SITE ALTERATION AND FILL MANAGEMENT PLAN

5783 Bloomington Road, Township of Whitchurch-Stouffville

Prepared for:
1398493 Ontario Inc.

Project: 2023-5354 **May 2025**

Submission	Description	Prepared		Checked	
		By	Date	By	Date
0.0	Original Report	J. Ghobrial	February 2025	L. Groysman	February 2025
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1.0 Introduction

Schaeffers Consulting Engineers (SCE) was retained by 1398493 Ontario Inc. (“The Applicant”) to prepare a Site Alteration and Fill Management Plan (SAFMP) in support of a site alteration permit application for the property located at 5783 Bloomington Road in the Town of Whitchurch-Stouffville, Ontario (the "Site"). The Site, which is owned and will be operated by Bloomington Soils Inc., is located on the south side of Bloomington Road and west of Ninth Line. The Site is approximately 34 hectares (ha) in size and was previously used as a gravel pit extraction operation.

The aggregate operations under license number 6562 were completed circa 1983, and at the same time, the license was surrendered. Subsequently, the site was rehabilitated as required under the Aggregate Resources Act. Nevertheless, the conclusion of operations has left a significant depression in the current landform, to the degree of up to 20 meters in some areas.

1.1 Description of Proposed Development

The Project Area identified in this Plan comprises a 34-hectare site located west of the intersection of Bloomington Road and Ninth Line, with a municipal address of 5783 Bloomington Road in the Town of Whitchurch-Stouffville. Throughout this SAFMP, the terms “Project Area” and the “Site” are used interchangeably.

The proposed site alteration aims to implement a grading plan which accounts for the historical grades at Bloomington Road and is consistent with the elevations that existed before the aggregate production activity in the 1980’s as well as the surrounding lands. The 1960 Department of Mines topographic map, included in Appendix E1 Historic Map, illustrates the original pre-excavation surface elevations and serves as the reference for establishing the final restoration grades across the Site. These elevations, inclusive of topsoil, represent the maximum allowable post-restoration grades.

In consultation with the Town, an approved exception applies along the western boundary of the Site. Recognizing that the lands immediately west of the subject site in a certain area are graded at a higher elevation than Bloomington Road, an engineered swale is proposed along the western boundary to restore proper drainage conditions on the Site, as they existed before the filling activity on the adjacent western property. To accommodate this drainage feature and avoid direct grading along the property line, the proposed fill area has been set back by up to 40 meters from the western boundary.

The Applicant proposes to restore the property by utilizing suitable environmentally clean fill material from qualifying construction projects in the Great Toronto Area and beyond. Fill will be placed so that the final topographic contours at the Site will be visually consistent with the surrounding lands' elevations and match the original grade at Bloomington Road.

The Site will be used for agricultural crop production after the proposed fill operations are completed.

This SAFMP follows the applicable requirements of the Town of Whitchurch-Stouffville's document titled "Guideline for Site Alteration and Fill Permit”, undated, further referenced as the Guideline. Furthermore,

The Town of Whitchurch-Stouffville By-Law passed in April 2024 (2024-037-RE) was also referenced for this report.

1.2 Proposed Grading Plan

The grading and drainage details for the site are comprehensively documented in the set of drawings included in **Appendix E**. Drawing **SC-1** presents Stage 1 of the proposed topsoil stripping plan. Drawings **SC-2** and **SC-3** present Stages 2 and 3 of the sediment and erosion control plan and fill operation. Drawing **BG-1** illustrates the grading of the proposed noise attenuation berm. The final grade and surface cover are illustrated in drawings **SG-1** and **SG-2** including the calculated slope grades, surface water runoff direction, and the drainage across the entire property, including at the western limit.

2.0 Site Background

2.1 Site Description

The Site is approximately 34 hectares (ha) in size. The site has undergone significant disturbance during the aggregate extraction operations between the years 1980-1985 which has left four man-made ponds on the property. The two ponds in the eastern part were originally classified as unevaluated wetlands on the publicly available Toronto and Region Conservation Authority (TRCA) online mapping last updated in 2023. The features have been declassified in collaboration with TRCA staff. For reference, a site walk was conducted with TRCA staff in September 2024 where the ponds were deemed to not be of any environmental significance and not within the jurisdiction of the TRCA. A subsequent letter provided by the TRCA in October 2024 indicated the TRCA has no objection to the proposed filling operation, this letter has been provided to the Town.

The site is located approximately 500 meters (m) west of the Bloomington Road and Ninth Line intersection in the Town of Whitchurch-Stouffville. Currently, the Subject Property includes several rural residential and agricultural buildings surrounded by actively farmed fields. A small residential subdivision (16 houses) exists to the east of the Subject Property.

Access to the Site is available via Bloomington Road, with a 65-meter-long driveway to accommodate vehicles entering and exiting the site.

2.2 Geotechnical Investigation

A Geotechnical Investigation was conducted by Golder Associates in 2011 and 2012 to gather information on the general subsurface soil and shallow groundwater conditions at the site using a limited number of boreholes. The Geotechnical Investigation is provided in **Appendix A1.**

In preparation for the SAFMP, Stantec Consulting Ltd. (Stantec) reviewed the 2012 geotechnical investigation and summarized its findings as follows.

The past investigation included five (5) boreholes (MW201 to MW205), advanced to depths ranging from approximately 13.92 m to 21.95 m below grade, corresponding to elevations from 308.93 m to 303.84 m. Standard penetration testing and sampling were completed at regular intervals in all boreholes. Groundwater conditions were observed in open boreholes during drilling and monitoring wells were installed in all boreholes.

The subsurface stratigraphy encountered in the boreholes generally consisted of:

- Topsoil: 150 mm to 300 mm thick; underlain by,
- Fill: Very loose to compact sandy silt, sand and silt/firm to hard silty clay to depths ranging from approximately 1.1 m to 4.11 m below grade (corresponding to approximately elevation 328.37 m to 319.65 m); underlain by,

- Native Soils: Compact to very dense silty sand, sand, sand and gravel, sandy gravel and silt; underlain by/interbedded with stiff to hard clayey silt to silty clay till /very dense silty sand to sandy silt till.

The native cohesionless strata typically contained various but minor amounts of fines and cobbles/boulders. The cohesive till strata had low plasticity and, where tested, had natural moisture contents close to their Plastic Limits.

Groundwater levels were observed at depths ranging from approximately 10 m to 18.3 m below grade in open boreholes. Groundwater levels were measured at depths ranging from approximately 10 m to 17.7 m below grade corresponding to elevations ranging from approximately 313.1 m to 310 m Above Mean Sea Level (m AMSL) at monitoring wells MW201 to MW205.

Based on the results of the geotechnical investigation, no major constraints are anticipated for the placement of the proposed fill for agricultural use. From a geotechnical perspective, the existing subsurface soils can support fill materials up to 20 m thick for backfilling the existing ponds. Self-weight and long-term settlements are expected but these may not pose significant concerns for future agricultural use and can be mitigated by additional fill (overfilling) during the final grading stage. For agricultural use where settlement is not a concern, the approved fill can be placed in 300 mm thick lifts and soil to be nominally compacted and statically rolled.

The full Summary of Geotech Conditions and Fill Placement Recommendations is provided in **Appendix A2**.

2.3 Hydrogeologic Investigation and Baseline Groundwater Monitoring

A Hydrogeological investigation was conducted by Stantec in 2024. The objective of the investigation was to assess the hydrogeological conditions and characterize the baseline groundwater quality at the Site. The Hydrogeological Assessment report, dated October 22, 2024, is provided in **Appendix B**.

The hydrogeological assessment utilized a background review of regional data, information collected during two historical investigations completed at the Site and information collected during the field activities completed on July 17 and 19, 2024.

Based on the results of the hydrogeological assessment, the following summary is provided:

- Subsurface Conditions: Shallow soils consist of topsoil (150 to 300 mm) underlain by reworked native material to depths of up to 4.1 m Below Ground Surface (BGS), followed by silt, sand, silty sand and sand and gravel extending to the maximum investigated depth of 21.95 m BGS.
- Groundwater Levels: The overburden groundwater elevations were observed at approximately 311.6 m AMSL (MW203) to 313.19 m AMSL (MW201) in May 2012 and from approximately 311.5 m AMSL (MW203) to 313.24 m AMSL (MW201) in July 2024.
- Groundwater and Surface Water Sampling: Groundwater samples were recovered from monitoring wells MW201, MW203 and MW205 on July 17, 2024, to evaluate groundwater quality.

Monitoring wells MW202 and MW204 could not be sampled due to MW202 being damaged and MW204 not being located. Surface water samples were also collected on July 17, 2024 from the north and south ponds located in the eastern portion of the site. The submitted groundwater and surface water samples were analyzed for concentrations of Volatile Organic Compounds (VOC), Petroleum Hydrocarbons (PHC), metals and inorganics, and Polycyclic Aromatic Hydrocarbons (PAH). The analytical results met the Ontario Ministry of the Environment (MECP) Table 1 Site Condition Standard (SCS).

- Aquifer and Well-Head Protection: The property is located within a Well-Head Protection Area (WPHA) and groundwater at the Site is part of a Highly Vulnerable Aquifer (HVA). Considering the current vulnerability of the aquifer at the Property, filling the ponds with soil that adheres to O. Reg. 406/19 requirements, will ensure protection of the local groundwater resource. The groundwater quality at the Site and at the neighbouring properties should be monitored against established baseline conditions during the filling operations.
- Groundwater Recharge: Groundwater recharge conditions are expected to improve after filling the north and south ponds.
- Pond Volumes: Based on bathymetric surveys of the two eastern ponds provided by GeoProcess Research Associates (GeoProcess) in the summer of 2024, the volume of the water in the north pond is estimated to be approximately 40,500 m3 and the volume of the water in the south pond is estimated to be 42,800 m3.
- Dewatering Requirements: A dewatering rate of approximately 400,000 L/day may lower the pond levels by approximately 0.4 m. Construction dewatering can be completed under a MECP Permit to Take Water (PTTW) or Environmental Activity and Sector Registry (EASR) application. Should dewatering rates greater than 400,000 L/day be required, a PTTW will be required.
- Temporary Water Table Impacts: Dewatering the ponds may cause a limited short-term lowering of the water table in the vicinity of the Property.

2.4 Natural Heritage Evaluation

GeoProcess Research Associates Inc. prepared an Environmental Impact Statement (EIS) report in support of the large-scale fill placement application. The Subject Property was formerly an aggregate quarry and now contains agricultural lands, two remnant aggregate ponds, and scattered residential structures. The EIS identified the environmental character of the Subject Property and recommended mitigation measures to avoid impacting significant features and functions associated with the natural heritage system. This evaluation confirmed that the proposed site alteration and fill placement can proceed with minimal environmental impact, subject to regulatory approvals and adherence to prescribed mitigation strategies. The full report is provided in Appendix C.

2.4.1 Regulatory Compliance

The EIS aligns with the policies of the York Region Official Plan, Town of Whitchurch-Stouffville Official Plan, Oak Ridges Moraine Conservation Plan, and TRCA regulations.

No significant negative impacts on the Natural Heritage System or Regional Greenlands System are anticipated, provided recommended mitigation measures are implemented.

2.4.2 Key Findings

The following key findings highlight the natural heritage characteristics and regulatory considerations for the Subject Property:

- Based on Schedule A (Town Structure) of the Town of Whitchurch-Stouffville Official Plan, a Natural Heritage System and Regional Greenlands System associated with the Oak Ridges Moraine Natural Linkage Designation have been identified within the Subject Property.
- Based on the policies of Section 4.1.6.1 of the Town of Whitchurch-Stouffville Official Plan, any development or site alteration within 120 m of the Regional Greenlands System requires an EIS.
- According to Schedules C and M, the Subject Property has also been identified as a Secondary Aggregate Resource Area within the Agricultural System.
- Schedule K of the Town of Whitchurch-Stouffville Official Plan identifies two aggregate ponds located in the northeast quadrant of the Subject Property, remnants of former quarry operations. The northern and southern pond volumes are approximately 40,500 m^3 and 42,800 m^3, respectively. A site visit with the TRCA was conducted in September 2024, and a subsequent clearance letter was provided by the TRCA confirming that the aggregate ponds do not qualify as wetlands and are not considered Key Hydrologic Features. The letter further states that the TRCA has no objection to the proposed filling operation.
- Dewatering of the features will be required to support proposed works and may require a Permit to Take Water, issued by the MECP under Section 34 of the Ontario Water Resources Act (OWRA).
- Field assessments conducted in the spring and summer of 2024 identified natural heritage features, including breeding bird populations, amphibians, and tree inventories.
- The land is primarily agricultural, with existing natural heritage elements not significantly impacted by the proposed fill placement.

2.4.3 Tree Removal and Preservation Measures

Tree management is a crucial component of the site alteration plan. The following considerations outline the proposed approach to tree removal and preservation:

- The EIS report discusses tree removal within the site and along the regional road. A total of 90 trees were documented in the Tree Inventory, including both private trees located entirely on the Subject Property and Regionally owned trees located within the York Region Right-of-Way.
- The assessment ensures that tree retention strategies align with environmental best practices while maintaining compliance with regulatory requirements.
- Within the site, 73 trees were documented, of which 67 are proposed for removal and 6 for retention.
- To reduce project costs, the applicant is considering implementing Tree Protection Zones (TPZ), grading adjustments along the northern boundary, and the application of Erosion and Sediment Control (ESC) measures instead of removing additional trees beyond the roadway widening segment. Please refer to drawing SC-1 for the details.
- Within the Regional Right-of-Way, 17 trees were identified, all of which are proposed to be retained and protected via Tree Protection Zones (TPZ) in accordance with the *York Region Street Tree and Forest Preservation Guidelines* (January 2022), and the TPZ design and construction will follow NHF-400 specifications.

2.4.4 Environmental Impacts & Mitigation Measures

A comprehensive analysis of potential environmental impacts has been conducted, resulting in the development of the following mitigation measures:

- The results of the biophysical analysis indicate that the proposed site alteration will not alter the existing natural heritage function of the Subject Property.
- Fill placement and associated grading will not change the current land use, as the property will remain primarily agricultural.
- Following the recommended mitigation measures, the proposed site alteration will not result in negative impacts to the Natural Heritage System and Regional Greenlands System.
- The presence of Eastern Meadowlark (a threatened species) was confirmed, necessitating mitigation measures such as timing restrictions for site alteration. To protect this species, site alteration activities will be restricted during the breeding season (May 1 to August 15) to avoid disturbance to nesting birds. Any site work within this period will require a qualified avian ecologist to conduct a nest survey and implement protective measures if active nests are found.
- Compensation for tree removal in the York Region Right-of-Way will follow the compensation structure and methodology outlined in the York Region Street Tree and Forest Preservation Guidelines (January 2022).

2.5 Archaeological Assessment

The permit application requires archaeological clearance to support the proposed site alteration activities. To address this requirement, Stage 1 and Stage 2 Archaeological Assessments were completed by Golder Associates in 2010-2012. The project site was divided into three distinct phases based on the timing of property alterations.

Correspondence with Kathryn Bryant, Archaeology Team Lead at the Ministry of Tourism, Culture, and Sport (MTCS) in May 2024, confirmed that the reports remain valid and comply with the 2012 *Standards and Guidelines for Consultant Archaeologists*. The ministry's acknowledgment letters from the original submissions, the email correspondence confirming the reports' suitability, and the original assessment reports are included in **Appendixes D1, D2 and D3**.

The following subsections provide a summary of the archaeological studies conducted on the subject site.

2.5.1 Stage 1 Archaeological Assessment

The objective of the Stage 1 assessment was to compile available information about the known and potential cultural heritage resources within the study area and to provide specific direction for the protection, management and/or recovery of these resources, consistent with Ministry of Culture guidelines (Government of Ontario, 1993).

Golder Associates Ltd. applied archaeological potential criteria commonly used by the Ontario Ministry of Culture to determine areas of archaeological potential. The archaeological potential for pre-contact Aboriginal and Euro-Canadian sites within the study area was assessed as moderate to high. However, background research revealed that the area has been significantly disturbed by 20th-century development. Specifically, Phase 1 and 2 areas as well as parts of Phase 3 area, have been impacted by gravel extraction and no archaeological potential was identified, meaning they were not subject to further archaeological field assessment. A Stage 2 archaeological assessment was recommended for all remaining areas in Phase 3 that have not been previously disturbed and may be impacted by potential future development.

The Ontario Ministry of Culture reviewed the results in the Stage 1 report, dated April 2010 and issued a letter of concurrence for the findings on March 16, 2011. The Stage 1 Archaeological Assessment Report along with the letter is included in **Appendix D1**.

2.5.2 Stage 2 Archaeological Assessment

Based on the findings of the Stage 1 Archaeological Assessment, a Stage 2 Archaeological Assessment was recommended for the approximately 11.5-hectare section of Phase 3 of the project location. This area was determined to have not been previously disturbed and may be impacted by future potential development.

The objective of the Stage 2 assessment was to conduct a field survey to identify and document any archaeological resources. The Stage 2 field survey, under the supervision of Dr. Carla Parslow (P243) of

Golder Associates, did not recover any archaeological material or identify any archaeological sites. As a result, no further assessment was recommended for this area.

The Stage 2 Archaeological Assessment Report, dated June 26, 2013, was reviewed by the Ministry of Tourism, Culture and Sport (MTCS). The MTCS issued a letter of concurrence with the findings on July 22, 2013. The Stage 2 Archaeological Assessment Report along with the letter of concurrence is included in **Appendix D2**.

3.0 Site Alteration and Fill Management Plan

The SAFMP outlines the proposed site alteration activities, defines the final site conditions, and details the impact mitigation measures to be implemented. The plan is based on conducted background studies and the site-specific conditions of the property. Additionally, the SAFMP describes the procedures, practices, and operational controls that the Applicant will implement to ensure compliance with environmental protection standards and minimize potential adverse impacts.

3.1 Site Alteration

The proposed site alteration will begin upon issuance of a Site Alteration and Fill Permit by the Town's engineering department as provided for in By-law 2024-037-RE. The anticipated site prep work will begin in the spring of 2025.

3.1.1 Purpose of the Site Alteration / Rationale

The proposed site alteration will address current drainage deficiencies, improve site conditions by importing approximately two million cubic meters of fill material and prepare the site for future agricultural use. This will restore proper drainage, particularly along the western boundary, and ensure the site is suitable for farming. The activities will follow good engineering practices and be overseen by Qualified Persons (QP) licensed in Ontario.

The SAFMP includes measures to mitigate potential environmental impacts associated with the proposed works, with imported clean fill expected to improve groundwater recharge, manage surface runoff, and reduce environmental degradation risks to surrounding properties. The plan also protects the site's environmental quality, including its status within a Well-Head Protection Area and Highly Vulnerable Aquifer, while carefully managing fill placement and monitoring groundwater conditions.

3.2 Schedule of Works

The proposed site alteration shall commence in under a year's time, pending approvals. Based on current conditions and the availability of suitable material in the market, the span of the project is expected to take approximately 7 years. Initially, there will be an installation of a 2.4 m tall wooden fence at the eastern property limit in place of the temporary berm. The proposed ESC measures and temporary construction access must be installed on site. This is followed by the construction of a berm in the east for noise control. Topsoil stripping will then commence in phases from Phase 1 to Phase 3. Note that during topsoil striping the existing ponds to the east must be dewatered and filled. After topsoil stripping is completed, filling operations will commence. Just as topsoil stripping, filling operations will be completed from Phase 1 to Phase 3. Finally, the site will be prepared for final grading. The site must be properly landscaped with grass and filled to the correct grades. All existing ESC ponds or traps will be dewatered and decommissioned. Permanent conveyance ditches and swales will be constructed for surface flow to drain to the south of the site.

3.2.1 Site Preparation and Construction Mobilization

According to Ontario Regulation 406/19, any project involving the importation of more than 10,000 cubic meters of excess soil must be registered with the Resource Productivity and Reuse Authority (RPRA). As this project involves the importation of approximately 2 million cubic meters of fill, registration is mandatory. This regulation promotes responsible excess soil management and enables tracking of the material throughout its entire chain of custody. Accordingly, a Reuse Site notice will be filed in the Excess Soil Registry prior to the receipt of any soil.

Site preparation and construction mobilization for the proposed fill operations will include several key activities to ensure compliance with regulatory requirements and the approved SAFMP. The existing entrance and access road will serve as the sole controlled access point, with a construction gate installed at the property limit. A 68-meter segment of the temporary access road connecting the site to Bloomington Road will be upgraded to York Region's DS-217 standard. Additionally, Bloomington Road will require widening to accommodate truck movements. Details of this widening are provided in **Section 3.2.2** below.

Note it is required to remove all existing structures on site for this SAFMP operation. All utilities will also need to be disconnected. This includes the metal clad equipment hanger, frame shed barn, residential homes, two (2) stables, and miscellaneous features.

To minimize environmental impacts, erosion and sediment control measures will be installed along the access road and site perimeter. Initial grading will create controlled areas for fill placement and stockpiling, and designated haul routes will be established within the site to ensure safe and efficient operations.

Signage and traffic control measures will be implemented to manage vehicle flow and minimize disruptions to surrounding areas. A staging area for equipment and materials will be established to streamline operations. Regular inspections and monitoring will be conducted throughout mobilization to verify compliance with environmental, safety, and operational standards.

3.2.2 Bloomington Road Intersection Alteration

The current capacity of the roadway system allows for additional truck movement as shown in The Traffic Impact Study. More details will be discussed in **Section 3.15.1**. Roadway widening for the site is required for the construction of the site alteration. The proposed road widening encompasses a right turn taper lane for the south side of Bloomington Road, facilitating inbound right turn movements, and a slip-around lane for the north side of Bloomington Road, minimizing interference with the through movements of Bloomington Road.

It is important to note that the road widening has minimal impacts to the drainage of flow to the culverts crossing Bloomington Road and that permanent swales within the subject site are proposed to convey the flows from the culverts to the south of the site. This was confirmed by the Storm Water Management report, prepared by SCE dated October 2024.

3.2.3 Construction

The proposed site alteration plan is presented on drawings included in **Appendix E.** The total volume of material required to build the proposed final contours is approximately 1.9 million m^3. The expected duration of construction activities is anticipated to span approximately 7 years.

A realistic and reasonable estimate of the fill import schedule, based on current market conditions, is as follows:

- Total fill volume: Approximately 1.9 million m^3.
- Annual import volume: Approximately 270,000 m^3.
- Monthly import volume: Approximately 27,000 m^3 (Assuming significant operation 10 months a year). Daily Import volume: Approximately 1350 m^3 (Assuming 20 operating days per month in each of the 10 months referenced above).
- Truck type: Triaxle dump trucks.
- Estimated daily truck traffic: 120 - 200 trucks per day

These assumptions are further discussed in Section 3.15.1.

As mentioned in **Section 3.2**, initially the proposed ESC measures and temporary construction access must be installed on site. This is followed by the construction of a berm in the east for noise control. Topsoil stripping will then commence in phases from phase 1 to phase 3. Note that during topsoil striping the existing ponds to the east must be dewatered and filled. After topsoil stripping is completed, filling operations will commence. Just as topsoil stripping, filling operations will be completed from phase 1 to phase 3. Finally, the site will be prepared for final grading. The site must be properly landscaped with grass and filled to final grades. All existing ESC ponds or traps will be dewatered and decommissioned. Finally, permanent conveyance ditches and swales will be constructed for flow to drain to the south of the site.

Operational controls will be monitored to ensure effectiveness and mechanisms put in place to continuously improve as new technologies and solutions are identified in keeping with the applicant's commitments to beneficially reuse material, to prevent adverse impacts, and to support positive environmental and community benefits.

SoilFlo will be used to track inbound material, monitor Site conditions, and confirm beneficial reuse. This will provide for real time monitoring of the Site and the maintenance of a cumulative record of import to supplement and support monthly, semi-annual, and annual reporting as set out in **Section 3.17**.

3.2.4 Site Alteration Close-out

The final land use of the property is for agricultural crop production. A Record of Site Condition ("RSC") will be filed for Table 2 Agricultural Property Use at the completion of the site alteration. A copy of the Letter of Acknowledgement from the MECP will be provided to the Town. Groundwater monitoring, Site controls, and security will be maintained until the RSC is acknowledged.

The final cover and growing medium will be installed and the Applicant will work with qualified person, as required, to transition land into productive agricultural use.

3.3 Hours of Operation

The site will operate between 7:00 a.m. and 5:00 pm Monday to Friday.

In general, site alteration activities will not occur:

- Between 5:00 pm and 7:00 am. Monday to Friday;
- On Saturdays, Sundays or Statutory Holiday; and,
- During unsafe weather or site conditions, or when operational controls are insufficient to mitigate adverse impacts, e.g. inclement weather warnings from Environment Canada.

3.4 Site Security and Access Control

A lockable gate will be installed at the property limit to control Site access. Furthermore, fencing is proposed to be installed along the site limits along with video surveillance cameras. This will be implemented to prevent any illegal dumping and unauthorized access.

3.5 Drawings and Cross Sections

Two different sets of drawings have been prepared for the site. The first set encompasses the road widening details and the second set encompasses the site alteration details. Please see **Appendix E** for both sets of drawings. Note that significant cross-section details will be shown within the engineering drawings.

The existing site topography, existing surface water flow conditions and the limits of the proposed site are provided within the grading plan. The site alteration process details including the topsoil stripping and filling are provided in SC-1, SC-2 and SC-3. Clean fill will be imported to achieve final elevations that generally match the historic grades at the site and existing ground elevations at the limits of the fill area.

The proposed final elevations and the proposed final surface water flow, on, and around, the Site are provided in SG-1 and SG-2. Interim and final topographies will be graded in a manner that allows surface water to flow southward. This will direct water toward existing infrastructure on-site to manage water volumes, allow for infiltration, and prevent runoff onto adjacent lands, infrastructure, and properties.

3.6 Stormwater Management and Erosion Control

In existing conditions, external flows north of the subject site would travel south towards the site via sheet flow or through the culvert. Furthermore, the subject site existing grading conditions caused sheet flow south of the site. Due to road widening, the Region has requested that the two westmost culverts be

upsized from 450 mm in diameter to 750 mm in diameter. As per the site alteration please see the details below in regards to the stormwater management and erosion controls:

- Grading outside the Site will be maintained at the existing condition.
- During topsoil stripping and fill operations, the interim grading will maintain surface water flows towards sediment ponds or sediment traps for the purpose of stormwater quality control and erosion control. No increase in off-Site surface water flow (annual or peak flow) is anticipated. Stormwater will infiltrate or be collected in ponds related to the aggregate operations, returning to the natural watershed conditions downstream of the Site.
- Any surface water features located at or near the water table will be tested during the semi-annual groundwater testing cycle.
- During final grading there will be a total of five (5) permanent conveyance swales conveying flows downstream of the site. The western most swale has been designed to ensure sufficient management of storm water at the property limit on the west side of the site. This has been done with the existing elevations at the neighbor property taken into account. The three swales in the middle are meant to convey the flows coming from the culverts crossing Bloomington Road into the subject site. The final swale to the east of the subject site is meant to convey any flows from the east boundary.
- The fill placement will be performed in sequential phases (starting at the west side, moving progressively eastward).

The Site Operator is responsible for maintaining all erosion and sediment control measures in working condition at all times. A Professional Engineer and/or his/her representative from SCE will inspect erosion and sediment control devices as part of their inspection. The Applicant shall repair the control measures within 48 hours after any deficiency is noted.

3.7 Groundwater Monitoring

The MECP Water Well Record (WWR) database was queried by Stantec to identify the number of water wells installed within a 500 m radius of the Site limits. A total of 161 records were reported. Eight records are associated with the Site—four records are for domestic water wells; one record is for a municipal water well and three records for monitoring wells. The off-site records were listed as follows: three municipal water wells, three public wells, 96 domestic water wells, one livestock water well, one commercial well, six test holes, seven monitoring wells, five observation wells that are not used, 13 abandoned wells, and 18 records for which no use was indicated.

Prior to the commencement of the alteration and fill operations, a baseline groundwater monitoring program will be completed at available on-site monitoring wells. The baseline study will include the following activities:

- Collect groundwater samples from monitoring wells MW201 to MW205 on the subject site for analysis of VOC, metals and inorganics, E.coli and total coliforms. Wells MW202 and MW204 will be reinstalled as they are currently inaccessible or missing. Reinstallation of MW204 is important to ensure adequate monitoring of the southwest part of the site. Following reinstallation, samples will be collected from all 5 wells (MW201 – MW205).
- Conduct two rounds of background pre-filling monitoring events once the permit is issued but before the commencement of filling operations. These events will test the full suite of parameters including VOCs, metals and inorganics, E.coli, total coliforms, BTEX, and PHCs.
- Establish baseline conditions and identify natural variability in groundwater chemistry through statistical evaluation.
- Establish site-specific trigger levels for key indicator parameters, which will be set well below applicable regulatory criteria.
- Develop an action plan that will be initiated if trigger levels are exceeded.

Following the commencement of filling operations, an ongoing groundwater monitoring program will be implemented that will include the following:

- Install a nested set of wells in the central part of the site within the fill mass to monitor vertical hydraulic gradients and flow velocities. This setup will facilitate early detection of potential impacts beneath the fill mass before they migrate beyond the property boundary.
- Conduct semi-annual groundwater sampling at five (5) on-site monitoring wells and prepare a semi-annual reports summarizing the monitoring and sampling results. Groundwater sampling will target relevant contaminants of concern based on the fill source sites.
- Perform trend analysis and predictive statistical modelling of groundwater quality data to assess any changes in groundwater chemistry over time and forecast future conditions.
- Prepare annual comprehensive groundwater and site monitoring reports with conclusions and recommendations

3.8 Protection of Water Wells

Prior to the commencement of the alteration and fill operations, a baseline monitoring program should be completed at homes within a 200 m radius of the Site limits. The baseline study will include the following activities:

- Preparation and distribution of notification letters and water well questionnaires to the well owners of the adjacent properties.

- Collection of water samples from select water wells on adjacent properties for analysis of VOC, metals and inorganics, Escherichia coli (E.coli) and total coliforms.

The 5 monitoring wells inside the proposed Site will be raised as the area is filled and used for monitoring purposes during the site alteration activities. Should one of these wells become damaged the well will be decommissioned and a replacement well will be installed.

Based on information obtained through the MECP water well record search, there are two York Region municipal production wells approximately 480 m southwest of the Site. Our current understanding is that these production wells extract groundwater from the same aquifer that is connected to the north and south ponds on the eastern part of the Site. The monitoring program to be implemented during the filling operation must be able to assess and evaluate changes to groundwater quality in the area of the filling operation and at the southwest Site boundary.

3.9 Protection of Septic Systems

No site alteration will be completed within three meters of any septic system; thus, no damage is expected to occur to any septic system.

3.10 Protection of Houses, Buildings, and Other Structures

No site alteration will be completed within three meters of any building or structure; thus, no damage is expected to occur to any building or structure.

3.11 Protection of Adjacent Properties

The proposed site alteration will not occur within five meters of the eastern Site limit. Site alteration will occur up to the north and south boundaries to match the existing grades. Further protection for the adjacent north, east, and west properties includes the installation of sediment fencing along the perimeter of the Site.

3.12 Support of Earth Structures

The proposed site alteration does not include the construction of any support of earth structures, including retaining walls, thus no damage is expected to occur to any earth structures.

3.13 Subsurface Drainage System

The proposed site alteration does not involve any installation of subsurface drainage systems; thus, no damage is expected to occur to any subsurface drainage system.

3.14 Tree Protection

Kuntz Forestry Consulting Inc. (Kuntz) completed a limited-scope Tree Inventory and Preservation Plan and Report. For details please see **Appendixes F1 and F2**. The tree inventory was conducted and reviewed in the context of the proposed road widening.

The findings of the study indicate a total of 11 trees and one tree polygon on and within six meters of the study area. The removal of one tree is required to accommodate the proposed development. The remaining trees can be saved provided appropriate tree protection measures are installed prior to the development.

The following recommendations are suggested to minimize impacts to trees identified for preservation as prescribed. Refer to Figure 1 of the Kuntz report for the location of required tree preservation fencing and general Tree Protection Plan Notes, and tree preservation fence detail.

- Tree protection barriers and fencing should be erected. All tree protection measures should follow the guidelines set out in the tree preservation plan notes and the tree preservation fencing detail.
- No construction activity including surface treatments, excavations of any kind, storage of materials or vehicles, unless specifically outlined above, is permitted within the area identified on Figure 1 as a tree protection zone (TPZ) at any time during or after construction.
- Branches and roots that extend beyond prescribed tree protection zones that require pruning must be pruned by a qualified Arborist or other tree professional. All pruning of tree roots and branches must be in accordance with Good Arboricultural Standards.
- Site visits, pre, during and post construction is recommended by either a certified consulting arborist (I.S.A.) or registered professional forester (R.P.F.) to ensure proper utilization of tree protection barriers. Trees should also be inspected for damage incurred during construction to ensure appropriate pruning or other measures are implemented.

GeoProcess Research Associates Inc. (GeoProcess) completed an Environmental Impact Study. See **Appendix C**. As part of the study, a tree inventory was completed to identify and assess the tree resources within the Subject Property. The assessment included individual trees 10 centimeters (cm) in Diameter at Breast Height (DBH) or greater within the boundaries of the Subject Property and within 6 m of the property limits, where accessible. A total of 89 trees were documented, as well as one additional deciduous snag, and three hedgerows. A detailed tree inventory table is provided in Appendix B of the Geo Process Report. Most trees were identified as being in “Good” overall health apart from several snag trees including the Ash sp., deciduous snag, and a trembling aspen. Fifty-five trees are proposed for removal to accommodate the fill placement.

3.15 Operational Controls to Manage Environmental and Community Impacts

3.15.1 Traffic Impact Study

Nextrans Consulting Engineers prepared a Transportation Impact Study (TIS) included in **Appendix G**. A summary of the TIS is provided below.

The traffic analysis considered the AM and PM peak hours of the adjacent road network. Five (5)-year (2029) and 10-year horizons (2034) from the 2023 baseline year were assessed.

The operation is expected to experience daily truck volumes of 120-200 trucks, which include inbound and outbound trips. While the projected maximum daily load is 300 trucks during unusually busy periods.

As per **Section 3.3** of this report, the operating hours of the site were assumed between 7:00 AM and 5:00 PM on weekdays as a conservative approach to the analysis, and 50% (150 trucks) of the total truck trips are expected to occur within the hours of 7:00 AM to 9:00 AM and 3:00 PM to 5:00 PM. The analysis was modelled such that 25% of the total truck trips (75 trucks) would occur during the adjacent road AM peak hour and 25% of the total truck trips (75 trucks) would occur during the adjacent road PM Peak hour.

Two truck routing options were considered for the operation. Under the first option (Option 1), trucks would enter and leave the site from the west, approaching the site eastbound on Bloomington Road, making a right turn into the site access and upon departure, making a left turn onto Bloomington Road to travel westbound. Under the second option (Option 2), trucks would enter and leave the site from the east, approaching the site westbound on Bloomington Road, making a left turn into the site access and upon departure, making a right turn onto Bloomington Road to travel eastbound.

When considering the overall performance of the site access and nearby intersections, Option 1 is the preferred truck routing option (trucks turning right in from Bloomington Road and left out onto Bloomington Road), as it produces a smaller impact on the adjacent intersections in the road network.

The intersection capacity analysis results, based on the methodology and procedures outlined in the Highway Capacity Manual (HCM), 2000, published by the Transportation Research Board, show that the study area intersections are expected to operate with acceptable Levels of Service (LOC) with the introduction of site generated trips.

A functional design was prepared to show the recommended road improvements at the site access. The right turn taper and slip-around lane were designed in accordance with the York Region Standard Drawing (DS)-100 and the TAC manual. The existing site access provides adequate stopping sight distance and departure sight distance.

To facilitate inbound right turn movements and further improve safety, a right turn taper was recommended at the eastbound approach of Bloomington Road and the site access, on the south side of Bloomington Road. To minimize the interference of the site generated truck traffic with through traffic on Bloomington Road, a slip-around lane was recommended for the westbound approach, on the north side of Bloomington Road across the site access.

Based on the capacity analysis, which considered site operations for five (5)-year (2029) and 10-year horizons (2034), the existing road network intersections are expected to operate with overall acceptable LOS with the introduction of the truck trips entering and leaving the site. Note the TIS took into account the, then proposed, now active, fill operation at the Lafarge site, located on York-Durham line. The analysis supports the proposed Site Alteration and Fill Permit application. The site generated traffic is expected to have a manageable impact and can be adequately accommodated by the surrounding road network.

3.15.2 Mud Management

Mud track out mitigation measures will include the following:

- The temporary haul route will consist of one 300 m dirt access road to the east side and one 400 m dirt access gravel road to the west side of the proposed Site area which is highlighted in drawings SC-1 and SC-2 to access the Site Area;
- The ultimate access road will be constructed in the Site Area toward the exit to Bloomington Road as illustrated in drawing SC-3. The outbound lane will include the following:
    - a rumble plate comprised of metal angled bars spaced 270 millimeters and will consist of two 2.4 m long grids with two 1.2 m long ramps on either end of the grids. The grids and ramps are 3.6 m wide; and,
    - 50 m of pavement segment extending from the rumble plates to the Site exit.
- Installing cameras to allow for continuous monitoring of road conditions at the entrance, at the exit, and along main public roadways;
- Regular inspections, approximately every two hours, of road conditions on Site and on proximate public roadway including Bloomington Road by field technicians and recording of conditions.
- Maintaining a full-time power sweeper and watering truck at the Site to wash the base asphalt on the internal haul route, Bloomington Road, with sweeping conducted twice daily or as needed. The sweeper will also be dispatched within 4 hours upon receiving notice from the Town. .

Mud track out onto public roadways is not expected to occur during normal operation; however, exceptions caused by extreme weather events may occur. If excessive mud track out onto public roadways occurs that is caused by an extreme weather event, import will be suspended until further mitigation measures can be implemented and the supplementary operational controls are confirmed to be effective.

3.15.3 Dust Management

An air quality assessment report was completed by SLR Consulting (Canada) Ltd, including dust mitigation measures, is provided in **Appendix H**. To minimize dust and reduce environmental impacts, the site will adopt the following measures:

- Transport distances for moving materials will be minimized through efficient site layout and design.
- Internal haul roads will be maintained with a graded gravel top-coat to reduce dust generation.
- During dry weather, fugitive dust emissions will be controlled through water application or other approved dust suppressants, applied using methods such as water trucks, sprinkler systems, or drip irrigation.
- Site alteration activities will be suspended during periods when Environment Canada issues a wind warning.
- Heavy machinery and dump trucks will adhere to a maximum speed limit of 25 km/h to limit dust production.
- Internal haul roads will be used to minimize dust on public roads during fill transportation.
- Equipment operators will ensure dump trucks entering the site are not overfilled.
- Materials will be unloaded from the lowest practical height to minimize dust generation during drop unloading.
- Water will be applied to overly dry or fine materials before transfer operations, as needed.
- Single and double-wall sediment control fences as per the ESC Drawings will be installed around the site perimeter to prevent airborne dust from leaving the property.

These measures will ensure compliance with environmental standards while maintaining operational efficiency.

3.15.4 Noise Impacts

A noise assessment report completed by SLR Consulting (Canada) Ltd., including noise mitigation measures, is provided in **Appendix I**.

A summary of the report is provided as follows:

The Project site currently includes hilly terrain sloping up to the north and west. Based on preliminary noise impact modelling, berm/barrier combinations are required adjacent to the east and south property lines. The berm or berm/barrier combination along the east property line is planned to be a minimum of 7.0 m above grade. The berm or berm/barrier combination along the south property line is planned to be a minimum of 3.0 m above grade. The acoustic barriers must be constructed of materials with mass to adequately attenuate the noise (generally a minimum surface density of 20 kg/m2). The berm/barrier should be free of gaps and cracks on the sides and bottom, except for small, localized openings required for drainage purposes.

An earthen berm with top-of-berm heights is planned to address the barrier requirements. The two ponds at the east side of the Project site need to be filled to accommodate the bottom width of the 7 m tall berm on the east side of the Project site. Filling the ponds and constructing the berm is expected to take approximately 4 months to complete. Due to the duration of the construction, it is recommended that the berm construction on the east side of the Project site is completed in phases. The first phase will include the construction of a 3 m berm. The berm will be gradually increased in height as the pond is sufficiently filled and construction progresses. With 3 m tall berm, the noise levels at the closest receptors are predicted to be below the MECP Class 4 exclusionary limits in NPC-300.

Tailgate slamming must be administratively controlled on the project site. Tailgate slamming is to be prohibited at all times. Truck drivers must be informed of the prohibition on tailgate slamming. Signage should be posted at the Project site entrance, reminding drivers that tailgate slamming during dumping of fill materials is prohibited. It should also be noted that, although the predicted sound levels are below the applicable guideline limits at all locations, tonal backup alarms from construction equipment may be audible at the PORs and may be considered a nuisance by the residents, depending on the frequency of occurrence. To minimize the potential noise complaints, every effort will be made to utilize broadband backup alarms, but cannot be guaranteed, when equipment will be located closest to residences. Temporary construction operations are not typically assessed under the definitions outlined in NPC-300. Therefore, residents should be warned in advance about raised sound levels during the construction and deconstruction processes of the acoustic barriers along the eastern and southern boundaries of the Project site.

To further minimize potential impacts on nearby residents, particularly during the pond filling process, it is proposed to install a 2.4 m tall wooden fence wall at the eastern property limit in place of the temporary berm. This will be implemented prior to the commencement of any site work.

Note that temporary construction is assumed to be exempt from noise analysis as per the NPC-300 guidelines.Furthermore, the berm construction will be done as quickly as possible and will only begin once enough material is secured within the site for continuous operation.

3.16 Risk, Incidents and Public Complaints

As specified in the Town's Guideline to Site Alteration 2024-038-RE, large site alterations with the potential for public complaints, unexpected incidents, or changes in conditions require the preparation of a Risk Management Matrix. This matrix, included as **Appendix J**, identifies potential risks in three key areas: operational, environmental, and health and safety. It provides an overview of risks associated with large-scale fill operations, outlines preventative measures to reduce risk likelihood, and details mitigation and follow-up strategies to address any issues that may arise from the proposed activities.

Risk assessments will be conducted and updated periodically throughout the site alteration process, guided by the Risk Management Matrix. The site operator will be responsible for implementing preventative measures, managing risks across all key areas during field activities, and conducting

regular assessments to ensure compliance with regulatory requirements and adherence to best practices.

The applicant recognizes the importance of providing an effective public consultation and liaison process for receiving input, addressing potential complaints, and providing solutions.

As outlined in the Town's Guideline to Site Alteration 2024-038-RE, all large site alterations require public consultation elements. The Town will use feedback from the public consultation to establish the conditions of the Site Alteration and Fill Agreement and Permit. The Applicant will coordinate with Town staff to finalize the details of the Public Information Session after the Town accepts the SAFMP. The Draft Permit and Conditions will be prepared.

The complaint protocol outlined below intends to ensure prompt response to complaints while also encouraging the identification and implementation of operational improvements to prevent recurrence.

The site operator will set up a dedicated phone line for complaints and inquiries related to site operations, enabling the public to contact a representative quickly. A specific email address will also be established for handling complaints, ensuring an official record that can be tracked. Additionally, complaints can be submitted via postal mail, offering an option for those without internet access. Complaints received from the public or a Town bylaw officer will be assessed to determine if immediate action is required. There will also be an online portal set up for complaints to be logged and tracked online.

Each complaint will be investigated by the Site Operator and the findings will be documented in an Incident Report. If a complaint is received from a member of the public, the Site Operator will respond directly within 48 Hours. This response will include a summary of the complaint, the findings of the investigation, and the actions taken to address the concern. A copy of this response will be provided to the Town.

Where appropriate, the Incident Report will identify any operational protocols that need to be revised to minimize the likelihood of similar issues arising in the future.

Incident Reports for complaints will be retained on file by the Site Operator for the duration of the site alteration. These reports will be included as part of the monthly operations report described in **Section 3.17**.

Where involved, other applicable parties (e.g., drivers, source sites) will be notified of the complaint and its resolution. All related communications will be documented in the Incident Report.

3.17 Communication and Reporting

This section outlines the communication protocol and reporting program for the proposed works to ensure compliance with the requirements of O. Reg. 406/19. It also encompasses the roles and responsibilities of key parties involved in the Project, describes the schedule and content of daily, monthly,

semi-annual, and annual reporting, as well as procedures for monitoring and documenting the volume of imported fill. For public and adjacent landowner liaison, please see **Section 3.16**.

3.17.1 Roles and Responsibilities

To ensure clear oversight and accountability throughout the implementation of this SAFMP, the following roles and responsibilities have been defined based on the Town's expectations for project execution and compliance monitoring. The role of the Qualified Person (QP) is further governed by the requirements of O. Reg. 406/19.

- Project Leader: Domenic Battistella of Bloomington Soils Inc. will be responsible for managing and coordinating all aspects of the project in compliance with the approved SAFMP and permit conditions.
- Qualified Person (QP): Joel van Popta, M.Sc., P.Geo., QP ESA, of Stantec Consulting Ltd. will serve as the Qualified Person. The QP will be responsible for fulfilling the duties of a receiving site QP as per the requirements of O. Reg. 406/19, including source site review, oversight of receiving site operations, and the documentation of compliance.
- Site Engineer: A Professional Engineer and/or his/her representative from SCE will provide oversight of grading activities, the implementation of the erosion and sediment control measures and construction of site drainage features to ensure conformance with the Erosion & Sediment Control and Storm Water Management Report, engineering drawings and applicable regulatory requirements.
- Site Operator (Constructor): A licensed contractor will be retained through a competitive procurement process following approval of the design drawings, operational practices, and scope of work. The Constructor will assume care and control of the Project Area and carry out the physical works in accordance with the approved SAFMP. The name and credentials of the selected Constructor will be provided to the Town upon award of the contract, prior to the commencement of any physical works on-site.

Roles and responsibilities identified above are part of the broader communication and reporting strategy described in subsequent sections. Any changes to the designated Project Leader, Qualified Person, Site Engineer or Constructor will be communicated to the Town in writing within five (5) business days of the change.

3.17.2 Daily Summary

A digital daily summary log will be maintained through SoilFlo to record all loads received at the Site, including any rejected loads. The Site Operator will be responsible for maintaining this log. Each entry will include the date, the number of trucks inspected at the gate, and the number of trucks refused access with the reasons for refusal. For each source site, the log will also document the waybill numbers of accepted vehicles and the specific location where the fill was placed.

The Site Operator will retain all source site applications, related reports, accepted waybills, and daily logs. These documents will be available to the Town upon request, along with the approval documentation for each source site prepared by the Qualified Person. Documentation will be retained for a minimum of 7 years or as otherwise directed by the Town.

Bi-weekly inspection reports will be prepared by the site staff to monitor the condition of stormwater, erosion, and sediment controls. These reports will also identify any corrective actions required, which will be implemented to the satisfaction of a professional engineer overseeing the site operations. The reports will be retained on file by the Site Operator and made available to the Town's inspector upon request.

3.17.3 Monthly Operations Report

The Project Leader will submit a monthly operations report to the Town detailing site activities and compliance updates for the reporting period. The site operator will summarize the audit testing program, including the number of samples collected from each source site, test results, and laboratory reports. The report will also address incidents, including complaints and their resolution status, and provide field reports noting any required repairs.

Daily inspections of the internal haul road and public roadways will be conducted at two-hour intervals by the Site Operator. A log documenting the condition of the roads, including the measures undertaken to control dust emissions and minimize mud track-out, will be maintained and included in each monthly operations report.

The report will include source site approval letters prepared by a Qualified Person (QP) verifying compliance with the source site acceptance protocol, along with a cumulative record of fill imports. This record will track truck counts, fill volumes from each source, confirmatory audit sample data, and placement locations.

The Project Leader will ensure the Town receives the operations reports for review and comment within thirty (30) business days following the end of each month. Monthly reports will be available to the Town electronically for the duration of the site alteration permit.

3.17.4 Semi-Annual Report

The Project Leader will submit a semi-annual report to the Town, providing an interim update on on-site operations. Each report will include the applicable monthly operations reports, a summary of all complaints received during the reporting period, and the actions taken to resolve them. It will also outline progress on filling activities and detail any operational incidents, such as erosion or sediment control issues, along with the measures implemented to address them. The semi-annual report will also include an update report on the groundwater monitoring and sampling results. Details regarding groundwater monitoring parameters, monitoring well locations, and sampling frequency are provided in Section 3.7 Groundwater Monitoring.

The Town, a third-party Qualified Person (Town's Peer Review Consultant) and the Project Leader will conduct an operational review and audit for each report. The review will assess compliance with permit requirements and recommend corrective actions, as needed. If any compliance issues, complaints, or other incidents are identified, the report will propose updates to the SAFMP to resolve them.

The Project Leader will ensure the semi-annual report is submitted within forty-five (45) days of the end of the reporting period.

3.17.5 Annual Reporting

The Project Leader will provide the Town with an annual report that expands on the semi-annual report by confirming the volume of imported fill during the reporting period, as determined by a topographic survey. Where standing water is present, previously conducted bathymetric surveys and site documentation will be used to adjust volume estimates accordingly. In cases where fill is placed in ponded areas, the volume of material placed will be tracked and included in the reconciliation process.

The Project Leader will submit the annual report to the Town at least three months before the site alteration permit expires. The report will include findings from an operational review and audit conducted by a third-party Qualified Person and the site operator. If necessary, the report will recommend updates to the FMP to address compliance issues, complaints, or other incidents from the previous year.

The report will provide a cumulative record of imported material, identifying each source, its associated characterization report, the number of truckloads received, the volume of imported soil from each source, and the applicable audit sample records. It will confirm the beneficial reuse of imported material and its placement within the site during the reporting period. Additionally, the report will summarize complaints received, the corrective actions taken, and audit results alongside groundwater monitoring findings. Details regarding groundwater monitoring parameters, monitoring well locations, and sampling frequency are provided in Section 3.7 Groundwater Monitoring.

The annual report will also include a review of traffic and signage, assess operational controls such as measures to prevent mud track-out, dust, and erosion or sediment emissions, and present results from other environmental monitoring as required. A summary of compliance audits and assessments will conclude the report, ensuring a comprehensive overview of the year's activities and adherence to regulatory requirements.

4.0 Fill Management

4.1 Fill Quality Criteria

In accordance with the Town's Guideline, all fill imported to the site must comply with the Table 1 site condition standards outlined in the Ministry of Environment, Conservation and Parks (MECP) document *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* (April 15, 2011).

Ontario Regulation 406/19 has superseded the 2011 MECP standards, introducing updated and more stringent requirements for managing excess soil. These include new leachate testing criteria, enhanced documentation and tracking processes, and mandatory involvement of Qualified Persons (QPs).

The applicable soil standards for the site alteration are Table 2.1 Agricultural Coarse Textured (AG CT) Standards from the MECP document *Rules for Soil Management and Excess Soil Quality Standards* (MECP, 2024), reflecting agricultural land use, potable groundwater conditions, and coarse-textured soil. These standards apply for the following reasons:

- The site is designated for agricultural land use.
- The soils on-site are coarse-textured.
- Bedrock lies at a depth greater than 2 meters.
- Properties within the study area rely on private wells for drinking water.
- The on-site ponds are man-made, resulting from past farming activities and pit backfilling.
- The site is not within 30 meters of an area of natural significance.
- Surficial soil pH ranges from 5 to 9, while subsurface soil pH ranges from 5 to 11.

Based on these factors, the applicable site condition standards for the property are listed under Table 1 (from O. Reg. 406/19) for below the water table and Table 2.1 Agricultural (*Rules for Soil Management and Excess Soil Quality Standards*, MECP 2024) for areas above the water table.

All fill imported to the site must be free of discoloration, staining, or odours indicative of petroleum hydrocarbons or other contaminants, even if the fill meets the applicable site condition standards. The following materials are strictly prohibited: putrescible materials such as yard waste and wood, painted or coated concrete, cement fines, rebar, plastic, scrap metal, asphalt, petroleum hydrocarbons, shingles, rubbish, glass, garbage, termites, organic chemicals, liquid industrial waste, toxic chemicals, and other contaminants.

No liquid soil will be imported to the Site. Furthermore, all imported material will conform to the definition of "Excess Soil" as set out in O. Reg. 406/19.

4.1.1 Fill Quality Evaluation and Assessment

All excess soil assessments, screening, sampling, and evaluations will be conducted by or under the supervision of a Qualified Person (QP), as defined in O. Reg. 406/19. Stantec personnel, including a QP, will be on site as required to carry out these activities and to provide oversight and reporting.

A QP will prepare the application to ship excess fill to the Site, acting on behalf of the owner of the proposed source site. The application's scope will vary depending on whether O. Reg. 406/19 applies to the source site.

For source sites subject to the planning requirements of O. Reg. 406/19, the application must meet the minimum reporting requirements outlined in the "Rules for Soil Management and Excess Soil Quality Standards," dated February 19, 2024

For source sites exempt from these planning requirements, the application must include the following:

- The name of the source site property owner or their authorized agent (hereafter referred to as the applicant).
- A geotechnical description of the excess soil to be shipped, including the reason for its excavation.
- A scaled map showing the limits of the excavation area.
- An assessment of past site uses to evaluate the likelihood of contamination in the excavation area.
- A sampling and analysis program.
- A soil characterization report prepared by a QP. Alternatively, the source will provide a phase Two ESA report used to support filling a Record of Site Condition (RSC)

If excess fill at the source site does not meet the requirements of Section 4.1.1, additional documentation is required to confirm that the lateral and vertical extents of contamination are adequately characterized. Supervisory measures must also be outlined to ensure the exclusion of unacceptable fill during excavation.

Upon receipt of a complete application, a QP, an employee of Stantec, will review the application and issue a concurrence letter, if applicable.

Excess soil will only be imported from approved source sites. The review will be available to the Town upon request in electronic format.

The O. Reg. 406/19 standards for excess soil management outline the requirements for soil analysis and sampling at the source site before soil is shipped to a receiving site.

At a minumum, excess soil must be analyzed for petroleum hydrocarbons (PHCs), BTEX (benzene, toluene, ethylbenzene, xylenes), metals, inorganics (including electrical conductivity, sodium adsorption ratio, and pH), and leachate. Analysis of additional parameters may be requested depending on the potentially

contaminating activities identified in the Assessment of Past Uses (APU). The analysis results must be compared to the soil quality standards specified in O. Reg. 406/19.

Soil sampling frequency depends on the amount of soil to be excavated:

- For less than 600 m^3 of soil, a minimum of three in-situ samples are required.
- For more than 600 m^3, one sample for each 200 m^3 is required for the first 10,000 m^3, and the frequency reduces as the volume increases.
- Ex-situ (stockpiled) soil sampling is based on the volume of the stockpile, with a formula provided in O. Reg. 153/04 to determine the number of samples.

If leachate analysis is required, a minimum of three samples must be collected for less than 600 m^3 of soil, with additional samples taken from the highest contamination areas. Leachate analysis is required for at least 10% of the soil samples unless a qualified person justifies its exclusion.

To assess the environmental quality of material imported to the site from source sites, individual sites will be evaluated based on the environmental quality of the material. The following documentation will be required for this review:

- The Phase One Environmental Site Assessment (ESA) or Assessment of Past Uses (APU) report.
- The Phase Two ESA or other relevant environmental assessment reports.
- Soil and groundwater analysis results from the source site, demonstrating no exceedance of the applicable site condition standards at the receiving site (Project Area).
- For each source site, the QP will provide confirmation of the suitability of the soil quality for the receiving site (Project Area).

All imported material will conform to the definition of Excess Soil under O. Reg. 406/19. No other material will be accepted for placement at the Site (Project Area).

For due diligence, Quality Control and Quality Assurance (QC/QA) samples will be collected on the subject site. If less than 2000 m3 are received from a particular site are received, one sample will be collected. If more than 2000 m3 are received, the sample frequency is 1 per every 2000 m3. This is to ensure imported soil meets site-specific standards.

In cases where small quantities of excess soil are received without full documentation, a verification protocol will be implemented. This includes enhanced visual inspection, screening for potential contaminants, and selective sampling at the discretion of the QP to ensure that the fill, regardless of volume, meets the applicable receiving site standards.

Audit samples will be collected from individual truckloads immediately after dumping at the designated area but prior to the material being bladed out or incorporated into the final fill. The testing area will be clearly marked and designated within the active phase of the fill area. It will have a minimum size of

20x20m and be roped off and clearly labelled to prevent unauthorized dumping until laboratory results confirm compliance. As the fill area progresses, the testing area will shift accordingly. If necessary, trucks will queue in the designated area until the audit sample results are reviewed. The marked location within the testing area will ensure traceability.

Field staff will conduct initial screening, documenting observations related to colour, odour, staining, or other signs of contamination (e.g., petroleum hydrocarbons). Supporting field notes will be retained.

Each sampled load will be logged with relevant haulage details, including the arrival time, source site, hauling company, and vehicle identification (e.g., license plate). Loads that meet acceptance criteria will then be incorporated into the fill mass.

One sample will be taken from a random truckload from each source site. Different source sites will be stockpiled separately and not added to the fill mass until analytical results of audit sampling have been received. Analytical testing will include, at a minimum, PHC, BTEX, metals and inorganic parameters. Additional parameters will be analyzed as warranted by documentation from the source site.

All audit samples will be clearly labeled and tracked. Each audited truckload will be assigned a unique load ticket number, recorded alongside the source site name, date, and time of arrival. This information will be used to ensure traceability of the material.

If a QC/QA sample exceeds the site-specific standards, the non-compliant soil will be identified and removed from the Site, and the source site will be suspended from further deliveries. Confirmatory samples will verify compliance of the remaining material. An investigation into the cause of non-compliance will be undertaken, and corrective actions documented.

Audit sampling will be conducted by trained field staff using decontaminated stainless steel or disposable tools. Samples will be submitted to a Canadian Association for Laboratory Accreditation (CALA) accredited laboratory under standard chain-of-custody protocols, in accordance with O. Reg. 406/19.

The audit sampling process and results will be documented, kept on file, and made available to the Town upon request.

4.1.2 Fill Tracking

Any soil imported to the Site will be tracked using SoilFlo system. Every vehicle transporting soil to the Fill Area will be tracked using an automated ticketing process that meets the tracking requirements of O. Reg. 406/19. Details of each source site (e.g., address and location where the soil was excavated) will be prepopulated into the tracking system.

As each truck arrives at the Site with soil destined for the Fill Area, the source site will enter details related to the truckload, including the name of the hauling company, a description of the soil, and the vehicle's license plate number. When the truck departs the source site, an electronic ticket is submitted, recording the date and time of departure along with the expected time of arrival. The receiving site will be able to

track the truckload in real time and record when the truck arrives, noting whether the shipment is accepted or rejected.

Reports can be generated from the tracking platform, providing details of every truck load accepted at the Site for each active source site.

Upon arrival at the Site, each truck will undergo an inspection at the gate. This will include a review of the contents of each vehicle from an elevated platform to identify any unusual odors, staining, or the presence of prohibited materials that may indicate potential contaminants. Any truck with evidence of potential contaminants will be refused access to the Site. An incident report will be created for any rejected truck, documenting the refusal and the reasons.

The truck inspection area, consisting of a trailer, will be set back from the Site entrance by 60 - 100 meters. An elevated platform will be constructed for the purpose of inspecting the soil load when collecting the waybill. In the event of delays at the inspection location or the fill placement area, the Site Operator will ensure trucks queue along the internal access road. No trucks will be allowed to queue on Bloomington Road. The Site Operator will direct the source site to delay additional truck loads as necessary to prevent excessive queuing.

4.2 Final Surface Cover and Grades

In line with industry best practices, particularly those outlined in *Best Management Practices for Aggregate Pit and Quarry Rehabilitation in Ontario*, a 'layer-cake' approach will be followed for placing excess soil in the pond areas. This method involves systematically layering and compacting the soil to ensure long-term stability and conformance to environmental quality standards.

The backfilling process will begin with dewatering the ponds and importing soil that conforms to the site standard, which will be placed to a minimum depth of 1 meter above the prevailing groundwater levels, ranging from Elev. 313.66 to Elev. 318.53 m. Note that a dewatering analysis was conducted by Stantec expressing the time needed to remove the water and the volume of fill required to fill the ponds. Furthermore, please note that the soil being placed below the water table will meet Table 1 standards as per the recommendation in the OSPE BMP.

Earth fill can be placed in lifts not exceeding 0.5 meters in loose thickness. The earth fill will extend to the final grades and will be nominally compacted. Due to the nature of the fill material, which is expected to experience long-term settlement, it is important to account for this during the final grading. A degree of overfilling is recommended to ensure the final surface remains level and consistent with the intended design.

A Geotechnical Engineer will oversee the entire process, particularly the importation and placement of the soil. The engineer will inspect the material at the source site to confirm gradation and quality, and will monitor the backfilling process at both the pond and aggregate pit to ensure the minimum fill level of 1 meter above the groundwater is achieved. The engineer will also assess potential settlement and recommend adjustments if necessary.

Since the future land use is agricultural, settlement in the backfill material is not expected to hinder land cultivation significantly. The fill material will be placed on the existing grade, which may consist of topsoil or weathered/disturbed native soils, with nominal compaction applied to stabilize the material.

The recommended backfilling procedure includes two stages: first, dewatering and second, placing the earth fill from the base of the pit to the required grade. Note earth fill material that meets Table 1 standards will be used.

It is anticipated that fills up to 20 meters thick will be required in some areas to match the site elevations with the surrounding lands. Based on geotechnical investigations, no significant constraints are expected for placing fill for agricultural use.

From a geotechnical perspective, the existing subsurface soils can support fill materials up to 20 meters thick for backfilling the ponds. Although self-weight and long-term settlement are anticipated, these should not pose significant challenges for agricultural use. Settlement can be mitigated through overfilling during final grading. For agricultural use where settlement is not a concern, the approved fill can be placed in 300 mm thick lifts and soil to be nominally compacted and statically rolled.

If imported fill is required, materials with characteristics similar to the site's existing granular soils (silty sand and sandy silt) are recommended. Soils with fine content exceeding 30% may become unsuitable when disturbed and wetter than their optimum moisture content.

If the water depth in the existing ponds is shallow (less than 0.5 meters), a granular fill layer can be placed initially to provide a safe working platform for construction equipment. Depending on the depth of water, some water removal may be necessary to facilitate the fill placement. Note that under current MECP regulations, a Permit to Take Water is required for dewatering applications exceeding 400,000 L/day.

All soil materials used as fill must be approved by qualified geotechnical personnel prior to placement. In wet conditions, some drying of materials may be necessary, and frozen soils must be excluded from use as fill.

4.3 Registry Notification

Section 19 of Ontario Regulation 406/19 requires that any owner or operator of a reuse site, where at least 10,000 cubic meters of excess soil is expected to be deposited, must file a notice on the excess soil registry. This notice informs the MECP and the public about the intent to operate such a site. Therefore, the Applicant will file the notice as required.

4.4 Contingency Plan

If an inspection at the gate identifies material in a vehicle load that may not meet the acceptable fill criteria outlined in Section 4.1, the Site Operator will take the following actions:

- **Minor Unacceptable Materials**
  If the load contains a minor amount of unacceptable material that can be readily removed, the

vehicle will be allowed access to the Site. The Owner's staff at the designated inspection area will hold the truck and review its contents. Unacceptable materials will be removed for off-Site disposal if possible. If removal is not feasible, the vehicle will be reloaded and directed to exit the Site, returning the load to the source site.

- **Suspension of Shipments**
  If a load is rejected, further shipments from the source site will be suspended as a precaution. The source site will be notified immediately, and trucks in transit will be turned back. No further shipments will be allowed until a preliminary investigation by the Owner is conducted.
- **Investigation and Resolution**
  If the issue is traced to a specific vehicle and corrective actions can prevent recurrence, shipments from the source site may resume. If the cause is unclear or indicates a broader issue, a Qualified Person (QP) will conduct an investigation at the source site to determine the cause of the unacceptable fill and establish measures to prevent recurrence.
- **Incident Reporting**
  The Owner will document the issue, investigation findings, and corrective actions in an Incident Report. Supporting documentation, such as testing and analysis results, will be included. A copy of the Incident Report will be submitted to the Town for review.

5.0 Site Alteration and Fill Management Plan Updates

Under the Guideline, the Permit for large site alterations associated with the preparation of an Agreement may not have a specific expiry date. To ensure compliance with the Conditions of the Permit and Agreement, Town staff will conduct an annual review of the site alteration.

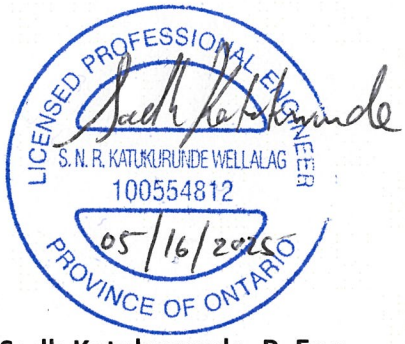
At the Town's request, the Site Alteration and Fill Management Plan (SAFMP) will be updated annually to reflect:

- Changing site conditions and activities;
- Potential amendments to Town By-laws; and,
- Conditions imposed by other agencies with jurisdiction.

All updates or amendments to the SAFMP will be documented as addendums and submitted to the Town's Director for approval. Such approval is required to maintain compliance with the Conditions of the Permit and Agreement.

The Applicant acknowledges that failure to comply with the Conditions of the Permit or Agreement may result in enforcement actions, including the issuance of Orders, Permit Revocation, and/or fines.

SCHAEFFERS CONSULTING ENGINEERS



Joshua Ghobrial

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Environmental Assessment and Permitting Lead

Stantec Consulting Ltd.
200-835 Paramount Drive, Stoney Creek ON L8J 0B4

May 7, 2025
File 122120514

Attention: Domenic Battistella
1398493 Ontario Inc.
5783 Bloomington Road, Whitchurch-Stouffville, Ontario

Dear Domenic Battistella,

Reference: Site Alteration and Fill Permit and Site Alteration and Fill Management Plan – Qualified Person, 5783 Bloomington Road, Whitchurch-Stouffville, Ontario

1398493 Ontario Inc. has retained Stantec Consulting Ltd. (Stantec) to provide Qualified Person (QP) support with respect to the Site Alteration and Fill Management Plan for 5783 Bloomington Road in Whitchurch-Stouffville, Ontario.

As the QP for the work, I, Joel vanPopta, have reviewed the Site Alteration and Fill Management Plan dated May 2025, and concur with the recommendations.

Regards,

Stantec Consulting Ltd.

Joel van Popta, M.Sc., P.Geo. QP$_{ESA}$
Senior Associate, Environmental Services
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Joel.VanPopta@stantec.com

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