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February 28, 2025

LRL File Ref.: 240447

Heritage Investments Ltd.
1010 Polytek Street, Unit 5
Gloucester, Ottawa K1J 9H8

Attention: Dean Michaud

Subject: Remedial Action Plan
593, 601 & 603 Laurier Avenue West, Ottawa, Ontario

Dear Mr. Michaud,

Heritage Investments Ltd. has retained LRL Engineering (LRL) to complete a Remedial Action Plan in support of the anticipated re-development of the property located at 593, 601 & 603 Laurier Avene West, Ottawa, ON (herein referred to as the "Site"). Based on the findings of the recently prepared Phase Two Environmental Site Assessment, the following conditions were encountered which require remedial actions:

- Petroleum Hydrocarbon Fraction F2 impacts encountered above the applicable Ontario Regulation 153/04 site condition standards (SCS) in the groundwater at the southeastern extent of 593 Laurier Avenue West;
- Polycyclic Aromatic Hydrocarbons (PAH) impacts encountered above the applicable SCS in the soils to the northeast of the existing development of 603 Laurier Avenue West; and
- Lead impacts encountered above the applicable SCS in the soils to the northwest of the existing development of 593 Laurier Avenue West.

Further details with respect to concentrations, and more accurate representation of the anticipated impacted matrix plume are provided in the *Phase Two Environmental Site Assessment, 593, 601 and 603 Laurier Avenue West, Ottawa, Ontario report, prepared for Heritage Investments Ltd., prepared by LRL Engineering (LRL Associates Ltd.), October 18, 2024*.

Various metal-based parameters (barium, cadmium, lead, mercury and zinc) were encountered generally throughout 593 Laurier Avenue West in a previous environmental investigation completed in 2019. These findings are presented in the *Phase II Environmental Site Assessment, 593 Laurier Avenue West, Ottawa, Ontario report, prepared for Alexander Fleck House Inc., prepared by LRL Engineering (LRL Associates Ltd.), November 7, 2019*; and subsequent Contamination Delineation report dated November 8, 2019. At the time of the delineation program, it was recommended that the soil contamination be remediated at the time of site development. The vertical extent of contamination was anticipated to be from surface to bedrock, encountered at depths between 0.5 m and 1.65 m bgs. The horizontal extent of contamination was not

delineated; however, it was indicated that it was anticipated to extend across the majority of the subject property.

1 BACKGROUND

In 2024, Heritage Investments Ltd. retained LRL to conduct a Phase Two Environmental Site Assessment for the properties located at 593, 601, and 603 Laurier Ave W in Ottawa, Ontario. The three separate properties feature multi-tenant residential buildings situated in a commercial area of Ottawa, Ontario. In addition, there is a small asphalt parking lot at the front (southwest corner) of 593 Laurier Ave West. The existing developments on the Site are estimated to have been built in the early 1900s (around 1901).

The objectives of this Phase Two ESA are to investigate the presence of contaminants at the Site, as identified in the Phase One ESA completed by LRL on July 24, 2024 (Revised February 2025). Based on the results of the Phase One ESA, the following areas of potential environmental concern (APECs) were identified:

- **APEC 1** was generated due to the presence of PCA Other : Spill for a hydraulic oil spill which occurred approximately 220 m south of the Site according to records available through the Ecolog ERIS report.
- **APEC 2** was generated due to the record of a previous furnace oil leak at the property located approximately 250 m south of the Site, PCA Other : Spill. The incident record was retrieved through the Ecolog ERIS report.
- **APEC 3** was generated due to the presence of PCA Other : Waste Generator at the Site. According to available records retrieved through Ecolog ERIS, the Site was registered historically as a generator of light fuels.
- **APEC 4** was generated due to the presence of PCA Other : Waste Generator for the property located approximately 100 m southeast. According to the Ecolog ERIS report, the facility was listed as a waste generator of PCBs, inorganics, paint, pigments and coating residues, oil skimmings and sludges.
- **APEC 5** was generated due to the presence of PCA Other : Waste Generator for the property located approximately 170 m southeast. According to the Ecolog ERIS report, the facility was listed as a waste generator of inorganic and organic lab chemicals, petroleum distillates, aliphatic solvents, alkaline wastes, oils and lubricants.
- **APEC 6** was generated due to the presence of PCA Other : Waste Generator for the property located approximately 60 m south. According to the Ecolog ERIS report, the facility was listed as a waste generator of pathological wastes, paint, pigments, coating residues, inorganic and organic lab chemicals, aliphatic solvents, petroleum distillates, pharmaceuticals, acid waste, alkaline wastes, waste oils and lubricants, photo processing wastes, heavy fuels, waste compressed gases, light fuels, oil skimmings, sludges.
- **APEC 7** was generated to address the previous up-gradient manufacturer/publisher identified through Ecolog ERIS reports for the property located approximately 170 m southeast.
- **APEC 8** was generated due to the PCA 41 for the former presence of heating oil tanks in each of the Phase One properties according to the Site Interview.
- **APEC 9** was generated due to the presence of PCA 30 for the possible fill material used to accommodate the parking circulation area at one of the Phase One properties based on the Site Visit.

- **APEC 10** was generated due to the presence of PCA 37 for the former Centretown Laundry Co-Op, a Laundries and Cleaners listed in 2005 at 211 Bronson Avenue, approximately 160 m south of the Site.
- **APEC 11** was generated due to the presence of PCA 39 to address possible impacts associated with the former Reupholstery and Furniture Repair facility at 211 Bronson Avenue, approximately 160 m south of the Site.
- **APEC 12** was generated due to the presence of PCA 31 to address possible impacts associated with the former Perfection Printers, a Printing facility which operated at 190 Bronson Avenue, approximately 85 m south of the Site.
- **APEC 13** was generated due to the presence of PCA 31 to address possible impacts associated with the former Desktop Express Publishing, and Publishing facility in the at least 1990 at 208 Bronson Avenue, approximately 180 m south of the Site.
- **APEC 14** was generated due to the presence of PCA 28 to address possible impacts associated with the underground petroleum storage tank installed in 1960 at 196 Bronson Avenue, approximately 120 m south of the Site.
- **APEC 15** was generated due to the presence of PCA 28 to address possible impacts associated with the above- and underground petroleum storage tanks installed between 1952 and 1973 at 60 Cambridge Street, approximately 60 m south of the Site.
- **APEC 16** was generated due to the presence of PCA 28 To address possible impacts associated with petroleum storage tanks installed between 1953 and 1961 at 211 Bronson Avenue, approximately 160 m south of the Site.

A Phase Two ESA to investigate the APECs was recommended.

1.1 Phase Two Environmental Site Assessment

A Phase Two ESA was conducted in order to investigate the APECs. The investigation involved advancing five (5) boreholes across the Site at strategic locations based on APECs. One (1) of the boreholes were completed as monitoring wells to assess hydrogeological conditions and facilitate groundwater sampling. The existing monitoring wells previously installed in support of the 2019 Phase II Environmental Site Assessment were incorporated into the sampling program and to assist with assessing the hydrogeological conditions of the Site.

Based on observations during drilling activities, along with screening of samples and laboratory analysis, the following contaminants of concern were identified in groundwater and soil samples:

- Sample **2-SS1** collected from BH24-2 at depths of 0.0 and 0.6 bgs encountered elevated concentrations of **Lead.** This may be associated with importation of fill materials present in the area between 593 and 601 Laurier Avenue properties;
- Sample **4-SS1** collected from depth BH24-04 from depths of between 0.0 and 0.6 m bgs encountered high concentrations of various **PAHs** parameters exceeding the Table 7 limits**.** These levels may be related to the previous oil heating tank and associated oil heating combustion or un-reported spills, use of fill material of poor quality, or the historical waste generated from light fuel activities by the Dalhousie Housing Co-op on the Site;
- **MW19-01** analysis results confirmed the **PHC-F2** concentration (308 µg/L) exceeding the Table 7 applicable standard of 150 µg/L. PHC-F4 was also present in the MW19-01 groundwater sample, however its level was not above the Table 7 standard limit;
- MW19-02 and MW24-05 had comparable VOC and PHC concentrations with levels generally being less than the laboratory detection limits. PHC-F3 was detected in both

samples with values of 194 and 357 µg/L, respectively, below the 500 µg/L Table 7 site condition standard. PHC-F4 was also detected in MW24-05 with a value of 346 µg/L, respectively, below the 500 µg/L Table 7 site condition standard;

- **Chloroform** in **MW24-05** was also detected above the appliable Table 7 site condition standard of 2 µg/L with a value of 15.2 µg/L. Sample MW-XX is a duplicate sample collected from MW24-05, which exhibited comparable detections and exceedances. Toluene was also detected in MW24-05 with a value of 0.6 µg/L, less than the Table 7 site condition standard of 320 µg/L. This exceedance can be attributed to the use of chlorinated municipal water during coring;
- PAH parameters were not detected in MW19-01 or MW24-05. Detections were encountered in MW19-02, however the levels were less than the Table 7 site condition standards; and
- Metals were detected in all samples collected, however, no exceedances were encountered. Chloride and free cyanide parameters were detected although no exceedances were encountered.

It was recommended that at the time of re-development of the Site, the quality of the soils to be excavated are confirmed through sampling and analysis. This will aid in ensuring that the appropriate handling and disposal measures are followed. The areas with confirmed exceedances in the overburden, within the work areas, should be remediated followed by confirmatory sampling by a Qualified Person. Prior to dewatering of excavations during the construction activities, the quality of the water to be discharged must be confirmed to align proper disposal or treatment requirements. Post re-development, the conditions should be verified through additional sampling to ensure that through the construction activities, conditions have not worsened.

Various metal-based parameters (barium, cadmium, lead, mercury and zinc) were encountered generally throughout 593 Laurier Avenue West in a previous environmental investigation completed in 2019. These findings are presented in the *Phase II Environmental Site Assessment, 593 Laurier Avenue West, Ottawa, Ontario report, prepared for Alexander Fleck House Inc., prepared by LRL Engineering (LRL Associates Ltd.), November 7, 2019*; and subsequent Contamination Delineation report dated November 8, 2019.

The October 2024 Phase Two Environmental Site Assessment report was submitted to the City of Ottawa for review and comment. The City has requested that a remediation action plan be developed for the Site to address the following impacts encountered:

- Petroleum Hydrocarbon Fraction F2 impacts encountered above the SCS in the groundwater at the southeastern extent of 593 Laurier Avenue West;
- PAH impacts encountered above the applicable SCS in the soils to the northeast of the existing development of 603 Laurier Avenue West; and
- Lead impacts encountered above the applicable SCS in the soils to the northwest of the existing development of 593 Laurier Avenue West. It has been assumed that this also entails the previous exceedances encountered at the time of the 2019 Phase II Environmental Site Assessment (barium, cadmium, lead, mercury and zinc).

2 APPLICABLE GUIDELINE CRITERIA

Regulatory requirements for assessing environmental conditions of a site are established by Ontario Regulation 153/04 – *Records of Site Conditions, Part XV.1 of the Environmental Protection Act* (O. Reg. 153/04). Site condition standards are set out in Ministry of Environment, Conservation and Parks (MECP) '*Soil, Ground Water and Sediment Standards for Use Under Part IV.1 of the Environmental Protection Act*, *April 15, 2011'*. The applicable site condition standard used was Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition.

- The Site and adjacent properties are serviced with municipal potable water;
- The subsurface conditions encountered consisted of fill therefore the coarse-textured standard was applied; and
- The Site and neighbouring properties are zoned as residential; and
- The Site is considered environmentally sensitive as there was less than 2 m of overburden overlying the bedrock.

As such, remedial targets for this action plan will be concentrations which are below or meet the MECP Table 7 SCS criteria for metals, PHCs Fractions F1 through F4, and PAH.

3 REMEDIATION METHODOLOGY

3.1 Soil Remediation

Two (2) separate impacted soil plumes have been identified on the Site. One (1) recognized by PAH exceedances to the northeast of 603 Laurier Avenue West (Plume A); and the second being recognized by various metal exceedances across 593 Laurier Avenue West (Plume B). At the time of construction, the impacted overburden will be excavated with available hydraulic excavation equipment (or equivalent) and disposed of off-Site at an approved waste disposal facility. This material is not considered suitable for re-use at licenced Class 1 or Class 2 excess soil storage facility.

During excavation, the work will be completed under the supervision of a competent field technician, under direct supervision of a Qualified Person. Confirmatory sampling from the limits of the excavation will be completed following the minimum sampling protocol outlined in O. Reg. 153/04 (as amended) Table 3 of Schedule E, until laboratory analysis have confirmed the impacted materials have been removed and the limits of excavation meet the SCS, or until excavation is limited or constrained by Site characteristics and conditions. Greater detail of each anticipated plumes remediation procedures is outlined here:

- **Area A:** PAH contamination noted in the overburden materials at BH24-04 to the northeast of 603 Laurier Avenue West. The full horizontal extents of the impacts have not been delineated at this time. PAH concentrations exceeding the applicable SCS were not detected in the remaining boreholes in the vicinity of BH24-04, therefore, it can be inferred that the impacted soils are limited to the southwest by BH24-05 (MW24-05); to the northeast by BH24-02; to the south by BH24-03; and to the southeast by BH24-01. This encompasses an area of approximately 290 m^2.

  Overburden will be excavated to bedrock in the area of the PAH exceedances. The vertical impacts are anticipated to extend to bedrock, which was encountered at depths between 0.36 and 1.20 m bgs. This equates to a volume of between approximately 85 and 350 m^3 of soil to be removed from the property.

Following the sample frequency set out in O. Reg. 153/04 (as amended), Table 3 – Minimum Confirmatory Sampling Requirements for Excavations, a minimum of four (4) side wall and six (6) floor samples will be required. As the floor of the excavation is anticipated to be exposed bedrock, floor samples are unlikely to be collected, therefore, the six (6) samples will be included in those from the walls of the excavation, so that the overall number of samples remain at least ten (10).

Combustible soil vapours will be collected from the limits of excavation during the remediation efforts as an aid in establishing the extents of the excavation prior to the collection of confirmatory samples.

- **Area B:** Various metal-based parameters, including barium, cadmium, lead, mercury and zinc generally across 593 Laurier Avenue West. The full horizontal extent of the impacts has not been confirmed, although, exceedances to metal-based parameters were not encountered in BH24-01 located at the southwestern portion of the Site. Therefore, it is inferred that the metal-based parameter exceedances encompass an area of approximately 650 m^2, which excludes the building footprint of the heritage building to remain at 593 Laurier Avenue West.

  The vertical extent of contamination was anticipated to be from surface to bedrock, encountered at depths between 0.5 m and 1.65 m bgs. This equates to a volume of between approximately 325 and 1,070 m^3 of soil to be removed from the property.

  Following the sample frequency set out in O. Reg. 153/04 (as amended), Table 3 – Minimum Confirmatory Sampling Requirements for Excavations, a minimum of between four (4) and five (5) side wall and between six (6) and eight (8) floor samples will be required. As the floor of the excavation is anticipated to be exposed bedrock, floor samples are unlikely to be collected, therefore, the between six (6) and eight (8) samples will be included in those from the walls of the excavation, so that the overall number of samples remain at least between ten (10) and thirteen (13).

  Combustible soil vapours will not be required during the collection of the samples, as the parameters of concern are metal-based, however, it is considered good practice to include these measurements regardless.

3.1.1 Excess Soils

Should additional excavation of ‘clean’ overburden be required to support the re-development project, the based on O. Reg 406/19, and the “Rules of Soil Management and Excess Soil Quality Standards” prepared by the MECP in 2019 (as amended), section 2.(3)15., at least one soil sample shall be analysed for each 200 m^3 of soil for the first 10,000 m^3 to be excavated. Synthetic Leachate analysis will be required for every 3 + 10% of the bulk samples collected for analysis.

If the soil volume to be excavated is less than 350 m3 then O. Reg 153/04 applies and one (1) sample for every 160 m^3.

Representative soil samples will be collected to confirm the fill disposal requirements for the Site. If the material is found to fail to meet the receiving facilities applicable standards, the material will be disposed of at a licensed landfill or soil recycling facility based on the results.

It should be noted that the results of the October 2024 Phase Two Environmental Site Assessment can be used to support the off-Site disposal of excess soils, although the data, and the report must be provided to the receiving facility well in advance to confirm that they will not require additional details. The results of the remedial efforts discussed above should also be provided to the receiving facility to demonstrate the conditions remaining on the Site are acceptable.

3.2 Groundwater Remediation

Chloroform in MW24-05 was detected above the appliable Table 7 SCS. This exceedance can be attributed to the use of chlorinated municipal water during coring, and therefore no additional remedial activities are considered warranted.

A second groundwater exceedance was encountered in MW19-01 where PHC-F2 concentration exceeded the Table 7 SCS. PHC-F4 was also present in the MW19-01 groundwater sample, however its level was not above the Table 7 SCS. The source, and extents of the petroleum-based exceedances have not been confirmed at the time this Remediation Action Plan was prepared. Potential sources which may have contributed to the exceedances, as identified in the Phase One Environmental Site Assessment included:

- **APEC 1** was generated due to the presence of PCA Other : Spill for a hydraulic oil spill which occurred approximately 220 m south of the Site according to records available through the Ecolog ERIS report.
- **APEC 2** was generated due to the record of a previous furnace oil leak at the property located approximately 250 m south of the Site, PCA Other : Spill. The incident record was retrieved through the Ecolog ERIS report.
- **APEC 3** was generated due to the presence of PCA Other : Waste Generator at the Site. According to available records retrieved through Ecolog ERIS, the Site was registered historically as a generator of light fuels.
- **APEC 5** was generated due to the presence of PCA Other : Waste Generator for the property located approximately 170 m southeast. According to the Ecolog ERIS report, the facility was listed as a waste generator of inorganic and organic lab chemicals, petroleum distillates, aliphatic solvents, alkaline wastes, oils and lubricants.
- **APEC 6** was generated due to the presence of PCA Other : Waste Generator for the property located approximately 60 m south. According to the Ecolog ERIS report, the facility was listed as a waste generator of pathological wastes, paint, pigments, coating residues, inorganic and organic lab chemicals, aliphatic solvents, petroleum distillates, pharmaceuticals, acid waste, alkaline wastes, waste oils and lubricants, photo processing wastes, heavy fuels, waste compressed gases, light fuels, oil skimmings, sludges.
- **APEC 8** was generated due to the PCA 41 for the former presence of heating oil tanks in each of the Phase One properties according to the Site Interview.
- **APEC 9** was generated due to the presence of PCA 30 for the possible fill material used to accommodate the parking circulation area at one of the Phase One properties based on the Site Visit.
- **APEC 11** was generated due to the presence of PCA 39 to address possible impacts associated with the former Reupholstery and Furniture Repair facility at 211 Bronson Avenue, approximately 160 m south of the Site.
- **APEC 12** was generated due to the presence of PCA 31 to address possible impacts associated with the former Perfection Printers, a Printing facility which operated at 190 Bronson Avenue, approximately 85 m south of the Site.
- **APEC 14** was generated due to the presence of PCA 28 to address possible impacts associated with the underground petroleum storage tank installed in 1960 at 196 Bronson Avenue, approximately 120 m south of the Site.

- **APEC 15** was generated due to the presence of PCA 28 to address possible impacts associated with the above- and underground petroleum storage tanks installed between 1952 and 1973 at 60 Cambridge Street, approximately 60 m south of the Site.
- **APEC 16** was generated due to the presence of PCA 28 To address possible impacts associated with petroleum storage tanks installed between 1953 and 1961 at 211 Bronson Avenue, approximately 160 m south of the Site.

The source of the impacts may have originated off-Site, based on the northerly groundwater flow direction towards the Ottawa River. The full extent of the impaired groundwater has not been delineated in each cardinal direction, nor has the source, although anticipated to be associated with an off-Site source, been confirmed. Without a greater understanding of the source, and extent of the impacted groundwater, the implementation of a remediation plan is not considered practical. Should the source be from an off-Site, up-gradient source, an on-Site injection program with pumping and re-circulation would only result in the continuous draw of impacts from the source. A barrier could be installed to prevent the re-contamination; however, this is a substantial undertaking, and without a greater understanding of the plume extents, this is considered not practicable.

Rather, at this time, further delineation is recommended as the initial stage of the groundwater remediation plan. The proposed delineation program is outlined below in Section 4. It was discussed during consultation with the City of Ottawa that alternative approaches to handle the impacted groundwater can be considered, however at this time, they are not thought to be practical as a long-term solution, as rationalized as follows:

- Foundation Membrane
    - It was suggested that perhaps application of a membrane surrounding the exterior foundation walls of the proposed and existing developments to remain could mitigate risk of exposure to PHCs by occupants. Although this could be implemented for the proposed new build, it is not viable for the existing heritage building on 593 Laurier Avenue West, where the foundation is of stone construction, and exposer could be detrimental to its integrity.
    - Groundwater collection around the foundations would need to include possible treatment prior to discharge into the City of Ottawa sanitary services. This will require increased costs for the operation and maintenance of the treatment units, as well as costs to discharge into the City's services.
- Groundwater Collection and Treatment
    - As discussed above, groundwater collection around the foundations could be introduced, with the use of a treatment system prior to discharge into the City of Ottawa sanitary services. As mentioned, this will require increased costs for the operation and maintenance of the treatment units, as well as costs to discharge into the City's services, and there is a risk to occupants for vapours resulting from the drawing of impacted groundwater into the vicinity of the building.
    - Although a Risk Assessment will be require, it can be assumed that likely on-going air monitoring within each building will be required to ensure the identified impacts are not impairing the conditions of the indoor air.
- Groundwater Remediation (Pump & Treatment, or In-Situ)
    - There are several possible technologies available to remove the impacts to the groundwater. Although they can be effective, without adequate characterization of the plume (i.e. source and extents), these processes can be ineffective, and may

worsen the already existing situation.. Adequate delineation of the plume is essential when developing a Groundwater Remediation Plan. The proposed delineation approach is described below in Section 4.

4 PROPOSED GROUNDWATER DELINEATION PLAN

Bedrock monitoring wells typically represent the groundwater conditions within a 5 m radius from the intrusion. To confirm the location of the likely source of the PHC impacted groundwater, encountered on the southeastern portion of 593 Laurier Avenue West, four (4) additional monitoring wells are recommended, with one (1) being placed approximately 5 m in each cardinal direction from the existing MW19-01. The enclosed **Figure 1** presents the anticipated monitoring well locations. It should be noted that due to the topography of the area, and the high traffic conditions of Bronson Avenue to the east of the Site, the proposed monitoring well to the east MW19-01 will be restricted to approximately 3.0 m from the existing monitoring well. One (1) monitoring well will be advanced within Laurier Avenue West, south of the Site.

The proposed work plan is outlined as follows:

- Request utility locates for the proposed on- and off-Site monitoring well installation locations.
- Coordinate and complete required applications and permits with the City of Ottawa for the installation of a monitoring well in the Laurier Street West right-of-way. This will include a traffic management plan which is to be followed during the off-Site work (drilling and subsequent sampling).
- Retain the services of a licenced monitoring well installer (as per O. Reg. 903), to advance four (4) boreholes through the overburden, extending to bedrock refusal at anticipated depths of between 0.5 m and 1.65 m bgs.
- The borehole in the right-of-way is to be on the north side of the City utility lines (municipal water line trench). Based on geoOttawa interactive mapping, no sanitary service trench traverses along the south of the Site in the right-of-way.
- Using dedicated sample barrels or a thoroughly cleaned split spoon sampler, soil samples will be collected of the overburden, of which select samples will be submitted for laboratory analysis of petroleum-based parameters of concern.
- Each of the boreholes will extend into bedrock, using HQ bedrock coring techniques, to depths of between 7.6 and 9.0 m bgs.
- Each borehole extended into bedrock will be completed into groundwater monitoring wells with a screen interval 3.0 m in length, sealed within the bedrock by an at least 0.6 m thick layer of bentonite hole plug commencing 0.3 m from the top of sand-pack set around the screen.
- No less than 24-hours following the construction of the monitoring wells, each of the newly constructed, and the existing MW19-01 and MW19-02 will be developed, by removing the equivalence of ten (10) well volumes, or until dry conditions are reached three (3) times.
- Using low-flow sampling techniques, to reduce the potential for sediment, and maintain a representative sample, no less than 24-hours following the development of the monitoring wells, collect samples from each of the newly installed monitoring well locations, and the existing monitoring wells MW19-01 and MW19-02.

- QA/QC measures, including VOC trip blank, and possible (depending on available volumes) duplicate sample collection will be implemented.
- Samples collected from the groundwater monitoring wells will be submitted for laboratory analysis of:
    - Petroleum Hydrocarbon Fractions F1 through F4;
    - Volatile Organic Compounds;
    - Polycyclic Aromatic Hydrocarbons; and
    - Metals and Inorganics.

Once the analysis is complete, it is anticipated that there will be adequate available data to allow for the development of a suitable groundwater remediation scope. Based on internal discussions at this time, Foundation Membrane and Groundwater Collection and Treatment with discharge into the City's sanitary services will not be implemented, but rather a more aggressive approach through a pump and treatment system or in-situ technology (or a combination) perimeter barriers.

It is our professional opinion that the re-development activities can proceed, along with the soil remediation, while the conditions of the groundwater at the far southeastern extend of the Site are addressed.

The anticipated schedule for the proposed undertaking is as follows:

Week 1 through Week 4	Request utility locates; Coordinate and complete required applications and permits with the City of Ottawa; and Retain the services of a licenced monitoring well installer.
Week 5	Advance the four (4) proposed boreholes and completed into groundwater monitoring wells. It is anticipated that this will take one (1) week to complete, with assumptions that the Site is accessible (snow cleared).
Week 6 through Week 7	Develop the respective monitoring wells by removing the equivalence of ten (10) well volumes, or until dry conditions are reached three (3) times. collect samples from each of the newly installed monitoring well locations, and the existing monitoring wells MW19-01 and MW19-02. Submit the samples collected for laboratory analysis at an accredited laboratory for M&I , PHC, VOC and PAH parameters of concern.
Week 8 through Week 10	Compile and assess data retrieved. Consult with groundwater treatment experts to derive a detailed plan of execution for the treatment of the groundwater.

5 LIMITATIONS AND USE OF REPORT

The findings contained in this report are based on data and information collected during previous investigative site activities completed by LRL Engineering. The recommendations are based solely on-site conditions encountered at the time of our fieldwork between September 3 and September 11, 2024, in addition to the findings presented in the previous Phase II Environmental Site Assessment report presented for 593 Laurier Avenue West. No assurance is made regarding changes in conditions subsequent to the time of this investigation. If additional information is discovered or obtained, LRL Engineering should be requested to re-evaluate the conclusions presented in this report and to provide amendments as required.

In evaluating the subject property, LRL Engineering has relied in good faith on information provided by individuals as noted in this report. We assume that the information provided is factual and accurate. We accept no responsibility for any deficiencies, misstatements or inaccuracies contained in this report as a result of omissions, misinterpretation or fraudulent acts of the persons contacted.

This report is intended for the sole use of Heritage Investments Ltd. and their authorized agents. LRL Engineering will not be responsible for any use of the information contained within this report by any third party.

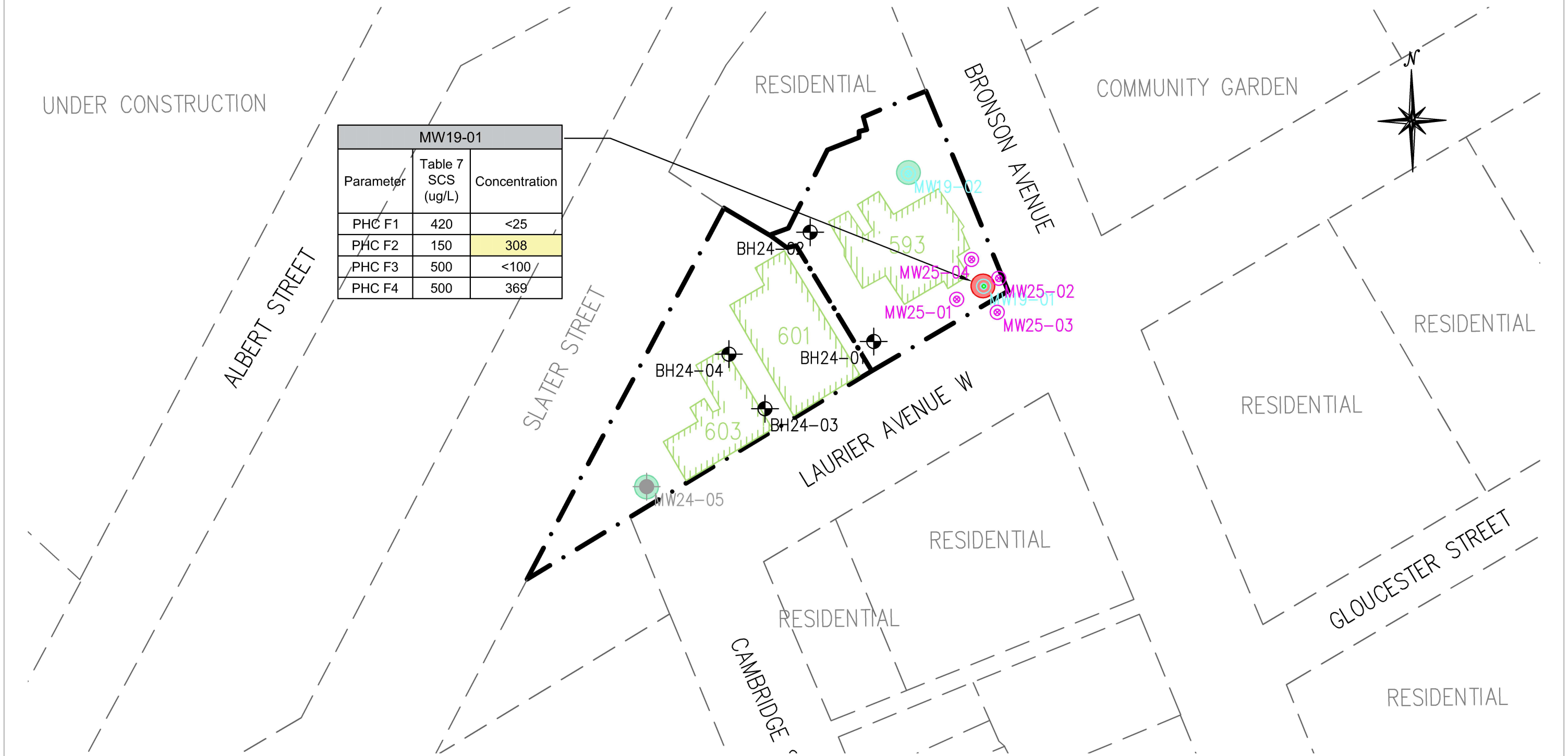
In addition, LRL Engineering will not be responsible for the real or perceived decrease in the property value, its saleability or ability to gain financing, through the reporting of factual information.

Yours truly,
LRL Engineering

Jessica Arthurs
Environmental Engineering Manager

Gianni Lametti, P. Eng.
Senior Environmental Engineer

Enclosed
Figure 1 Proposed Monitoring Well Locations



Legend

- Subject Sites
- Neighbouring Property Extents
- Existing Buildings
- Borehole / Monitoring Well – Meets Table 7 SCS
- Borehole / Monitoring Well – Exceeds Table 7 SCS
- Concentration Exceeding Table 7 SCS
- MW19-X Existing Monitoring Well (2019)
- BH24-X Newly Advanced Borehole (2024)
- MW24-X Newly Installed Monitoring Well (2024)
- MW25-X Proposed Monitoring Well (2025)

10m 0 10 20 30m

SCALE: 1:750

No.	REVISIONS	BY	DATE
01	FINAL	J.A.	09/25/2024

LRL
ENGINEERING | INGÉNIERIE
5430 Canotek Road | Ottawa, ON, K1J 9G2
www.lrl.ca | (613) 842-3434

CLIENT
HERITAGE INVESTMENTS LTD.

DESIGNED BY:	DRAWN BY:	APPROVED BY:
--	J.A.	J.L.

PROJECT
REMEDIATION ACTION PLAN
593, 601 & 603 LAURIER AVENUE W
OTTAWA, ONTARIO

DRAWING TITLE
PROPOSED DELINEATION PLAN

PROJECT NO.
240447

DATE
FEBRUARY 2025

FIGURE1