TANK OTTAWA CITY ON K2A 0E8	W/141.0	-1.05	59
22	SPL		388 Richmond Rd. Ottawa ON K2A 0E8	W/141.0	-1.05	60
23	PRT	TWENTY FIRST CENTURY MOTORS INC	319 RICHMOND RD OTTAWA ON K1Z6X7	N/147.0	-1.21	60
23	FSTH	AVENUES GARAGE LTD	319 RICHMOND RD OTTAWA ON K1Z 6X7	N/147.0	-1.21	61
23	FSTH	AVENUES GARAGE LTD	319 RICHMOND RD OTTAWA ON K1Z 6X7	N/147.0	-1.21	61
23	GEN	Avenues Garage Ltd.	319 Richmond Rd Ottawa ON	N/147.0	-1.21	62
23	EXP	AVENUES GARAGE LTD	319 RICHMOND RD OTTAWA K1Z 6X7 ON CA ON	N/147.0	-1.21	62
23	EXP	AVENUES GARAGE LTD	319 RICHMOND RD OTTAWA K1Z 6X7 ON CA ON	N/147.0	-1.21	62
23	EXP	AVENUES GARAGE LTD	319 RICHMOND RD OTTAWA K1Z 6X7 ON CA ON	N/147.0	-1.21	63
23	FST	AVENUES GARAGE LTD	319 RICHMOND RD OTTAWA K1Z 6X7 ON CA ON	N/147.0	-1.21	63
23	FST	AVENUES GARAGE LTD	319 RICHMOND RD OTTAWA K1Z 6X7 ON CA ON	N/147.0	-1.21	63

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
23	FST	AVENUES GARAGE LTD	319 RICHMOND RD OTTAWA K1Z 6X7 ON CA ON	N/147.0	-1.21	64
24	GEN	Cassone Construction	300 Richmond Rd. Ottawa ON	NE/148.6	-1.09	64
25	GEN	AL PARSONS (OUT OF BUSINESS)	376 MADISON AVE. OTTAWA ON K2A 0B7	WNW/159.8	-2.04	65
25	GEN	AL PARSONS (OUT OF BUSINESS) 02-233	376 MADISON AVE. OTTAWA ON K2A 0B7	WNW/159.8	-2.04	65
26	SPL	PRIVATE RESIDENCE	HOME AT 389 DANFORTH AVE FURNACE OIL TANK FURNACE OIL TANK OTTAWA CITY ON K2A 0E1	WSW/162.6	-1.07	65
27	SCT	GEVC Interactive Inc.	311 Richmond Rd Suite 204 Ottawa ON K1Z 6X3	NNE/164.4	-0.97	66
28	PINC	ENBRIDGE GAS INC	401 EDEN AVE,,OTTAWA,ON,K1Z 5J1,CA ON	NE/169.5	-0.94	66
29	SCT	Imagnan Corp.	376 Churchill Ave N Suite 107 Ottawa ON K1Z 5C3	NW/173.9	-1.95	66
29	SCT	C.J.T. Surplus Equipment Ltd.	376 Churchill Ave N Suite 306 Ottawa ON K1Z 5C3	NW/173.9	-1.95	66
29	GEN	regional elevator	376 churchill road ottawa ON	NW/173.9	-1.95	67
30	SCT	Gold Cast	377 Churchill Ave N Ottawa ON K1Z 5C4	N/177.4	-2.05	67
31	SCT	Forbie Activewear	375 Churchill Ave N Ottawa ON K1Z 5C4	N/184.1	-2.05	67
32	SPL	Enbridge Gas Distribution Inc.	412 Edgewood Avenue Ottawa ON	ENE/184.9	-0.33	68

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
32	PINC	PIPELINE HIT 1/2"	412 EDGEWOOD AVE,,OTTAWA,ON,K1Z 5K5,CA ON	ENE/184.9	-0.33	68
33	SCT	Simply Wood Furnishings Ltd.	393A Richmond Rd Ottawa ON K2A 0E9	W/187.7	-2.07	69
33	GEN	Mike Steinberg	393-401 Richmond Road Ottawa ON K2A 0E9	W/187.7	-2.07	69
33	SCT	Simply Wood Furnishings	393A Richmond Rd Ottawa ON K2A 0E9	W/187.7	-2.07	69
34	SCT	Entomological Society of Cda	393 Winston Ave Ottawa ON K2A 1Y8	WNW/193.8	-2.49	69
35	SPL	Enbridge Gas Distribution Inc.	433 Roosevelt Ave. Ottawa ON	WSW/195.7	-0.12	70
35	PINC	ENBRIDGE GAS INC	433 ROOSEVELT AVE,,OTTAWA,ON,K2A 1Z4,CA ON	WSW/195.7	-0.12	70
36	GEN	DISTRICT REALTY	411 ROOSEVELT AVENUE OTTAWA ON K2A3X9	WSW/202.4	-2.08	71
37	HINC		464 EVERED AVENUE OTTAWA ON K1Z 5K8	ESE/211.6	3.01	71
38	GEN	TUBMAN FUNERAL HOMES	403 RICHMOND RD OTTAWA ON K2A 0E9	W/218.7	-2.28	71
38	GEN	TUBMAN FUNERAL HOMES 44-171	403 RICHMOND RD OTTAWA ON K2A 0E9	W/218.7	-2.28	72
38	GEN	TUBMAN FUNERAL HOMES	403 RICHMOND ROAD OTTAWA ON K2A 0E9	W/218.7	-2.28	72

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
38	GEN	J.A. TUBMAN FUNERAL HOMES LIMITED	403 RICHMOND ROAD OTTAWA ON K2A 0E9	W/218.7	-2.28	72
38	GEN	TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	W/218.7	-2.28	72
38	GEN	TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	W/218.7	-2.28	73
38	GEN	TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	W/218.7	-2.28	73
38	GEN	TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	W/218.7	-2.28	73
38	GEN	TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	W/218.7	-2.28	74
38	GEN	TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON	W/218.7	-2.28	74
38	GEN	TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	W/218.7	-2.28	74
38	GEN	TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	W/218.7	-2.28	75
38	GEN	TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	W/218.7	-2.28	75
38	GEN	TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	W/218.7	-2.28	75
38	GEN	TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	W/218.7	-2.28	76
38	GEN	TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	W/218.7	-2.28	76

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
39	SPL	PRIVATE RESIDENCE	HOUSE AT 356 WHITBY AVE FURNACE OIL TANK OTTAWA CITY ON K2A 0B5	NW/219.8	-3.04	76
40	GEN	Cameron Veterinary Professional Corp	348 Whitby Ave Ottawa ON K2A 0B5	NW/220.9	-3.10	77
40	GEN	Cameron Veterinary Professional Corp	348 Whitby Ave Ottawa ON K2A 0B5	NW/220.9	-3.10	77
40	GEN	Cameron Veterinary Professional Corp	348 Whitby Ave Ottawa ON K2A 0B5	NW/220.9	-3.10	78
40	GEN	Cameron Veterinary Professional Corp	348 Whitby Ave Ottawa ON K2A 0B5	NW/220.9	-3.10	78
41	GEN	METROTYPE GRAPHICS LTD.	364 CHURCHILL STREET NORTH OTTAWA ON K1Z 5G9	NNW/224.8	-3.00	79
41	GEN	METROTYPE GRAPHICS LTD.	364 CHURCHILL STREET NORTH OTTAWA ON K1Z 5G9	NNW/224.8	-3.00	79
41	GEN	METROTYPE GRAPHICS LTD. 26-238	364 CHURCHILL STREET NORTH OTTAWA ON K1Z 5G9	NNW/224.8	-3.00	79
41	GEN	METRO(OUT OF BUS) 26-238	364 CHURCHILL STREET NORTH OTTAWA ON K1Z 5G9	NNW/224.8	-3.00	79
41	GEN	Cameron Veterinary Professional Corporation	364 Churchill Avenue North Ottawa ON K1Z 5C2	NNW/224.8	-3.00	80
41	GEN	Cameron Veterinary Professional Corporation	364 Churchill Avenue North Ottawa ON K1Z 5C2	NNW/224.8	-3.00	80
41	GEN	Cameron Veterinary Professional Corporation	364 Churchill Avenue North Ottawa ON K1Z 5C2	NNW/224.8	-3.00	80
41	GEN	Cameron Veterinary Professional Corporation	364 Churchill Avenue North Ottawa ON K1Z 5C2	NNW/224.8	-3.00	81

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
41	GEN	Cameron Veterinary Professional Corporation	364 Churchill Avenue North Ottawa ON K1Z 5C2	NNW/224.8	-3.00	81
41	GEN	Cameron Veterinary Professional Corporation	364 Churchill Avenue North Ottawa ON	NNW/224.8	-3.00	81
41	GEN	Cameron Veterinary Professional Corporation	364 Churchill Avenue North Ottawa ON K1Z 5C2	NNW/224.8	-3.00	82
41	GEN	Cameron Veterinary Professional Corporation	364 Churchill Avenue North Ottawa ON K1Z 5C2	NNW/224.8	-3.00	82
42	SPL	CANADIAN WASTE SERVICES	363 CHURCHILL, NORTH OF RICHMOND MOTOR VEHICLE (OPERATING FLUID) OTTAWA CITY ON	NNW/225.3	-3.08	82
43	PINC	ZONE 5 LANDSCAPING INC	409 EDGEWOOD AVE,,OTTAWA,ON,K1Z 5K6,CA ON	ENE/227.9	-1.06	83
43	SPL	Enbridge Gas Distribution Inc.	409 Edgewood Avenue Ottawa ON	ENE/227.9	-1.06	83
44	SPL		424 Athlone St Ottawa ON	ENE/248.5	-0.05	84
44	PINC	GARY PATRICK GEHL	424 ATHLONE AVE,,OTTAWA,ON,K1Z 5M5,CA ON	ENE/248.5	-0.05	84
45	SPL	8596239 Canada Inc. <UNOFFICIAL>	400 Athlone Ave Ottawa ON	ENE/249.4	-1.01	85
46	GEN	J. Clark Pharmacy Care Ltd.	410 RICHMOND ROAD OTTAWA ON K2A 4C4	WSW/249.6	-2.74	85
46	GEN	J. Clark Pharmacy Care Ltd.	410 RICHMOND ROAD OTTAWA ON K2A 4C4	WSW/249.6	-2.74	86
46	GEN	J. Clark Pharmacy Care Ltd.	410 RICHMOND ROAD OTTAWA ON K2A 4C4	WSW/249.6	-2.74	86

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
46	GEN	J. Clark Pharmacy Care Ltd.	410 RICHMOND ROAD OTTAWA ON K2A 4C4	WSW/249.6	-2.74	86
46	GEN	J. Clark Pharmacy Care Ltd.	410 RICHMOND ROAD OTTAWA ON K2A 4C4	WSW/249.6	-2.74	87
47	SCT	Y'S OWL CO-OPERATIVE INC	290 PICTON AVE OTTAWA ON K1Z 8P8	NE/249.6	-1.86	87
47	SCT	Orezone Resources Inc.	290 Picton St Suite 201 Ottawa ON K1Z 8P8	NE/249.6	-1.86	87
47	SCT	Apption Software Inc.	290 Picton Ave Suite 104 Ottawa ON K1Z 8P8	NE/249.6	-1.86	87
47	SCT	Orezone Gold Corporation	290 Picton Ave Suite 201 Ottawa ON K1Z 8P8	NE/249.6	-1.86	88
48	PINC	PIPELINE HIT - 2"	310 ELMGROVE AVE,,OTTAWA,ON,K1Z 6V1,CA ON	N/249.7	-3.05	88
48	SPL	Enbridge Gas Distribution Inc.	310 Elmsgrove Ave Ottawa ON	N/249.7	-3.05	88
49	PINC	BEAVER CONSTRUCTION GROUP INC	422 ATHLONE AVE,,OTTAWA,ON,K1Z 5M5,CA ON	ENE/249.8	0.00	89
50	SCT	DOUBLE L PRINTERS	416 RICHMOND RD OTTAWA ON K2A 0G2	WSW/250.1	-2.72	89
50	SCT	Double L Printers - Div. of 595511 Ontario Inc.	416 Richmond Rd Ottawa ON K2A 0G2	WSW/250.1	-2.72	90

Executive Summary: Summary By Data Source

CDRY - Dry Cleaning Facilities

A search of the CDRY database, dated Jan 2004-Dec 2018 has found that there are 1 CDRY site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
Laundry Land Cleaning	424 Churchill Ave N Ottawa ON K1Z5C8	0.0	1

EXP - List of Expired Fuels Safety Facilities

A search of the EXP database, dated Jul 31, 2020 has found that there are 3 EXP site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
AVENUES GARAGE LTD	319 RICHMOND RD OTTAWA K1Z 6X7 ON CA ON	147.0	23
AVENUES GARAGE LTD	319 RICHMOND RD OTTAWA K1Z 6X7 ON CA ON	147.0	23
AVENUES GARAGE LTD	319 RICHMOND RD OTTAWA K1Z 6X7 ON CA ON	147.0	23

FST - Fuel Storage Tank

A search of the FST database, dated Jul 31, 2020 has found that there are 3 FST site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
AVENUES GARAGE LTD	319 RICHMOND RD OTTAWA K1Z 6X7 ON CA ON	147.0	23
AVENUES GARAGE LTD	319 RICHMOND RD OTTAWA K1Z 6X7 ON CA ON	147.0	23

Site	Address	Distance (m)	Map Key
AVENUES GARAGE LTD	319 RICHMOND RD OTTAWA K1Z 6X7 ON CA ON	147.0	23

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 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
AVENUES GARAGE LTD	319 RICHMOND RD OTTAWA ON K1Z 6X7	147.0	23
AVENUES GARAGE LTD	319 RICHMOND RD OTTAWA ON K1Z 6X7	147.0	23

GEN - Ontario Regulation 347 Waste Generators Summary

A search of the GEN database, dated 1986-Jan 31, 2021 has found that there are 98 GEN site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
LAUNDRY LAND	424 CHURCHILL AVENUE OTTAWA ON K1N 6B5	0.0	1
LAUNDRY LAND 24-215	424 CHURCHILL AVENUE OTTAWA ON K1Z 5C8	0.0	1
LAUNDRY LAND	424 CHURCHILL AVENUE OTTAWA ON K1Z 5C8	0.0	1
LAUNDRY LAND	424 CHURCHILL AVENUE OTTAWA ON K1Z 5C8	0.0	1
LAUNDRY LAND	424 CHURCHILL AVENUE OTTAWA ON K1Z 5C8	0.0	1

Site	Address	Distance (m)	Map Key
LAUNDRY LAND	424 CHURCHILL AVENUE OTTAWA ON K1Z 5C8	0.0	1
LAUNDRY LAND	424 CHURCHILL AVENUE OTTAWA ON K1Z 5C8	0.0	1
LAUNDRY LAND	424 CHURCHILL AVENUE OTTAWA ON	0.0	1
LAUNDRY LAND	424 Churchill ave. Ottawa ON K1Z 5C8	0.0	1
LAUNDRY LAND	424 Churchill ave. Ottawa ON K1Z 5C8	0.0	1
LAUNDRY LAND	424 Churchill ave. Ottawa ON K1Z 5C8	0.0	1
LAUNDRY LAND	424 Churchill ave. Ottawa ON K1Z 5C8	0.0	1
LAUNDRY LAND	424 Churchill ave. Ottawa ON K1Z 5C8	0.0	1
LAUNDRY LAND	424 Churchill ave. Ottawa ON K1Z 5C8	0.0	1
Blyth Academy Ottawa	352 Danforth Ave Ottawa ON	16.0	2
Blyth Academy Ottawa	352 Danforth Ave Ottawa ON K2A 0E2	16.0	2

Site	Address	Distance (m)	Map Key
Blyth Academy Ottawa	352 Danforth Ave Ottawa ON K2A 0E2	16.0	2
Blyth Academy Ottawa	352 Danforth Ave Ottawa ON K2A 0E2	16.0	2
ALBERT & SON ENGRAVERS	412B CHURCHILL AVE. OTTAWA ON K1Z 5C6	30.9	4
PEARL CLEANERS	354B RICHMOND ROAD OTTAWA ON K2A 0E8	48.7	5
VELO SPORTABLE CYCLE	358 RICHMOND ROAD OTTAWA ON K2A 0E8	51.9	6
1534244 Ontario Inc	358 Richmond Road Ottawa ON	51.9	6
Ottawa-Carleton District School Board	345 Ravenhill Ave. Ottawa ON K2A 0J5	59.9	7
Ottawa-Carleton District School Board	345 Ravenhill Ave. Ottawa ON K2A 0J5	59.9	7
Ottawa-Carleton District School Board	345 Ravenhill Ave. Ottawa ON K2A 0J5	59.9	7
Ottawa-Carleton District School Board	345 Ravenhill Ave. Ottawa ON K2A 0J5	59.9	7
Ottawa-Carleton District School Board	345 Ravenhill Ave. Ottawa ON	59.9	7
Ottawa-Carleton District School Board	345 Ravenhill Ave. Ottawa ON K2A 0J5	59.9	7

Site	Address	Distance (m)	Map Key
Ottawa-Carleton District School Board	345 Ravenhill Ave. Ottawa ON K2A 0J5	59.9	7
Ottawa-Carleton District School Board	345 Ravenhill Ave. Ottawa ON K2A 0J5	59.9	7
Ottawa-Carleton District School Board Health & Safety	345 Ravenhill Ave. Ottawa ON K2A 0J5	59.9	7
Ottawa-Carleton District School Board Health & Safety	345 Ravenhill Ave. Ottawa ON K2A 0J5	59.9	7
Ottawa-Carleton District School Board Health & Safety	345 Ravenhill Ave. Ottawa ON K2A 0J5	59.9	7
Mountain Equipment Co-op	366 Richmond Road Ottawa ON	62.6	8
Mountain Equipment Co-op	366 Richmond Road Ottawa ON K2A 0E8	62.6	8
Mountain Equipment Co-op	366 Richmond Road Ottawa ON K2A 0E8	62.6	8
Mountain Equipment Co-op	366 Richmond Road Ottawa ON K2A 0E8	62.6	8
Mountain Equipment Co-op	366 Richmond Road Ottawa ON K2A 0E8	62.6	8
Mountain Equipment Co-op	366 Richmond Road Ottawa ON K2A 0E8	62.6	8

Site	Address	Distance (m)	Map Key
Mountain Equipment Co-op Ottawa	366 Richmond Road Ottawa ON K2A 0E8	62.6	8
Mountain Equipment Co-op Ottawa	366 Richmond Road Ottawa ON K2A 0E8	62.6	8
WESTBOROUGH PHARMASAVE	340 RICHMOND ROAD OTTAWA ON K2A 0E8	71.6	9
WESTBORO PHARMACY LTD	WESTBORO PHARMACY LIMITED 340 RICHMOND ROAD OTTAWA ON K2A 0E8	71.6	9
561391 Ontario Inc.	350 Richmond Road Ottawa ON K2A 0E8	72.6	11
FREDERICK GRODDE LTD.	379 DANFORTH AVENUE OTTAWA ON K2A 0E1	87.9	14
FREDERICK GRODDE LTD.	379 DANFORTH AVENUE OTTAWA ON K2A 0E1	87.9	14
FREDERICK GRODDE LTD.	379 DANFORTH AVENUE OTTAWA ON K2A 0E1	87.9	14
JOSEPH C. GAFFNEY	372 RICHMOND ROAD OTTAWA ON K2A 0E8	93.0	15
JOSEPH C. GAFFNEY 22-433	372 RICHMOND ROAD OTTAWA ON K2A 0E8	93.0	15
HYBRID PHRARM INC	318 RICHMOND RD OTTAWA ON K1Z6X6	105.6	17
HYBRID PHRARM INC	318 RICHMOND RD OTTAWA ON K1Z6X6	105.6	17

Site	Address	Distance (m)	Map Key
HYBRID PHRARM INC	318 RICHMOND RD OTTAWA ON K1Z6X6	105.6	17
First General Services (URA)	528 Byron St Ottawa ON K2A 0E3	121.4	18
Ottawa Carleton Construction Group Ltd.	386 Richmond Road Ottawa ON K2A 0E8	135.1	21
Avenues Garage Ltd.	319 Richmond Rd Ottawa ON	147.0	23
Cassone Construction	300 Richmond Rd. Ottawa ON	148.6	24
AL PARSONS (OUT OF BUSINESS)	376 MADISON AVE. OTTAWA ON K2A 0B7	159.8	25
AL PARSONS (OUT OF BUSINESS) 02-233	376 MADISON AVE. OTTAWA ON K2A 0B7	159.8	25
regional elevator	376 churchill road ottawa ON	173.9	29
Mike Steinberg	393-401 Richmond Road Ottawa ON K2A 0E9	187.7	33
DISTRICT REALTY	411 ROOSEVELT AVENUE OTTAWA ON K2A3X9	202.4	36
TUBMAN FUNERAL HOMES	403 RICHMOND ROAD OTTAWA ON K2A 0E9	218.7	38

Site	Address	Distance (m)	Map Key
J.A. TUBMAN FUNERAL HOMES LIMITED	403 RICHMOND ROAD OTTAWA ON K2A 0E9	218.7	38
TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	218.7	38
TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	218.7	38
TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	218.7	38
TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	218.7	38
TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	218.7	38
TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON	218.7	38
TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	218.7	38
TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	218.7	38
TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	218.7	38
TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	218.7	38
TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	218.7	38

Site	Address	Distance (m)	Map Key
TUBMAN FUNERAL HOMES AND CREMATION	403 RICHMOND ROAD OTTAWA ON K2A 0E9	218.7	38
TUBMAN FUNERAL HOMES	403 RICHMOND RD OTTAWA ON K2A 0E9	218.7	38
TUBMAN FUNERAL HOMES 44-171	403 RICHMOND RD OTTAWA ON K2A 0E9	218.7	38
Cameron Veterinary Professional Corp	348 Whitby Ave Ottawa ON K2A 0B5	220.9	40
Cameron Veterinary Professional Corp	348 Whitby Ave Ottawa ON K2A 0B5	220.9	40
Cameron Veterinary Professional Corp	348 Whitby Ave Ottawa ON K2A 0B5	220.9	40
Cameron Veterinary Professional Corp	348 Whitby Ave Ottawa ON K2A 0B5	220.9	40
METROTYPE GRAPHICS LTD.	364 CHURCHILL STREET NORTH OTTAWA ON K1Z 5G9	224.8	41
METROTYPE GRAPHICS LTD.	364 CHURCHILL STREET NORTH OTTAWA ON K1Z 5G9	224.8	41
METROTYPE GRAPHICS LTD. 26-238	364 CHURCHILL STREET NORTH OTTAWA ON K1Z 5G9	224.8	41
METRO(OUT OF BUS) 26-238	364 CHURCHILL STREET NORTH OTTAWA ON K1Z 5G9	224.8	41

Site	Address	Distance (m)	Map Key
Cameron Veterinary Professional Corporation	364 Churchill Avenue North Ottawa ON K1Z 5C2	224.8	41
Cameron Veterinary Professional Corporation	364 Churchill Avenue North Ottawa ON K1Z 5C2	224.8	41
Cameron Veterinary Professional Corporation	364 Churchill Avenue North Ottawa ON K1Z 5C2	224.8	41
Cameron Veterinary Professional Corporation	364 Churchill Avenue North Ottawa ON K1Z 5C2	224.8	41
Cameron Veterinary Professional Corporation	364 Churchill Avenue North Ottawa ON K1Z 5C2	224.8	41
Cameron Veterinary Professional Corporation	364 Churchill Avenue North Ottawa ON	224.8	41
Cameron Veterinary Professional Corporation	364 Churchill Avenue North Ottawa ON K1Z 5C2	224.8	41
Cameron Veterinary Professional Corporation	364 Churchill Avenue North Ottawa ON K1Z 5C2	224.8	41
J. Clark Pharmacy Care Ltd.	410 RICHMOND ROAD OTTAWA ON K2A 4C4	249.6	46
J. Clark Pharmacy Care Ltd.	410 RICHMOND ROAD OTTAWA ON K2A 4C4	249.6	46
J. Clark Pharmacy Care Ltd.	410 RICHMOND ROAD OTTAWA ON K2A 4C4	249.6	46
J. Clark Pharmacy Care Ltd.	410 RICHMOND ROAD OTTAWA ON K2A 4C4	249.6	46

Site	Address	Distance (m)	Map Key
J. Clark Pharmacy Care Ltd.	410 RICHMOND ROAD OTTAWA ON K2A 4C4	249.6	46

HINC - TSSA Historic Incidents

A search of the HINC database, dated 2006-June 2009* has found that there are 2 HINC site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	343 RICHMOND ROAD Ottawa ON K2A 0E7	96.6	16
	464 EVERED AVENUE OTTAWA ON K1Z 5K8	211.6	37

INC - Fuel Oil Spills and Leaks

A search of the INC database, dated Jul 31, 2020 has found that there are 1 INC site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	412 & 414 Churchill Avenue, Ottawa ON	30.9	3

PINC - Pipeline Incidents

A search of the PINC database, dated Oct 31, 2020 has found that there are 7 PINC site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
ENBRIDGE GAS INC	401 EDEN AVE,,OTTAWA,ON,K1Z 5J1,CA ON	169.5	28
PIPELINE HIT 1/2"	412 EDGEWOOD AVE,,OTTAWA,ON,K1Z 5K5,CA ON	184.9	32

Site	Address	Distance (m)	Map Key
ENBRIDGE GAS INC	433 ROOSEVELT AVE,,OTTAWA,ON,K2A 1Z4,CA ON	195.7	35
ZONE 5 LANDSCAPING INC	409 EDGEWOOD AVE,,OTTAWA,ON,K1Z 5K6,CA ON	227.9	43
GARY PATRICK GEHL	424 ATHLONE AVE,,OTTAWA,ON,K1Z 5M5, CA ON	248.5	44
PIPELINE HIT - 2"	310 ELMGROVE AVE,,OTTAWA,ON,K1Z 6V1,CA ON	249.7	48
BEAVER CONSTRUCTION GROUP INC	422 ATHLONE AVE,,OTTAWA,ON,K1Z 5M5, CA ON	249.8	49

PRT - Private and Retail Fuel Storage Tanks

A search of the PRT database, dated 1989-1996* has found that there are 1 PRT site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
TWENTY FIRST CENTURY MOTORS INC	319 RICHMOND RD OTTAWA ON K1Z6X7	147.0	23

RSC - Record of Site Condition

A search of the RSC database, dated 1997-Sept 2001, Oct 2004-Jan 2021 has found that there are 1 RSC site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
Mr. Arnold Midgley, The Trustees of Kitchissippi United Church	450 Churchill Avenue North, Ottawa, Ontario, K1Z 5E2 ON K1Z 5E2	121.9	19

SCT - Scott's Manufacturing Directory

A search of the SCT database, dated 1992-Mar 2011* has found that there are 17 SCT site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
BlackCherry Digital Media Inc.	346 Richmond Rd Suite 210 Ottawa ON K2A 0E8	72.0	10
Valberg Imaging	322 Richmond Rd Ottawa ON K1Z 6X6	84.6	13
Forbie Activewear	314 Richmond Rd Ottawa ON K1Z 6X6	124.6	20
GEVC Interactive Inc.	311 Richmond Rd Suite 204 Ottawa ON K1Z 6X3	164.4	27
C.J.T. Surplus Equipment Ltd.	376 Churchill Ave N Suite 306 Ottawa ON K1Z 5C3	173.9	29
Imagnan Corp.	376 Churchill Ave N Suite 107 Ottawa ON K1Z 5C3	173.9	29
Gold Cast	377 Churchill Ave N Ottawa ON K1Z 5C4	177.4	30
Forbie Activewear	375 Churchill Ave N Ottawa ON K1Z 5C4	184.1	31
Simply Wood Furnishings	393A Richmond Rd Ottawa ON K2A 0E9	187.7	33
Simply Wood Furnishings Ltd.	393A Richmond Rd Ottawa ON K2A 0E9	187.7	33
Entomological Society of Cda	393 Winston Ave Ottawa ON K2A 1Y8	193.8	34

Site	Address	Distance (m)	Map Key
Y'S OWL CO-OPERATIVE INC	290 PICTON AVE OTTAWA ON K1Z 8P8	249.6	47
Apption Software Inc.	290 Picton Ave Suite 104 Ottawa ON K1Z 8P8	249.6	47
Orezone Resources Inc.	290 Picton St Suite 201 Ottawa ON K1Z 8P8	249.6	47
Orezone Gold Corporation	290 Picton Ave Suite 201 Ottawa ON K1Z 8P8	249.6	47
DOUBLE L PRINTERS	416 RICHMOND RD OTTAWA ON K2A 0G2	250.1	50
Double L Printers - Div. of 595511 Ontario Inc.	416 Richmond Rd Ottawa ON K2A 0G2	250.1	50

SPL - Ontario Spills

A search of the SPL database, dated 1988-Mar 2020; Jul 2020 - Aug 2020 has found that there are 16 SPL site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
Enbridge Gas Distribution Inc.	412 & 414 Churchill Ave. Ottawa ON	30.9	3
PRIVATE RESIDENCE	518 BYRON AVE. STORAGE TANK/BARREL OTTAWA CITY ON K2A 0E3	78.9	12
	386 Richmond Rd S21 RESIDENCE<UNOFFICIAL> Ottawa ON K2A 0E8	135.1	21

Site	Address	Distance (m)	Map Key
	388 Richmond Rd. Ottawa ON K2A 0E8	141.0	22
PRIVATE BUSINESS	BANK OF NOVA SCOTIA, 388 RICHMOND ST STORAGE TANK OTTAWA CITY ON K2A 0E8	141.0	22
PRIVATE BUSINESS	388 RICHMOND RD. OTTAWA BANK OF NOVA SCOTIA STORAGE TANK OTTAWA CITY ON K2A 0E8	141.0	22
BANK OF NOVA SCOTIA	388 RICHMOND ROAD BRANCH 388 RICHMOND ST, OTTAWA OTTAWA CITY ON K2A 0E8	141.0	22
PRIVATE RESIDENCE	HOME AT 389 DANFORTH AVE FURNACE OIL TANK FURNACE OIL TANK OTTAWA CITY ON K2A 0E1	162.6	26
Enbridge Gas Distribution Inc.	412 Edgewood Avenue Ottawa ON	184.9	32
Enbridge Gas Distribution Inc.	433 Roosevelt Ave. Ottawa ON	195.7	35
PRIVATE RESIDENCE	HOUSE AT 356 WHITBY AVE FURNACE OIL TANK OTTAWA CITY ON K2A 0B5	219.8	39
CANADIAN WASTE SERVICES	363 CHURCHILL, NORTH OF RICHMOND MOTOR VEHICLE (OPERATING FLUID) OTTAWA CITY ON	225.3	42
Enbridge Gas Distribution Inc.	409 Edgewood Avenue Ottawa ON	227.9	43
	424 Athlone St Ottawa ON	248.5	44
8596239 Canada Inc.<UNOFFICIAL>	400 Athlone Ave Ottawa ON	249.4	45

Site	Address	Distance (m)	Map Key
Enbridge Gas Distribution Inc.	310 Elmsgrove Ave Ottawa ON	249.7	48

Map: 0.25 Kilometer Radius

Order Number: 21032600178

Address: 424 Churchill Avenue North, Ottawa, ON

ERIS ENVIRONMENTAL RISK INFORMATION SERVICES

- Project Property
- Buffer Outline
- Eris Sites with Higher Elevation
- Eris Sites with Same Elevation
- Eris Sites with Lower Elevation
- Eris Sites with Unknown Elevation
- Expressway
- Principal Highway
- Secondary Highway
- Major Road
- Local road
- Trail
- Proposed Road
- Ferry Route/Ice Road
- Industrial and Resource - Regions
- Main Line
- Sidetrack
- Transit Line
- Abandoned Line
- National Park
- Provincial or Territorial Park
- Other Park
- Golf Course or Driving Range
- Park or Sports Field
- Other Recreation Area

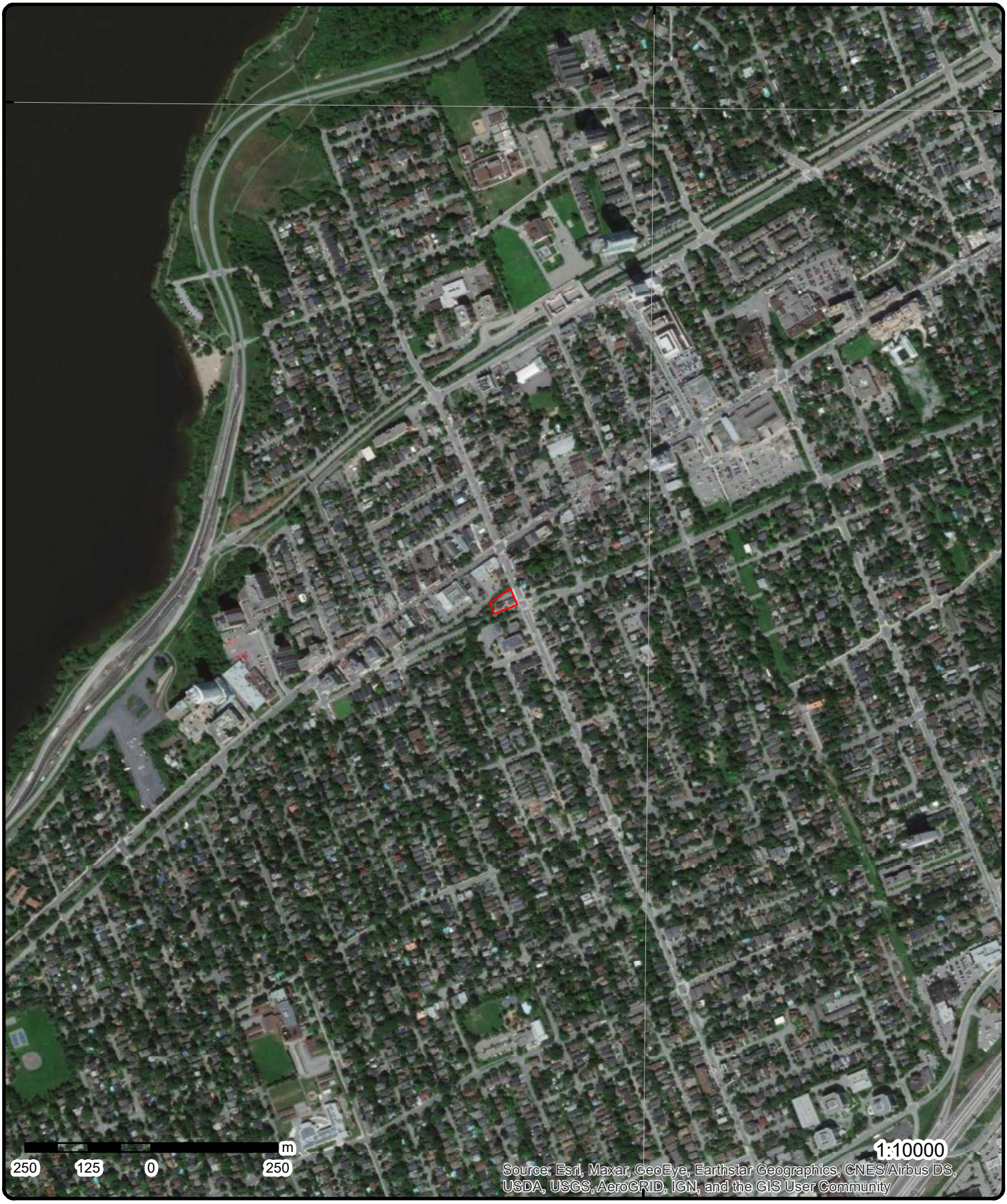
Source: © 2015 DMTI Spatial Inc.

© ERIS Information Limited Partnership

75°45'W

45°24'N

45°24'N



Aerial

Year: 2008

Address: 424 Churchill Avenue North, Ottawa, ON

Source: ESRI World Imagery

Order Number: 21032600178

ERIS
ENVIRONMENTAL RISK INFORMATION SERVICES

© ERIS Information Limited Partnership

Topographic Map

Address: 424 Churchill Avenue North, ON

Source: ESRI World Topographic Map

Order Number: 21032600178

ENVIRONMENTAL RISK INFORMATION SERVICES

© ERIS Information Limited Partnership

Detail Report

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	1 of 15	ENE/0.0	69.7 / -0.14	LAUNDRY LAND 424 CHURCHILL AVENUE OTTAWA ON K1N 6B5	GEN

Generator No: ON0550900
Status:
Approval Years: 86,87,88,89
Contam. Facility:
MHSW Facility:
SIC Code: 9721
SIC Description: POWER LAUND./CLEANERS

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	2 of 15	ENE/0.0	69.7 / -0.14	LAUNDRY LAND 24-215 424 CHURCHILL AVENUE OTTAWA ON K1Z 5C8	GEN

Generator No: ON0550900
Status:
Approval Years: 92,93,94,95,96,97,98
Contam. Facility:
MHSW Facility:
SIC Code: 9721
SIC Description: POWER LAUND./CLEANER

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	3 of 15	ENE/0.0	69.7 / -0.14	LAUNDRY LAND 424 CHURCHILL AVENUE OTTAWA ON K1Z 5C8	GEN

Generator No: ON0550900
Status:
Approval Years: 99,00,01,02,03,04,05,06,07,08
Contam. Facility:
MHSW Facility:
SIC Code: 9721
SIC Description: POWER LAUND./CLEANERS

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	4 of 15	ENE/0.0	69.7 / -0.14	LAUNDRY LAND 424 CHURCHILL AVENUE OTTAWA ON K1Z 5C8	GEN

Generator No: ON0550900
Status:
Approval Years: 2009
Contam. Facility:
MHSW Facility:
SIC Code: 812310
SIC Description: Coin-Operated Laundries and Dry Cleaners

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	5 of 15	ENE/0.0	69.7 / -0.14	LAUNDRY LAND 424 CHURCHILL AVENUE OTTAWA ON K1Z 5C8	GEN

Generator No: ON0550900
Status:
Approval Years: 2010
Contam. Facility:
MHSW Facility:
SIC Code: 812310
SIC Description: Coin-Operated Laundries and Dry Cleaners

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	6 of 15	ENE/0.0	69.7 / -0.14	LAUNDRY LAND 424 CHURCHILL AVENUE OTTAWA ON K1Z 5C8	GEN

Generator No: ON0550900
Status:
Approval Years: 2011
Contam. Facility:
MHSW Facility:
SIC Code: 812310
SIC Description: Coin-Operated Laundries and Dry Cleaners

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	7 of 15	ENE/0.0	69.7 / -0.14	LAUNDRY LAND 424 CHURCHILL AVENUE OTTAWA ON K1Z 5C8	GEN

Generator No: ON0550900
Status:
Approval Years: 2012
Contam. Facility:
MHSW Facility:
SIC Code: 812310

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

SIC Description: Coin-Operated Laundries and Dry Cleaners

Detail(s)

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

---

1 **8 of 15** **ENE/0.0** **69.7 / -0.14** **LAUNDRY LAND** **GEN**
424 CHURCHILL AVENUE
OTTAWA ON

Generator No: ON0550900
Status:
Approval Years: 2013
Contam. Facility:
MHSW Facility:
SIC Code: 812310
SIC Description: COIN-OPERATED LAUNDRIES AND DRY CLEANERS

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

---

1 **9 of 15** **ENE/0.0** **69.7 / -0.14** **LAUNDRY LAND** **GEN**
424 Churchill ave.
Ottawa ON K1Z 5C8

Generator No: ON0550900
Status:
Approval Years: 2016
Contam. Facility: No
MHSW Facility: No
SIC Code: 812310
SIC Description: COIN-OPERATED LAUNDRIES AND DRY CLEANERS

PO Box No:
Country: Canada
Choice of Contact: CO_ADMIN
Co Admin: Thai Phong Tran
Phone No Admin: 728-2105 Ext.

Detail(s)

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

---

1 **10 of 15** **ENE/0.0** **69.7 / -0.14** **LAUNDRY LAND** **GEN**
424 Churchill ave.
Ottawa ON K1Z 5C8

Generator No: ON0550900
Status:
Approval Years: 2015
Contam. Facility: No
MHSW Facility: No
SIC Code: 812310
SIC Description: COIN-OPERATED LAUNDRIES AND DRY CLEANERS

PO Box No:
Country: Canada
Choice of Contact: CO_ADMIN
Co Admin: Thai Phong Tran
Phone No Admin: 728-2105 Ext.

Detail(s)

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	11 of 15	ENE/0.0	69.7 / -0.14	LAUNDRY LAND 424 Churchill ave. Ottawa ON K1Z 5C8	GEN

Generator No: ON0550900
Status:
Approval Years: 2014
Contam. Facility: No
MHSW Facility: No
SIC Code: 812310
SIC Description: COIN-OPERATED LAUNDRIES AND DRY CLEANERS

PO Box No:
Country: Canada
Choice of Contact: CO_ADMIN
Co Admin: Thai Phong Tran
Phone No Admin: 728-2105 Ext.

Detail(s)

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	12 of 15	ENE/0.0	69.7 / -0.14	LAUNDRY LAND 424 Churchill ave. Ottawa ON K1Z 5C8	GEN

Generator No: ON0550900
Status: Registered
Approval Years: As of Dec 2018
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 241 H
Waste Class Desc: Halogenated solvents and residues

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	13 of 15	ENE/0.0	69.7 / -0.14	Laundry Land Cleaning 424 Churchill Ave N Ottawa ON K1Z5C8	CDRY

Legal Name of Company: Laundry Land Dry Cleaning

Waste Quantity by Year

Reporting Year: 2018
Quantity of PERC (kg): 309
Total Waste Water (kg): 230
Total Waste Water (L): 0
Total Residue (kg): 0
Total Residue (L): 0
Total Mix (kg): 0
Total Mix (L): 0
Request for Confidentiality: no
Reason for Confidentiality:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	14 of 15	ENE/0.0	69.7 / -0.14	LAUNDRY LAND 424 Churchill ave. Ottawa ON K1Z 5C8	GEN

Generator No: ON0550900
Status: Registered
Approval Years: As of Jul 2020
Contam. Facility:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

MHSW Facility: **Phone No Admin:**
SIC Code:
SIC Description:

Detail(s)

Waste Class: 241 H
Waste Class Desc: Halogenated solvents and residues

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	15 of 15	ENE/0.0	69.7 / -0.14	LAUNDRY LAND 424 Churchill ave. Ottawa ON K1Z 5C8	GEN

Generator No: ON0550900
Status: Registered
Approval Years: As of Jan 2021
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:
PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 241 H
Waste Class Desc: Halogenated solvents and residues

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
2	1 of 4	WSW/16.0	69.8 / -0.05	Blyth Academy Ottawa 352 Danforth Ave Ottawa ON	GEN

Generator No: ON7687172
Status:
Approval Years: 2013
Contam. Facility:
MHSW Facility:
SIC Code: 611110
SIC Description: ELEMENTARY AND SECONDARY SCHOOLS
PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
2	2 of 4	WSW/16.0	69.8 / -0.05	Blyth Academy Ottawa 352 Danforth Ave Ottawa ON K2A 0E2	GEN

Generator No: ON7687172
Status:
Approval Years: 2016
Contam. Facility: No
MHSW Facility: No
SIC Code: 611110
SIC Description: ELEMENTARY AND SECONDARY SCHOOLS
PO Box No:
Country: Canada
Choice of Contact: CO_OFFICIAL
Co Admin:
Phone No Admin:

Detail(s)

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

---

2 **3 of 4** **WSW/16.0** **69.8 / -0.05** **Blyth Academy Ottawa**
352 Danforth Ave
Ottawa ON K2A 0E2
GEN

Generator No: ON7687172
Status:
Approval Years: 2015
Contam. Facility: No
MHSW Facility: No
SIC Code: 611110
SIC Description: ELEMENTARY AND SECONDARY SCHOOLS

PO Box No:
Country: Canada
Choice of Contact: CO_OFFICIAL
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

---

2 **4 of 4** **WSW/16.0** **69.8 / -0.05** **Blyth Academy Ottawa**
352 Danforth Ave
Ottawa ON K2A 0E2
GEN

Generator No: ON7687172
Status:
Approval Years: 2014
Contam. Facility: No
MHSW Facility: No
SIC Code: 611110
SIC Description: ELEMENTARY AND SECONDARY SCHOOLS

PO Box No:
Country: Canada
Choice of Contact: CO_OFFICIAL
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

---

3 **1 of 2** **NNW/30.9** **69.7 / -0.14** **Enbridge Gas Distribution Inc.**
412 & 414 Churchill Ave.
Ottawa ON
SPL

Ref No: 8482-84ZNTG
Site No:
Incident Dt:
Year:
Incident Cause: Discharge or Emission to Air
Incident Event:
Contaminant Code: 35
Contaminant Name: NATURAL GAS (METHANE)
Contaminant Limit 1:
Contam Limit Freq 1:
Contaminant UN No 1:
Environment Impact: Not Anticipated

Discharger Report:
Material Group:
Health/Env Conseq:
Client Type:
Sector Type: Pipeline
Agency Involved:
Nearest Watercourse:
Site Address:
Site District Office:
Site Postal Code:
Site Region:
Site Municipality:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Nature of Impact:		**Site Lot:**	
Receiving Medium:		**Site Conc:**	
Receiving Env:		**Northing:**	
MOE Response:		**Easting:**	
Dt MOE Arvl on Scn:		**Site Geo Ref Accu:**	
MOE Reported Dt:	4/30/2010	**Site Map Datum:**	
Dt Document Closed:		**SAC Action Class:**	TSSA - Fuel Safety Branch
Incident Reason:	Equipment/Vehicles	**Source Type:**	
Site Name:	possible road Construction site<UNOFFICIAL>		
Site County/District:			
Site Geo Ref Meth:			
Incident Summary:	TSSA: Enbridge:1" plastic damage, methane to atmosphere		
Contaminant Qty:	40 min (duration)		

---

3 | **2 of 2** | **NNW/30.9** | **69.7 / -0.14** | **412 & 414 Churchill Avenue, Ottawa ON** | **INC**

Incident No:	377302	**Any Health Impact:**	
Incident ID:	2528892	**Any Enviro Impact:**	
Instance No:		**Service Interrupted:**	
Status Code:	Causal Analysis Complete	**Was Prop Damaged:**	
Attribute Category:	FS-Incident	**Reside App. Type:**	
Context:		**Commer App. Type:**	
Date of Occurrence:		**Indus App. Type:**	
Time of Occurrence:		**Institut App. Type:**	
Incident Created On:		**Venting Type:**	
Instance Creation Dt:		**Vent Conn Mater:**	
Instance Install Dt:		**Vent Chimney Mater:**	
Occur Insp Start Date:		**Pipeline Type:**	Service / Riser Distribution Pipeline
Approx Quant Rel:		**Pipeline Involved:**	
Tank Capacity:		**Pipe Material:**	Plastic
Fuels Occur Type:		**Depth Ground Cover:**	.8m
Fuel Type Involved:		**Regulator Location:**	Outside
Enforcement Policy:		**Regulator Type:**	Service Regulator (up to 60 psi intake)
Prc Escalation Req:		**Operation Pressure:**	IP
Tank Material Type:		**Liquid Prop Make:**	
Tank Storage Type:		**Liquid Prop Model:**	
Tank Location Type:		**Liquid Prop Serial No:**	
Pump Flow Rate Cap:		**Liquid Prop Notes:**	
Task No:		**Equipment Type:**	
Notes:		**Equipment Model:**	
Drainage System:		**Serial No:**	
Sub Surface Contam.:		**Cylinder Capacity:**	
Aff Prop Use Water:		**Cylinder Cap Units:**	
Contam. Migrated:		**Cylinder Mat Type:**	
Contact Natural Env:		**Near Body of Water:**	
Incident Location:	412 & 414 Churchill Avenue, Ottawa - 1" Pipeline Hit		
Occurence Narrative:	Gas Line not properly Located.		
Operation Type Involved:			
Item:			
Item Description:			
Device Installed Location:			

---

4 | **1 of 1** | **NNW/30.9** | **69.7 / -0.14** | **ALBERT & SON ENGRAVERS 412B CHURCHILL AVE. OTTAWA ON K1Z 5C6** | **GEN**

Generator No:	ON2135900	**PO Box No:**	
Status:		**Country:**	
Approval Years:	96,97,98	**Choice of Contact:**	
Contam. Facility:		**Co Admin:**	
MHSW Facility:		**Phone No Admin:**	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

SIC Code: 2821
SIC Description: PLATEMAKING, ETC.

Detail(s)

Waste Class: 112
Waste Class Desc: ACID WASTE - HEAVY METALS

Waste Class: 211
Waste Class Desc: AROMATIC SOLVENTS

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

---

5 | **1 of 1** | **NW/48.7** | **68.8 / -1.10** | **PEARL CLEANERS**
354B RICHMOND ROAD
OTTAWA ON K2A 0E8 | **GEN**

Generator No: ON1984500
Status:
Approval Years: 95,96,97,98,99,00,01
Contam. Facility:
MHSW Facility:
SIC Code: 2499
SIC Description: OTHER CLOTHING ETC.

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

---

6 | **1 of 2** | **WNW/51.9** | **68.8 / -1.04** | **VELO SPORTABLE CYCLE**
358 RICHMOND ROAD
OTTAWA ON K2A 0E8 | **GEN**

Generator No: ON1830701
Status:
Approval Years: 00,01
Contam. Facility:
MHSW Facility:
SIC Code: 6541
SIC Description: SPORTING GOODS STORE

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 145
Waste Class Desc: PAINT/PIGMENT/COATING RESIDUES

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Waste Class: 213
Waste Class Desc: PETROLEUM DISTILLATES

Waste Class: 221
Waste Class Desc: LIGHT FUELS

Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES

Waste Class: 252
Waste Class Desc: WASTE OILS & LUBRICANTS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
6	2 of 2	WNW/51.9	68.8 / -1.04	1534244 Ontario Inc 358 Richmond Road Ottawa ON	GEN

Generator No: ON5993376
Status:
Approval Years: 03,04,06
Contam. Facility:
MHSW Facility:
SIC Code: 451110
SIC Description: Sporting Goods Stores

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 211
Waste Class Desc: AROMATIC SOLVENTS

Waste Class: 213
Waste Class Desc: PETROLEUM DISTILLATES

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
7	1 of 11	SSE/59.9	71.5 / 1.64	Ottawa-Carleton District School Board 345 Ravenhill Ave. Ottawa ON K2A 0J5	GEN

Generator No: ON6810332
Status:
Approval Years: 2009
Contam. Facility:
MHSW Facility:
SIC Code: 611110
SIC Description: Elementary and Secondary Schools

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 146
Waste Class Desc: OTHER SPECIFIED INORGANICS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
7	2 of 11	SSE/59.9	71.5 / 1.64	Ottawa-Carleton District School Board 345 Ravenhill Ave. Ottawa ON K2A 0J5	GEN

Generator No: ON6810332
Status:
Approval Years: 2010
Contam. Facility:
MHSW Facility:
SIC Code: 611110
SIC Description: Elementary and Secondary Schools

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 146
Waste Class Desc: OTHER SPECIFIED INORGANICS

Waste Class: 145
Waste Class Desc: PAINT/PIGMENT/COATING RESIDUES

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
7	3 of 11	SSE/59.9	71.5 / 1.64	Ottawa-Carleton District School Board 345 Ravenhill Ave.	GEN

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
				Ottawa ON K2A 0J5	

Generator No: ON6810332
Status:
Approval Years: 2011
Contam. Facility:
MHSW Facility:
SIC Code: 611110
SIC Description: Elementary and Secondary Schools

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 145
Waste Class Desc: PAINT/PIGMENT/COATING RESIDUES

Waste Class: 146
Waste Class Desc: OTHER SPECIFIED INORGANICS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
7	4 of 11	SSE/59.9	71.5 / 1.64	Ottawa-Carleton District School Board 345 Ravenhill Ave. Ottawa ON K2A 0J5	GEN

Generator No: ON6810332
Status:
Approval Years: 2012
Contam. Facility:
MHSW Facility:
SIC Code: 611110
SIC Description: Elementary and Secondary Schools

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 145
Waste Class Desc: PAINT/PIGMENT/COATING RESIDUES

Waste Class: 146
Waste Class Desc: OTHER SPECIFIED INORGANICS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
7	5 of 11	SSE/59.9	71.5 / 1.64	Ottawa-Carleton District School Board 345 Ravenhill Ave. Ottawa ON	GEN

Generator No: ON6810332
Status:
Approval Years: 2013
Contam. Facility:
MHSW Facility:
SIC Code: 611110
SIC Description: ELEMENTARY AND SECONDARY SCHOOLS

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 146
Waste Class Desc: OTHER SPECIFIED INORGANICS

Waste Class: 145
Waste Class Desc: PAINT/PIGMENT/COATING RESIDUES

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
7	6 of 11	SSE/59.9	71.5 / 1.64	Ottawa-Carleton District School Board 345 Ravenhill Ave.	GEN

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
				Ottawa ON K2A 0J5	

Generator No: ON6810332
Status:
Approval Years: 2016
Contam. Facility: No
MHSW Facility: No
SIC Code: 611110
SIC Description: ELEMENTARY AND SECONDARY SCHOOLS

PO Box No:
Country: Canada
Choice of Contact: CO_OFFICIAL
Co Admin: Greg Benson
Phone No Admin: 613-596-8211 Ext.8549

Detail(s)

Waste Class: 145
Waste Class Desc: PAINT/PIGMENT/COATING RESIDUES

Waste Class: 146
Waste Class Desc: OTHER SPECIFIED INORGANICS

7	7 of 11	SSE/59.9	71.5 / 1.64	**Ottawa-Carleton District School Board** **345 Ravenhill Ave.** **Ottawa ON K2A 0J5**	GEN

Generator No: ON6810332
Status:
Approval Years: 2015
Contam. Facility: No
MHSW Facility: No
SIC Code: 611110
SIC Description: ELEMENTARY AND SECONDARY SCHOOLS

PO Box No:
Country: Canada
Choice of Contact: CO_OFFICIAL
Co Admin: Greg Benson
Phone No Admin: 613-596-8211 Ext.8549

Detail(s)

Waste Class: 146
Waste Class Desc: OTHER SPECIFIED INORGANICS

Waste Class: 145
Waste Class Desc: PAINT/PIGMENT/COATING RESIDUES

7	8 of 11	SSE/59.9	71.5 / 1.64	**Ottawa-Carleton District School Board** **345 Ravenhill Ave.** **Ottawa ON K2A 0J5**	GEN

Generator No: ON6810332
Status:
Approval Years: 2014
Contam. Facility: No
MHSW Facility: No
SIC Code: 611110
SIC Description: ELEMENTARY AND SECONDARY SCHOOLS

PO Box No:
Country: Canada
Choice of Contact: CO_OFFICIAL
Co Admin: Greg Benson
Phone No Admin: 613-596-8211 Ext.8549

Detail(s)

Waste Class: 145
Waste Class Desc: PAINT/PIGMENT/COATING RESIDUES

Waste Class: 146
Waste Class Desc: OTHER SPECIFIED INORGANICS

7	9 of 11	SSE/59.9	71.5 / 1.64	**Ottawa-Carleton District School Board Health & Safety**	GEN

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
				345 Ravenhill Ave. ***Ottawa ON K2A 0J5***	

Generator No: ON6810332
Status: Registered
Approval Years: As of Dec 2018
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 145 I
Waste Class Desc: Wastes from the use of pigments, coatings and paints

Waste Class: 146 T
Waste Class Desc: Other specified inorganic sludges, slurries or solids

---

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
7	***10 of 11***	***SSE/59.9***	***71.5 / 1.64***	***Ottawa-Carleton District School Board Health & Safety*** ***345 Ravenhill Ave.*** ***Ottawa ON K2A 0J5***	***GEN***

Generator No: ON6810332
Status: Registered
Approval Years: As of Jul 2020
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 146 T
Waste Class Desc: Other specified inorganic sludges, slurries or solids

Waste Class: 145 I
Waste Class Desc: Wastes from the use of pigments, coatings and paints

---

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
7	***11 of 11***	***SSE/59.9***	***71.5 / 1.64***	***Ottawa-Carleton District School Board Health & Safety*** ***345 Ravenhill Ave.*** ***Ottawa ON K2A 0J5***	***GEN***

Generator No: ON6810332
Status: Registered
Approval Years: As of Jan 2021
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 145 I
Waste Class Desc: Wastes from the use of pigments, coatings and paints

Waste Class: 146 T
Waste Class Desc: Other specified inorganic sludges, slurries or solids

---

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
8	1 of 8	W/62.6	68.9 / -1.03	Mountain Equipment Co-op 366 Richmond Road Ottawa ON	GEN

Generator No: ON6336429
Status:
Approval Years: 2013
Contam. Facility:
MHSW Facility:
SIC Code: 451110, 811490
SIC Description: SPORTING GOODS STORES, OTHER PERSONAL AND HOUSEHOLD GOODS REPAIR AND MAINTENANCE

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
8	2 of 8	W/62.6	68.9 / -1.03	Mountain Equipment Co-op 366 Richmond Road Ottawa ON K2A 0E8	GEN

Generator No: ON6336429
Status:
Approval Years: 2011
Contam. Facility:
MHSW Facility:
SIC Code: 451110, 811490
SIC Description:

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
8	3 of 8	W/62.6	68.9 / -1.03	Mountain Equipment Co-op 366 Richmond Road Ottawa ON K2A 0E8	GEN

Generator No: ON6336429
Status:
Approval Years: 2012
Contam. Facility:
MHSW Facility:
SIC Code: 451110, 811490
SIC Description: Sporting Goods Stores, Other Personal and Household Goods Repair and Maintenance

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
8	4 of 8	W/62.6	68.9 / -1.03	Mountain Equipment Co-op 366 Richmond Road Ottawa ON K2A 0E8	GEN

Generator No: ON6336429
Status:
Approval Years: 2015
Contam. Facility: No
MHSW Facility: No
SIC Code: 451110, 811490
SIC Description: SPORTING GOODS STORES, OTHER PERSONAL AND HOUSEHOLD GOODS REPAIR AND MAINTENANCE

PO Box No:
Country: Canada
Choice of Contact: CO_OFFICIAL
Co Admin: Justin Partridge
Phone No Admin: 6137297802 Ext.

Detail(s)

Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES

Waste Class: 252
Waste Class Desc: WASTE OILS & LUBRICANTS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
8	5 of 8	W/62.6	68.9 / -1.03	Mountain Equipment Co-op 366 Richmond Road Ottawa ON K2A 0E8	GEN

Generator No: ON6336429
Status:
Approval Years: 2016
Contam. Facility: No
MHSW Facility: No
SIC Code: 451110, 811490
SIC Description: SPORTING GOODS STORES, OTHER PERSONAL AND HOUSEHOLD GOODS REPAIR AND MAINTENANCE

PO Box No:
Country: Canada
Choice of Contact: CO_OFFICIAL
Co Admin: Justin Partridge
Phone No Admin: 6137297802 Ext.

Detail(s)

Waste Class: 146
Waste Class Desc: OTHER SPECIFIED INORGANICS

Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES

Waste Class: 252
Waste Class Desc: WASTE OILS & LUBRICANTS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
8	6 of 8	W/62.6	68.9 / -1.03	Mountain Equipment Co-op 366 Richmond Road Ottawa ON K2A 0E8	GEN

Generator No: ON6336429
Status:
Approval Years: 2014
Contam. Facility: No
MHSW Facility: No
SIC Code: 451110, 811490
SIC Description: SPORTING GOODS STORES, OTHER PERSONAL AND HOUSEHOLD GOODS REPAIR AND MAINTENANCE

PO Box No:
Country: Canada
Choice of Contact: CO_OFFICIAL
Co Admin: Lukasz Dybinksi
Phone No Admin: 613 729 7802 Ext.

Detail(s)

Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
8	7 of 8	W/62.6	68.9 / -1.03	Mountain Equipment Co-op Ottawa 366 Richmond Road Ottawa ON K2A 0E8	GEN

Generator No: ON6336429
Status: Registered
Approval Years: As of Dec 2018
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 146 T
Waste Class Desc: Other specified inorganic sludges, slurries or solids

Waste Class: 252 L
Waste Class Desc: Waste crankcase oils and lubricants

Waste Class: 331 I
Waste Class Desc: Waste compressed gases including cylinders

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
8	8 of 8	W/62.6	68.9 / -1.03	Mountain Equipment Co-op Ottawa 366 Richmond Road Ottawa ON K2A 0E8	GEN

Generator No: ON6336429
Status: Registered
Approval Years: As of Oct 2019
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 252 L
Waste Class Desc: Waste crankcase oils and lubricants

Waste Class: 331 I
Waste Class Desc: Waste compressed gases including cylinders

Waste Class: 146 T
Waste Class Desc: Other specified inorganic sludges, slurries or solids

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
9	1 of 2	NNW/71.6	68.9 / -1.02	WESTBOROUGH PHARMASAVE 340 RICHMOND ROAD OTTAWA ON K2A 0E8	GEN

Generator No: ON1842422
Status:
Approval Years: 00,01
Contam. Facility:
MHSW Facility:
SIC Code: 6031
SIC Description: PHARMACIES

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
9	2 of 2	NNW/71.6	68.9 / -1.02	WESTBORO PHARMACY LTD WESTBORO PHARMACY LIMITED 340 RICHMOND ROAD OTTAWA ON K2A 0E8	GEN

Generator No: ON1842422
Status:
Approval Years: 02,03,04
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

---

10 **1 of 1** **NNW/72.0** **68.9 / -1.02** **BlackCherry Digital Media Inc.** **SCT**
346 Richmond Rd Suite 210
Ottawa ON K2A 0E8

Established: 01-AUG-04
Plant Size (ft²):
Employment:

--Details--
Description: Graphic Design Services
SIC/NAICS Code: 541430

Description: Software Publishers
SIC/NAICS Code: 511210

Description: Computer Systems Design and Related Services
SIC/NAICS Code: 541510

Description: Motion Picture and Video Production
SIC/NAICS Code: 512110

---

11 **1 of 1** **NNW/72.6** **68.9 / -1.02** **561391 Ontario Inc.** **GEN**
350 Richmond Road
Ottawa ON K2A 0E8

Generator No: ON1337355
Status:
Approval Years: 03,04
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

---

12 **1 of 1** **SW/78.9** **70.2 / 0.27** **PRIVATE RESIDENCE** **SPL**
518 BYRON AVE. STORAGE TANK/BARREL
OTTAWA CITY ON K2A 0E3

Ref No: 27129
Site No:
Incident Dt: 10/28/1989
Year:
Incident Cause: OTHER CAUSE (N.O.S.)
Incident Event:
Contaminant Code:
Contaminant Name:
Contaminant Limit 1:
Contam Limit Freq 1:
Contaminant UN No 1:
Environment Impact: NOT ANTICIPATED
Nature of Impact:
Receiving Medium: LAND
Receiving Env:
MOE Response:
Dt MOE Arvl on Scn:
MOE Reported Dt: 10/28/1989
Dt Document Closed:
Incident Reason: CORROSION
Site Name:

Discharger Report:
Material Group:
Health/Env Conseq:
Client Type:
Sector Type:
Agency Involved:
Nearest Watercourse:
Site Address:
Site District Office:
Site Postal Code:
Site Region:
Site Municipality: 20101
Site Lot:
Site Conc:
Northing:
Easting:
Site Geo Ref Accu:
Site Map Datum:
SAC Action Class:
Source Type:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Site County/District:
Site Geo Ref Meth:
Incident Summary: 400 L FURNACE OIL TO GRD AT RESIDENCE.
Contaminant Qty:

---

13 | **1 of 1** | **NNE/84.6** | **69.8 / -0.11** | **Valberg Imaging**
322 Richmond Rd
Ottawa ON K1Z 6X6 | **SCT**

Established: 01-DEC-85
Plant Size (ft²):
Employment:

--Details--
Description: Other Printing
SIC/NAICS Code: 323119

Description: Photographic Services
SIC/NAICS Code: 541920

---

14 | **1 of 3** | **WSW/87.9** | **69.3 / -0.58** | **FREDERICK GRODDE LTD.**
379 DANFORTH AVENUE
OTTAWA ON K2A 0E1 | **GEN**

Generator No: ON1788600
Status:
Approval Years: 93,94,95,96,97,98,99,00,01
Contam. Facility:
MHSW Facility:
SIC Code: 9999
SIC Description: OTHER SERVICES

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 211
Waste Class Desc: AROMATIC SOLVENTS

Waste Class: 213
Waste Class Desc: PETROLEUM DISTILLATES

---

14 | **2 of 3** | **WSW/87.9** | **69.3 / -0.58** | **FREDERICK GRODDE LTD.**
379 DANFORTH AVENUE
OTTAWA ON K2A 0E1 | **GEN**

Generator No: ON1788600
Status:
Approval Years: 02,03
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

---

14 | **3 of 3** | **WSW/87.9** | **69.3 / -0.58** | **FREDERICK GRODDE LTD.**
379 DANFORTH AVENUE
OTTAWA ON K2A 0E1 | **GEN**

Generator No: ON1788600
Status:
Approval Years: 04

PO Box No:
Country:
Choice of Contact:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:
Co Admin:
Phone No Admin:

---

15 **1 of 2** **W/93.0** **68.9 / -1.01** **GEN**

JOSEPH C. GAFFNEY
372 RICHMOND ROAD
OTTAWA ON K2A 0E8

Generator No: ON1338700
Status:
Approval Years: 90
Contam. Facility:
MHSW Facility:
SIC Code: 6331
SIC Description: GASOLINE SERV. ST.
PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 221
Waste Class Desc: LIGHT FUELS

---

15 **2 of 2** **W/93.0** **68.9 / -1.01** **GEN**

JOSEPH C. GAFFNEY 22-433
372 RICHMOND ROAD
OTTAWA ON K2A 0E8

Generator No: ON1338700
Status:
Approval Years: 92,93,94,95,96,97,98
Contam. Facility:
MHSW Facility:
SIC Code: 6331
SIC Description: GASOLINE SERV. ST.
PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 221
Waste Class Desc: LIGHT FUELS

---

16 **1 of 1** **NNW/96.6** **68.9 / -1.04** **HINC**

343 RICHMOND ROAD
Ottawa ON K2A 0E7

External File Num: FS INC 0609-02847
Fuel Occurrence Type: Pipeline Strike
Date of Occurrence: 10/18/2006
Fuel Type Involved: Natural Gas
Status Desc: Completed - Causal Analysis(End)
Job Type Desc: Incident/Near-Miss Occurrence (FS)
Oper. Type Involved: Commercial (e.g. restaurant, business unit, etc)
Service Interruptions: Yes
Property Damage: No
Fuel Life Cycle Stage: Utilization
Root Cause: Root Cause: Equipment/Material/Component:No Procedures:No Maintenance:No Design:No Training:No Management:No Human Factors:Yes
Reported Details:
Fuel Category: Gaseous Fuel
Occurrence Type: Incident
Affiliation: Industry Stakeholder (Licensee/Registration/Certificate Holder, Facility Owner, etc.)
County Name: Ottawa
Approx. Quant. Rel:
Nearby body of water:
Enter Drainage Syst.:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Approx. Quant. Unit:					
Environmental Impact:					

17	1 of 3	NNE/105.6	68.7 / -1.17	**HYBRID PHRARM INC** **318 RICHMOND RD** **OTTAWA ON K1Z6X6**	GEN

Generator No: ON3143006
Status: Registered
Approval Years: As of Dec 2018
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 261 C
Waste Class Desc: Pharmaceuticals

17	2 of 3	NNE/105.6	68.7 / -1.17	**HYBRID PHRARM INC** **318 RICHMOND RD** **OTTAWA ON K1Z6X6**	GEN

Generator No: ON3143006
Status: Registered
Approval Years: As of Jul 2020
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 261 A
Waste Class Desc: Pharmaceuticals

Waste Class: 261 C
Waste Class Desc: Pharmaceuticals

Waste Class: 312 P
Waste Class Desc: Pathological wastes

17	3 of 3	NNE/105.6	68.7 / -1.17	**HYBRID PHRARM INC** **318 RICHMOND RD** **OTTAWA ON K1Z6X6**	GEN

Generator No: ON3143006
Status: Registered
Approval Years: As of Jan 2021
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 261 C
Waste Class Desc: Pharmaceuticals

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Waste Class: 312 P
Waste Class Desc: Pathological wastes

Waste Class: 261 A
Waste Class Desc: Pharmaceuticals

---

18 | **1 of 1** | **SW/121.4** | **69.8 / -0.05** | **First General Services (URA)**
528 Byron St
Ottawa ON K2A 0E3 | **GEN**

Generator No: ON3182297
Status:
Approval Years: 03,04
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

---

19 | **1 of 1** | **SSE/121.9** | **72.4 / 2.46** | **Mr. Arnold Midgley, The Trustees of Kitchissippi United Church**
450 Churchill Avenue North, Ottawa, Ontario, K1Z 5E2
ON K1Z 5E2 | **RSC**

RSC ID: 108923
RA No:
RSC Type:
Curr Property Use: Institutional
Ministry District: OTTAWA
Filing Date: 16-Jun-11
Date Ack:
Date Returned:
Restoration Type:
Soil Type:
Criteria:
CPU Issued Sect 1686: No

Cert Date: 15-Apr-11
Cert Prop Use No: No CPU
Intended Prop Use: Residential
Qual Person Name:
Stratified (Y/N):
Audit (Y/N):
Entire Leg Prop. (Y/N): Yes
Accuracy Estimate: 11 to 20 meters
Telephone: 613-7227254
Fax: 613-7229530
Email: kitchissippi@bellnet.ca

Asmt Roll No: 0614 084 502 05000 0000
Prop ID No (PIN): 04016-0077 (LT)
Property Municipal Address: 450 Churchill Avenue North, Ottawa, Ontario, K1Z 5E2
Mailing Address: 630 Island Park Drive, Ottawa, Ontario, K1Y 0B7
Latitude & Latitude: 45.39000000N 75.75305560W
UTM Coordinates: NAD83 18-441052-5026552 (converted from Latitude & Longitude)
Consultant:
Legal Desc: LTS 10 & 11, PL 204, E EDISON ST; LTS 10 & 11, PL 204, W CHURCHILL AV; OTTAWA/NEPEAN
Measurement Method: Digitized from a satellite image
Applicable Standards: Background Site Conditions Standard, with Potable Ground Water, Coarse Textured Soil, for Residential/Parkland/Institutional property use
RSC PDF:

---

20 | **1 of 1** | **NNE/124.6** | **68.7 / -1.17** | **Forbie Activewear**
314 Richmond Rd
Ottawa ON K1Z 6X6 | **SCT**

Established: 1993
Plant Size (ft²):
Employment:

--Details--
Description: Cut and Sew Clothing Contracting
SIC/NAICS Code: 315210

Description: Other Men's and Boys' Cut and Sew Clothing Manufacturing

SIC/NAICS Code: 315229

Description: Other Women's and Girls' Cut and Sew Clothing Manufacturing
SIC/NAICS Code: 315239

Description: All Other Cut and Sew Clothing Manufacturing
SIC/NAICS Code: 315299

Description: Clothing Accessories and Other Clothing Manufacturing
SIC/NAICS Code: 315990

---

21 | **1 of 2** | **W/135.1** | **68.9 / -0.96** | **386 Richmond Rd S21**
RESIDENCE<UNOFFICIAL>
Ottawa ON K2A 0E8 | **SPL**

Ref No: 6156-6P2LJU
Site No:
Incident Dt: 4/20/2006
Year:
Incident Cause: Unknown
Incident Event:
Contaminant Code: 13
Contaminant Name: FURNACE OIL
Contaminant Limit 1:
Contam Limit Freq 1:
Contaminant UN No 1:
Environment Impact: Possible
Nature of Impact: Air Pollution
Receiving Medium: Air
Receiving Env:
MOE Response:
Dt MOE Arvl on Scn:
MOE Reported Dt: 4/20/2006
Dt Document Closed:
Incident Reason: Unknown - Reason not determined
Site Name: 386 RICHMOND RD
Site County/District:
Site Geo Ref Meth:
Incident Summary: TSSA:fuel odour complaint-386 Richmond Rd. Ottawa
Contaminant Qty: Not Specified

Discharger Report:
Material Group: Oils
Health/Env Conseq:
Client Type:
Sector Type: Other
Agency Involved:
Nearest Watercourse:
Site Address: 386 RICHMOND RD
Site District Office: Ottawa
Site Postal Code:
Site Region:
Site Municipality: Ottawa
Site Lot:
Site Conc:
Northing:
Easting:
Site Geo Ref Accu:
Site Map Datum:
SAC Action Class:
Source Type:

---

21 | **2 of 2** | **W/135.1** | **68.9 / -0.96** | **Ottawa Carleton Construction Group Ltd.**
386 Richmond Road
Ottawa ON K2A 0E8 | **GEN**

Generator No: ON3053460
Status: Registered
Approval Years: As of Oct 2019
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 221 L
Waste Class Desc: Light fuels

---

22 | **1 of 4** | **W/141.0** | **68.8 / -1.05** | **BANK OF NOVA SCOTIA**
388 RICHMOND ROAD BRANCH 388 RICHMOND | **SPL**

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
				ST, OTTAWA OTTAWA CITY ON K2A 0E8	

Ref No:	85046	Discharger Report:	
Site No:		Material Group:	
Incident Dt:	5/4/1993	Health/Env Conseq:	
Year:		Client Type:	
Incident Cause:	ABOVE-GROUND TANK LEAK	Sector Type:	
Incident Event:		Agency Involved:	
Contaminant Code:		Nearest Watercourse:	
Contaminant Name:		Site Address:	
Contaminant Limit 1:		Site District Office:	
Contam Limit Freq 1:		Site Postal Code:	
Contaminant UN No 1:		Site Region:	
Environment Impact:	POSSIBLE	Site Municipality:	20101
Nature of Impact:	Multi Media Pollution	Site Lot:	
Receiving Medium:	LAND	Site Conc:	
Receiving Env:		Northing:	
MOE Response:		Easting:	
Dt MOE Arvl on Scn:		Site Geo Ref Accu:	
MOE Reported Dt:	5/4/1993	Site Map Datum:	
Dt Document Closed:		SAC Action Class:	
Incident Reason:	OVERSTRESS/OVERPRESSURE	Source Type:	
Site Name:			
Site County/District:			
Site Geo Ref Meth:			
Incident Summary:	BANK OF NOVA SCOTIA-2 L FURNACE OIL TO GROUND, CONTAINED.		
Contaminant Qty:			

22	2 of 4	W/141.0	68.8 / -1.05	PRIVATE BUSINESS 388 RICHMOND RD. OTTAWA BANK OF NOVA SCOTIA STORAGE TANK OTTAWA CITY ON K2A 0E8	SPL

Ref No:	222829	Discharger Report:	
Site No:		Material Group:	
Incident Dt:	3/8/2002	Health/Env Conseq:	
Year:		Client Type:	
Incident Cause:	OTHER CONTAINER LEAK	Sector Type:	
Incident Event:		Agency Involved:	
Contaminant Code:		Nearest Watercourse:	
Contaminant Name:		Site Address:	
Contaminant Limit 1:		Site District Office:	
Contam Limit Freq 1:		Site Postal Code:	
Contaminant UN No 1:		Site Region:	
Environment Impact:	POSSIBLE	Site Municipality:	20107
Nature of Impact:	Soil contamination	Site Lot:	
Receiving Medium:	LAND	Site Conc:	
Receiving Env:		Northing:	
MOE Response:		Easting:	
Dt MOE Arvl on Scn:		Site Geo Ref Accu:	
MOE Reported Dt:	3/8/2002	Site Map Datum:	
Dt Document Closed:		SAC Action Class:	
Incident Reason:	GASKET, JOINT	Source Type:	
Site Name:			
Site County/District:			
Site Geo Ref Meth:			
Incident Summary:	BANK OF NOVA SCOTIA:SPILL FUEL OIL TO PARKING LOT CONTAINED /CLEANING.		
Contaminant Qty:			

22	3 of 4	W/141.0	68.8 / -1.05	PRIVATE BUSINESS BANK OF NOVA SCOTIA, 388 RICHMOND ST	SPL

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
				STORAGE TANK OTTAWA CITY ON K2A 0E8	

Ref No:	222842	Discharger Report:	
Site No:		Material Group:	
Incident Dt:	3/8/2002	Health/Env Conseq:	
Year:		Client Type:	
Incident Cause:	ABOVE-GROUND TANK LEAK	Sector Type:	
Incident Event:		Agency Involved:	
Contaminant Code:		Nearest Watercourse:	
Contaminant Name:		Site Address:	
Contaminant Limit 1:		Site District Office:	
Contam Limit Freq 1:		Site Postal Code:	
Contaminant UN No 1:		Site Region:	
Environment Impact:	POSSIBLE	Site Municipality:	20107
Nature of Impact:	Soil contamination	Site Lot:	
Receiving Medium:	LAND	Site Conc:	
Receiving Env:		Northing:	
MOE Response:		Easting:	
Dt MOE Arvl on Scn:		Site Geo Ref Accu:	
MOE Reported Dt:	3/8/2002	Site Map Datum:	
Dt Document Closed:		SAC Action Class:	
Incident Reason:	EQUIPMENT FAILURE	Source Type:	
Site Name:			
Site County/District:			
Site Geo Ref Meth:			
Incident Summary:	BANK OF NOVA SCOTIA: 50L FURNACE OIL TO GROUND, NO WATER, CLEANED UP		
Contaminant Qty:			

22	4 of 4	W/141.0	68.8 / -1.05	388 Richmond Rd. Ottawa ON K2A 0E8	SPL

Ref No:	3388-6HZHC2	Discharger Report:	0
Site No:		Material Group:	Oil
Incident Dt:	11/8/2005	Health/Env Conseq:	
Year:		Client Type:	
Incident Cause:	Tank (Above Ground) Leak	Sector Type:	Other
Incident Event:		Agency Involved:	
Contaminant Code:		Nearest Watercourse:	
Contaminant Name:	FUEL OIL	Site Address:	
Contaminant Limit 1:		Site District Office:	Ottawa
Contam Limit Freq 1:		Site Postal Code:	
Contaminant UN No 1:		Site Region:	
Environment Impact:	Not Anticipated	Site Municipality:	Ottawa
Nature of Impact:		Site Lot:	
Receiving Medium:	Land	Site Conc:	
Receiving Env:		Northing:	
MOE Response:		Easting:	
Dt MOE Arvl on Scn:		Site Geo Ref Accu:	
MOE Reported Dt:	11/8/2005	Site Map Datum:	
Dt Document Closed:		SAC Action Class:	Land Spills
Incident Reason:	Error- Operator error	Source Type:	
Site Name:	Bank of Nova Scotia<UNOFFICIAL>		
Site County/District:			
Site Geo Ref Meth:			
Incident Summary:	Furnace oil spill, qty unkn, Ottawa		
Contaminant Qty:			

23	1 of 10	N/147.0	68.7 / -1.21	TWENTY FIRST CENTURY MOTORS INC 319 RICHMOND RD OTTAWA ON K1Z6X7	PRT

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Location ID: 11058
Type: retail
Expiry Date: 1995-11-30
Capacity (L): 68100
Licence #: 0076376086

23	2 of 10	N/147.0	68.7 / -1.21	AVENUES GARAGE LTD 319 RICHMOND RD OTTAWA ON K1Z 6X7	FSTH

License Issue Date: 4/1/2002
Tank Status: Licensed
Tank Status As Of: August 2007
Operation Type: Retail Fuel Outlet
Facility Type: Gasoline Station - Full Serve

--Details--
Status: Active
Year of Installation: 1984
Corrosion Protection:
Capacity: 22700
Tank Fuel Type: Liquid Fuel Single Wall UST - Gasoline

Status: Active
Year of Installation: 1984
Corrosion Protection:
Capacity: 22700
Tank Fuel Type: Liquid Fuel Single Wall UST - Gasoline

Status: Active
Year of Installation: 1984
Corrosion Protection:
Capacity: 22700
Tank Fuel Type: Liquid Fuel Single Wall UST - Diesel

23	3 of 10	N/147.0	68.7 / -1.21	AVENUES GARAGE LTD 319 RICHMOND RD OTTAWA ON K1Z 6X7	FSTH

License Issue Date: 4/1/2002
Tank Status: Licensed
Tank Status As Of: December 2008
Operation Type: Retail Fuel Outlet
Facility Type: Gasoline Station - Full Serve

--Details--
Status: Active
Year of Installation: 1984
Corrosion Protection:
Capacity: 22700
Tank Fuel Type: Liquid Fuel Single Wall UST - Gasoline

Status: Active
Year of Installation: 1984
Corrosion Protection:
Capacity: 22700
Tank Fuel Type: Liquid Fuel Single Wall UST - Gasoline

Status: Active
Year of Installation: 1984
Corrosion Protection:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Capacity: 22700
Tank Fuel Type: Liquid Fuel Single Wall UST - Diesel

---

23 | **4 of 10** | **N/147.0** | **68.7 / -1.21** | **Avenues Garage Ltd.**
319 Richmond Rd
Ottawa ON | **GEN**

Generator No: ON3859040
Status:
Approval Years: 2013
Contam. Facility:
MHSW Facility:
SIC Code: 811111
SIC Description: GENERAL AUTOMOTIVE REPAIR

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 221
Waste Class Desc: LIGHT FUELS

---

23 | **5 of 10** | **N/147.0** | **68.7 / -1.21** | **AVENUES GARAGE LTD**
319 RICHMOND RD OTTAWA K1Z 6X7 ON CA
ON | **EXP**

Instance No: 10905908
Status: EXPIRED
Instance ID:
Instance Type:
Instance Creation Dt: 7/19/2000 8:15:15 PM
Instance Install Dt: 5/21/2009
Item:
Item Description: FS Liquid Fuel Tank
Facility Type: FS LIQUID FUEL TANK
Overfill Prot Type: NULL
Creation Date: 7/5/2009 1:22:04 AM
Expired Date:
Manufacturer: NULL
Source: FS Liquid Fuel Tank
Description: 2009VBS
Serial No: NULL
Ulc Standard: NULL
Facility Location: 319 RICHMOND RD OTTAWA K1Z 6X7 ON CA

Model: NULL
Quantity: 1
Unit of Measure: EA
Fuel Type2: NULL
Fuel Type3: NULL
Piping Steel:
Piping Galvanized:
Tank Single Wall St:
Piping Underground:
Tank Underground:
Panam Related: NULL
Panam Venue Nm: NULL

---

23 | **6 of 10** | **N/147.0** | **68.7 / -1.21** | **AVENUES GARAGE LTD**
319 RICHMOND RD OTTAWA K1Z 6X7 ON CA
ON | **EXP**

Instance No: 10905926
Status: EXPIRED
Instance ID:
Instance Type:
Instance Creation Dt: 7/19/2000 8:15:15 PM
Instance Install Dt: 5/21/2009
Item:
Item Description: FS Liquid Fuel Tank
Facility Type: FS LIQUID FUEL TANK
Overfill Prot Type: NULL
Creation Date: 7/5/2009 1:22:06 AM
Expired Date:
Manufacturer: NULL
Source: FS Liquid Fuel Tank

Model: NULL
Quantity: 1
Unit of Measure: EA
Fuel Type2: NULL
Fuel Type3: NULL
Piping Steel:
Piping Galvanized:
Tank Single Wall St:
Piping Underground:
Tank Underground:
Panam Related: NULL
Panam Venue Nm: NULL

Description: 2009VBS
Serial No: NULL
Ulc Standard: NULL
Facility Location: 319 RICHMOND RD OTTAWA K1Z 6X7 ON CA

---

23 | **7 of 10** | **N/147.0** | **68.7 / -1.21** | **AVENUES GARAGE LTD**
319 RICHMOND RD OTTAWA K1Z 6X7 ON CA
ON | **EXP**

Instance No: 10905941
Status: EXPIRED
Instance ID:
Instance Type:
Instance Creation Dt: 7/19/2000 8:15:15 PM
Instance Install Dt: 5/21/2009
Item:
Item Description: FS Liquid Fuel Tank
Facility Type: FS LIQUID FUEL TANK
Overfill Prot Type: NULL
Creation Date: 7/5/2009 1:22:07 AM
Expired Date:
Manufacturer: NULL
Source: FS Liquid Fuel Tank
Description: 2009VBS
Serial No: NULL
Ulc Standard: NULL
Facility Location: 319 RICHMOND RD OTTAWA K1Z 6X7 ON CA

Model: NULL
Quantity: 1
Unit of Measure: EA
Fuel Type2: NULL
Fuel Type3: NULL
Piping Steel:
Piping Galvanized:
Tank Single Wall St:
Piping Underground:
Tank Underground:
Panam Related: NULL
Panam Venue Nm: NULL

---

23 | **8 of 10** | **N/147.0** | **68.7 / -1.21** | **AVENUES GARAGE LTD**
319 RICHMOND RD OTTAWA K1Z 6X7 ON CA
ON | **FST**

Instance No: 10905908
Status:
Cont Name:
Instance Type:
Item: FS LIQUID FUEL TANK
Item Description: FS Liquid Fuel Tank
Tank Type: Liquid Fuel Single Wall UST
Install Date: 5/21/2009
Install Year: 1984
Years in Service:
Model: NULL
Description:
Capacity: 22700
Tank Material: Steel
Corrosion Protect:
Overfill Protect:
Facility Type: FS Liquid Fuel Tank
Parent Facility Type:
Facility Location:
Device Installed Location: 319 RICHMOND RD OTTAWA K1Z 6X7 ON CA

Manufacturer:
Serial No:
Ulc Standard:
Quantity:
Unit of Measure:
Fuel Type: Gasoline
Fuel Type2: NULL
Fuel Type3: NULL
Piping Steel:
Piping Galvanized:
Tanks Single Wall St:
Piping Underground:
Num Underground:
Panam Related:
Panam Venue:

Fuel Storage Tank Details

Owner Account Name: AVENUES GARAGE LTD

---

23 | **9 of 10** | **N/147.0** | **68.7 / -1.21** | **AVENUES GARAGE LTD**
319 RICHMOND RD OTTAWA K1Z 6X7 ON CA
ON | **FST**

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Instance No:	10905926	**Manufacturer:**	
Status:		**Serial No:**	
Cont Name:		**Ulc Standard:**	
Instance Type:		**Quantity:**	
Item:	FS LIQUID FUEL TANK	**Unit of Measure:**	
Item Description:	FS Liquid Fuel Tank	**Fuel Type:**	Gasoline
Tank Type:	Liquid Fuel Single Wall UST	**Fuel Type2:**	NULL
Install Date:	5/21/2009	**Fuel Type3:**	NULL
Install Year:	1984	**Piping Steel:**	
Years in Service:		**Piping Galvanized:**	
Model:	NULL	**Tanks Single Wall St:**	
Description:		**Piping Underground:**	
Capacity:	22700	**Num Underground:**	
Tank Material:	Steel	**Panam Related:**	
Corrosion Protect:		**Panam Venue:**	
Overfill Protect:			
Facility Type:	FS Liquid Fuel Tank		
Parent Facility Type:			
Facility Location:			
Device Installed Location:	319 RICHMOND RD OTTAWA K1Z 6X7 ON CA		

Fuel Storage Tank Details

Owner Account Name: AVENUES GARAGE LTD

23	10 of 10	N/147.0	68.7 / -1.21	**AVENUES GARAGE LTD** **319 RICHMOND RD OTTAWA K1Z 6X7 ON CA** **ON**	FST

Instance No:	10905941	**Manufacturer:**	
Status:		**Serial No:**	
Cont Name:		**Ulc Standard:**	
Instance Type:		**Quantity:**	
Item:	FS LIQUID FUEL TANK	**Unit of Measure:**	
Item Description:	FS Liquid Fuel Tank	**Fuel Type:**	Diesel
Tank Type:	Liquid Fuel Single Wall UST	**Fuel Type2:**	NULL
Install Date:	5/21/2009	**Fuel Type3:**	NULL
Install Year:	1984	**Piping Steel:**	
Years in Service:		**Piping Galvanized:**	
Model:	NULL	**Tanks Single Wall St:**	
Description:		**Piping Underground:**	
Capacity:	22700	**Num Underground:**	
Tank Material:	Steel	**Panam Related:**	
Corrosion Protect:		**Panam Venue:**	
Overfill Protect:			
Facility Type:	FS Liquid Fuel Tank		
Parent Facility Type:			
Facility Location:			
Device Installed Location:	319 RICHMOND RD OTTAWA K1Z 6X7 ON CA		

Fuel Storage Tank Details

Owner Account Name: AVENUES GARAGE LTD

24	1 of 1	NE/148.6	68.8 / -1.09	**Cassone Construction** **300 Richmond Rd.** **Ottawa ON**	GEN

Generator No:	ON4702399	**PO Box No:**	
Status:		**Country:**	
Approval Years:	2012	**Choice of Contact:**	
Contam. Facility:		**Co Admin:**	
MHSW Facility:		**Phone No Admin:**	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

SIC Code: 236220
SIC Description: Commercial and Institutional Building Construction

---

25 *1 of 2* *WNW/159.8* *67.9 / -2.04* ***AL PARSONS (OUT OF BUSINESS)*** ***GEN***
376 MADISON AVE.
OTTAWA ON K2A 0B7

Generator No:	ON1029900	**PO Box No:**	
Status:		**Country:**	
Approval Years:	88,89,90	**Choice of Contact:**	
Contam. Facility:		**Co Admin:**	
MHSW Facility:		**Phone No Admin:**	
SIC Code:	5412		
SIC Description:	ELECTRONIC HH. APP.		

Detail(s)

Waste Class: 213
Waste Class Desc: PETROLEUM DISTILLATES

---

25 *2 of 2* *WNW/159.8* *67.9 / -2.04* ***AL PARSONS (OUT OF BUSINESS) 02-233*** ***GEN***
376 MADISON AVE.
OTTAWA ON K2A 0B7

Generator No:	ON1029900	**PO Box No:**	
Status:		**Country:**	
Approval Years:	92,93,94,95,96,97,98	**Choice of Contact:**	
Contam. Facility:		**Co Admin:**	
MHSW Facility:		**Phone No Admin:**	
SIC Code:	5412		
SIC Description:	ELECTRONIC HH. APP.		

---

26 *1 of 1* *WSW/162.6* *68.8 / -1.07* ***PRIVATE RESIDENCE*** ***SPL***
HOME AT 389 DANFORTH AVE FURNACE OIL TANK FURNACE OIL TANK
OTTAWA CITY ON K2A 0E1

Ref No:	36769	**Discharger Report:**	
Site No:		**Material Group:**	
Incident Dt:	3/29/1990	**Health/Env Conseq:**	
Year:		**Client Type:**	
Incident Cause:	OTHER CONTAINER LEAK	**Sector Type:**	
Incident Event:		**Agency Involved:**	
Contaminant Code:		**Nearest Watercourse:**	
Contaminant Name:		**Site Address:**	
Contaminant Limit 1:		**Site District Office:**	
Contam Limit Freq 1:		**Site Postal Code:**	
Contaminant UN No 1:		**Site Region:**	
Environment Impact:	POSSIBLE	**Site Municipality:**	20101
Nature of Impact:	Vegetation	**Site Lot:**	
Receiving Medium:	LAND	**Site Conc:**	
Receiving Env:		**Northing:**	
MOE Response:		**Easting:**	
Dt MOE Arvl on Scn:		**Site Geo Ref Accu:**	
MOE Reported Dt:	3/29/1990	**Site Map Datum:**	
Dt Document Closed:		**SAC Action Class:**	
Incident Reason:	CORROSION	**Source Type:**	
Site Name:			
Site County/District:			
Site Geo Ref Meth:			

Incident Summary: BACKENTRY- UNKNOWN QUANTITY OF FURNACE OIL TO GROUND, PINHOLE LEAK
Contaminant Qty:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
27	1 of 1	NNE/164.4	68.9 / -0.97	GEVC Interactive Inc. 311 Richmond Rd Suite 204 Ottawa ON K1Z 6X3	SCT

Established: 01-AUG-94
Plant Size (ft²):
Employment:

--Details--
Description: Software Publishers
SIC/NAICS Code: 511210

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
28	1 of 1	NE/169.5	69.0 / -0.94	ENBRIDGE GAS INC 401 EDEN AVE,,OTTAWA,ON,K1Z 5J1,CA ON	PINC

Incident ID:
Incident No: 2833556
Incident Reported Dt: 4/22/2020
Type: FS-Pipeline Incident
Status Code:
Customer Acct Name: ENBRIDGE GAS INC
Incident Address: 401 EDEN AVE,,OTTAWA,ON,K1Z 5J1,CA
Tank Status: Pipeline Damage Reason Est
Task No:
Spills Action Centre:
Fuel Type:
Fuel Occurrence Tp:
Date of Occurrence:
Occurrence Start Dt:
Operation Type:
Pipeline Type:
Regulator Type:
Summary:
Reported By:
Affiliation:
Occurrence Desc:
Damage Reason:
Notes:

Fuel Category:
Health Impact:
Environment Impact:
Property Damage:
Service Interupt:
Enforce Policy:
Public Relation:
Pipeline System:
Depth:
Pipe Material:
PSIG:
Attribute Category:
Regulator Location:
Method Details:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
29	1 of 3	NW/173.9	67.9 / -1.95	Imagnan Corp. 376 Churchill Ave N Suite 107 Ottawa ON K1Z 5C3	SCT

Established: 01-JUN-95
Plant Size (ft²):
Employment:

--Details--
Description: Stationery and Office Supplies Wholesaler-Distributors
SIC/NAICS Code: 418210

Description: All Other Industrial Machinery Manufacturing
SIC/NAICS Code: 333299

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
29	2 of 3	NW/173.9	67.9 / -1.95	C.J.T. Surplus Equipment Ltd. 376 Churchill Ave N Suite 306	SCT

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
				Ottawa ON K1Z 5C3	

Established: 01-DEC-70
Plant Size (ft²):
Employment:

--Details--
Description: Wholesale Trade Agents and Brokers
SIC/NAICS Code: 419120

Description: Wholesale Trade Agents and Brokers
SIC/NAICS Code: 419120

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
29	3 of 3	NW/173.9	67.9 / -1.95	**regional elevator** **376 churchill road** **ottawa ON**	GEN

Generator No: ON2901040
Status:
Approval Years: 2011
Contam. Facility:
MHSW Facility:
SIC Code: 238291
SIC Description:
PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
30	1 of 1	N/177.4	67.8 / -2.05	**Gold Cast** **377 Churchill Ave N** **Ottawa ON K1Z 5C4**	SCT

Established: 01-AUG-93
Plant Size (ft²):
Employment:

--Details--
Description: Jewellery and Silverware Manufacturing
SIC/NAICS Code: 339910

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
31	1 of 1	N/184.1	67.8 / -2.05	**Forbie Activewear** **375 Churchill Ave N** **Ottawa ON K1Z 5C4**	SCT

Established: 01-MAY-93
Plant Size (ft²):
Employment:

--Details--
Description: Cut and Sew Clothing Contracting
SIC/NAICS Code: 315210

Description: Other Men's and Boys' Cut and Sew Clothing Manufacturing
SIC/NAICS Code: 315229

Description: All Other Cut and Sew Clothing Manufacturing
SIC/NAICS Code: 315299

Description: Cut and Sew Clothing Contracting
SIC/NAICS Code: 315210

Description: Clothing Accessories and Other Clothing Manufacturing
SIC/NAICS Code: 315990

Description: Other Women's and Girls' Cut and Sew Clothing Manufacturing
SIC/NAICS Code: 315239

---

32 **1 of 2** **ENE/184.9** **69.6 / -0.33** **Enbridge Gas Distribution Inc.** **SPL**
412 Edgewood Avenue
Ottawa ON

Ref No: 1132-AYMLE7
Site No: NA
Incident Dt: 2018/05/10
Year:
Incident Cause:
Incident Event: Leak/Break
Contaminant Code: 35
Contaminant Name: NATURAL GAS (METHANE)
Contaminant Limit 1:
Contam Limit Freq 1:
Contaminant UN No 1: 1075
Environment Impact:
Nature of Impact:
Receiving Medium:
Receiving Env: Air
MOE Response: No
Dt MOE Arvl on Scn:
MOE Reported Dt: 2018/05/10
Dt Document Closed: 2018/05/18
Incident Reason: Operator/Human Error
Site Name: Residence<UNOFFICIAL>
Site County/District:
Site Geo Ref Meth:
Incident Summary: TSSA FSB: 1/2 inch plastic IP service line strike, made safe.
Contaminant Qty: 0 other - see incident description

Discharger Report:
Material Group:
Health/Env Conseq: 2 - Minor Environment
Client Type: Corporation
Sector Type: Miscellaneous Communal
Agency Involved:
Nearest Watercourse:
Site Address: 412 Edgewood Avenue
Site District Office: Ottawa
Site Postal Code:
Site Region: Eastern
Site Municipality: Ottawa
Site Lot:
Site Conc:
Northing:
Easting:
Site Geo Ref Accu:
Site Map Datum:
SAC Action Class: TSSA - Fuel Safety Branch - Hydrocarbon Fuel Release/Spill
Source Type: Pipeline/Components

---

32 **2 of 2** **ENE/184.9** **69.6 / -0.33** **PIPELINE HIT 1/2"** **PINC**
412 EDGEWOOD AVE,,OTTAWA,ON,K1Z 5K5,CA
ON

Incident ID:
Incident No: 2302974
Incident Reported Dt: 5/11/2018
Type: FS-Pipeline Incident
Status Code:
Customer Acct Name: PIPELINE HIT 1/2"
Incident Address: 412 EDGEWOOD AVE,,OTTAWA,ON,K1Z 5K5,CA
Tank Status: Pipeline Damage Reason Est
Task No:
Spills Action Centre:
Fuel Type:
Fuel Occurrence Tp:
Date of Occurrence:
Occurrence Start Dt:
Operation Type:
Pipeline Type:
Regulator Type:
Summary:
Reported By:
Affiliation:

Fuel Category:
Health Impact:
Environment Impact:
Property Damage:
Service Interupt:
Enforce Policy:
Public Relation:
Pipeline System:
Depth:
Pipe Material:
PSIG:
Attribute Category:
Regulator Location:
Method Details:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Occurrence Desc:					
Damage Reason:					
Notes:					

33	1 of 3	W/187.7	67.8 / -2.07	**Simply Wood Furnishings Ltd.** **393A Richmond Rd** **Ottawa ON K2A 0E9**	SCT

Established: 1987
Plant Size (ft²):
Employment: 5

--Details--
Description: Wood Kitchen Cabinet and Counter Top Manufacturing
SIC/NAICS Code: 337110

33	2 of 3	W/187.7	67.8 / -2.07	**Mike Steinberg** **393-401 Richmond Road** **Ottawa ON K2A 0E9**	GEN

Generator No: ON1851952
Status:
Approval Years: 02,03,04,05
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 221
Waste Class Desc: LIGHT FUELS

Waste Class: 252
Waste Class Desc: WASTE OILS & LUBRICANTS

33	3 of 3	W/187.7	67.8 / -2.07	**Simply Wood Furnishings** **393A Richmond Rd** **Ottawa ON K2A 0E9**	SCT

Established: 1987
Plant Size (ft²): 7000
Employment: 5

--Details--
Description: Wood Kitchen Cabinet and Counter Top Manufacturing
SIC/NAICS Code: 337110

34	1 of 1	WNW/193.8	67.4 / -2.49	**Entomological Society of Cda** **393 Winston Ave** **Ottawa ON K2A 1Y8**	SCT

Established: 01-DEC-68
Plant Size (ft²):
Employment:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

--Details--
Description: Professional Organizations
SIC/NAICS Code: 813920

---

35 ***1 of 2*** ***WSW/195.7*** ***69.8 / -0.12*** ***Enbridge Gas Distribution Inc.*** ***SPL***
433 Roosevelt Ave.
Ottawa ON

Ref No:	8230-BFSLAG	***Discharger Report:***	
Site No:	NA	***Material Group:***	
Incident Dt:	9/7/2019	***Health/Env Conseq:***	2 - Minor Environment
Year:		***Client Type:***	Corporation
Incident Cause:		***Sector Type:***	Miscellaneous Industrial
Incident Event:	Leak/Break	***Agency Involved:***	
Contaminant Code:	35	***Nearest Watercourse:***	
Contaminant Name:	NATURAL GAS (METHANE)	***Site Address:***	433 Roosevelt Ave.
Contaminant Limit 1:		***Site District Office:***	Ottawa
Contam Limit Freq 1:		***Site Postal Code:***	
Contaminant UN No 1:	1075	***Site Region:***	Eastern
Environment Impact:		***Site Municipality:***	Ottawa
Nature of Impact:		***Site Lot:***	
Receiving Medium:		***Site Conc:***	
Receiving Env:	Air	***Northing:***	
MOE Response:	No	***Easting:***	
Dt MOE Arvl on Scn:		***Site Geo Ref Accu:***	
MOE Reported Dt:	9/7/2019	***Site Map Datum:***	
Dt Document Closed:	10/24/2019	***SAC Action Class:***	TSSA - Fuel Safety Branch - Hydrocarbon Fuel Release/Spill
Incident Reason:	Operator/Human Error	***Source Type:***	Pipeline/Components

Site Name: Residential<UNOFFICIAL>
Site County/District:
Site Geo Ref Meth:
Incident Summary: TSSA FSB: Enbridge: 1/2" plastic IP nat gas line strike to atm.
Contaminant Qty: 0 other - see incident description

---

35 ***2 of 2*** ***WSW/195.7*** ***69.8 / -0.12*** ***ENBRIDGE GAS INC*** ***PINC***
433 ROOSEVELT AVE,,OTTAWA,ON,K2A 1Z4,CA
ON

Incident ID:		***Fuel Category:***	
Incident No:	2679440	***Health Impact:***	
Incident Reported Dt:	9/9/2019	***Environment Impact:***	
Type:	FS-Pipeline Incident	***Property Damage:***	
Status Code:		***Service Interupt:***	
Customer Acct Name:	ENBRIDGE GAS INC	***Enforce Policy:***	
Incident Address:	433 ROOSEVELT AVE,,OTTAWA,ON,K2A 1Z4,CA	***Public Relation:***	
Tank Status:	Pipeline Damage Reason Est	***Pipeline System:***	
Task No:		***Depth:***	
Spills Action Centre:		***Pipe Material:***	
Fuel Type:		***PSIG:***	
Fuel Occurrence Tp:		***Attribute Category:***	
Date of Occurrence:		***Regulator Location:***	
Occurrence Start Dt:		***Method Details:***	
Operation Type:			
Pipeline Type:			
Regulator Type:			
Summary:			
Reported By:			
Affiliation:			
Occurrence Desc:			
Damage Reason:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Notes:

---

36 *1 of 1* *WSW/202.4* *67.8 / -2.08* **DISTRICT REALTY**
411 ROOSEVELT AVENUE
OTTAWA ON K2A3X9 **GEN**

Generator No: ON9318155
Status:
Approval Years: 2014
Contam. Facility: No
MHSW Facility: No
SIC Code: 531111
SIC Description: LESSORS OF RESIDENTIAL BUILDINGS AND DWELLINGS (EXCEPT SOCIAL HOUSING PROJECTS)

PO Box No:
Country: Canada
Choice of Contact: CO_OFFICIAL
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 252
Waste Class Desc: WASTE OILS & LUBRICANTS

---

37 *1 of 1* *ESE/211.6* *72.9 / 3.01* **464 EVERED AVENUE**
OTTAWA ON K1Z 5K8 **HINC**

External File Num: FS INC 0810-06021
Fuel Occurrence Type: Pipeline Strike
Date of Occurrence: 9/30/2008
Fuel Type Involved: Natural Gas
Status Desc: Completed - Causal Analysis(End)
Job Type Desc: Incident/Near-Miss Occurrence (FS)
Oper. Type Involved: Construction Site (pipeline strike)
Service Interruptions: Yes
Property Damage: No
Fuel Life Cycle Stage: Transmission, Distribution and Transportation
Root Cause: Root Cause: Equipment/Material/Component:Yes Procedures:Yes Maintenance:No Design:No Training: Yes Management:No Human Factors:Yes
Reported Details:
Fuel Category: Gaseous Fuel
Occurrence Type: Incident
Affiliation: Industry Stakeholder (Licensee/Registration/Certificate Holder, Facility Owner, etc.)
County Name: Ottawa
Approx. Quant. Rel:
Nearby body of water:
Enter Drainage Syst.:
Approx. Quant. Unit:
Environmental Impact:

---

38 *1 of 16* *W/218.7* *67.6 / -2.28* **TUBMAN FUNERAL HOMES**
403 RICHMOND RD
OTTAWA ON K2A 0E9 **GEN**

Generator No: ONF017100
Status:
Approval Years: 88,89,90
Contam. Facility:
MHSW Facility:
SIC Code: 9731
SIC Description: FUNERAL HOMES

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 312

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Waste Class Desc:		PATHOLOGICAL WASTES			

38	2 of 16	W/218.7	67.6 / -2.28	TUBMAN FUNERAL HOMES 44-171 403 RICHMOND RD OTTAWA ON K2A 0E9	GEN

Generator No: ONF017100
Status:
Approval Years: 92,93,94,95,96,97,98,99
Contam. Facility:
MHSW Facility:
SIC Code: 9731
SIC Description: FUNERAL HOMES

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

38	3 of 16	W/218.7	67.6 / -2.28	TUBMAN FUNERAL HOMES 403 RICHMOND ROAD OTTAWA ON K2A 0E9	GEN

Generator No: ONF017100
Status:
Approval Years: 00,01
Contam. Facility:
MHSW Facility:
SIC Code: 9731
SIC Description: FUNERAL HOMES

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

38	4 of 16	W/218.7	67.6 / -2.28	J.A. TUBMAN FUNERAL HOMES LIMITED 403 RICHMOND ROAD OTTAWA ON K2A 0E9	GEN

Generator No: ONF017100
Status:
Approval Years: 02,03
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

38	5 of 16	W/218.7	67.6 / -2.28	TUBMAN FUNERAL HOMES AND CREMATION 403 RICHMOND ROAD OTTAWA ON K2A 0E9	GEN

Generator No: ONF017100
Status:
Approval Years: 04,05,06,07,08

PO Box No:
Country:
Choice of Contact:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Contam. Facility: ***Co Admin:***
MHSW Facility: ***Phone No Admin:***
SIC Code: 812210
SIC Description: Funeral Homes

Detail(s)

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

---

38 ***6 of 16*** ***W/218.7*** ***67.6 / -2.28*** ***TUBMAN FUNERAL HOMES AND CREMATION*** ***GEN***
403 RICHMOND ROAD
OTTAWA ON K2A 0E9

Generator No: ONF017100 ***PO Box No:***
Status: ***Country:***
Approval Years: 2009 ***Choice of Contact:***
Contam. Facility: ***Co Admin:***
MHSW Facility: ***Phone No Admin:***
SIC Code: 812210
SIC Description: Funeral Homes

Detail(s)

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

---

38 ***7 of 16*** ***W/218.7*** ***67.6 / -2.28*** ***TUBMAN FUNERAL HOMES AND CREMATION*** ***GEN***
403 RICHMOND ROAD
OTTAWA ON K2A 0E9

Generator No: ONF017100 ***PO Box No:***
Status: ***Country:***
Approval Years: 2010 ***Choice of Contact:***
Contam. Facility: ***Co Admin:***
MHSW Facility: ***Phone No Admin:***
SIC Code: 812210
SIC Description: Funeral Homes

Detail(s)

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

---

38 ***8 of 16*** ***W/218.7*** ***67.6 / -2.28*** ***TUBMAN FUNERAL HOMES AND CREMATION*** ***GEN***
403 RICHMOND ROAD
OTTAWA ON K2A 0E9

Generator No: ONF017100 ***PO Box No:***
Status: ***Country:***
Approval Years: 2011 ***Choice of Contact:***
Contam. Facility: ***Co Admin:***

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

MHSW Facility: **Phone No Admin:**
SIC Code: 812210
SIC Description: Funeral Homes

Detail(s)

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

---

38 **9 of 16** **W/218.7** **67.6 / -2.28**

TUBMAN FUNERAL HOMES AND CREMATION
403 RICHMOND ROAD
OTTAWA ON K2A 0E9

GEN

Generator No: ONF017100
Status:
Approval Years: 2012
Contam. Facility:
MHSW Facility:
SIC Code: 812210
SIC Description: Funeral Homes

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

---

38 **10 of 16** **W/218.7** **67.6 / -2.28**

TUBMAN FUNERAL HOMES AND CREMATION
403 RICHMOND ROAD
OTTAWA ON

GEN

Generator No: ONF017100
Status:
Approval Years: 2013
Contam. Facility:
MHSW Facility:
SIC Code: 812210
SIC Description:

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

---

38 **11 of 16** **W/218.7** **67.6 / -2.28**

TUBMAN FUNERAL HOMES AND CREMATION
403 RICHMOND ROAD
OTTAWA ON K2A 0E9

GEN

Generator No: ONF017100
Status:
Approval Years: 2016
Contam. Facility: No
MHSW Facility: No

PO Box No:
Country: Canada
Choice of Contact: CO_OFFICIAL
Co Admin:
Phone No Admin:

SIC Code: 812210
SIC Description: 812210

Detail(s)

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

---

38 ***12 of 16*** ***W/218.7*** ***67.6 / -2.28*** ***TUBMAN FUNERAL HOMES AND CREMATION*** ***GEN***
403 RICHMOND ROAD
OTTAWA ON K2A 0E9

Generator No: ONF017100
Status:
Approval Years: 2015
Contam. Facility: No
MHSW Facility: No
SIC Code: 812210
SIC Description: 812210

PO Box No:
Country: Canada
Choice of Contact: CO_OFFICIAL
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

---

38 ***13 of 16*** ***W/218.7*** ***67.6 / -2.28*** ***TUBMAN FUNERAL HOMES AND CREMATION*** ***GEN***
403 RICHMOND ROAD
OTTAWA ON K2A 0E9

Generator No: ONF017100
Status:
Approval Years: 2014
Contam. Facility: No
MHSW Facility: No
SIC Code: 812210
SIC Description: 812210

PO Box No:
Country: Canada
Choice of Contact: CO_OFFICIAL
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

---

38 ***14 of 16*** ***W/218.7*** ***67.6 / -2.28*** ***TUBMAN FUNERAL HOMES AND CREMATION*** ***GEN***
403 RICHMOND ROAD
OTTAWA ON K2A 0E9

Generator No: ONF017100
Status: Registered
Approval Years: As of Dec 2018
Contam. Facility:
MHSW Facility:
SIC Code:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

SIC Description:

Detail(s)

Waste Class: 312 P
Waste Class Desc: Pathological wastes

---

38 | ***15 of 16*** | ***W/218.7*** | ***67.6 / -2.28*** | ***TUBMAN FUNERAL HOMES AND CREMATION*** ***403 RICHMOND ROAD*** ***OTTAWA ON K2A 0E9*** | ***GEN***

Generator No: ONF017100
Status: Registered
Approval Years: As of Jul 2020
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 312 P
Waste Class Desc: Pathological wastes

---

38 | ***16 of 16*** | ***W/218.7*** | ***67.6 / -2.28*** | ***TUBMAN FUNERAL HOMES AND CREMATION*** ***403 RICHMOND ROAD*** ***OTTAWA ON K2A 0E9*** | ***GEN***

Generator No: ONF017100
Status: Registered
Approval Years: As of Jan 2021
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 312 P
Waste Class Desc: Pathological wastes

---

39 | ***1 of 1*** | ***NW/219.8*** | ***66.8 / -3.04*** | ***PRIVATE RESIDENCE*** ***HOUSE AT 356 WHITBY AVE FURNACE OIL TANK*** ***OTTAWA CITY ON K2A 0B5*** | ***SPL***

Ref No: 44037
Site No:
Incident Dt: //
Year:
Incident Cause: UNKNOWN
Incident Event:
Contaminant Code:
Contaminant Name:
Contaminant Limit 1:
Contam Limit Freq 1:
Contaminant UN No 1:
Environment Impact: POSSIBLE
Nature of Impact: Soil contamination
Receiving Medium: LAND
Receiving Env:

Discharger Report:
Material Group:
Health/Env Conseq:
Client Type:
Sector Type:
Agency Involved:
Nearest Watercourse:
Site Address:
Site District Office:
Site Postal Code:
Site Region:
Site Municipality: 20101
Site Lot:
Site Conc:
Northing:

MOE Response:
Dt MOE Arvl on Scn:
MOE Reported Dt: 8/1/1996
Dt Document Closed:
Incident Reason: UNKNOWN
Site Name:
Site County/District:
Site Geo Ref Meth:
Incident Summary: PRIVATE RESIDENCE:UNK QUANTITY OF FURNACE OIL TO GROUND.
Contaminant Qty:
Easting:
Site Geo Ref Accu:
Site Map Datum:
SAC Action Class:
Source Type:

---

40 **1 of 4** **NW/220.9** **66.8 / -3.10** **GEN**

Cameron Veterinary Professional Corp
348 Whitby Ave
Ottawa ON K2A 0B5

Generator No: ON3065966
Status:
Approval Years: 2016
Contam. Facility: No
MHSW Facility: No
SIC Code: 541940
SIC Description: VETERINARY SERVICES
PO Box No:
Country: Canada
Choice of Contact: CO_OFFICIAL
Co Admin: Dan Cameron
Phone No Admin: 6137225717 Ext.

Detail(s)

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

---

40 **2 of 4** **NW/220.9** **66.8 / -3.10** **GEN**

Cameron Veterinary Professional Corp
348 Whitby Ave
Ottawa ON K2A 0B5

Generator No: ON3065966
Status: Registered
Approval Years: As of Dec 2018
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:
PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 122 C
Waste Class Desc: Alkaline slutions - containing other metals and non-metals (not cyanide)

Waste Class: 212 I
Waste Class Desc: Aliphatic solvents and residues

Waste Class: 212 L
Waste Class Desc: Aliphatic solvents and residues

Waste Class: 252 L
Waste Class Desc: Waste crankcase oils and lubricants

Waste Class: 261 A
Waste Class Desc: Pharmaceuticals

Waste Class: 264 L
Waste Class Desc: Photoprocessing wastes

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Waste Class: 264 T
Waste Class Desc: Photoprocessing wastes

Waste Class: 312 P
Waste Class Desc: Pathological wastes

---

40 | **3 of 4** | **NW/220.9** | **66.8 / -3.10** | **Cameron Veterinary Professional Corp**
348 Whitby Ave
Ottawa ON K2A 0B5 | **GEN**

Generator No: ON3065966
Status: Registered
Approval Years: As of Jul 2020
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 261 A
Waste Class Desc: Pharmaceuticals

Waste Class: 212 I
Waste Class Desc: Aliphatic solvents and residues

Waste Class: 264 L
Waste Class Desc: Photoprocessing wastes

Waste Class: 212 L
Waste Class Desc: Aliphatic solvents and residues

Waste Class: 312 P
Waste Class Desc: Pathological wastes

---

40 | **4 of 4** | **NW/220.9** | **66.8 / -3.10** | **Cameron Veterinary Professional Corp**
348 Whitby Ave
Ottawa ON K2A 0B5 | **GEN**

Generator No: ON3065966
Status: Registered
Approval Years: As of Jan 2021
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 212 I
Waste Class Desc: Aliphatic solvents and residues

Waste Class: 312 P
Waste Class Desc: Pathological wastes

Waste Class: 212 L
Waste Class Desc: Aliphatic solvents and residues

Waste Class: 264 L
Waste Class Desc: Photoprocessing wastes

Waste Class: 261 A

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Waste Class Desc:		Pharmaceuticals			

41	1 of 12	NNW/224.8	66.9 / -3.00	METROTYPE GRAPHICS LTD. 364 CHURCHILL STREET NORTH OTTAWA ON K1Z 5G9	GEN

Generator No: ON0785600
Status:
Approval Years: 88,89
Contam. Facility:
MHSW Facility:
SIC Code: 2821
SIC Description: PLATEMAKING, ETC.

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 264
Waste Class Desc: PHOTOPROCESSING WASTES

41	2 of 12	NNW/224.8	66.9 / -3.00	METROTYPE GRAPHICS LTD. 364 CHURCHILL STREET NORTH OTTAWA ON K1Z 5G9	GEN

Generator No: ON0785600
Status:
Approval Years: 90
Contam. Facility:
MHSW Facility:
SIC Code: 2821
SIC Description: PLATEMAKING, ETC.

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 264
Waste Class Desc: PHOTOPROCESSING WASTES

41	3 of 12	NNW/224.8	66.9 / -3.00	METROTYPE GRAPHICS LTD. 26-238 364 CHURCHILL STREET NORTH OTTAWA ON K1Z 5G9	GEN

Generator No: ON0785600
Status:
Approval Years: 92,93,94,95,96
Contam. Facility:
MHSW Facility:
SIC Code: 2821
SIC Description: PLATEMAKING, ETC.

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 264
Waste Class Desc: PHOTOPROCESSING WASTES

41	4 of 12	NNW/224.8	66.9 / -3.00	METRO(OUT OF BUS) 26-238 364 CHURCHILL STREET NORTH OTTAWA ON K1Z 5G9	GEN

Generator No: ON0785600
Status:
Approval Years: 97,98

PO Box No:
Country:
Choice of Contact:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Contam. Facility: ***Co Admin:***
MHSW Facility: ***Phone No Admin:***
SIC Code: 2821
SIC Description: PLATEMAKING, ETC.

Detail(s)

Waste Class: 264
Waste Class Desc: PHOTOPROCESSING WASTES

---

41 ***5 of 12*** ***NNW/224.8*** ***66.9 / -3.00*** ***Cameron Veterinary Professional Corporation*** ***GEN***
364 Churchill Avenue North
Ottawa ON K1Z 5C2

Generator No: ON2549408 ***PO Box No:***
Status: ***Country:***
Approval Years: 07,08 ***Choice of Contact:***
Contam. Facility: ***Co Admin:***
MHSW Facility: ***Phone No Admin:***
SIC Code: 541940
SIC Description: Veterinary Services

Detail(s)

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

---

41 ***6 of 12*** ***NNW/224.8*** ***66.9 / -3.00*** ***Cameron Veterinary Professional Corporation*** ***GEN***
364 Churchill Avenue North
Ottawa ON K1Z 5C2

Generator No: ON2549408 ***PO Box No:***
Status: ***Country:***
Approval Years: 2009 ***Choice of Contact:***
Contam. Facility: ***Co Admin:***
MHSW Facility: ***Phone No Admin:***
SIC Code: 541940
SIC Description: Veterinary Services

Detail(s)

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

---

41 ***7 of 12*** ***NNW/224.8*** ***66.9 / -3.00*** ***Cameron Veterinary Professional Corporation*** ***GEN***
364 Churchill Avenue North
Ottawa ON K1Z 5C2

Generator No: ON2549408 ***PO Box No:***
Status: ***Country:***
Approval Years: 2010 ***Choice of Contact:***
Contam. Facility: ***Co Admin:***
MHSW Facility: ***Phone No Admin:***
SIC Code: 541940
SIC Description: Veterinary Services

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Detail(s)

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

---

41 | ***8 of 12*** | ***NNW/224.8*** | ***66.9 / -3.00*** | ***Cameron Veterinary Professional Corporation*** ***364 Churchill Avenue North*** ***Ottawa ON K1Z 5C2*** | ***GEN***

Generator No: ON2549408
Status:
Approval Years: 2011
Contam. Facility:
MHSW Facility:
SIC Code: 541940
SIC Description: Veterinary Services

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

---

41 | ***9 of 12*** | ***NNW/224.8*** | ***66.9 / -3.00*** | ***Cameron Veterinary Professional Corporation*** ***364 Churchill Avenue North*** ***Ottawa ON K1Z 5C2*** | ***GEN***

Generator No: ON2549408
Status:
Approval Years: 2012
Contam. Facility:
MHSW Facility:
SIC Code: 541940
SIC Description: Veterinary Services

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

---

41 | ***10 of 12*** | ***NNW/224.8*** | ***66.9 / -3.00*** | ***Cameron Veterinary Professional Corporation*** ***364 Churchill Avenue North*** ***Ottawa ON*** | ***GEN***

Generator No: ON2549408
Status:
Approval Years: 2013
Contam. Facility:
MHSW Facility:
SIC Code: 541940
SIC Description: VETERINARY SERVICES

PO Box No:
Country:
Choice of Contact:
Co Admin:
Phone No Admin:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Detail(s)

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

---

41 | ***11 of 12*** | ***NNW/224.8*** | ***66.9 / -3.00*** | ***Cameron Veterinary Professional Corporation*** ***364 Churchill Avenue North*** ***Ottawa ON K1Z 5C2*** | ***GEN***

Generator No: ON2549408
Status:
Approval Years: 2015
Contam. Facility: No
MHSW Facility: No
SIC Code: 541940
SIC Description: VETERINARY SERVICES

PO Box No:
Country: Canada
Choice of Contact: CO_OFFICIAL
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

---

41 | ***12 of 12*** | ***NNW/224.8*** | ***66.9 / -3.00*** | ***Cameron Veterinary Professional Corporation*** ***364 Churchill Avenue North*** ***Ottawa ON K1Z 5C2*** | ***GEN***

Generator No: ON2549408
Status:
Approval Years: 2014
Contam. Facility: No
MHSW Facility: No
SIC Code: 541940
SIC Description: VETERINARY SERVICES

PO Box No:
Country: Canada
Choice of Contact: CO_OFFICIAL
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

---

42 | ***1 of 1*** | ***NNW/225.3*** | ***66.8 / -3.08*** | ***CANADIAN WASTE SERVICES*** ***363 CHURCHILL, NORTH OF RICHMOND*** ***MOTOR VEHICLE (OPERATING FLUID)*** ***OTTAWA CITY ON*** | ***SPL***

Ref No: 207678
Site No:
Incident Dt: 8/2/2001
Year:
Incident Cause: VALVE/FITTING LEAK OR FAILURE
Incident Event:
Contaminant Code:
Contaminant Name:

Discharger Report:
Material Group:
Health/Env Conseq:
Client Type:
Sector Type:
Agency Involved:
Nearest Watercourse:
Site Address:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Contaminant Limit 1:		**Site District Office:**	
Contam Limit Freq 1:		**Site Postal Code:**	
Contaminant UN No 1:		**Site Region:**	
Environment Impact:	Not Anticipated	**Site Municipality:**	20107
Nature of Impact:	Other	**Site Lot:**	
Receiving Medium:	Land, Water	**Site Conc:**	
Receiving Env:		**Northing:**	
MOE Response:		**Easting:**	
Dt MOE Arvl on Scn:		**Site Geo Ref Accu:**	
MOE Reported Dt:	8/2/2001	**Site Map Datum:**	
Dt Document Closed:		**SAC Action Class:**	
Incident Reason:	MATERIAL FAILURE	**Source Type:**	
Site Name:			
Site County/District:			
Site Geo Ref Meth:			
Incident Summary:	CAN WASTE: TRUCK BLEW HYDRAULIC LINE, 140 L TO ROAD, C/B-CLEANING		
Contaminant Qty:			

43	1 of 2	ENE/227.9	68.8 / -1.06	**ZONE 5 LANDSCAPING INC** **409 EDGEWOOD AVE,,OTTAWA,ON,K1Z 5K6,CA** **ON**	PINC

Incident ID:		**Fuel Category:**	Natural Gas
Incident No:	1732174	**Health Impact:**	
Incident Reported Dt:	10/6/2015	**Environment Impact:**	
Type:	FS-Pipeline Incident	**Property Damage:**	Yes
Status Code:		**Service Interupt:**	
Customer Acct Name:	ZONE 5 LANDSCAPING INC	**Enforce Policy:**	Yes
Incident Address:	409 EDGEWOOD AVE,,OTTAWA,ON,K1Z 5K6,CA	**Public Relation:**	
Tank Status:	Pipeline Damage Reason Est	**Pipeline System:**	
Task No:	5891737	**Depth:**	
Spills Action Centre:		**Pipe Material:**	
Fuel Type:		**PSIG:**	
Fuel Occurrence Tp:		**Attribute Category:**	FS-Perform P-line Inc Invest
Date of Occurrence:		**Regulator Location:**	
Occurrence Start Dt:	2015/10/06	**Method Details:**	E-mail
Operation Type:			
Pipeline Type:			
Regulator Type:			
Summary:	409 EDGEWOOD AVENUE, OTTAWA - PIPELINE HIT - 1 ¼"		
Reported By:	Peter O'Gorman - ENBRIDGE		
Affiliation:			
Occurrence Desc:			
Damage Reason:	Excavation practices not sufficient		
Notes:			

43	2 of 2	ENE/227.9	68.8 / -1.06	**Enbridge Gas Distribution Inc.** **409 Edgewood Avenue** **Ottawa ON**	SPL

Ref No:	6661-A32JXW	**Discharger Report:**	
Site No:	NA	**Material Group:**	
Incident Dt:	10/6/2015	**Health/Env Conseq:**	
Year:		**Client Type:**	
Incident Cause:		**Sector Type:**	Unknown / N/A
Incident Event:		**Agency Involved:**	
Contaminant Code:	35	**Nearest Watercourse:**	
Contaminant Name:	NATURAL GAS (METHANE)	**Site Address:**	409 Edgewood Avenue
Contaminant Limit 1:		**Site District Office:**	
Contam Limit Freq 1:		**Site Postal Code:**	
Contaminant UN No 1:		**Site Region:**	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Environment Impact:		**Site Municipality:**	Ottawa
Nature of Impact:		**Site Lot:**	
Receiving Medium:		**Site Conc:**	
Receiving Env:		**Northing:**	
MOE Response:	No	**Easting:**	
Dt MOE Arvl on Scn:		**Site Geo Ref Accu:**	
MOE Reported Dt:	10/6/2015	**Site Map Datum:**	
Dt Document Closed:	11/27/2015	**SAC Action Class:**	TSSA - Fuel Safety Branch - Hydrocarbon Fuel Release/Spill
Incident Reason:	Operator/Human Error	**Source Type:**	
Site Name:	Residential Line Strike<UNOFFICIAL>		
Site County/District:			
Site Geo Ref Meth:			
Incident Summary:	TSSA FSB: 1 1/4" pl intermediate main dmgd; made safe		
Contaminant Qty:	0 other - see incident description		

---

44 **1 of 2** **ENE/248.5** **69.8 / -0.05** **424 Athlone St Ottawa ON** **SPL**

Ref No:	6566-9UVP49	**Discharger Report:**	
Site No:	NA	**Material Group:**	
Incident Dt:	3/23/2015	**Health/Env Conseq:**	
Year:		**Client Type:**	
Incident Cause:	Leak/Break	**Sector Type:**	
Incident Event:		**Agency Involved:**	
Contaminant Code:	35	**Nearest Watercourse:**	
Contaminant Name:	METHANE GAS, COMPRESSED (NATURAL GAS)	**Site Address:**	424 Athlone St
Contaminant Limit 1:		**Site District Office:**	
Contam Limit Freq 1:		**Site Postal Code:**	
Contaminant UN No 1:		**Site Region:**	
Environment Impact:		**Site Municipality:**	Ottawa
Nature of Impact:	Air	**Site Lot:**	
Receiving Medium:		**Site Conc:**	
Receiving Env:		**Northing:**	
MOE Response:	N	**Easting:**	
Dt MOE Arvl on Scn:		**Site Geo Ref Accu:**	
MOE Reported Dt:	3/23/2015	**Site Map Datum:**	
Dt Document Closed:		**SAC Action Class:**	Air Spills - Gases and Vapours
Incident Reason:	Material Failure - Poor Design/Substandard Material	**Source Type:**	
Site Name:	line strike<UNOFFICIAL>		
Site County/District:			
Site Geo Ref Meth:			
Incident Summary:	TSSA: line strike 424 Athlone St, made safe		
Contaminant Qty:	1 other - see incident description		

---

44 **2 of 2** **ENE/248.5** **69.8 / -0.05** **GARY PATRICK GEHL 424 ATHLONE AVE,,OTTAWA,ON,K1Z 5M5,CA ON** **PINC**

Incident ID:		**Fuel Category:**	Natural Gas
Incident No:	1602350	**Health Impact:**	
Incident Reported Dt:	3/23/2015	**Environment Impact:**	
Type:	FS-Pipeline Incident	**Property Damage:**	Yes
Status Code:		**Service Interupt:**	
Customer Acct Name:	GARY PATRICK GEHL	**Enforce Policy:**	Yes
Incident Address:	424 ATHLONE AVE,,OTTAWA,ON,K1Z 5M5, CA	**Public Relation:**	
Tank Status:	Pipeline Damage Reason Est	**Pipeline System:**	
Task No:	5415185	**Depth:**	
Spills Action Centre:		**Pipe Material:**	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Fuel Type:		**PSIG:**	
Fuel Occurrence Tp:		**Attribute Category:**	FS-Perform P-line Inc Invest
Date of Occurrence:		**Regulator Location:**	
Occurrence Start Dt:	2015/03/24	**Method Details:**	E-mail
Operation Type:			
Pipeline Type:			
Regulator Type:			
Summary:	424 ATHLONE AVENUE, OTTAWA - PIPELINE HIT - 1 ¼"		
Reported By:	Tracy Penney - ENBRIDGE		
Affiliation:			
Occurrence Desc:			
Damage Reason:	Excavation practices not sufficient		
Notes:			

---

45 | ***1 of 1*** | ***ENE/249.4*** | ***68.9 / -1.01*** | ***8596239 Canada Inc.<UNOFFICIAL>*** ***400 Athlone Ave*** ***Ottawa ON*** | ***SPL***

Ref No:	7053-9DKMY8	**Discharger Report:**	
Site No:		**Material Group:**	
Incident Dt:	2013/11/14	**Health/Env Conseq:**	
Year:		**Client Type:**	
Incident Cause:	Vandalism	**Sector Type:**	Motor Vehicle
Incident Event:		**Agency Involved:**	
Contaminant Code:	15	**Nearest Watercourse:**	
Contaminant Name:	HYDRAULIC OIL	**Site Address:**	400 Athlone Ave
Contaminant Limit 1:		**Site District Office:**	
Contam Limit Freq 1:		**Site Postal Code:**	
Contaminant UN No 1:		**Site Region:**	
Environment Impact:	Possible	**Site Municipality:**	Ottawa
Nature of Impact:	Soil Contamination	**Site Lot:**	
Receiving Medium:		**Site Conc:**	
Receiving Env:		**Northing:**	
MOE Response:		**Easting:**	
Dt MOE Arvl on Scn:		**Site Geo Ref Accu:**	
MOE Reported Dt:	2013/11/18	**Site Map Datum:**	
Dt Document Closed:		**SAC Action Class:**	Land Spills
Incident Reason:	Deliberate Act	**Source Type:**	
Site Name:	construction site<UNOFFICIAL>		
Site County/District:			
Site Geo Ref Meth:			
Incident Summary:	400 Athlone Ave: excavator fire, fuel & operating fluids		
Contaminant Qty:	0 other - see incident description		

---

46 | ***1 of 5*** | ***WSW/249.6*** | ***67.1 / -2.74*** | ***J. Clark Pharmacy Care Ltd.*** ***410 RICHMOND ROAD*** ***OTTAWA ON K2A 4C4*** | ***GEN***

Generator No:	ON7312008	**PO Box No:**	
Status:		**Country:**	Canada
Approval Years:	2016	**Choice of Contact:**	CO_ADMIN
Contam. Facility:	No	**Co Admin:**	NASTRAN NAJAFI-FARD
MHSW Facility:	No	**Phone No Admin:**	4164931120 Ext.3218
SIC Code:	446110		
SIC Description:	446110		

Detail(s)

Waste Class:	312
Waste Class Desc:	PATHOLOGICAL WASTES

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

---

46 **2 of 5** **WSW/249.6** **67.1 / -2.74** **J. Clark Pharmacy Care Ltd.** **GEN**
410 RICHMOND ROAD
OTTAWA ON K2A 4C4

Generator No: ON7312008
Status:
Approval Years: 2015
Contam. Facility: No
MHSW Facility: No
SIC Code: 446110
SIC Description: 446110

PO Box No:
Country: Canada
Choice of Contact: CO_ADMIN
Co Admin: NASTRAN NAJAFI-FARD
Phone No Admin: 4164931120 Ext.3218

Detail(s)

Waste Class: 312
Waste Class Desc: PATHOLOGICAL WASTES

Waste Class: 261
Waste Class Desc: PHARMACEUTICALS

---

46 **3 of 5** **WSW/249.6** **67.1 / -2.74** **J. Clark Pharmacy Care Ltd.** **GEN**
410 RICHMOND ROAD
OTTAWA ON K2A 4C4

Generator No: ON7312008
Status: Registered
Approval Years: As of Dec 2018
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 261 A
Waste Class Desc: Pharmaceuticals

Waste Class: 312 P
Waste Class Desc: Pathological wastes

---

46 **4 of 5** **WSW/249.6** **67.1 / -2.74** **J. Clark Pharmacy Care Ltd.** **GEN**
410 RICHMOND ROAD
OTTAWA ON K2A 4C4

Generator No: ON7312008
Status: Registered
Approval Years: As of Jul 2020
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 261 A
Waste Class Desc: Pharmaceuticals

Waste Class: 312 P

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Waste Class Desc:		Pathological wastes			

46	5 of 5	WSW/249.6	67.1 / -2.74	J. Clark Pharmacy Care Ltd. 410 RICHMOND ROAD OTTAWA ON K2A 4C4	GEN

Generator No: ON7312008
Status: Registered
Approval Years: As of Jan 2021
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 261 A
Waste Class Desc: Pharmaceuticals

Waste Class: 312 P
Waste Class Desc: Pathological wastes

47	1 of 4	NE/249.6	68.0 / -1.86	Y'S OWL CO-OPERATIVE INC 290 PICTON AVE OTTAWA ON K1Z 8P8	SCT

Established: 1981
Plant Size (ft²): 8000
Employment: 17

--Details--
Description: PLASTICS PRODUCTS, N.E.C.
SIC/NAICS Code: 3089

47	2 of 4	NE/249.6	68.0 / -1.86	Orezone Resources Inc. 290 Picton St Suite 201 Ottawa ON K1Z 8P8	SCT

Established: 1987
Plant Size (ft²):
Employment: 10

47	3 of 4	NE/249.6	68.0 / -1.86	Apption Software Inc. 290 Picton Ave Suite 104 Ottawa ON K1Z 8P8	SCT

Established: 01-NOV-04
Plant Size (ft²):
Employment:

--Details--
Description: Computer Systems Design and Related Services
SIC/NAICS Code: 541510

Description: Computer Systems Design and Related Services
SIC/NAICS Code: 541510

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
47	4 of 4	NE/249.6	68.0 / -1.86	Orezone Gold Corporation 290 Picton Ave Suite 201 Ottawa ON K1Z 8P8	SCT

Established: 01-JUL-87
Plant Size (ft²):
Employment:

--Details--
Description: Other Support Activities for Mining
SIC/NAICS Code: 213119

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
48	1 of 2	N/249.7	66.8 / -3.05	PIPELINE HIT - 2" 310 ELMGROVE AVE,,OTTAWA,ON,K1Z 6V1,CA ON	PINC

Incident ID:
Incident No: 1899576
Incident Reported Dt: 7/8/2016
Type: FS-Pipeline Incident
Status Code:
Customer Acct Name: PIPELINE HIT - 2"
Incident Address: 310 ELMGROVE AVE,,OTTAWA,ON,K1Z 6V1,CA
Tank Status: Pipeline Damage Reason Est
Task No: 6241143
Spills Action Centre:
Fuel Type:
Fuel Occurrence Tp:
Date of Occurrence:
Occurrence Start Dt: 2016/07/18
Operation Type:
Pipeline Type:
Regulator Type:
Summary: 310 ELMGROVE AVE, OTTAWA - PIPELINE HIT - 2"
Reported By: Bernie Monette - ENBRIDGE
Affiliation:
Occurrence Desc:
Damage Reason: Facility was not located or marked
Notes:

Fuel Category: Natural Gas
Health Impact:
Environment Impact:
Property Damage: Yes
Service Interupt:
Enforce Policy: Yes
Public Relation:
Pipeline System:
Depth:
Pipe Material:
PSIG:
Attribute Category: FS-Perform P-line Inc Invest
Regulator Location:
Method Details: E-mail

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
48	2 of 2	N/249.7	66.8 / -3.05	Enbridge Gas Distribution Inc. 310 Elmsgrove Ave Ottawa ON	SPL

Ref No: 2365-ABMRJS
Site No: NA
Incident Dt: 2016/07/07
Year:
Incident Cause:
Incident Event: Leak/Break
Contaminant Code: 35
Contaminant Name: NATURAL GAS (METHANE)
Contaminant Limit 1:
Contam Limit Freq 1:
Contaminant UN No 1:
Environment Impact:
Nature of Impact:
Receiving Medium:
Receiving Env: Air

Discharger Report:
Material Group:
Health/Env Conseq:
Client Type:
Sector Type: Miscellaneous Industrial
Agency Involved:
Nearest Watercourse:
Site Address: 310 Elmsgrove Ave
Site District Office:
Site Postal Code:
Site Region:
Site Municipality: Ottawa
Site Lot:
Site Conc:
Northing:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

MOE Response:	No	**Easting:**	
Dt MOE Arvl on Scn:		**Site Geo Ref Accu:**	
MOE Reported Dt:	2016/07/07	**Site Map Datum:**	
Dt Document Closed:	2016/08/10	**SAC Action Class:**	TSSA - Fuel Safety Branch - Hydrocarbon Fuel Release/Spill
Incident Reason:	Operator/Human Error	**Source Type:**	
Site Name:	Residential<UNOFFICIAL>		
Site County/District:			
Site Geo Ref Meth:			
Incident Summary:	TSSA 2 inch main damage, made safe		
Contaminant Qty:	0 other - see incident description		

---

49 | ***1 of 1*** | ***ENE/249.8*** | ***69.9 / 0.00*** | ***BEAVER CONSTRUCTION GROUP INC 422 ATHLONE AVE,,OTTAWA,ON,K1Z 5M5,CA ON*** | ***PINC***

Incident ID:		**Fuel Category:**	Natural Gas
Incident No:	1609794	**Health Impact:**	
Incident Reported Dt:	4/2/2015	**Environment Impact:**	
Type:	FS-Pipeline Incident	**Property Damage:**	Yes
Status Code:		**Service Interupt:**	
Customer Acct Name:	BEAVER CONSTRUCTION GROUP INC	**Enforce Policy:**	Yes
Incident Address:	422 ATHLONE AVE,,OTTAWA,ON,K1Z 5M5, CA	**Public Relation:**	
Tank Status:	Pipeline Damage Reason Est	**Pipeline System:**	
Task No:	5430081	**Depth:**	
Spills Action Centre:		**Pipe Material:**	
Fuel Type:		**PSIG:**	
Fuel Occurrence Tp:		**Attribute Category:**	FS-Perform P-line Inc Invest
Date of Occurrence:		**Regulator Location:**	
Occurrence Start Dt:	2105/04/02	**Method Details:**	E-mail
Operation Type:			
Pipeline Type:			
Regulator Type:			
Summary:	422 ATHLONE AVE, OTTAWA - PIPELINE HIT 1 1/4"		
Reported By:	Jeff Stiles - Enbridge Gas		
Affiliation:			
Occurrence Desc:			
Damage Reason:	Excavation practices not sufficient		
Notes:			

---

50 | ***1 of 2*** | ***WSW/250.1*** | ***67.2 / -2.72*** | ***DOUBLE L PRINTERS 416 RICHMOND RD OTTAWA ON K2A 0G2*** | ***SCT***

Established:	1969
Plant Size (ft²):	2500
Employment:	6

--Details--

Description:	COMMERCIAL PRINTING, LITHOGRAPHIC
SIC/NAICS Code:	2752
Description:	COMMERCIAL PRINTING, NOT ELSEWHERE CLASSIFIED
SIC/NAICS Code:	2759
Description:	Quick Printing
SIC/NAICS Code:	323114
Description:	Digital Printing
SIC/NAICS Code:	323115

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Description:		Other Printing			
SIC/NAICS Code:		323119			
50	2 of 2	WSW/250.1	67.2 / -2.72	**Double L Printers - Div. of 595511 Ontario Inc.** **416 Richmond Rd** **Ottawa ON K2A 0G2**	SCT
Established:		1969			
Plant Size (ft²):		2500			
Employment:		6			

Unplottable Summary

Total: 3 Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
GEN	Kiewit Eurovia Vinci	Cleary Station Richmond Road	Ottawa ON	K2A 0G6
GEN	Ottawa Greenbelt Construction Company Limited	Churchill Ave Reconstruction - Carling to Byron	Ottawa ON	
SPL	TEXACO	RICHMOND RD. SERVICE STATION	OTTAWA CITY ON	

Unplottable Report

Site: ***Kiewit Eurovia Vinci***
Cleary Station Richmond Road Ottawa ON K2A 0G6

Database: ***GEN***

Generator No:	ON6388739	***PO Box No:***	
Status:	Registered	***Country:***	Canada
Approval Years:	As of Jan 2021	***Choice of Contact:***	
Contam. Facility:		***Co Admin:***	
MHSW Facility:		***Phone No Admin:***	
SIC Code:			
SIC Description:			

Detail(s)

Waste Class:	146 L
Waste Class Desc:	Other specified inorganic sludges, slurries or solids
Waste Class:	221 L
Waste Class Desc:	Light fuels

Site: ***Ottawa Greenbelt Construction Company Limited***
Churchill Ave Reconstruction - Carling to Byron Ottawa ON

Database: ***GEN***

Generator No:	ON4886021	***PO Box No:***	
Status:		***Country:***	
Approval Years:	2013	***Choice of Contact:***	
Contam. Facility:		***Co Admin:***	
MHSW Facility:		***Phone No Admin:***	
SIC Code:	237110		
SIC Description:	WATER AND SEWER LINE AND RELATED STRUCTURES CONSTRUCTION		

Detail(s)

Waste Class:	251
Waste Class Desc:	OIL SKIMMINGS & SLUDGES

Site: ***TEXACO***
RICHMOND RD. SERVICE STATION OTTAWA CITY ON

Database: ***SPL***

Ref No:	14431	***Discharger Report:***	
Site No:		***Material Group:***	
Incident Dt:	2/2/1989	***Health/Env Conseq:***	
Year:		***Client Type:***	
Incident Cause:	OTHER CAUSE (N.O.S.)	***Sector Type:***	
Incident Event:		***Agency Involved:***	
Contaminant Code:		***Nearest Watercourse:***	
Contaminant Name:		***Site Address:***	
Contaminant Limit 1:		***Site District Office:***	
Contam Limit Freq 1:		***Site Postal Code:***	
Contaminant UN No 1:		***Site Region:***	
Environment Impact:	NOT ANTICIPATED	***Site Municipality:***	20101
Nature of Impact:		***Site Lot:***	
Receiving Medium:	LAND	***Site Conc:***	
Receiving Env:		***Northing:***	
MOE Response:		***Easting:***	
Dt MOE Arvl on Scn:		***Site Geo Ref Accu:***	
MOE Reported Dt:	2/2/1989	***Site Map Datum:***	

Dt Document Closed:
Incident Reason: ERROR
Site Name:
Site County/District:
Site Geo Ref Meth:
Incident Summary:
Contaminant Qty:

SAC Action Class:
Source Type:

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

The Ontario Ministry of Natural Resources maintains a database of all active pits and quarries. The database provides information regarding the registered owner/operator, location name, operation type, approval type, and maximum annual tonnage.

Government Publication Date: Up to Sep 2020

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-Oct 2018

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-Dec 31, 2020

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 2018

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: Jul 31, 2020

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-Dec 31, 2020

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 -Dec 2020

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-Nov 2020

Certificates of Property Use: Provincial CPU

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all CPU's on the registry such as (EPA s. 168.6) - Certificate of Property Use.

Government Publication Date: 1994-Feb 28, 2021

Drill Hole Database: Provincial DRL

The Ontario Drill Hole Database contains information on more than 113,000 percussion, overburden, sonic and diamond drill holes from assessment files on record with the department of Mines and Minerals. 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 to the MNDM. 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 - Sep 2020

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: Jul 31, 2020

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-Jan 31, 2021

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-Feb 28, 2021

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- Jan 31, 2021

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-Jan 31, 2021

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: Dec 31, 2016

Environmental Penalty Annual Report: Provincial EPAR

This database contains data from Ontario's annual environmental penalty report published by the Ministry of the Environment and Climate Change. 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, 2019

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: Jul 31, 2020

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 2021

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: May 31, 2018

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: Jul 31, 2020

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. 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-Jan 31, 2021

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-Dec 2018

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: Jul 31, 2020

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: Feb 28, 2019

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-Dec 2020

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 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.

Government Publication Date: Dec 31, 2018

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-Apr 2018

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-Dec 31, 2020

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 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.

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-Aug 31, 2020

Ontario Oil and Gas Wells: Provincial OOGW

In 1998, the MNR handed over to the Ontario Oil, Gas and Salt Resources 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 include well owner/operator, location, permit issue date, and well cap date, license No., 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 provide for each well record.

Government Publication Date: 1800-Jun 2020

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 all 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-Feb 28, 2021

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-Jan 31, 2021

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: Oct 31, 2020

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 all PTTW's on the registry such as OWRA s. 34 - Permit to take water.

Government Publication Date: 1994-Feb 28, 2021

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: 1986-2016

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).

Government Publication Date: 1997-Sept 2001, Oct 2004-Jan 2021

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-Dec 31, 2020

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 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-Mar 2020; Jul 2020 - Aug 2020

Wastewater Discharger Registration Database: Provincial SRDS

Information under this heading is combination of the following 2 programs. The Municipal/Industrial Strategy for Abatement (MISA) division of the Ontario Ministry of Environment maintained a database of all 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. All sampling information is now collected and stored within the Sample Result Data Store (SRDS).

Government Publication Date: 1990-Dec 31, 2017

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 - Dec 2020

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: Jul 31, 2020

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-Jan 31, 2021

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: Apr 30, 2020

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.