

January 16, 2025  
122140312

**Mike Dwyer**  
County of Lanark  
99 Christie Lake Road  
Perth ON K7H 3C6

Dear Mike Dwyer,

**Reference: Review of Remedial Action Plan, 116-122 Old Mill Lane, Appleton, Ontario, prepared by Paterson Group, October 24, 2024**

Stantec Consulting Ltd. (Stantec) was retained by the County of Lanark (the County) to complete a review of environmental information relating to the property situated at 116-122 Old Mill Lane, Appleton, Ontario, which is situated within Lot 4, Concession 10, Geographic Township of Ramsay, Town of Mississippi Mills, Ontario (the Site). The Site was formerly occupied by the Appletex textile mill. This review was conducted in consideration of an application that has been made for the redevelopment of the Site into a residential subdivision, serviced by individual private water supply wells and septic systems.

Reviews of environmental information previously provided to Stantec are described in detail by Stantec (2023a, 2023b). The findings of these reviews have revealed that although Records of Site Condition (RSCs) were filed for the Site in 2011, areas of potential environmental concern (APECs) were present at the Site that required further investigation. The review described herein was completed for the County to support its review of a revised application that was submitted by the applicant for the Site. In response to peer review comments provided by Stantec in letter responses (Stantec, 2023a and 2023b) and email communications, Paterson Group Inc. (Paterson) provided the County a Phase II Environmental Site Assessment (ESA) report (Paterson, 2023; the 2023 Paterson report) and a Remedial Action Plan (RAP; Paterson, 2024a). The RAP was subsequently revised and most recently submitted to the County in October 2024 (Paterson, 2024b).

It is noted that the comments provided herein relate only to the soil and groundwater environmental quality aspects at the Site, as presented in the Paterson documents referenced above, and do not address other geotechnical, hydrogeological, ecological, or other planning concerns that may be relevant to the development application.

## 1 Summary of Environmental Concerns

Stantec identified a number of outstanding uncertainties regarding the environmental quality of soil and groundwater at the Site in its 2023 reviews. The most recent RAP (Paterson, 2024b) documented subsequent environmental investigations in 2023 and 2024 following completion of the 2023 Paterson report, to address the identified uncertainties. Comments on the findings of these investigations have been incorporated into the sections below for soil and groundwater quality, with discussion on how these findings have addressed the uncertainties.



## 1.1 Soil Quality

### 1.1.1 2023 Paterson Report Soil Quality Findings

The soil quality results presented in the 2023 Paterson report confirmed the investigation of the areas of potential environmental concern identified at the Site but did not fully investigate the conditions within each of the areas recommended by Stantec (2023a). The 2023 Paterson report acknowledged that polycyclic aromatic hydrocarbon (PAH), petroleum hydrocarbon (PHC) and metals impacts are present in soil in the former building footprint and a fill stockpile in the central portion of the Site. Paterson attributed the PAH impacts to the presence of asphaltic concrete in the fill. If this is the case, then wherever concrete rubble has been included with backfill materials at the Site, PAH impacts may also be present.

Stantec considered that the following areas of uncertainty remained for soil quality at the Site:

- The quality of unexcavated soil at the southern limit of the former PHC remedial excavation west of the former mill building was unknown.
- Additional analyses of soil for volatile organic compounds (VOCs), dioxins and furans within the northern portion of the mill building footprint would reduce the uncertainty around these parameters as COPCs in soil at the Site.
- Soil quality at the base of the former lagoons was unknown. Although the remediation report indicated that sediment was excavated from the lagoons and removed from the Site (Paterson, 2010), the 2023 Paterson report identified apparent lagoon sediment in this portion of the Site that was not analyzed for soil quality.
- Fill quality across the Site remained undelineated, in particular in the northern portion of the mill building footprint and to the south of the fill stockpile where soil impacts were confirmed in the 2023 Paterson report. Fill quality in the northern, eastern and southern portions of the Site had not yet been determined. Based on the soil results to date, the likelihood of encountering fill of unknown quality throughout the Site is considered high. Due to the heterogeneous nature of the fill quality, it is not possible to rule out that additional soil exceedances could be present in areas not yet tested and outside of the areas that were confirmed to be impacted.

Note that Paterson (2023) did not analyze for the full volatile organic compound (VOC) list of parameters and did not name them as contaminants of potential concern (COPCs). Limited testing referenced by in historical Phase II ESA and Remediation Summary reports (Paterson, 2009, 2010) included soil, sediment and groundwater analysis of VOCs and no detections were identified, with the exception of the petroleum-related benzene, toluene, ethylbenzene and xylenes (BTEX) parameters. Although the extent of testing is limited, this suggests that VOCs are not contaminants of concern (COCs) at the Site.

Paterson (2023) analyzed a limited number of soil samples for polychlorinated biphenyls (PCBs), dioxins and furans in the mill building footprint, and the results met the applicable Ontario Ministry of the Environment, Conservation and Parks (MECP) site condition standards (SCS). Although the extent of testing is limited, this suggests that these parameters are not COCs at the Site.

Although data gaps remain as described above, the soil quality analyses have confirmed exceedances of the applicable soil quality SCS and the impacted areas have not yet been delineated. To redevelop the Site for residential use, a complete delineation of the horizontal and vertical extent of the impacts, together with either remediation (i.e., excavation and removal) of the soil, or risk assessment with applicable management measures, would be required.



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### 1.1.2 2024 RAP Soil Quality Findings

The RAP prepared by Paterson (2024b) included limited documentation to describe additional soil investigation at the Site, in the form of the excavation of additional test pits at various locations and two boreholes within the former lagoon area. The RAP included site plans showing testing locations with call-out boxes identifying the general results of soil sampling, where completed. The RAP also included borehole and test pit logs, and photographs. It did not include any summary data tables or laboratory certificates of analysis.

From the investigations documented in the 2023 Paterson report and the RAP, eight areas of impacted soil were identified that will require excavation to clean up the Site for redevelopment, at a minimum. It is noted that the estimate of soil volumes to be removed that was presented in the previous RAP (Paterson, 2024a) increased by a factor of more than 20 following the test pit investigation in 2024 (Paterson, 2024b). Stantec notes that the identified impacted soil zones remain undelineated in some portions of the Site, and the estimated volumes should therefore be treated as preliminary and subject to further increase. Stantec recommends further delineation of the impacted soil zones be completed to better understand the extents of impacted soil at the proposed excavation areas. Stantec is also unclear why Paterson appears to have excavated nine test pits in 2024 at various locations (test pits TP 1-24, TP 11-24, TP 23-24, TP 24-24, TP 27-24, TP 28-24, TP 30-24, TP 31-24 and TP 35-24; refer to Drawing No. PE1114-9 in Paterson, 2024b) that could have assisted with soil quality delineation, but there were no soil quality results reported at these locations.

The RAP described soil sampling at two boreholes drilled within the former lagoons at the Site (i.e., BH4-24 and BH5-24) and three test pits (i.e., TP 31-23, TP 32-23 and TP 33-23), but this sampling did not appear to target the layer that would be considered most representative of former lagoon sediment (i.e., black organic silty clay), except for one sample (i.e., SS5 at BH4-24). The borehole log suggested that this sample represented the lower portion of the black organic sediment layer, although Paterson considered the sample to be native clay in the RAP text (Paterson, 2024b). Paterson indicated that some samples within the former lagoon area exceeded the MECP Table 6 soil SCS for vanadium; however, they considered vanadium to be naturally elevated in background clays. Although this may be the case and Paterson produced references to this effect in an email to Stantec dated May 31, 2024, Stantec notes that elevated vanadium was only observed in the former lagoon area and not elsewhere across the Site. Stantec considers that the quality of buried sediment that may remain at the Site in the former lagoon area remains unknown, and the extent of vanadium impacts was not confirmed.

Subsequent to the 2023 Paterson report, dioxins and furans were tested in soil collected at TP8-24 and TP9-24 in the area of the former building. Paterson indicated on the results figure provided in the RAP that concentrations of these parameters met the Table 6 SCS (Paterson, 2024b). This was consistent with the soil testing reported in the 2023 Paterson report, and supports the position that these parameters are not COCs in site soil. Stantec notes that, in addition to removal of the identified impacted soil zones, the fill in the former building area will likely need removal from the Site for geotechnical reasons because of the demolition debris that is present in this soil, as noted in test pit logs.

In consideration of a request by the County to address the potential for the presence of per- and polyfluoroalkyl substances (PFAS) in soil, Paterson included correspondence in the RAP from the Mississippi Mills Fire Department dated July 29, 2024, which stated that to their knowledge, firefighting foam was not used to respond to the fire that occurred at the Site on February 2, 2007. Paterson therefore did not consider PFAS to be a COC in soil and sampling for this parameter was not conducted.



## 1.2 Groundwater Quality

### 1.2.1 2023 Paterson Report Groundwater Quality Findings

The groundwater quality results presented in the 2023 Paterson report confirmed investigation of shallow groundwater in overburden and bedrock, and deeper groundwater in bedrock, within most of the areas of potential environmental concern identified at the Site. Analysis of the COPCs did not identify exceedances of the MECP Table 6 SCS. The absence of groundwater impacts in the various wells installed across the Site from 2018 to 2023 supported the potential redevelopment of the Site for residential use.

The following areas of uncertainty remained for groundwater quality at the Site:

- The groundwater quality at BH1-18 and BH2-18 was compared to the MECP Table 6 SCS but it was not confirmed if the reported concentrations also met the applicable MECP Table 8 SCS for locations within 30 m of the Mississippi River.
- Monitoring well BH2-23 was situated upgradient of the majority of the former lagoon area. Further justification should be given to support its acceptability to represent lagoon groundwater conditions.

With respect to concerns for drawdown of impacts in shallow soil into deeper groundwater being used for water supply, this was not considered to be a significant concern because of the depth to groundwater relative to the generally shallow extent of soil impacts, and the typically low potential for significant migration of discontinuous PAHs and metals impacts in the soil.

### 1.2.2 2024 RAP Groundwater Quality Findings

The RAP prepared by Paterson (2024b) included limited documentation to describe additional groundwater investigation at the Site, in the form of groundwater sampling at two boreholes completed as monitoring wells advanced within the former lagoon area at the Site (i.e., BH4-24 and BH5-24). Sampling of groundwater at these two wells reportedly indicated that concentrations of metals, BTEX, PHCs and PAHs met the MECP Table 6 SCS. Note that the RAP did not confirm that the groundwater quality also met the Table 8 SCS, which is applicable to locations within 30 m of a water body.

In consideration of a request by the County to address the potential for the presence of PFAS in groundwater, Paterson included correspondence in the RAP from the Mississippi Mills Fire Department dated July 29, 2024, which stated that to their knowledge, firefighting foam was not used to respond to the fire that occurred at the Site on February 2, 2007. Paterson did not provide groundwater PFAS sampling results in the most recent RAP (Paterson, 2024b).



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## 2 Recommendations

The results of the later 2023 and 2024 field programs, and any subsequent work, should be fully documented in an updated Phase Two ESA that meets the requirements to support the filing of an RSC. The Phase Two ESA report should include, but is not limited to:

- Delineation of extents of soil impacted by the various parameter groupings, including metals, PAHs, BTEX and PHCs.
- Data tables and laboratory certificates of analysis for all soil and groundwater samples analyzed at the Site.
- Comparison of the soil and groundwater results to the Table 8 SCS as well as the Table 6 SCS.
- Confirmation that the former lagoon sediment quality has been assessed.
- Rationale to support the assertion that elevated vanadium in soil within the former lagoon area is associated with naturally elevated background concentrations.
- Provide rationale for the determination that VOCs, PCBs, dioxins, furans, and PFAS are not COCs in soil and/or groundwater at the Site.
- Documentation of PFAS groundwater analyses, as a confirmatory measure given the future use of groundwater as a potable water source.

The County should consider requesting that an updated RSC be filed for the Site as a condition of site redevelopment. An RSC would not be able to be filed until the impacts at the Site are fully delineated and remediated.

The RAP suggested that the stockpile of fill at the Site may not all be impacted, and estimated that only a portion of this soil will require off-site disposal (Paterson, 2024b). If some amount of fill in this stockpile will remain at the Site, additional confirmatory sampling will be required, at the frequency specified in O.Reg. 153/04 for stockpile soil sampling.

The RAP should account for items to adhere to Ontario Regulation 406/19 for on-site and excess soil management. Given the former industrial use of the property, the Site would be considered an 'enhanced investigation project area' and will require a notice to be filed on the Excess Soil Registry prior to removal of soil from the Site, together with the supporting planning documentation as documented in this regulation and its accompanying MECP Soil Rules document.

The groundwater monitoring wells should be retained for future groundwater monitoring at the Site, where possible. If removed, they should be decommissioned by a licensed well contractor in accordance with Reg. 903. Note that Drawing Nos. PE1114-10 and PE1114-8 provided by Patterson (2024b) did not clearly show that BH4-24 and BH5-24 were completed as monitoring wells. This should be clarified in any updated groundwater drawings for subsequent reporting.



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### 3 Closure

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential liabilities associated with the identified property.

This report provides an evaluation of selected environmental conditions associated with the identified portion of the property that was assessed at the time the work was conducted and is based on information obtained by and/or provided to Stantec at that time. There are no assurances regarding the accuracy and completeness of this information. All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

The opinions in this report can only be relied upon as they relate to the condition of the portion of the identified property that was assessed at the time the work was conducted. Activities at the property subsequent to Stantec's assessment may have significantly altered the property's condition. Stantec cannot comment on other areas of the property that were not assessed.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report and are based solely on the scope of work described in the report, the limited data available and the results of the work. They are not a certification of the property's environmental condition. This report should not be construed as legal advice.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities or claims, howsoever arising, from third party use of this report.

This report is limited by the following:

- *Information contained in the documents referenced herein.*

The locations of any utilities, buildings and structures, and property boundaries illustrated in or described within this report, if any, including pole lines, conduits, water mains, sewers and other surface or sub-surface utilities and structures are not guaranteed. Before starting work, the exact location of all such utilities and structures should be confirmed and Stantec assumes no liability for damage to them.

The conclusions are based on the site conditions encountered by Stantec at the time the work was performed at the specific testing and/or sampling locations, and conditions may vary among sampling locations. Factors such as areas of potential concern identified in previous studies, site conditions (e.g., utilities) and cost may have constrained the sampling locations used in this assessment. In addition, analysis has been carried out for only a limited number of chemical parameters, and it should not be inferred that other chemical species are not present. Due to the nature of the investigation and the limited data available, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire site.



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As the purpose of this report is to identify site conditions which may pose an environmental risk; the identification of non-environmental risks to structures or people on the site is beyond the scope of this assessment.

Should additional information become available which differs significantly from our understanding of conditions presented in this report, Stantec specifically disclaims any responsibility to update the conclusions in this report.

This report was prepared by Grace Ferguson, M.Sc., P.Eng., QP<sub>ESA</sub> and reviewed by Brent Ferguson, B.Sc., P.Geo, QP<sub>ESA</sub>.

We trust that this review is sufficient for your current requirements. If you have any questions or require clarifications regarding this information, please contact the undersigned.

Sincerely,

**STANTEC CONSULTING LTD.**

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cc. Koren Lam, Lanark County

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## 4 References

Paterson Group Inc. (Paterson), 2009. Phase II Environmental Site Assessment, Former Appletex Mill, 116-122 Old Mill Lane, Appleton, Ontario, prepared for Carlgate Development Inc., dated June 18, 2009.

Paterson Group Inc. (Paterson), 2010. Phase I - Environmental Site Assessment and Remediation Program, Former Appletex Mill, 116-122 Old Mill Lane, Appleton, Ontario, prepared for Carlgate Development Inc., dated November 15, 2010.

Paterson Group Inc. (Paterson), 2023. Phase II Environmental Site Assessment, 116-122 Old Mill Lane, Appleton, Ontario, prepared for Southwell Homes Ltd., dated June 14, 2023.

Paterson Group Inc. (Paterson), 2024a. Remedial Action Plan, 116-122 Old Mill Lane, Appleton, Ontario, prepared for Southwell Homes Ltd., dated February 14, 2024.

Paterson Group Inc. (Paterson), 2024b. Remedial Action Plan, 116-122 Old Mill Lane, Appleton, Ontario, prepared for Southwell Homes Ltd., dated October 24, 2024.

Stantec Consulting Ltd. (Stantec), 2023a. Letter prepared for Julie Stewart, Planning Director, County of Lanark regarding Peer Review of Environmental Conditions, Redevelopment of a Brownfield, Appleton Subdivision, Part of Lot 4, Concession 10, Geographic Township of Ramsay, Town of Mississippi Mills, Ontario, dated March 15, 2023.

Stantec Consulting Ltd. (Stantec), 2023b. Letter prepared for Koren Lam, Senior Planner, County of Lanark regarding Peer Review of Phase II – Environmental Site Assessment, 116-122 Old Mill Lane, Appleton, Ontario for Redevelopment Application, dated September 15, 2023.

