REPORT

Remedial Action Plan Lead Paint and Lead Impacted Soil Abatement

Camp Robin Hood in Rouge National Urban Park

Submitted to:

Parks Canada

Submitted by:

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Distribution List

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Photos

1.0 INTRODUCTION

Golder Associates Ltd. (Golder) was retained by Parks Canada Agency (PCA) to prepare a revised Remedial Action Plan (RAP) paired with Specifications derived from the National Master Specifications (NMS) to address the known lead-based paint (LBP) on building exteriors and the associated lead impacts in soil at the Camp Robin Hood (CRH) facility in the Rouge National Urban Park (RNUP) located at 10243 Reesor Road in Markham, Ontario (the Site). The intent of the RAP and Specifications is to define the project's scope and how it must be completed in compliance with all applicable Federal and Provincial Standards and Regulations.

The CRH facility is a day camp for youth and covers approximately 10 hectares and is comprised of approximately 30 buildings used for the camp activities and support, including two residences, a barn, a main office building and approximately fifty day-use huts and structures used for various purposes. Recreational facilities on the property include three swimming pools, four baseball diamonds, three basketball courts and three tennis courts. A pond of approximately 2,000 square metres in size is present in the southwest corner of CRH, and will require erosion protection from the work area at close distance to it. The CRH property is bisected by an access road leading from Reesor Road to a small forest present near the back of the property. CRH also uses a forest located to the east for overnight camping. The site plan is shown in Figure 1.

This RAP has been compiled from several previous environmental investigations and paint sampling surveys conducted by others from 1997 to 2017 and 2018 paint and soil delineation sampling conducted by Golder, commissioned both by CRH and the federal government.

2.0 ABATEMENT ACTIVITIES AND OBJECTIVES

This RAP covers two media requiring abatement:

1) Paints containing metals (lead or mercury) on exterior painted features of the buildings; and

2) Lead impacted soil that has been caused by flaking and peeling of exterior lead-based paint.

The objective is to abate and remediate in order to reduce and/or remove risks to human health and/or ecological receptors.

Canadian federal guidelines that are in existence as of <u>March 31, 2018</u> will be used for abatement targets for mercury- or lead-based paint and lead-impacted soil. The threshold for defining mercury- or lead-based paint is contained in the *Surface Coating Material Regulation*, Section 2 (1). A surface coating material must not contain more than **90 milligrams per kilogram (mg/kg) or 90 parts per million (ppm)** total lead, or 10 ppm mercury, when a dried sample is tested in accordance with a method that conforms to good laboratory practices.

The remediation target for lead impacted soil is contained in the Canadian Council of Ministers of Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health. The guideline concentration in effect as of March 31, 2018 for Residential and Parkland Use is **140 mg/kg** based on dry weight.

3.0 HERITAGE HOUSES

There are two buildings located at CRH that are listed by Markham Register of Property of Cultural Heritage Value or Interest. They are the Owner's Residence and the Baseball Office. When conducting remedial activities for lead based paint abatement and soil remediation at these buildings, the contractor shall adhere to the Ontario Heritage Act (part IV designation) and the guidance detailed in Parks Canada's Cultural Resource Management Policy (2013) and Standards and Guidlines for the Conservation of Historic Places in Canada, 2nd Edition.

A Built Heritage Overview Assessment for the Owner's Residence and Baseball Office, dated April 24, 2018 has been prepared by Parks Canada. The successful proponent will adhere to the guidelines written in the Built Heritage Overview Assessment in addition to the Statement of Cultural Resource Impact Analysis (SCRIA) (both documents attached in Appendix C) in conjunction with the two documents previously noted above.

Any work on the two heritage buildings (siding repair, paint removal, re-painting, etc.) must be done in accordance with the Standards and Guidelines for the Conservation of Historic Places in Canada and SCRIA.

In particular, care should be taken not to damage the wood siding of the buildings during the paint removal process. Siding replacement should be limited to wood elements that are in poor condition and too deteriorated to withstand paint removal. These should be replaced in kind.

For the Heritage Houses, PCA requires that the contractor remove the lead containing coatings with an eco-friendly chemical gel or paste and fibrous laminated cloth wrap from the exterior walls.

4.0 LEAD PAINT ABATEMENT (METAL BASED PAINT ABATEMENT)

Sampling and testing paints for metals on exterior surfaces of buildings at the CRH facility has been completed by:

- Shaheen (1997): seven exterior paints were sampled and tested from six buildings (Baseball Office, Owner's Residence, Photography Building, Program Building, Archery Huts, Sleeping Huts) and all had concentrations of lead in excess of 90 ppm.
- DSC (2011): three exterior paints were sampled and tested from three buildings (Baseball Office, Owner's Residence, Program Building) and all had concentrations of lead in excess of 90 ppm.
- Terrapex (2015 & 2016): 32 exterior paints were sampled and tested from 32 buildings. The exterior paints associated with nine of these buildings (Lunch Barn, TBS Centre, Maintenance Area, Mom's Place, Camp Craft, Castle, Will Scarlet Building, Shed behind Building X, Friar Tuck) had concentrations of lead in excess of 90 ppm.

In May, 2018, Golder completed additional sampling and testing of 21 exterior paints from 10 buildings. It was noted in the past reports that the Castle had been demolished and at the time of the May 9, 2018 visit, it was determined that the Shed behind Building X was demolished as well. It was also determined that the Lunch Barn, the Photography Building and the Coaches Corner (referred to herein as the Lunch Barn) are all references to the same building structure. The buildings referred to as Mom's Place and Mom's Nook and Cranny for the purposes of the RAP and Specifications will be treated as the same building. Various exterior paints associated with all 10 buildings sampled by Golder had concentrations of lead in excess of 90ppm. Photos of all site structures can be found in Appendix E. The 10 buildings with exterior paint tested during the May 9, 2018 site visit are as follows:

- Friar Tuck Building
- Camp Craft
- TBS Centre
- Program Building

- Lunch Barn
- Mom’s Place/Nook and Cranny
- Maintenance Building
- Will Scarlett Building
- Baseball Office
- Owner’s Residence

The outcome of the current and previous paint testing is that lead concentrations in excess of 90 ppm have been identified in exterior paints associated with 10 unique buildings at CRH and approximately 60 Archery Huts/Sleeping Huts/Intergirls’ Cabins/Leppie’s Cabins/Girls Change Area/Boys Change Area/Interboys’ Cabins/Archers Cabins/Seniors’ Cabins (collectively referred to herein as “cabins”).

The following table lists the remaining 10 buildings and approximately 60 cabins identified as having exterior lead-based paints, based on the above-noted historical studies and the site visit conducted on May 9, 2018.

Table 1: Summary of Lead Based Paints on Building Exteriors

Building Name(s)	Exterior Paint Colour	Lead Content (ppm)	Sampled By / Date	Current Condition of Paint (as of May 2018 site visit)
Baseball Office	Yellow	64,959	Shaheen 1997	Noted as historically having been repainted within the past two years (Terrapex 2016). No yellow or green trim was observed at the time of the May 9, 2018 visit. The building was observed to be painted in blue with white trim. Both of these paints were lead containing and in poor condition.
	Green Trim	64,846	Shaheen 1997	
	Blue	31,000	DSC 2011	
		12,000	Golder 2018	
	White Trim	340	Golder 2018	
Owner's Residence	Yellow	17,374	Shaheen 1997	Noted as historically having been repainted within the last five years (Terrapex 2016). No yellow paint was observed at the time of the May 9, 2018 site visit. The building was observed to be painted in blue with white trim. Both of these paints were lead containing and observed to be in poor condition at the time of the May 2018 site visit.
	Blue	26,000	DSC 2011	
		34,000	Golder 2018	
	White Trim	230	Golder 2018	
Lunch Barn	Green	37,586	Shaheen 1997	Wood trim and siding were both observed to be painted green at the May 2018 site visit. The siding was found to be in fair condition, while the trim was found to be in poor condition. What appeared to be a freshly painted beige door (south wall) was observed at the time of the May 2018 site visit. It is assumed the beige is the same paint as the "beige" which was sampled at Mom's Nook and Cranny and Mom's Place in May 2018 by Golder.
	Green	47,000	Terrapex 2015	
	Green	14,000	Golder 2018	
	Beige	assumed 340 (see Mom's Place/Nook and Cranny)	-	
Program Building	Orange	18,936	Shaheen 1997	It is assumed that the orange paint cited by Shaheen in 1997 faded over time and is the same paint sampled as "tan" by
	Brown Trim	1,300	DSC 2011	

Building Name(s)	Exterior Paint Colour	Lead Content (ppm)	Sampled By / Date	Current Condition of Paint (as of May 2018 site visit)
		2,800	Golder 2018	Golder in May 2018. The multi colored sample is a composite sample of various paint on boards front the front of the building. Each year the current site lease holders paints a board (related to a competition at the camp). The brown paint is a dark brown trim. All paint was observed to be in poor and flaking condition at the time of the May 2018 site visit.
	Multi (red, green, yellow, blue) on front of building	460	Golder 2018	
	Tan	26,000	Golder 2018	
60 Various Cabins	Brown	13,192	Shaheen 1997	All cabins (as described in Section 3.0 above) have been enclosed by cedar boards. It is assumed that the brown paint included in the Shaheen 1997 report remains on the structure. The site owner and the site lease holder were not aware of any structures described as “sleeping huts.”
		2,305	Shaheen 1997	
TBS Centre	Green	306	Terrapex 2015	The TBS Centre aluminum siding was powder coated (beige) and not sampled during the May 2018 site visit. It was found to be in good condition. The green wood trim was found to be in poor condition at the time of the May 2018 site visit.
	Green	280	Golder 2018	
Maintenance Area	Green	16,400	Terrapex 2015	The maintenance area is comprised of aluminum siding and wood. The majority of the building is painted green and in poor condition. The trim on the building was observed to be white and in poor and flaking condition at the time of the May 2018 site visit.
	Green	54,000	Golder 2018	
	White	27,000	Golder 2018	
Mom’s Place/Nook and Cranny	Green	1,630	Terrapex 2015	Noted as having been historically repainted within the last three years (Terrapex 2016). On the “Mom’s Place” portion of the building, the beige paint (siding) was found to be in fair condition, while the green paint (trim) was observed to be in
	Green	<84	Golder 2018	
	Beige	340	Golder 2018	

Building Name(s)	Exterior Paint Colour	Lead Content (ppm)	Sampled By / Date	Current Condition of Paint (as of May 2018 site visit)
	Green	39,000	Golder 2018	poor condition. On the Nook and Cranny portion of the building, the beige paint (trim) was found to be in fair condition, while the green paint (siding) was observed to be in poor condition.
	Beige	490	Golder 2018	
Camp Craft	Brown	8,780	Terrapex 2015	Noted as having been repainted in the Terrapex 2016 report.
	Brown	7,000	Golder 2018	Camp Craft has been enclosed by pine boards, however the trim on the windows was sampled in May 2018 by Golder. The trim was observed to be in poor and flaking condition.
Will Scarlet Building	Blue	774	Terrapex 2015	Noted as having been repainted in the Terrapex 2016 report. External building materials were noted to be aluminum siding and wood. While sampling, it was determined the brown and cream paint were covering blue paint. Both the brown and cream were found to be in poor condition at the time of the May 2018 site visit.
	Brown	400	Golder 2018	
	Cream	<83	Golder 2018	
Friar Tuck	Brown	93.9	Terrapex 2015	Noted as having been repainted with latex paint in 2015 (Terrapex 2016). All paint was noted to be in poor and flaking condition at the time of the May 2018 site visit.
	Brown	130	Golder 2018	
	Cream	370	Golder 2018	
	White	<84	Golder 2018	
	Pink shading refers to a “Heritage” building listed by Markham Register of Property of Cultural Heritage Value or Interest.			

Note: The Terrapex 2016 report refers to the Terrapex Draft RAP submitted to Parks Canada in 2016.

In addition to the LBPs noted in Table 1, in 2015, Terrapex identified exterior paint on the Dance Studio (identified as Building K on Figure 2) containing a concentration of mercury in excess of 10 ppm, which is the current allowable limit for mercury in paint in accordance with the *Surface Coating Materials Regulation*. Since the mercury is bound within an inorganic material (the paint) and is not elemental in nature, the same precautionary measures for the abatement of lead-based paints can be utilized for the remediation of mercury-based paints. Any mercury or mercury-containing materials to be sent off-site for disposal would require that the Site be registered as a Hazardous Waste Generator with the Ontario Ministry of Environment and Climate Change (MOECC) prior to the transport and disposal of the mercury. Abatement of the Dance Studio is not included in the scope of work for this remediation project.

With regard to LBPs, four options have been identified regarding maintenance and/or remediation:

Replacement – This entails the complete removal of all substrates covered by LBPs and replacement with new materials. Please note this method may not be practical for all buildings associated with Camp Robin Hood.

Removal – This entails complete removal of LBPs from the substrates, typically accomplished by hand scraping, wet sanding and/or the application of chemical paint strippers or peeling agents followed by hand removal.

Enclosure – This entails the attachment of a rigid, durable barrier over all building components containing LBPs. Typical materials utilized include vinyl or aluminum siding, fibreboard, wood products and/or cementitious materials.

Encapsulation – This entails the application of a durable liquid coating or sealant over all building components containing LBPs.

If a building with exterior LBP was previously identified to have been enclosed or encapsulated, it is possible that no further work may be required if a non-lead-based encapsulant was applied over top of the LBP, if the enclosure/encapsulation is considered to be complete and in good condition, pending the approval of PCA.

The following table depicts the likely acceptable options for remediation of each of the aforementioned buildings. The contractor shall propose to PCA which of the acceptable options they wish to implement for each building, given consideration of the last reported condition of the LBPs, the heritage designation of the building, if so identified, and the current and potential future use of the building.

Table 2: Acceptable Remedial Options for LBP Remediation

Name of Building	Replacement	Removal	Enclosure	Encapsulation
Program Building	X	X		X
Lunch Barn	X	X	X	X
Camp Craft (Window Trim Only)[1]	X	X	X	
Mom’s Place/Nook and Cranny	X	X	X	X
TBS Centre (Trim Only)	X	X	X	
Will Scarlett Building	X	X	X	X

Name of Building	Replacement	Removal	Enclosure	Encapsulation
Friar Tuck Building	X	X	X	X
Maintenance Building	X	X	X	X
Baseball Office	Follow recommendations as described in Section 3.0 and included in the SCRIA			
Owners Residence	Follow recommendations as described in Section 3.0 and included in the SCRIA			

Notes:
1 Camp Craft exterior was enclosed by pine wood planks at time of May 2018 site visit and does not require remediation as part of this scope of work. The window trim at the time of the May 2018 site visit contained lead at >90ppm and requires remediation as part of this scope of work.
2 TBS Centre had newly installed powder based paint metal siding, which was not sampled at the time of the May 2018 site visit (as approved by Parks Canada) in order to preserve the integrity of the siding. The window trim at the time of the May 2018 site visit contained lead at >90ppm and requires remediation as part of this scope of work.
3 The Heritage Houses will be remediated based on the four documents noted in Section 3.0.

The approximately 60 cabins (and the exterior walls of Camp Craft) were noted to have been enclosed by cedar/pine wood planks at the time of the May 2018 site visit and, therefore, do not require LBP abatement/remediation at this time as part of this scope of work. On-going maintenance of the cabins is required to monitor the deterioration of the wood enclosures and it is assumed the site lease holder will be responsible for this on-going maintenance and monitoring.

4.1 Pre-Field Tasks

Prior to performing any lead work at the Camp Robin Hood Facility, the contractor must:

1. Prepare and submit to PCA a Health & Safety Plan that complies with Provincial and Federal labour codes/regulations/guidelines and outlines safe work procedures for protection of workers, authorized visitors and the environment when remediating the LBP.
    a. The Health and Safety Plan will include (but not be limited to) the following sections:
        i. Project Approach
        ii. Responsibilities of Various Workers
        iii. Hazard Identification and Risk Management
        iv. Hazard Controls
            1. Site Orientation and any required training
            2. Defined work areas
            3. Dust control measures
            4. Airborne sampling for lead for exposure monitoring
            5. PPE
            6. Decontamination Zone
            7. Worker Hygiene
            8. Heat Stress
            9. Waste Management
2. In coordination with PCA and/or the operators of CRH, propose the most optimal strategy for replacing or removing and/or securing the LBPs through either enclosing or encapsulation at each individual building.

Submit the proposed remedial action for lead paint removal at each individual building for review and approval by PCA.

3. Show proof of acceptance of the expected volume of lead-impacted waste at a MOECC-licensed waste disposal facility.
4. Show proof of good standing with the Ontario Workers Safety and Insurance Board (WSIB).
5. Submit acceptable proof that all workers participating in LBP activities have received training in the handling and hazards of lead that the Ontario MOL would consider acceptable.
6. Provide the name of one or more licensed MOECC-licensed waste haulers that the contractor intends to hire to transport the lead-impacted waste to the waste disposal facility and provide a copy of their Environmental Compliance Approval (ECA) to transport lead waste.
7. Prepare and file a Notice of Project with the Ontario Ministry of Labour.
8. Coordinate the schedule of activities with the operators of CRH.

4.2 Minimum Health & Safety Requirements for Workers in the Lead Work Areas

The critical exposure pathways for lead and human health are inhalation of lead containing dust emissions and ingestion of lead including lead adhered to particulate. The minimum personal protective equipment for workers working within lead work areas is:

- Disposable Tyvek-style particulate-barrier coveralls
- CASE-approved safety boots
- CSA-approved safety glasses or goggles
- NIOSH-approved half-mask air-purifying respirator with P100 HEPA filters*
- CSA-approved hard hat
- CSA-approved hand protection appropriate for tasks being performed
- CSA-approved hearing protection
- CSA-approved high visibility clothing
- Barricades, caution tape and signage indicating an airborne dust as per Ontario MOL *Guideline – Lead on Construction Projects*

**Respirator requirements assume Type 2a lead abatement precautions or lower, as dictated by the type of work to be performed, in accordance with the Ministry of Labour's Guideline – Lead on Construction Projects (April 2011).*

In addition, dust control measures must be implemented to ensure no lead-containing dust migrates outside of the designated lead work area as per the Ontario MOL *Guideline – Lead on Construction Projects.*

Eating, drinking and smoking will not be permitted within the work area at any time.

4.3 Lead Paint Remediation Work to be Done

To complete the LBP remediation work, the contractor must complete the following minimum tasks:

1) Mobilize to the site all equipment and supplies required to perform the lead abatement work.

2) Identify and cordon off all work areas using barrier tape and/or partitions, with clear signage warning of an airborne lead hazard within the work area, to prevent potential lead exposure to Site occupants. Any such barriers utilized must be maintained in good standing and condition by the contractor for the duration of the

lead work to be performed in any lead work area until the lead work within the work area has been deemed as sufficiently complete by PCA.

3) Personal protective equipment will be worn by the contractor’s personnel in the work zone in accordance with the Ministry of Labour’s Guideline – Lead on Construction Projects (April 2011). Personal protective equipment noted in Section 4.2 will be worn by all workers within the lead work areas at all times until lead work is deemed complete by the departmental representative.

4) Polyethylene drop sheets are to be placed below all areas where lead work is being performed, and secured in place to prevent being blown away or from creating trip hazards. When work is complete in the area above a drop sheet, the drop sheet shall be misted with water and rolled into itself to contain all lead waste generated by the work, and placed into an appropriate sealed container designated for lead waste.

5) If enclosure or encapsulation options are deemed appropriate for a structure and concurred by PCA, all delaminating and/or loose paint shall be removed by HEPA vacuuming, hand scraping, wet sanding and/or chemical stripping prior to commencement of sealant applications or enclosure construction.

6) If removal operations are considered appropriate for a structure and concurred by PCA, they shall be undertaken utilizing methods that reduce the amount of potential lead-containing dust generated by the work, including but not limited to:

   - Hand tools only unless equipped with effective HEPA-filtered dust collection at the point of disturbance;
   - No dry sweeping, sanding or scraping or the use of compressed air; and
   - Preference to wet operations (utilizing water while scraping/sanding, chemical stripping agents, etc.).

7) If removal or replacement operations are considered appropriate and concurred by PCA, it is assumed the site lease holder will be responsible for final exterior painting for aesthetics.

8) Lead abatement, including removal, will be deemed sufficiently complete by the departmental representative utilizing a combination of visual inspection to ensure total removal of previously-identified LBPs and representative bulk sampling of paints to confirm non-lead-containing paints are all that remain, at the discretion of the departmental representative and/or CPA. Encapsulation and enclosure operations will be deemed sufficiently complete by the departmental representative following a visual inspection of the effectiveness of the applied materials, as deemed appropriate by the departmental representative and/or CPA. PCA reserves the right to test the surficial soil surrounding the area that lead paint was removed from the exterior of a building (at the sole cost to the contractor). Should the soil results come back positive for a lead exceedance, any remedial activities required will be paid for by contractor.

9) Any lead abatement work to be done on the buildings which are listed by the Markham Register of Property of Cultural Heritage Value or Interest must follow all applicable municipal, provincial and federal requirements in effect pertaining to the heritage nature of the structures, generally indicated in Section 3.0. Any remedial option considered for these two buildings will need to be submitted in writing for review by Parks Canada prior to implementation of the remedial action.

5.0 LEAD IMPACTED SOIL REMEDIATION

Soil sampling and testing for metals around the exterior lead based paint has been completed by

- Genviar (2010) soil was sampled and tested around three buildings (Baseball Office, Program Office, Owner's Residence) and all had exceedances of lead in soil.
- DSC (2011) twelve additional buildings. The only one to have lead in exceedance of the federal guideline was the Photography Building/Coaches Corner.
- Terrapex (2015 & 2016). Assessed soil around the former location of the Castle (now demolished). No exceedances were found.

In May, 2018, Golder completed additional soil sampling and testing at these four areas with the objective of improving the resolution and delineation of the contaminated soil zones. The areas listed in the table below are based on all of the soils sampling and testing work done to date.

The outcome of the previous soil testing is that lead exceedances in soil have been identified in the vicinity of four buildings at CRH. The following table lists the locations of lead impacted soil and the areas and depths affected, based on the above-noted studies.

Table 3: Areas Requiring Lead Impacted Soil Remediation

Building Name	Surface Area of Impacted Soil (m^2)	Estimated Depth of Impacted Soil (m)	Estimated Volume of Impacted Soil (m^3)	Approximate tonnage (mT)
Baseball Office	40.5	0.20	8.10	16.2
Photography Building/ Coach's Corner	22.8	0.15	3.42	6.84
Owner's Residence	29.2	0.20	5.84	11.68
Program Building	13.7	0.20	2.74	5.48
Totals	**106.2 (m^2)**		**20.1 (m^3)**	**40.2 mT**

The area surrounding these four buildings that requires soil remediation is shown in Figure 2 to Figure 5.

5.1 Pre-Field Tasks

Prior to performing the soil remediation work, the contractor must:

1. Prepare and submit to PCA a Health & Safety Plan that complies with Provincial and Federal labour codes and outlines safe work procedures for its own staff when performing soil remediation, the Departmental Representative, and prevents any other personnel from hazards in the work zones.
    a. The Health and Safety Plan will include (but not be limited to) the following sections:
        i. Project Approach

   ii. Responsibilities of Various Workers
   iii. Hazard Identification and Risk Management
   iv. Hazard Controls
      1. Site Orientation and any required training
      2. Defined work areas
      3. Dust control measures
      4. Airborne sampling for lead for exposure monitoring
      5. PPE
      6. Decontamination Zone
      7. Worker Hygiene
      8. Heat Stress
      9. Waste Management
2. Show proof of acceptance of the expected volume of lead-impacted soil at a MOECC licensed waste disposal facility. Note a toxic characteristic leachate potential (TCLP) test from a composite soil sample from the four impacted areas is contained in Appendix B. The contractor may use that test result in obtaining costs and acceptance from appropriately licensed waste disposal facilities.
3. Provide the name of one or more licensed MOECC-licensed waste haulers that the contractor intends to hire to transport the lead-impacted soil to the waste disposal facility.
4. Prepare and file a Notice of Project with the Ontario Ministry of Labour.
5. Obtain underground utility clearances of all public and private utilities in all work areas.
6. Coordinate the schedule of activities with the operators of CRH.

5.2 Minimum Health & Safety Requirements for Workers in/around the Excavation

The critical exposure pathways for lead and human health are breathing of lead containing dust, and ingestion of lead and dermal contact. The minimum personal protective equipment for workers working near the lead impacted soil remediation zone is wearing and using:

- Disposable Tyvek-style particulate-barrier coveralls while working in proximity of the contaminated soil removal areas;
- CSA-approved safety boots;
- CSA-approved safety glasses or goggles;
- NIOSH-approved half-mask air-purifying respirator with P100 HEPA filters*
- CSA-approved hard hat;
- CSA-approved hand protection appropriate for tasks being performed;
- CSA-approved hearing protection;
- CSA-approved high visibility clothing;
- Erecting barricades, caution tape and signage indicating an airborne dust as per Ontario MOL *Guideline – Lead on Construction Projects.*

In addition, dust control measures for the soil must be prepared and available. These can consist of wetting or covering the exposed lead-impacted soil.

In addition, eating and drinking and smoking will not be permitted in proximity of the work area.

5.3 Soil Remediation Work to be Done

To complete the soil remediation work the contractor must complete the following tasks:

1) Mobilize appropriately sized excavation equipment to the site to complete the shallow soil excavations;

2) Excavate soil from each identified zone and temporarily store the soil in roll-off containers and then export to the receiving site. If roll-off containers with soil are stored overnight on-site they must be covered to prevent soil from becoming windblown.

3) Paved sidewalks and driveways that cross the remediation zones should not be excavated. The soil beneath them would not be affected by lead-based paint that has come off the buildings.

4) Allow departmental representative access to soil excavation areas to perform verification soil sampling at base and lateral extent of the excavations. Departmental representative will coordinate the testing of the verification soil samples at an accredited environmental laboratory at RUSH turn-around-time.

5) The departmental representative will also have a sampling QA/QC program consisting of a minimum of one duplicate sample per 10 verification samples. Duplicate samples will be given a "blind" sample ID and submitted along with the original samples.

6) Allow 48 hours or 2 working days for the departmental representative to provide confirmation that the remediation targets have been met.

7) Excavations will be deemed complete when the required verification samples are shown to have lead concentrations less than the remediation target. The required number of verification samples is based on MOECC guidance. There is no federal equivalent equivalence for verification sampling of an excavation.

Table 4: Minimum Number of Verification Soil Samples by Excavation Area

Area of Excavation (m^2)	Minimum Number of Floor Verification Samples Required	Minimum Number of Wall Verification Samples Required
< 25	2	2
>25 to 50	2	3
>50 to 100	3	3
>100 to 250	3	5

Source: Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario (MOE, 1996)

8) The final dimensions of each remedial excavation will be measured by the departmental representative and agreed upon with the contractor. The horizontal extents will be measured flat on the ground and the depth will be measured with respect to the adjacent ground surface in order to determine the volume of soil removed.

9) An itemized journal of field activities is to be kept by the contractor

10) Photographs of the field activities and each verification sampling location will be taken by the departmental representative.

11) The contractor must provide weight tickets for all of the contaminated soil from the disposal site for payment. Payment will be based on measured volume, not by weight.

12) Backfill and sod placement is not part of the Contractor's scope of work.

13) The leaseholder will

- Backfill the remediated excavations with clean new topsoil.
- Place sod on top of the new fill and roll it. The type of grass species in the sod will be as per the specifications.

14) In the event of accidental discovery of archeological resources, the protocol is defined in the SCRIA. If archaeological resources are discovered, the contractor shall cease all work and contact Parks Canada project manager immediately (who will contact PCTAR). Management of archaeological material must be done by Parks Canada.

6.0 PROJECT CLOSURE AND REPORTING

Upon completion of the tasks noted above by the contractor and departmental representative, Golder will prepare a remediation and abatement report outlining the work conducted along with any conclusions and recommendations for any future work. The report will include the following:

- A detailed description of the soil remediation and lead abatement work undertaken and the methodologies used.
- The analytical results and relevant information from the soil verification testing (to be provided by the departmental representative).
- The contractor's daily activities related to paint abatement and soil remediation including excavated soil handling and disposal.
- Site plans of the excavated soil areas.
- Site photographs.
- A conclusion with respect to soil remediation.

7.0 LIMITATIONS

This Remedial Action Plan was prepared in part from information compiled from previous studies undertaken at the Site by other consultants. It is for the use of Parks Canada and the successful bidding contractor for the work. No assurance is made regarding the accuracy and completeness of the data obtained from other parties. Golder disclaims responsibility for consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

In evaluating the previous information for the Site, Golder has relied in good faith on information provided by other consultants noted in part in this report. We assumed that the information provided is factual and accurate. We accept no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted.

Any use which a third party makes of this report, or any reliance on, or decisions to be made based on it, are the responsibilities of such third parties. Golder Associates Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

The services performed as described in this document were conducted in a manner consistent with the level of care and skill normally exercised by other members of the engineering and science professions currently practicing under similar conditions, subject to the time limits and financial and physical constraints applicable to the services.

Signature Page

Golder Associates Ltd.

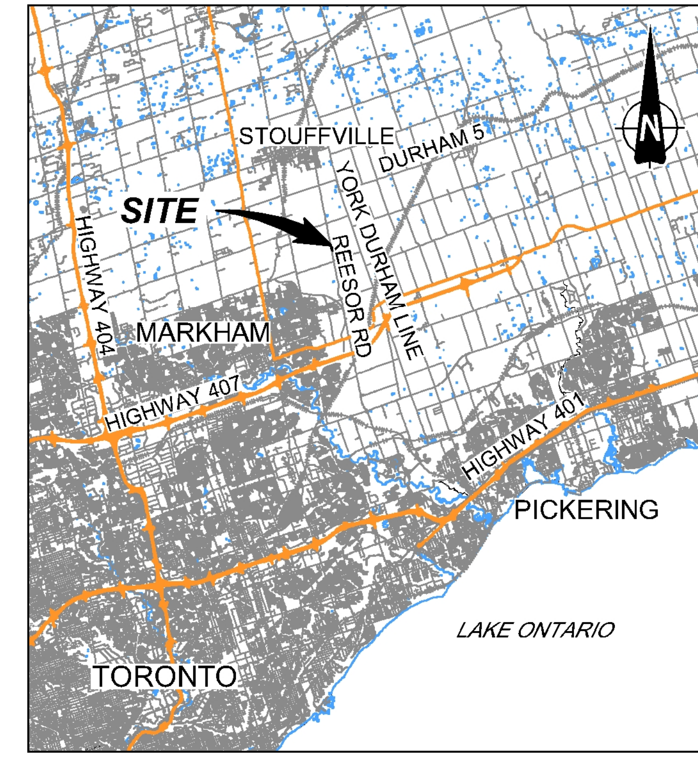
Jennifer Douglas, B.Sc.
EHS Project Manager

Don Plenderleith, P.Eng.
Principal

DHP/JD/CJR/ly

APPENDIX A

Figures



KEY PLAN

LEGEND

AREA OF PAINT SAMPLE EXCEEDING SURFACE COATING MATERIALS REGULATION FOR LEAD (>90 ppm)

REFERENCE

DRAWING BASED ON 2015 AERIAL IMAGERY PROVIDED BY PARKS CANADA; AND CANMAP STREETFILES V2008.4.

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

PROJECT

2018 SAMPLE LOCATIONS AND EXTENT OF LEAD IMPACT
CAMP ROBIN HOOD
ROUGE NATIONAL URBAN PARK

TITLE

LOCATION PLAN

GOLDER

PROJECT No.	1788320	FILE No.	1788320-3100-R01001
		SCALE	AS SHOWN
CADD	DCH	June 5/18	REV.
CHECK			

FIGURE 1

Drawing file: 1788320-3100-R01001.dwg Jun 05, 2018 - 1:19pm Original Format is Tabloid 279mm x 432mm Client: Parks Canada Agency

0 25mm

LEGEND

DELINEATION SAMPLE

APPROXIMATE BOREHOLE (DCS, DEC. 2010)

APPROXIMATE BOREHOLE (GENIVAR, DEC. 2009)

ANALYTICAL RESULTS - LEAD (0-0.15m bgs):

[60] MEASURED CONCENTRATION (µg/g)

ALL SOILS SAMPLES MEET SQG_{HH} STANDARDS

ONE OR MORE SOIL SAMPLES EXCEED SQG_{HH} STANDARDS

0.2m INFERRED EXTENT OF SOIL EXCEEDING SQG_{HH} (DEPTH SHOWN IN METRES)

NOTES: SQG_{HH} STANDARD FOR LEAD: 140 µg/g
DEEP SOIL SAMPLE NOT SHOWN (ALL MEET SQG_{HH} STANDARDS)

REFERENCES

DRAWING BASED ON 2015 AERIAL IMAGERY PROVIDED BY PARKS CANADA;

DECOMMISSIONING CONSULTING SERVICES LIMITED (DCS), PHASE II/III ESA, PROJECT No. 700743-020, DRAWING No. 700743-020-3, JANUARY 2011; AND

GENIVAR, PHASE I ENVIRONMENTAL SITE ASSESSMENT 0 FINAL, SITE FEATURES MAP, FILE No. MA-09-245-00-MA, MARCH 2010.

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

PROJECT

2018 SAMPLE LOCATIONS AND EXTENT OF LEAD IMPACT
CAMP ROBIN HOOD
ROUGE NATIONAL URBAN PARK

TITLE

EXTENT OF SOIL IMPACTS SQG_{HH}
BASEBALL OFFICE

GOLDER

PROJECT No.	1788320	FILE No.	1788320–3100–R01002
		SCALE	AS SHOWN
CADD	DCH	May 17/18	REV.
CHECK			

FIGURE 2

Client: Parks Canada Agency
Original Format is Tabloid 279mm x 432mm
25mm 0
Drawing file: 1788320–3100–R01002.dwg May 18, 2018 – 8:50am

LEGEND

DELINEATION SAMPLE

APPROXIMATE BOREHOLE (TERRAPEX, 2015)

ANALYTICAL RESULTS - LEAD (0-0.15m bgs):

[73] MEASURED CONCENTRATION (µg/g)

ALL SOILS SAMPLES MEET SQG_{HH} STANDARDS

ONE OR MORE SOIL SAMPLES EXCEED SQG_{HH} STANDARDS

0.15m INFERRED EXTENT OF SOIL EXCEEDING SQG_{HH} (DEPTH SHOWN IN METRES)

NOTES: SQG_{HH} STANDARD FOR LEAD: 140 µg/g

DEEP SOIL SAMPLE NOT SHOWN (ALL MEET SQG_{HH} STANDARDS)

REFERENCES

DRAWING BASED ON 2015 AERIAL IMAGERY PROVIDED BY PARKS CANADA; AND

TERRAPEX, SUPPLEMENTAL SITE INVESTIGATION AND LEAD PAINT SURVEY, GENERAL SITE LAYOUT AND SOIL SAMPLE CONDITIONS, PROJECT No. CT2131.98, FIGURE 3A, JULY 2015.

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

PROJECT

2018 SAMPLE LOCATIONS AND EXTENT OF LEAD IMPACT
CAMP ROBIN HOOD
ROUGE NATIONAL URBAN PARK

TITLE

EXTENT OF SOIL IMPACTS SQG_{HH}
PHOTOGRAPHY BUILDING/COACHES' CORNER

GOLDER

PROJECT No.	1788320	FILE No.	1788320-3100-R01002
		SCALE	AS SHOWN
CADD	DCH	May 17/18	REV.
CHECK			

FIGURE 3

Drawing file: 1788320-3100-R01002.dwg May 18, 2018 - 9:07am Original Format is Tabloid 279mm x 432mm Client: Parks Canada Agency

0 25mm

LEGEND

⊗ DELINEATION SAMPLE

APPROXIMATE BOREHOLE (DCS, DEC. 2010)

APPROXIMATE BOREHOLE (GENIVAR, DEC. 2009)

ANALYTICAL RESULTS - LEAD (0-0.15m bgs):

[96] MEASURED CONCENTRATION (µg/g)

ALL SOILS SAMPLES MEET SQG_{HH} STANDARDS

ONE OR MORE SOIL SAMPLES EXCEED SQG_{HH} STANDARDS

0.2m INFERRED EXTENT OF SOIL EXCEEDING SQG_{HH} (DEPTH SHOWN IN METRES)

NOTES: SQG_{HH} STANDARD FOR LEAD: 140 µg/g

DEEP SOIL SAMPLE NOT SHOWN (ALL MEET SQG_{HH} STANDARDS)

REFERENCES

DRAWING BASED ON 2015 AERIAL IMAGERY PROVIDED BY PARKS CANADA;

DECOMMISSIONING CONSULTING SERVICES LIMITED (DCS), PHASE II/III ESA, PROJECT No. 700743-020, DRAWING No. 700743-020-3, JANUARY 2011; AND

GENIVAR, PHASE I ENVIRONMENTAL SITE ASSESSMENT 0 FINAL, SITE FEATURES MAP, FILE No. MA-09-245-00-MA, MARCH 2010.

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

PROJECT

2018 SAMPLE LOCATIONS AND EXTENT OF LEAD IMPACT
CAMP ROBIN HOOD
ROUGE NATIONAL URBAN PARK

TITLE

EXTENT OF SOIL IMPACTS SQG_{HH}
OWNER'S RESIDENCE

GOLDER

PROJECT No.	1788320	FILE No.	1788320-3100-R01002
		SCALE	AS SHOWN	REV.
CADD	DCH	May 17/18	
CHECK			**FIGURE 4**

Drawing file: 1788320-3100-R01002.dwg May 18, 2018 - 8:52am Original Format is Tabloid 279mm x 432mm Client: Parks Canada Agency

LEGEND

DELINEATION SAMPLE

APPROXIMATE BOREHOLE (DCS, DEC. 2010)

APPROXIMATE BOREHOLE (GENIVAR, DEC. 2009)

ANALYTICAL RESULTS - LEAD (0-0.15m bgs):

[37] MEASURED CONCENTRATION (µg/g)

ALL SOILS SAMPLES MEET SQG_{HH} STANDARDS

ONE OR MORE SOIL SAMPLES EXCEED SQG_{HH} STANDARDS

0.2m INFERRED EXTENT OF SOIL EXCEEDING SQG_{HH} (DEPTH SHOWN IN METRES)

NOTES: SQG_{HH} STANDARD FOR LEAD: 140 µg/g

DEEP SOIL SAMPLE NOT SHOWN (ALL MEET SQG_{HH} STANDARDS)

REFERENCES

DRAWING BASED ON 2015 AERIAL IMAGERY PROVIDED BY PARKS CANADA;

DECOMMISSIONING CONSULTING SERVICES LIMITED (DCS), PHASE II/III ESA, PROJECT No. 700743-020, DRAWING No. 700743-020-3, JANUARY 2011; AND

GENIVAR, PHASE I ENVIRONMENTAL SITE ASSESSMENT 0 FINAL, SITE FEATURES MAP, FILE No. MA-09-245-00-MA, MARCH 2010.

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

PROJECT

2018 SAMPLE LOCATIONS AND EXTENT OF LEAD IMPACT
CAMP ROBIN HOOD
ROUGE NATIONAL URBAN PARK

TITLE

EXTENT OF SOIL IMPACTS SQG_{HH}
PROGRAM BUILDING

GOLDER

PROJECT No.	1788320	FILE No. 1788320-3100-R01002	
		SCALE AS SHOWN	REV.
CADD	DCH	May 17/18	
CHECK			

FIGURE 5

Client: Parks Canada Agency
Original Format is Tabloid 279mm x 432mm
25mm
0
Drawing file: 1788320-3100-R01002.dwg May 18, 2018 - 8:53am

Client: Parks Canada Agency

Original Format is Tabloid 279mm x 432mm

Aug 01, 2018 – 3:31pm

Drawing file: 1788320-P02002.dwg

LEGEND

LEAD BASED PAINT SURFACE AREA REQUIRING ABATEMENT USING PEEL AWAY LEAD PAINT REMOVAL SYSTEM

REFERENCES

DRAWING BASED ON 2015 AERIAL IMAGERY PROVIDED BY PARKS CANADA;

DECOMMISSIONING CONSULTING SERVICES LIMITED (DCS), PHASE II/III ESA, PROJECT No. 700743-020, DRAWING No. 700743-020-3, JANUARY 2011; AND

GENIVAR, PHASE I ENVIRONMENTAL SITE ASSESSMENT 0 FINAL, SITE FEATURES MAP, FILE No. MA-09-245-00-MA, MARCH 2010.

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

PROJECT

EXTENT OF SOIL IMPACTS – ADDITIONAL SAMPLE LOCATIONS
CAMP ROBIN HOOD
ROUGE NATIONAL URBAN PARK

TITLE

EXTENT OF LEAD BASED PAINT IMPACTS BASEBALL OFFICE

GOLDER

PROJECT No. 1788320		FILE No. 1788320-P02002	
		SCALE AS SHOWN	REV.
CADD	DH/AS	July 31/18	
CHECK			**FIGURE 6**

LEGEND

LEAD BASED PAINT SURFACE AREA REQUIRING ABATEMENT USING PEEL AWAY LEAD PAINT REMOVAL SYSTEM

REFERENCES

DRAWING BASED ON 2015 AERIAL IMAGERY PROVIDED BY PARKS CANADA;

DECOMMISSIONING CONSULTING SERVICES LIMITED (DCS), PHASE II/III ESA, PROJECT No. 700743-020, DRAWING No. 700743-020-3, JANUARY 2011; AND

GENIVAR, PHASE I ENVIRONMENTAL SITE ASSESSMENT 0 FINAL, SITE FEATURES MAP, FILE No. MA-09-245-00-MA, MARCH 2010.

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

PROJECT

EXTENT OF SOIL IMPACTS – ADDITIONAL SAMPLE LOCATIONS
CAMP ROBIN HOOD
ROUGE NATIONAL URBAN PARK

TITLE

**EXTENT OF LEAD BASED PAINT IMPACTS
OWNER'S RESIDENCE**

GOLDER

PROJECT No.	1788320	FILE No.	1788320–P02002
		SCALE	AS SHOWN
		REV.	
CADD	DH/AS	July 31/18	
CHECK			

FIGURE 7

Client: Parks Canada Agency
Original Format is Tabloid 279mm x 432mm
25mm 0
Aug 01, 2018 – 3:35pm
Drawing file: 1788320–P02002.dwg

APPENDIX B

TCLP Test Results

AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 18T337672

PROJECT: 1788320/3100

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Jennifer Douglas

SAMPLING SITE:Rouge national Urban Park, Markham

SAMPLED BY:Polly Chen

O. Reg. 558 Metals + Hg

DATE RECEIVED: 2018-05-10

DATE REPORTED: 2018-05-24

Parameter	Unit	G / S	RDL	COMP [BB-2, BB-6, OR5]
			SAMPLE TYPE:	Soil
			DATE SAMPLED:	2018-05-09
				9248517
Arsenic Leachate	mg/L	2.5	0.010	<0.010
Barium Leachate	mg/L	100	0.100	1.19
Boron Leachate	mg/L	500	0.050	0.106
Cadmium Leachate	mg/L	0.5	0.010	<0.010
Chromium Leachate	mg/L	5	0.010	0.011
Lead Leachate	mg/L	5	0.010	0.017
Mercury Leachate	mg/L	0.1	0.01	<0.01
Selenium Leachate	mg/L	1	0.010	<0.010
Silver Leachate	mg/L	5	0.010	<0.010
Uranium Leachate	mg/L	10	0.050	<0.050

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O. Reg. 558 - Schedule IV Leachate Quality Criteria
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By: Amanjot Bhela

APPENDIX C

Heritage House Resource Documents

Built Heritage Overview Assessment

Rouge NUP
Camp Robin Hood

Comments are provided by Mélisa Audet, Sr. Built Heritage Advisor / Conservation Architect, Golnaz Karimi, Built Heritage Officer, Parks Canada Agency and are based on the Standards and Guidelines for Conservation of Historic Places in Canada (second edition), and the Cultural Resource Management (CRM) Policy.

Date June 22nd, 2018

Project Camp Robin Hood Lead Remediation

Documents Reviewed

- Final CRH Lead Remediation Specifications, dated June 2018.

Built Heritage Recommendations

The last set of specifications received June 2018 was briefly reviewed by Built Heritage. Our previous provided comments were NOT implemented in the final specifications. Please refer back to our previous BHOA (April 2018) and the submitted SCRIA (May 2018) for our recommendations.

Parks Canada Agency IACHD - Built Heritage

Last Updated: June 22, 2018

Built Heritage Overview Assessment

Rouge NUP
Camp Robin Hood

Comments are provided by Golnaz Karimi, Built Heritage Officer, Parks Canada Agency and are based on the Statement of Heritage Values (where available), the Standards and Guidelines for Conservation of Historic Places in Canada (second edition), and the Cultural Resource Management (CRM) Policy.

Date April 24th, 2018

Project Camp Robin Hood Lead Remediation

Documents Reviewed

- Remedial Action Plan Lead Paint and Lead Impacted Soil Abatement Report, by Golder Associates Ltd., dated April 2018.
- Draft CRH Lead Remediation Specifications, dated April 2018.
- FHBRO evaluation #07-087, dated 2009.
- Review Scope of Work Camp Robin Hood - Environmental Remediation, Lead Paint, by Built Heritage, dated May 2017.

Project Overview

- The property is occupied with approximately 30 buildings, used for the summer day camp including two designated heritage residences, a barn, a main office building and approximately fifty day-use huts and structures used for various purposes.
- Lead impacted soil has been identified around four buildings including the above heritage houses, which requires soil remediation.
- Lead based paint (LBP) has been identified on 13 structures and requires abatement. 2 out of 13 are designated heritage houses: William Reesor House (10243 Reesor Rd), Reesor-Konselman House (10251 Reesor Road).
    - Summary of work for LBP:
        - Removal of lead-containing coatings with a chemical gel or paste and fibrous laminated cloth wrap on [walls] [ceilings] [as indicated on drawings].
        - Removal of lead-containing coatings or materials using a power tool with an effective dust collection system equipped with a HEPA filter on [walls] [ceilings] [as indicated on drawings].
        - Removal of lead-containing coatings or materials with non-powered hand tool, other than manual scraping and sanding on [walls] [ceilings] [as indicated on drawings]

Built Heritage Recommendations

The following items are suggested for the two heritage structures, the other structures on site are not included in this review.

- Encapsulating lead based paint using least-invasive abatement methods possible is recommended by the Standards and Guidelines. However, encapsulating existing paint coatings on the original wood siding would not be a practical method. The exterior paint is cracked and chipped in most areas, and encapsulating the existing lead paint may take many layers of new paint coatings. Also painting over decorative moldings would not be appropriate due to the sticky nature of the coating and the loss of the decorative wood detailing. Lastly the use of encapsulate coatings on exteriors of historic wooden buildings in moist or humid areas can have damaging long-term effects and it can damage the heritage wood siding if the moisture is trapped behind the coating.

- It is recommended to work with LBP consultants and plan abatement treatment for the two heritage houses with least amount of impact on the heritage fabric. The followings lead paint removal methods are low-impact and suggested for this site:
    - Wet sanding of loose paint to bonded paint.
    - Finish sanding using mechanical sanders with high-efficiency particulate air (HEPA) vacuum.
    - Low-heat stripping with heat guns.
    - Solvent-based non-toxic paint strippers.

- The paint removal techniques that are high-impact and may damage the heritage fabric are NOT recommended. The high-impact LBP treatments include:
    - Open flame burning or torching.
    - Heat guns operating at or above 1100 degrees Fahrenheit or charring the paint.
    - Abrasive blasting or sandblasting.
    - Power sanding that can abrade wood surfaces.
    - Dry sanding or dry scraping.
    - Caustic strippers that can raise wood grain.

- The existing wood siding and decorative wood elements such as the mouldings should be maintained and repaired as needed. The wood elements that are in poor condition and too deteriorated to withstand paint removal, should be replaced in kind. The project's draft specifications should include a section on heritage carpentry.
- Take paint samples of the existing paint colours. Repaint the wood surface with paint that matches the existing colours. It is recommended to use solvent-free and breathable paint system such as linseed oil.
- A test area/mock-up should be prepared for review and approval prior to applying the recommended measures overall.

Next steps

- Submit the following documents once completed for further review:
    - Specification for heritage carpentry
    - Final LPB specifications

Statement of Cultural Resource Impact Analysis

RECOMMENDATION to the FUS

We recommend that you approve the implementation of these mitigation measures.

X **I concur**

___ **I do not concur**

___ **for discussion**

Omar McDadi A/ FUS

Rouge National Urban Park Field Unit

For: Brent O'Rae, Environmental Program Advisor

Project Title: Metal Base Paint Abatement and Remediation Camp Robin Hood Facility, Rouge NUP

Project Number:

Rouge NUP

The purpose of the project is to conduct an abatement and remediation program at Camp Robin Hood (CRH), Rouge National Urban Park (site). The project will affect the grounds and two heritage buildings, listed on the *Markham Register of Property of Cultural Heritage Value or Interest*. This review focuses on the impact of the project on the two heritage buildings and on the archaeological resources of the site.

Date: June 1, 2018

Contact:

Lynda Villeneuve
CRM Advisor, Cultural Heritage Policies Branch, Indigenous Affairs and Cultural Heritage Directorate, Parks Canada, 30 Victoria Street (PC-02-E), 3-110, Gatineau QC J8X 0B3
lynda.villeneuve@pc.gc.ca/ Tel: 819-420-9210

The following aspects of the proposal respect or enhance the heritage value of the cultural resource for the following reasons:

The lead paint abatement will remove contaminant from the buildings and provide an opportunity to repair and re-paint the wood siding of the two heritage buildings, which will improve their condition.

The following aspects of the proposal could detrimentally impact on heritage significance. The reasons are explained as well as the mitigation measures to be taken to minimise impacts:

The lead paint removal could affect the heritage value of the buildings if the wood siding is removed or damaged. Options were reviewed in order to select the one that would have the least impact on the buildings.

The following solutions have been considered and discounted for the following reasons:

- **Replacement:** entails the complete removal and replacement of all substrates covered with LBP, including the wood siding. This option is not consistent with the *Standards and Guidelines (S&G)* as it entails the loss of character-defining materials.
- **Enclosure:** mechanical attachment of a rigid, durable barrier to the building components having LBP. Typical materials used are vinyl or aluminum siding, fibreboard, wood products and cementitious materials. This method would affect the exterior appearance of the buildings, and could potentially damage the wood siding underneath as well as the

decorative elements, depending on how the new siding would be attached to the façade.

- **Encapsulation:** application of a durable liquid coating or reinforced coating (lead barrier compound (LBC)) to prevent the contact of LBP dust/chips with the environment. Encapsulating lead based paint using least-invasive abatement methods possible is recommended by the S&G. However, it would not be a practical method. The exterior paint is cracked and chipped in most areas, and encapsulating the existing lead paint may take many layers of new paint coatings. Painting over decorative moldings would not be appropriate due to the sticky nature of the coating and the loss of the decorative wood detailing. Lastly the use of encapsulate coatings on exteriors of historic wooden buildings in moist or humid areas can have damaging long-term effects and it can damage the heritage wood siding if the moisture is trapped behind the coating.

- **Sanding and re-paint:** This option is also consistent with the S&G as it would have minimal impact on the wood siding of the building, but it will leave the lead on the building which will possibly pollute the soil again in the future.

Recommendations:

- Ensure the existing foundations and exterior are protected during the soil remediation work.

- The lead paint abatement method recommended is to strip down the paint on the siding using a peel-away lead paint removal system. The peel-away system will not expose the lead to its surrounding and the contractor doesn`t have to worry about protecting the building with a covered scaffolding. Also the peel-away system is chemically less intrusive than other paint strippers causing less damage to the integrity of the wood fabric.

- If this method is implemented, it is recommended to take samples of the paint before removal, to be able to document the different layers of paint on the building over time. Samples, including all the layers, should be taken at various locations on the buildings, including trims, and be large enough for analysis.

- The existing wood siding and decorative wood elements such as the mouldings should be maintained and repaired as needed. The wood elements that are in poor condition and too deteriorated to withstand paint removal, should be replaced in kind.

- The project's draft specifications should include sections on heritage carpentry and re-painting of all exterior finishes.

- Re-paint the wood surface with paint that matches the existing colours. It is recommended to use solvent-free and breathable paint system such as linseed oil.

- A test area/mock-up should be prepared for review and approval prior to applying the recommended measures overall.

- Submit the following documents once completed for further review:
  - o Specification for heritage carpentry
  - o Specification for re-painting exterior finishes
  - o Final LPB specifications

<u>Mitigation Measures for Archaeological Resources :</u>

As no significant archaeological resources were identified during the Archaeological Impact Assessment (AIA), no further archaeological assessments are required prior to soil removal. However, if features (e.g., structural remains and/or artifact concentrations) are encountered, excavation work should stop in this area, photographs should be taken, and the Parks Canada project manager should be informed. The project manager should then contact Parks Canada's Terrestrial Archaeology section for advice. An assessment of significance will determine what will be required to mitigate the chance find.

References:

Built Heritage Overview Assessment, Rouge NUP, Camp Robin Hood. Built Heritage Team, Parks Canada, April 2018.

Archaeological Overview Assessment Camp Robin Hood Contaminated Soil Remediation, Rouge NUP. Jenneth Curtis, Terrestrial Archaeology, Parks Canada, March 2018.

Archaeological Impact Assessment Camp Robin Hood Contaminated Soil Remediation, Rouge NUP. Jeffrey Dillane, Terrestrial Archaeology, Parks Canada, May 2018.

FHBRO Benchmark Report 07-087 William-Reesor House , 10243 Reesor Road – PIN 111, Reesor-Konzelman House, 10251 Reesor Road – PIN 111. Parks Canada, 2009.

Remedial Action Plan Lead Paint and Lead Impacted Soil Abatement Report. Golder Associates Ltd., April 2018.

Draft CRH Lead Remediation Specifications. April 2018.

Review Scope of Work Camp Robin Hood - Environmental Remediation, Lead Paint. Built Heritage, May 2017.

APPENDIX D

Historical Reports

FINAL
REPORT
TO
PUBLIC WORKS AND GOVERNMENT SERVICES CANADA
AND TRANSPORT CANADA
PHASE II/III
ENVIRONMENTAL SITE ASSESSMENT

PWGSC PROJECT NO. R.022117.003

PINS 614110, PIN 614111 AND 614112
AT THE PICKERING LAND SITE (PLS)
(10243 AND 10251 REESOR ROAD
MARKHAM, ONTARIO)

Prepared by:
DECOMMISSIONING CONSULTING SERVICES LIMITED
121 Granton Drive, Unit 11
Richmond Hill, Ontario L4B 3N4
CANADA

Tel:	(905) 882-5984
Fax:	(905) 882-8962
E-Mail:	engineers@dcsltd.ca
Web Page:	www.dcsltd.ca

March 2011

700743-020

DCS

EXECUTIVE SUMMARY

Decommissioning Consulting Services Limited (DCS) was retained by Public Works and Government Services Canada (PWGSC) on behalf of Transport Canada (TC) to complete a Phase II/III Environmental Site Assessment (ESA) at the TC property 10243 and 10251 Reesor Road (the "site") located in Markham, Ontario, identified as Property Identification Numbers (PIN) 614110, 6144111 and 614112.

The purpose of the investigation was to delineate the extent of metals soil contamination (antimony, arsenic, barium, copper, lead and zinc) identified during an Enhanced Phase I ESA completed at the site in by Genivar Consultants L.P. (GENIVAR) in a report entitled *Enhanced Phase I Environmental Site Assessment – Final, Pickering lands Site PIN614110, 614111 and 614112, 10243 and 10251 Reesor Road, Markham, ON*, dated March 2010. The work was completed in accordance with the Terms of Reference (ToR) document for Phase II/III ESAs, dated 20 August 2010, supplied by PWGSC. The Phase II/III ESA was completed in accordance with CSA Z769-00 and applicable regulations and guidelines.

The site is located on the east side of Reesor Road, north of the northeast corner of Reesor Road and Major Mackenzie Drive. Access to the site is by Reesor Road to the west of the site. The site is a rectangular shaped lot comprising an area of approximately 30 ha. The property is designated for agricultural and rural residential use and is occupied by a residence and for commercial purposes by Camp Robin Hood, a children's' summer camp facility.

An Enhanced Phase I ESA previously performed by GENIVAR (report dated March 2010) identified the presence of shallow metals contamination in the vicinity of three site structures: the Baseball Office, the Owner's Residence (labelled "southernmost house" in the GENIVAR report), and the Program Building. The source of the metals contamination was not confirmed, however, it was suspected to be due to the lead-based paints on the exterior surfaces of the structures that have flaked or leached off as a result of normal weathering. The limits of the metals contamination were not delineated or estimated during the referred Enhanced Phase I ESA.

The findings of the GENIVAR Enhanced Phase I ESA indicated that additional sampling would be required to determine the extent of the impacts and consider remedial measures.

The DCS Phase II/III ESA field program consisted of drilling 31 boreholes around the three target structures (10 boreholes for each of the Baseball Office and the Owner's Residence and 11 boreholes for the Program Building). Representative soil samples were submitted for laboratory chemical analysis of metals contaminants. Paint samples were also collected from the target structures, where the exterior paint applications were observed to be in poor condition (i.e., flaking or weathered) and were submitted for laboratory analysis for lead. It is noted that the colours of the paint on the buildings sampled by DCS did not necessarily represent the colours of paint samples collected in earlier studies.

Results of the laboratory soil analysis were primarily compared with the Canadian Council for Ministers of the Environment (CCME) *Canadian Environmental Quality Guidelines, Chapter 7 - Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health* (CCME, 1999, as updated to 2010) soil quality guidelines (SQGs) for residential/parkland land use.

Results of the laboratory soil analysis were also compared with the pending 2009 Table 2 (i.e., full-depth, potable) and Table 8, soil and groundwater site condition standards (SCSs), promulgated under Ontario Regulation 511/09 of the Province of Ontario *"Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act"*, dated July, 2009 (the "Standards"), as administered by the Ontario Ministry of the Environment (MOE), for reference purposes only.

The field work for this investigation was completed on 22 December 2010.

Based on the results of the Phase II/III ESA field work and laboratory testing, the following conclusions were drawn for each contaminated area around the target structures.

For the Baseball Office, the soil samples recovered from the areas to the south and east of the structure reported concentrations of lead (200 to 260 ug/g) and zinc (215 to 245 ug/g) that exceeded the CCME SQGs for residential/parkland property for lead (140 ug/g) and zinc (200 ug/g). Also for this area, a soil sample recovered south of the structure reported a concentration of copper (330 ug/g) that exceeded the applicable CCME SQG of 63 ug/g.

Soil samples recovered from the area to the north and south of the Owner’s Residence structure reported concentrations of zinc (250 to 430 ug/g) that exceeded CCME SQG of 200 ug/g. Additionally, for this area, soil samples recovered south of the structure (in the garden area) reported concentrations of antimony (8.9 to 16 ug/g) that exceeded the MOE 2009 Table 2 SCS of 7.5 ug/g. A concentration of arsenic at 16 ug/g was also reported in a soil sample collected south of the structure that exceeded the CCME SQG of 12 ug/g.

Soil samples recovered from the area south and east of the Program Building structure reported concentrations of zinc (210 to 510 ug/g) that exceeded the CCME SQG of 200 ug/g. Reported concentrations of selenium (1.1 to 4.2 ug/g) in the area south of the structure exceeded the CCME SQG of 1 ug/g.

Some of the concentrations mentioned above were obtained by averaging the concentration of a sample and its corresponding blind duplicate.

The revised limits of the metals contamination at the three identified contaminated areas within the site (collectively labelled CS 614110/111/112-1) were partially delineated during this project and are inferred as follows:

- For the contaminated area around the Baseball Office, the inferred extent of contamination is located south and east of the Baseball Office (estimated area of 58.5 m^2) to an inferred average depth of 0.15 m, resulting in a total volume of 9 m^3 (approximately 17.5 tonnes);

- For the contaminated area around the Owner's Residence, the inferred extent of contamination is found to the south and north of the building. The estimated area of 115.8 m^2 south of the building and inferred (average) depth of 0.15 m gives a volume of 17.4 m^3; and an estimated area of 35.2 m^2 north of the building with an inferred depth of 0.15 m results in a volume of 5.3 m^3, adding the volume of the two affected areas there is a total of 22.7 m^3 (approximately 45 tonnes) of metals contaminated soil.

- For the contaminated area around the Program Building, the inferred extent of contamination is found to the south and east of the building. Based on the estimated area of 33 m^2 to the east of the building and inferred (average) depth of 0.15 m (5 m^3) and an estimated area of 65 m^2 south of the building and an inferred (average) depth of 1.0 m (65 m^3), a total volume of 70 m^3, resulting in approximately 140 tonnes of metals contaminated soil is estimated.

A supplemental Phase III ESA is recommended to refine the estimated volume.

A CCME National Classification System for Contaminated Site (NCSCS) score of 57.6 was calculated for the site. This corresponds to a Class 2 – Medium Priority for Action classification.

The laboratory analysis found that the weathered exterior paints on the three structures, in the three contaminated areas, have a lead content exceeding the 2005 (as amended to 2010) federal Canadian *Surface Coating Materials Regulations,* under the *Hazardous Products Act* value that restricts lead content to 90 mg/kg (0.009% by weight or 90 ppm) for surface coating materials (e.g., paints) used on artefacts (e.g., furniture, toys, etc.) in or around a residence or other premises (e.g., a public park) attended by children or pregnant women. This value does not apply specifically to lead in existing paint on buildings/structures, but rather it limits lead content in new coatings on the artefacts noted above.

The exterior blue-coloured paint retrieved from the south west corner of the Baseball Office exhibited a lead content of 3.1%. The exterior blue-coloured paint recovered from the north west corner of the Owner's Residence exhibited a content of 2.6%. The exterior brown-colored paint retrieved from the south east corner of the Program Building exhibited a lead content of 0.13%. Exterior paint applications for the three sites are therefore considered "lead-based". Painting contractors should be advised of the presence of lead, if any, in the existing coatings at the site before commencing work so that appropriate personal protective equipment can be provided and work area isolation can be implemented. During any future demolition activity, special precautionary measures should be adopted on a case-by-case basis depending on the concentration of lead found in a particular application, the extent and nature of the work, etc. Such measures could include, for example, work area containment, dust suppression, worker and equipment decontamination practices, the use of personal protective equipment, etc. The detection of elevated concentration of lead in the paint on the structures supports the inference presented by GENIVAR that the source of the metals soil contamination was due to the lead-based paints on the exterior surfaces that have flaked or leached off as a result of normal weathering.

Pre-Remediation Considerations

As indicated above, the source of the metals contamination in soil was not confirmed but may be due to the lead-based paints on the exterior surfaces of the house that have flaked in soil or leached off as a result of normal weathering. If it is assumed that the metals contamination in soil would continue from the presence of the lead-based paint on the exterior walls of the structures, the paint should be stabilized by scraping and repainting or capped with aluminum or plywood to eliminate the potential for site recontamination. In advance of any site remediation/risk management, sampling of all remaining paint applications on the exterior of the structures should be undertaken and if determined to be lead-based, that these painted surfaces should also be stabilized by scraping and repainting.

As the metals contamination exhibited at CS 614110/111/112-1 has not been fully delineated at this time, a supplementary drilling program (i.e., supplementary Phase III ESA) is recommended in advance of any site remediation/risk management. The cost to complete a supplementary Phase III ESA at CS 614110/111/112-1 is estimated at $32,900 + HST (exclusive of PWGSC management fees).

Remediation Options

To address the metals contamination identified at CS 614110/111/112-1, two remediation options were considered:

A) Risk Management; or,

B) Excavation and Disposal

Option A - Risk Management

The exhibited metals soils exceedances are based on comparison of the chemical data with environmental criteria developed with both environmental and human health exposure risks. As the sites include a tenanted residence and the commercial operation of Camp Robin Hood, human receptors pose an exposure risk to the metals contaminated soils. Therefore, a Risk Management Plan would be a viable option for CS 614110/111/112-1. The Risk Management Plan would include a Screening Level Risk Assessment (SLRA) to assess the risks of the metals impacts to human and ecological receptors (i.e., the existing flora and fauna inhabiting the site) and to ultimately confirm suitability of the risk-based alternative to CS 614110/111/112-1. The contingent liability cost for option (A) *Risk Management* is estimated to range between $89,570 and $135,070.

Option B - Excavation and Disposal

Environmental remediation by excavation and disposal would consist of source removal of all metals contaminated soils from the site then replacement with clean fill (i.e., topsoil). This work would begin by mobilizing light excavation equipment to the site. The equipment would be selected to minimize damage to the grassed areas surrounding the remediation area. The contaminated soil would be excavated directly into trucks for disposal to a land-based landfill where the material is consistent with the landfill license. The site remediation activities would not affect tenants. Full-time monitoring by qualified environmental consulting field staff would be performed during the remediation activities. The remediation area would be restored with the placement of topsoil, finished with roll-sod. The indicative liability cost for option (B) *Excavation and Disposal* is estimated at $153,174.

Based on an evaluation of the environmental remediation and the risk assessment options, the Excavation and Disposal option (B) would be the preferred approach because it removes the contaminants from the site for a similar cost to the Risk Management option.

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LIST OF DRAWINGS **APPENDIX A**

1.0 INTRODUCTION

Decommissioning Consulting Services Limited (DCS) was retained by Public Works and Government Services Canada (PWGSC) on behalf of Transport Canada (TC) to conduct a Phase II/III Environmental Site Assessment (ESA) at the TC property 10243 and 10251 Reesor Road (the "site") located in Markham, Ontario, identified as Property Identification Numbers (PINs) 614110, 614111 and 614112. The work was performed in accordance with the PWGSC Terms of Reference (ToR) document (issued 20 August 2010) for Project Number R.022117.003 and the DCS proposal dated 10 November 2010.

The purpose of the investigation was to delineate the extent of shallow antimony, arsenic, barium, copper, lead and zinc soil contamination identified during an Enhanced Phase I ESA previously completed on the site by Genivar Consultants L.P. (GENIVAR) in March 2010. Antimony was not noted by GENIVAR as exceeding the applicable environmental soil quality guidelines and standards applied to this work, however a review of the report by DCS identified this exceedance.

The site is part of the "Pickering Lands Site" (PLS) which comprises a 7,530 ha parcel of land expropriated by the Government of Canada in 1972 to form a second international airport for the Greater Toronto Area. Properties within the PLS are currently vacant or are leased for agricultural, residential or commercial purposes.

1.1 SCOPE OF WORK

The scope of work for the Phase II/III ESA included:

i) preparation of a general Health and Safety Plan, common to other site assessments within the portfolio of sites as described in our proposal;

ii) a review of any previous environmental reporting concerning the site;

iii) screening of analytical data obtained during the GENIVAR 2010 Enhanced Phase I ESA against the pending Province of Ontario Site Condition Standards (SCSs) issued by the Ontario Ministry of the Environment (MOE) on 27 July 2009;

iv) arranging for and completing subsurface utility locates for the areas of investigation prior to the initiation of field activities;

v) advancing boreholes at 31 locations to a maximum depth of 0.75 m;

vi) collection and field examination of soil samples recovered during the advancement of the boreholes with selected samples submitted for laboratory chemical analysis of contaminants of concern (COCs) as identified in the previous environmental reporting including metals;

vii) review of the soil analytical data reported in the current investigation against the applicable federal guidelines and pending province of Ontario Site Conditions Standards (SCSs) issued by the Ontario Ministry of the Environment on 27 July 2009 (refer to Section 2.4.1 for Environmental Evaluation Guidelines Selection);

viii) submission of a selected soil sample for grain size analysis;

ix) collection of three samples of paint applications in poor condition (e.g., flaking, dusting, etc.) and submission for laboratory chemical analysis of lead in paint and comparison of these results against the Canadian *Surface Coating Materials Regulation* (amended 27 February 2010);

x) review and application of data from the Phase II/III ESA and the previous environmental reporting for updating of the Canadian Council of Ministers of the Environment (CCME) National Classification System for Contaminated Site (NCSCS) scoring for the site;

xi) prepare a Remedial Action Plan/Risk Management Plan (RAP/RMP) including site cleanup and/or risk management alternatives together with cost estimates; and,

xii) prepare a Phase II/III ESA report summarizing the findings of the investigation.

The work was completed in accordance with the Terms of Reference (ToR) document for Phase II/III ESAs, dated 20 August 2010, supplied by PWGSC and the Canadian Standards Association (CSA) document CSA Z769-00 that outlines general requirements for Phase II ESAs.

1.2 SITE LOCATION

The location of the site is shown in Figure 1 – Key Plan. The site is located on the east side of Reesor Road, north of the northeast corner of Reesor Road and Major Mackenzie Drive. Access to the site is by Reesor Road to the west of the site. The site is a rectangular-shaped lot comprising an area of approximately 30 ha. The centroid of the site has Universal Transverse Mercator (UTM) coordinates 643200 mE and 4865278 mN(1). The centroids of the three investigated contaminated areas, are listed below:

- Baseball Office: 642844 mE, 4865240 Mn(1)
- Owner's Residence: 642878 mE, 4865178 mN(1)
- Program Building: 642910 mE, 4865071 mN(1)

1.3 SITE SETTING

The site is legally described as Part of Lot 22, Concession 10, Township of Markham, York Region, is rectangular in shape and occupies an area of approximately 30 ha. The site is designated for agricultural and rural residential use and is occupied by tenanted residences (PIN 614112) and for commercial purposes by Camp Robin Hood, a children's summer camp facility.

All structures on the site are located on the western third portion of the site. The balance of the site is occupied by an agricultural field and wooded area. Access to the property is by Reesor Road to the west of the site. Two residential buildings, a barn, wooden cabins, portables, several small wooden structures, three swimming pools, and a natural (i.e. not man-made) pond used for canoeing and sport fields are all located on the western third of the site. The main structures include the Owner's Residence, with a footprint of approximately 180 m^2; the Baseball Office (70 m^2); the Program Building (77 m^2); a large barn (600 m^2); and other permanent and portable structures of different sizes.

The site is bounded by agricultural fields to the north, east and south and Reesor Road to the west, with agricultural lands to the west across Reesor Road.

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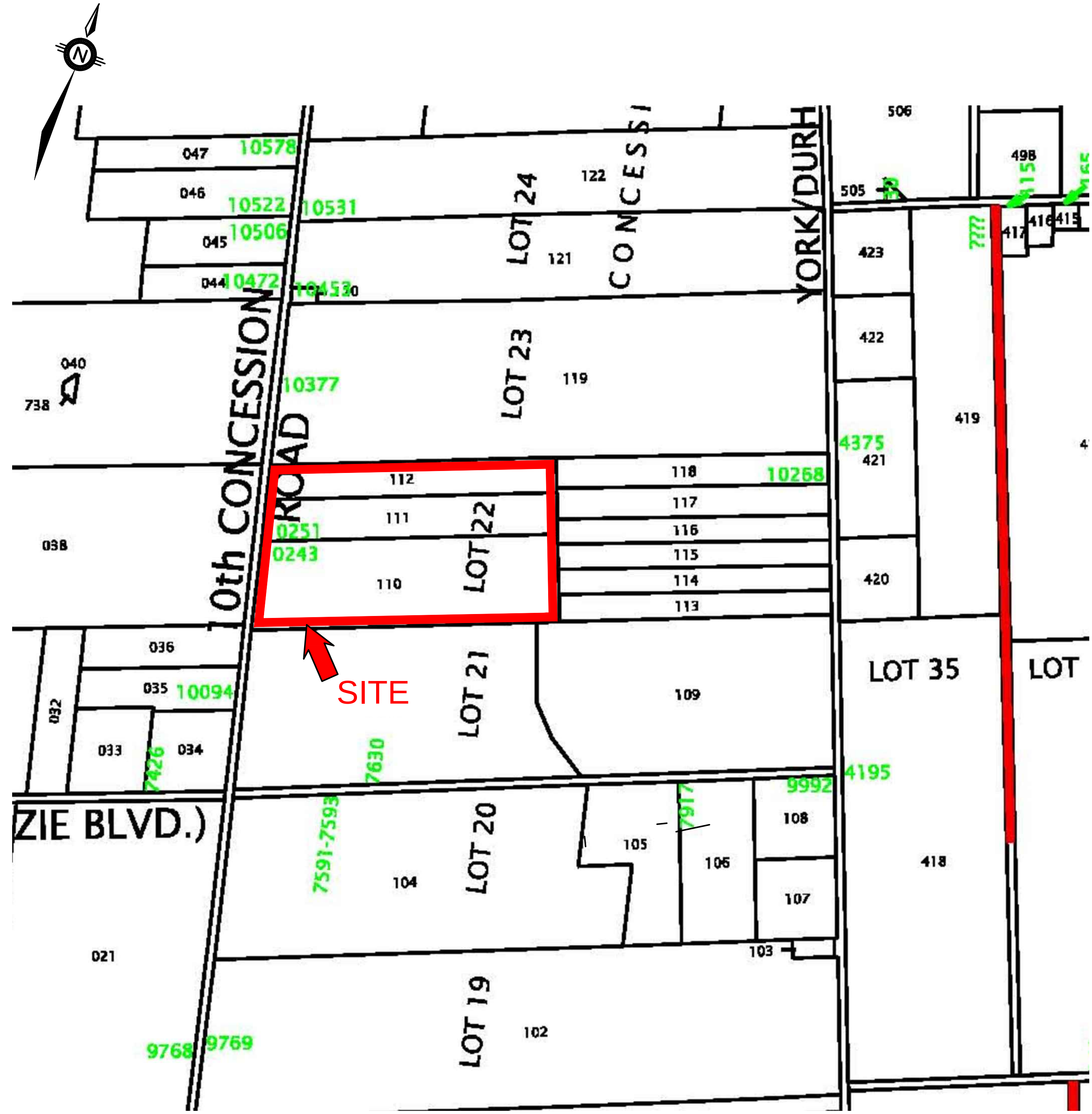
(1) Geo-referenced from the internet-based Google Earth GIS aerial imagery and mapping application (NAD 83, Zone 17T).



REFERENCE

1. Pickering Lands Site Emergency Response Numbers Plan, PWGSC Real Property Services and Transport Canada

DCS

DECOMMISSIONING CONSULTING SERVICES LIMITED

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

PHASE II/ III ESA

PIN 614110, PIN 6144111 AND 614112
10242 & 10251 REESOR ROAD, PICKERING, ONTARIO

KEY PLAN

Drawn By: S.D.T	Approved By: R.R	Project No: 700743-020
Date: FEB 2011	Scale: N.T.S	Drawing No: FIGURE 1

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A Site Plan (Drawing 700743-020-1) is located in Appendix A.

1.4 PREVIOUS REPORTING

An Enhanced Phase I ESA was previously completed by GENIVAR for the site in March 2010. Findings of the previous GENIVAR investigation are contained in the report to PWGSC entitled *"Enhanced Phase I Environmental Site Assessment - Final Pickering Lands Site PIN 614110, 614111 and 614112 – 10243 and 10251 Reesor Road, Markham Ontario"*, dated March 2010.

No other information from previous environmental assessments, was made available for DCS' review for this Phase II/III ESA.

Key findings of the previous GENIVAR investigation are listed in Section 1.4.1 below. The information presented below should be considered to constitute a summary review only and is intended to highlight potential environmental concerns and issues that may warrant further investigation. The full text of the original report should be consulted for details regarding the specific work carried out and observed conditions on-site.

1.4.1 Enhanced Phase I ESA, GENIVAR, March 2010 Report

At the time of the GENIVAR Enhanced Phase I ESA, the majority of the site was comprised of open agricultural land with the western third of the site occupied by permanent and portable structures and sport facilities. It should be noted that the site conditions have not changed significantly since the March 2010 Enhanced Phase I ESA by GENIVAR.

The Enhanced Phase I ESA scope of work included the recovery of ten surficial soil samples, collected using a trowel, to a depth of 0.2 m. Soil analyses consisted of metals/inorganics and PAHs. The GENIVAR report also referenced tank surveys, well surveys and remediation reports.

The GENIVAR report included reference to and a review of the following three previous assessments, which are relevant to this report:

1. An environmental evaluation by Shaheen and Peaker Limited (Shaheen and Peaker) entitled *"Environmental Evaluation, Pickering Land Site, Phase 1D,*

Commercial Properties PIN 614110/111.1”prepared by Shaheen and Peaker, dated March 1997.

2. An environmental evaluation by Terraprobe “*Environmental Evaluation, Pickering Land Site, Phase 1D, PIN 614111.2*”, prepared by Terraprobe, dated March 1997.

3. An asbestos and lead survey by Pinchin Environmental Ltd (Pinchin) entitled “*Pickering Airport Lands Asbestos and Lead Evaluation of PIN 614110*”, prepared by Pinchin Environmental, dated August 1997.

DCS was not provided with copies of these previous reports for review and incorporation into this report.

Based on a review of the GENIVAR report, the following salient points were noted:

1. GENIVAR identified from the reviewed reports available to them, the following potential concerns at the site: minor staining associated with the house AST, investigate possible contamination to the site soils as a result of co-mingling of elevated exterior lead-based paint and refuse along access road to PIN 614111.2.

2. GENIVAR collected ten soil samples to a depth of 0.2 m. Summary tables on the results are available in the body of the report

3. Soil samples taken on three fire pits and west of the archery hut were reported to exceed in their concentration or method of detection for naphthalene (Limit of detection of 0.03 ug/g compared with a CCME soil quality guideline for the protection of freshwater life, SQG_{FL} of 0.013 ug/g). This limit is applicable if there is a concern to affect nearby water bodies, which was not the case for the site.

4. Several soil samples collected by GENIVAR exceeded Federal and Provincial guidelines for various metals and inorganics. A soil sample, SS-112.2-1, taken nearby the Baseball Office exceeded the limit for lead; sample SS-110-8, taken immediately adjacent to the Owner’s Residence, showed contamination due to antimony, barium, lead and zinc; while the soil sample labelled SS-110-5,

collected nearby the Program Building, exceeded the limit for arsenic, copper, lead, zinc, electrical conductivity and chloride.

5. GENIVAR compared the soil sample SS-110-5 against Ontario Ministry of the Environment (MOE) Table 1 Standards, All other types of property use, in addition to the CCME standards, due to its proximity to a natural body of water: a pond used for canoeing by the camp.

6. pH measured in the collected soil samples were in the range of 7.17 to 8.13.

7. The lateral and vertical extent of the metals contamination was not delineated by GENIVAR.

8. Soil analytical results were compared with the 2007 CCME Soil Quality Guidelines (SQGs) for agricultural land use, coarse textured soils and the current (i.e., 2004) MOE environmental Table 2 (i.e., full-depth, potable) Standards for agricultural land-use for coarse textured soils.

9. Not enough data existed to support the preparation of a Remedial Action Plan.

In brief, Geniver made the following conclusions and recommendations:

1. "A total of ten soil samples were collected from the site. Six of the soil samples were taken from areas where previous exterior paint samples indicated the presence of lead-based paints, three samples taken from soil under the ash of a fire pit and one sample was taken from a soil stockpile located on the property. These samples were all analyzed for metals and inorganics and/or poly aromatic hydrocarbons (PAH). Soil sample SS-110-3 revealed arsenic (276 ug/g), boron (24.5 ug/g), total chromium (234 ug/g), copper (479 ug/g), zinc (641 ug/g) and electrical conductivity (0.839 mS-cm), soil sample SS-110-5 revealed arsenic (30.9 ug/g), copper (69 ug/g), lead (175 ug/g), zinc (430 ug/g) and electrical conductivity (2.67 mS-cm), soil sample SS-110-8 revealed barium (1290 ug/g), lead (437 ug/g) and zinc (1670 ug/g) exceeding the applicable Federal Guidelines/Provincial Standards. Soil sample SS-112.2-1 revealed a lead exceedance of 295 ug/g which is greater than the applicable CCME guideline

value of 70 ug/g and MOE standard of 200 ug/g. Exceedances were not observed in samples SS-110-1, SS-110-4, SS-110-7, SS-110-8 or SS-112.2-2."

2. In relation to the metals contamination detected by the Baseball Office: "Complete additional soil sampling to determine the extent of the impacts. The sampling program should include as many as five soil samples in the area of the north house as well as a background sample in an area not anticipated to be impacted. The soils should also be characterized for waste disposal purposes. Options for going forward should be evaluated (e.g. remedial options or risk assessment)."

3. In relation to the metals contamination detected by the Owner's Residence: "Complete additional soil sampling to determine the extent of the impacts. The sampling program should include as many as five soil samples in the area of the southwest corner of the southernmost house as well as a background sample in an area not anticipated to be impacted. The soils should also be characterized for waste disposal purposes. Options for going forward should be evaluated (e.g. remedial options or risk assessment)."

4. In relation to the metals contamination detected by the Program Building: "Complete additional soil sampling to determine the extent of the impacts. The sampling program should include as many as five soil samples in the area of the southwest corner of the Program Building within the animal pen as well as a background sample in an area not anticipated to be impacted. The soils should also be characterized for waste disposal purposes. Options for going forward should be evaluated (e.g. remedial options or risk assessment)."

5. "Although there is no Federal Guidelines or Provincial Standard for chlorine in soil, it was noted that the chloride concentration near the pond (SS-110-5) was significantly high (1420 ug/g) compared to other samples analyzed (5.6 – 25.5 ug/g)"

6. "The site is currently supplied with drinking water via two drilled wells; one located to the northwest of the barn and the second located to the north of the pond. The water is treated using a combination of UV, chlorine injection and

> filtration. The water supplying the site is monitored and tested on a weekly basis. A third unused well is located to the north of the Health Centre”

The analytical data obtained reported in the 2010 Enhanced Phase I ESA were re-screened against the pending Province of Ontario Site Condition Standards (SCSs) issued by the MOE in July 2009. These pending SCSs will take effect on July 1, 2011. As indicated above, soil exceedances to the current (i.e., 2004) MOE SCSs were reported in the GENIVAR 2010 Enhanced Phase I ESA report. A new exceedance to the pending 2009 MOE SCSs was exhibited in the samples recovered during the 2010 Enhance Phase I ESA comprising cadmium at GENIVAR soil sample SS-110-8 with a concentration of 1.7 ug/g vs. the MOE Table 2 SCSs of 1.2 ug/g. It was also noted that for sample SS-110-8 an exceedance for antimony was missed in the GENIVAR report, measuring 74.4 ug/g against a MOE Table 2 SCSs of 13 or 7.5 ug/g (MOE current 2004 and proposed 2009). Data from the 2010 Enhanced Phase I ESA is reproduced in the data tables in Section 2.5.1 – Soil Analyses.

1.5 HEALTH AND SAFETY PLAN

Before field work commenced, DCS prepared a general Health and Safety Plan dated 26 November 2010 common to other site assessments within the portfolio of sites as described in our proposal. A copy of the Health and Safety Plan was maintained on site during the course of field work.

Appropriate components of the Health and Safety plan were adopted from the DCS corporate Health and Safety Manual. All field workers were provided with a copy of the Health and Safety Plan and were instructed on the protocols of the plan and the proper use of personal protective equipment. Worker health and safety standards were assured by following stringent safety precautions in accordance with the applicable sections specified under the Canada Labour Code and the Canada Health and Safety Act. Potential hazards specific to this project included: cold weather, icy ground and hazards commonly associated with powered field sampling equipment (i.e., noise, heavy tools, etc.) used during the field work component of this project.

2.0 PHASE II/III ENVIRONMENTAL SITE ASSESSMENT

A Phase II/III ESA was completed at the site. The extent and limitations of the investigation are provided below. A Phase II/III ESA, as qualified by PWGSC, generally consists of obtaining soil samples to delineate areas that have been impacted as previously documented by a Phase II ESA (or a Phase I/II ESA) to supplement the findings that are typically identified through a Phase II ESA. The samples are collected using approved methodologies and submitted under a Chain of Custody to a Canadian Association for Laboratory Accreditation Inc. (CALA) certified laboratory. The results are reported together with a description of the field procedures and a discussion of the results.

The Phase II/III ESA program investigated the extent of the metals contamination in soil identified in the GENIVAR 2010 Enhanced Phase I ESA. The contaminant impacts are located adjacent to the Baseball Office, the Owner's Residence and Program Building (collectively labelled CS 614110/111/112-1). In order to determine if lead-based paint is present on the structures (which may be the source of impacts to soil) pint samples were collected from the exterior of each of the three structures.

The locations of the investigated areas at the site are shown on the Site Plan (Drawing 700743-020-1) and the Site Features Map (Drawing 700743-020-2), in Appendix A. Site photographs are presented in Appendix B. Field records are presented in Appendix C

2.1 PREPARATORY WORK

The commencement of the field activities included marking the proposed borehole locations based on horizontal measurements with respect to the Baseball Office, Owner's Residence and Program Building as described in the DCS proposal dated 10 November 2010 to facilitate lateral and vertical delineation of metals contamination in soil as may be encountered in the investigated areas.

2.1.1 Utility Locating

Prior to commencing the intrusive field investigation program, all potential buried utilities/services on the site were located to ensure that the buried services were not disturbed during the field activities. The proposed borehole locations were surveyed by MultiView Locates Inc. (MultiView) of Mississauga, Ontario and determined to be clear of interference with underground utilities.

A clearance program was also performed for public utilities through the Ontario One Call Ltd. and associated public locating services (via the MultiLocate service). No public utilities were identified within the areas of the boreholes.

2.2 FIELD INVESTIGATION

The locations of the boreholes and paint samples are shown on Drawings 700743-020-3 to 700743-020-5 included in Appendix A. Details on the boreholes information can be found in the borehole logs included in Appendix E.

2.2.1 Lead in Paint Sampling

Based on the information contained in the GENIVAR 2010 Enhanced Phase I ESA report, suspected lead-based paint applications at the site included the exterior of the structures located in the three contaminated areas (Baseball Office, Owner's Residence and Program Building). Three samples of the suspected lead-based paint applications on the structures were recovered, from areas where the paint was observed to be in poor condition (i.e., flaking/weathered). The paint samples were sent to Maxxam Analytics Inc. (Maxxam), an environmental laboratory located in Mississauga, Ontario for analysis of lead content in paint. The results of the analyses are presented in the following table:

Sample No.	Location	Description	Lead Content (%)
CS1 - Paint	Baseball Office - Wood frame exterior surface, south west corner.	Blue Paint	3.1
CS2 - Paint	Owner's Residence - Wood frame exterior surface, north west corner.	Blue Paint	2.6
CS3 - Paint	Program Building - Wood frame exterior surface, south east corner.	Brown Paint	0.13

The laboratory analytical certificates are presented in Appendix G.

2.2.2 Drilling and Soil Sampling

The drilling program was carried out on 3 and 22 December 2010 under the supervision of Dr. Sean Shekarforoush, Ph.D. Boreholes were advanced at 31 locations (BH110-1 to BH110-27) on the site as shown on Drawings 700743-020-3 to 700743-020-5, to depths ranging from 0.15 to 0.75 m below ground surface. The field work was completed in accordance with the DCS

Standard Procedures and Environmental Requirements provided in Appendix D. Descriptions of the soil stratigraphy are presented in the borehole logs presented in Appendix E.

Drilling and sampling operations were conducted with the use of a gas-powered Pionjar 120 portable percussion soil sampling equipment supplied and operated by a two-man crew from Sonic Soil Sampling (Ontario) Inc. (Sonic) under the full-time supervision of DCS field staff. Soil samples were recovered on a continuous basis with a standard 50 mm diameter, 0.6 m long split-spoon sampler. Field decontamination procedures of the sampling equipment are provided in Appendix D. At the completion of sampling activities the boreholes were backfilled with bentonite hole plug to surface grade.

The soil samples were examined at the time of collection for general soil classification purposes (including type, texture, colour, and moisture characteristics) as well as for evidence of environmental impacts (odour, staining, presence of foreign debris, sheens and the presence of free product). Following field logging, samples were placed into labelled, clean, 500 mL wide-mouth glass jars with polymer interleaf-lined lids for shipment to the DCS laboratory for detailed inspection. Selected samples were stored in a cooler during shipment under chain-of-custody protocols to the laboratory for analysis. The soil laboratory analysis program is described below in Section 2.5.1 of this report.

2.3 SUBSURFACE CONDITIONS

A summary of the subsurface conditions encountered in the boreholes is presented below. Details of the stratigraphy encountered at the borehole locations are provided on the borehole logs included in Appendix E. Subsurface conditions may vary between and beyond the individual borehole locations.

2.3.1 Soil Conditions

The main stratigraphic units encountered extending from surface, for the areas investigated around the Baseball Office and the Owner's Residence consisted of:

- surficial topsoil;
- surficial sand and gravel fill; and

- silt.

The stratigraphic units encountered, extending from surface, for the area around the Program Building consisted of:

- surficial topsoil;
- surficial sand and gravel fill;
- peat; and
- silt and clayey silt.

Boreholes were advanced to a maximum depth of 0.75 m below surface grade.

2.3.1.1 *Surficial Sand and Gravel Fill*

A brown, damp sand and gravel fill layer was present from surface grade at boreholes BH110-10, BH110-11, BH110-13 and BH110-14 to a maximum depth of 0.15 m (Owner's Residence). This layer was also present at boreholes BH110-1 to BH110-4 and BH110-8 to a maximum depth of 0.25 m (Program Building).

No readily identifiable evidence of contamination including foreign odours, staining, sheens or presence of free product was observed within this fill layer. No foreign matter was observed in this fill layer.

2.3.1.2 *Surficial Topsoil*

A dark brown silty topsoil was present from surface grade at the other twenty two boreholes where the soil and gravel fill are not identified as the surface layer, to a maximum depth of 0.15 m.

No readily identifiable evidence of contamination including foreign odours, staining, sheens or presence of free product was observed within this topsoil layer. No foreign matter was observed in this topsoil at any borehole location.

2.3.1.3 *Peat*

A damp, dark brown peat with some silt was encountered immediately below the surficial sand and gravel or topsoil at all boreholes around the Program Building. This layer was found to a maximum of 0.75 m.

No readily identifiable evidence of contamination including foreign odours, staining, sheens or presence of free product was observed within this peat layer. No foreign matter was observed in this topsoil at any borehole location.

2.3.1.4 *Silt and Clayey Silt Fill*

A grey brown silt and clayey silt fill layer was encountered immediately below the surficial topsoil or sand and gravel fill at all boreholes located at the Baseball Office and the Owner's Residence. This layer was found to a maximum depth of 0.75 m, the bottom depth of all boreholes advanced during this investigation, with the exception of borehole BH110-14 where the silt and clayey silt fill was underlain by sand.

The silt and clayey silt fill was also identified at some of the boreholes put down adjacent to the Program Building underlying peat. The silt and clayey silt till extend to a depth of 0.75 m at borehole BH110-14, the bottom depth of this borehole.

No readily identifiable evidence of contamination including foreign odours, staining, sheens or presence of free product was observed within the silt and clayey silt fill. No foreign matter was observed in this fill layer.

Grain size (sieve) analysis was carried out on one sample of the silt to clayey silt fill collected at BH110-11 in the interval 0.15 to 0.41 m (sample SS1C). The sample was determined to comprise sandy silt and is considered a medium-to-fine grained soil [>50% passing the number 200 (75 um) sieve]. The result of the grain size distribution analysis is included in Appendix F.

2.3.2 Bedrock

Bedrock was not encountered in any of the boreholes advanced to a maximum depth of 0.75 m during this investigation.

2.3.3 Hydrogeological Conditions

A hydrogeological evaluation was not undertaken as part of the scope of this Phase II/III ESA investigation. Groundwater, however, is expected to flow easterly toward the creek located in the eastern area of the site.

2.3.4 Soil Sample Selection

Soil samples selected for metals analysis are typically based on visual evidence of potential environmental impacts (e.g., coal, slag, clinker, odours, staining, etc.) or, where no readily observable evidence of environmental impacts are observed are selected to provide representative coverage of the soil horizons encountered.

2.3.5 Borehole Survey

The locations of the boreholes were determined with respect to the structures present in the three investigation areas.

2.4 LABORATORY TESTING

The soil samples selected for chemical analysis were submitted to Maxxam, a CALA-certified, independent environmental laboratory facility located in Mississauga, Ontario.

2.4.1 Environmental Evaluation Guidelines Selection

The PLS is owned and operated by the federal government (TC) and as such the soil quality guidelines (SQGs) developed by the Canadian Council for Ministers of the Environment (CCME) apply to the site.

The selected CCME guidelines for soil quality are the *Canadian Environmental Quality Guidelines, Chapter 7 - Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health* (revised 2008). As the site is occupied by a tenanted residence and youth recreational camp facilities (Camp Robin Hood), the residential/parkland land use criteria of the CCME (SQGs) were referenced.

The results of analyses conducted on the soil samples were also compared against the pending generic Site Condition Standards (SCSs) contained in the Province of Ontario "*Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*", dated July 2009 (the "MOE Standards"), as administered by the Ontario Ministry of the Environment (MOE), promulgated under Ontario Regulation 511/09 for reference purposes only. These pending SCSs will take effect on July 1, 2011.

The site and adjacent lands are not part of or adjacent to an Area of Natural and Scientific Interest (based on a review of the Ontario Ministry of Natural Resources on-line *Biodiversity Explorer* database) and the soil pH results fall within the range of 5 to 9 (for surface soils, see Section 2.5.1 – Soil Analyses), therefore, the generic MOE Table 2 (potable) Standards for Residential/Parkland/Institutional property use have been applied to the areas around the Baseball Office and the Owner's Residence. However, the presence of a natural small pond located within 30 m of the Program Building requires that the generic MOE Standards for use within 30 m of a water body in potable groundwater condition (Table 8 of the MOE) within this particular area of investigation. The pond is farther than 30 meters from the Baseball Office and the Owner's Residence such that the generic standards in the Table 8 of the MOE Standards would not apply (i.e. the Table 2 generic standards are the only guideline MOE Standards reference) at the Baseball Office and Owner's Residence.

Based on the information provided in the GENIVAR report there is no information to indicate the site is a shallow soil property. Bedrock was not encountered in any of the boreholes advanced on the site during the current investigation. Thus, the areas of investigation do not require assessment of a shallow soil property in accordance with the MOE Standards.

As indicated above in Section 2.3.1.4 – Silt and Clayey Silt Fill, a representative sample of that layer was analyzed for grain size (i.e., sieve) analysis. The results, which are graphically shown in Appendix F, indicate that the silt and clay silt is considered to meet the medium and fine textured soils category of the CCME SQGs and the MOE SCSs (i.e., more than 50% less than 75 um particle size). As a more conservative approach, the coarse textured soil soils category of the CCME SQGs and the MOE SCSs was selected by GENIVAR for the site.

2.4.2 Quality Assurance/Quality Control

Laboratory and field control checks are utilized to ensure that the quality of the analytical data is maintained at an acceptable level. Maxxam is CALA-certified and participates in applicable inter-laboratory testing rounds administered by provincial and federal agencies. The procedures detailed in the MOE *Protocol for Analytical Methods Used in Assessment of Properties Under Part XV.1 of the Environmental Protection Act*, dated March 9, 2004, constitutes the accepted standards for chemical testing for environmental evaluation purposes in the province (where available). In accordance with this protocol, all appropriate laboratory quality assurance/quality control (QA/QC) procedures, including the use of internal method and matrix spikes, duplicates and blanks, are incorporated and run a minimum of once per sample set. The laboratory internal QA/QC data are included in the laboratory certificates of analysis in (Appendix G).

Field blind duplicate soil samples were prepared by obtaining a soil sample split from selected sample locations (i.e., BH110-8, BH110-17 and BH110-26). The splits were provided with a fictitious sample identifications (e.g., “SCS1-DUP1”) and submitted to the laboratory for analysis to permit a determination of the internal quality control and repeatability of analyses from the selected laboratory to be determined. The sample identification cross-references are included in Section 2.5.1 and on the borehole logs in Appendix E.

The results of the QA/QC samples were reviewed to assess the representativeness (reproducibility) of the laboratory data. This is often reported as relative percent difference (RPD) according to the following equation:

$$\mathrm{RPD} = \frac{(X_1 - X_2)}{\overline{X}} \times 100$$

Where:

X_1	=	concentration of original sample
X_2	=	concentration of replicate sample
$\overline{X}$	=	mean concentration of original and duplicate sample

A summary of the blind duplicate and field analytical results as well as the RPD calculations are shown in Table 2.1. The analytical results of the QA/QC sample collected during the sampling program are also included next to the corresponding field (i.e., true) sample in Table 2.2 (for the Baseball Office and the Owner’s Residence) and Table 2.3 (for the Program Building).

The field blind duplicate samples collected were generally consistent with the true samples. RPD values on the sample pairs ranged from 0 to 40%, with half of the RPD values being less than 10%, which demonstrated good overall reproducibility for the parameters tested (i.e., an RPD of less than 30%).

TABLE 2.1

ASSESSMENT OF QA/QC SAMPLES IN SOIL

PARAMETERS	MDL	BH110-8 SS1A 3/Dec/2010	SCS1-DUP1 (BH110-8 SS1A) 3/Dec/2010	RPD (%)	BH110-17 SS1A 3/Dec/2010	SCS2-DUP2 (BH110-17 SS1A) 3/Dec/2010	RPD (%)	BH110-26 SS1A 3/Dec/2010	SCS3-DUP3 (BH110-26 SS1A) 3/Dec/2010	RPD (%)
Antimony	0.2	<0.2	<0.2	NC	6	5.5	8.7	0.3	0.3	NC
Arsenic	1.0	4	3	NC	9	9	0.0	4	3	NC
Barium	0.5	49	52	5.9	200	210	4.9	89	84	5.8
Beryllium	0.2	<0.2	<0.2	NC	0.5	0.6	NC	0.4	0.4	NC
Cadmium	0.1	0.2	0.2	NC	0.5	0.6	NC	0.9	0.8	11.8
Chromium (Total)	1	14	13	7.4	24	26	8.0	18	13	**32.3**
Cobalt	0.1	3.5	3.8	8.2	6.8	7.2	5.7	7	5.5	24.0
Copper	0.5	19	18	5.4	28	29	3.5	21	16	27.0
Lead	1.0	37	35	5.6	150	120	22.2	160	240	**40.0**
Molybdenum	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC	<0.5	<0.5	NC
Nickel	2.5	8.3	8.7	NC	14	14	0.0	14	12	15.4
Selenium	0.5	0.7	0.7	NC	<0.5	<0.5	NC	<0.5	<0.5	NC
Silver	0.2	<0.2	<0.2	NC	<0.2	<0.2	NC	<0.2	<0.2	NC
Thallium	0.05	0.06	0.07	NC	0.13	0.13	NC	0.12	0.09	NC
Vanadium	5	16	15	NC	27	27	0.0	26	23	12.2
Zinc	5	120	110	8.7	280	290	3.5	200	230	14.0

NOTES:

All soil parameter values in µg/g (ppm) and ground water values in µg/L (ppb) unless otherwise indicated.

RPD	Relative Percent Difference	--	No MDL reported by the laboratory.
BOLD	RPD exceeds 30%	<	Not detected.
MDL	Method Detection Limit.	NA	Not analyzed
NC	RPD values not calculated where one or both results are at or below 5 times laboratory MDLs.		

Prepared by: R.R.
Checked by: L.L.

The analysis for chromium and lead in sample BH110-26 exhibited an elevated RPD of 32.3% and 40% respectively. High RPD values in fill soil are typically due to the heterogeneous nature of fill soils.

RPD values can be biased high for slight differences in concentrations when the results are at or marginally above the laboratory method detection limits (MDLs), therefore, RPD values were not calculated where one or both results are at or below five times the laboratory's MDLs.

RPD analyses on the Maxxam internal QA/QC analyses ranged from less than 0.2 to 25%, with the majority being less than 10%, which also demonstrated generally good reproducibility for the parameters tested. The results of the Maxxam internal QA/QC samples are included in the laboratory certificates of analysis in Appendix G.

From the above activities, it was concluded that the laboratory test results were representative of the environmental quality of the soils at the site for the locations tested and at the date of sample collection.

Once it was determined that the laboratory test data was reliable, the results were entered into the summary tables and compared against the applicable provincial and federal environmental guidelines. Data entry and comparison of data against the guidelines were performed by one person with the completed summary tables being reviewed for accuracy by at least one other person.

2.5 ANALYTICAL RESULTS

As discussed above in section 2.4.1 – Environmental Evaluation Guidelines Selection, the primary applicable environmental evaluation , the CCME SQGs for Residential/Parkland land use, for medium and fine textured soil and the 2009 MOE SCSs; Table 8 for Residential/Institutional/Community/Industrial use and Table 2 for Residential/Parkland/ Institutional property landuse are also provided for reference.

The laboratory certificates of analysis are presented in Appendix G.

2.5.1 Soil Analyses

The laboratory analyses performed on the selected soil samples were as follows:

- Forty one soil samples plus the three field blind duplicate samples from BH110-8 SS1A, BH110-17 SS1A and BH110-26 SS1A were analyzed for the presence of metals.

- One soil sample from BH110-16 SS1A was analyzed for pH.

- A composite of soil samples from the three contaminated areas (i.e., BH110-8 SS1B, BH110-10 SS1B and BH110-21 SS1B) was submitted for analysis of O.Reg. 558 Toxicity Characteristic Leachate Procedure (TCLP).

Pursuant to the sample selection regimen presented in our proposal, soil samples recovered from the boreholes adjacent to the target structures were first selected for laboratory analysis with the remaining borehole samples situated farther out, placed on hold pending the results of the first set of analyses.

The results of the soil analyses have been summarized with reference to the applicable MOE SCSs and CCME SQGs on the following tables:

Table 2.2	Results of Analyses for Metals Parameters in Soil – Baseball Office and Owner's Residence
Table 2.3	Results of Analyses for Metals Parameters in Soil – Program Building
Table 2.4	Results of Ontario Regulation 347 TCLP Waste Characterization Testing

The results of the TCLP analysis were compared against the O.Reg. 347 Schedule 4 Leachate Quality Criteria.

The results of the soil analyses from the 2010 GENIVAR Enhanced Phase I ESA are included in Tables 2.3 and 2.4 for reference. The approximate location of the GENIVAR soil samples are shown in Drawings 700743-020-3 to 700743-020-5.

TABLE 2.2

RESULTS OF METALS PARAMETERS IN SOIL - BASEBALL OFFICE AND OWNER'S RESIDENCE

PARAMETERS	CCME RESIDENTIAL/ PARKLAND SOIL QUALITY GUIDELINES†	MOE RESIDENTIAL/ PARKLAND/ INSTITUTIONAL STANDARDS* Table 2	MDL	SS-110-8** 22/Dec/2009 (0.0m-0.2m)	SS-112.2-1** 22/Dec/2009 (0.0m-0.2m)	MDL	BH110-10 SS1A 3/Dec/2010 (0.0m-0.15m)
			Texture	Coarse	Coarse	Texture	Med/Fine
Antimony	**20**	**7.5**	**0.80**	**74.4**	<0.8	**0.2**	1.7
Arsenic	**12**	**18**	**0.30**	9.4	2.5	**1**	2
Barium	**500**	**390**	**0.20**	**1290**	135	**0.5**	49
Beryllium	**4**	**(5) 4**	**0.2**	0.6	0.6	**0.2**	<0.2
Boron (Hot Water Extractable)	**-**	**1.5**	**0.10**	0.35	0.7	**0.05**	NA
Cadmium	**10**	**1.2**	**0.20**	1.7	0.4	**0.1**	0.2
Chromium (Total)	**64**	**160**	**0.30**	28.6	19.0	**1**	8
Chromium (VI)	**0.4**	**(10) 8**	**0.40**	<0.4	<0.4	**0.2**	NA
Cobalt	**50**	**22**	**0.20**	8.4	8.1	**0.1**	2.2
Copper	**63**	**(180) 140**	**0.20**	28.3	18.3	**0.5**	7.4
Lead	**140**	**120**	**0.30**	**437**	**295**	**1**	15
Mercury	**-**	**(1.8) 0.27**	**0.01**	0.240	0.096	**0.05**	NA
Molybdenum	**10**	**6.9**	**0.30**	0.3	<0.3	**0.5**	0.50
Nickel	**50**	**(130) 100**	**0.30**	16.0	15.6	**0.5**	4.9
Selenium	**1**	**2.4**	**0.40**	0.7	<0.4	**0.5**	<0.5
Silver	**20**	**(25) 20**	**0.2**	<0.2	<0.2	**0.2**	<0.2
Thallium	**1.0**	**1.0**	**0.20**	<0.2	<0.2	**0.05**	0.05
Vanadium	**130**	**86**	**0.20**	26.7	24.9	**5**	8
Zinc	**200**	**340**	**0.20**	**1670**	198	**5**	56

Prepared by R.R.
Checked by L.L

TABLE 2.2

RESULTS OF METALS PARAMETERS IN SOIL - BASEBALL OFFICE AND OWNER'S RESIDENCE

PARAMETERS	CCME RESIDENTIAL/ PARKLAND SOIL QUALITY GUIDELINES†	MOE RESIDENTIAL/ PARKLAND/ INSTITUTIONAL STANDARDS* Table 2	BH110-11 SS1A 3/Dec/2010 (0.0m-0.15m)	Lab Dup (BH110-11 SS1A) 3/Dec/2010 (0.0m-0.15m)	BH110-12 SS1A 3/Dec/2010 (0.0m-0.15m)	BH110-13 SS1A 3/Dec/2010 (0.0m-0.15m)	BH110-13 SS1B 3/Dec/2010 (0.15m-0.45m)
			Med/Fine	Med/Fine	Med/Fine	Med/Fine	Med/Fine
Antimony	**20**	**7.5**	0.8	0.9	2.5	16	8.9
Arsenic	**12**	**18**	3	3	3	3	2
Barium	**500**	**390**	49	49	77	160	150
Beryllium	**4**	**(5) 4**	<0.2	<0.2	0.2	0.4	0.6
Boron (Hot Water Extractable)	**-**	**1.5**	NA	NA	NA	NA	NA
Cadmium	**10**	**1.2**	0.1	0.2	0.3	0.5	0.2
Chromium (Total)	**64**	**160**	8	10	13	14	15
Chromium (VI)	**0.4**	**(10) 8**	NA	NA	NA	NA	NA
Cobalt	**50**	**22**	2.7	2.8	4.9	5.1	6.2
Copper	**63**	**(180) 140**	7.8	7.8	14	14	12
Lead	**140**	**120**	22	23	49	99	78
Mercury	**-**	**(1.8) 0.27**	NA	NA	NA	NA	NA
Molybdenum	**10**	**6.9**	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	**50**	**(130) 100**	6.5	5.3	10	10	12
Selenium	**1**	**2.4**	<0.5	<0.5	<0.5	<0.5	<0.5
Silver	**20**	**(25) 20**	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	**1.0**	**1.0**	0.07	0.07	0.08	0.08	0.09
Vanadium	**130**	**86**	6	6	21	22	25
Zinc	**200**	**340**	54	59	99	**430**	93

Prepared by R.R.
Checked by L.L

TABLE 2.2

RESULTS OF METALS PARAMETERS IN SOIL - BASEBALL OFFICE AND OWNER'S RESIDENCE

PARAMETERS	CCME RESIDENTIAL/ PARKLAND SOIL QUALITY GUIDELINES†	MOE RESIDENTIAL/ PARKLAND/ INSTITUTIONAL STANDARDS* Table 2	BH110-14 SS1A 3/Dec/2010 (0.0m-0.15m)	BH110-15 SS1A 3/Dec/2010 (0.0m-0.15m)	BH110-16 SS1A 3/Dec/2010 (0.0m-0.15m)	BH110-16 SS1B 3/Dec/2010 (0.15m-0.45m)	BH110-16(2) SS1A 3/Dec/2010 (0.0m-0.15m)
			Med/Fine	Med/Fine	Med/Fine	Med/Fine	Med/Fine
Antimony	**20**	**7.5**	0.9	2.8	3.9	1	1.1
Arsenic	**12**	**18**	4	4	6	3	**16**
Barium	**500**	**390**	84	93	170	100	92
Beryllium	**4**	**(5) 4**	0.5	0.4	0.5	0.7	0.3
Boron (Hot Water Extractable)	**-**	**1.5**	NA	NA	NA	NA	NA
Cadmium	**10**	**1.2**	0.4	0.6	0.5	0.3	0.3
Chromium (Total)	**64**	**160**	16	16	22	22	29
Chromium (VI)	**0.4**	**(10) 8**	NA	NA	NA	NA	NA
Cobalt	**50**	**22**	5.8	5.7	7.1	8.9	4.8
Copper	**63**	**(180) 140**	15	19	23	21	34
Lead	**140**	**120**	32	49	92	36	51
Mercury	**-**	**(1.8) 0.27**	NA	NA	NA	NA	NA
Molybdenum	**10**	**6.9**	0.50	<0.5	<0.5	<0.5	<0.5
Nickel	**50**	**(130) 100**	20	12	15	19	11
Selenium	**1**	**2.4**	<0.5	<0.5	0.50	<0.5	<0.5
Silver	**20**	**(25) 20**	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	**1.0**	**1.0**	0.08	0.09	0.13	0.16	0.06
Vanadium	**130**	**86**	23	23	29	33	19
Zinc	**200**	**340**	96	190	**250**	86	110

Prepared by R.R.
Checked by L.L

TABLE 2.2

RESULTS OF METALS PARAMETERS IN SOIL - BASEBALL OFFICE AND OWNER'S RESIDENCE

PARAMETERS	CCME RESIDENTIAL/ PARKLAND SOIL QUALITY GUIDELINES†	MOE RESIDENTIAL/ PARKLAND/ INSTITUTIONAL STANDARDS* Table 2	BH110-17 SS1A 3/Dec/2010 (0.0m-0.15m)	SCS2-DUP2 (BH110-17 SS1A) 3/Dec/2010 (0.0m-0.15m)	BH110-17 SS1B 3/Dec/2010 (0.15m-0.45m)	BH110-17 SS1C 3/Dec/2010 (0.45m-0.75m)	BH110-18 SS1A 3/Dec/2010 (0.0m-0.15m)
			Med/Fine	Med/Fine	Med/Fine	Med/Fine	Med/Fine
Antimony	**20**	**7.5**	6	5.5	6.8	0.3	0.4
Arsenic	**12**	**18**	9	9	5	1	5
Barium	**500**	**390**	200	210	190	120	60
Beryllium	**4**	**(5) 4**	0.5	0.6	0.7	0.7	0.3
Boron (Hot Water Extractable)	**-**	**1.5**	NA	NA	NA	NA	NA
Cadmium	**10**	**1.2**	0.5	0.6	0.3	0.2	0.3
Chromium (Total)	**64**	**160**	24	26	27	26	14
Chromium (VI)	**0.4**	**(10) 8**	NA	NA	NA	NA	NA
Cobalt	**50**	**22**	6.8	7.2	9	9.8	5.4
Copper	**63**	**(180) 140**	28	29	30	24	15
Lead	**140**	**120**	**150**	120	140	40	43
Mercury	**-**	**(1.8) 0.27**	NA	NA	NA	NA	NA
Molybdenum	**10**	**6.9**	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	**50**	**(130) 100**	14	14	19	22	10
Selenium	**1**	**2.4**	<0.5	<0.5	<0.5	<0.5	<0.5
Silver	**20**	**(25) 20**	<0.2	<0.2	0.2	<0.2	<0.2
Thallium	**1.0**	**1.0**	0.13	0.13	0.16	0.09	0.09
Vanadium	**130**	**86**	27	27	32	40	25
Zinc	**200**	**340**	**280**	**290**	160	82	76

Prepared by R.R.
Checked by L.L

TABLE 2.2

RESULTS OF METALS PARAMETERS IN SOIL - BASEBALL OFFICE AND OWNER'S RESIDENCE

PARAMETERS	CCME RESIDENTIAL/ PARKLAND SOIL QUALITY GUIDELINES†	MOE RESIDENTIAL/ PARKLAND/ INSTITUTIONAL STANDARDS* Table 2	BH110-19 SS1A 3/Dec/2010 (0.0m-0.15m)	BH110-19 SS1B 3/Dec/2010 (0.15m-0.5m)	BH110-19(2) SS1A 22/Dec/2010 (0.0m-0.15m)	BH110-20 SS1A 3/Dec/2010 (0.0m-0.15m)	Lab Dup (BH110-20 SS1A) 3/Dec/2010 (0.0m-0.15m)
			Med/Fine	Med/Fine	Med/Fine	Med/Fine	Med/Fine
Antimony	**20**	**7.5**	0.3	<0.2	0.3	0.3	0.3
Arsenic	**12**	**18**	5	2	3	4	4
Barium	**500**	**390**	67	54	80	91	94
Beryllium	**4**	**(5) 4**	0.3	0.5	0.4	0.3	0.4
Boron (Hot Water Extractable)	**-**	**1.5**	NA	NA	NA	NA	NA
Cadmium	**10**	**1.2**	0.4	0.2	0.4	0.8	0.9
Chromium (Total)	**64**	**160**	13	14	16	14	15
Chromium (VI)	**0.4**	**(10) 8**	NA	NA	NA	NA	NA
Cobalt	**50**	**22**	5.7	6.9	6.4	5.9	5.9
Copper	**63**	**(180) 140**	**330**	9	19	23	23
Lead	**140**	**120**	90	23	89	**260**	**260**
Mercury	**-**	**(1.8) 0.27**	NA	NA	NA	NA	NA
Molybdenum	**10**	**6.9**	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	**50**	**(130) 100**	11	11	14	13	12
Selenium	**1**	**2.4**	<0.5	<0.5	<0.5	<0.5	0.80
Silver	**20**	**(25) 20**	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	**1.0**	**1.0**	0.09	0.08	0.11	0.09	0.09
Vanadium	**130**	**86**	24	27	23	22	23
Zinc	**200**	**340**	130	44	120	**240**	**250**

Prepared by R.R.
Checked by L.L

TABLE 2.2

RESULTS OF METALS PARAMETERS IN SOIL - BASEBALL OFFICE AND OWNER'S RESIDENCE

PARAMETERS	CCME RESIDENTIAL/ PARKLAND SOIL QUALITY GUIDELINES†	MOE RESIDENTIAL/ PARKLAND/ INSTITUTIONAL STANDARDS* Table 2	BH110-20 SS1B 3/Dec/2010 (0.15m-0.45m) Med/Fine	BH110-21 SS1A 3/Dec/2010 (0.0m-0.15m) Med/Fine	BH110-22 SS1A 3/Dec/2010 (0.0m-0.15m) Med/Fine	BH110-23 SS1A 3/Dec/2010 (0.0m-0.15m) Med/Fine	BH110-24 SS1A 3/Dec/2010 (0.0m-0.15m) Med/Fine
Antimony	**20**	**7.5**	0.3	0.3	<0.2	<0.2	<0.2
Arsenic	**12**	**18**	4	3	12	3	3
Barium	**500**	**390**	92	84	47	85	75
Beryllium	**4**	**(5) 4**	0.5	0.4	<0.2	0.6	0.4
Boron (Hot Water Extractable)	**-**	**1.5**	NA	NA	NA	NA	NA
Cadmium	**10**	**1.2**	0.4	0.3	0.2	0.2	0.3
Chromium (Total)	**64**	**160**	18	18	16	19	15
Chromium (VI)	**0.4**	**(10) 8**	NA	NA	NA	NA	NA
Cobalt	**50**	**22**	7.8	7.3	3.6	7.6	6.2
Copper	**63**	**(180) 140**	19	17	13	23	16
Lead	**140**	**120**	110	100	24	39	110
Mercury	**-**	**(1.8) 0.27**	NA	NA	NA	NA	NA
Molybdenum	**10**	**6.9**	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	**50**	**(130) 100**	16	16.0	6.6	16.0	14.0
Selenium	**1**	**2.4**	<0.5	<0.5	<0.5	<0.5	<0.5
Silver	**20**	**(25) 20**	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	**1.0**	**1.0**	0.14	0.13	0.05	0.15	0.11
Vanadium	**130**	**86**	28	30	20	30	25
Zinc	**200**	**340**	130	80	66	68	90

Prepared by R.R.
Checked by L.L

TABLE 2.2

RESULTS OF METALS PARAMETERS IN SOIL - BASEBALL OFFICE AND OWNER'S RESIDENCE

PARAMETERS	CCME RESIDENTIAL/ PARKLAND SOIL QUALITY GUIDELINES†	MOE RESIDENTIAL/ PARKLAND/ INSTITUTIONAL STANDARDS* Table 2	BH110-25 SS1A 3/Dec/2010 (0.0m-0.15m)	BH110-26 SS1A 3/Dec/2010 (0.0m-0.15m)	SC3-DUP3 (BH110-26 SS1A) 3/Dec/2010 (0.0m-0.15m)	BH110-26 SS1B 3/Dec/2010 (0.15m-0.45m)	BH110-27 SS1A 3/Dec/2010 (0.0m-0.15m)
			Med/Fine	Med/Fine	Med/Fine	Med/Fine	Med/Fine
Antimony	**20**	**7.5**	0.3	0.3	0.3	0.2	<0.2
Arsenic	**12**	**18**	6	4	3	4	3
Barium	**500**	**390**	85	89	84	120	54
Beryllium	**4**	**(5) 4**	0.6	0.4	0.4	0.8	0.3
Boron (Hot Water Extractable)	**-**	**1.5**	NA	NA	NA	NA	NA
Cadmium	**10**	**1.2**	0.4	0.9	0.8	0.4	0.3
Chromium (Total)	**64**	**160**	18	18	13	25	13
Chromium (VI)	**0.4**	**(10) 8**	NA	NA	NA	NA	NA
Cobalt	**50**	**22**	7.7	7.0	5.5	11.0	5.2
Copper	**63**	**(180) 140**	18	21	16	20	11
Lead	**140**	**120**	60	**160**	**240**	45	21
Mercury	**-**	**(1.8) 0.27**	NA	NA	NA	NA	NA
Molybdenum	**10**	**6.9**	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	**50**	**(130) 100**	15.0	14.0	12.0	22	9.7
Selenium	**1**	**2.4**	<0.5	<0.5	<0.5	0.60	<0.5
Silver	**20**	**(25) 20**	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	**1.0**	**1.0**	0.13	0.12	0.09	0.18	0.09
Vanadium	**130**	**86**	29	26	23	37	24
Zinc	**200**	**340**	90	200	**230**	100	57

Prepared by R.R.
Checked by L.L

TABLE 2.2

RESULTS OF METAL ANALYSES FOR IN SOIL - BASEBALL OFFICE CONTAMINATED SITE

NOTES:

All parameter values in µg/g (ppm) unless otherwise indicated.

†	**Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines (updated in 2010):**
BOLD	Exceeds CCME Redsidential/Parkland Soil Quality Guidelines
*	**Province of Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, July 2009:**
VALUE	Exceeds Residential/Parkland/Institutional Property Use - Table 2, Full Depth Generic Site Condition Standards in a Potable Ground Water Condition.
**	Data from Genivar 2010 Enhanced Phase I ESA
MDL	Method Detection Limit
--	No MDL reported by the laboratory.
( )	Standards/guidelines in brackets apply to medium- or fine-textured soils.
-	Standard/guideline not available.
<	Not detected.
NA	Not analyzed

Prepared by: R.R.
Checked by: J.J.

TABLE 2.3

RESULTS OF METALS PARAMETERS IN SOIL - PROGRAM BUILDING

PARAMETERS	CCME RESIDENTIAL/ PARKLAND SOIL QUALITY GUIDELINES†	MOE RESIDENTIAL PARK./INST./COMM./IND. TYPES OF PROPERTY USE STANDARDS* Table 8	MDL	SS-110-5** 22/Dec/2009 (0.0m-0.2m)
			Texture	Coarse
Antimony	**20**	**1.3**	**0.80**	<0.8
Arsenic	**12**	**18**	**0.30**	**30.9**
Barium	**500**	**220**	**0.20**	59.6
Beryllium	**4**	**2.5**	**0.2**	0.2
Boron (Hot Water Extractable)	**-**	**1.5**	**0.10**	0.7
Cadmium	**10**	**1.2**	**0.20**	0.3
Chromium (Total)	**64**	**70**	**0.30**	33.6
Chromium (VI)	**0.4**	**0.66**	**0.40**	<0.4
Cobalt	**50**	**22**	**0.20**	4.3
Copper	**63**	**92**	**0.20**	**69.0**
Lead	**140**	**120**	**0.30**	**175**
Mercury	**-**	**0.27**	**0.01**	0.061
Molybdenum	**10**	**2**	**0.30**	0.4
Nickel	**50**	**82**	**0.30**	7.7
Selenium	**1**	**1.5**	**0.40**	0.6
Silver	**20**	**0.5**	**0.2**	<0.2
Thallium	**1.0**	**1.0**	**0.20**	<0.2
Vanadium	**130**	**86**	**0.20**	9.1
Zinc	**200**	**290**	**0.20**	**430**

Prepared by R.R.
Checked by L.L.

TABLE 2.3

RESULTS OF METALS PARAMETERS IN SOIL - PROGRAM BUILDING

PARAMETERS	CCME RESIDENTIAL/ PARKLAND SOIL QUALITY GUIDELINES†	MOE RESIDENTIAL PARK./INST./COMM./IND. TYPES OF PROPERTY USE STANDARDS* Table 8	MDL	BH110-1 SS1A 3/Dec/2010 (0.0m-0.15m)	BH110-2 SS1A 3/Dec/2010 (0.0m-0.15m)	BH110-3 SS1A 3/Dec/2010 (0.0m-0.15m)
			Texture	Med/Fine	Med/Fine	Med/Fine
Antimony	**20**	**1.3**	**0.2**	<0.2	<0.2	<0.2
Arsenic	**12**	**18**	**1**	8	4	3
Barium	**500**	**220**	**0.5**	9.6	17	13
Beryllium	**4**	**2.5**	**0.2**	<0.2	<0.2	<0.2
Boron (Hot Water Extractable)	**-**	**1.5**	**0.05**	NA	NA	NA
Cadmium	**10**	**1.2**	**0.1**	0.2	0.1	<0.1
Chromium (Total)	**64**	**70**	**1**	3	6	4
Chromium (VI)	**0.4**	**0.66**	**0.2**	NA	NA	NA
Cobalt	**50**	**22**	**0.1**	1.8	2.1	1.6
Copper	**63**	**92**	**0.5**	7.1	6.7	4.5
Lead	**140**	**120**	**1**	13	7	5
Mercury	**-**	**0.27**	**0.05**	NA	NA	NA
Molybdenum	**10**	**2**	**0.5**	0.90	<0.5	<0.5
Nickel	**50**	**82**	**0.5**	3.5	4.3	3.1
Selenium	**1**	**1.5**	**0.5**	<0.5	<0.5	<0.5
Silver	**20**	**0.5**	**0.2**	<0.2	<0.2	<0.2
Thallium	**1.0**	**1.0**	**0.05**	0.07	0.05	<0.05
Vanadium	**130**	**86**	**5**	5	13	11
Zinc	**200**	**290**	**5**	72	53	37

Prepared by R.R.
Checked by L.L.

TABLE 2.3

RESULTS OF METALS PARAMETERS IN SOIL - PROGRAM BUILDING

PARAMETERS	CCME RESIDENTIAL/ PARKLAND SOIL QUALITY GUIDELINES†	MOE RESIDENTIAL PARK./INST./COMM./IND. TYPES OF PROPERTY USE STANDARDS* Table 8	BH110-4 SS1A 3/Dec/2010 (0.0m-0.15m)	BH110-5 SS1A 3/Dec/2010 (0.0m-0.15m)	BH110-5 SS1B 3/Dec/2010 (0.15m-0.45m)	BH110-5(2) SS1A 22/Dec/2010 (0.0m-0.15m)
			Med/Fine	Med/Fine	Med/Fine	Med/Fine
Antimony	**20**	**1.3**	<0.2	<0.2	<0.2	<0.2
Arsenic	**12**	**18**	3	2	1	2
Barium	**500**	**220**	10	53	60	51
Beryllium	**4**	**2.5**	<0.2	0.3	0.4	0.2
Boron (Hot Water Extractable)	**-**	**1.5**	NA	NA	NA	NA
Cadmium	**10**	**1.2**	0.1	0.3	0.2	0.3
Chromium (Total)	**64**	**70**	5	17	17	16
Chromium (VI)	**0.4**	**0.66**	NA	NA	NA	NA
Cobalt	**50**	**22**	1.6	5.3	4.7	4.1
Copper	**63**	**92**	4.5	23	19	22
Lead	**140**	**120**	4	12	7	13
Mercury	**-**	**0.27**	NA	NA	NA	NA
Molybdenum	**10**	**2**	<0.5	<0.5	<0.5	<0.5
Nickel	**50**	**82**	3.2	11	12.0	11
Selenium	**1**	**1.5**	<0.5	0.60	0.90	0.80
Silver	**20**	**0.5**	<0.2	<0.2	<0.2	<0.2
Thallium	**1.0**	**1.0**	<0.05	0.11	0.11	0.06
Vanadium	**130**	**86**	11	19	16	17
Zinc	**200**	**290**	33	**360**	69	81

Prepared by R.R.
Checked by L.L.

TABLE 2.3

RESULTS OF METALS PARAMETERS IN SOIL - PROGRAM BUILDING

PARAMETERS	CCME RESIDENTIAL/ PARKLAND SOIL QUALITY GUIDELINES†	MOE RESIDENTIAL PARK./INST./COMM./IND. TYPES OF PROPERTY USE STANDARDS* Table 8	BH110-6 SS1A 3/Dec/2010 (0.0m-0.15m)	BH110-7 SS1A 3/Dec/2010 (0.0m-0.15m)	BH110-7 SS1B 3/Dec/2010 (0.15m-0.45m)	BH110-7 SS1C 3/Dec/2010 (0.45m-0.75m)
			Med/Fine	Med/Fine	Med/Fine	Med/Fine
Antimony	**20**	**1.3**	<0.2	<0.2	<0.2	<0.2
Arsenic	**12**	**18**	4	3	3	2
Barium	**500**	**220**	40	42	55	68
Beryllium	**4**	**2.5**	0.2	0.4	0.5	0.4
Boron (Hot Water Extractable)	**-**	**1.5**	NA	NA	NA	NA
Cadmium	**10**	**1.2**	0.2	0.3	0.4	0.6
Chromium (Total)	**64**	**70**	13	19	20	24
Chromium (VI)	**0.4**	**0.66**	NA	NA	NA	NA
Cobalt	**50**	**22**	3.8	4.8	4.9	3.0
Copper	**63**	**92**	16	24	28	46
Lead	**140**	**120**	11	17	15	11
Mercury	**-**	**0.27**	NA	NA	NA	NA
Molybdenum	**10**	**2**	<0.5	<0.5	<0.5	<0.5
Nickel	**50**	**82**	8.7	13	14	16
Selenium	**1**	**1.5**	<0.5	1.0	**<u>2.1</u>**	**<u>4.2</u>**
Silver	**20**	**0.5**	<0.2	<0.2	<0.2	<0.2
Thallium	**1.0**	**1.0**	0.08	0.12	0.13	0.10
Vanadium	**130**	**86**	15	19	19	15
Zinc	**200**	**290**	57	**<u>510</u>**	**<u>310</u>**	**210**

Prepared by R.R.
Checked by L.L.

TABLE 2.3

RESULTS OF METALS PARAMETERS IN SOIL - PROGRAM BUILDING

PARAMETERS	CCME RESIDENTIAL/ PARKLAND SOIL QUALITY GUIDELINES†	MOE RESIDENTIAL PARK./INST./COMM./IND. TYPES OF PROPERTY USE STANDARDS* Table 8	BH110-7(2) SS1A 22/Dec/2010 (0.0m-0.15m)	BH110-8 SS1A 3/Dec/2010 (0.0m-0.15m)	SCS1-DUP1 (BH110-8 SS1A) 3/Dec/2010 (0.0m-0.15m)	BH110-9 SS1A 3/Dec/2010 (0.0m-0.15m)
			Med/Fine	Med/Fine	Med/Fine	Med/Fine
Antimony	**20**	**1.3**	<0.2	<0.2	<0.2	<0.2
Arsenic	**12**	**18**	3	4	3	4
Barium	**500**	**220**	55	49	52	59
Beryllium	**4**	**2.5**	0.3	<0.2	<0.2	0.3
Boron (Hot Water Extractable)	**-**	**1.5**	NA	NA	NA	NA
Cadmium	**10**	**1.2**	0.3	0.2	0.2	0.3
Chromium (Total)	**64**	**70**	17	14	13	16
Chromium (VI)	**0.4**	**0.66**	NA	NA	NA	NA
Cobalt	**50**	**22**	4.3	3.5	3.8	4.5
Copper	**63**	**92**	28	19	18	18
Lead	**140**	**120**	16	37	35	14
Mercury	**-**	**0.27**	NA	NA	NA	NA
Molybdenum	**10**	**2**	<0.5	<0.5	<0.5	<0.5
Nickel	**50**	**82**	11	8.3	8.7	9.1
Selenium	**1**	**1.5**	**1.10**	0.70	0.70	<0.5
Silver	**20**	**0.5**	<0.2	<0.2	<0.2	<0.2
Thallium	**1.0**	**1.0**	0.07	0.06	0.07	0.06
Vanadium	**130**	**86**	17	16	15	20
Zinc	**200**	**290**	180	120	110	63

Prepared by R.R.
Checked by L.L.

TABLE 2.3

RESULTS OF METALS PARAMETERS IN SOIL - PROGRAM BUILDING

NOTES:

All parameter values in µg/g (ppm) unless otherwise indicated.

†	**Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines (updated in 2010):**
BOLD	Exceeds CCME Redsidential/Parkland Soil Quality Guidelines
*	**Province of Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, July 2009:**
VALUE	Exceeds All Other Types of Property Use - Table 8, Background Site Condition Standards.
**	Data from Genivar 2010 Enhanced Phase I ESA
MDL	Method Detection Limit
--	No MDL reported by the laboratory.
( )	Standards/guidelines in brackets apply to medium- or fine-textured soils.
-	Standard/guideline not available.
<	Not detected.
NA	Not analyzed

Prepared by: R.R.
Checked by: J.J.

TABLE 2.4

RESULTS OF ONTARIO REGULATION 347 (AMENDED TO O.REG. 558) TCLP WASTE CHARACTERIZATION TESTING

PARAMETERS	O.REG. 347 SCHEDULE 4 LEACHATE QUALITY CRITERIA*	MDL	Composite of BH110-8 SS1B BH110-10 SS1B and BH110-21 SS1B 0.15-0.45 m
Arsenic	**2.5**	0.2	<0.2
Barium	**100.0**	0.2	0.9
Boron	**500.0**	0.1	0.1
Cadmium	**0.5**	0.05	<0.05
Chromium (Total)	**5.0**	0.1	<0.1
Lead	**5.0**	0.1	<0.1
Selenium	**1.0**	0.1	<0.1
Silver	**5**	0.01	<0.01
Uranium	**10.0**	0.01	<0.01
Initial pH (at the start)	-	--	8.52
Final pH (at the finish)	-	--	6.12

NOTES:

All parameter values in mg/L (ppm) unless otherwise indicated.

*	**O.Reg. 347 Schedule 4 Leachate Quality Criteria Classifications (amended to O.Reg. 558):**
BOLD	"Leachate Toxic Waste" - parameter concentration equal to or exceeding Schedule 4 Leachate Quality Criteria Value using TCLP Method 1311 that appears in the United States Environmental Protection Agency Publication SW-846 entitled "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods".
TCLP	Toxicity Characteristic Leaching Procedure.
MDL	Method Detection Limit.
--	No MDL reported by the laboratory.
-	Schedule 4 criteria not available
<	Not detected.

3.0 ENVIRONMENTAL DISCUSSION

The following discussion summarizes the findings of the Phase II/III Environmental Site Assessment.

3.1 PHASE II/III ENVIRONMENTAL SITE ASSESSMENT

3.1.1 Analytical Results

A discussion of the results of the field investigation performed at the site is presented in the following sections.

3.1.1.1 *Lead in Paint Sampling*

Paint is a common lead-containing material which may require special handling and abatement procedures for structures of this age. Lead is also an Ontario Designated Substance. The Canadian *Surface Coating Materials Regulation* made under the *Hazardous Products Act,* published in the *Canada Gazette,* amended on 27 February 2010, currently restricts lead content to 90 mg/kg (0.009% by weight or 90 ppm) for surface coating materials (e.g., paints) used on artefacts (e.g., furniture, toys, etc.) in or around a residence or other premises (e.g., a public park) attended by children or pregnant women. This value does not apply specifically to lead in existing paint on buildings/structures, but rather it limits lead content in new coatings on the artefacts noted above.

Painted external surfaces on the target structures appeared to be in poor condition due to weathering. The affected areas are extensive, with most of the external surface of the structures presenting flaking paint. The paint from the three target structures was sampled and the laboratory analytical results indicated that all exceed the 0.009% *Surface Coating Materials Regulation* value and they are therefore considered "lead-based" (refer to section 2.2.1).

3.1.1.2 *Baseball Office Contaminated Area*

Thirteen soil samples plus a field blind duplicate sample recovered from the ten boreholes drilled on-site in around the Baseball Office by DCS were submitted for analysis of metals. Previously, one surface soil sample was recovered on-site by GENIVAR in 2009 and submitted for analysis of metals. The results of DCS' analyses and the historic GENIVAR results are presented on Table 2.2 and are shown on Drawing 700743-20-3 (Baseball Office).

The following exceedances to the CCME SQGs and/or 2009 MOE Table 2 SCSs were identified:

Borehole	Sample/Depth Interval (m)	Location	Parameter	Concentration (ug/g)	CCME SQG Res./Park (ug/g)	MOE Table 2 Res./Park (ug/g)
SS-112.2-1	0-0.20	0.5m West of Baseball Office	Lead	**295**	140	120
BH110-20	SS1A 0-0.15	0.5m South of Baseball Office	Lead	**260**	140	120
			Zinc	**240**	200	340
BH110-26	SS1A 0-0.15	0.5m East of Baseball Office	Lead	**200***	140	120
			Zinc	**215***	200	340
BH110-19	SS1A 0-0.15	2m South of Baseball Office	Copper	**330**	63	140

* average of the borehole sample and blind duplicate
Bold – exceeds federal (CCME) guideline

No copper, lead or zinc exceedances to either the CCME SQGs or the MOE Table 2 SCSs were exhibited in the boreholes located to the north and west of the Baseball Office, therefore, no further metals laboratory analysis was performed on the samples recovered from boreholes located in those areas.

For discussion purposes only, the limits of the metals contamination is inferred to span the area to the south and east of the Baseball Office along a line delineated by DCS boreholes BH110-19(2) and -25. The metals contamination is also inferred to extend to an average depth of 0.2 m.

3.1.1.3 *Owner's Residence Contaminated Area*

Fourteen soil samples plus a field blind duplicate samples recovered from the ten boreholes drilled on-site around the Owner's Residence by DCS were submitted for analysis of metals. Previously, one surface soil sample was recovered on-site by GENIVAR in 2009 and submitted for analysis of metals. The results of DCS' analyses and the historic GENIVAR results are presented on Table 2.2 and are shown on Drawing 700743-20-4 (Owner's Residence).

The following exceedances to the CCME SQGs and/or 2009 MOE Table 2 SCSs were identified:

Borehole	Sample/Depth Interval (m)	Location	Parameter	Concentration (ug/g)	CCME SQG Res./Park (ug/g)	MOE Table 2 Res./Park (ug/g)
SS-110-8	0-0.20	Southwest Corner of the Southern most House	Antimony	**74.4**	20	7.5
			Barium	**1290**	500	390
			Lead	**437**	140	120
			Zinc	**1670**	200	340
			Cadmium	1.7	10	1.2
BH110-13	SS1A 0-0.15	0.5m North of Owner's Residence	Antimony	16	20	7.5
			Zinc	**430**	200	340
BH110-13	SS1B 0.15-0.45	0.5m North of Owner's Residence	Antimony	8.9	20	7.5
BH110-16	SS1A 0-0.15	2.5m South of Deck Area	Zinc	**250**	200	340
BH110-16(2)	SS1A 0-0.15	4.5m South of Deck Area	Arsenic	**16**	12	18
BH110-17	SS1A 0-0.15	0.5m South of Owner's Residence	Lead	135*	140	120
			Zinc	**285***	200	340
BH110-17	SS1B 0.15-0.45	0.5m South of Owner's Residence	Lead	140	140	120

* average of the borehole sample and blind duplicate
Bold – exceeds federal (CCME) guideline

The pH value measured by DCS at borehole BH110-16(2), was 7.21 (SS1A at 0-0.15 m depth) which is within the range of 6 to 8 specified in the CCME SQGs and the range of 5 to 9 specified in the Table 2 SCSs.

The limits of the metals contamination is inferred to be located in the areas to the south and north of the Owner's Residence. The northerly extent of contamination is delineated by DCS borehole BH110-12. The southerly extent of contamination cannot be confirmed but is estimated to be 6.5 m south of the building. The metals contamination exceeding federal guidelines is inferred to extend to an average depth of 0.15 m.

3.1.1.4 *Program Building Contaminated Area*

Fourteen soil samples plus a field blind duplicate sample recovered from the eleven boreholes drilled outside of the Program Building by DCS were submitted for analysis of metals. Previously, one surface soil sample was recovered on-site by GENIVAR in 2009 and submitted for analysis of metals. The results of DCS' analyses and the historic GENIVAR results are presented on Table 2.3 and are shown on Drawing 700743-20-5 (Program Building).

The following exceedances to the CCME SQGs and/or 2009 MOE Table 8 SCSs were identified:

Borehole	Sample/Depth Interval (m)	Location	Parameter	Concentration (ug/g)	CCME SQG Res./Park (ug/g)	MOE Table 8 Res./Park (ug/g)
SS-110-5	0-0.20	0.2m South of West Deck Area	Arsenic	**30.9**	12	18
			Copper	**69**	63	92
			Lead	**175**	140	120
			Zinc	**430**	200	290
BH110-5	SS1A 0-0.15	2.3m East of East Deck Area	Zinc	**360**	200	290
BH110-7	SS1A 0-0.15	2.5m South of Program Building	Zinc	**510**	200	290
BH110-7	SS1B 0.15-0.45	2.5m South of Deck Area	Selenium	**2.1**	1	1.5
			Zinc	**310**	200	290
BH110-7	SS1C 0.45-0.75	2.5m South of Program Building	Selenium	**4.2**	1	1.5
			Zinc	**210**	200	290
BH110-7(2)	SS1A 0-0.15	3.5m South of Program Bldg.	Selenium	**1.1**	1	1.5

* average of the borehole sample and blind duplicate
Bold – exceeds federal (CCME) guideline

The limit of the contamination is confirmed to extend east to Borehole BH110-5(2). The southern limit of contamination south of the Program Building cannot be confirmed, but is estimated to extend approximately 5 m south of the Program Building. The depth of contamination is estimated to extend to 0.15 m deep east of the building and 1.0 m deep south of the building.

3.2 CONTAMINATED SITES SUMMARY

3.2.1 Contaminated Site CS-614110/111/112-1

Baseball Office Contaminated Area

The source of the metals contamination outside the Baseball Office has not been confirmed, however, the DCS findings suggest that the source of the elevated copper, lead and zinc concentrations are due to the lead-based paints on the exterior surfaces of the structure that have flaked or leached off as a result of normal weathering. No evidence of imported fill contaminated with foreign objects (i.e., debris or wastes) was noted in any of the fill samples collected and therefore the metals contamination is likely due to a local (i.e., on-site) source.

The limits (i.e., inferred extent) of contamination (based on comparison with the CCME SQGs) are shown on the Soil Contaminant Distribution Plan (Drawing 700743-020-3) in Appendix A. Based on the estimated area of 58.5 m^2 and inferred (average) depth of 0.15 m, a total volume of 9 m^3 (approximately 17.5 tonnes) of metals contaminated soil is estimated.

To address the metals contamination, environmental remediation of the inferred extent of soil contamination as shown on Drawing 700743-020-6 is recommended. This is discussed further in Section 4.0 – Remedial Action Plan/Risk Management Plan.

Owner's Residence Contaminated Area

DCS findings suggest that the source of the elevated antimony, lead and zinc concentrations outside the Owner's Residence are due to the lead-based paints on the exterior surfaces of the house that have flaked or leached off as a result of normal weathering. No evidence of imported fill contaminated with foreign objects was noted in any of the fill samples collected and therefore the metals contamination is likely due to a local (i.e., on-site) source.

The inferred extent of contamination is found to the south and north of the Owner's Residence, as it is shown on the Soil Contaminant Distribution Plan (Drawing 700743-020-4) in Appendix A. The estimated area of 115.8 m^2 south of the building and inferred (average) depth of 0.15 m gives a volume of 17.4 m^3; and an estimated area of 35.2 m^2 north of the building with an inferred depth of 0.15 m results in a volume of 5.3 m^3. Adding the volume of the two affected areas there is a total of 22.7 m^3 (approximately 45 tonnes) of metals contaminated soil.

The details on the recommended environmental remediation for the areas south and north of the structure are discussed in Section 4.0 – Remedial Action Plan/Risk Management Plan.

Program Building Contaminated Area

DCS findings suggest that the source of the elevated selenium and zinc concentrations outside of the Program Building are due to the lead-based paints on the exterior surfaces of the house that have flaked or leached off as a result of normal weathering. No evidence of imported fill contaminated with foreign objects was noted in any of the fill samples collected and therefore the metals contamination is likely due to a local source.

The inferred extent of contamination is found to the south and east, as it is shown on the Soil Contaminant Distribution Plan (Drawing 700743-020-5) in Appendix A. Based on the estimated area of 33 m^2 to the east of the building and inferred (average) depth of 0.15 m (5 m^3) and an estimated area of 65 m^2 south of the building and an inferred (average) depth of 1.0 m (65 m^3) a total volume of 70 m^3, resulting in approximately 140 tonnes of metals contaminated soil is estimated.

3.2.2 Summary for Contaminated Site CS-614110/111/112-1.

A site classification in accordance with the revised *CCME National Classification System for Contaminated Sites (NCSCS 2008)* was completed. This system provides a method for the evaluation of contaminated sites according to their current or potential adverse impact on human health and the environment. The NCSCS was developed as a scientific and technical method to evaluate contaminated federally-owned sites across Canada in order to prioritize future actions at the contaminated sites. The system is able to categorize sites into general levels of concern (Class 1, 2, 3, N or I) according to their current or potential adverse impact on humans and/or the environment. Application of the NCSCS is a screening method only and is not a quantitative risk assessment.

NCSCS scoring was calculated using the 2010 worksheet and the Phase II/III ESA results and the completed NCS classification worksheets are presented in Appendix G. The NCSCS score derived was 57.6. This corresponds to a Class 2 – Medium Priority for Action classification.

The information for the contaminated sites is provided in the following table.

Potential Area of Concern	Contaminated Site	GPS Co-ordinates	Source Description	Contaminants of Concern	Supporting Documentation
South and east side of the Baseball Office; north and south side of the Owner's Residence; and east and south side of the Program Building	CS-614110/111/112-1	642879 mE and 4865175 mN(2) (NAD 83 Zone 17)	No land use was found to be the source. Possible source of antimony, arsenic, barium, copper, lead, selenium and zinc contamination being the lead-based paints on the exterior surfaces of the three target areas (Baseball Office, Owner's Residence and Program Building).	Antimony, Arsenic, Barium, Copper, Lead, Selenium, Zinc	GENIVAR 2010 Enhanced Phase I Environmental Site Assessment DCS Phase II/III Environmental Site Assessment

(2) Geo-referenced from the internet-based Google Earth GIS aerial imagery and mapping application (NAD 83, Zone 17T)

4.0 REMEDIAL ACTION PLAN/RISK MANAGEMENT PLAN

A Remedial Action Plan/Risk Management Plan (RAP/RMP) was undertaken for CS 614110/111/112-1, based on the results of the GENIVAR 2010 Enhanced Phase I ESA and the DCS Phase II/III ESA.

The following three remediation categories were presented in the PWGSC ToR for Phase II/III ESAs:

1. Risk Management Technologies (with development of site specific remediation criteria, if applicable)
    - Risk Assessment
    - No Action/Monitoring (i.e., natural attenuation)
    - Isolation, Containment and Control

2. *Ex Situ* Remediation/Treatment Technologies
    - Excavation and Disposal
    - Excavation and *Ex Situ* Bioremediation
    - Excavation and Isolation, Containment and Control

3. *In Situ* Remediation/Treatment Technologies
    - Bioventing (*in situ* volatilization)
    - *In Situ* Bioremediation

Remedial options considered for the subject contaminated sites were evaluated based on the following factors:

- Effectiveness in meeting the selected clean-up criteria;
- Applicability to site conditions;
- Risk to human health and the environment;
- Timeframe;
- Comparative cost;

Pursuant to the requirements of the ToR, a minimum of one risk management option and one active remedial option were to be evaluated based on the above general remediation technology categories including recommendations concerning the need for further site assessment/investigation, if required. A discussion of the above three remediation categories is provided below.

4.1 RISK MANAGEMENT TECHNOLOGIES

Based on the findings of the GENIVAR Enhanced Phase I ESA and the DCS Phase II/III ESA, soils at the sites CS-614110/111/112-1 are contaminated by metals. Antimony, arsenic and lead are classified as "high" hazards, respectively, in the proposed hazard ranking of the National Classification System (NCS); while selenium is classified as "medium" and barium, copper and zinc are classified as "low" hazards.

One potential remedial option that may be considered appropriate for the contaminated sites is to leave the contaminated soils in place, supported with a Risk Management Plan (RMP). This approach could be completed with the majority of the site data collected to date and would not require additional intrusive sampling. As part of the implementation of this option, a Screening Level Risk Assessment (SLRA) would be performed to assess the risks of the present metals impacts to human and ecological receptors and to ultimately confirm suitability of the risk-based alternative to the contaminated site.

If the SLRA identifies acceptable risks, remedial activities at the site would not be necessary, and in all likelihood no further action(s) would be required, unless the use and/or activities at the sites change in the future. The *no action/monitoring* risk management approach would be an effective risk management measure in this instance. However, if the SLRA identifies unacceptable risks, a Site-Specific Risk Assessment (SSRA) may be warranted. If an SSRA is performed for the identified contaminated sites, it would ultimately result in the derivation of site-specific remedial targets (SSRT) protective of receptors identified at the site. The SSRA would require a return visit to the sites by a qualified biologist for an evaluation of the existing flora and fauna inhabiting the site. Soils with metals concentrations in excess of the SSRTs would either have to be remediated through options (2) or (3) above to concentrations that meet the SSRTs and/or risk managed further. The *no action/monitoring* risk management approach would likely not be an effective risk management measure if the concentrations of metals are in excess of the SSRTs due to the relative stability of metals in soil. This approach would likely result in the site being monitored for a long period of time with little or no attenuation in contaminant concentrations.

The *isolation, containment and control* risk management approach to mitigate the risks presented by metals at the sites would likely not be an effective risk management measure. Isolation technologies would involve either erecting a permanent fence around the contaminated areas and/or covering the contaminated area with a cap to limit exposure routes to humans and ecological receptors. The cap would also contain the contamination and prevent migration through surface water movement and wind blown dust. This method, however, is more suitable for remote sites where source removal of the contamination is not cost-effective in comparison with regular fence and/or cap maintenance over a long period of time.

These risk management options (i.e., long term monitoring or isolation) normally do not result in the remediation of the site, but rather cut off an exposure pathway and are considered to be containment and/or control measures. Both of these options would require additional monitoring and maintenance if a cap is installed; resulting in additional costs and possibly restrictions to the site.

As discussed above in Sections 3.2.1, the source of the metals contamination was not confirmed but may be due to the lead-based paints on the exterior surfaces of the structures that have flaked or leached off as a result of normal weathering. Given that extensive areas of the external surfaces of the structures present weathered lead-based painting, it is assumed that the metals contamination would continue in the surrounding soil. To avoid further soil contamination, the paint should be stabilized by scraping and repainting or capped with aluminum or plywood to eliminate the potential for site recontamination.

Activity	Estimated Cost ($)
Supplementary Phase III ESA Investigation	32,900
Screening Level Risk Assessment (SLRA)	30,000
Site-Specific Risk Assessment (SSRA, if required)	35,000
Stabilization of Exterior Painted Surfaces	6,000
Sub Total	68,900 - 103,900
30% Contingency	20,670 - 31,170
Total	**89,570 - 135,070**

* The range of cost is given to account for potential need of an SLRA

Given the low technical complexity, the risk assessment process can be completed in a period of four to six months. The Risk Management option should be re-evaluated based on the conclusions reached in the risk assessment.

4.2 *Ex Situ* Remediation/Treatment Technologies

Ex situ treatment technologies typically include excavation of contaminated soil for off-site disposal at an approved waste disposal facility (e.g., municipal transfer station or landfill), for on-site *ex situ* bioremediation (see Section 4.3 below) or for off-site beneficial reuse (e.g., daily cover at a municipal landfill). These technologies could be used to remove contaminated soil from the contaminated sites so that further management of contamination would not be required. This approach could be completed with the majority of the site data collected to date and would not require additional intrusive sampling. In comparison with the risk management option (1), this option eliminates the contamination at the site and presents a permanent solution for remediation of the contaminated sites. Based on the direct road-access location of the sites, common excavation and haulage equipment can be used making this strategy a viable alternative to risk management. Further, as the TCLP results indicated that the soils excavated from the contaminated sites were determined to be non-hazardous, they may be disposed to any land-based landfill where the soils are consistent with the landfill license.

The *ex situ bioremediation* of metals contaminated soil approach would likely not be an effective method of remediation because of the relative difficulty of remediating metals impacts in soil and due to the above benefits relating to site access and transport.

The *ex situ beneficial reuse* of metals contaminated soil approach would likely not be an effective method of remediation because of the relative small quantity of metals contaminated soil at the sites.

Appropriate health and safety plans would be required to avoid ingestion/inhalation of impacted soil/dust by site personnel, and to prevent contaminant impact to the vicinity. Given the site is a federal property, the completion of a Canadian Environmental Assessment Act (CEAA) Screening Assessment would be required as well, prior to implementing the remedial activities. It is presumed that the work would be undertaken in the spring/summer/fall with acceptable weather conditions and could be completed in a reasonable timeframe of one to two weeks. This remediation option would have a low risk to human health and minimal interference with the tenant, however, remediation within 1 m of any buried services or water and wastewater services will be done manually (i.e., labourers and shovels).

The following list outlines the required components for implementing this strategy:

- Conduct a Supplementary Phase III ESA investigation;
- Development of a work plan (including detailed costing);
- Completion of a CEAA Screening Assessment;
- Mobilize light excavation equipment to the site;
- Strip metals contaminated soils from CS 614110/111/112-1 and load onto a truck for direct disposal to a land-based landfill;
- Obtain verification samples from the limits of the excavation (for compliance purposes);
- Restore the excavated area with imported topsoil, finished with roll-sod; and,
- Documentation and reporting.

Full-time monitoring by qualified environmental consulting field staff would be performed during the remediation activities. A breakdown of the estimated cost to remove and dispose of all of the metals contaminated soil at the contaminated sites is provided in the following table.

As indicated above for the Risk Management option, lead-based exterior paint should be stabilized by scraping and repainting or capped with aluminum or plywood to eliminate the potential for site recontamination.

Estimated Cost for Excavation and Disposal Option – CS 610108-001

Activity	Estimated Cost ($)
Supplementary Phase III ESA Investigation	32,900
Preparatory Activities (HASP, report review, planning, etc.)	6,000
Preparation of Specifications	4,500
CEAA Screening Assessment	5,000
Site Supervision	5,760
Remediation Subcontractor (based on 205 tonnes)	41,000
Stabilization of Exterior Lead-Based Painted Surfaces	6,000
Laboratory Analysis	6,600
Reporting, NCSCS scoring	5,500
Expenses (field and office)	720
Sub Total	113,980
30% Contingency	34,194
Deck Repair Contingency	5,000
Total	**153,174**

The above cost estimate for Environmental Remediation by Excavation and Disposal is based on approximately 102 m^3 (205 tonnes) of metals contaminated soils in CS 614110/111/112-1 based on the inferred extent of impacts as shown on Drawings 700743-019-3, 700743-019-4, and 700743-019-5.

As the remediation area includes the area to the south of the owner's house where underneath the deck area, additional costs will accrue for its disassembly and repair. For contingency, an allowance of $5,000 is included for repairs to the owner's house deck.

4.3 *IN SITU* REMEDIATION/TREATMENT TECHNOLOGIES

In situ treatment technologies would include biodegradation (e.g., bioventing or bioremediation).

Bioremediation involves the use of microorganisms to transform or degrade contaminants to non-hazardous or less hazardous chemicals. It is a technique very effective with organic contaminants such as PHCs, however metals have low water solubility and low potential for biodegradation and cannot be treated effectively with regular biodegradation methods.

Bioventing basically increases the flow of air through the unsaturated zone to stimulate bioremediation and volatilization. It is a technique very effective with volatile organic contaminants, however metals have a low vapour pressure and cannot be treated effectively with regular bioventing methods. However, metals can be treated *in situ* to reduce their bioavailability.

The *in situ remediation* of metals contaminated soil approach would likely not be an effective method of remediation because of the metals contamination present at CS 614110/111/112-1.

4.4 PRELIMINARY REMEDIAL ACTION PLAN

Based on the site conditions and discussions presented the above section, potential remedial options considered appropriate for CS 614110/111/112-1 include the following:

A) Risk Management; or,

B) Excavation and Disposal

The following table presents a summary of the assessment of the two remedial options considering the various required factors.

Assessment of Remedial Options for CS 614110/111/112-1

Assessment Criteria	Risk Management Option (A)	Excavation and Disposal Option (B)
Effectiveness in meeting the selected cleanup criteria	Not Applicable (Risk Assessment approach establishes site specific remediation criteria)	Good
Applicability to site conditions	Good	Good
Complexity	Low	Low
Public acceptance	Low	Good
Risk to human health and the environment	Low	Low
Timeframe	Four to six months	Three months
Comparative cost	Moderate	Moderate
Property ownership	Low	Good
On-site vs. off-site contamination	None	None
Long-term monitoring	None	None

Based on the above assessment of the remedial options available for CS 614110/111/112-1, *Excavation and Disposal* is the preferred remedial option because it removes the contaminants from the site for a similar cost to the Risk Management option.

4.5 ESTIMATE OF INDICATIVE/SUBSTANTIVE OR CONTINGENT LIABILITY

It is the objective of the federal government to ensure that costs and liabilities related to the management and remediation of contaminated sites, for which the Government of Canada has ongoing responsibility, are accounted for and reported in the financial statements of the government in the fiscal year in which environment damage is incurred, or in the fiscal year in which costs and liabilities are identified. To meet this objective, the Treasury Board has directed federal departments to account for these costs and liabilities when contamination occurs if the government is obligated, or likely to be obligated to incur such costs:

- for reasons of public health and safety
- to contractual arrangements; or,
- to meet standards set out in an act or regulation of a government (federal, provincial or municipal) in Canada or abroad which are considered to be acceptable.

If Risk Management is the chosen remedial option, then the remediation costs are defined as *contingent liability*. If *Ex Situ* or *In Situ* Remediation/Treatment Technologies are the chosen remedial option, then the remediation costs are defined as either *indicative* or *substantive* liability.

If the cost estimate for the remedial option is based on preliminary data, the estimate is defined as being *indicative*. If the cost estimate for the remedial option is based on comprehensive/high quality data, the estimate is defined as being *substantive*.

The Treasury Board guidelines for assignment of liability indicate that impacted sites with a NCSCS score of Class 1 or 2 are considered to have a liability equivalent to the estimated remedial costs, while sites with a score of Class 3 represent a *Contingent Liability* also equivalent to the estimated remedial costs.

Further site characterization is required for CS 614110/111/112-1 as insufficient soil data exists to estimate with reasonable certainty the volume of contaminated soil, therefore, this remedial option estimate is considered as *indicative* liability.

Contaminated Site CS 614108-001 obtained an NCSCS score of Class 2 and therefore represents an estimate of *indicative* liability (same as remedial costs) which was calculated according to the Treasury Board of Canada protocols. An estimate of liability was prepared (see above Sections 4.1 and 4.2) for the two remedial options for CS 614110/111/112-1. The liability that is associated is:

Remedial Option	Estimated Cost
(A) Screening Level Risk Assessment (SLRA) and Risk Management Plan	$89,570
(A) Site-Specific Risk Assessment (SSRA, if required)	$135,070
(B) Excavation and Disposal	$153,174

Therefore, the *contingent* liability cost associated with the Risk Management option (A) at CS 614110/111/112-1 is estimated to range between $89,570 and $135,070. The *indicative* liability cost associated with the preferred Excavation and Disposal option (B) is estimated to be $153,174. For contingency, an allowance of $5,000 is included for repairs to the deck (south side) on the Owner's Residence should Option (B) be selected.

4.6 FURTHER ASSESSMENT COSTS

4.6.1 CS 614110/111/112-1

The work completed to date is not sufficient for completing the preferred remedial option (Excavation and Disposal) at CS 614110/111/112-1. Additional sampling at CS 614110/111/112-1 is considered necessary to estimate with reasonable certainty the volume of contaminated soil to support the preparation of a RAP/RMP.

To further evaluate the metals soil exceedances exhibited at CS 614110/111/112-1, extra boreholes situated to delineate the extent of the contamination in the three areas around the target structures, as shown on the Proposed Supplemental Phase III ESA Sampling Plan drawings (Drawings 700743-019-6, 700743-019-7, and 700743-019-8) in Appendix A. Samples would be collected at depths consistent with the current Phase II/III ESA method (i.e., 0.15, 0.45 and 0.75 m), and submitted for laboratory chemical analysis of metals. A deeper borehole needs to be dug next to BH-110-7 (south of the Program Building), where the vertical extent of the metals contamination has not been determined.

As indicated above, the source of the metals contamination was not confirmed but may be due to the lead-based paints on the exterior surfaces of the structures that have flaked or leached off as a result of normal weathering. Sampling of all remaining paint applications on the exterior of the structures would be undertaken as part of the scope of work. The estimated cost to carry out this supplementary investigation is $32,900 (excluding HST and PWGSC management fees).

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the Phase II/III ESA field work and laboratory testing, the following conclusions were drawn for each contaminated area around the target structures: For the Baseball Office, the soil samples recovered from the areas to the south and east of the structure exceeded the CCME SQGs for residential/parkland property use with lead concentrations ranging from 200 to 260 ug/g vs. the CCME SQG of 140 ug/g and zinc concentrations ranging from 215 to 240 ug/g vs. the CCME SQG of 200 ug/g. Also for this area, a soil sample recovered south of the structure exceeded the applicable federal guideline with a copper concentration of 330 ug/g vs. the CCME SQG of 63 ug/g.

For the Owner's Residence, the soil samples recovered from the area to the north and south of the structure exceeded the applicable guideline with zinc concentrations ranging from 250 ug/g to 430 ug/g vs. the CCME SQG of 200 ug/g. Arsenic contamination was also found, south of the structure, with concentration of 16 ug/g vs. the CCME SQG of 12.

For the Program Building soil samples located south and east of the structure exceeded the standard for zinc, with concentrations ranging from 210 to 510 ug/g., with the presence of selenium contamination in the south area, with concentrations ranging from 1.1 to 4.2 ug/g. against the CCME SQG a standard of 1 ug/g.

Some of the concentrations mentioned above were obtained by averaging the concentration of a sample and its corresponding blind duplicate.

The revised limits of the metals contamination at the three identified contaminated areas within the site (collectively labelled CS 614110/111/112-1) were partially delineated during this project and are inferred as follows:

- The contaminated area around the Baseball Office is located south and east of the building (estimated area of 58.5 m^2) to an inferred average depth of 0.15 m, resulting in a total volume of 9 m^3;

- The contaminated area around the Owner's Residence, located north and south of the building (estimated area 151 m^2) to an inferred average depth of 0.15 m, resulting in a total volume of 23 m^3; and

- The contaminated area around the Program Building, located south and east of the building [estimated area of 33 m^2 to the east of the building with an inferred depth of 0.15 m (5 m^3) and an estimated area of 6.5 m^2 south of the building to an inferred depth of 1.0 m (65 m^3)] resulting in a volume of 70 m^3.

The total volume of metals contaminated soil for the three contaminated areas is then 102 m^3 (approximately 205 tonnes). A supplemental Phase III ESA is recommended to refine the estimated volume.

A CCME National Classification System for Contaminated Site (NCSCS) score of 57.6 was calculated for the site. This corresponds to a Class 2 – Medium Priority for Action classification.

The laboratory analysis found that the weathered exterior paint on the three structures, in the three contaminated areas, have a lead content exceeding the 2005 (as amended to 2010) federal Canadian *Surface Coating Materials Regulations*, under the *Hazardous Products Act* value that restricts lead content to 90 mg/kg (0.009% by weight or 90 ppm) for surface coating materials (e.g., paints) used on artefacts (e.g., furniture, toys, etc.) in or around a residence or other premises (e.g., a public park) attended by children or pregnant women. This value does not apply specifically to lead in existing paint on buildings/structures, but rather it limits lead content in new coatings on the artefacts noted above.

The exterior blue-coloured paint retrieved from the south west corner of the Baseball Office exhibited a lead content of 3.1%. The exterior blue-coloured paint recovered from the north west corner of the Owner's Residence exhibited a content of 2.6%. For the Program Building, exterior brown-coloured paint retrieved from the south east corner of the Program Building, exhibited a lead content of 0.13%. Exterior paint applications for the three sites are therefore considered "lead-based". Painting contractors should be advised of the presence of lead, if any, in the existing coatings at the site before commencing work so that appropriate personal protective equipment can be provided and work area isolation can be implemented. During any future demolition activity, special precautionary measures should be adopted on a case-by-case basis depending on the concentration of lead found in a particular application, the extent and nature of the work, etc. Such measures could include, for example, work area containment, dust suppression, worker and equipment decontamination practices, the use of personal protective equipment, etc. The detection of elevated concentration of lead in the paint on the structures supports the inference presented by GENIVAR that the source of the metals soil contamination was due to the lead-based paints on the exterior surfaces that have flaked or leached off as a result of normal weathering.

Pre-Remediation Considerations

As indicated above, the source of the metals contamination was not confirmed but may be due to the lead-based paints on the exterior surfaces of the house that have flaked or leached off as a result of normal weathering. If it is assumed that the metals contamination would continue from the presence of the lead-based paint on the exterior walls of the structures, the paint should be stabilized by scraping and repainting or capped with aluminum or plywood to eliminate the potential for site recontamination. In advance of any site remediation/risk management, sampling of all remaining paint applications on the exterior of the structures should be undertaken and if determined to be lead-based, that these painted surfaces should also be stabilized by scraping and repainting.

As the metals contamination exhibited at CS 614110/111/112-1 has not been fully delineated at this time, a supplementary drilling program (i.e., supplementary Phase III ESA) is recommended in advance of any site remediation/risk management. The cost to complete a supplementary Phase III ESA at CS 614110/111/112-1 is estimated at $32,900 + HST (exclusive of PWGSC management fees).

Remediation Options

To address the metals contamination identified at CS 614110/111/112-1, two remediation options were considered:

C) Risk Management; or,

D) Excavation and Disposal

Option A - Risk Management

The exhibited metals soils exceedances are based on comparison of the chemical data with environmental criteria developed with both environmental and human health exposure risks. As the sites include a tenanted residence and the commercial operation of Camp Robin Hood, human receptors pose an exposure risk to the metals contaminated soils. Therefore, a Risk

Management Plan would be a viable option for CS 614110/111/112-1. The Risk Management Plan would include a Screening Level Risk Assessment (SLRA) to assess the risks of the metals impacts to human and ecological receptors (i.e., the existing flora and fauna inhabiting the site) and to ultimately confirm suitability of the risk-based alternative to CS 614110/111/112-1. The contingent liability cost for option (A) *Risk Management* is estimated to range between $89,570 and $135,070.

Option B - Excavation and Disposal

Environmental remediation by excavation and disposal would consist of source removal of all metals contaminated soils from the site then replacement with clean fill (i.e., topsoil). This work would begin by mobilizing light excavation equipment to the site. The equipment would be selected to minimize damage to the grassed areas surrounding the remediation area. The contaminated soil would be excavated directly into trucks for disposal to a land-based landfill where the material is consistent with the landfill license. The site remediation activities would not affect tenants. Full-time monitoring by qualified environmental consulting field staff would be performed during the remediation activities. The remediation area would be restored with the placement of topsoil, finished with roll-sod. The indicative liability cost for option (B) *Excavation and Disposal* is estimated at $153,174.

Based on an evaluation of the environmental remediation and the risk assessment options, the Excavation and Disposal option (B) would be the preferred approach because it removes the contaminants from the site for a similar cost to the Risk Management option.

6.0 REFERENCES

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Canadian Council of Ministers of the Environment, 1999. *Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health* (Summary Tables). September 2007 (as amended to 2010).

Province of Ontario, *Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, July 27, 2009.

Occupational Health and Safety Act (OHSA, R.S.O. 1990).

7.0 USE AND LIMITATIONS OF THIS PHASE II/III ESA REPORT

This report has been prepared in accordance with generally accepted engineering and environmental practices for the exclusive use of Public Works and Government Services Canada and Transport Canada. This report is based on the information obtained while conducting the investigation activities completed during the Phase II/III ESA, authorized by PWGSC, at the PLS site PINs 614110, 614111 and 614112 located at 10243 and 10251 Reesor Road in Markham, Ontario.

The findings and conclusions presented in this report represent the best judgement of the assessor(s) based on the current environmental standards and on the site conditions observed on December 3 and 22, 2010. Due to the nature of investigation and the limited data available, DCS cannot warrant against undiscovered environmental liabilities. Further, conclusions pertaining to the media sampled during the Phase II/III ESA are based exclusively on the soil samples collected and chemical parameters tested at specific sampling locations. It should be recognized that subsurface soil conditions between and beyond the sample locations may vary. DCS cannot expressly guarantee that subsurface conditions between and beyond the sample locations do not vary from the results determined at the sample locations.

Notwithstanding these limitations, this report is believed to provide a reasonable representation of site conditions as of December 22, 2010. The contents of this report are based on the information collected during the investigation activities, our understanding of the actual site conditions, and our professional opinion according to the information available at the time of preparation of this report.

This report has been prepared by DCS for Public Works and Government Services Canada and Transport Canada. DCS accepts no liability, whether in negligence, contract or arising on any other basis for damages or for indemnification arising from decisions or actions by others based on this report.

8.0 CLOSURE

The field program for this investigation was undertaken by Dr. Sean Shekarforoush. The data review and reporting for this Phase II/III ESA program was undertaken by Mr. Rene Rodriguez. This report was reviewed by Mr. Steven Ruminsky, P.Eng., P.Geo.

Mr. Ruminsky is registered with the Ministry of the Environment (MOE) as qualified person with respect to the completion of Phase I and II Environmental Site Assessments (QP_{ESA}) and Risk Assessment (QP_{RA}) as per O.Reg. 153/04. Resumes detailing the qualifications and technical experience of the site assessors are included in Appendix J.

Respectfully submitted,

DECOMMISSIONING CONSULTING SERVICES LIMITED

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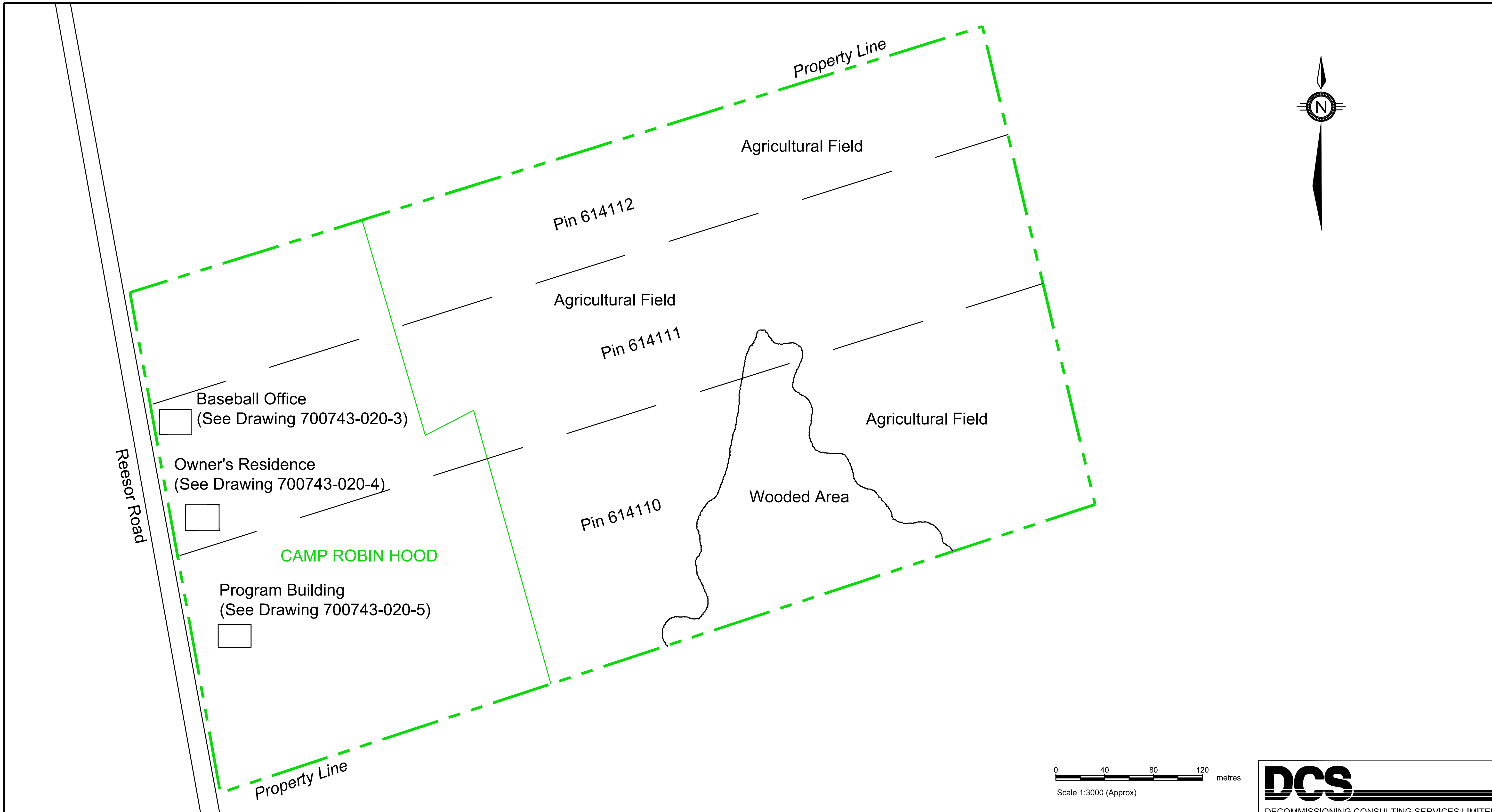
APPENDIX A

SITE PLAN, BOREHOLE LOCATION PLAN, SOIL CONTAMINANT DISTRIBUTION PLANS AND PROPOSED SUPPLEMENTAL PHASE III ESA SAMPLING PLANS



DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

LEGEND:

NOTES:
1.

REFERENCE:
1.

REVISIONS:

No.	Date:	By:	Revisions

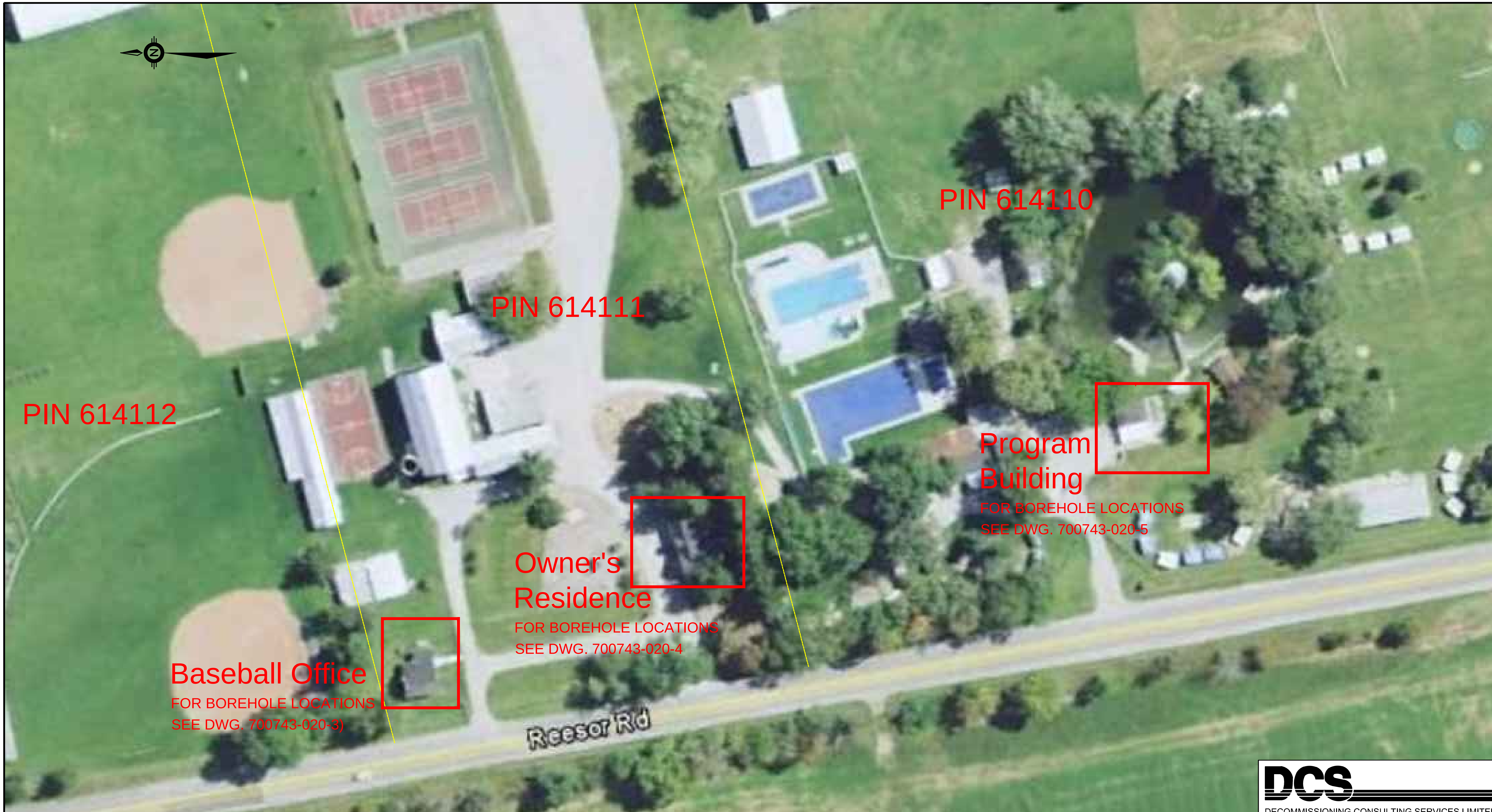
PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

PHASE II/III ESA

10242 & 10251 REESOR ROAD, PICKERING, ONTARIO
PIN 614110, PIN 6144111 AND 614112

SITE PLAN

Drawn By: S.D.T.	Approved By: S.S	Project No: 700743-020
Date: JAN 2010	Scale: AS SHOWN	Drawing No: 700743-020-1



LEGEND:

NOTES:

1.

REFERENCE:

1.

REVISIONS:

No.	Date:	By:	Revisions

DCS

DECOMMISSIONING CONSULTING SERVICES LIMITED

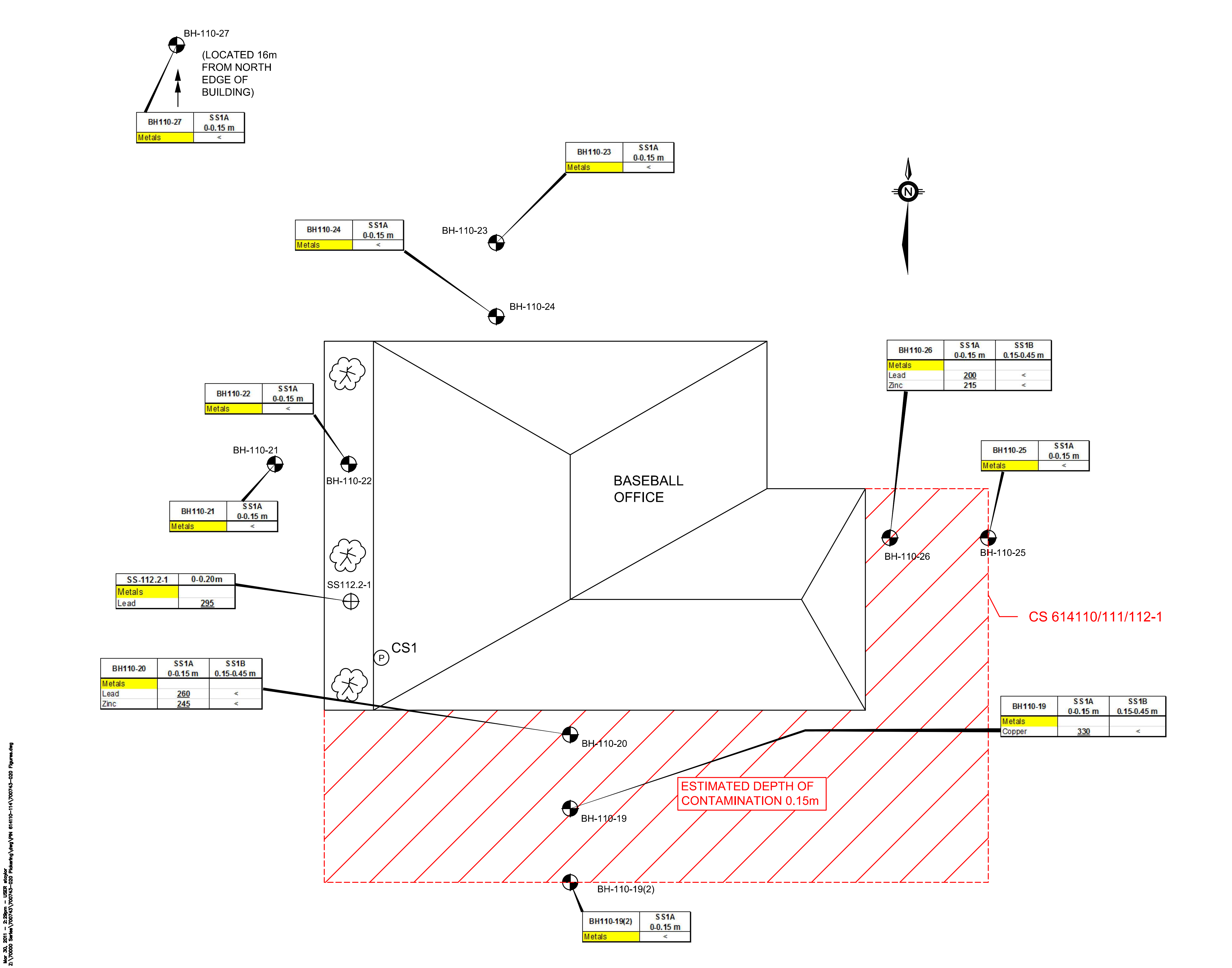
PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

SITE FEATURES MAP

10242 & 10251 REESOR ROAD, PICKERING, ONTARIO
PIN 614110, PIN 6144111 AND 614112

Drawn By: S.D.T.	Approved By: S.S	Project No: 700743-020
Date: JAN 2010	Scale: N.T.S	Drawing No: 700743-020-2

Mar 30, 2011 – 2:28pm – USER staylor
Z:\70000 Series\700743\700743-020 Pickering\dwg\PIN 614110-114\700743-020 Figures.dwg



LEGEND:

- BH-110-19 — BOREHOLE LOCATION (DCS, DEC. 2010)
- SS112.2-1 — BOREHOLE LOCATION (GENIVAR, DEC. 2009)
- DECK
- GARDEN
- INFERRED LIMITS OF CONTAMINATED SITE CS 614108-001 (BASED ON CCME SQGs)
- PAINT SAMPLE LOCATION (DCS, DEC. 2010)

BH110-1	CCME Guideline	Table 2 Standard	SS2 0.15-0.50 m
Copper	63	140	75
Lead	140	120	139
Zinc	200	340	295

BH110-1	Borehole Identifier
CCME Guideline	Canadian Council of Ministers of the Environment (CCME) Canadian Soil Quality Guidelines (SQGs) for Residential/Parkland land use, coarse soil texture. (updated in 2010).
Table 2 Standard	2011 MOE Table 2 Full Depth Soil Standard for Residential /Parkland/Institutional property use, coarse soil texture.
SS2	Sample Identifier
0.15-0.50m	Sample Depth Interval
Lead	Parameter tested
BOLD	Exceeds CCME Guideline
Underline	Exceeds MOE Standard
BOLD	Exceeds CCME and MOE
NA	Parameter not analyzed
<	Parameter Concentration meets CCME guideline and MOE standard

REFERENCE

1. Pickering Lands Site Emergency Response Numbers Plan, PWGSC Real Property Services and Transport Canada
2. Aerial Imagery dated 1 September 2009, Google Earth

NOTES:

1. PIN - Property Identification Number

0 1.0 2.0 3.0 metres

SCALE 1:75

DCS

DECOMMISSIONING CONSULTING SERVICES LIMITED

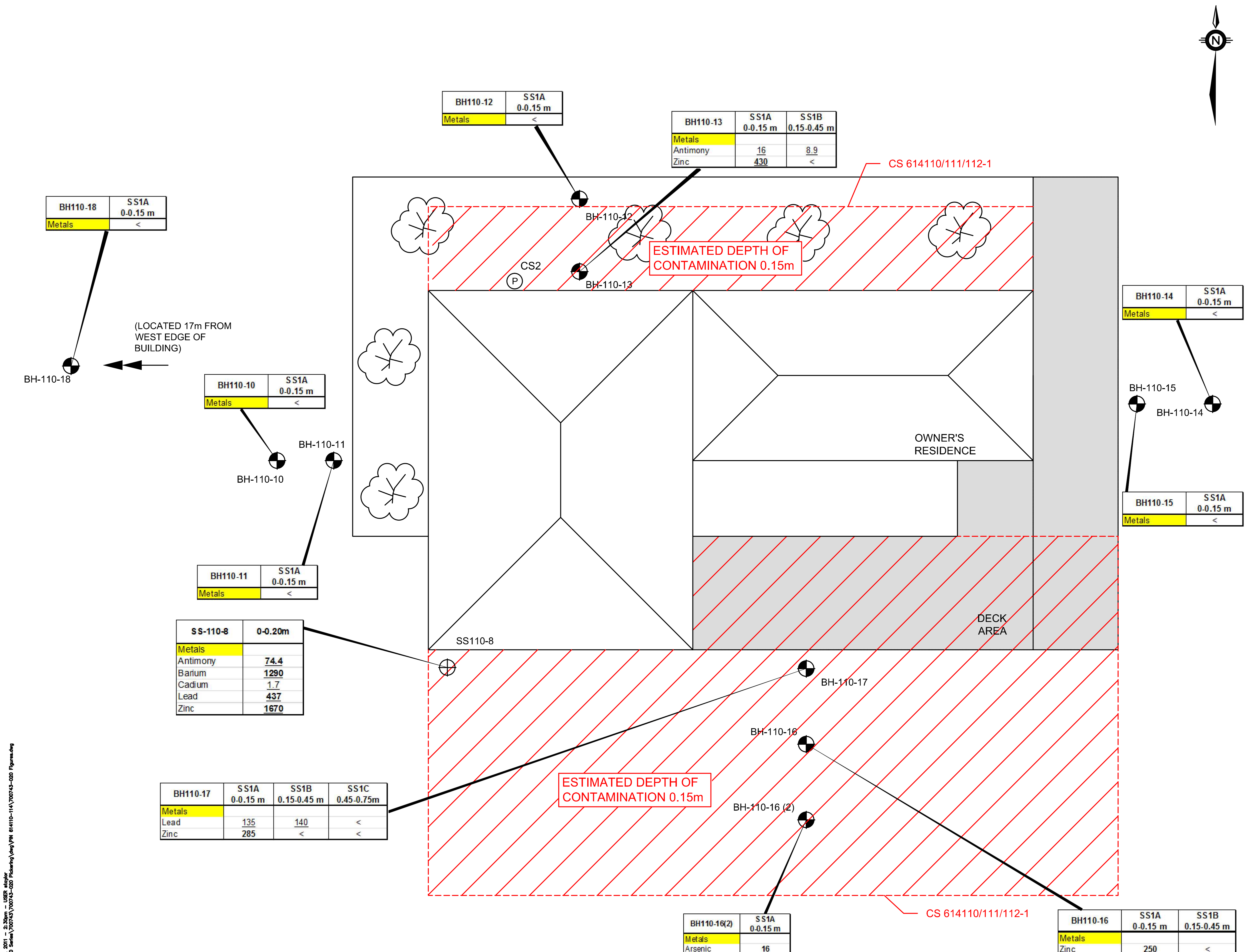
PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

PHASE II/III ESA

PIN 614110, PIN 6144111 AND 614112
10242 & 10251 REESOR ROAD, PICKERING, ONTARIO

SOIL CONTAMINANT DISTRIBUTION PLAN
BASEBALL OFFICE

Drawn By: S.D.T	Approved By: S.S	Project No: 700743-020
Date: JAN 2011	Scale: 1:75	Drawing No: 700743-020-3



BH110-12	SS1A 0-0.15 m
Metals	<

BH110-13	SS1A 0-0.15 m	SS1B 0.15-0.45 m
Metals		
Antimony	16	8.9
Zinc	**430**	<

BH110-18	SS1A 0-0.15 m
Metals	<

BH110-10	SS1A 0-0.15 m
Metals	<

BH110-11	SS1A 0-0.15 m
Metals	<

SS-110-8	0-0.20m
Metals	
Antimony	**74.4**
Barium	**1290**
Cadium	1.7
Lead	**437**
Zinc	**1670**

BH110-17	SS1A 0-0.15 m	SS1B 0.15-0.45 m	SS1C 0.45-0.75m
Metals			
Lead	135	140	<
Zinc	**285**	<	<

BH110-14	SS1A 0-0.15 m
Metals	<

BH110-15	SS1A 0-0.15 m
Metals	<

BH110-16(2)	SS1A 0-0.15 m
Metals	
Arsenic	16

BH110-16	SS1A 0-0.15 m	SS1B 0.15-0.45 m
Metals		
Zinc	**250**	<

LEGEND:

BH-110-12 BOREHOLE LOCATION (DCS, DEC. 2010)

SS110-8 BOREHOLE LOCATION (GENIVAR, DEC. 2009)

DECK

GARDEN

INFERRED LIMITS OF CONTAMINATED SITE CS 614108-001 (BASED ON CCME SQGs)

P PAINT SAMPLE LOCATION (DCS, DEC. 2010)

BH110-20	CCME Guideline	Table 2 Standard	SS2 0.15-0.50 m
Antimony	20	7.5	16
Arsenic	12	18	16
Lead	140	120	139
Zinc	200	340	295

BH110-20	Borehole Identifier
CCME Guideline	Canadian Council of Ministers of the Environment (CCME) Canadian Soil Quality Guidelines (SQGs) for Residential/Parkland land use, coarse soil texture. (updated in 2010).
Table 2 Standard	2011 MOE Table 2 Full Depth Soil Standard for Residential /Parkland/Institutional property use, coarse soil texture.
SS2	Sample Identifier
0.15-0.50m	Sample Depth Interval
Lead	Parameter tested
BOLD	Exceeds CCME Guideline
Underline	Exceeds MOE Standard
BOLD	Exceeds CCME and MOE
NA	Parameter not analyzed
<	Parameter Concentration meets CCME guideline and MOE standard

REFERENCE

1. Pickering Lands Site Emergency Response Numbers Plan, PWGSC Real Property Services and Transport Canada
2. Aerial Imagery dated 1 September 2009, Google Earth

NOTES:

1. PIN - Property Identification Number

0 2 4 metres

SCALE 1:100

DCS

DECOMMISSIONING CONSULTING SERVICES LIMITED

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

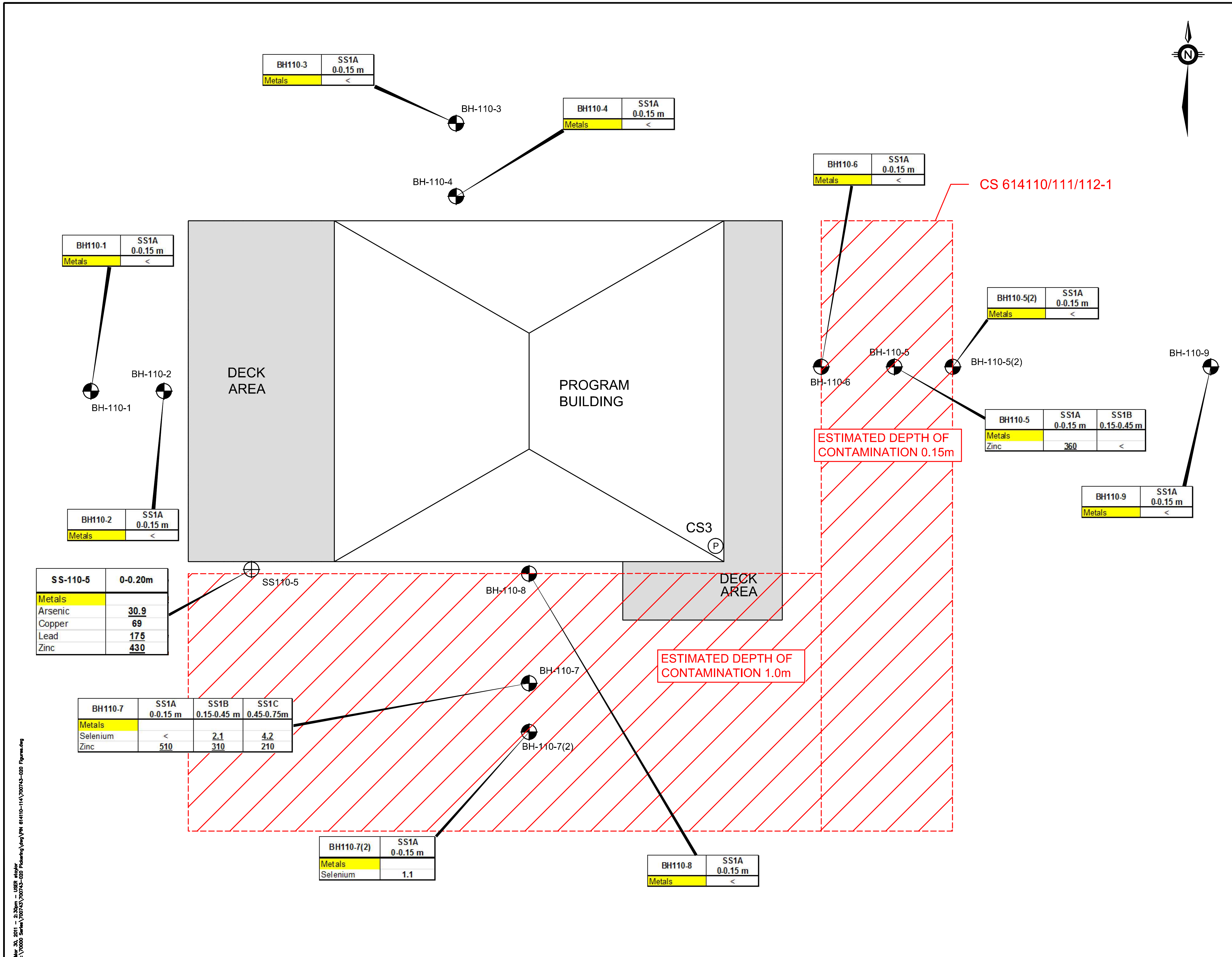
PHASE II/III ESA

PIN 614110, PIN 6144111 AND 614112

10242 & 10251 REESOR ROAD, PICKERING, ONTARIO

SOIL CONTAMINANT DISTRIBUTION PLAN OWNER'S RESIDENCE

Drawn By: S.D.T	Approved By: S.S.	Project No: 700743-020
Date: JAN 2011	Scale: 1:100	Drawing No: 700743-020-4



LEGEND:

BH-110-7 BOREHOLE LOCATION (DCS, DEC. 2010)

SS110-5 BOREHOLE LOCATION (GENIVAR, DEC. 2009)

DECK

GARDEN

INFERRED LIMITS OF CONTAMINATED SITE CS 614108-001 (BASED ON CCME SQGs)

PAINT SAMPLE LOCATION (DCS, DEC. 2010)

BH110-5	CCME Guideline	Table 8 Standard	SS2 0.15-0.50 m
Selenium	1	1.5	4.2
Zinc	200	290	295

BH110-5	Borehole Identifier
CCME Guideline	Canadian Council of Ministers of the Environment (CCME) Canadian Soil Quality Guidelines (SQGs) for Residential/Parkland land use, coarse soil texture. (updated in 2010).
Table 8 Standard	2011 MOE Table 8 Full Depth Soil Standard for Residential /Parkland/Institutional property use, coarse soil texture.
SS2	Sample Identifier
0.15-0.50m	Sample Depth Interval
Lead	Parameter tested
BOLD	Exceeds CCME Guideline
Underline	Exceeds MOE Standard
BOLD	Exceeds CCME and MOE
NA	Parameter not analyzed
<	Parameter Concentration meets CCME guideline and MOE standard

REFERENCE

1. Pickering Lands Site Emergency Response Numbers Plan, PWGSC Real Property Services and Transport Canada
2. Aerial Imagery dated 1 September 2009, Google Earth

NOTES:

1. PIN - Property Identification Number

0 1.0 2.0 3.0 metres

SCALE 1:75

DCS

DECOMMISSIONING CONSULTING SERVICES LIMITED

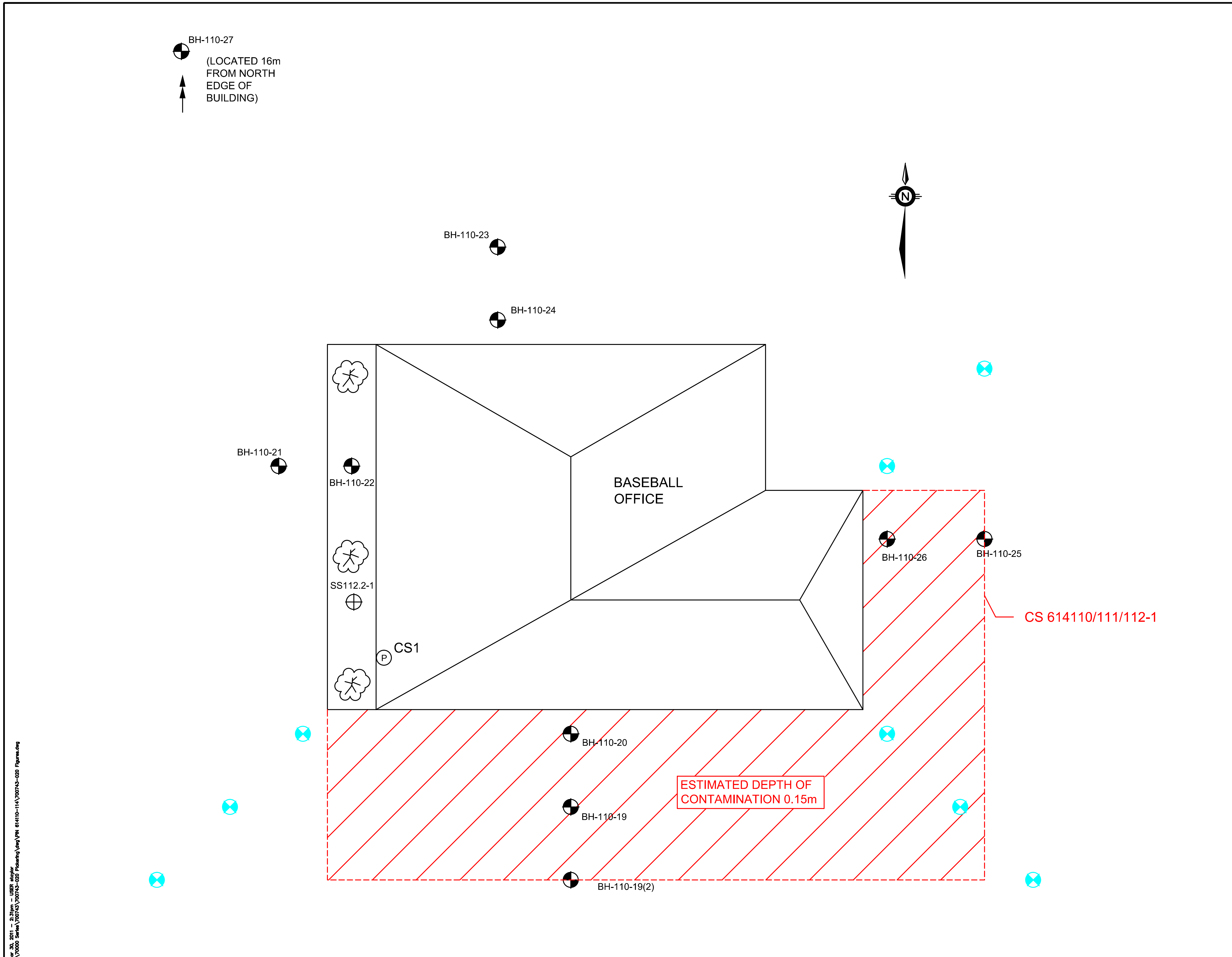
PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

PHASE II/III ESA

PIN 614110, PIN 6144111 AND 61411210242 & 10251 REESOR ROAD, PICKERING, ONTARIO

SOIL CONTAMINANT DISTRIBUTION PLAN PROGRAM BUILDING

Drawn By: S.D.T	Approved By: S.S	Project No: 700743-020
Date: JAN 2011	Scale: 1:75	Drawing No: 700743-020-5



LEGEND:

BH-110-19	BOREHOLE LOCATION (DCS, DEC. 2010)
SS112.2-1	BOREHOLE LOCATION (GENIVAR, DEC. 2009)
	DECK
	GARDEN
	INFERRED LIMITS OF CONTAMINATED SITE CS 614108-001 (BASED ON CCME SQGs)
P	PAINT SAMPLE LOCATION (DCS, DEC. 2010)
	PROPOSED BOREHOLE LOCATION (DCS JAN 2011)

REFERENCE

1. Pickering Lands Site Emergency Response Numbers Plan, PWGSC Real Property Services and Transport Canada
2. Aerial Imagery dated 1 September 2009, Google Earth

NOTES:

1. PIN - Property Identification Number

0 1.0 2.0 3.0 metres

SCALE 1:75

DCS

DECOMMISSIONING CONSULTING SERVICES LIMITED

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

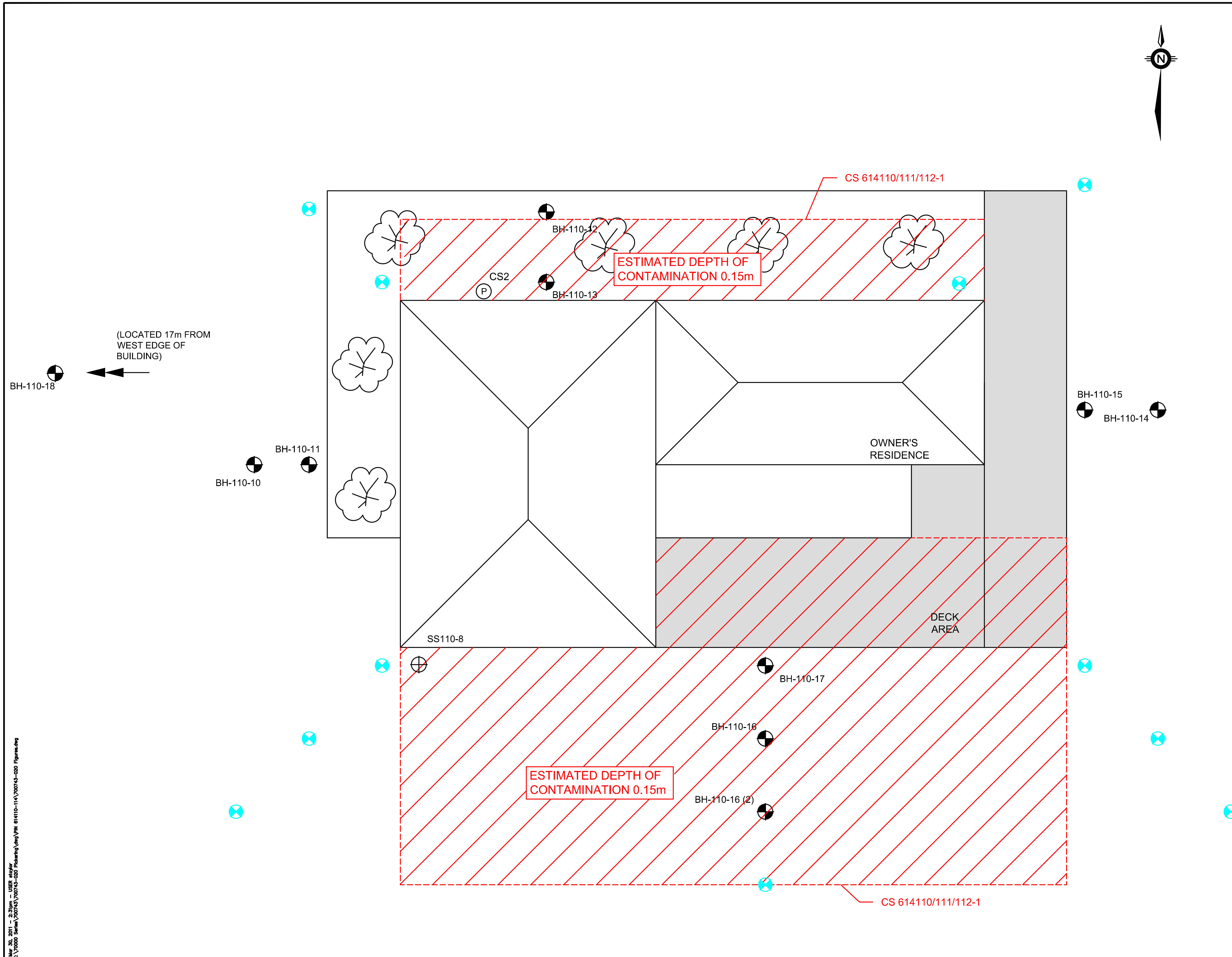
PHASE II/III ESA

PIN 614110, PIN 6144111 AND 614112

10242 & 10251 REESOR ROAD, PICKERING, ONTARIO

SUPPLEMENTARY PHASE III ESA SAMPLING PLAN BASEBALL OFFICE

Drawn By: S.D.T	Approved By: S.S	Project No: 700743-020
Date: JAN 2011	Scale: 1:75	Drawing No: 700743-020-6



LEGEND:

BH-110-12	BOREHOLE LOCATION (DCS, DEC. 2010)
SS110-8	BOREHOLE LOCATION (GENIVAR, DEC. 2009)
	DECK
	GARDEN
	INFERRED LIMITS OF CONTAMINATED SITE CS 614108-001 (BASED ON CCME SQGs)
P	PAINT SAMPLE LOCATION (DCS, DEC. 2010)
	PROPOSED BOREHOLE LOCATION (DCS JAN 2011)

REFERENCE

1. Pickering Lands Site Emergency Response Numbers Plan, PWGSC Real Property Services and Transport Canada
2. Aerial Imagery dated 1 September 2009, Google Earth

NOTES:

1. PIN - Property Identification Number

0 2 4 metres

SCALE 1:100

DCS

DECOMMISSIONING CONSULTING SERVICES LIMITED

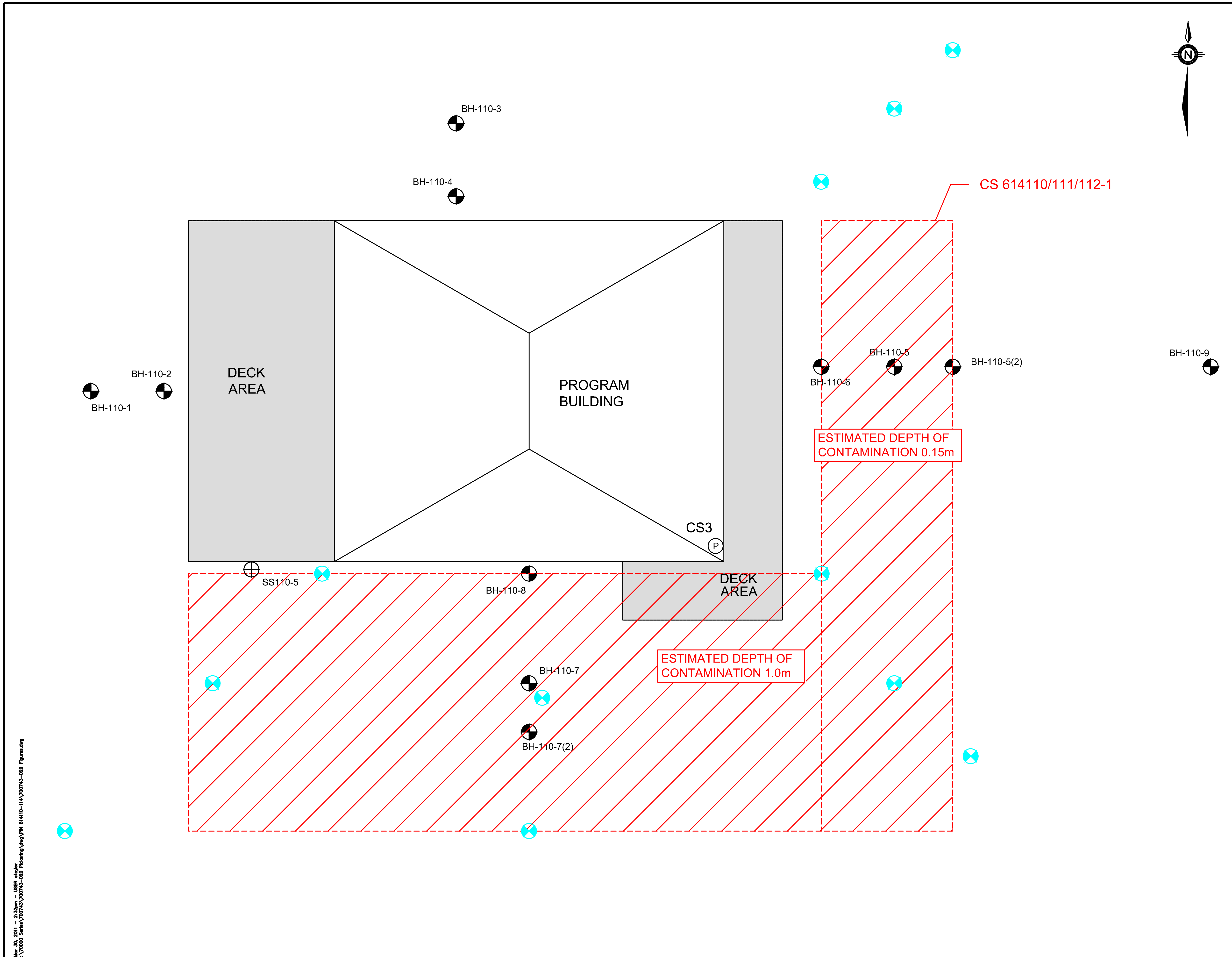
PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

PHASE II/III ESA

PIN 614110, PIN 6144111 AND 614112
10242 & 10251 REESOR ROAD, PICKERING, ONTARIO

SUPPLEMENTARY PHASE III ESA
SAMPLING PLAN
OWNER'S RESIDENCE

Drawn By: S.D.T	Approved By: S.S.	Project No: 700743-020
Date: JAN 2011	Scale: 1:100	Drawing No: 700743-020-7



LEGEND:

BH-110-7	BOREHOLE LOCATION (DCS, DEC. 2010)
SS110-5	BOREHOLE LOCATION (GENIVAR, DEC. 2009)
	DECK
	GARDEN
	INFERRED LIMITS OF CONTAMINATED SITE CS 614108-001 (BASED ON CCME SQGs)
P	PAINT SAMPLE LOCATION (DCS, DEC. 2010)
	PROPOSED BOREHOLE LOCATION (DCS JAN 2011)

REFERENCE

1. Pickering Lands Site Emergency Response Numbers Plan, PWGSC Real Property Services and Transport Canada
2. Aerial Imagery dated 1 September 2009, Google Earth

NOTES:

1. PIN - Property Identification Number

0 1.0 2.0 3.0 metres

SCALE 1:75

DCS

DECOMMISSIONING CONSULTING SERVICES LIMITED

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

PHASE II/III ESA

PIN 614110, PIN 6144111 AND 61411210242 & 10251 REESOR ROAD, PICKERING, ONTARIO

SUPPLEMENTARY PHASE III ESA SAMPLING PLAN PROGRAM BUILDING

Drawn By: S.D.T	Approved By: S.S	Project No: 700743-020
Date: JAN 2011	Scale: 1:75	Drawing No: 700743-020-8

APPENDIX B

SITE PHOTOGRAPHS

Photograph No. 1: Location of lead-based paint sample 614110-CS1 on – of baseball office

Photograph No. 2: Location of lead-based paint sample 614110-CS2 on --- of owner's residence

Photograph No. 3: Location of lead-based paint sample 614110-CS3 on --- of program building

Photograph No. 4: Program building looking east.

APPENDIX C

FIELD RECORDS

200743-20 110-112 3/Dec/2010

DECOMMISSIONING CONSULTING SERVICES LIMITED — FIELD LOG

PROJECT NAME Pickering Lands Sit
PROJECT No. 200741-20
DATE DRILLED 3 Dec
ENGINEER/SAMPLER S.S.

BORE HOLE No BH110-1
PAGE No. ____ of ____
WELL INSTALLED Yes No
WELL No. ____

MEASUREMENT IMPERIAL ____ METERIC ____
ELEVATION ____ DEPTH OF HOLE ____
DATUM ____ DEPTH TO WATER ____

CONTRACTOR Profile
DRILL TYPE Dig Jar
CASING ____
CLIMATE CONDITIONS TEMP: ____
WEATHER: Cloudy -3°c

SAMPLE CONDITION: ▥ - GOOD, ▥ - DISTURBED, ▥ - LOST
ODOUR: 0 - NONE, 2 - FAINT, 4 - STRONG

SAMPLE TYPE: BU - BULK, WS - WASH, RC - ROCK CORE, AS - AUGER, PS - PISTON, ST - THIN WALLED OPEN (SHELBY), SS - SPLIT SPOON, T - SPLIT TUBE

ABBREVIATIONS: SA - SAMPLE, K - PERMEABILITY, RQD - ROCK QUALITY DESIGNATION, CA - CASING, VF - FIELD VANE, HNU - HNU TRACE GAS ANALYSER (MRU - METER READING UNITS), WL - WATER LEVEL, VL - LAB VANE

STRATA	DEPTH	COND	TYPE	No.	RECOV.	FORCE	FIELD TEST	ODOUR	HNU MRU	NOTES (START TIME ____)
										BH110-1
	0		SS							
					24"					0-10" (Fill)
										coarse sand, moist, brown
	0.5									10"-15" Peat,
	0.75									15"-24" Silt, some clay
										grey - wet, oxidation
										BH110-2
	0		SS							
					24"					0-10" (Fill)
										coarse sand, brown, moist
										12"-24" Silt, some clay
										grey, brown, oxidation
										trace gravel
	0.75									10"-12" Peat

END TIME ____

G/W FIELD	pH	CONDUCTIVITY	TEMP.

Monitor Instillation
Type ____ Sch. ____ Dia. ____
Threaded ____ No. ____
Depth to Tip ____

Stickup above Ground ____
Screen Interval ____
filter Type ____
From ____ To ____

Seal Type ____
From ____ To ____
Backfill Type ____
From ____ To ____

Casing Type ____
Length ____
Stickup ____
SKETCH OF LOCATION ON BACK

700743-20 110-112 3/Dec/2010

DECOMMISSIONING CONSULTING SERVICES LIMITED

FIELD LOG

PROJECT NAME Dickering lands site
PROJECT No.
DATE DRILLED
ENGINEER/SAMPLER

BORE HOLE No. BH 110-3
PAGE No. ____ of ____

MEASUREMENT IMPERIAL ____ METERIC ____
ELEVATION ____ DEPTH OF HOLE ____
DATUM ____ DEPTH TO WATER ____

WELL INSTALLED Yes No
WELL No. ____

CONTRACTOR ____ CLIMATE CONDITIONS TEMP: ____
DRILL TYPE Pionjar WEATHER: ____
CASING ____

SAMPLE CONDITION: ▪ - GOOD, ▪ - DISTURBED, ▪ - LOST
ODOUR: 0 - NONE, 2 - FAINT, 4 - STRONG

SAMPLE TYPE: BU - BULK, AS - AUGER, SS - SPLIT SPOON, WS - WASH, PS - PISTON, T - SPLIT TUBE, RC - ROCK CORE, ST - THIN WALLED OPEN (SHELBY)

ABBREVIATIONS: SA - SAMPLE, CA - CASING, WL - WATER LEVEL, K - PERMEABILITY, VF - FIELD VANE, VL - LAB VANE, RQD - ROCK QUALITY DESIGNATION, HNU - HNU TRACE GAS ANALYSER (MRU - METER READING UNITS)

STRATA	DEPTH	COND	TYPE	No.	RECOV.	FORCE	FIELD TEST	ODOUR	HNU MRU	NOTES
										BH 110-3 START TIME ____
	0		SS		24"					0-10" Fill Course Sand brown, moist
										10"-20" Peat brown-black, some silt
										20"-24" clayey silt
	0.75									grey brown - oxidation wet
										BH 110-4
	0		SS		22"					0-8" Fill, Course Sand, brown, moist
										8"-22" Peat, dark brown
	0.75									
										END TIME ____

G/W FIELD	pH	CONDUCTIVITY	TEMP.

Monitor Instillation
Type ____ Sch. ____ Dia. ____
Threaded ____ No. ____
Depth to Tip ____

Stickup above Ground ____
Screen Interval ____
filter Type ____
From ____ To ____

Seal Type ____
From ____ To ____
Backfill Type ____
From ____ To ____

Casing Type ____
Length ____
Stickup ____
SKETCH OF LOCATION ON BACK

200743-20 110-12 31 Dec/2010

DECOMMISSIONING CONSULTING SERVICES LIMITED FIELD LOG

PROJECT NAME	Pickering lands silt	BORE HOLE No.	
PROJECT No.		PAGE No. of	
DATE DRILLED		WELL INSTALLED	Yes No
ENGINEER/SAMPLER		WELL No.	

MEASUREMENT IMPERIAL ____ METERIC ____
ELEVATION ____ DEPTH OF HOLE ____
DATUM ____ DEPTH TO WATER ____

CONTRACTOR ____ CLIMATE CONDITIONS TEMP: ____
DRILL TYPE Dirt Jar WEATHER: ____
CASING ____

SAMPLE CONDITION: ▩ - GOOD, ▩ - DISTURBED, ▩ - LOST
ODOUR: 0 - NONE, 2 - FAINT, 4 - STRONG

SAMPLE TYPE: BU - BULK, AS - AUGER, SS - SPLIT SPOON, WS - WASH, PS - PISTON, T - SPLIT TUBE, RC - ROCK CORE, ST - THIN WALLED OPEN (SHELBY)

ABBREVIATIONS: SA - SAMPLE, CA - CASING, WL - WATER LEVEL, K - PERMEABILITY, VF - FIELD VANE, VL - LAB VANE, RQD - ROCK QUALITY DESIGNATION, HNU - HNU TRACE GAS ANALYSER (MRU - METER READING UNITS)

STRATA	DEPTH	COND	TYPE	No.	RECOV.	FORCE	FIELD TEST	ODOUR	HNU MRU	NOTES START TIME
	0				22"					BH110-5
										0-6" Topsoil
										6"-16" Peat
										16"-22" clayey silt
	0.75									trace gravel
										grey brown, wet
										BH110-6
	0				16"					0-5" Topsoil
										5"-16" Peat and
										brown grey silt
	0.75									

END TIME ____

G/W FIELD:	pH	CONDUCTIVITY	TEMP.

Monitor Instillation
Type ____ Sch. ____ Dia. ____
Threaded ____ No. ____
Depth to Tip ____

Stickup above Ground ____
Screen Interval ____
Filter Type ____
From ____ To ____

Seal Type ____
From ____ To ____
Backfill Type ____
From ____ To ____

Casing Type ____
Length ____
Stickup ____
SKETCH OF LOCATION ON BACK

700243 - 20   110-112   3/Dec/2010

DECOMMISSIONING CONSULTING SERVICES LIMITED FIELD LOG

PROJECT NAME ______
PROJECT No. ______
DATE DRILLED ______
ENGINEER/SAMPLER ______

BORE HOLE No. ______
PAGE No. ____ of ____

MEASUREMENT IMPERIAL ____ METERIC ____
ELEVATION ______ DEPTH OF HOLE ______
DATUM ______ DEPTH TO WATER ______

WELL INSTALLED Yes No
WELL No. ______

CONTRACTOR ______ CLIMATE CONDITIONS TEMP: ______
DRILL TYPE ______ WEATHER: ______
CASING ______

SAMPLE CONDITION: ▩ - GOOD, ▩ - DISTURBED, ▩ - LOST
ODOUR: 0 - NONE, 2 - FAINT, 4 - STRONG

SAMPLE TYPE: BU - BULK, AS - AUGER, SS - SPLIT SPOON, WS - WASH, PS - PISTON, T - SPLIT TUBE, RC - ROCK CORE, ST - THIN WALLED OPEN (SHELBY)

ABBREVIATIONS: SA - SAMPLE, CA - CASING, WL - WATER LEVEL, K - PERMEABILITY, VF - FIELD VANE, VL - LAB VANE, RQD - ROCK QUALITY DESIGNATION, HNU - HNU TRACE GAS ANALYSER (MRU - METER READING UNITS)

STRATA	DEPTH	COND	TYPE	No.	RECOV.	FORCE	FIELD TEST	ODOUR	HNU MRU	NOTES START TIME ____
	0	1	SS		15"					BH 110-7
										0 - 5" Topsoil
										5" - 15" Peat
	0.75									
	0		SS		12"					BH 110-8
										0 - 8" Fill, sand & gravel
										8" - 12" Peat
	0.75									
										Dup SS1A 0.0 - 0.15
										(Two rounds)

END TIME ______

G/W FIELD:	pH	CONDUCTIVITY	TEMP.

Monitor Instillation
Type ____ Sch. ____ Dia. ____
Threaded ____ No. ____
Depth to Tip ____

Stickup above Ground ____
Screen Interval ____
filter Type ____
From ____ To ____

Seal Type ____
From ____ To ____
Backfill Type ____
From ____ To ____

Casing Type ____
Length ____
Stickup ____
SKETCH OF LOCATION ON BACK

200793-20 110-112 31Oct/2010

DECOMMISSIONING CONSULTING SERVICES LIMITED FIELD LOG

PROJECT NAME Pickering Lands Site
PROJECT No.
DATE DRILLED
ENGINEER/SAMPLER

BORE HOLE No.
PAGE No. ___ of ___

MEASUREMENT IMPERIAL ___ METERIC ___
ELEVATION ___ DEPTH OF HOLE ___
DATUM ___ DEPTH TO WATER ___

WELL INSTALLED Yes No
WELL No.

CONTRACTOR ___ CLIMATE CONDITIONS TEMP:
DRILL TYPE ___ WEATHER:
CASING

SAMPLE CONDITION: ▨ – GOOD, ▨ – DISTURBED, ▨ – LOST
ODOUR: 0 – NONE, 2 – FAINT, 4 – STRONG

SAMPLE TYPE: BU – BULK, AS – AUGER, SS – SPLIT SPOON, WS – WASH, PS – PISTON, T – SPLIT TUBE, RC – ROCK CORE, ST – THIN WALLED OPEN (SHELBY)

ABBREVIATIONS: SA – SAMPLE, CA – CASING, WL – WATER LEVEL, K – PERMEABILITY, VF – FIELD VANE, VL – LAB VANE, RQD – ROCK QUALITY DESIGNATION, HNU – HNU TRACE GAS ANALYSER (HNU – METER READING UNITS)

STRATA	DEPTH	COND	TYPE	No.	RECOV.	FORCE	FIELD TEST	ODOUR	HNU MRU	NOTES (START TIME ___)
	0.0		SS		18"					BH 110-9 Background
										0 – 4" Topsoil (some gravel)
										4" – 10" Peat
										10" – 18" Silt, trace sand & gravel
	0.75									brown, oxidation, moist rootlets

END TIME ___

G/W FIELD:	pH	CONDUCTIVITY	TEMP.

Monitor Instillation
Type ___ Sch. ___ Dia. ___
Threaded ___ No. ___
Depth to Tip ___

Stickup above Ground ___
Screen Interval ___
filter Type ___
From ___ To ___

Seal Type ___
From ___ To ___
Backfill Type ___
From ___ To ___

Casing Type ___
Length ___
Stickup ___
SKETCH OF LOCATION ON BACK

7002 63-20 PIN 814 110-112

DECOMMISSIONING CONSULTING SERVICES LIMITED — FIELD LOG

PROJECT NAME: Pickering Lands s/t
PROJECT No.:
DATE DRILLED: 31 Dec / 2010
ENGINEER/SAMPLER:

BORE HOLE No.:
PAGE No. ___ of ___

MEASUREMENT: IMPERIAL ___ METERIC ___
ELEVATION: ___ DEPTH OF HOLE: ___
DATUM: ___ DEPTH TO WATER: ___

WELL INSTALLED Yes No
WELL No.:

CONTRACTOR: Pionjar
DRILL TYPE:
CASING:

CLIMATE CONDITIONS TEMP:
WEATHER: cloudy -2°C

SAMPLE CONDITION: GOOD; DISTURBED; LOST
ODOUR: 0 - NONE; 2 - FAINT; 4 - STRONG

SAMPLE TYPE: BU - BULK; AS - AUGER; SS - SPLIT SPOON; WS - WASH; PS - PISTON; T - SPLIT TUBE; RC - ROCK CORE; ST - THIN WALLED OPEN (SHELBY)

ABBREVIATIONS: SA - SAMPLE; CA - CASING; WL - WATER LEVEL; K - PERMEABILITY; VF - FIELD VANE; VL - LAB VANE; RQD - ROCK QUALITY DESIGNATION; HNU - HNU TRACE GAS ANALYSER (MRU - METER READING UNITS)

STRATA	DEPTH	COND	TYPE	No.	RECOV.	FORCE	FIELD TEST	ODOUR	HNU MRU	NOTES (START TIME ___)
	0		SS		16"					BH 110-10
										0-6" Fill, sand & gravel
										6"-16" Silt, Peat (organics)
	0.75									dark brown, rootlets
										BH 110-11
	0		SS		20"					0-6" Fill, coarse sand
										6"-16" silt and organics
	0.75									16"-20" silt brown, moist
										BH 110-18 Background
	0		SS		20"					0-5" Topsoil
										5"-20" Silt, trace sand and organics
	0.75									moist dark brown

END TIME ___

G/W FIELD:	pH	CONDUCTIVITY	TEMP.

Monitor Instillation
Type ___ Sch. ___ Dia. ___
Threaded ___ No. ___
Depth to Tip ___

Stickup above Ground ___
Screen Interval ___
Filter Type ___
From ___ To ___

Seal Type ___
From ___ To ___
Backfill Type ___
From ___ To ___

Casing Type ___
Length ___
Stickup ___
SKETCH OF LOCATION ON BACK

700743/20 3/Dec/2010

DECOMMISSIONING CONSULTING SERVICES LIMITED

FIELD LOG

PROJECT NAME Pickering lands sites
PROJECT No.
DATE DRILLED
ENGINEER/SAMPLER

BORE HOLE No.
PAGE No. ____ of ____
WELL INSTALLED Yes No
WELL No.

MEASUREMENT IMPERIAL ____ METERIC ____
ELEVATION ____ DEPTH OF HOLE ____
DATUM ____ DEPTH TO WATER ____

CONTRACTOR ____ CLIMATE CONDITIONS TEMP:
DRILL TYPE Pionjar WEATHER:
CASING

SAMPLE CONDITION: GOOD; DISTURBED; LOST. ODOUR: 0 – NONE; 2 – FAINT; 4 – STRONG

SAMPLE TYPE: BU – BULK; AS – AUGER; SS – SPLIT SPOON; WS – WASH; PS – PISTON; T – SPLIT TUBE; RC – ROCK CORE; ST – THIN WALLED OPEN (SHELBY)

ABBREVIATIONS: SA – SAMPLE; CA – CASING; WL – WATER LEVEL; K – PERMEABILITY; VF – FIELD VANE; VL – LAB VANE; RQD – ROCK QUALITY DESIGNATION; HNU – HNU TRACE GAS ANALYSER (MRU – METER READING UNITS)

STRATA	DEPTH	COND	TYPE	No.	RECOV.	FORCE	FIELD TEST	ODOUR	HNU MRU	NOTES (START TIME ____)
	0		SS		24"					BH10-13
										0–4" Topsoil
										4"–20" – Silt trace organics
	0.75									dark brown, moist, trace sand
										20"–24" silt, light brown
										wet
	0		SS		20"					BH 10-12 as above
										0–4" Topsoil
										4"–20" Silt, trace organics and sand
										dark brown, moist
	0.75									

END TIME ____

G/W FIELD	pH	CONDUCTIVITY	TEMP.

Monitor Instillation
Type ____ Sch. ____ Dia. ____
Threaded ____ No. ____
Depth to Tip ____

Stickup above Ground ____
Screen Interval ____
filter Type ____
From ____ To ____

Seal Type ____
From ____ To ____
Backfill Type ____
From ____ To ____

Casing Type ____
Length ____
Stickup ____
SKETCH OF LOCATION ON BACK

200243-20 3 Dec 2010

DECOMMISSIONING CONSULTING SERVICES LIMITED — FIELD LOG

PROJECT NAME: Pickering lands site
PROJECT No.:
DATE DRILLED:
ENGINEER/SAMPLER:

BORE HOLE No.:
PAGE No. ___ of ___

MEASUREMENT IMPERIAL ___ METERIC ___
ELEVATION: ___ DEPTH OF HOLE: ___
DATUM: ___ DEPTH TO WATER: ___

WELL INSTALLED Yes No
WELL No.

CONTRACTOR:
DRILL TYPE: Pionjar
CASING:

CLIMATE CONDITIONS TEMP:
WEATHER: Cloudy -2°C

SAMPLE CONDITION: GOOD, DISTURBED, LOST
ODOUR: 0 - NONE, 2 - FAINT, 4 - STRONG

SAMPLE TYPE: BU - BULK, AS - AUGER, SS - SPLIT SPOON, WS - WASH, PS - PISTON, T - SPLIT TUBE, RC - ROCK CORE, ST - THIN WALLED OPEN (SHELBY)

ABBREVIATIONS: SA - SAMPLE, CA - CASING, WL - WATER LEVEL, K - PERMEABILITY, VT - FIELD VANE, VL - LAB VANE, RQD - ROCK QUALITY DESIGNATION, HNU - HNU TRACE GAS ANALYSER (MRU - METER READING UNITS)

STRATA	DEPTH	COND	TYPE	No.	RECOV.	FORCE	FIELD TEST	ODOUR	HNU MRU	NOTES (START TIME ___)
	0		SS		24"					BH 110-14
										0-3" - Fill, grey, Coarse Sand
										3"-16" - Silt, trace sand
										brown, rootlets, moist
	0.75 m									16"-24" Fine Sand some Silt
										brown, moist
	0		SS		12"					BH 110-15
										0-5" Top soil
										5"-12" Silt and Sand
	0.5									brown, moist
	Refusal @ 0.5 m									

END TIME ___

G/W FIELD	pH	CONDUCTIVITY	TEMP.

Monitor Instillation
Type ___ Sch. ___ Dia. ___
Threaded ___ No. ___
Depth to Tip ___

Stickup above Ground ___
Screen Interval ___
Filter Type ___
From ___ To ___

Seal Type ___
From ___ To ___
Backfill Type ___
From ___ To ___

Casing Type ___
Length ___
Stickup ___
SKETCH OF LOCATION ON BACK

'100743-20 3 Dec/2010

DECOMMISSIONING CONSULTING SERVICES LIMITED — FIELD LOG

PROJECT NAME Pickering lands sites
PROJECT No.
DATE DRILLED
ENGINEER/SAMPLER

BORE HOLE No.
PAGE No. ____ of ____

MEASUREMENT IMPERIAL ____ METERIC ____
ELEVATION ____ DEPTH OF HOLE ____
DATUM ____ DEPTH TO WATER ____

WELL INSTALLED Yes No
WELL No.

CONTRACTOR Pinngar
DRILL TYPE
CASING

CLIMATE CONDITIONS TEMP:
WEATHER:

SAMPLE CONDITION: ▭ – GOOD, ▭ – DISTURBED, ■ – LOST
ODOUR: 0 – NONE, 2 – FAINT, 4 – STRONG

SAMPLE TYPE: BU – BULK, AS – AUGER, SS – SPLIT SPOON, WS – WASH, PS – PISTON, T – SPLIT TUBE, RC – ROCK CORE, ST – THIN WALLED OPEN (SHELBY)

ABBREVIATIONS: SA – SAMPLE, CA – CASING, WL – WATER LEVEL, K – PERMEABILITY, VF – FIELD VANE, VL – LAB VANE, RQD – ROCK QUALITY DESIGNATION, HNU – HNU TRACE GAS ANALYSER (MRU – METER READING UNITS)

STRATA	DEPTH	COND	TYPE	No.	RECOV.	FORCE	FIELD TEST	ODOUR	HNU MRU	NOTES
										START TIME
	0.0		SS	1	28					BH110-16
										0-3" Topsoil
										3"-24" silt some sand ~~gravel~~ trace gravel, brown moist
	0.75 m									
	0		SS		24"					BH 110-17
										0-5" Topsoil
										5"-12" silt, trace sand gravel brown moist rootlets
	0.75 m									12"-24" silt, trace sand light brown moist
										Dup 1 0.0 – 0.15
										END TIME

G/W FIELD:	pH	CONDUCTIVITY	TEMP.

Monitor Instillation
Type ____ Sch. ____ Dia. ____
Threaded ____ No. ____
Depth to Tip ____

Stickup above Ground ____
Screen Interval ____
filter Type ____
From ____ To ____

Seal Type ____
From ____ To ____
Backfill Type ____
From ____ To ____

Casing Type ____
Length ____
Stickup ____
SKETCH OF LOCATION ON BACK

700743-20 3/Dec/2010

DECOMMISSIONING CONSULTING SERVICES LIMITED FIELD LOG

PROJECT NAME Pickering Lands Site
PROJECT No.
DATE DRILLED
ENGINEER/SAMPLER

BORE HOLE No.
PAGE No. ____ of ____

MEASUREMENT IMPERIAL ____ METERIC ____
ELEVATION ____ DEPTH OF HOLE ____
DATUM ____ DEPTH TO WATER ____

WELL INSTALLED Yes No
WELL No.

CONTRACTOR ____ CLIMATE CONDITIONS TEMP: ____
DRILL TYPE Pionjar WEATHER: ____
CASING ____

SAMPLE CONDITION: ▨ - GOOD, ▨ - DISTURBED, ▨ - LOST
ODOUR: 0 - NONE, 2 - FAINT, 4 - STRONG
SAMPLE TYPE: BU - BULK, AS - AUGER, SS - SPLIT SPOON, WS - WASH, PS - PISTON, T - SPLIT TUBE, RC - ROCK CORE, ST - THIN WALLED OPEN (SHELBY)
ABBREVIATIONS: SA - SAMPLE, CA - CASING, WL - WATER LEVEL, K - PERMEABILITY, VF - FIELD VANE, VL - LAB VANE, RQD - ROCK QUALITY DESIGNATION, HNU - HNU TRACE GAS ANALYSER (MRU - METER READING UNITS)

STRATA	DEPTH	COND	TYPE	No.	RECOV.	FORCE	FIELD TEST	ODOUR	HNU MRU	NOTES (START TIME ____)
										BH110-~~20~~19
	0		SS		14"					0-5" Topsoil
										5"-14" Silt, trace sand, brown, moist rootlets
	0.75									
										BH110-20
	0		SS		22"					0-5" Topsoil
										5"-12" Silt, trace sand brown, moist
	0.75									12"-22" Silt and fine sand brown, moist
										Dup 1 (SCS3)

END TIME ____

G/W FIELD	pH	CONDUCTIVITY	TEMP.

Monitor Installation
Type ____ Sch. ____ Dia. ____
Threaded ____ No. ____
Depth to Tip ____

Stickup above Ground ____
Screen Interval ____
filter Type ____
From ____ To ____

Seal Type ____
From ____ To ____
Backfill Type ____
From ____ To ____

Casing Type ____
Length ____
Stickup ____
SKETCH OF LOCATION ON BACK

700743-20   31 Dec 2010

DECOMMISSIONING CONSULTING SERVICES LIMITED — FIELD LOG

PROJECT NAME Pickering lands site
PROJECT No.
DATE DRILLED
ENGINEER/SAMPLER

BORE HOLE No.
PAGE No. ____ of ____

MEASUREMENT IMPERIAL ____ METERIC ____
ELEVATION ____ DEPTH OF HOLE ____
DATUM ____ DEPTH TO WATER ____

WELL INSTALLED Yes No
WELL No.

CONTRACTOR ____ CLIMATE CONDITIONS TEMP:
DRILL TYPE Pionjar
WEATHER:
CASING

SAMPLE CONDITION: ▨ - GOOD; ▨ - DISTURBED; ▨ - LOST
ODOUR: 0 - NONE; 2 - FAINT; 4 - STRONG

SAMPLE TYPE: BU - BULK; AS - AUGER; SS - SPLIT SPOON; WS - WASH; PS - PISTON; T - SPLIT TUBE; RC - ROCK CORE; ST - THIN WALLED OPEN (SHELBY)

ABBREVIATIONS: SA - SAMPLE; CA - CASING; WL - WATER LEVEL; K - PERMEABILITY; VF - FIELD VANE; VL - LAB VANE; RQD - ROCK QUALITY DESIGNATION; HNU - HNU TRACE GAS ANALYSER (MRU - METER READING UNITS)

START TIME

STRATA	DEPTH	COND	TYPE	No.	RECOV.	FORCE	FIELD TEST	ODOUR	HNU MRU	NOTES
	0 ↓ 0.75		SS		18"					BH 110-21 0-6" Topsoil 6"-18" Silt, trace sand brown, moist, rootlets
	0 ↓ 0.75		SS		24"					BH 110-22 0-5" topsoil 5"-10" Silt and organics (pieces of glass) 10"-24" silt, trace sand brown, moist
	0 ↓ 0.75				15"					BH 110-23 0-5" topsoil 5"-15" Silt, trace sand brown, moist

END TIME

G/W FIELD	pH	CONDUCTIVITY	TEMP.

Monitor Instillation
Type ____ Sch. ____ Dia. ____
Threaded ____ No. ____
Depth to Tip ____

Stickup above Ground ____
Screen Interval ____
filter Type ____
From ____ To ____

Seal Type ____
From ____ To ____
Backfill Type ____
From ____ To ____

Casing Type ____
Length ____
Stickup ____
SKETCH OF LOCATION ON BACK

700743-20 3 Dec/10

DECOMMISSIONING CONSULTING SERVICES LIMITED FIELD LOG

PROJECT NAME Pickering lands sites
PROJECT No.
DATE DRILLED
ENGINEER/SAMPLER

BORE HOLE No.
PAGE No. ___ of ___

MEASUREMENT IMPERIAL ___ METERIC ___
ELEVATION ___ DEPTH OF HOLE ___
DATUM ___ DEPTH TO WATER ___

WELL INSTALLED Yes No
WELL No.

CONTRACTOR ___ CLIMATE CONDITIONS TEMP:
DRILL TYPE Pionjar WEATHER:
CASING

SAMPLE CONDITION: ▨ - GOOD, ▨ - DISTURBED, ■ - LOST
ODOUR: 0 - NONE, 2 - FAINT, 4 - STRONG

SAMPLE TYPE: BU - BULK, AS - AUGER, SS - SPLIT SPOON, WS - WASH, PS - PISTON, T - SPLIT TUBE, RC - ROCK CORE, ST - THIN WALLED OPEN (SHELBY)

ABBREVIATIONS: SA - SAMPLE, CA - CASING, WL - WATER LEVEL, K - PERMEABILITY, VF - FIELD VANE, VL - LAB VANE, RQD - ROCK QUALITY DESIGNATION, HNU - HNU TRACE GAS ANALYSER (MRU - METER READING UNITS)

START TIME ___

STRATA	DEPTH	COND	TYPE	No.	RECOV.	FORCE	FIELD TEST	ODOUR	HNU MRU	NOTES
	0 – 0.75				24"					BH 110-24 0'-5" topsoil 5"-24" silt, trace sand & gravel brown, moist rootlets
					24"					BH 110-25 0-5" topsoil 5"-24" silt, trace sand and gravel brown, moist
					16"					BH 110-26 0-5" topsoil 5"-16" silt, trace sand and gravel brown, moist

END TIME ___

G/W FIELD	pH	CONDUCTIVITY	TEMP.

Monitor Installation
Type ___ Sch. ___ Dia. ___
Threaded ___ No. ___
Depth to Tip ___

Stickup above Ground ___
Screen Interval ___
Filter Type ___
From ___ To ___

Seal Type ___
From ___ To ___
Backfill Type ___
From ___ To ___

Casing Type ___
Length ___
Stickup ___
SKETCH OF LOCATION ON BACK

700743-20 3 Dec 2010

DECOMMISSIONING CONSULTING SERVICES LIMITED — **FIELD LOG**

PROJECT NAME Pickering Lands site
PROJECT No.
DATE DRILLED
ENGINEER/SAMPLER

BORE HOLE No.
PAGE No. ____ of ____

MEASUREMENT IMPERIAL ____ METERIC ____
ELEVATION ____ DEPTH OF HOLE ____
DATUM ____ DEPTH TO WATER ____

WELL INSTALLED Yes No
WELL No.

CONTRACTOR Profile
DRILL TYPE Drivepoint
CASING

CLIMATE CONDITIONS TEMP:
WEATHER:

SAMPLE CONDITION: GOOD, DISTURBED, LOST
ODOUR: 0 - NONE, 2 - FAINT, 4 - STRONG

SAMPLE TYPE: BU - BULK, AS - AUGER, SS - SPLIT SPOON, WS - WASH, PS - PISTON, T - SPLIT TUBE, RC - ROCK CORE, ST - THIN WALLED OPEN (SHELBY)

ABBREVIATIONS: SA - SAMPLE, CA - CASING, WL - WATER LEVEL, K - PERMEABILITY, VF - FIELD VANE, VL - LAB VANE, RQD - ROCK QUALITY DESIGNATION, HNU - HNU TRACE GAS ANALYSER (MRU - METER READING UNITS)

STRATA	DEPTH	COND	TYPE	No.	RECOV.	FORCE	FIELD TEST	ODOUR	HNU MRU	NOTES
	0				18"					BH 110-27
										Background
										0-6" topsoil
										6"-18" silt, trace sand
										brown, moist, rootlets
	0.35									

START TIME ____
END TIME ____

G/W FIELD	pH	CONDUCTIVITY	TEMP.

Monitor Instillation
Type ____ Sch. ____ Dia. ____
Threaded ____ No. ____
Depth to Tip ____

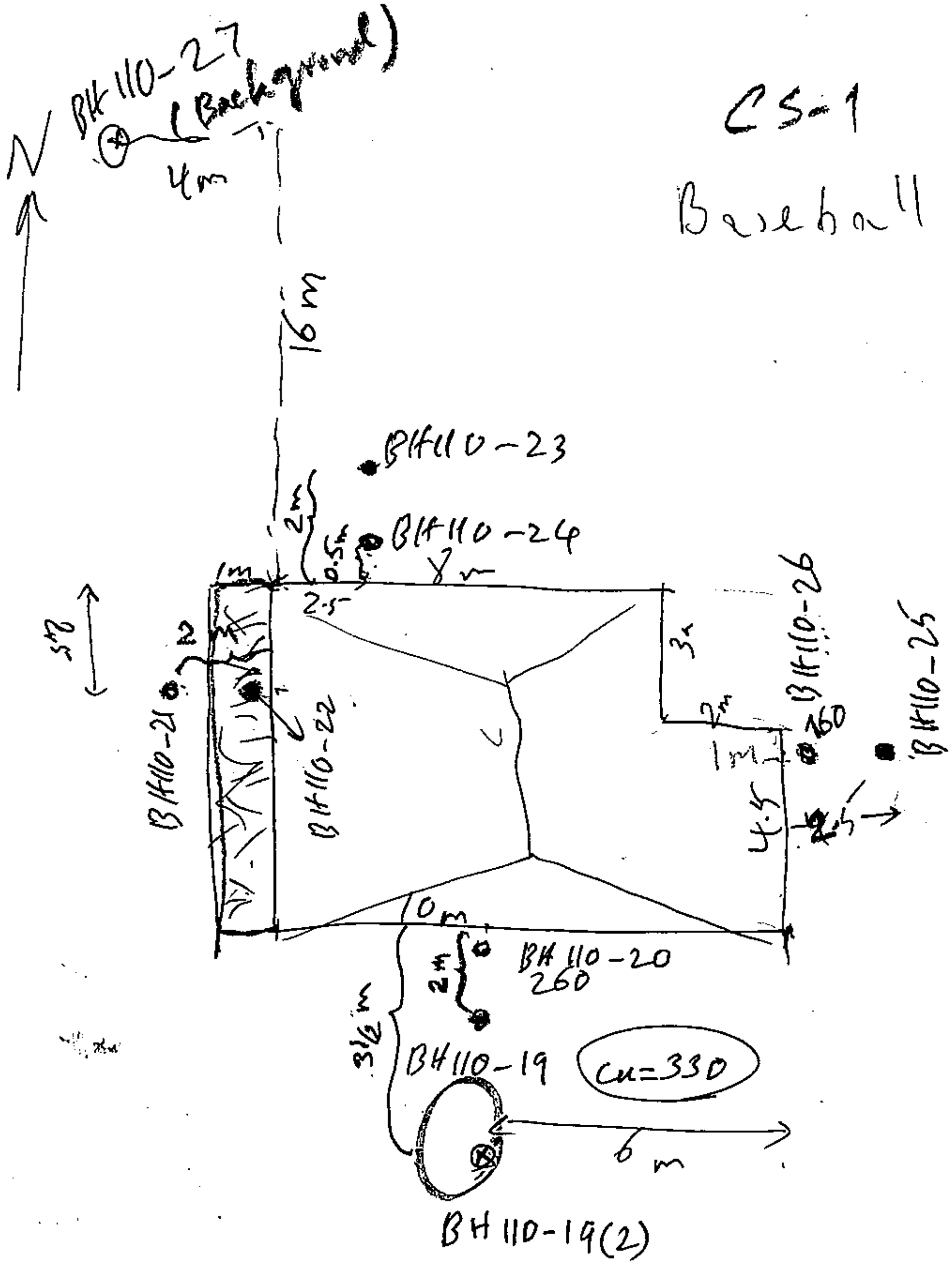
Stickup above Ground ____
Screen Interval ____
filter Type ____
From ____ To ____

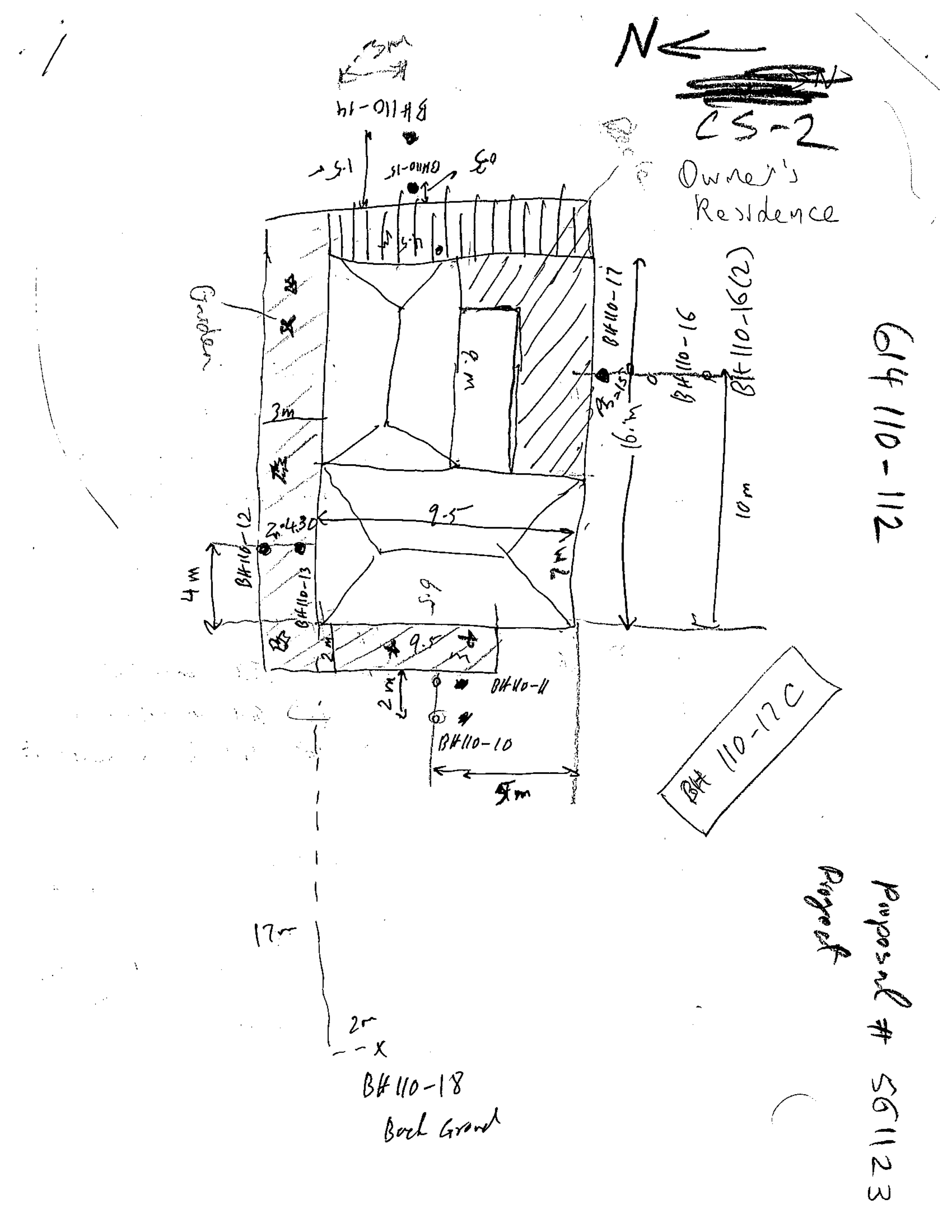
Seal Type ____
From ____ To ____
Backfill Type ____
From ____ To ____

Casing Type ____
Length ____
Stickup ____
SKETCH OF LOCATION ON BACK

CS-1

Baseball Office



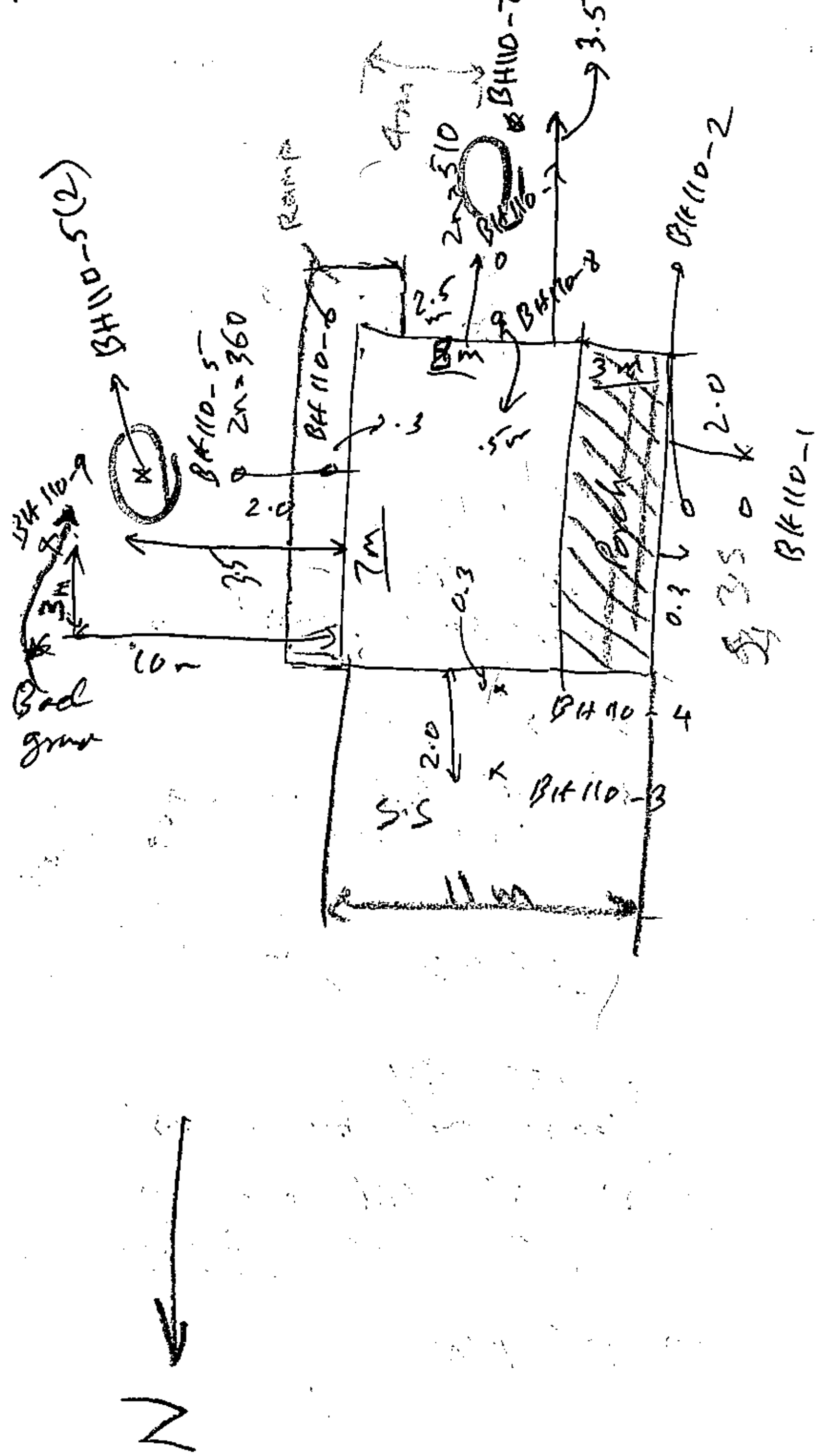


N
CS-2
Owner's Residence
BH110-14
BH110-15
1.5
4.5
Garden
3m
9.2 m
BH110-17
BH110-16
BH110-16(2)
16.1 m
10m
9.5
7m
6.5
BH110-12
2.430
BH110-13
4m
2m
9.5
BH110-11
BH110-10
5m
BH 110-12C
17m
2m
BH110-18
Back Ground
614 110-112
Proposal # 561123
Project

Program Chalet

CS-3

Program Building



APPENDIX D

STANDARD PROCEDURES AND ENVIRONMENTAL REQUIREMENTS

APPENDIX D

STANDARD PROCEDURES AND ENVIRONMENTAL REQUIREMENTS[1]

D.1 SUBSURFACE INVESTIGATION PROCEDURES

D.1.1 OVERBURDEN DRILLING AND SAMPLING

Drilling and sampling operations are typically conducted with the use of a mobile power auger equipped to advance holes through overburden using hollow-stem and continuous flight augers; diamond drills using wash-boring techniques; rotary drills using mud or air reverse circulation. For shallow boreholes or sampling indoors Pionjar percussion drill sampling is frequently used. Soil samples are generally recovered on a continuous basis, with the use of a 51 mm diameter, 600 mm or 750 mm long, split-spoon sampler, over the full depth of the boreholes.

In addition, direct push drills have become regularly used for holes of shallow depth. When utilizing the direct push method with a dual tube sampling system, soil samples are retrieved on a continuous basis in 1.2 m lengths in individual, disposable sampling tubes.

No lubricants are used in the make-up of the augers, drill rods or samplers, and appropriate sampling and drilling control procedures are adopted to avoid cross-contamination between the samples and sampling locations.

The split spoon sampling is carried out in conjunction with the Standard Penetration Test used to provide ‘N’ values for the determination of relative density in cohesionless soils and consistency in cohesive soils. This information is not collected when utilizing direct push drilling techniques or when utilizing a Pionjar drill.

Individual soil samples are examined upon recovery by the field engineer or technician for purposes of describing and recording texture, colour, odour and moisture content. Borehole logs are prepared on the basis of sample and drilling process observations in the field describing the encountered strata and visual or olfactory evidence of subsurface contamination, if present.

Following field logging, samples are placed into labelled, sterile, 500 mℓ wide-mouth glass jars with polymer interleaf -lined lids for shipment to the DCS laboratory for detailed inspection. Glass 50 mℓ septum jars, with Teflon-lined caps, are used to collect soil subsamples for volatile organic analysis. The septum jars are required to be completely filled with soil to ensure that no headspace is available to accommodate desorbed organics. Once the soil samples have been recovered and placed into the sterile glass jars, the samples are temporarily stored in cardboard containers, in the field

(1) The discussion on environmental requirements is based solely on an engineering interpretation of the current Ontario Ministry of the Environment standards, policies, guidelines and regulations on soil, sediment and groundwater quality issues as they relate to environmental site assessment investigations. The discussion does not represent a legal opinion on these matters.

vehicle awaiting shipment to the DCS office for examination. Following selection in the office laboratory, the samples are forwarded to a commercial environmental testing laboratory for analysis.

Where high levels of contamination are anticipated or where evidence of high levels of contamination (strong odours, staining, evident presence of wastes or dangerous materials) are noted during drilling, drill cuttings from the boreholes are placed in 16 gauge steel, ring-topped, 205 ℓ drums for storage and off-site disposal. Where no evidence of untoward level of contamination is present, cuttings are used to backfill the boring and are tamped into place prior to reinstatement of any surface covering, such as asphalt or concrete pavements or slabs. Where excess cuttings are generated (i.e., because of monitoring well installations, etc.), surplus clean soil is spread on unpaved ground surfaces in the vicinity of the borehole or placed in clean ring-topped 205 ℓ steel drums and removed for off-site disposal.

D.1.2 TEST PIT EXCAVATION AND SAMPLING

Test pits are excavated using a track-mounted hydraulic excavator or a rubber-tired backhoe. The operator works under the full-time supervision of a DCS field engineer or technician. Excavations are typically carried out in 300 to 600 mm thick lifts. Topsoil and soil free of visible deleterious materials are stockpiled on one side of the excavation. Soil containing visual evidence of foreign material and/or contaminants are stockpiled on the opposite side of the test pit. During backfilling operations, deleterious material is typically placed in the test pit at the level at which it was encountered to limit the possibility of introducing contamination into any previously unaffected strata.

During the excavation of the test pits, visual observations and soil sampling is undertaken. Soil samples are typically recovered from each stratigraphic unit or from intermediate depths exhibiting marked changes in characteristics (colour, odour, physical appearance, or foreign materials). Soil samples are obtained during the excavation of test pits by removing any spoil or debris caused by the excavator or backhoe from the sidewall, and then scraping the wall with a sterile 500 mℓ glass jar, in an upward direction, for 150 mm or the full thickness of the stratum. The jars are sealed with aluminum foil-lined lids. Glass jars, with Teflon-lined caps, are used to collect soil samples for volatile organic analyses. Samples for soil gas surveys may be stored in plastic Ziploc bags, pending headspace testing in the field.

When possible, sampling tools or implements are not used to collect the soil samples to minimize the potential for cross-contamination of samples. Where it is necessary to use sampling implements such as trowels or knives, because of soil conditions or the presence of debris, appropriate decontamination procedures are followed between each sampling interval.

In locations where the test pits extend below depths of 1.4 m below grade or where the water table is encountered, the above-noted sample recovery protocols must be modified. Construction regulations under the *Occupational Health and Safety Act* limit unsupported trench depths, while potential sloughing from the sides of an excavation below the water table makes sampling of the test pit sidewall under those conditions unsafe. Samples in these conditions are, therefore, recovered from the bucket of the excavator or backhoe. Approximate sampling depth intervals are determined from ground surface using a measuring tape.

Detailed descriptions of the soil texture, colour, odour, moisture and evidence of contamination as well as sampling intervals are recorded for each test pit on the attached logs.

D.1.3 EQUIPMENT DECONTAMINATION

Prior to the start of the drilling program, all augers and centre plugs are cleaned at the shop by the drilling contractor. The lead augers and centre plugs are hand-cleaned between boreholes to remove any residual soil or debris adhering to the down-hole tools, well away from the location of any boreholes, to avoid the possibility of cross-contamination.

All sampling tools used (split-spoons, putty knives, trowels, etc.) are thoroughly cleaned following the recovery of each sample. The samplers are first wiped clean of free soil or any other materials adhering to inner and outer surfaces, and then washed with a wire brush in a solution of water and laboratory-grade phosphate-free detergent (Sparkleen). Detergent residues are removed by rinsing with municipally-treated clean tap water. In the event that persistent organic contaminants or stains adhere to the surface of the sampler, it is sprayed with hexane, a highly volatile solvent followed by a spray of methanol. The final stage of the sampler tool decontamination process comprises a spray with distilled water to eliminate any surficial residues.

D.1.4 SOIL GAS VAPOUR MONITORING

Headspace measurements are taken in the field a set period after recovery of the soil samples with the use of either a photoionization detector (HNu) or explosimeter (GasTech 1238ME) to identify the presence of ionizable volatile organic vapours in the soil. The readings obtained using either meter are obtained by gently inserting the tip of the meter probe through the polymer interleaf cover placed over the mouth of each 500 mℓ sample jar and aspirating a vapour aliquot for testing. The 50 mℓ teflon-lined septum jars which contain a split sample of the soil within the 500 mℓ jar for volatile organic analyses are not disturbed.

Where samples are to be recovered for headspace testing purposes only, the soil sample is placed in a “Ziploc” LDPE bag and allowed to come to room temperature for a period of two hours before testing. The tip of the meter probe is used to puncture the side of the bag to facilitate aspiration of the vapour sample.

The HNu photoionization meter used to read soil gas vapour concentrations is calibrated to a hexane gas standard and all measurements are reported in parts per million by volume. The GasTech meter is equipped with two ranges of measurement, reading concentrations in the parts per million (0 to 500 ppm) range and as a percentage of the lower explosive limit (0 to 100% LEL) also calibrated to hexane. LEL is a measure of the propensity for an atmosphere to detonate or deflagrate with 100% LEL being the minimum concentration of gas, in air, required for ignition.

The monitoring results are noted on the borehole logs for subsequent evaluation purposes. The headspace vapour profile for each borehole or test pit is assessed to identify likely zones of elevated organic contaminants in the soil column and to assist in the selection of samples stored within 50 mℓ septum jars for analytical purposes. Soil gas vapour monitoring results are shown on the logs generated for each borehole.

An additional feature of the GasTech monitor allows its use to measure soil gas with or without methane gas elimination. This allows for soil gas measurements to be taken without the influence of methane gas on the readings which may be present in the soil, however, not contributing to the vapour contaminant of concern.

D.1.5 BOREHOLE AND TEST PIT SURVEYS

Borehole and test pit locations are laid out in the field by a two-person field crew, using a chain, stadia measurement or total station instrument, with reference to existing buildings and other permanent structures and features identified on the site plan.

Ground surface elevations at borehole and monitoring well collars are established in the field using an automatic level survey instrument. A closed level loop is carried out to complete the survey. Ground surface elevations are referenced to the elevation of a municipal, geodetic or hydrographic survey benchmark, unless a local datum referenced to a known or assumed elevation is to be used for the survey. Details of the location of the benchmark or local datum used are presented in the report.

D.2 GROUNDWATER MONITORING

D.2.1 WELL INSTALLATION

Monitoring wells are typically completed using 37.5 or 55 mm diameter Schedule 40 PVC Triloc riser pipes with a 1.5 or 3 m long No. 10 slot intake zone (screen). No glues or solvents are used in the construction of the wells to avoid introducing volatiles into the well and, thereby, biasing the analytical results. Silica sand is placed around and to a height of at least 300 mm above the top of the well screen as a gravel pack. The remaining annular is sealed with Holeplug, Benseal or other bentonite seal. A protective steel casing or a ground-level, flush-mounted, steel casing is then grouted in place at the top of the well to protect the installation from damage or vandalism. All elevated casings are locked with 2402 keyed mortice locks. Flush-mounted casing protectors are generally bolted in place. Where wells are to penetrate through low permeability confining strata separating an upper and lower aquifer, a lower seal is set in the confining layer to ensure against the transmission and possible migration of contaminants between aquifers.

In accordance with O.Reg. 903 there is a requirement for a well record to be submitted to the MOE for each monitoring well or group of monitoring wells installed. The well tag and well record is submitted by the subcontract licensed well driller who install the well. Also under this regulation the property owner is required to have unused or abandoned wells properly decommissioned by a licensed well driller prior to abandoning the well. The regulation provides details of well abandonment procedures and requires that a well abandonment record be filed with the MOE.

D.2.2 GROUNDWATER MEASUREMENT

A dedicated WaTerra inertial pump is installed in each well to ensure that samples representative of subsurface water conditions at the location at which the screen is set are recovered without the threat of cross-contamination. Following completion of drilling, the depth from ground surface (borehole collar) to the phreatic surface is measured with the use of a Solinst SOL1 water level indicator or interface meter and recorded on the borehole log. The wells are developed by hand-pumping the WaTerra sampler to ensure that at least three and as many as ten well volumes of water (depending on recovery periods) are removed to reduce the potential effects of contamination introduced through drilling, and to maximize the responsiveness to the surrounding geological materials.

Following development, the phreatic surface is allowed to reinstate itself prior to obtaining final groundwater elevations. Measurements of the water levels are made from all wells within the same time period to ensure that the results are representative of conditions across the entire site. Any unusual weather conditions and modifying features encountered are noted on the log. Field data are reduced with reference to collar elevations and are tabulated with the date of the measurements.

D.2.3 GROUNDWATER SAMPLING

Groundwater samples are recovered from the well through the inertial pump directly into sterile glass or plastic sample jars that have been pretreated with preservatives, where appropriate. Sample jars are obtained directly from the laboratory and are received, stored and, when filled, shipped back to the laboratory for analysis in a sealed insulated cooler box. For analyses of inorganic species, the sample is pumped from the well through a WaTerra Hydropore 0.45 μm cartridge filter to eliminate suspended solids. Samples destined for organic analyses are obtained unfiltered. In both cases, the samples are retained in a marked sample jar to which a sample label identifying the well number, date of recovery and other pertinent information is affixed. The sample jars are filled to the brim to eliminate headspace air to reduce the possibility of oxidation and degassing. Sample bottles are then stored in the insulated cooler and either protected from freezing during winter weather or cooled with freezer packs to an optimum temperature of less than 8ºC during warm weather pending shipment to the laboratory.

D.2.4 *IN SITU* RESPONSE TESTS

Formation permeability is determined through application of a falling (slug) or rising head test carried out in the monitoring well. Where the screened section is fully contained below the phreatic surface, additional water can be added to the well riser to provide a head to force flow into the soil or rock formation. When the screen intersects the phreatic surface, resulting in exposure of open screen to unsaturated soil above the water table, the monitoring well is pumped down and then allowed to recharge from the surrounding soil. In both cases, the change in water level is measured at set time intervals with a water level indicator and recorded in the field. Where response time is too short to permit manual measurement with the Solinst indicator, a pressure transducer can be used to provide the rate of head change with time to be recorded. Well information recorded at the time of testing includes well radius (r), screened interval length (L), gravel pack radius (R), height of the phreatic surface above an arbitrary datum (H), the height of the water column in the well at the cessation of pumping or surcharging (H_o) and the height of the water column in the well at each measurement interval t (h).

D.3 SURFACE WATER SAMPLING

Surface water samples or samples from test pits are recovered with the use of a clean stainless steel, 20 ℓ bucket from which appropriately sized sterile glass or plastic sample jars, pretreated with preservatives, where required, are filled. Samples for metal analysis work are initially filtered through a plate filter or WaTerra Hydropore 0.45 μm cartridge filter in the field before decanting into a sample jar, unless direct delivery to a laboratory facility at which immediate filtration can be undertaken, is planned. Care is taken to minimize the accumulation of floating debris or other wastes that may be present on the surface of the water body. Alternatively, if rapid access to a laboratory is assured, surface water samples can be recovered directly by carefully immersing open sample bottles, without preservatives, below the surface of the water to ensure that the bottles are filled to the brim to eliminate headspace air and reduce the possibility of oxidation or degassing and that a minimum of disturbance occurs. Protective latex gloves should be worn and the sample bottle should be completely filled and immediately capped to minimize degassing of volatiles and contamination of the sample. Sample bottles are then stored in an insulated cooler and either protected from freezing in the winter or cooled with freezer packs to a temperature of less than 8ºC during warm weather, pending shipment to the laboratory.

D.4 QUALITY ASSURANCE / QUALITY CONTROL

The principal reason for the recovery of soil and groundwater samples in the field is to permit their inspection and analysis to determine whether contaminants or foreign matter is present at levels that constitute a health-, environmental- or construction-related liability, the discharge of which will require remedial or mitigative action. The accuracy with which the analytical results returned from chemical testing at the laboratory reflects the in-place condition is critical to the success of the site characterization program and thus every effort must be taken to ensure that the samples are recovered, handled, stored, shipped to and received at the laboratory in a condition that is representative of the material on site.

D.4.1 SAMPLE PRESERVATION

Preservation of soil samples quality is critical in the case of volatile organic compounds only, where the use of glass, Teflon-lined 50 mℓ septum jars, filled to the brim to avoid residual headspace into which volatiles can degas, as required. Volatiles samples are kept in a refrigerated condition at an ideal temperature of less than 4ºC and of no more than 10ºC and are delivered to the laboratory as soon after recovery as is practicable and in no case after more than 14 days from the date of recovery. Samples recovered for testing for the presence of inorganic contaminants have no time limit restriction between recovery and testing, if sealed. Where samples are tested for the presence of semi-volatile and non-volatile organics, they are analyzed within 60 days of recovery to ensure that biodegradation does not materially affect the chemical loading in the soil. All sample jars should be maintained in a sealed condition in the dark under refrigerated conditions.

Preservation requirements for groundwater samples are dependent on the contaminant parameters for which the analyses are being conducted. MOE requirements are widely adopted by the industry in Ontario and listed in the MOE document entitled Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act dated March 2004. The sample preservation procedures and holding time limits applied and the container types used are consistent with the requirements of the guidance document.

D.4.2 SAMPLE SEALS

On samples collected for volatile organic analyses, adhesive sample seals are affixed across the lids of all sample jar and bottle containers in such a way as to ensure that the seal must be broken on opening. Seals are placed to provide evidence of tampering with samples while in transit or temporary storage between the time of recovery and delivery to the laboratory.

D.4.3 CHAIN-OF-CUSTODY

Full chain-of-custody procedures are applied from the point at which field staff surrenders responsibility for the samples in the field or, where that individual is responsible for transit from the field location to the office, at their place of work. Chain-of-custody forms, which log the date of transfer and identity of the parties by and to whom the transfer has been made, also record the identity of the samples included in the shipment, the date sampled and sample location, the analyses requested for each sample, the name and address of the laboratory to which the samples are assigned, and any clarifying notes that may be required.

D.4.4 SAMPLE QUALITY MANAGEMENT

Laboratory or field control checks are utilized to ensure that the quality of the analytical data is maintained at an acceptable level. All laboratories to which samples are sent for chemical analysis are CALA-certified and participate in applicable inter-laboratory testing rounds administered by provincial and federal agencies.

Field duplicate samples, where used, are prepared by obtaining a soil or groundwater sample split from preselected sample locations. The splits are provided with fictitious sample identification designations and submitted to the laboratory for analysis to permit a determination of the internal quality control and repeatability of analyses from the selected laboratory to be determined.

Trip blanks comprising deionized water may be prepared by the contracted laboratory to accompany groundwater sample containers to determine whether contamination of the containers or of the samples had occurred during shipment to the field or, following recovery, during storage and shipment from the field to the laboratory. Trip blanks are generally enclosed with sample sets recovered for analysis for the presence of volatile organic compounds.

Equipment blanks may be recovered to establish the efficacy of sampler tool decontamination. Blanks are prepared in the field by pouring analyte-free deionized water over the sampling tool and collecting the resulting runoff in a 40 mℓ septum jar.

As described under the Laboratory Analysis section, matrix spikes are conducted a minimum of once during each project run by the laboratory. Field duplicate matrix spikes are normally not prepared. Laboratory duplicates are run in the laboratory on ten percent of the samples subject to testing.

Laboratory analysis results and QA/QC program results are carefully scrutinized on receipt to determine whether the results returned are representative. The laboratory customer services representative is contacted for clarification, if any uncertainty associated with the veracity or quality of the results is noted.

D.5 ONTARIO ENVIRONMENTAL EVALUATION GUIDELINES

Environmental guidelines used to evaluate soil and groundwater contaminant concentrations within the Province of Ontario have evolved over the past 20 years. The guidelines established by provincial and federal environmental bodies throughout Canada have been adopted in Ontario. Reference has also been made to European and U.S.A. generic criteria and specific environmental remediation requirements for large facilities such as oil refinery properties.

In 2004, soil, groundwater and sediment chemistry guidelines for a broad range (116 parameters) of frequently encountered contaminants were promulgated by the Ontario Ministry of the Environment (MOE) under O.Reg. 153/04 – *Records of Site Condition*. A brief discussion of relevant Ontario standards referenced in this report is presented below.

D.5.1 ONTARIO ENVIRONMENTAL STANDARDS

On 1 October 2004, under O.Reg. 153/04, the environmental guidelines presented in the Province of Ontario document *"Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act"*, dated 9 March 2004, came into force. The Site Condition Standards (the "Standards" or SCS), which represent a major revision to previous guidelines, include:

- introduction of environmental cleanup standards under the regulation rather than the previous suggested guidelines;

- generic sediment standards presented in conjunction with soil and groundwater standards;

- petroleum hydrocarbons are evaluated utilizing criteria developed for the Canadian Council for Ministers of the Environment (CCME) *Canada Wide Standards* which provides for a differentiation of hydrocarbon into four fractions, termed F1 to F4;

- stratified cleanup objectives where a less stringent generic soil cleanup criteria is applied to materials more than 1.5 m below the ground surface;

- classification of properties where 1/3 or more of the site area consists of overburden equal to or less than 2 metres in depth;

- Standards for use within 30 m of a permanent water body;

- classification of properties located within 30 m of an area of natural significance as potentially sensitive sites;

- allowance for the property owner to develop cleanup criteria using human health and environmental risk assessment techniques that would be specific to the site and proposed redevelopment landuse plan; and,

- a pending requirement to submit a Record of Site Condition (RSC) to the MOE if a property is to undergo a change to a more environmentally sensitive land use, such as from industrial to residential land use.

These Standards were amended in 2009 by the Province of Ontario under O.Reg. 511/09, will take effect 1 July 2011 and are presented in the Province of Ontario document *"Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act"*, dated 27 July 2009. The 2009 document presents maximum contaminant concentrations (i.e., Standards) against agricultural or other, residential/parkland/institutional and industrial/commercial/community property uses on the following nine tables:

Table 1	Full depth Background Site Condition Standards
Table 2	Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Table 3	Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Table 4	Stratified Site Condition Standards in a Potable Ground Water Condition
Table 5	Stratified Site Condition Standards in a Non-Potable Ground Water Condition
Table 6	Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition
Table 7	Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition
Table 8	Generic Site Condition Standards for Use Within 30 m of a Water Body in a Potable Ground Water Condition

Table 9 Generic Site Condition Standards for Use Within 30 m of a Water Body in a Non-Potable Ground Water Condition

The principal inorganic and organic parameters of concern at most industrial sites fall within four general categories. The inorganic parameters, including heavy metals, cyanide and general indicators provide evidence of contamination associated with, among other sources, discharges from old heavy industrial concerns, accumulations from long-term coal, raw material and waste storage and contamination associated with ash, clinker and other residue materials in historical fill. Depending on the historic use of the property, specific analyses may be carried out to determine some or all of the following:

pH	Copper	Selenium
Electrical Conductivity	Lead	Silver
Sodium Adsorption Ratio	Mercury	Zinc
Arsenic	Molybdenum	Antimony
Cadmium	Nickel	Barium
Hexavalent Chromium	Water Soluble Boron	Beryllium
Total Chromium	Free Cyanide	Vanadium
Cobalt		

Analyses may be conducted for the presence of polycyclic aromatic hydrocarbons (PAH) compounds that are associated with the use of diesel and heating fuel oils, heavy oils and greases, bunker fuels, asphaltic materials and coal and stockpiling of bottom ash and flyash from incinerators, boiler fire boxes and other such equipment, and which include:

Benzo(a)anthracene	Phenanthrene	Fluorene
Benzo(b)fluoranthene	Pyrene	Anthracene
Benzo(a)pyrene	Benzo(k)fluoranthene	Fluoranthene
Dibenzo(a,h)anthracene	Acenaphthylene	Chrysene
Indeno(1,2,3-c,d)pyrene	Acenaphthene	Benzo(g,h,i)perylene
Naphthalene		

Testing may also be conducted for the presence of volatile organic compounds (VOCs) associated with the presence of chlorinated and non-chlorinated industrial and housekeeping solvents and incorporating the monocyclic aromatic hydrocarbon (MAH) compounds reflective of light fraction petroleum products such as gasoline and aviation fuels and which may have been discharged to a site including:

Trichlorofluoromethane	Chloromethane	Bromomethane
Acrylonitrile	Carbon Tetrachloride	Vinyl Chloride
1,1-dichloroethene	1,2-dichloropropene	Chlorobenzene
Dichloroethane	Bromodichloromethane	Ethylbenzene
t-1,2-dichloroethene	Trichloroethene	m&p-xylenes
1,1-dichloroethane	cis-1,2-dichloropropene	Bromoform

Chlorobromomethane	tr-1,3-dichloropropene	Styrene
Chloroform	1,1,2-trichloroethane	1,1,2,2-tetrachloroethane
1,2-dichloroethane	Toluene	1,2-dichlorobenzene
1,1,1-trichloroethane	Chlorodibromomethane	1,3-dichlorobenzene
o-xylene	1,2-dibromomethane	1,4-dichlorobenzene
Benzene	Tetrachloroethene	

General indicator testing for the presence of residual contamination in soil at sites at which petroleum fuel products were used, handled, stored or produced may also be carried out for the presence of petroleum hydrocarbons ranging from F1 fractionation comprising total purgeable hydrocarbons (F1- C6 to C10), cold extractable (F2- >C10 to C16 and F3- >C16 to C34) and hot extractable (F4- >C34) ranges. Petroleum hydrocarbon testing in conjunction with the MAH compounds benzene, toluene, ethylbenzene and m,p+o-xylenes (BTEX) comprises a suite of analyses carried out to evaluate petroleum hydrocarbon product contamination.

An additional 41 halogenated and non-halogenated organic compounds, and inorganic parameters including polychlorinated biphenyls and pesticides and herbicides which are subject to evaluation when indications of their presence may be suggested have also been incorporated into the generic standards.

Site-specific cleanup standards that exceed *default* generic levels included in the tables can be developed for a particular property, for given land uses, receptor characteristics, pathways modifiers and development proposals using human and ecological risk assessment procedures. Registration of an instrument on title and other institutional controls may have to be implemented, in this regard. Where risk assessment modeling is to be carried out, additional information on soil conditions, including natural moisture content, grain size distribution, porosity and total organic content, is required. Risk assessment-based *effective* cleanup standards developed for a site are considered by the MOE to constitute the approved Standard for that property as long as the landuse and receptor characteristics remains the same and appropriate administrative, engineered and institutional controls remain in place.

D.5.2 PROPOSED MOE EXCESS FILL GUIDELINES

To clarify their position on the need to control the quality of materials moving from excavation sites to fill sites, the MOE issued a document entitled *Draft Criteria for the Management of Inert Fill* in August 1998. This document was issued to solicit comments and has not been finalized or officially adopted. The proposed policy is to comprise a companion document to the June 1996 cleanup guideline to be used to provide guidance on the chemical quality required of excavated materials that are to be used on commercial, industrial, agricultural, residential and ecologically sensitive lands as fill following their removal from the generating site.

On an interim basis, pending release of the MOE's updated policy which is understood to be integrated with the contaminated sites guideline, the Director, Central Region, has advised that soil generated from a construction or cleanup site and intended for use as fill at an off-site location must meet the criteria listed in Table "F" *Ontario Background Soil Concentrations.* Excess materials exhibiting contaminants exceeding that guideline shall be considered waste and shall be subject to disposal at a Part V waste management site in accordance with the requirements of O.Reg. 347, General Waste Management. Excess soil meeting guidelines consistent with the landuse, and relocated or reused on the site from which it was excavated, however, is not subject to O.Reg. 347.

D.5.3 AESTHETIC GUIDELINES

Materials which meet the chemical criteria of the excess fill guidelines may not be acceptable as fill for unrestricted off-site reuse if they are aesthetically impaired. Such materials may be subject to disposal as waste at a waste management site if removed from the generating property.

The guidelines used to evaluate the aesthetics of excavated materials are subjective in nature with soil considered acceptable for off-site reuse on a residential zoned property exhibiting no odours and trace to moderate staining but yielding no visible sheen on water. The inclusion of visible contaminants such as coal, asphalt and other discrete inclusions of contamination or debris including construction rubble, timber, metal, glass, plastic, ceramics, etc., may not be considered permissible for off-site use on residential properties, but depending on the degree of impact, may be suitable for reuse on sites zoned for industrial/commercial landuse. Soil gas headspace concentrations below 30% of LEL at industrial/commercial sites and 15% of LEL at residential sites may be considered to comprise aesthetics issues.

D.6 LABORATORY ANALYSIS

The procedures detailed in the MOE *Protocol for Analytical Methods Used in Assessment of Properties Under Part XV.1 of the Environmental Protection Act*, dated 9 March 2004, constitutes the accepted standards for chemical testing for environmental evaluation purposes in the province (where available). In accordance with this protocol, all appropriate laboratory quality assurance/quality control (QA/QC) procedures, including the use of spikes, replicates and blanks, are incorporated and run a minimum of once per sample set. The QA/QC data are returned with the laboratory reports received. A laboratory register is maintained to provide a permanent record of all samples received and to track the progress of the samples through the laboratory. Bench notebooks, recorder charts and other pertinent materials are archived for future reference purposes, if necessary. Where MOE methods are not available, United States Environmental Protection Agency, American Society for Testing and Materials and other recognized procedures are adopted.

D.7 CANADIAN COUNCIL OF MINISTERS OF THE ENVIRONMENT GUIDELINES

For federally-owned sites, a specific set of environmental guidelines are to be used to evaluate soil, surface water and sediment contaminant concentrations. The Canadian Council of Ministers of the Environment (CCME), the primary minister-led intergovernmental forum for collective action on environmental issues of national and international concern, has established a series of environmental guidelines in the CCME document *"Canadian Environmental Quality Guidelines"* (as updated from time to time). The Environmental Quality Guidelines (EQGs) consist of the following eight categories (chapters):

1. Canadian National Ambient Air Quality Objectives - Process and Status

2. Community Water Supplies
3. Recreational Water Quality Guidelines and Aesthetics
4. Canadian Water Quality Guidelines for the Protection of Aquatic Life
5. Canadian Water Quality Guidelines for the Protection of Agricultural Water Uses
6. Canadian Sediment Quality Guidelines for the Protection of Aquatic Life
7. Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health
8. Canadian Tissue Residue Guidelines for the Protection of Wildlife Consumers of Aquatic Biota

The Water Quality Guidelines (WQGs) in Chapters 4 and 5 present the maximum water contaminant concentrations for protection of freshwater or marine (i.e., sea) life and water used for irrigation or livestock, respectively.

The Sediment Quality Guidelines (SdQGs) in Chapter 6 present lower and upper fresh water and marine sediment contaminant concentrations in addition to a method for calculating the overall potential for biological effects.

The Soil Quality Guidelines (SQGs) in Chapter 7 present the maximum soil contaminant concentrations against agricultural, residential/parkland, commercial and industrial land uses.

In 2001, the CCME established the document *"Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil"* (as updated from time to time). The CCME Canada-Wide Standards (CWS) consist of a three-tiered approach:

- Tier 1 presents the maximum generic petroleum hydrocarbon soil contaminant concentrations against agricultural, residential/parkland, commercial and industrial land uses.
- Tier 2 facilitates the adjustment of Tier 1 Standards based on site-specific conditions that allow the elimination of exposure pathways that may not be applicable to the site. These Standards are presented in the CWS *Technical Supplement* document.
- Tier 3 facilitates the development of site-specific criteria based on site-specific risk assessment and management considerations. Guiding principles are presented in the CWS *Technical Supplement* document.

D.8 FEDERAL INTERIM GROUNDWATER QUALITY GUIDELINES

For federally-owned sites, a specific set of environmental guidelines are to be used to evaluate groundwater contaminant concentrations. Under the Federal Contaminated Sites Action Plan (FCSAP), the document *"Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites"* dated May 2010, was established to assist in assessing, remediating and risk managing federally-owned sites funded under the FCSAP program. The Federal Interim Groundwater Quality (FIGQ) Guidelines consist of a two tiered approach:

- Tier 1 presents the maximum generic groundwater contaminant concentrations against agricultural, residential/parkland and commercial/industrial land uses.

- Tier 2 facilitates the adjustment of Tier 1 Guidelines based on site-specific conditions that allow the elimination of exposure pathways that may not be applicable to the site.

D.9 GUIDELINES FOR CANADIAN DRINKING WATER QUALITY

For federally-owned sites, a specific set of environmental guidelines are to be used to evaluate contaminant concentrations present in a potable water source. Published by Health Canada on behalf of the Federal-Provincial-Territorial Committee on Drinking Water, the document *"Guidelines for Canadian Drinking Water Quality, Sixth Edition"*, was established to assist in determining the suitability of a potable water source considering known health effects associated with each contaminant, the availability of treatment and analytical technologies, aesthetic effects (e.g., taste, odour) and operational considerations where the presence of a substance may interfere with or impair a treatment process or technology (e.g., turbidity interfering with chlorination or UV disinfection) or adversely affect drinking water infrastructure (e.g., corrosion of pipes). The Guidelines for Canadian Drinking Water Quality (GCDWQ) are presented in a comprehensive *"Summary Table"* (as updated from time to time).

APPENDIX E

BOREHOLE LOGS

Project: Pickering Lands Sites	Contract No: 700743-20	Borehole: BH110-1	
Boring date: 03/12/2010	Supervised by: S.Shekarforoush	Monitoring Well: n/a	
Borehole Location: PIN # 110, Pickering, Ontario		Sheet 1 of 1	
Driller: Profile Drilling			
Drilling Method: Pionjar			

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV ☐ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND AND GRAVEL (FILL), brown, damp				SS-1A			100		N		Metal Analyses (0.0m to 0.15m)
						SS-1B							
	0.25	**PEAT** dark brown, damp, some silt											
0.5	0.38	**SILT** grey brown, some clay, damp, oxidation				SS-1C							
	0.75	End of Borehole at 0.75m											

ODOUR: N - None T - Trace M - Moderate S - Strong VS- Very Strong	Prepared by: S.Shekarforoush Checked by: S. Ruminsky Date: 05/12/10	DCS DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites**	Contract No: **700743-20**	Borehole: **BH110-2**	
Boring date: **03/12/2010**	Supervised by: **S.Shekarforoush**	Monitoring Well: **n/a**	
Borehole Location: **PIN # 110, Pickering, Ontario**		**Sheet 1 of 1**	
Driller: **Profile Drilling**			
Drilling Method: **Pionjar**			

Scale (m)	Elev. (m) Depth (m)	Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV (ppm) 100 200 300 400 / Headspace TOV (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND AND GRAVEL (FILL), brown, damp				SS-1A			100		N		Metal Analyses (0.0m to 0.15m)
						SS-1B							
	0.25	**PEAT**, dark brown, damp, some silt											
0.5	0.30	**SILT** grey brown, some clay, trace gravel, damp, oxidation				SS-1C							
	0.75	End of Borehole at 0.75m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **S.Shekarforoush**

Checked by: **S. Ruminsky**

Date: **05/12/10**

DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites**	Contract No: **700743-20**	Borehole: **BH110-3**	
Boring date: **03/12/2010**	Supervised by: **S.Shekarforoush**	Monitoring Well: **n/a**	
Borehole Location: **PIN # 110, Pickering, Ontario**		**Sheet 1 of 1**	
Driller: **Profile Drilling**			
Drilling Method: **Pionjar**			

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV ☐ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND AND GRAVEL (FILL), brown, damp				SS-1A			100		N		Metal Analyses (0.0m to 0.15m)
						SS-1B							
	0.25	**PEAT** dark brown, damp, some silt											
0.5						SS-1C							
	0.51	**CLAYEY SILT** grey brown, wet, oxidation											
	0.75	End of Borehole at 0.75m											

ODOUR:
- N - None
- T - Trace
- M - Moderate
- S - Strong
- VS- Very Strong

Prepared by: **S.Shekarforoush**

Checked by: **S. Ruminsky**

Date: **05/12/10**

DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites** Contract No: **700743-20**

Boring date: **03/12/2010** Supervised by: **S.Shekarforoush**

Borehole Location: **PIN # 110, Pickering, Ontario**

Driller: **Profile Drilling**

Drilling Method: **Pionjar**

Borehole: **BH110-4**

Monitoring Well: **n/a**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND AND GRAVEL (FILL), brown, damp				SS-1A			95		N		Metal Analyses (0.0m to 0.15m)
	0.23	**PEAT** dark brown, damp				SS-1B							
0.5						SS-1C							Metals
	0.75	End of Borehole at 0.75m											

ODOUR:
- N - None
- T - Trace
- M - Moderate
- S - Strong
- VS- Very Strong

Prepared by: **S.Shekarforoush**

Checked by: **S. Ruminsky**

Date: **05/12/10**

DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites** Contract No: **700743-20** Borehole: **BH110-5**

Boring date: **03/12/2010** Supervised by: **S.Shekarforoush** Monitoring Well: **n/a**

Borehole Location: **PIN # 110, Pickering, Ontario**

Driller: **Profile Drilling**

Drilling Method: **Pionjar**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		TOP SOIL				SS-1A			95		N		Metal Analyses (0.0m to 0.15m)
	0.15	**PEAT** dark brown, damp, some silt				SS-1B							Metal Analyses (0.15m to 0.45m)
0.5	0.41	**CLAYEY SILT** grey brown, trace sand & gravel, wet, oxidation				SS-1C							
	0.75	End of Borehole at 0.75m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **S.Shekarforoush**

Checked by: **S. Ruminsky**

Date: **05/12/10**

DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: Pickering Lands Sites	Contract No: 700743-20	Borehole: BH110-6	
Boring date: 03/12/2010	Supervised by: S.Shekarforoush	Monitoring Well: n/a	
Borehole Location: PIN # 110, Pickering, Ontario			
Driller: Profile Drilling		Sheet 1 of 1	
Drilling Method: Pionjar			

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV ☐ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		TOP SOIL				SS-1A			75		N		Metal Analyses (0.0m to 0.15m)
	0.13	**PEAT** dark brown and grey, damp, some silt				SS-1B							
0.5						SS-1C							Metals
	0.75	End of Borehole at 0.75m											

ODOUR: N - None T - Trace M - Moderate S - Strong VS- Very Strong	Prepared by: S.Shekarforoush Checked by: S. Ruminsky Date: 05/12/10	DCS DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites** Contract No: **700743-20**
Boring date: **03/12/2010** Supervised by: **S.Shekarforoush**
Borehole Location: **PIN # 110, Pickering, Ontario**
Driller: **Profile Drilling**
Drilling Method: **Pionjar**

Borehole: **BH110-7**
Monitoring Well: **n/a**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV ☐ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		TOP SOIL				SS-1A			65		N		Metal Analyses (0.0m to 0.15m)
	0.13	**PEAT** dark brown and grey, damp, some silt				SS-1B							Metal Analyses (0.15m to 0.45m)
0.5						SS-1C							Metal Analyses (0.45m to 0.75m)
	0.75	End of Borehole at 0.75m											Metal Analyses (0.45m to 0.75m)

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **S.Shekarforoush**
Checked by: **S. Ruminsky**
Date: **05/12/10**

DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites** Contract No: **700743-20**

Borehole: **BH110-8**

Boring date: **03/12/2010** Supervised by: **S.Shekarforoush**

Monitoring Well: **n/a**

Borehole Location: **PIN # 110, Pickering, Ontario**

Driller: **Profile Drilling**

Drilling Method: **Pionjar**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND AND GRAVEL (FILL), brown, damp				SS-1A			50		N		Metal Analyses (0.0m to 0.15m)
	0.20	**PEAT** dark brown and grey, damp				SS-1B							SCS1-DUP1 analysed for metals
0.5						SS-1C							Metals
	0.75	End of Borehole at 0.75m											

ODOUR:
- N - None
- T - Trace
- M - Moderate
- S - Strong
- VS- Very Strong

Prepared by: **S.Shekarforoush**

Checked by: **S. Ruminsky**

Date: **05/12/10**

DCS DECOMMISSIONING CONSULTING SERVICES LIMITED

Project:	Pickering Lands Sites	Contract No:	700743-20	Borehole:	BH110-9
Boring date:	03/12/2010	Supervised by:	S.Shekarforoush	Monitoring Well:	n/a
Borehole Location:	PIN # 110, Pickering, Ontario				
Driller:	Profile Drilling				Sheet 1 of 1
Drilling Method:	Pionjar				

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV ☐ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		TOP SOIL				SS-1A			65		N		Metal Analyses (0.0m to 0.15m)
	0.10	**PEAT**, dark brown, damp, some silt				SS-1B							
	0.25	**SILT** brown, trace sand & gravel, wet, rootlets, oxidation											
0.5						SS-1C							Metals
	0.75	End of Borehole at 0.75m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: S.Shekarforoush

Checked by: S. Ruminsky

Date: 05/12/10

DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites** Contract No: **700743-20**

Boring date: **03/12/2010** Supervised by: **S.Shekarforoush**

Borehole Location: **PIN # 110, Pickering, Ontario**

Driller: **Profile Drilling**

Drilling Method: **Pionjar**

Borehole: **BH110-10**

Monitoring Well: **n/a**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV ☐ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND AND GRAVEL (FILL), brown, damp				SS-1A			65		N		Metal Analyses (0.0m to 0.15m)
	0.15	**SILT WITH ORGANICS** dark brown, damp				SS-1B							
0.5						SS-1C							
	0.75	End of Borehole at 0.75m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **S.Shekarforoush**

Checked by: **S. Ruminsky**

Date: **05/12/10**

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DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites** Contract No: **700743-20**

Boring date: **03/12/2010** Supervised by: **S.Shekarforoush**

Borehole Location: **PIN # 110, Pickering, Ontario**

Driller: **Profile Drilling**

Drilling Method: **Pionjar**

Borehole: **BH110-11**

Monitoring Well: **n/a**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND AND GRAVEL (FILL), brown, damp				SS-1A			85		N		Metal Analyses (0.0m to 0.15m)
	0.15	**SANDY SILT WITH ORGANICS** grey brown, moist, rootlets				SS-1B							
0.5	0.41	**SILT**brown, trace clay, moist, rootlets				SS-1C							
	0.75	End of Borehole at 0.75m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **S.Shekarforoush**

Checked by: **S. Ruminsky**

Date: **05/12/10**

DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites** Contract No: **700743-20**

Boring date: **03/12/2010** Supervised by: **S.Shekarforoush**

Borehole Location: **PIN # 110, Pickering, Ontario**

Driller: **Profile Drilling**

Drilling Method: **Pionjar**

Borehole: **BH110-12**

Monitoring Well: **n/a**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV ☐ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		TOP SOIL				SS-1A			85		N		Metal Analyses (0.0m to 0.15m)
	0.10	**SILT** dark brown, trace organics & sand, moist, rootlets				SS-1B							
0.5						SS-1C							
	0.75	End of Borehole at 0.75m											

ODOUR:
- N - None
- T - Trace
- M - Moderate
- S - Strong
- VS- Very Strong

Prepared by: **S.Shekarforoush**

Checked by: **S. Ruminsky**

Date: **05/12/10**

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DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites**	Contract No: **700743-20**	Borehole: **BH110-13**	
Boring date: **03/12/2010**	Supervised by: **S.Shekarforoush**	Monitoring Well: **n/a**	
Borehole Location: **PIN # 110, Pickering, Ontario**			
Driller: **Profile Drilling**		**Sheet 1 of 1**	
Drilling Method: **Pionjar**			

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND AND GRAVEL (FILL), brown, damp				SS-1A			100		N		Metal Analyses (0.0m to 0.15m)
	0.10	**SILT** dark brown, trace organics sand, moist, rootlets				SS-1B							Metal Analyses (0.15m to 0.45m)
0.5	0.51	**SILT** lightbrown, wet				SS-1C							
	0.75	End of Borehole at 0.75m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **S.Shekarforoush**

Checked by: **S. Ruminsky**

Date: **05/12/10**

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DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites** Contract No: **700743-20**

Borehole: **BH110-14**

Boring date: **03/12/2010** Supervised by: **S.Shekarforoush**

Monitoring Well: **n/a**

Borehole Location: **PIN # 110, Pickering, Ontario**

Driller: **Profile Drilling**

Drilling Method: **Pionjar**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV ☐ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		SAND AND GRAVEL (FILL) grey, damp				SS-1A			100		N		Metal Analyses (0.0m to 0.15m)
	0.10	**SILT** brown, trace sand, moist, rootlets				SS-1B							
0.5	0.41	**SAND** lightbrown, fine, moist				SS-1C							
	0.75	End of Borehole at 0.75m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **S.Shekarforoush**

Checked by: **S. Ruminsky**

Date: **05/12/10**

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DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: Pickering Lands Sites	Contract No: 700743-20	Borehole: BH110-15
Boring date: 03/12/2010	Supervised by: S.Shekarforoush	Monitoring Well: n/a
Borehole Location: PIN # 110, Pickering, Ontario		Sheet 1 of 1
Driller: Profile Drilling		
Drilling Method: Pionjar		

Scale (m)	Elev. (m) Depth (m)	Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV ☐ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		TOP SOIL				SS-1A			50		N		Metal Analyses (0.0m to 0.15m)
	0.13	**SILT** dark brown, some sand, moist				SS-1B							
0.5						SS-1C							
	0.75	End of Borehole at 0.75m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: S.Shekarforoush

Checked by: S. Ruminsky

Date: 05/12/10

DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: Pickering Lands Sites		Contract No: 700743-20		Borehole: BH110-16
Boring date: 03/12/2010		Supervised by: S.Shekarforoush		Monitoring Well: n/a
Borehole Location: PIN # 110, Pickering, Ontario				
Driller: Profile Drilling				**Sheet 1 of 1**
Drilling Method: Pionjar				

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV ☐ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		TOP SOIL				SS-1A			100		N		Metal Analyses (0.0m to 0.15m)
	0.10	**SILT** brown, some sand, trace gravel, moist				SS-1B							Metal Analyses (0.15m to 0.45m)
0.5						SS-1C							
	0.75	End of Borehole at 0.75m											

ODOUR:
- N - None
- T - Trace
- M - Moderate
- S - Strong
- VS- Very Strong

Prepared by: S.Shekarforoush

Checked by: S. Ruminsky

Date: 05/12/10

DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites** Contract No: **700743-20**

Boring date: **03/12/2010** Supervised by: **S.Shekarforoush**

Borehole Location: **PIN # 110, Pickering, Ontario**

Driller: **Profile Drilling**

Drilling Method: **Pionjar**

Borehole: **BH110-17**

Monitoring Well: **n/a**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV ☐ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		TOP SOIL				SS-1A			100		N		Metal Analyses (0.0m to 0.15m)
	0.13	**SILT** brown, trace sand and gravel, moist, rootlets				SS-1B							SCS1-DUP2 analysed for metals
0.5	0.30	**SILT** light brown, trace sand, moist				SS-1C							Metal Analyses (0.15m to 0.45m) Metal Analyses (0.45m to 0.75m)
	0.75	End of Borehole at 0.75m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **S.Shekarforoush**

Checked by: **S. Ruminsky**

Date: **05/12/10**

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DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites** Contract No: **700743-20**

Boring date: **03/12/2010** Supervised by: **S.Shekarforoush**

Borehole Location: **PIN # 110, Pickering, Ontario**

Driller: **Profile Drilling**

Drilling Method: **Pionjar**

Borehole: **BH110-18**

Monitoring Well: **n/a**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV ☐ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		TOP SOIL				SS-1A			90		N		Metal Analyses (0.0m to 0.15m)
	0.13	**SILT** dark brown, trace sand and organics, moist				SS-1B							
0.5						SS-1C							
	0.75	End of Borehole at 0.75m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **S.Shekarforoush**

Checked by: **S. Ruminsky**

Date: **05/12/10**

DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites**	Contract No: **700743-20**		Borehole: **BH110-19**
Boring date: **03/12/2010**	Supervised by: **S.Shekarforoush**		Monitoring Well: **n/a**
Borehole Location: **PIN # 110, Pickering, Ontario**			
Driller: **Profile Drilling**			**Sheet 1 of 1**
Drilling Method: **Pionjar**			

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV ☐ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		TOP SOIL				SS-1A			65		N		Metal Analyses (0.0m to 0.15m)
	0.13	**SILT** brown, trace sand, moist, rootlets				SS-1B							Metal Analyses (0.15m to 0.45m)
0.5						SS-1C							
	0.75	End of Borehole at 0.75m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **S.Shekarforoush**

Checked by: **S. Ruminsky**

Date: **05/12/10**

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DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: Pickering Lands Sites	Contract No: 700743-20	Borehole: BH110-20	
Boring date: 03/12/2010	Supervised by: S.Shekarforoush	Monitoring Well: n/a	
Borehole Location: PIN # 110, Pickering, Ontario		Sheet 1 of 1	
Driller: Profile Drilling			
Drilling Method: Pionjar			

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface: m)	Symbol	Samples: Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV ☐ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		TOP SOIL				SS-1A			95		N		Metal Analyses (0.0m to 0.15m)
	0.13	**SILT** brown, trace sand, moist, rootlets				SS-1B							Metal Analyses (0.15m to 0.45m)
	0.30	**SILT** brown, some fine sand, moist											
0.5						SS-1C							
	0.75	End of Borehole at 0.75m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: S.Shekarforoush

Checked by: S. Ruminsky

Date: 05/12/10

DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites** Contract No: **700743-20**

Boring date: **03/12/2010** Supervised by: **S.Shekarforoush**

Borehole Location: **PIN # 110, Pickering, Ontario**

Driller: **Profile Drilling**

Drilling Method: **Pionjar**

Borehole: **BH110-21**

Monitoring Well: **n/a**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV ☐ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		TOP SOIL				SS-1A			75		N		Metal Analyses (0.0m to 0.15m)
	0.15	**SILT** brown, trace sand, moist, rootlets				SS-1B							
0.5						SS-1C							
	0.75	End of Borehole at 0.75m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **S.Shekarforoush**

Checked by: **S. Ruminsky**

Date: **05/12/10**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites** Contract No: **700743-20** Borehole: **BH110-22**

Boring date: **03/12/2010** Supervised by: **S.Shekarforoush** Monitoring Well: **n/a**

Borehole Location: **PIN # 110, Pickering, Ontario**

Driller: **Profile Drilling**

Drilling Method: **Pionjar**

Scale (m)	Elev. (m) Depth (m)	Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV ☐ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		TOP SOIL				SS-1A			100		N		Metal Analyses (0.0m to 0.15m)
	0.13	**SILT** brown, some organics, pieces of glass, moist, rootlets				SS-1B							
	0.25	**SILT** brown, trace fine sand, moist											
0.5						SS-1C							
	0.75	End of Borehole at 0.75m											

ODOUR:
- N - None
- T - Trace
- M - Moderate
- S - Strong
- VS- Very Strong

Prepared by: **S.Shekarforoush**

Checked by: **S. Ruminsky**

Date: **05/12/10**

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DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites**	Contract No: **700743-20**	Borehole: **BH110-23**		
Boring date: **03/12/2010**	Supervised by: **S.Shekarforoush**	Monitoring Well: **n/a**		
Borehole Location: **PIN # 110, Pickering, Ontario**		**Sheet 1 of 1**		
Driller: **Profile Drilling**				
Drilling Method: **Pionjar**				

Scale (m)	Elev. (m) Depth (m)	Description (Stratigraphy) Ground Surface: m	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		TOP SOIL				SS-1A			65		N		Metal Analyses (0.0m to 0.15m)
	0.13	**SILT** brown, trace sand, moist, rootlets				SS-1B							
0.5						SS-1C							
	0.75	End of Borehole at 0.75m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **S.Shekarforoush**

Checked by: **S. Ruminsky**

Date: **05/12/10**

DCS
DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites** Contract No: **700743-20**

Borehole: **BH110-24**

Boring date: **03/12/2010** Supervised by: **S.Shekarforoush**

Monitoring Well: **n/a**

Borehole Location: **PIN # 110, Pickering, Ontario**

Driller: **Profile Drilling**

Drilling Method: **Pionjar**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		TOP SOIL				SS-1A			100		N		Metal Analyses (0.0m to 0.15m)
	0.13	**SILT** brown, trace sand & gravel, moist, rootlets				SS-1B							
0.5						SS-1C							
	0.75	End of Borehole at 0.75m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **S.Shekarforoush**

Checked by: **S. Ruminsky**

Date: **05/12/10**

DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites** Contract No: **700743-20** Borehole: **BH110-25**

Boring date: **03/12/2010** Supervised by: **S.Shekarforoush** Monitoring Well: **n/a**

Borehole Location: **PIN # 110, Pickering, Ontario**

Driller: **Profile Drilling**

Drilling Method: **Pionjar**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		TOP SOIL				SS-1A			100		N		Metal Analyses (0.0m to 0.15m)
	0.13	**SILT** brown, trace sand & gravel, moist, rootlets				SS-1B							
0.5						SS-1C							
	0.75	End of Borehole at 0.75m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **S.Shekarforoush**

Checked by: **S. Ruminsky**

Date: **05/12/10**

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DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites** Contract No: **700743-20**

Boring date: **03/12/2010** Supervised by: **S.Shekarforoush**

Borehole Location: **PIN # 110, Pickering, Ontario**

Driller: **Profile Drilling**

Drilling Method: **Pionjar**

Borehole: **BH110-26**

Monitoring Well: **n/a**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV □ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		TOP SOIL				SS-1A			65		N		Metal Analyses (0.0m to 0.15m)
	0.15	**SILT** brown, trace sand & gravel, moist, rootlets				SS-1B							SCS1-DUP3 analysed for metals
0.5						SS-1C							Metal Analyses (0.15m to 0.45m)
	0.75	End of Borehole at 0.75m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **S.Shekarforoush**

Checked by: **S. Ruminsky**

Date: **05/12/10**

DCS

DECOMMISSIONING CONSULTING SERVICES LIMITED

Project: **Pickering Lands Sites** Contract No: **700743-20** Borehole: **BH110-27**

Boring date: **03/12/2010** Supervised by: **S.Shekarforoush** Monitoring Well: **n/a**

Borehole Location: **PIN # 110, Pickering, Ontario**

Driller: **Profile Drilling**

Drilling Method: **Pionjar**

Sheet 1 of 1

Scale (m)	Elev. (m) Depth (m)	Stratigraphy: Description (Ground Surface: m)	Symbol	Well Details	Water Level	Sample Type and Number	Conditon	Blows/ 150mm	% Recovery	RQD	Odour	Headspace TOV ⊕ (ppm) 100 200 300 400 / Headspace TOV ☐ (%LEL) 20 40 60 80	Remarks and Sample Analyses
		TOP SOIL				SS-1A			75		N		Metal Analyses (0.0m to 0.15m)
	0.15	**SILT** brown, trace sand, moist, rootlets				SS-1B							
0.5						SS-1C							
	0.75	End of Borehole at 0.75m											

ODOUR:
N - None
T - Trace
M - Moderate
S - Strong
VS- Very Strong

Prepared by: **S.Shekarforoush**

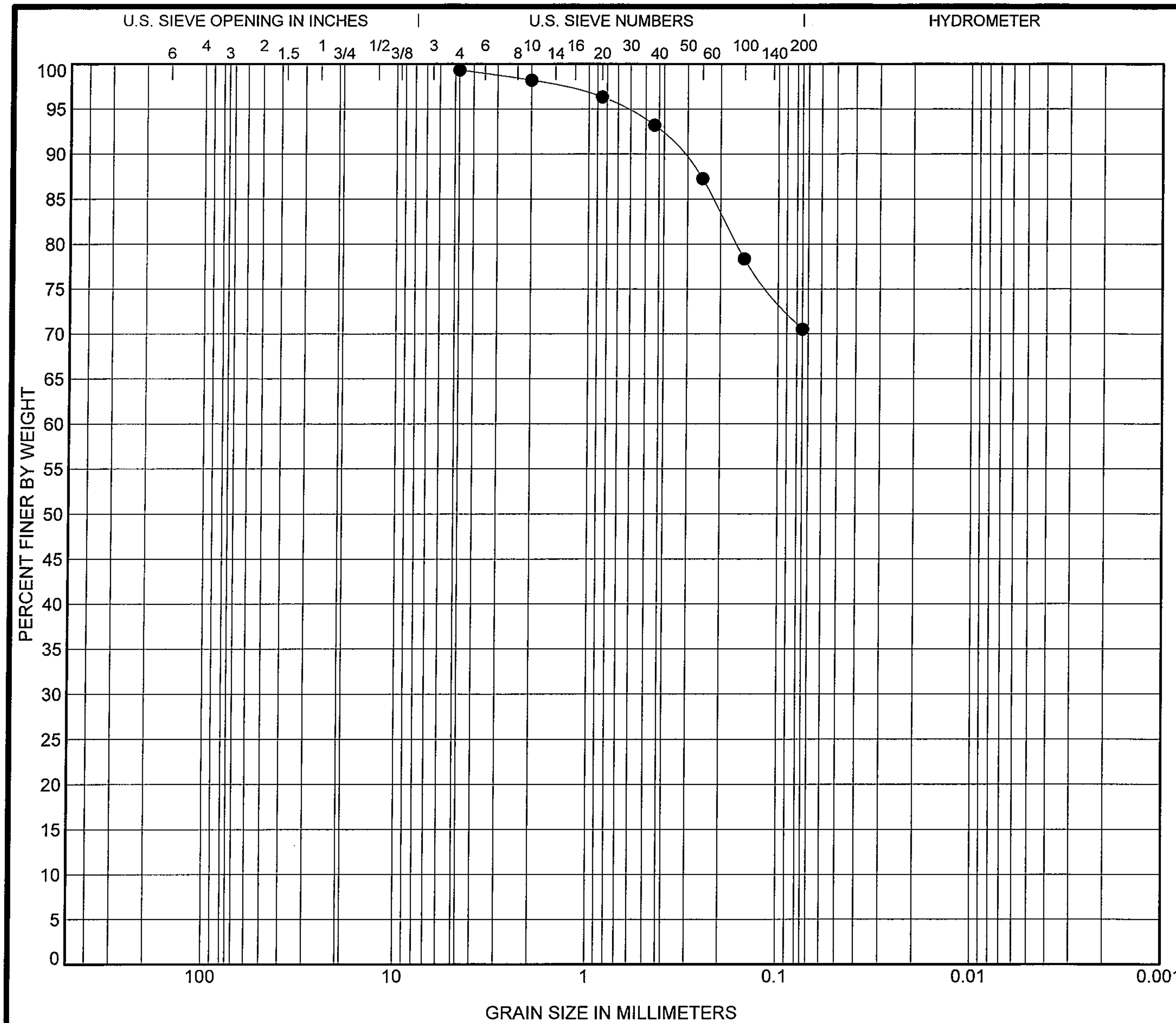
Checked by: **S. Ruminsky**

Date: **05/12/10**

DECOMMISSIONING CONSULTING SERVICES LIMITED

APPENDIX F

GRAIN SIZE ANALYSIS RESULTS



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● **BH110-11**	**0.25**	**SANDY SILT**					

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **BH110-11**	**0.25**	**4.75**				**0.0**	**28.8**	**70.5**	

Logo

Decommissioning Consulting Services Limited
121 Granton Drive, Unit 11
Richmond Hill, Ontario, L4B 3N4
Telephone: 905-882-5984
Fax: 905-882-8962

GRAIN SIZE DISTRIBUTION

Project: Pickering Lands Sites

Location: PIN # 110, Pickering, Ontario

Number: 700743-20

APPENDIX G

LABORATORY CERTIFICATES OF ANALYSIS

Maxxam

Success Through Science®

Your Project #: 700743-20
Site: PIN614278-SCS2 PICKERING, ON
Your C.O.C. #: n/a

Attention: Sean Shekarforoush
Decommissioning Consulting Services Limited
121 Granton Dr
Unit 11
Richmond Hill, ON
L4B 3N4

Report Date: 2010/12/14

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B0H6421
Received: 2010/12/07, 13:20

Sample Matrix: Paint
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Lead In Paint	3	2010/12/10	2010/12/13	CAM SOP-00408	EPA 6010

Sample Matrix: Soil
Samples Received: 30

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Acid Extr. Metals (aqua regia) by ICPMS	30	2010/12/13	2010/12/13	CAM SOP-00447	EPA 6020

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

MATHURA THIRUKKUMARAN, CS Rep
Email: MThirukkumaran@maxxam.ca
Phone# (905) 817-5700

==
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

O'REG 153 METALS BY ICPMS (SOIL)

Maxxam ID		IB9406	IB9407	IB9408	IB9409		IB9410		
Sampling Date		2010/12/03	2010/12/03	2010/12/03	2010/12/03		2010/12/03		
COC Number		n/a	n/a	n/a	n/a		n/a		
	Units	**BH110-1 SS1A (0.0-0.15)**	**BH110-2 SS1A (0.0-0.15)**	**BH110-3 SS1A (0.0-0.15)**	**BH110-4 SS1A (0.0-0.15)**	**RDL**	**BH110-5 SS1A (0.0-0.15)**	**RDL**	**QC Batch**
Metals									
Acid Extractable Antimony (Sb)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	0.2	2356909
Acid Extractable Arsenic (As)	ug/g	8	4	3	3	1	2	1	2356909
Acid Extractable Barium (Ba)	ug/g	9.6	17	13	10	0.5	53	0.5	2356909
Acid Extractable Beryllium (Be)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	0.3	0.2	2356909
Acid Extractable Cadmium (Cd)	ug/g	0.2	0.1	<0.1	0.1	0.1	0.3	0.1	2356909
Acid Extractable Chromium (Cr)	ug/g	3	6	4	5	1	17	1	2356909
Acid Extractable Cobalt (Co)	ug/g	1.8	2.1	1.6	1.6	0.1	5.3	0.1	2356909
Acid Extractable Copper (Cu)	ug/g	7.1	6.7	4.5	4.5	0.5	23	0.5	2356909
Acid Extractable Lead (Pb)	ug/g	13	7	5	4	1	12	1	2356909
Acid Extractable Molybdenum (Mo)	ug/g	0.9	<0.5	<0.5	<0.5	0.5	<0.5	0.5	2356909
Acid Extractable Nickel (Ni)	ug/g	3.5	4.3	3.1	3.2	2.5	11	0.5	2356909
Acid Extractable Selenium (Se)	ug/g	<0.5	<0.5	<0.5	<0.5	0.5	0.6	0.5	2356909
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	0.2	2356909
Acid Extractable Thallium (Tl)	ug/g	0.07	0.05	<0.05	<0.05	0.05	0.11	0.05	2356909
Acid Extractable Vanadium (V)	ug/g	5	13	11	11	5	19	5	2356909
Acid Extractable Zinc (Zn)	ug/g	72	53	37	33	5	360	5	2356909

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0H6421
Report Date: 2010/12/14

Decommissioning Consulting Services Limited
Client Project #: 700743-20
Project name: PIN614278-SCS2 PICKERING, ON

O'REG 153 METALS BY ICPMS (SOIL)

Maxxam ID		IB9411	IB9412	IB9413	IB9414		IB9415		
Sampling Date		2010/12/03	2010/12/03	2010/12/03	2010/12/03		2010/12/03		
COC Number		n/a	n/a	n/a	n/a		n/a		
	Units	**BH110-6 SS1A (0.0-0.15)**	**BH110-7 SS1A (0.0-0.15)**	**BH110-8 SS1A (0.0-0.15)**	**BH110-9 SS1A (0.0-0.15)**	**RDL**	**BH110-10 SS1A (0.0-0.15)**	**RDL**	**QC Batch**
Metals									
Acid Extractable Antimony (Sb)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	1.7	0.2	2356909
Acid Extractable Arsenic (As)	ug/g	4	3	4	4	1	2	1	2356909
Acid Extractable Barium (Ba)	ug/g	40	42	49	59	0.5	49	0.5	2356909
Acid Extractable Beryllium (Be)	ug/g	0.2	0.4	<0.2	0.3	0.2	<0.2	0.2	2356909
Acid Extractable Cadmium (Cd)	ug/g	0.2	0.3	0.2	0.3	0.1	0.2	0.1	2356909
Acid Extractable Chromium (Cr)	ug/g	13	19	14	16	1	8	1	2356909
Acid Extractable Cobalt (Co)	ug/g	3.8	4.8	3.5	4.5	0.1	2.2	0.1	2356909
Acid Extractable Copper (Cu)	ug/g	16	24	19	18	0.5	7.4	0.5	2356909
Acid Extractable Lead (Pb)	ug/g	11	17	37	14	1	15	1	2356909
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	<0.5	<0.5	0.5	0.5	0.5	2356909
Acid Extractable Nickel (Ni)	ug/g	8.7	13	8.3	9.1	0.5	4.9	2.5	2356909
Acid Extractable Selenium (Se)	ug/g	<0.5	1.0	0.7	<0.5	0.5	<0.5	0.5	2356909
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	0.2	2356909
Acid Extractable Thallium (Tl)	ug/g	0.08	0.12	0.06	0.06	0.05	0.05	0.05	2356909
Acid Extractable Vanadium (V)	ug/g	15	19	16	20	5	8	5	2356909
Acid Extractable Zinc (Zn)	ug/g	57	510	120	63	5	56	5	2356909

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam

Maxxam Job #: B0H6421
Report Date: 2010/12/14

Decommissioning Consulting Services Limited
Client Project #: 700743-20
Project name: PIN614278-SCS2 PICKERING, ON

O'REG 153 METALS BY ICPMS (SOIL)

Maxxam ID		IB9416	IB9416		IB9417	IB9418	IB9419		
Sampling Date		2010/12/03	2010/12/03		2010/12/03	2010/12/03	2010/12/03		
COC Number		n/a	n/a		n/a	n/a	n/a		
	Units	**BH110-11 SS1A (0.0-0.15)**	**BH110-11 SS1A (0.0-0.15) Lab-Dup**	**RDL**	**BH110-12 SS1A (0.0-0.15)**	**BH110-13 SS1A (0.0-0.15)**	**BH110-14 SS1A (0.0-0.15)**	**RDL**	**QC Batch**
Metals									
Acid Extractable Antimony (Sb)	ug/g	0.8	0.9	0.2	2.5	16	0.9	0.2	2356909
Acid Extractable Arsenic (As)	ug/g	3	3	1	3	3	4	1	2356909
Acid Extractable Barium (Ba)	ug/g	49	49	0.5	77	160	84	0.5	2356909
Acid Extractable Beryllium (Be)	ug/g	<0.2	<0.2	0.2	0.2	0.4	0.5	0.2	2356909
Acid Extractable Cadmium (Cd)	ug/g	0.1	0.2	0.1	0.3	0.5	0.4	0.1	2356909
Acid Extractable Chromium (Cr)	ug/g	8	10	1	13	14	16	1	2356909
Acid Extractable Cobalt (Co)	ug/g	2.7	2.8	0.1	4.9	5.1	5.8	0.1	2356909
Acid Extractable Copper (Cu)	ug/g	7.8	7.8	0.5	14	14	15	0.5	2356909
Acid Extractable Lead (Pb)	ug/g	22	23	1	49	99	32	1	2356909
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	0.5	<0.5	<0.5	0.5	0.5	2356909
Acid Extractable Nickel (Ni)	ug/g	6.5	5.3	2.5	10	10	20	0.5	2356909
Acid Extractable Selenium (Se)	ug/g	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	0.5	2356909
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	0.2	2356909
Acid Extractable Thallium (Tl)	ug/g	0.07	0.07	0.05	0.08	0.08	0.08	0.05	2356909
Acid Extractable Vanadium (V)	ug/g	6	6	5	21	22	23	5	2356909
Acid Extractable Zinc (Zn)	ug/g	54	59	5	99	430	96	5	2356909

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Success Through Science®

Maxxam Job #: B0H6421
Report Date: 2010/12/14

Decommissioning Consulting Services Limited
Client Project #: 700743-20
Project name: PIN614278-SCS2 PICKERING, ON

O'REG 153 METALS BY ICPMS (SOIL)

Maxxam ID		IB9420	IB9421	IB9422	IB9423		IB9424		
Sampling Date		2010/12/03	2010/12/03	2010/12/03	2010/12/03		2010/12/03		
COC Number		n/a	n/a	n/a	n/a		n/a		
	Units	**BH110-15 SS1A (0.0-0.15)**	**BH110-16 SS1A (0.0-0.15)**	**BH110-17 SS1A (0.0-0.15)**	**BH110-18 SS1A (0.0-0.15)**	**QC Batch**	**BH110-19 SS1A (0.0-0.15)**	**RDL**	**QC Batch**
Metals									
Acid Extractable Antimony (Sb)	ug/g	2.8	3.9	6.0	0.4	2356909	0.3	0.2	2356916
Acid Extractable Arsenic (As)	ug/g	4	6	9	5	2356909	5	1	2356916
Acid Extractable Barium (Ba)	ug/g	93	170	200	60	2356909	67	0.5	2356916
Acid Extractable Beryllium (Be)	ug/g	0.4	0.5	0.5	0.3	2356909	0.3	0.2	2356916
Acid Extractable Cadmium (Cd)	ug/g	0.6	0.5	0.5	0.3	2356909	0.4	0.1	2356916
Acid Extractable Chromium (Cr)	ug/g	16	22	24	14	2356909	13	1	2356916
Acid Extractable Cobalt (Co)	ug/g	5.7	7.1	6.8	5.4	2356909	5.7	0.1	2356916
Acid Extractable Copper (Cu)	ug/g	19	23	28	15	2356909	330	0.5	2356916
Acid Extractable Lead (Pb)	ug/g	49	92	150	43	2356909	90	1	2356916
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	<0.5	<0.5	2356909	<0.5	0.5	2356916
Acid Extractable Nickel (Ni)	ug/g	12	15	14	10	2356909	11	0.5	2356916
Acid Extractable Selenium (Se)	ug/g	<0.5	0.5	<0.5	<0.5	2356909	<0.5	0.5	2356916
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	<0.2	<0.2	2356909	<0.2	0.2	2356916
Acid Extractable Thallium (Tl)	ug/g	0.09	0.13	0.13	0.09	2356909	0.09	0.05	2356916
Acid Extractable Vanadium (V)	ug/g	23	29	27	25	2356909	24	5	2356916
Acid Extractable Zinc (Zn)	ug/g	190	250	280	76	2356909	130	5	2356916

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

O'REG 153 METALS BY ICPMS (SOIL)

Maxxam ID		IB9425	IB9425		IB9426		IB9427		
Sampling Date		2010/12/03	2010/12/03		2010/12/03		2010/12/03		
COC Number		n/a	n/a		n/a		n/a		
	Units	**BH110-20 SS1A (0.0-0.15)**	**BH110-20 SS1A (0.0-0.15) Lab-Dup**	**QC Batch**	**BH110-21 SS1A (0.0-0.15)**	**QC Batch**	**BH110-22 SS1A (0.0-0.15)**	**RDL**	**QC Batch**
Metals									
Acid Extractable Antimony (Sb)	ug/g	0.3	0.3	2356916	0.3	2356909	<0.2	0.2	2356916
Acid Extractable Arsenic (As)	ug/g	4	4	2356916	3	2356909	12	1	2356916
Acid Extractable Barium (Ba)	ug/g	91	94	2356916	84	2356909	47	0.5	2356916
Acid Extractable Beryllium (Be)	ug/g	0.3	0.4	2356916	0.4	2356909	<0.2	0.2	2356916
Acid Extractable Cadmium (Cd)	ug/g	0.8	0.9	2356916	0.3	2356909	0.2	0.1	2356916
Acid Extractable Chromium (Cr)	ug/g	14	15	2356916	18	2356909	16	1	2356916
Acid Extractable Cobalt (Co)	ug/g	5.9	5.9	2356916	7.3	2356909	3.6	0.1	2356916
Acid Extractable Copper (Cu)	ug/g	23	23	2356916	17	2356909	13	0.5	2356916
Acid Extractable Lead (Pb)	ug/g	260	260	2356916	100	2356909	24	1	2356916
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	2356916	<0.5	2356909	<0.5	0.5	2356916
Acid Extractable Nickel (Ni)	ug/g	13	12	2356916	16	2356909	6.6	0.5	2356916
Acid Extractable Selenium (Se)	ug/g	<0.5	0.8	2356916	<0.5	2356909	<0.5	0.5	2356916
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	2356916	<0.2	2356909	<0.2	0.2	2356916
Acid Extractable Thallium (Tl)	ug/g	0.09	0.09	2356916	0.13	2356909	0.05	0.05	2356916
Acid Extractable Vanadium (V)	ug/g	22	23	2356916	30	2356909	20	5	2356916
Acid Extractable Zinc (Zn)	ug/g	240	250	2356916	80	2356909	66	5	2356916

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0H6421
Report Date: 2010/12/14

Decommissioning Consulting Services Limited
Client Project #: 700743-20
Project name: PIN614278-SCS2 PICKERING, ON

O'REG 153 METALS BY ICPMS (SOIL)

Maxxam ID		IB9428		IB9429	IB9430	IB9431	IB9432		
Sampling Date		2010/12/03		2010/12/03	2010/12/03	2010/12/03	2010/12/03		
COC Number		n/a		n/a	n/a	n/a	n/a		
	Units	**BH110-23 SS1A (0.0-0.15)**	**QC Batch**	**BH110-24 SS1A (0.0-0.15)**	**BH110-25 SS1A (0.0-0.15)**	**BH110-26 SS1A (0.0-0.15)**	**BH110-27 SS1A (0.0-0.15)**	**RDL**	**QC Batch**
Metals									
Acid Extractable Antimony (Sb)	ug/g	<0.2	2356909	<0.2	0.3	0.3	<0.2	0.2	2356916
Acid Extractable Arsenic (As)	ug/g	3	2356909	3	6	4	3	1	2356916
Acid Extractable Barium (Ba)	ug/g	85	2356909	75	85	89	54	0.5	2356916
Acid Extractable Beryllium (Be)	ug/g	0.6	2356909	0.4	0.6	0.4	0.3	0.2	2356916
Acid Extractable Cadmium (Cd)	ug/g	0.2	2356909	0.3	0.4	0.9	0.3	0.1	2356916
Acid Extractable Chromium (Cr)	ug/g	19	2356909	15	18	18	13	1	2356916
Acid Extractable Cobalt (Co)	ug/g	7.6	2356909	6.2	7.7	7.0	5.2	0.1	2356916
Acid Extractable Copper (Cu)	ug/g	23	2356909	16	18	21	11	0.5	2356916
Acid Extractable Lead (Pb)	ug/g	39	2356909	110	60	160	21	1	2356916
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	2356909	<0.5	<0.5	<0.5	<0.5	0.5	2356916
Acid Extractable Nickel (Ni)	ug/g	16	2356909	14	15	14	9.7	0.5	2356916
Acid Extractable Selenium (Se)	ug/g	<0.5	2356909	<0.5	<0.5	<0.5	<0.5	0.5	2356916
Acid Extractable Silver (Ag)	ug/g	<0.2	2356909	<0.2	<0.2	<0.2	<0.2	0.2	2356916
Acid Extractable Thallium (Tl)	ug/g	0.15	2356909	0.11	0.13	0.12	0.09	0.05	2356916
Acid Extractable Vanadium (V)	ug/g	30	2356909	25	29	26	24	5	2356916
Acid Extractable Zinc (Zn)	ug/g	68	2356909	90	90	200	57	5	2356916

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

O'REG 153 METALS BY ICPMS (SOIL)

Maxxam ID		IB9433	IB9434	IB9435		
Sampling Date		2010/12/03	2010/12/03	2010/12/03		
COC Number		n/a	n/a	n/a		
	Units	**SCS1-DUP1**	**SCS2-DUP2**	**SCS3-DUP3**	**RDL**	**QC Batch**
Metals						
Acid Extractable Antimony (Sb)	ug/g	<0.2	5.5	0.3	0.2	2356916
Acid Extractable Arsenic (As)	ug/g	3	9	3	1	2356916
Acid Extractable Barium (Ba)	ug/g	52	210	84	0.5	2356916
Acid Extractable Beryllium (Be)	ug/g	<0.2	0.6	0.4	0.2	2356916
Acid Extractable Cadmium (Cd)	ug/g	0.2	0.6	0.8	0.1	2356916
Acid Extractable Chromium (Cr)	ug/g	13	26	13	1	2356916
Acid Extractable Cobalt (Co)	ug/g	3.8	7.2	5.5	0.1	2356916
Acid Extractable Copper (Cu)	ug/g	18	29	16	0.5	2356916
Acid Extractable Lead (Pb)	ug/g	35	120	240	1	2356916
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	<0.5	0.5	2356916
Acid Extractable Nickel (Ni)	ug/g	8.7	14	12	0.5	2356916
Acid Extractable Selenium (Se)	ug/g	0.7	<0.5	<0.5	0.5	2356916
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	<0.2	0.2	2356916
Acid Extractable Thallium (Tl)	ug/g	0.07	0.13	0.09	0.05	2356916
Acid Extractable Vanadium (V)	ug/g	15	27	23	5	2356916
Acid Extractable Zinc (Zn)	ug/g	110	290	230	5	2356916

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		IB9436	IB9437	IB9438		
Sampling Date		2010/12/03	2010/12/03	2010/12/03		
COC Number		n/a	n/a	n/a		
	Units	**SCS1-PAINT**	**SCS2-PAINT**	**SCS3-PAINT**	**RDL**	**QC Batch**
Metals						
Lead (Pb)	%	2.8	1.5	0.13	0.01	2356133

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Package 1	15.3°C

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

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam

Success Through Science®

Decommissioning Consulting Services Limited
Attention: Sean Shekarforoush
Client Project #: 700743-20
P.O. #:
Project name: PIN614278-SCS2 PICKERING, ON

Quality Assurance Report

Maxxam Job Number: MB0H6421

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2356133 JOH	Matrix Spike	Lead (Pb)	2010/12/13		96	%	75 - 125
	QC Standard	Lead (Pb)	2010/12/13		105	%	75 - 125
	Method Blank	Lead (Pb)	2010/12/13	<0.01		%	
	RPD	Lead (Pb)	2010/12/13	12.8		%	35
2356909 VIV	Matrix Spike						
	[IB9416-01]	Acid Extractable Antimony (Sb)	2010/12/13		92	%	75 - 125
		Acid Extractable Arsenic (As)	2010/12/13		98	%	75 - 125
		Acid Extractable Barium (Ba)	2010/12/13		NC	%	75 - 125
		Acid Extractable Beryllium (Be)	2010/12/13		88	%	75 - 125
		Acid Extractable Cadmium (Cd)	2010/12/13		96	%	75 - 125
		Acid Extractable Chromium (Cr)	2010/12/13		107	%	75 - 125
		Acid Extractable Cobalt (Co)	2010/12/13		96	%	75 - 125
		Acid Extractable Copper (Cu)	2010/12/13		91	%	75 - 125
		Acid Extractable Lead (Pb)	2010/12/13		96	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2010/12/13		98	%	75 - 125
		Acid Extractable Nickel (Ni)	2010/12/13		97	%	75 - 125
		Acid Extractable Selenium (Se)	2010/12/13		94	%	75 - 125
		Acid Extractable Silver (Ag)	2010/12/13		95	%	75 - 125
		Acid Extractable Thallium (Tl)	2010/12/13		91	%	75 - 125
		Acid Extractable Vanadium (V)	2010/12/13		103	%	75 - 125
		Acid Extractable Zinc (Zn)	2010/12/13		NC	%	75 - 125
	QC Standard	Acid Extractable Antimony (Sb)	2010/12/13		102	%	75 - 125
		Acid Extractable Arsenic (As)	2010/12/13		103	%	75 - 125
		Acid Extractable Barium (Ba)	2010/12/13		98	%	75 - 125
		Acid Extractable Beryllium (Be)	2010/12/13		101	%	75 - 125
		Acid Extractable Cadmium (Cd)	2010/12/13		102	%	75 - 125
		Acid Extractable Chromium (Cr)	2010/12/13		103	%	75 - 125
		Acid Extractable Cobalt (Co)	2010/12/13		102	%	75 - 125
		Acid Extractable Copper (Cu)	2010/12/13		101	%	75 - 125
		Acid Extractable Lead (Pb)	2010/12/13		101	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2010/12/13		102	%	75 - 125
		Acid Extractable Nickel (Ni)	2010/12/13		103	%	75 - 125
		Acid Extractable Selenium (Se)	2010/12/13		103	%	75 - 125
		Acid Extractable Silver (Ag)	2010/12/13		102	%	75 - 125
		Acid Extractable Thallium (Tl)	2010/12/13		101	%	75 - 125
		Acid Extractable Vanadium (V)	2010/12/13		108	%	75 - 125
		Acid Extractable Zinc (Zn)	2010/12/13		110	%	75 - 125
	Method Blank	Acid Extractable Antimony (Sb)	2010/12/13	<0.2		ug/g	
		Acid Extractable Arsenic (As)	2010/12/13	<1		ug/g	
		Acid Extractable Barium (Ba)	2010/12/13	<0.5		ug/g	
		Acid Extractable Beryllium (Be)	2010/12/13	<0.2		ug/g	
		Acid Extractable Cadmium (Cd)	2010/12/13	<0.1		ug/g	
		Acid Extractable Chromium (Cr)	2010/12/13	<1		ug/g	
		Acid Extractable Cobalt (Co)	2010/12/13	<0.1		ug/g	
		Acid Extractable Copper (Cu)	2010/12/13	<0.5		ug/g	
		Acid Extractable Lead (Pb)	2010/12/13	<1		ug/g	
		Acid Extractable Molybdenum (Mo)	2010/12/13	<0.5		ug/g	
		Acid Extractable Nickel (Ni)	2010/12/13	<0.5		ug/g	
		Acid Extractable Selenium (Se)	2010/12/13	<0.5		ug/g	
		Acid Extractable Silver (Ag)	2010/12/13	<0.2		ug/g	
		Acid Extractable Thallium (Tl)	2010/12/13	<0.05		ug/g	
		Acid Extractable Vanadium (V)	2010/12/13	<5		ug/g	
		Acid Extractable Zinc (Zn)	2010/12/13	<5		ug/g	
	RPD [IB9416-01]	Acid Extractable Antimony (Sb)	2010/12/13	NC		%	35
		Acid Extractable Arsenic (As)	2010/12/13	NC		%	35

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Decommissioning Consulting Services Limited
Attention: Sean Shekarforoush
Client Project #: 700743-20
P.O. #:
Project name: PIN614278-SCS2 PICKERING, ON

Quality Assurance Report (Continued)

Maxxam Job Number: MB0H6421

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2356909 VIV	RPD [IB9416-01]	Acid Extractable Barium (Ba)	2010/12/13	0.2		%	35
		Acid Extractable Beryllium (Be)	2010/12/13	NC		%	35
		Acid Extractable Cadmium (Cd)	2010/12/13	NC		%	35
		Acid Extractable Chromium (Cr)	2010/12/13	23.4		%	35
		Acid Extractable Cobalt (Co)	2010/12/13	1.4		%	35
		Acid Extractable Copper (Cu)	2010/12/13	0.4		%	35
		Acid Extractable Lead (Pb)	2010/12/13	5.5		%	35
		Acid Extractable Molybdenum (Mo)	2010/12/13	NC		%	35
		Acid Extractable Nickel (Ni)	2010/12/13	NC		%	35
		Acid Extractable Selenium (Se)	2010/12/13	NC		%	35
		Acid Extractable Silver (Ag)	2010/12/13	NC		%	35
		Acid Extractable Thallium (Tl)	2010/12/13	NC		%	35
		Acid Extractable Vanadium (V)	2010/12/13	NC		%	35
		Acid Extractable Zinc (Zn)	2010/12/13	9.1		%	35
2356916 VIV	Matrix Spike [IB9425-01]	Acid Extractable Antimony (Sb)	2010/12/13		95	%	75 - 125
		Acid Extractable Arsenic (As)	2010/12/13		99	%	75 - 125
		Acid Extractable Barium (Ba)	2010/12/13		NC	%	75 - 125
		Acid Extractable Beryllium (Be)	2010/12/13		99	%	75 - 125
		Acid Extractable Cadmium (Cd)	2010/12/13		100	%	75 - 125
		Acid Extractable Chromium (Cr)	2010/12/13		104	%	75 - 125
		Acid Extractable Cobalt (Co)	2010/12/13		98	%	75 - 125
		Acid Extractable Copper (Cu)	2010/12/13		99	%	75 - 125
		Acid Extractable Lead (Pb)	2010/12/13		NC	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2010/12/13		101	%	75 - 125
		Acid Extractable Nickel (Ni)	2010/12/13		97	%	75 - 125
		Acid Extractable Selenium (Se)	2010/12/13		102	%	75 - 125
		Acid Extractable Silver (Ag)	2010/12/13		101	%	75 - 125
		Acid Extractable Thallium (Tl)	2010/12/13		98	%	75 - 125
		Acid Extractable Vanadium (V)	2010/12/13		110	%	75 - 125
		Acid Extractable Zinc (Zn)	2010/12/13		NC	%	75 - 125
	QC Standard	Acid Extractable Antimony (Sb)	2010/12/13		99	%	75 - 125
		Acid Extractable Arsenic (As)	2010/12/13		96	%	75 - 125
		Acid Extractable Barium (Ba)	2010/12/13		96	%	75 - 125
		Acid Extractable Beryllium (Be)	2010/12/13		92	%	75 - 125
		Acid Extractable Cadmium (Cd)	2010/12/13		98	%	75 - 125
		Acid Extractable Chromium (Cr)	2010/12/13		97	%	75 - 125
		Acid Extractable Cobalt (Co)	2010/12/13		96	%	75 - 125
		Acid Extractable Copper (Cu)	2010/12/13		97	%	75 - 125
		Acid Extractable Lead (Pb)	2010/12/13		99	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2010/12/13		98	%	75 - 125
		Acid Extractable Nickel (Ni)	2010/12/13		98	%	75 - 125
		Acid Extractable Selenium (Se)	2010/12/13		96	%	75 - 125
		Acid Extractable Silver (Ag)	2010/12/13		98	%	75 - 125
		Acid Extractable Thallium (Tl)	2010/12/13		98	%	75 - 125
		Acid Extractable Vanadium (V)	2010/12/13		100	%	75 - 125
		Acid Extractable Zinc (Zn)	2010/12/13		109	%	75 - 125
	Method Blank	Acid Extractable Antimony (Sb)	2010/12/13	<0.2		ug/g	
		Acid Extractable Arsenic (As)	2010/12/13	<1		ug/g	
		Acid Extractable Barium (Ba)	2010/12/13	<0.5		ug/g	
		Acid Extractable Beryllium (Be)	2010/12/13	<0.2		ug/g	
		Acid Extractable Cadmium (Cd)	2010/12/13	<0.1		ug/g	
		Acid Extractable Chromium (Cr)	2010/12/13	<1		ug/g	
		Acid Extractable Cobalt (Co)	2010/12/13	<0.1		ug/g	
		Acid Extractable Copper (Cu)	2010/12/13	<0.5		ug/g	

Decommissioning Consulting Services Limited
Attention: Sean Shekarforoush
Client Project #: 700743-20
P.O. #:
Project name: PIN614278-SCS2 PICKERING, ON

Quality Assurance Report (Continued)

Maxxam Job Number: MB0H6421

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2356916 VIV	Method Blank	Acid Extractable Lead (Pb)	2010/12/13	<1		ug/g	
		Acid Extractable Molybdenum (Mo)	2010/12/13	<0.5		ug/g	
		Acid Extractable Nickel (Ni)	2010/12/13	<0.5		ug/g	
		Acid Extractable Selenium (Se)	2010/12/13	<0.5		ug/g	
		Acid Extractable Silver (Ag)	2010/12/13	<0.2		ug/g	
		Acid Extractable Thallium (Tl)	2010/12/13	<0.05		ug/g	
		Acid Extractable Vanadium (V)	2010/12/13	<5		ug/g	
		Acid Extractable Zinc (Zn)	2010/12/13	<5		ug/g	
	RPD [IB9425-01]	Acid Extractable Antimony (Sb)	2010/12/13	NC		%	35
		Acid Extractable Arsenic (As)	2010/12/13	NC		%	35
		Acid Extractable Barium (Ba)	2010/12/13	2.7		%	35
		Acid Extractable Beryllium (Be)	2010/12/13	NC		%	35
		Acid Extractable Cadmium (Cd)	2010/12/13	6.0		%	35
		Acid Extractable Chromium (Cr)	2010/12/13	1.4		%	35
		Acid Extractable Cobalt (Co)	2010/12/13	0.7		%	35
		Acid Extractable Copper (Cu)	2010/12/13	2.1		%	35
		Acid Extractable Lead (Pb)	2010/12/13	2.5		%	35
		Acid Extractable Molybdenum (Mo)	2010/12/13	NC		%	35
		Acid Extractable Nickel (Ni)	2010/12/13	7.0		%	35
		Acid Extractable Selenium (Se)	2010/12/13	NC		%	35
		Acid Extractable Silver (Ag)	2010/12/13	NC		%	35
		Acid Extractable Thallium (Tl)	2010/12/13	NC		%	35
		Acid Extractable Vanadium (V)	2010/12/13	NC		%	35
		Acid Extractable Zinc (Zn)	2010/12/13	3.5		%	35

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B0H6421

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Cristina Carriere

CRISTINA CARRIERE, Scientific Services

==

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

7-Dec-10 13:20
MATHURA THIRUKKUM
B0H6421
DTS ENV-784

Maxxam Analytics Inc

6740 C
Tel: 905-817-5700, I

CHAIN OF CUSTODY RECORD

Page 1 of 3

INVOICE INFORMATION		REPORT INFORMATION		PROJECT INFORMATION		MAXXAM JOB #
Company Name:	DCS Ltd	Company Name:		Quotation #:		
Contact Name:	Sean Shekarforoush	Contact Name:		P.O. #:		
Address:	121 Granton Drive	Address:		Project #:	700743-20	CHAIN OF CUSTODY #
	Richmond Hill, ON			Project Name	PIN 614278-SCS2	
Phone #: 905-8825984 Fax:		Phone #: Fax:		Location:	Pickering, ON	
Email:	sshekarforoush@dcsltd.ca	Email:		Sampled by:	Ben Nketia	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the **DRINKING WATER CHAIN OF CUSTODY** form.

☐ MISA Reg. 153 Sewer Use ☐ Other
☐ Table 1 ☐ Sanitary
☐ PWQO ☐ Table 2 ☐ Storm Specify
☐ Reg. 558 ☐ Table 3 Region:
Report Criteria on C of A?

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

TURNAROUND TIME (TAT) REQUIRED

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.

Regular (Standard) TAT:
☑ 5 to 7 Working Days
Rush TAT Rush Confirmation #:
(Call Lab for #)
☐ 1 Day ☐ 2 Days ☐ 3 Days
Date Required:
Time Required:
Please note that TAT for certain tests such as BOD and Dioxins/Furans are >5 days, contact your Project Manager for details.

ANALYSIS REQUESTED (Please specify)

	Sample Identification	Date Sampled	Sampled	Matrix (GW, SW, Soil,	Regulated Drinking water? (Y/N)	Metals Field filtered? (Y/N)	Metals	# of Cont.	COMMENTS / TAT COMMENTS
1	BH110-1 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		
2	BH110-2 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		
3	BH110-3 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		
4	BH110-4 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		
5	BH110-5 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		
6	BH110-6 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		
7	BH110-7 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		
8	BH110-8 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		No ICE in
9	BH110-9 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		Containes
10	BH110-10 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		
11	BH110-11 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		
12	BH110-12 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		

RELINQUISHED BY (Signature/Print)	RECEIVED BY (Signature/Print)	Date	Time	Laboratory Use Only	
	P.E.Pet PRATIK PETERS	2010/12/07	1:20	Temperature (0C) on Receipt	Condition of Sample on Receipt
				16/15/15°C	☐ OK ☐ SIF

MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL DELAYS.

White: Maxxam Yellow: Mail Pink: Client

Maxxam Analytics Inc

6740 Campobello Rd, Mississauga, Ontario L5N 2L8
Tel: 905-817-5700, Fax: 905-817-5779 Toll Free: 1-800-563-6266

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION		REPORT INFORMATION (if different from invoice)		PROJECT INFORMATION		MAXXAM JOB #
Company Name:	DCS Ltd	Company Name:		Quotation #:		
Contact Name:	Sean Shekarforoush	Contact Name:		P.O. #:		CHAIN OF CUSTODY #
Address:	121 Granton Drive	Address:		Project #:	700743-20	
	Richmond Hill, ON			Project Name	PIN 614278-SCS2	
Phone #:	905-8825984 Fax:	Phone #:	Fax:	Location:	Pickering, ON	
Email:	sshekarforoush@dcsltd.ca	Email:		Sampled by:	Ben Nketia	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the DRINKING WATER CHAIN OF CUSTODY form.

☐ MISA — Reg. 153: ☐ Table 1, ☐ Table 2, ☐ Table 3 — Sewer Use: ☐ Sanitary, ☐ Storm — ☐ Other, Specify

☐ PWQO

☐ Reg. 558

Region:

Report Criteria on C of A?

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

TURNAROUND TIME (TAT) REQUIRED

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.

Regular (Standard) TAT:
☑ 5 to 7 Working Days

Rush TAT Rush Confirmation #:
(Call Lab for #)
☐ 1 Day ☐ 2 Days ☐ 3 Days

Date Required:

Time Required:

Please note that TAT for certain tests such as BOD and Dioxins/Furans are >5 days, contact your Project Manager for details.

ANALYSIS REQUESTED (Please specify)

	Sample Identification	Date Sampled	Sampled	Matrix (GW, SW, Soil,	Regulated Drinking water? (Y/N)	Metals Field filtered? (Y/N)	Metals	# of Cont.	COMMENTS / TAT COMMENTS
1	BH110-13 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		
2	BH110-14 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		
3	BH110-15 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		
4	BH110-16 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		
5	BH110-17 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		
6	BH110-18 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		
7	BH110-19 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		
8	BH110-20 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		
9	BH110-21 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		
10	BH110-22 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		No ice in
11	BH110-23 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		containers
12	BH110-24 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x		

RELINQUISHED BY (Signature/Print)	RECEIVED BY (Signature/Print)	Date	Time	Laboratory Use Only	
	P.E.Pet PRATIK PETAA	2010/12/07	1:20	Temperature (0C) on Receipt	Condition of Sample on Receipt
				16/15/15 C	☐ OK ☐ SIF

MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL DELAYS.

White: Maxxam Yellow: Mail Pink: Client

Maxxam Analytics Inc

CUSTODY RECORD

Page 3 of 3

INVOICE INFORMATION		REPORT INFORMATION (if different from invoice)		PROJECT INFORMATION		MAXXAM JOB #
Company Name:	DCS Ltd	Company Name:		Quotation #:		
Contact Name:	Sean Shekarforoush	Contact Name:		P.O. #:		
Address:	121 Granton Drive	Address:		Project #:	700743-20	CHAIN OF CUSTODY #
	Richmond Hill, ON			Project Name	PIN 614278-SCS2	
Phone #: 905-8825984	Fax:	Phone #:	Fax:	Location:	Pickering, ON	
Email:	sshekarforoush@dcsltd.ca	Email:		Sampled by:	Ben Nketia	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the **DRINKING WATER CHAIN OF CUSTODY** form.

☐ MISA — Reg. 153: ☐ Table 1, ☐ Table 2, ☐ Table 3 — Sewer Use: ☐ Sanitary, ☐ Storm — ☐ Other, Specify

☐ PWQO

☐ Reg. 558

Region:

Report Criteria on C of A?

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

ANALYSIS REQUESTED (Please specify)

TURNAROUND TIME (TAT) REQUIRED

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.

Regular (Standard) TAT:

☑ 5 to 7 Working Days

Rush TAT Rush Confirmation #:

(Call Lab for #)

☐ 1 Day ☐ 2 Days ☐ 3 Days

Date Required:

Time Required:

Please note that TAT for certain tests such as BOD and Dioxins/Furans are >5 days, contact your Project Manager for details.

	Sample Identification	Date Sampled	Sampled	Matrix (GW, SW, Soil,	Regulated Drinking water? (Y/N)	Metals Field filtered? (Y/N)	Metals	Lead	# of Cont.	COMMENTS / TAT COMMENTS
1	BH110-25 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x			
2	BH110-26 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x			
3	BH110-27 SS1A (0.0 - 0.15)	03-Dec-10		Soil			x			
4	SCS1 - Dup1	03-Dec-10		Soil			x			
5	SCS2 - Dup1	03-Dec-10		Soil			x			
6	SCS3 - Dup1	03-Dec-10		Soil			x			
7	SCS1 - Paint	03-Dec-10		Paint				x		
8	SCS2 - Paint	03-Dec-10		Paint				x		No ice in
9	SCS3 - Paint	03-Dec-10		Paint				x		
10										container
11										
12										

RELINQUISHED BY (Signature/Print)	RECEIVED BY (Signature/Print)	Date	Time	Laboratory Use Only	
	P.Peter PRATIK PETERS	2010/12/07	1:20	Temperature (0C) on Receipt	Condition of Sample on Receipt
				16/15/15°C	☐ OK ☐ SIF

MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL DELAYS.

White: Maxxam Yellow: Mail Pink: Client

Maxxam

Success Through Science®

Your Project #: 700743-20
Site: PIN 614110-112 PICKERING
Your C.O.C. #: na

Attention: Sean Shekarforoush
Decommissioning Consulting Services Limited
121 Granton Dr
Unit 11
Richmond Hill, ON
L4B 3N4

Report Date: 2011/01/13

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B102314
Received: 2011/01/07, 15:49

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Acid Extr. Metals (aqua regia) by ICPMS	2	2011/01/13	2011/01/13	CAM SOP-00447	EPA 6020

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

MATHURA THIRUKKUMARAN, CS Rep
Email: MThirukkumaran@maxxam.ca
Phone# (905) 817-5700

==
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		II1590	II1591		
Sampling Date		2010/12/03	2010/12/03		
COC Number		na	na		
	Units	**BH 110-13 SS1B(0.15-0.45)**	**BH 110-17 SS1C(0.45-0.75)**	**RDL**	**QC Batch**
Metals					
Acid Extractable Aluminum (Al)	ug/g	9300	15000	50	2379028
Acid Extractable Antimony (Sb)	ug/g	8.9	0.3	0.2	2379028
Acid Extractable Arsenic (As)	ug/g	2	1	1	2379028
Acid Extractable Barium (Ba)	ug/g	150	120	0.5	2379028
Acid Extractable Beryllium (Be)	ug/g	0.6	0.7	0.2	2379028
Acid Extractable Cadmium (Cd)	ug/g	0.2	0.2	0.1	2379028
Acid Extractable Calcium (Ca)	ug/g	20000	52000	50	2379028
Acid Extractable Chromium (Cr)	ug/g	15	26	1	2379028
Acid Extractable Cobalt (Co)	ug/g	6.2	9.8	0.1	2379028
Acid Extractable Copper (Cu)	ug/g	12	24	0.5	2379028
Acid Extractable Iron (Fe)	ug/g	16000	25000	50	2379028
Acid Extractable Lead (Pb)	ug/g	78	40	1	2379028
Acid Extractable Magnesium (Mg)	ug/g	2900	5700	50	2379028
Acid Extractable Manganese (Mn)	ug/g	420	600	1	2379028
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	0.5	2379028
Acid Extractable Nickel (Ni)	ug/g	12	22	0.5	2379028
Acid Extractable Phosphorus (P)	ug/g	800	960	50	2379028
Acid Extractable Potassium (K)	ug/g	1100	2300	200	2379028
Acid Extractable Selenium (Se)	ug/g	<0.5	<0.5	0.5	2379028
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	0.2	2379028
Acid Extractable Sodium (Na)	ug/g	<100	140	100	2379028
Acid Extractable Strontium (Sr)	ug/g	38	90	1	2379028
Acid Extractable Thallium (Tl)	ug/g	0.09	0.09	0.05	2379028
Acid Extractable Vanadium (V)	ug/g	25	40	5	2379028
Acid Extractable Zinc (Zn)	ug/g	93	82	5	2379028

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Package 1	8.7°C

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

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Decommissioning Consulting Services Limited
Attention: Sean Shekarforoush
Client Project #: 700743-20
P.O. #:
Project name: PIN 614110-112 PICKERING

Quality Assurance Report

Maxxam Job Number: MB102314

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2379028 VIV	Matrix Spike	Acid Extractable Aluminum (Al)	2011/01/13		NC	%	75 - 125
		Acid Extractable Antimony (Sb)	2011/01/13		100	%	75 - 125
		Acid Extractable Arsenic (As)	2011/01/13		100	%	75 - 125
		Acid Extractable Barium (Ba)	2011/01/13		NC	%	75 - 125
		Acid Extractable Beryllium (Be)	2011/01/13		99	%	75 - 125
		Acid Extractable Cadmium (Cd)	2011/01/13		105	%	75 - 125
		Acid Extractable Calcium (Ca)	2011/01/13		NC	%	75 - 125
		Acid Extractable Chromium (Cr)	2011/01/13		101	%	75 - 125
		Acid Extractable Cobalt (Co)	2011/01/13		100	%	75 - 125
		Acid Extractable Copper (Cu)	2011/01/13		NC	%	75 - 125
		Acid Extractable Iron (Fe)	2011/01/13		NC	%	75 - 125
		Acid Extractable Lead (Pb)	2011/01/13		NC	%	75 - 125
		Acid Extractable Magnesium (Mg)	2011/01/13		NC	%	75 - 125
		Acid Extractable Manganese (Mn)	2011/01/13		NC	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2011/01/13		103	%	75 - 125
		Acid Extractable Nickel (Ni)	2011/01/13		98	%	75 - 125
		Acid Extractable Phosphorus (P)	2011/01/13		NC	%	75 - 125
		Acid Extractable Potassium (K)	2011/01/13		NC	%	75 - 125
		Acid Extractable Selenium (Se)	2011/01/13		101	%	75 - 125
		Acid Extractable Silver (Ag)	2011/01/13		101	%	75 - 125
		Acid Extractable Sodium (Na)	2011/01/13		104	%	75 - 125
		Acid Extractable Strontium (Sr)	2011/01/13		NC	%	75 - 125
		Acid Extractable Thallium (Tl)	2011/01/13		100	%	75 - 125
		Acid Extractable Vanadium (V)	2011/01/13		101	%	75 - 125
		Acid Extractable Zinc (Zn)	2011/01/13		NC	%	75 - 125
	QC Standard	Acid Extractable Aluminum (Al)	2011/01/13		99	%	75 - 125
		Acid Extractable Antimony (Sb)	2011/01/13		98	%	75 - 125
		Acid Extractable Arsenic (As)	2011/01/13		97	%	75 - 125
		Acid Extractable Barium (Ba)	2011/01/13		100	%	75 - 125
		Acid Extractable Beryllium (Be)	2011/01/13		99	%	75 - 125
		Acid Extractable Cadmium (Cd)	2011/01/13		101	%	75 - 125
		Acid Extractable Calcium (Ca)	2011/01/13		97	%	75 - 125
		Acid Extractable Chromium (Cr)	2011/01/13		98	%	75 - 125
		Acid Extractable Cobalt (Co)	2011/01/13		98	%	75 - 125
		Acid Extractable Copper (Cu)	2011/01/13		100	%	75 - 125
		Acid Extractable Iron (Fe)	2011/01/13		106	%	75 - 125
		Acid Extractable Lead (Pb)	2011/01/13		103	%	75 - 125
		Acid Extractable Magnesium (Mg)	2011/01/13		95	%	75 - 125
		Acid Extractable Manganese (Mn)	2011/01/13		97	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2011/01/13		99	%	75 - 125
		Acid Extractable Nickel (Ni)	2011/01/13		99	%	75 - 125
		Acid Extractable Phosphorus (P)	2011/01/13		92	%	75 - 125
		Acid Extractable Potassium (K)	2011/01/13		97	%	75 - 125
		Acid Extractable Selenium (Se)	2011/01/13		99	%	75 - 125
		Acid Extractable Silver (Ag)	2011/01/13		100	%	75 - 125
		Acid Extractable Sodium (Na)	2011/01/13		96	%	75 - 125
		Acid Extractable Strontium (Sr)	2011/01/13		100	%	75 - 125
		Acid Extractable Thallium (Tl)	2011/01/13		99	%	75 - 125
		Acid Extractable Vanadium (V)	2011/01/13		96	%	75 - 125
		Acid Extractable Zinc (Zn)	2011/01/13		103	%	75 - 125
	Method Blank	Acid Extractable Aluminum (Al)	2011/01/13	<50		ug/g	
		Acid Extractable Antimony (Sb)	2011/01/13	<0.2		ug/g	
		Acid Extractable Arsenic (As)	2011/01/13	<1		ug/g	
		Acid Extractable Barium (Ba)	2011/01/13	<0.5		ug/g	
		Acid Extractable Beryllium (Be)	2011/01/13	<0.2		ug/g	

Decommissioning Consulting Services Limited
Attention: Sean Shekarforoush
Client Project #: 700743-20
P.O. #:
Project name: PIN 614110-112 PICKERING

Quality Assurance Report (Continued)

Maxxam Job Number: MB102314

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2379028 VIV	Method Blank	Acid Extractable Cadmium (Cd)	2011/01/13	<0.1		ug/g	
		Acid Extractable Calcium (Ca)	2011/01/13	<50		ug/g	
		Acid Extractable Chromium (Cr)	2011/01/13	<1		ug/g	
		Acid Extractable Cobalt (Co)	2011/01/13	<0.1		ug/g	
		Acid Extractable Copper (Cu)	2011/01/13	0.8, RDL=0.5		ug/g	
		Acid Extractable Iron (Fe)	2011/01/13	<50		ug/g	
		Acid Extractable Lead (Pb)	2011/01/13	<1		ug/g	
		Acid Extractable Magnesium (Mg)	2011/01/13	<50		ug/g	
		Acid Extractable Manganese (Mn)	2011/01/13	<1		ug/g	
		Acid Extractable Molybdenum (Mo)	2011/01/13	<0.5		ug/g	
		Acid Extractable Nickel (Ni)	2011/01/13	0.6, RDL=0.5		ug/g	
		Acid Extractable Phosphorus (P)	2011/01/13	<50		ug/g	
		Acid Extractable Potassium (K)	2011/01/13	<200		ug/g	
		Acid Extractable Selenium (Se)	2011/01/13	<0.5		ug/g	
		Acid Extractable Silver (Ag)	2011/01/13	<0.2		ug/g	
		Acid Extractable Sodium (Na)	2011/01/13	<100		ug/g	
		Acid Extractable Strontium (Sr)	2011/01/13	<1		ug/g	
		Acid Extractable Thallium (Tl)	2011/01/13	<0.05		ug/g	
		Acid Extractable Vanadium (V)	2011/01/13	<5		ug/g	
		Acid Extractable Zinc (Zn)	2011/01/13	<5		ug/g	
	RPD	Acid Extractable Antimony (Sb)	2011/01/13	NC		%	35
		Acid Extractable Arsenic (As)	2011/01/13	NC		%	35
		Acid Extractable Barium (Ba)	2011/01/13	2.5		%	35
		Acid Extractable Beryllium (Be)	2011/01/13	NC		%	35
		Acid Extractable Cadmium (Cd)	2011/01/13	NC		%	35
		Acid Extractable Chromium (Cr)	2011/01/13	7.7		%	35
		Acid Extractable Cobalt (Co)	2011/01/13	6.8		%	35
		Acid Extractable Copper (Cu)	2011/01/13	4.5		%	35
		Acid Extractable Lead (Pb)	2011/01/13	2.6		%	35
		Acid Extractable Molybdenum (Mo)	2011/01/13	NC		%	35
		Acid Extractable Nickel (Ni)	2011/01/13	2.3		%	35
		Acid Extractable Selenium (Se)	2011/01/13	NC		%	35
		Acid Extractable Silver (Ag)	2011/01/13	NC		%	35
		Acid Extractable Thallium (Tl)	2011/01/13	NC		%	35
		Acid Extractable Vanadium (V)	2011/01/13	NC		%	35
		Acid Extractable Zinc (Zn)	2011/01/13	2.4		%	35

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B102314

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Cristina Carriere

CRISTINA CARRIERE, Scientific Services

===

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Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics Inc

6740 Campobello Rd, Mississauga, Ontario L5N 2L8
Tel: 905-817-5700, Fax: 905-817-5779 Toll Free: 1-800-563-6266

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE INFORMATION		REPORT INFORMATION (if different from invoice)		PROJECT INFORMATION		MAXXAM JOB #
Company Name:	DCS Ltd	Company Name:		Quotation #:		7-Jan-11 15:49
Contact Name:	Sean Shekarforoush	Contact Name:		P.O. #:		B102314
Address:	121 Granton Drive, Richmond Hill, ON	Address:		Project #:	700743-20	ENV-100 MHO
				Project Name	PIN 614110-112	
Phone #:	905-8825984 Fax:	Phone #:	Fax:	Location:	Pickering, ON	
Email:	sshekarforoush@dcsltd.ca	Email:		Sampled by:	Ben Nketia	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the **DRINKING WATER CHAIN OF CUSTODY** form.

- ☐ MISA — Reg. 153: ☐ Table 1 — Sewer Use: ☐ Sanitary — ☐ Other
- ☐ PWQO — ☐ Table 2 — ☐ Storm — Specify
- ☐ Reg. 558 — ☐ Table 3 — Region:

Report Criteria on C of A?

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

ANALYSIS REQUESTED (Please specify)

TURNAROUND TIME (TAT) REQUIRED

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.

Regular (Standard) TAT:
☑ 5 to 7 Working Days

Rush TAT Rush Confirmation #:
(Call Lab for #)
☐ 1 Day ☐ 2 Days ☐ 3 Days

Date Required:
Time Required:

Please note that TAT for certain tests such as BOD and Dioxins/Furans are >5 days, contact your Project Manager for details.

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil,	Regulated Drinking water? (Y/N)	Metals Field filtered? (Y/N)	Metals (ICPMS)	# of Cont.	COMMENTS / TAT COMMENTS
1	BH110-13 SS1B (0.15 - 0.45)	03-Dec-10		Soil			x	1	
2	BH110-17 SS1C (0.45 - 0.75)	03-Dec-10		Soil			x	1	
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									

RELINQUISHED BY (Signature/Print)	RECEIVED BY (Signature/Print)	Date	Time	Laboratory Use Only: Temperature (0C) on Receipt	Condition of Sample on Receipt
S. Shek 6/Jan/2011	[illegible]	2011/01/07	15:49	8/9/9 °C	☐ OK ☐ SIF

MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL DELAYS.

White: Maxxam Yellow: Mail Pink: Client

Your Project #: 700743-20
Site: PIN 614110-112
Your C.O.C. #: NA

Attention: Sean Shekarforoush
Decommissioning Consulting Services Limited
121 Granton Dr
Unit 11
Richmond Hill, ON
L4B 3N4

Report Date: 2011/01/25

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B107718
Received: 2011/01/19, 15:00

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Acid Extr. Metals (aqua regia) by ICPMS	2	2011/01/25	2011/01/25	CAM SOP-00447	EPA 6020

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

MATHURA THIRUKKUMARAN, CS Rep
Email: MThirukkumaran@maxxam.ca
Phone# (905) 817-5700

==
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

Maxxam Job #: B107718
Report Date: 2011/01/25

Decommissioning Consulting Services Limited
Client Project #: 700743-20
Project name: PIN 614110-112

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		IK7529	IK7530		
Sampling Date		2010/12/03	2010/12/03		
COC Number		NA	NA		
	Units	**BH110-7 SS1C (0.45-0.75)**	**BH110-16(2) SS1A (0.0-0.15)**	**RDL**	**QC Batch**
Metals					
Acid Extractable Aluminum (Al)	ug/g	7500	7300	50	2388509
Acid Extractable Antimony (Sb)	ug/g	<0.2	1.1	0.2	2388509
Acid Extractable Arsenic (As)	ug/g	2	16	1	2388509
Acid Extractable Barium (Ba)	ug/g	68	92	0.5	2388509
Acid Extractable Beryllium (Be)	ug/g	0.4	0.3	0.2	2388509
Acid Extractable Cadmium (Cd)	ug/g	0.6	0.3	0.1	2388509
Acid Extractable Calcium (Ca)	ug/g	37000	27000	50	2388509
Acid Extractable Chromium (Cr)	ug/g	24	29	1	2388509
Acid Extractable Cobalt (Co)	ug/g	3.0	4.8	0.1	2388509
Acid Extractable Copper (Cu)	ug/g	46	34	0.5	2388509
Acid Extractable Iron (Fe)	ug/g	6100	12000	50	2388509
Acid Extractable Lead (Pb)	ug/g	11	51	1	2388509
Acid Extractable Magnesium (Mg)	ug/g	2900	3300	50	2388509
Acid Extractable Manganese (Mn)	ug/g	150	410	1	2388509
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	0.5	2388509
Acid Extractable Nickel (Ni)	ug/g	16	11	0.5	2388509
Acid Extractable Phosphorus (P)	ug/g	1300	940	50	2388509
Acid Extractable Potassium (K)	ug/g	980	1500	200	2388509
Acid Extractable Selenium (Se)	ug/g	4.2	<0.5	0.5	2388509
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	0.2	2388509
Acid Extractable Sodium (Na)	ug/g	<100	160	100	2388509
Acid Extractable Strontium (Sr)	ug/g	57	47	1	2388509
Acid Extractable Thallium (Tl)	ug/g	0.10	0.06	0.05	2388509
Acid Extractable Vanadium (V)	ug/g	15	19	5	2388509
Acid Extractable Zinc (Zn)	ug/g	210	110	5	2388509

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B107718
Report Date: 2011/01/25

Decommissioning Consulting Services Limited
Client Project #: 700743-20
Project name: PIN 614110-112

Package 1	-1.7°C

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

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

Decommissioning Consulting Services Limited
Attention: Sean Shekarforoush
Client Project #: 700743-20
P.O. #:
Project name: PIN 614110-112

Quality Assurance Report

Maxxam Job Number: MB107718

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2388509 VIV	Matrix Spike	Acid Extractable Aluminum (Al)	2011/01/25		NC	%	75 - 125
		Acid Extractable Antimony (Sb)	2011/01/25		105	%	75 - 125
		Acid Extractable Arsenic (As)	2011/01/25		109	%	75 - 125
		Acid Extractable Barium (Ba)	2011/01/25		NC (1)	%	75 - 125
		Acid Extractable Beryllium (Be)	2011/01/25		107	%	75 - 125
		Acid Extractable Cadmium (Cd)	2011/01/25		108	%	75 - 125
		Acid Extractable Calcium (Ca)	2011/01/25		NC	%	75 - 125
		Acid Extractable Chromium (Cr)	2011/01/25		114	%	75 - 125
		Acid Extractable Cobalt (Co)	2011/01/25		108	%	75 - 125
		Acid Extractable Copper (Cu)	2011/01/25		108	%	75 - 125
		Acid Extractable Iron (Fe)	2011/01/25		NC (1)	%	75 - 125
		Acid Extractable Lead (Pb)	2011/01/25		108	%	75 - 125
		Acid Extractable Magnesium (Mg)	2011/01/25		NC	%	75 - 125
		Acid Extractable Manganese (Mn)	2011/01/25		NC	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2011/01/25		106	%	75 - 125
		Acid Extractable Nickel (Ni)	2011/01/25		NC (1)	%	75 - 125
		Acid Extractable Phosphorus (P)	2011/01/25		NC	%	75 - 125
		Acid Extractable Potassium (K)	2011/01/25		NC	%	75 - 125
		Acid Extractable Selenium (Se)	2011/01/25		106	%	75 - 125
		Acid Extractable Silver (Ag)	2011/01/25		105	%	75 - 125
		Acid Extractable Sodium (Na)	2011/01/25		107	%	75 - 125
		Acid Extractable Strontium (Sr)	2011/01/25		NC	%	75 - 125
		Acid Extractable Thallium (Tl)	2011/01/25		102	%	75 - 125
		Acid Extractable Vanadium (V)	2011/01/25		122	%	75 - 125
		Acid Extractable Zinc (Zn)	2011/01/25		NC (1)	%	75 - 125
	QC Standard	Acid Extractable Aluminum (Al)	2011/01/25		112	%	75 - 125
		Acid Extractable Antimony (Sb)	2011/01/25		102	%	75 - 125
		Acid Extractable Arsenic (As)	2011/01/25		106	%	75 - 125
		Acid Extractable Barium (Ba)	2011/01/25		104	%	75 - 125
		Acid Extractable Beryllium (Be)	2011/01/25		105	%	75 - 125
		Acid Extractable Cadmium (Cd)	2011/01/25		103	%	75 - 125
		Acid Extractable Calcium (Ca)	2011/01/25		122	%	75 - 125
		Acid Extractable Chromium (Cr)	2011/01/25		108	%	75 - 125
		Acid Extractable Cobalt (Co)	2011/01/25		104	%	75 - 125
		Acid Extractable Copper (Cu)	2011/01/25		106	%	75 - 125
		Acid Extractable Iron (Fe)	2011/01/25		121	%	75 - 125
		Acid Extractable Lead (Pb)	2011/01/25		106	%	75 - 125
		Acid Extractable Magnesium (Mg)	2011/01/25		108	%	75 - 125
		Acid Extractable Manganese (Mn)	2011/01/25		108	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2011/01/25		101	%	75 - 125
		Acid Extractable Nickel (Ni)	2011/01/25		108	%	75 - 125
		Acid Extractable Phosphorus (P)	2011/01/25		115	%	75 - 125
		Acid Extractable Potassium (K)	2011/01/25		113	%	75 - 125
		Acid Extractable Selenium (Se)	2011/01/25		109	%	75 - 125
		Acid Extractable Silver (Ag)	2011/01/25		102	%	75 - 125
		Acid Extractable Sodium (Na)	2011/01/25		106	%	75 - 125
		Acid Extractable Strontium (Sr)	2011/01/25		104	%	75 - 125
		Acid Extractable Thallium (Tl)	2011/01/25		103	%	75 - 125
		Acid Extractable Vanadium (V)	2011/01/25		108	%	75 - 125
		Acid Extractable Zinc (Zn)	2011/01/25		108	%	75 - 125
	Method Blank	Acid Extractable Aluminum (Al)	2011/01/25	<50		ug/g	
		Acid Extractable Antimony (Sb)	2011/01/25	<0.2		ug/g	
		Acid Extractable Arsenic (As)	2011/01/25	<1		ug/g	
		Acid Extractable Barium (Ba)	2011/01/25	<0.5		ug/g	
		Acid Extractable Beryllium (Be)	2011/01/25	<0.2		ug/g	

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Decommissioning Consulting Services Limited
Attention: Sean Shekarforoush
Client Project #: 700743-20
P.O. #:
Project name: PIN 614110-112

Quality Assurance Report (Continued)

Maxxam Job Number: MB107718

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2388509 VIV	Method Blank	Acid Extractable Cadmium (Cd)	2011/01/25	<0.1		ug/g	
		Acid Extractable Calcium (Ca)	2011/01/25	<50		ug/g	
		Acid Extractable Chromium (Cr)	2011/01/25	<1		ug/g	
		Acid Extractable Cobalt (Co)	2011/01/25	<0.1		ug/g	
		Acid Extractable Copper (Cu)	2011/01/25	<0.5		ug/g	
		Acid Extractable Iron (Fe)	2011/01/25	<50		ug/g	
		Acid Extractable Lead (Pb)	2011/01/25	<1		ug/g	
		Acid Extractable Magnesium (Mg)	2011/01/25	<50		ug/g	
		Acid Extractable Manganese (Mn)	2011/01/25	<1		ug/g	
		Acid Extractable Molybdenum (Mo)	2011/01/25	<0.5		ug/g	
		Acid Extractable Nickel (Ni)	2011/01/25	<0.5		ug/g	
		Acid Extractable Phosphorus (P)	2011/01/25	<50		ug/g	
		Acid Extractable Potassium (K)	2011/01/25	<200		ug/g	
		Acid Extractable Selenium (Se)	2011/01/25	<0.5		ug/g	
		Acid Extractable Silver (Ag)	2011/01/25	<0.2		ug/g	
		Acid Extractable Sodium (Na)	2011/01/25	<100		ug/g	
		Acid Extractable Strontium (Sr)	2011/01/25	<1		ug/g	
		Acid Extractable Thallium (Tl)	2011/01/25	<0.05		ug/g	
		Acid Extractable Vanadium (V)	2011/01/25	<5		ug/g	
		Acid Extractable Zinc (Zn)	2011/01/25	<5		ug/g	
	RPD	Acid Extractable Antimony (Sb)	2011/01/25	NC		%	35
		Acid Extractable Arsenic (As)	2011/01/25	3.8		%	35
		Acid Extractable Barium (Ba)	2011/01/25	4.1		%	35
		Acid Extractable Beryllium (Be)	2011/01/25	NC		%	35
		Acid Extractable Cadmium (Cd)	2011/01/25	NC		%	35
		Acid Extractable Chromium (Cr)	2011/01/25	6.5		%	35
		Acid Extractable Cobalt (Co)	2011/01/25	5.1		%	35
		Acid Extractable Copper (Cu)	2011/01/25	8.3		%	35
		Acid Extractable Iron (Fe)	2011/01/25	5.2		%	35
		Acid Extractable Lead (Pb)	2011/01/25	3.2		%	35
		Acid Extractable Molybdenum (Mo)	2011/01/25	7.6		%	35
		Acid Extractable Nickel (Ni)	2011/01/25	8.5		%	35
		Acid Extractable Selenium (Se)	2011/01/25	NC		%	35
		Acid Extractable Silver (Ag)	2011/01/25	NC		%	35
		Acid Extractable Thallium (Tl)	2011/01/25	NC		%	35
		Acid Extractable Vanadium (V)	2011/01/25	NC		%	35
		Acid Extractable Zinc (Zn)	2011/01/25	9.6		%	35

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) The recovery in the matrix spike was not calculated (NC). Spiked concentration was less than 2x that native to the sample.

Validation Signature Page

Maxxam Job #: B107718

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Eva Pranjic CHARTERED CHEMIST

EWA PRANJIC, M.Sc., C.Chem, Scientific Specialist

==

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Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics Inc

6740 Campobello Rd, Mississauga, Ontario L5N 2L8
Tel: 905-817-5700, Fax: 905-817-5779 Toll Free: 1-800-563-6266

CHAIN OF CUSTODY RECORD

19-Jan-11 15:00
MATHURA THIRUKKUM
B107718
ABH ENV-143

INVOICE INFORMATION		REPORT INFORMATION (if different from invoice)		PROJECT INFORMATION	
Company Name:	DCS Ltd	Company Name:		Quotation #:	
Contact Name:	Sean Shekarforoush	Contact Name:		P.O. #:	
Address:	121 Granton Drive Richmond Hill, ON	Address:		Project #:	700743-20
				Project Name	PIN 614110-112
Phone #:	905-8825984 Fax:	Phone #:	Fax:	Location:	Pickering, ON
Email:	sshekarforoush@dcsltd.ca	Email:		Sampled by:	Ben Nketia

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the **DRINKING WATER CHAIN OF CUSTODY** form.

- ☐ MISA — Reg. 153: ☐ Table 1, ☐ Table 2, ☐ Table 3 — Sewer Use: ☐ Sanitary, ☐ Storm — ☐ Other, Specify
- ☐ PWQO
- ☐ Reg. 558 — Region:

Report Criteria on C of A?

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

ANALYSIS REQUESTED (Please specify)

TURNAROUND TIME (TAT) REQUIRED

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.

Regular (Standard) TAT:
☑ 5 to 7 Working Days

Rush TAT Rush Confirmation #:
(Call Lab for #)
☐ 1 Day ☐ 2 Days ☐ 3 Days

Date Required:
Time Required:

Please note that TAT for certain tests such as BOD and Dioxins/Furans are >5 days, contact your Project Manager for details.

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil,	Regulated Drinking water? (Y/N)	Metals Field filtered? (Y/N)	Metals (ICPMS)	# of Cont.	COMMENTS / TAT COMMENTS
1	BH110-7 SS1C (0.45 - 0.75)	03-Dec-10		Soil			x	1	
2	BH110-16(2) SS1A (0.0 - 0.15)	03-Dec-10		Soil			x	1	
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									

RELINQUISHED BY (Signature/Print)	RECEIVED BY (Signature/Print)	Date	Time	Laboratory Use Only: Temperature (0C) on Receipt	Condition of Sample on Receipt
Sean Shekarforoush	[illegible]	2011/01/19	15:00	-2/-1/-2°C	☐ OK ☐ SIF
S. Shek					

MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL DELAYS.

White: Maxxam Yellow: Mail Pink: Client

Maxxam

Success Through Science®

Your Project #: 700743-20
Site: PIN 614110-112 PICKERING, ON
Your C.O.C. #: na

Attention: Sean Shekarforoush
Decommissioning Consulting Services Limited
121 Granton Dr
Unit 11
Richmond Hill, ON
L4B 3N4

Report Date: 2011/01/31

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B110225
Received: 2011/01/25, 12:45

Sample Matrix: Paint
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Lead In Paint	3	2011/01/28	2011/01/31	CAM SOP-00408	EPA 6010

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

MATHURA THIRUKKUMARAN, CS Rep
Email: MThirukkumaran@maxxam.ca
Phone# (905) 817-5700

===
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Total cover pages: 1

Decommissioning Consulting Services Limited
Maxxam Job #: B110225
Client Project #: 700743-20
Report Date: 2011/01/31
Project name: PIN 614110-112 PICKERING, ON

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		IM0612	IM0613	IM0614	IM0614		
Sampling Date		2010/12/03	2010/12/03	2010/12/03	2010/12/03		
COC Number		na	na	na	na		
	Units	**PAINT SAMPLE PIN 614110-CS1**	**PAINT SAMPLE PIN 614110-CS2**	**PAINT SAMPLE PIN 614110-CS3**	**PAINT SAMPLE PIN 614110-CS3 Lab-Dup**	**RDL**	**QC Batch**
Metals							
Lead (Pb)	%	3.1	2.6	0.10	0.10	0.01	2392114

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Package 1	12.0°C

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

GENERAL COMMENTS

Results relate only to the items tested.

Success Through Science®

Decommissioning Consulting Services Limited
Attention: Sean Shekarforoush
Client Project #: 700743-20
P.O. #:
Project name: PIN 614110-112 PICKERING, ON

Quality Assurance Report

Maxxam Job Number: MB110225

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2392114	JOH	Matrix Spike [IM0614-01]	Lead (Pb)	2011/01/31		78	%	75 - 125
		QC Standard	Lead (Pb)	2011/01/31		108	%	75 - 125
		Method Blank	Lead (Pb)	2011/01/31	<0.01		%	
		RPD [IM0614-01]	Lead (Pb)	2011/01/31	1		%	35

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Maxxam Analytics International Corporation o/a Maxxam Analytics Mississauga Env: 6740 Campobello Road L5N 2L8 Telephone(905) 817-5700 FAX(905) 817-5777

Validation Signature Page

Maxxam Job #: B110225

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Eva P.

CHARTERED
Eva Pranjic
CHEMIST

EWA PRANJIC, M.Sc., C.Chem, Scientific Specialist

==

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Maxxam Analytics Inc

6740 Campobello Rd, Mississauga, Ontario L5N 2L8
Tel: 905-817-5700, Fax: 905-817-5779 Toll Free: 1-800-563-6266

CHAIN OF CUSTODY RECORD

Pag 1 of 1

INVOICE INFORMATION		REPORT INFORMATION (if different from invoice)		PROJECT INFORMATION	
Company Name:	DCS Ltd	Company Name:		Quotation #:	
Contact Name:	Sean Shekarforoush	Contact Name:		P.O. #:	
Address:	121 Granton Drive	Address:		Project #:	700743-20
	Richmond Hill, ON			Project Name	PIN 614110-112
Phone #:	905-8825984 Fax:	Phone #:	Fax:	Location:	Pickering, ON
Email:	sshekarforoush@dcsltd.ca	Email:		Sampled by:	Ben Nketia

25-Jan-11 12:45
MATHURA THIRUKKUM
B110225
MHO ENV-25

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the **DRINKING WATER CHAIN OF CUSTODY** form.

☐ MISA | Reg. 153 | Sewer Use | ☐ Other
☐ Table 1 | ☐ Sanitary
☐ PWQO | ☐ Table 2 | ☐ Storm | Specify
☐ Reg. 558 | ☐ Table 3 | Region:

Report Criteria on C of A?

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

ANALYSIS REQUESTED (Please specify)

TURNAROUND TIME (TAT) REQUIRED

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.

Regular (Standard) TAT:
☑ 5 to 7 Working Days

Rush TAT Rush Confirmation #:
(Call Lab for #)
☐ 1 Day ☐ 2 Days ☐ 3 Days

Date Required:
Time Required:

Please note that TAT for certain tests such as BOD and Dioxins/Furans are >5 days, contact your Project Manager for details.

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil,	Regulated Drinking water? (Y/N)	Metals Field filtered? (Y/N)	Lead	# of Cont.	COMMENTS / TAT COMMENTS
1	Paint Sample PIN 614110 - CS1	03-Dec-10		Paint			x	1	
2	Paint Sample PIN 614110 - CS2	03-Dec-10		Paint			x	1	
3	Paint Sample PIN 614110 - CS3	03-Dec-10		Paint			x	1	
4									
5									
6									
7									
8									
9									
10									
11									
12									

RELINQUISHED BY (Signature/Print)	RECEIVED BY (Signature/Print)	Date	Time	Laboratory Use Only: Temperature (0C) on Receipt	Condition of Sample on Receipt
Sean Shekarforoush	[illegible]	2011/01/25	12:45	12/12/12 °C	☐ OK ☐ SIF

MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL DELAYS.

White: Maxxam Yellow: Mail Pink: Client

Maxxam

Success Through Science®

Your Project #: 700743-20
Site: PIN 614110 PICKERING, ON
Your C.O.C. #: n/a

Attention: Sean Shekarforoush
Decommissioning Consulting Services Limited
121 Granton Dr
Unit 11
Richmond Hill, ON
L4B 3N4

Report Date: 2011/02/10

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B115348
Received: 2011/02/04, 12:06

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Total Metals in TCLP Leachate by ICPMS	1	2011/02/09	2011/02/10	CAM SOP-00447	EPA 6020
TCLP - % Solids	1	2011/02/08	2011/02/09	CAM SOP-00401	EPA 1311 modified
TCLP - Extraction Fluid	1	N/A	2011/02/09	CAM SOP-00401	EPA 1311 modified
TCLP - Initial and final pH	1	N/A	2011/02/09	CAM SOP-00401	EPA 1311 modified

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

MATHURA THIRUKKUMARAN, CS Rep
Email: MThirukkumaran@maxxam.ca
Phone# (905) 817-5700

==
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Total cover pages: 1

Maxxam Job #: B115348
Report Date: 2011/02/10

Decommissioning Consulting Services Limited
Client Project #: 700743-20
Project name: PIN 614110 PICKERING, ON

O'REG 558 TCLP LEACHATE PREPARATION (SOIL)

Maxxam ID		IO3869		
Sampling Date				
COC Number		n/a		
	Units	**BH110 COMPOSITE**	**RDL**	**QC Batch**
Inorganics				
Final pH	pH	6.12		2401554
Initial pH	pH	8.52		2401554
TCLP - % Solids	%	100	0.2	2401548
TCLP Extraction Fluid	N/A	FLUID1		2401553

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B115348
Report Date: 2011/02/10

Decommissioning Consulting Services Limited
Client Project #: 700743-20
Project name: PIN 614110 PICKERING, ON

O'REG 558 TCLP METALS (SOIL)

Maxxam ID		IO3869		
Sampling Date				
COC Number		n/a		
	Units	**BH110 COMPOSITE**	**RDL**	**QC Batch**
Metals				
Leachable Arsenic (As)	mg/L	<0.2	0.2	2401530
Leachable Barium (Ba)	mg/L	0.9	0.2	2401530
Leachable Boron (B)	mg/L	0.1	0.1	2401530
Leachable Cadmium (Cd)	mg/L	<0.05	0.05	2401530
Leachable Chromium (Cr)	mg/L	<0.1	0.1	2401530
Leachable Lead (Pb)	mg/L	<0.1	0.1	2401530
Leachable Selenium (Se)	mg/L	<0.1	0.1	2401530
Leachable Silver (Ag)	mg/L	<0.01	0.01	2401530
Leachable Uranium (U)	mg/L	<0.01	0.01	2401530

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Package 1	8.3°C

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

GENERAL COMMENTS

Results relate only to the items tested.

Decommissioning Consulting Services Limited
Attention: Sean Shekarforoush
Client Project #: 700743-20
P.O. #:
Project name: PIN 614110 PICKERING, ON

Quality Assurance Report

Maxxam Job Number: MB115348

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2401530	JBW	Matrix Spike	Leachable Arsenic (As)	2011/02/10		99	%	75 - 125
			Leachable Barium (Ba)	2011/02/10		NC (1)	%	75 - 125
			Leachable Boron (B)	2011/02/10		94	%	75 - 125
			Leachable Cadmium (Cd)	2011/02/10		98	%	75 - 125
			Leachable Chromium (Cr)	2011/02/10		103	%	75 - 125
			Leachable Lead (Pb)	2011/02/10		96	%	75 - 125
			Leachable Selenium (Se)	2011/02/10		103	%	75 - 125
			Leachable Silver (Ag)	2011/02/10		94	%	75 - 125
			Leachable Uranium (U)	2011/02/10		97	%	75 - 125
		Leachate Blank	Leachable Arsenic (As)	2011/02/10	<0.2		mg/L	
			Leachable Barium (Ba)	2011/02/10	<0.2		mg/L	
			Leachable Boron (B)	2011/02/10	<0.1		mg/L	
			Leachable Cadmium (Cd)	2011/02/10	<0.05		mg/L	
			Leachable Chromium (Cr)	2011/02/10	<0.1		mg/L	
			Leachable Lead (Pb)	2011/02/10	<0.1		mg/L	
			Leachable Selenium (Se)	2011/02/10	<0.1		mg/L	
			Leachable Silver (Ag)	2011/02/10	<0.01		mg/L	
			Leachable Uranium (U)	2011/02/10	<0.01		mg/L	
		Spiked Blank	Leachable Arsenic (As)	2011/02/10		91	%	85 - 115
			Leachable Barium (Ba)	2011/02/10		92	%	85 - 115
			Leachable Boron (B)	2011/02/10		99	%	85 - 115
			Leachable Cadmium (Cd)	2011/02/10		93	%	85 - 115
			Leachable Chromium (Cr)	2011/02/10		92	%	85 - 115
			Leachable Lead (Pb)	2011/02/10		92	%	85 - 115
			Leachable Selenium (Se)	2011/02/10		93	%	85 - 115
			Leachable Silver (Ag)	2011/02/10		89	%	85 - 115
			Leachable Uranium (U)	2011/02/10		91	%	85 - 115
		RPD	Leachable Arsenic (As)	2011/02/10	NC		%	25
			Leachable Barium (Ba)	2011/02/10	NC		%	25
			Leachable Boron (B)	2011/02/10	NC		%	25
			Leachable Cadmium (Cd)	2011/02/10	NC		%	25
			Leachable Chromium (Cr)	2011/02/10	NC		%	25
			Leachable Lead (Pb)	2011/02/10	NC		%	25
			Leachable Selenium (Se)	2011/02/10	NC		%	25
			Leachable Silver (Ag)	2011/02/10	NC		%	25
			Leachable Uranium (U)	2011/02/10	NC		%	25

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) The recovery in the matrix spike was not calculated (NC). Spiked concentration was less than 2x that native to the sample.

Validation Signature Page

Maxxam Job #: B115348

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Cristina Carriere

CRISTINA CARRIERE, Scientific Services

==

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Maxxam Analytics Inc

Tel: 905-8 … L5N 2L8 … 563-6266

4-Feb-11 12:06

B115348

ENV-249 ESS

CHAIN OF COUSTODY RECORD

Page 1 of 1

INVOICE INFORMATION		(… Invoice)		PROJECT INFORMATION		MAXXAM JOB #
Company Name:	DCS Ltd			Quotation #:		
Contact Name:	Sean Shekarforoush	Contact Name:		P.O. #:		
Address:	121 Granton Drive	Address:		Project #:	700743-20	CHAIN OF CUSTODY #
	Richmond Hill, ON			Project Name	PIN 614110	
Phone #: 905-8825984	Fax:	Phone #:	Fax:	Location:	Pickering, ON	
Email:	sshekarforoush@dcsltd.ca	Email:		Sampled by:	Ben Nketia	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the **DRINKING WATER CHAIN OF CUSTODY** form.

- ☐ MISA — Reg. 153: ☐ Table 1, ☐ Table 2, ☐ Table 3 — Sewer Use: ☐ Sanitary, ☐ Storm — ☐ Other, Specify
- ☐ PWQO
- ☑ Reg. 558
- Region:
- Report Criteria on C of A?

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

ANALYSIS REQUESTED (Please specify)

TURNAROUND TIME (TAT) REQUIRED

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.

Regular (Standard) TAT:

☑ 5 to 7 Working Days

Rush TAT Rush Confirmation #: (Call Lab for #)

☐ 1 Day ☐ 2 Days ☐ 3 Days

Date Required:

Time Required:

Please note that TAT for certain tests such as BOD and Dioxins/Furans are >5 days, contact your Project Manager for details.

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil,	Regulated Drinking water? (Y/N)	Metals Field filtered? (Y/N)	TCLP for Metals	# of Cont.	COMMENTS / TAT COMMENTS
1	Composite of:						x		
2	BH110-8 SS1B	Dec 2010		Soil				1	
3	BH110-10 SS1B	Dec 2010		Soil				1	
4	BH110-21 SS1B	Dec 2010		Soil				1	
5									
6									
7									
8									
9									
10									
11									

RELINQUISHED BY (Signature/Print)	RECEIVED BY (Signature/Print)	Date	Time	Laboratory Use Only: Temperature (0C) on Receipt	Condition of Sample on Receipt
Sean Shekarforoush 11/02/04, 10 AM	ELZBIETA STEPNISKA	2011/02/04	12:06	8/8/9 °C	☐ OK ☐ SIF

MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL DELAYS.

White: Maxxam Yellow: Mail Pink: Client

Your Project #: 700743-20
Site: PIN 614110-112 PICKERING, ON
Your C.O.C. #: n/a

Attention: Sean Shekarforoush
Decommissioning Consulting Services Limited
121 Granton Dr
Unit 11
Richmond Hill, ON
L4B 3N4

Report Date: 2010/12/30

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B0I6049
Received: 2010/12/24, 23:23

Sample Matrix: Soil
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Acid Extr. Metals (aqua regia) by ICPMS	3	2010/12/30	2010/12/30	CAM SOP-00447	EPA 6020

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

MATHURA THIRUKKUMARAN, CS Rep
Email: MThirukkumaran@maxxam.ca
Phone# (905) 817-5700

==
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

Maxxam

Maxxam Job #: B0I6049
Report Date: 2010/12/30

Decommissioning Consulting Services Limited
Client Project #: 700743-20
Project name: PIN 614110-112 PICKERING, ON

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		IG5744	IG5745	IG5746		
Sampling Date		2010/12/22	2010/12/22	2010/12/22		
COC Number		n/a	n/a	n/a		
	Units	**BH110-19(2)SS1A (0.0-0.15)**	**BH110-7(2)SS1A (0.0-0.15)**	**BH110-5(2)SS1A (0.0-0.15)**	**RDL**	**QC Batch**
Metals						
Acid Extractable Aluminum (Al)	ug/g	9300	6100	5600	50	2370403
Acid Extractable Antimony (Sb)	ug/g	0.3	<0.2	<0.2	0.2	2370403
Acid Extractable Arsenic (As)	ug/g	3	3	2	1	2370403
Acid Extractable Barium (Ba)	ug/g	80	55	51	0.5	2370403
Acid Extractable Beryllium (Be)	ug/g	0.4	0.3	0.2	0.2	2370403
Acid Extractable Cadmium (Cd)	ug/g	0.4	0.3	0.3	0.1	2370403
Acid Extractable Calcium (Ca)	ug/g	31000	77000	85000	50	2370403
Acid Extractable Chromium (Cr)	ug/g	16	17	16	1	2370403
Acid Extractable Cobalt (Co)	ug/g	6.4	4.3	4.1	0.1	2370403
Acid Extractable Copper (Cu)	ug/g	19	28	22	0.5	2370403
Acid Extractable Iron (Fe)	ug/g	15000	10000	9500	50	2370403
Acid Extractable Lead (Pb)	ug/g	89	16	13	1	2370403
Acid Extractable Magnesium (Mg)	ug/g	3900	6000	4600	50	2370403
Acid Extractable Manganese (Mn)	ug/g	480	300	230	1	2370403
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	<0.5	0.5	2370403
Acid Extractable Nickel (Ni)	ug/g	14	11	11	0.5	2370403
Acid Extractable Phosphorus (P)	ug/g	1200	1000	890	50	2370403
Acid Extractable Potassium (K)	ug/g	1800	1600	1200	200	2370403
Acid Extractable Selenium (Se)	ug/g	<0.5	1.1	0.8	0.5	2370403
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	<0.2	0.2	2370403
Acid Extractable Sodium (Na)	ug/g	<100	120	150	100	2370403
Acid Extractable Strontium (Sr)	ug/g	54	110	130	1	2370403
Acid Extractable Thallium (Tl)	ug/g	0.11	0.07	0.06	0.05	2370403
Acid Extractable Vanadium (V)	ug/g	23	17	17	5	2370403
Acid Extractable Zinc (Zn)	ug/g	120	180	81	5	2370403

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Package 1	7.3°C

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

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam

Success Through Science®

Decommissioning Consulting Services Limited
Attention: Sean Shekarforoush
Client Project #: 700743-20
P.O. #:
Project name: PIN 614110-112 PICKERING, ON

Quality Assurance Report

Maxxam Job Number: MB0I6049

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2370403 VIV	Matrix Spike	Acid Extractable Aluminum (Al)	2010/12/30		NC	%	75 - 125
		Acid Extractable Antimony (Sb)	2010/12/30		99	%	75 - 125
		Acid Extractable Arsenic (As)	2010/12/30		101	%	75 - 125
		Acid Extractable Barium (Ba)	2010/12/30		NC	%	75 - 125
		Acid Extractable Beryllium (Be)	2010/12/30		95	%	75 - 125
		Acid Extractable Cadmium (Cd)	2010/12/30		102	%	75 - 125
		Acid Extractable Calcium (Ca)	2010/12/30		NC	%	75 - 125
		Acid Extractable Chromium (Cr)	2010/12/30		102	%	75 - 125
		Acid Extractable Cobalt (Co)	2010/12/30		98	%	75 - 125
		Acid Extractable Copper (Cu)	2010/12/30		98	%	75 - 125
		Acid Extractable Iron (Fe)	2010/12/30		NC	%	75 - 125
		Acid Extractable Lead (Pb)	2010/12/30		98	%	75 - 125
		Acid Extractable Magnesium (Mg)	2010/12/30		NC	%	75 - 125
		Acid Extractable Manganese (Mn)	2010/12/30		NC	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2010/12/30		104	%	75 - 125
		Acid Extractable Nickel (Ni)	2010/12/30		99	%	75 - 125
		Acid Extractable Phosphorus (P)	2010/12/30		NC	%	75 - 125
		Acid Extractable Potassium (K)	2010/12/30		NC	%	75 - 125
		Acid Extractable Selenium (Se)	2010/12/30		102	%	75 - 125
		Acid Extractable Silver (Ag)	2010/12/30		100	%	75 - 125
		Acid Extractable Sodium (Na)	2010/12/30		101	%	75 - 125
		Acid Extractable Strontium (Sr)	2010/12/30		NC	%	75 - 125
		Acid Extractable Thallium (Tl)	2010/12/30		95	%	75 - 125
		Acid Extractable Vanadium (V)	2010/12/30		105	%	75 - 125
		Acid Extractable Zinc (Zn)	2010/12/30		102	%	75 - 125
	QC Standard	Acid Extractable Aluminum (Al)	2010/12/30		108	%	75 - 125
		Acid Extractable Antimony (Sb)	2010/12/30		102	%	75 - 125
		Acid Extractable Arsenic (As)	2010/12/30		106	%	75 - 125
		Acid Extractable Barium (Ba)	2010/12/30		102	%	75 - 125
		Acid Extractable Beryllium (Be)	2010/12/30		101	%	75 - 125
		Acid Extractable Cadmium (Cd)	2010/12/30		105	%	75 - 125
		Acid Extractable Calcium (Ca)	2010/12/30		109	%	75 - 125
		Acid Extractable Chromium (Cr)	2010/12/30		106	%	75 - 125
		Acid Extractable Cobalt (Co)	2010/12/30		106	%	75 - 125
		Acid Extractable Copper (Cu)	2010/12/30		108	%	75 - 125
		Acid Extractable Iron (Fe)	2010/12/30		115	%	75 - 125
		Acid Extractable Lead (Pb)	2010/12/30		104	%	75 - 125
		Acid Extractable Magnesium (Mg)	2010/12/30		102	%	75 - 125
		Acid Extractable Manganese (Mn)	2010/12/30		105	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2010/12/30		102	%	75 - 125
		Acid Extractable Nickel (Ni)	2010/12/30		105	%	75 - 125
		Acid Extractable Phosphorus (P)	2010/12/30		89	%	75 - 125
		Acid Extractable Potassium (K)	2010/12/30		105	%	75 - 125
		Acid Extractable Selenium (Se)	2010/12/30		107	%	75 - 125
		Acid Extractable Silver (Ag)	2010/12/30		104	%	75 - 125
		Acid Extractable Sodium (Na)	2010/12/30		104	%	75 - 125
		Acid Extractable Strontium (Sr)	2010/12/30		104	%	75 - 125
		Acid Extractable Thallium (Tl)	2010/12/30		102	%	75 - 125
		Acid Extractable Vanadium (V)	2010/12/30		104	%	75 - 125
		Acid Extractable Zinc (Zn)	2010/12/30		110	%	75 - 125
	Method Blank	Acid Extractable Aluminum (Al)	2010/12/30	<50		ug/g	
		Acid Extractable Antimony (Sb)	2010/12/30	<0.2		ug/g	
		Acid Extractable Arsenic (As)	2010/12/30	<1		ug/g	
		Acid Extractable Barium (Ba)	2010/12/30	<0.5		ug/g	
		Acid Extractable Beryllium (Be)	2010/12/30	<0.2		ug/g	

Maxxam

Success Through Science®

Decommissioning Consulting Services Limited
Attention: Sean Shekarforoush
Client Project #: 700743-20
P.O. #:
Project name: PIN 614110-112 PICKERING, ON

Quality Assurance Report (Continued)

Maxxam Job Number: MB0I6049

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2370403 VIV	Method Blank	Acid Extractable Cadmium (Cd)	2010/12/30	<0.1		ug/g	
		Acid Extractable Calcium (Ca)	2010/12/30	<50		ug/g	
		Acid Extractable Chromium (Cr)	2010/12/30	<1		ug/g	
		Acid Extractable Cobalt (Co)	2010/12/30	<0.1		ug/g	
		Acid Extractable Copper (Cu)	2010/12/30	<0.5		ug/g	
		Acid Extractable Iron (Fe)	2010/12/30	<50		ug/g	
		Acid Extractable Lead (Pb)	2010/12/30	<1		ug/g	
		Acid Extractable Magnesium (Mg)	2010/12/30	<50		ug/g	
		Acid Extractable Manganese (Mn)	2010/12/30	<1		ug/g	
		Acid Extractable Molybdenum (Mo)	2010/12/30	<0.5		ug/g	
		Acid Extractable Nickel (Ni)	2010/12/30	<0.5		ug/g	
		Acid Extractable Phosphorus (P)	2010/12/30	<50		ug/g	
		Acid Extractable Potassium (K)	2010/12/30	<200		ug/g	
		Acid Extractable Selenium (Se)	2010/12/30	<0.5		ug/g	
		Acid Extractable Silver (Ag)	2010/12/30	<0.2		ug/g	
		Acid Extractable Sodium (Na)	2010/12/30	<100		ug/g	
		Acid Extractable Strontium (Sr)	2010/12/30	<1		ug/g	
		Acid Extractable Thallium (Tl)	2010/12/30	<0.05		ug/g	
		Acid Extractable Vanadium (V)	2010/12/30	<5		ug/g	
		Acid Extractable Zinc (Zn)	2010/12/30	<5		ug/g	
	RPD	Acid Extractable Antimony (Sb)	2010/12/30	NC		%	35
		Acid Extractable Arsenic (As)	2010/12/30	NC		%	35
		Acid Extractable Barium (Ba)	2010/12/30	2.5		%	35
		Acid Extractable Beryllium (Be)	2010/12/30	NC		%	35
		Acid Extractable Cadmium (Cd)	2010/12/30	NC		%	35
		Acid Extractable Chromium (Cr)	2010/12/30	2.6		%	35
		Acid Extractable Cobalt (Co)	2010/12/30	2.5		%	35
		Acid Extractable Copper (Cu)	2010/12/30	3.2		%	35
		Acid Extractable Lead (Pb)	2010/12/30	NC		%	35
		Acid Extractable Molybdenum (Mo)	2010/12/30	NC		%	35
		Acid Extractable Nickel (Ni)	2010/12/30	NC		%	35
		Acid Extractable Selenium (Se)	2010/12/30	NC		%	35
		Acid Extractable Silver (Ag)	2010/12/30	NC		%	35
		Acid Extractable Thallium (Tl)	2010/12/30	NC		%	35
		Acid Extractable Vanadium (V)	2010/12/30	NC		%	35
		Acid Extractable Zinc (Zn)	2010/12/30	NC		%	35

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B0I6049

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Cristina Carriere

CRISTINA CARRIERE, Scientific Services

==

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CHAIN OF CUSTODY RECORD

Maxxam Analytics Inc

6740 Campobello Rd, Mississauga, Ontario L5N 2L8
Tel: 905-817-5700, Fax: 905-817-5779 Toll Free: 1-800-563-6266

24-Dec-10 23:23

B0I6049

ENV-042 MHO

INVOICE INFORMATION		REPORT INFORMATION (if different from invoice)		PROJECT INFORMATION	
Company Name:	DCS Ltd	Company Name:		Quotation #:	
Contact Name:	Sean Shekarforoush	Contact Name:		P.O. #:	
Address:	121 Granton Drive	Address:		Project #:	700743-20
	Richmond Hill, ON			Project Name	PIN 614110-112
Phone #:	905-8825984 Fax:	Phone #:	Fax:	Location:	Pickering, ON
Email:	sshekarforoush@dcsltd.ca	Email:		Sampled by:	Ben Nketia

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the **DRINKING WATER CHAIN OF CUSTODY** form.

☐ MISA — Reg. 153: ☐ Table 1, ☐ Table 2, ☐ Table 3 — Sewer Use: ☐ Sanitary, ☐ Storm — ☐ Other, Specify

☐ PWQO

☐ Reg. 558

Region:

Report Criteria on C of A?

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

TURNAROUND TIME (TAT) REQUIRED

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.

Regular (Standard) TAT:

☑ 5 to 7 Working Days

Rush TAT Rush Confirmation #:

(Call Lab for #)

☐ 1 Day ☐ 2 Days ☐ 3 Days

Date Required:

Time Required:

Please note that TAT for certain tests such as BOD and Dioxins/Furans are >5 days, contact your Project Manager for details.

	Sample Identification	Date Sampled	Sampled	Matrix (GW, SW, Soil,	Regulated Drinking water? (Y/N)	Metals Field filtered? (Y/N)	Metals (ICPMS)	# of Cont.	COMMENTS / TAT COMMENTS
1	BH110-19(2) SS1A (0.0 - 0.15)	22-Dec-10		Soil			x	1	
2	BH110-7(2) SS1A (0.0 - 0.15)	22-Dec-10		Soil			x	1	
3	BH110-5(2) SS1A (0.0 - 0.15)	22-Dec-10		Soil			x	1	
4									
5									
6									
7									
8									
9									
10									
11									
12									

RELINQUISHED BY (Signature/Print)	RECEIVED BY (Signature/Print)	Date	Time	Laboratory Use Only: Temperature (0C) on Receipt	Condition of Sample on Receipt
Sean Shekarforoush 23/Dec/2010	MARC Flecher	2010/12/24	12:23	7/7/8 °C	☐ OK ☐ SIF

MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL DELAYS.

White: Maxxam Yellow: Mail Pink: Client

Your Project #: 700743-20
Site: 614110-112 PICKERING
Your C.O.C. #: na

Attention: Sean Shekarforoush
Decommissioning Consulting Services Limited
121 Granton Dr
Unit 11
Richmond Hill, ON
L4B 3N4

Report Date: 2011/01/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B0I6787
Received: 2010/12/30, 11:46

Sample Matrix: Soil
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Acid Extr. Metals (aqua regia) by ICPMS	7	2011/01/05	2011/01/05	CAM SOP-00447	EPA 6020

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

MATHURA THIRUKKUMARAN, CS Rep
Email: MThirukkumaran@maxxam.ca
Phone# (905) 817-5700

==
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

Maxxam Job #: B0I6787
Report Date: 2011/01/05

Decommissioning Consulting Services Limited
Client Project #: 700743-20
Project name: 614110-112 PICKERING

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		IG9655	IG9656	IG9657	IG9658	IG9659		
Sampling Date		2010/12/03	2010/12/03	2010/12/03	2010/12/03	2010/12/03		
COC Number		na	na	na	na	na		
	Units	**BH110-5 SS1B (0.15-0.45)**	**BH110-7 SS1B (0.15-0.45)**	**BH110-16 SS1B (0.15-0.45)**	**BH110-17 SS1B (0.15-0.45)**	**BH110-19 SS1B (0.15-0.45)**	**RDL**	**QC Batch**
Metals								
Acid Extractable Aluminum (Al)	ug/g	6300	7400	13000	13000	9300	50	2372734
Acid Extractable Antimony (Sb)	ug/g	<0.2	<0.2	1.0	6.8	<0.2	0.2	2372734
Acid Extractable Arsenic (As)	ug/g	1	3	3	5	2	1	2372734
Acid Extractable Barium (Ba)	ug/g	60	55	100	190	54	0.5	2372734
Acid Extractable Beryllium (Be)	ug/g	0.4	0.5	0.7	0.7	0.5	0.2	2372734
Acid Extractable Cadmium (Cd)	ug/g	0.2	0.4	0.3	0.3	0.2	0.1	2372734
Acid Extractable Calcium (Ca)	ug/g	100000	54000	35000	77000	6400	50	2372734
Acid Extractable Chromium (Cr)	ug/g	17	20	22	27	14	1	2372734
Acid Extractable Cobalt (Co)	ug/g	4.7	4.9	8.9	9.0	6.9	0.1	2372734
Acid Extractable Copper (Cu)	ug/g	19	28	21	30	9.2	0.5	2372734
Acid Extractable Iron (Fe)	ug/g	10000	10000	22000	21000	16000	50	2372734
Acid Extractable Lead (Pb)	ug/g	7	15	36	140	23	1	2372734
Acid Extractable Magnesium (Mg)	ug/g	5200	4900	4700	5600	2800	50	2372734
Acid Extractable Manganese (Mn)	ug/g	240	290	540	590	520	1	2372734
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2372734
Acid Extractable Nickel (Ni)	ug/g	12	14	19	19	11	0.5	2372734
Acid Extractable Phosphorus (P)	ug/g	750	1100	940	1400	630	50	2372734
Acid Extractable Potassium (K)	ug/g	820	1400	2000	2300	800	200	2372734
Acid Extractable Selenium (Se)	ug/g	0.9	2.1	<0.5	<0.5	<0.5	0.5	2372734
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	<0.2	0.2	<0.2	0.2	2372734
Acid Extractable Sodium (Na)	ug/g	130	<100	120	160	<100	100	2372734
Acid Extractable Strontium (Sr)	ug/g	170	88	66	140	18	1	2372734
Acid Extractable Thallium (Tl)	ug/g	0.11	0.13	0.16	0.16	0.08	0.05	2372734
Acid Extractable Vanadium (V)	ug/g	16	19	33	32	27	5	2372734
Acid Extractable Zinc (Zn)	ug/g	69	310	86	160	44	5	2372734

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0I6787
Report Date: 2011/01/05

Decommissioning Consulting Services Limited
Client Project #: 700743-20
Project name: 614110-112 PICKERING

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		IG9660	IG9661		
Sampling Date		2010/12/03	2010/12/03		
COC Number		na	na		
	Units	**BH110-20 SS1B (0.15-0.45)**	**BH110-26 SS1B (0.15-0.45)**	**RDL**	**QC Batch**
Metals					
Acid Extractable Aluminum (Al)	ug/g	10000	16000	50	2372734
Acid Extractable Antimony (Sb)	ug/g	0.3	0.2	0.2	2372734
Acid Extractable Arsenic (As)	ug/g	4	4	1	2372734
Acid Extractable Barium (Ba)	ug/g	92	120	0.5	2372734
Acid Extractable Beryllium (Be)	ug/g	0.5	0.8	0.2	2372734
Acid Extractable Cadmium (Cd)	ug/g	0.4	0.4	0.1	2372734
Acid Extractable Calcium (Ca)	ug/g	67000	6900	50	2372734
Acid Extractable Chromium (Cr)	ug/g	18	25	1	2372734
Acid Extractable Cobalt (Co)	ug/g	7.8	11	0.1	2372734
Acid Extractable Copper (Cu)	ug/g	19	20	0.5	2372734
Acid Extractable Iron (Fe)	ug/g	18000	24000	50	2372734
Acid Extractable Lead (Pb)	ug/g	110	45	1	2372734
Acid Extractable Magnesium (Mg)	ug/g	4800	4800	50	2372734
Acid Extractable Manganese (Mn)	ug/g	540	830	1	2372734
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	0.5	2372734
Acid Extractable Nickel (Ni)	ug/g	16	22	0.5	2372734
Acid Extractable Phosphorus (P)	ug/g	990	980	50	2372734
Acid Extractable Potassium (K)	ug/g	1500	2000	200	2372734
Acid Extractable Selenium (Se)	ug/g	<0.5	0.6	0.5	2372734
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	0.2	2372734
Acid Extractable Sodium (Na)	ug/g	140	<100	100	2372734
Acid Extractable Strontium (Sr)	ug/g	110	24	1	2372734
Acid Extractable Thallium (Tl)	ug/g	0.14	0.18	0.05	2372734
Acid Extractable Vanadium (V)	ug/g	28	37	5	2372734
Acid Extractable Zinc (Zn)	ug/g	130	100	5	2372734

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B0I6787
Report Date: 2011/01/05

Decommissioning Consulting Services Limited
Client Project #: 700743-20
Project name: 614110-112 PICKERING

Package 1	15.0°C

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

GENERAL COMMENTS

Results relate only to the items tested.

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Decommissioning Consulting Services Limited
Attention: Sean Shekarforoush
Client Project #: 700743-20
P.O. #:
Project name: 614110-112 PICKERING

Quality Assurance Report

Maxxam Job Number: MB0I6787

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2372734 VIV	Matrix Spike	Acid Extractable Aluminum (Al)	2011/01/05		NC	%	75 - 125
		Acid Extractable Antimony (Sb)	2011/01/05		82	%	75 - 125
		Acid Extractable Arsenic (As)	2011/01/05		95	%	75 - 125
		Acid Extractable Barium (Ba)	2011/01/05		NC	%	75 - 125
		Acid Extractable Beryllium (Be)	2011/01/05		100	%	75 - 125
		Acid Extractable Cadmium (Cd)	2011/01/05		95	%	75 - 125
		Acid Extractable Calcium (Ca)	2011/01/05		NC	%	75 - 125
		Acid Extractable Chromium (Cr)	2011/01/05		NC	%	75 - 125
		Acid Extractable Cobalt (Co)	2011/01/05		97	%	75 - 125
		Acid Extractable Copper (Cu)	2011/01/05		NC	%	75 - 125
		Acid Extractable Iron (Fe)	2011/01/05		NC	%	75 - 125
		Acid Extractable Lead (Pb)	2011/01/05		92	%	75 - 125
		Acid Extractable Magnesium (Mg)	2011/01/05		NC	%	75 - 125
		Acid Extractable Manganese (Mn)	2011/01/05		NC	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2011/01/05		94	%	75 - 125
		Acid Extractable Nickel (Ni)	2011/01/05		NC	%	75 - 125
		Acid Extractable Phosphorus (P)	2011/01/05		NC	%	75 - 125
		Acid Extractable Potassium (K)	2011/01/05		NC	%	75 - 125
		Acid Extractable Selenium (Se)	2011/01/05		97	%	75 - 125
		Acid Extractable Silver (Ag)	2011/01/05		95	%	75 - 125
		Acid Extractable Sodium (Na)	2011/01/05		NC	%	75 - 125
		Acid Extractable Strontium (Sr)	2011/01/05		NC	%	75 - 125
		Acid Extractable Thallium (Tl)	2011/01/05		84	%	75 - 125
		Acid Extractable Vanadium (V)	2011/01/05		NC	%	75 - 125
		Acid Extractable Zinc (Zn)	2011/01/05		NC	%	75 - 125
	QC Standard	Acid Extractable Aluminum (Al)	2011/01/05		109	%	75 - 125
		Acid Extractable Antimony (Sb)	2011/01/05		92	%	75 - 125
		Acid Extractable Arsenic (As)	2011/01/05		101	%	75 - 125
		Acid Extractable Barium (Ba)	2011/01/05		101	%	75 - 125
		Acid Extractable Beryllium (Be)	2011/01/05		99	%	75 - 125
		Acid Extractable Cadmium (Cd)	2011/01/05		101	%	75 - 125
		Acid Extractable Calcium (Ca)	2011/01/05		105	%	75 - 125
		Acid Extractable Chromium (Cr)	2011/01/05		106	%	75 - 125
		Acid Extractable Cobalt (Co)	2011/01/05		103	%	75 - 125
		Acid Extractable Copper (Cu)	2011/01/05		106	%	75 - 125
		Acid Extractable Iron (Fe)	2011/01/05		111	%	75 - 125
		Acid Extractable Lead (Pb)	2011/01/05		101	%	75 - 125
		Acid Extractable Magnesium (Mg)	2011/01/05		101	%	75 - 125
		Acid Extractable Manganese (Mn)	2011/01/05		104	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2011/01/05		100	%	75 - 125
		Acid Extractable Nickel (Ni)	2011/01/05		103	%	75 - 125
		Acid Extractable Phosphorus (P)	2011/01/05		105	%	75 - 125
		Acid Extractable Potassium (K)	2011/01/05		104	%	75 - 125
		Acid Extractable Selenium (Se)	2011/01/05		105	%	75 - 125
		Acid Extractable Silver (Ag)	2011/01/05		100	%	75 - 125
		Acid Extractable Sodium (Na)	2011/01/05		105	%	75 - 125
		Acid Extractable Strontium (Sr)	2011/01/05		106	%	75 - 125
		Acid Extractable Thallium (Tl)	2011/01/05		86	%	75 - 125
		Acid Extractable Vanadium (V)	2011/01/05		105	%	75 - 125
		Acid Extractable Zinc (Zn)	2011/01/05		109	%	75 - 125
	Method Blank	Acid Extractable Aluminum (Al)	2011/01/05	<50		ug/g	
		Acid Extractable Antimony (Sb)	2011/01/05	<0.2		ug/g	
		Acid Extractable Arsenic (As)	2011/01/05	<1		ug/g	
		Acid Extractable Barium (Ba)	2011/01/05	<0.5		ug/g	
		Acid Extractable Beryllium (Be)	2011/01/05	<0.2		ug/g	

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Success Through Science®

Decommissioning Consulting Services Limited
Attention: Sean Shekarforoush
Client Project #: 700743-20
P.O. #:
Project name: 614110-112 PICKERING

Quality Assurance Report (Continued)

Maxxam Job Number: MB0I6787

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2372734 VIV	Method Blank	Acid Extractable Cadmium (Cd)	2011/01/05	<0.1		ug/g	
		Acid Extractable Calcium (Ca)	2011/01/05	<50		ug/g	
		Acid Extractable Chromium (Cr)	2011/01/05	<1		ug/g	
		Acid Extractable Cobalt (Co)	2011/01/05	<0.1		ug/g	
		Acid Extractable Copper (Cu)	2011/01/05	<0.5		ug/g	
		Acid Extractable Iron (Fe)	2011/01/05	<50		ug/g	
		Acid Extractable Lead (Pb)	2011/01/05	<1		ug/g	
		Acid Extractable Magnesium (Mg)	2011/01/05	<50		ug/g	
		Acid Extractable Manganese (Mn)	2011/01/05	<1		ug/g	
		Acid Extractable Molybdenum (Mo)	2011/01/05	<0.5		ug/g	
		Acid Extractable Nickel (Ni)	2011/01/05	<0.5		ug/g	
		Acid Extractable Phosphorus (P)	2011/01/05	<50		ug/g	
		Acid Extractable Potassium (K)	2011/01/05	<200		ug/g	
		Acid Extractable Selenium (Se)	2011/01/05	<0.5		ug/g	
		Acid Extractable Silver (Ag)	2011/01/05	<0.2		ug/g	
		Acid Extractable Sodium (Na)	2011/01/05	<100		ug/g	
		Acid Extractable Strontium (Sr)	2011/01/05	<1		ug/g	
		Acid Extractable Thallium (Tl)	2011/01/05	<0.05		ug/g	
		Acid Extractable Vanadium (V)	2011/01/05	<5		ug/g	
		Acid Extractable Zinc (Zn)	2011/01/05	<5		ug/g	
	RPD	Acid Extractable Antimony (Sb)	2011/01/05	NC		%	35
		Acid Extractable Arsenic (As)	2011/01/05	NC		%	35
		Acid Extractable Barium (Ba)	2011/01/05	7.0		%	35
		Acid Extractable Beryllium (Be)	2011/01/05	NC		%	35
		Acid Extractable Cadmium (Cd)	2011/01/05	NC		%	35
		Acid Extractable Chromium (Cr)	2011/01/05	7.3		%	35
		Acid Extractable Cobalt (Co)	2011/01/05	5.0		%	35
		Acid Extractable Copper (Cu)	2011/01/05	7.7		%	35
		Acid Extractable Lead (Pb)	2011/01/05	6.9		%	35
		Acid Extractable Molybdenum (Mo)	2011/01/05	NC		%	35
		Acid Extractable Nickel (Ni)	2011/01/05	5.9		%	35
		Acid Extractable Selenium (Se)	2011/01/05	NC		%	35
		Acid Extractable Silver (Ag)	2011/01/05	NC		%	35
		Acid Extractable Thallium (Tl)	2011/01/05	5.6		%	35
		Acid Extractable Vanadium (V)	2011/01/05	5.4		%	35
		Acid Extractable Zinc (Zn)	2011/01/05	7.8		%	35

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B0I6787

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Cristina Carriere

CRISTINA CARRIERE, Scientific Services

===

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Analytics Inc

6740 Campobello Rd, Mississauga, Ontario L5N 2L8
Tel: 905-817-5700, Fax: 905-817-5779 Toll Free: 1-800-563-6266

CHAIN OF (

30-Dec-10 11:46

B0I6787

ENV-235 J L

INVOICE INFORMATION		REPORT INFORMATION (if different from invoice)		PROJECT INFORMATION	
Company Name:	DCS Ltd	Company Name:		Quotation #:	
Contact Name:	Sean Shekarforoush	Contact Name:		P.O. #:	
Address:	121 Granton Drive	Address:		Project #:	700743-20
	Richmond Hill, ON			Project Name	PIN 614110-112
Phone #:	905-8825984 Fax:	Phone #:	Fax:	Location:	Pickering, ON
Email:	sshekarforoush@dcsltd.ca	Email:		Sampled by:	Ben Nketia

CHAIN OF CUSTODY #

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the **DRINKING WATER CHAIN OF CUSTODY** form.

☐ MISA — Reg. 153: ☐ Table 1, ☐ Table 2, ☐ Table 3 — Sewer Use: ☐ Sanitary, ☐ Storm — ☐ Other, Specify

☐ PWQO

☐ Reg. 558

Region:

Report Criteria on C of A?

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

TURNAROUND TIME (TAT) REQUIRED

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.

Regular (Standard) TAT:
☑ 5 to 7 Working Days

Rush TAT Rush Confirmation #:
(Call Lab for #)
☐ 1 Day ☐ 2 Days ☐ 3 Days

Date Required:
Time Required:

Please note that TAT for certain tests such as BOD and Dioxins/Furans are >5 days, contact your Project Manager for details.

ANALYSIS REQUESTED (Please specify)

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil,	Regulated Drinking water? (Y/N)	Metals Field filtered? (Y/N)	Metals (ICPMS)	# of Cont.	COMMENTS / TAT COMMENTS
1	BH110-5 SS1B (0.15 - 0.45)	03-Dec-10		Soil			x	1	
2	BH110-7 SS1B (0.15 - 0.45)	03-Dec-10		Soil			x	1	
3	BH110-16 SS1B (0.15 - 0.45)	03-Dec-10		Soil			x	1	
4	BH110-17 SS1B (0.15 - 0.45)	03-Dec-10		Soil			x	1	
5	BH110-19 SS1B (0.15 - 0.45)	03-Dec-10		Soil			x	1	
6	BH110-20 SS1B (0.15 - 0.45)	03-Dec-10		Soil			x	1	
7	BH110-26 SS1B (0.15 - 0.45)	03-Dec-10		Soil			x	1	
8									
9									
10									
11									
12									

RELINQUISHED BY (Signature/Print)	RECEIVED BY (Signature/Print)	Date	Time	Laboratory Use Only: Temperature (0C) on Receipt	Condition of Sample on Receipt
Sean Shekarforoush 29/Dec/2010	MARK FERRER	2010/12/30	11:46	15/15/15 C	☐ OK ☐ SIF

MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL DELAYS.

No ice

White: Maxxam Yellow: Mail Pink: Client

APPENDIX H

NCSCS WORKSHEETS

CCME National Classification System for Contaminated Sites (2008, 2010 v 1.2)
Pre-Screening Checklist

	Question	Response (yes / no)	Comment
1.	Are **Radioactive material**, **Bacterial contamination** or **Biological hazards** likely to be present at the site?	No	If yes, do not proceed through the NCSCS. Contact applicable regulatory agency immediately.
2.	Are there **no contamination exceedances** (known or suspected)? Determination of exceedances may be based on: 1) CCME environmental quality guidelines; 2) equivalent provincial guidelines/standards if no CCME guideline exists for a specific chemical in a relevant medium; or 3) toxicity benchmarks derived from the literature for chemicals not covered by CCME or provincial guidelines/standards.	No	If yes (i.e., there are no exceedances), do not proceed through the NCSCS.
3.	Have **partial/incompleted or no environmental site investigations** been conducted for the Site?	No	If yes, do not proceed through the NCSCS.
4.	Is there direct and signficant evidence of **impacts to humans** at the site, or off-site due to migration of contaminants from the site?	No	If yes, automatically rate the site as Class 1, a priority for remediation or risk management, regardless of the total score obtained should one be calculated (e.g., for comparison with other Class 1 sites).
5.	Is there direct and significant evidence of **impacts to ecological receptors** at the site, or off-site due to migration of contaminants from the site?	No	Some low levels of impact to ecological receptors are considered acceptable, particularly on commercial and industrial land uses. However, if ecological effects are considered to be severe, the site may be categorized as Class 1, regardless of the numerical total NCSCS score. For the purpose of application of the NCSCS, effects that would be considered severe include observed effects on survival, growth or reproduction which could threaten the viability of a population of ecological receptors at the site. Other evidence that qualifies as severe adverse effects may be determined based on professional judgement and in consultation with the relevant jurisdiction.
6.	Are there indicators of significant **adverse effects in the exposure zone** (i.e., the zone in which receptors may come into contact with contaminants)? Some examples are as follows: -Hydrocarbon sheen or NAPL in the exposure zone -Severely stressed biota or devoid of biota; -Presence of material at ground surface or sediment with suspected high concentration of contaminants such as ore tailings, sandblasting grit, slag, and coal tar.	No	If yes, automatically rate the site as Class 1, a priority for remediation or risk management, regardless of the total score obtained should one be calculated (e.g., for comparison with other Class 1 sites).
7.	Do measured concentrations of volatiles or unexploded ordnances represent an **explosion hazard**?	No	If yes, automatically rate the site as Class 1, a priority for remediation or risk management, and do not continue until the safety risks have been addressed. Consult your jurisdiction's occupational health and safety guidance or legislation on exposive hazards and measurement of lower explosive limits.

If none of the above applies, proceed with the NCSCS scoring.

CCME National Classification System for Contaminated Sites (2008, 2010 v 1.2)
Summary of Site Conditions

Subject Site:	**CS-614110/111/112-1**	
Civic Address: *(or other description of location)*	10243 and 10251 Reesor Road, Markham, Ontario	
Site Common Name: *(if applicable)*		
Site Owner or Custodian: *(Organization and Contact Person)*	Owned by Transport Canada, Managed by Public Works and Government Services Canada	
Legal description *or* metes and bounds:	Part of Lot 22, Concession 10, Township of Markham	
Approximate Site area:	Approximately 30 hectares.	
PID(s): *(or Parcel Identification Numbers [PIN] if untitled Crown land)*	PIN 614110, 614111 and 614112	
Centre of site: *(provide latitude/longitude or UTM coordinates)*	Latitude: Longitude:	______ degrees ______ min ______ secs ______ degrees ______ min ______ secs
	UTM Coordinate:	Northing 4865305 Easting 643246
Site Land Use:	Current:	Agricultural, residential and commercial. The land in the immediate vicinity of the CS is used for commercial and residential purposes.
	Proposed:	Community and industrial use as a second international airport to service the Greater Toronto Area
Site Plan	**To delineate the bounds of the Site a site plan MUST be attached. The plan must be drawn to scale indicating the boundaries in relation to well-defined reference points and/or legal descriptions. Delineation of the contamination should also be indicated on the site plan.**	
Provide a brief description of the Site:	The site is located on the east side of Reesor Road, north of the northeast corner of Reesor Road and Major Mackenzie Drive. Access to the site is by Reesor Road to the west of the site. The site is rectangular in shape and occupies an area of approximately 30 ha. The site is designated for agricultural and rural residential use and is occupied by a residence and for commercial purposes by Camp Robin Hood, a children summer camp facility. The majority of the site is occupied by an agricultural field. Access to the site is by Reesor Road to the west of the site. Located on-site are a one and a two-storey, wood-frame house (owner's house) with a footprint of approximately 180 m2; a wood frame and stone foundation U-shaped barn, with a footprint of approximately 600 m2; a two-storey, wood-frame office (baseball office), with a footpring of approximately 70 m2; a one-story wood-frame office (program building), with a footprint of 77 m2 and other structures and sports fields. The Contaminated areas within the Site are located as listed below, - immediately to the south and east of the baseball office. - immediately to the north and west of owner's house. - immediately to the east and west of the program building.	

CCME National Classification System for Contaminated Sites (2008, 2010 v 1.2)
Summary of Site Conditions

Affected media and Contaminants of Potential Concern (COPC):	Soil - antimony, arsenic, barium, copper, lead, selenium and zinc.

Please fill in the "letter" that best describes the level of information available for the site being assessed

Site Letter Grade **D**

If letter grade is F, do not continue, you must have a minimum of a Phase I Environmental Site Assessment or equivalent.

Scoring Completed By:	Rene Rodriguez
Date Scoring Completed:	25-Feb-11

CCME National Classification System for Contaminated Sites (2008, 2010 v 1.2)
User's Guide - Instructions

1) Please review the following overview of contents. The revised CCME National Classification System for Contaminated Sites (NCSCS) consists of a pre-screening checklist, summary of site conditions, summary score sheet, and three instruction/worksheet pages for the user to fill out: Contaminant Characteristics, Migration Potential and Exposure. For ease of printing, the method of evaluation for scoring each section of the worksheet is provided in a separate Instructions tab. Reference material is also provided to assist with the evaluation. A brief description of each sheet is as follows:

Pre-Screening Checklist - Used to determine if the Site can either be considered a Class 1 site (to be remediated immediately) or more information must be collected before the Site can be ranked, or other hazards exist at the Site that must be addressed first before the Site can be ranked using the revised NCSCS.

Site Description Sheet - Summarizes Site information. It also indicates the level of information available (Site Letter Grade) for the site to conduct the NCSCS scoring evaluation. The known/potential contaminants of concern and affected media will also be summarized here.

Contaminant Characteristics Instructions & Worksheet - Prompts the user for information related to the contaminants of potential concern (COPC) found at the site.

Migration Potential Instructions & Worksheet - Prompts the user for information related to physical transport processes which may move contamination to neighboring sites or re-distribute contamination within a site. Migration potential includes many of the exposure pathways, but is not limited to exposure pathways. Migration potential does not require clearly defined receptors.

Exposure Instructions & Worksheet - Prompts the user for information related to exposure pathways and receptors which may be located on the site.

Summary Score Sheet - Generates a total site score by adding up the scores generated on each of the three worksheets and provides the corresponding Site Classification. It also provides an estimate of certainty in the score provided (Certainty Percentage).

Reference Material - Additional information which may be useful to refer to when conducting the evaluation.
- Contaminant Hazard Ranking
- Examples of Persistent Substances
- Examples of Substances in the Various Chemical Classes
- Chemical-specific Properties
- Range of Values of Hydraulic Conductivity and Permeability

The worksheet titles and sub headings are as follows.

I. Contaminant Characteristics

1. Residency Media
2. Chemical Hazard
3. Contaminant Exceedance Factor
4. Contaminant Quantity
5. Modifying Factors

II. Migration Potential

1. Groundwater Movement
2. Surface water Movement
3. Soil
4. Vapour
5. Sediment Movement
6. Modifying Factors

III. Exposure

1. Human Receptors
   - A. Known Impact
   - B Potential
     - a. Land Use
     - b. Accessibility
     - c. Exposure Route
2. Human Modifying Factors
3. Ecological Receptors
   - A. Known Impact
   - B. Potential
     - a. Terrestrial
     - b. Aquatic
4. Ecological Modifying Factors
   - a. Species at Risk
   - b. Aesthetics
5. Other Receptors
   - a. Permafrost

2) This is an electronic form which will prompt the user for information. Based on the answers provided, a score is calculated for the contaminated site in question. In most cases, the user will be asked to select amongst two or more choices in a drop down checklist. To access the drop down checklist, move the mouse towards the right side of the "action box". If a drop down is available, an arrow will appear, which must be selected to access the drop down choices. An "action box" requires input from the user. All action boxes have an amber background.

action box

3) When assigning scores for each factor, it is highly recommended to give a rationale (a column has been provided for this purpose in Worksheets I, II and III). Information that would be useful in justifying the scores assigned may include: a statement of any assumptions, a description of site-specific information, and references for any data sources (e.g., site visit, personal interview, site assessment reports, or other documents consulted).

4) The Site Letter Grade is related to the level of information available for the Site (as defined by the User) and provides an indication of completeness of information based on the level of investigation and remediation work that has been carried out at the site. More detailed descriptions of the various categories are provided below.

Site Letter Grade:	*Detailed Descriptions:*
F	***Pre Phase I ESA –*** No environmental investigations have been conducted or there are only partial or incomplete Phase I ESA for the Site. It is not recommended to continue through the NCSCS when insufficient data are available. In these cases, it will generally be necessary to conduct a Phase I ESA or other site investigation tasks in order to complete the NCSCS scoring.
E	***Phase I ESA –*** A preliminary desk-top type study has been conducted, involving non-intrusive data collection to determine whether there is a potential for the Site to be contaminated and to provide information to direct any intrusive investigations. Data collected may include a review of available information on current site conditions and history of the property, a site inspection and interviews with personnel familiar with the Site. [Note: This stage is similar to "Phase I: Site Information Assessment" as described in Guidance Document on the Management of Contaminated Sites in Canada (CCME 1997).]
D	***Limited Phase II ESA –*** An initial intrusive investigation and assessment of the property has been conducted, generally focusing on potential sources of contamination, to determine whether there is contamination present above the relevant screening guidelines or criteria, and to broadly define soil and groundwater conditions; samples have been collected and analyzed to identify, characterize and quantify contamination that may be present in air, soil, groundwater, surface water or building materials. [Note: This stage is similar to "Phase II: Reconnaissance Testing Program" as described in Guidance Document on the Management of Contaminated Sites in Canada (CCME 1997).]
C	***Detailed Phase II ESA –*** Further intrusive investigations have been conducted to characterize and delineate the contamination, to obtain detailed information on the soil and groundwater conditions, to identify the contaminant pathways, and to provide other information required to develop a remediation plan. [Note: This stage is similar to "Phase III: Detailed Testing Program" as described in Guidance Document on the Management of Contaminated Sites in Canada (CCME 1997).]
B	***Risk Assessment with or without Remedial Plan or Risk Management Strategy –*** A risk assessment has been completed, and if the risk was found to be unacceptable, a site-specific remedial action plan has been designed to mitigate environmental and health concerns associated with the Site, or a risk management strategy has been developed.
A	***Confirmation Sampling –*** Remedial work, monitoring, and/or compliance testing have been conducted and confirmatory sampling demonstrates whether contamination has been removed or stabilized effectively and whether cleanup or risk management objectives have been attained.

5) A few terms are used throughout which require definition, they are as follows:

Known - refers to scores that are assigned based on documented scientific and/or technical observations

Potential - refers to scores that are assigned when something is not known, though it may be suspected

Allowed Potential - If, in a given category, known and potential scores are provided by the user, the checklist will typically default to the "known" score. If a "known" score is provided, the "allowed potential" score will equal zero. Exceptions can be found within the Modifying Factors categories in each worksheet where there are often several independent questions. Therefore, "known" and "potential" scores are allowed to contribute to the total modifying factor score.

Raw - refers to score totals which have not been adjusted down to the total maximum score for the given category. In most cases the possible total raw score is greater than the maximum allowed

Note: For some questions in the worksheets, the option selected will determine whether a "known" or "potential" score is assigned. In these cases, if "Do Not Know" is selected, a score will automatically be listed as "potential", whereas all of the other options in the list will provide a "known" score.

6) Certainty Percentage: The ratio of “Known” to “Potential” responses reflects the relative certainty, or confidence, of the resulting final score and the classification. The NCSCS system defines this ratio as the “Certainty Percentage”. The Certainty Percentage is generated from the number of sections assigned scores based on “known” information divided by the total number of sections. A high percentage indicates that more is known about the Site, and therefore there is more confidence in the ranking, whereas a low percentage suggests that the ranking should be treated with caution.

7) Site Classification Categories: Sites should not be ranked relative to one another. Sites must be classifed on their individual characteristics in order to determine the appropriate classification (Class 1, 2, 3, or N) according to their priority for action, or Class INS (Insufficient Information) for sites that require further information before they can be classifed. The classification groupings are as follows:

Class 1 - High Priority for Action (Total NCSCS Score greater than 70)

The available information indicates that action (e.g., futher site characterization, risk management, remediation, etc.) is required to address existing concerns. Typically, Class 1 sites indicate high concern for several factors, and measured or observed impacts have been documented.

Class 2 - Medium Priority for Action (Total NCSCS Score between 50 and 69.9)

The available information indicates that there is high potential for adverse impacts, although the threat to human health and the environment is generally not imminent. There will tend not to be indication of off-site contamination, however, the potential for this was rated high and therefore some action is likely required.

Class 3 - Low Priority for Action (Total NCSCS Score between 37 and 49.9)

The available information indicates that this site is currently not a high concern. However, additional investigation may be carried out to confirm the site classification, and some degree of action may be required.

Class N - Not a Priority for Action (Total NCSCS Score less than 37)

The available information indicates there is probably no significant environmental impact or human health threats. There is likely no need for action unless new information becomes available indicating greater concerns, in which case the site should be re-examined.

Class INS - Insufficient Information (>15% of Responses are "Do Not Know")

There is insufficient information to classify the site. In this event, additional information is required to address data gaps.

8) Additional Complementary Tools to the NCSCS

The CCME Soil Quality Index (SoQI) is a complementary tool that focuses more on evaluating the relative hazard, by comparing contaminant concentrations with their respective soil quality guidelines. The SoQI uses three factors for its calculations, namely: 1) scope (% of contaminants that do not meet their respective guidelines), 2) frequency (% of individual tests of contaminants that do not meet their respective guidelines), and 3) amplitude (the amount by which the contaminants do not meet their respective guidelines). The soil quality index can be used to compare different contaminated sites with similar types of contamination as well as to see if the jurisdictional requirements have been met after remediation of a particular site.

The NCSCS was not developed for and is not readily applicable for the assessment of sites with a significant marine or aquatic component. Environmental conditions at marine and aquatic sites are best measured in the bed sediments as they act as long-term reservoirs of chemicals to the aquatic environment and to organisms living in or having direct contact with sediments. The CCME Sediment Quality Index (SeQI) provides a convenient means of summarizing sediment quality data and can complement the NCSCS. The SeQI provides a mathematical framework for assessing sediment quality conditions by comparing contaminant concentrations with their respective sediment quality guidelines.

CCME National Classification System (2008, 2010 v 1.2)
(I) Contaminant Characteristics
CS-614110/111/112-1

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method of Evaluation	Notes
1. Residency Media (replaces physical state)				
Which of the following residency media are known (or strongly suspected) to have one or more exceedances of the applicable CCME guidelines? **yes** = has an exceedance or strongly suspected to have an exceedance **no** = does not have an exceedance or strongly suspected not to have an exceedance		Soil was sampled during an Enhanced Phase I ESA conducted by Genivar in December 2009 (reported March 2010) and by Decommissioning Consulting Services Ltd. (DCS) in December 2010. Exceedences of copper, lead, zinc and other metals in soil were identified Ground water has not been investigated; it is not known if it has been impacted. A surface water body is present on the site, a pond used for canoeing located east of the program building. Sediments have not been investigated. It is not known if they have been impacted; however exceedances in sediments are not strongly suspected.	The overall score is calculated by adding the individual scores from each residency media (having one or more exceedance of the most conservative media specific and land-use appropriate CCME guideline). Summary tables of the Canadian Environmental Quality Guidelines for soil, water (aquatic life, non-potable groundwater environments, and agricultural water uses) and sediment are available on the CCME website at http://www.ccme.ca/publications/ceqg_rcqe.html?category_id=124 For potable groundwater environments, guidelines for Canadian Drinking Water Quality (for comparison with groundwater monitoring data) are available on the Health Canada website at http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/doc_sup-appui/sum_guide-res_recom/index_e.html.	An increasing number of residency media containing chemical exceedances often equates to a greater potential risk due to an increase in the number of potential exposure pathways.
A. Soil	Yes			
Yes No Do Not Know				
B. Groundwater	Do Not Know			
Yes No Do Not Know				
C. Surface water	Yes			
Yes No Do Not Know				
D. Sediment	No			
Yes No Do Not Know				
"Known" -score	4			
"Potential" - score	1			
2. Chemical Hazard				
What is the relative degree of chemical hazard of the contaminant in the list of hazard rankings proposed by the Federal Contaminated Sites Action Plan (FCSAP)?	High	Antimony, arsenic, barium, copper, selenium, lead and zinc contamination was identified. Barium, copper and zinc have a Contaminant Hazard Ranking (CHR) of Low; selenimu has a CHR of Medium; and antimony, arsenic and lead have a CHR of High.	The relative degree of chemical hazard should be selected based on the most hazardous contaminant known or suspected to be present at the site. The degree of hazard has been defined by the Federal Contaminated Sites Action Plan (FCSAP) and a list of substances with their associated hazard (Low, Medium and High) has been provided as a separate sheet in this file. *See Attached Reference Material for Contaminant Hazard Rankings.*	Hazard as defined in the revised NCS pertains to the physical properties of a chemical which can cause harm. Properties can include toxic potency, propensity to biomagnify, persistence in the environment, etc. Although there is some overlap between hazard and contaminant exceedance factor below, it will not be possible to derive contaminant exceedance factors for many substances which have a designated chemical hazard designation, but don't have a CCME guideline. The purpose of this category is to avoid missing a measure of toxic potential.
High Medium Low Do Not Know				
"Known" -score	8			
"Potential" - score	---			
3. Contaminant Exceedence Factor				
What is the ratio between the measured contaminant concentration and the applicable CCME guidelines (or other "standards")?	Low (1x to 10x)	The highest reported antimony concentration is 74.4 µg/g which is approximately 3.7 times above the CCME R/P SQG of 20 µg/g. The highest reported arsenic concentration is 30.9 µg/g which is approximately 2.5 times above the CCME R/P SQG of 12 µg/g.The highest reported barium concentration is 1,290 µg/g which is approximately 2.5 times above the CCME R/P SQG of 500 µg/g. The highest reported copper concentration is 330 µg/g which is approximately 5.2 times above the CCME R/P SQG of 63 µg/g. The highest reported lead concentration is 437 µg/g which is approximately 3.1 times above the CCME R/P SQG of 140 µg/g. The highest reported selenium concentration is 4.2 µg/g which is approximately 4.2 times above the CCME R/P SQG of 1 µg/g.The highest reported zinc concentration is 1,670 µg/g which is approximately 8.3 times above the CCME R/P SQG of 200 µg/g.	Ranking of contaminant "exceedance" is determined by comparing contaminant concentrations with the *most conservative media-specific and land-use appropriate CCME* environmental quality guidelines. **Ranking should be based on contaminant with greatest exceedance of CCME guidelines.** Ranking of contaminant hazard as high, medium and low is as follows: High = One or more measured contaminant concentration is greater than 100 X appropriate CCME guidelines Medium = One or more measured contaminant concentration is 10 - 99.99 X appropriate CCME guidelines Low = One or more measured contaminant concentration is 1 - 9.99 X appropriate CCME guidelines Mobile NAPL = Contaminant is a non-aqueous phase liquid (i.e., due to its low solubility, it does not dissolve in water, but remains as a separate liquid) and is present at a sufficiently high saturation (i.e., greater than residual NAPL saturation) such that there is significant potential for mobility either downwards or laterally. Other standards may include local background concentration or published toxicity benchmarks. Results of toxicity testing with site samples can be used as an alternative. This approach is only relevant for contaminants that do not biomagnify in the food web, since toxicity tests would not indicate potential effects at higher trophic levels. High = lethality observed. Medium = no lethality, but sub lethal effects observed. Low = neither lethal nor sub lethal effects observed.	In the event that elevated levels of a material with no associated CCME guidelines are present, check provincial and USEPA environmental criteria. Hazard Quotients (sometimes referred to as a screening quotient in risk assessments) refer to the ratio of measured concentration to the concentration believed to be the threshold for toxicity. A similar calculation is used here to determine the contaminant exceedance factor (CEF). Concentrations greater than one times the applicable CCME guideline (i.e., CEF=>1) indicate that risks are possible. Mobile NAPL has the highest associated score (8) because of its highly concentrated nature and potential for increase in the size of the impacted zone.
Mobile NAPL High (>100x) Medium (10x to 100x) Low (1x to 10x) Do Not Know				
"Known" -score	2			
"Potential" - score	---			

CCME National Classification System (2008, 2010 v 1.2)

(I) Contaminant Characteristics

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Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method of Evaluation	Notes
4. Contaminant Quantity (known or strongly suspected)				
What is the known or strongly suspected quantity of all contaminants? >10 hectare (ha) or 5000 m^3 2 to 10 ha or 1000 to 5000 m^3 <2 ha or 1000 m^3 Do Not Know	<2 ha or 1000 m3	Approximately 135 m^3 of metals contaminated soils were estimated as being present at the contaminated sites based on inferred lateral distances and soil depths of contamination.	Measure or estimate the area or quantity of total contamination (i.e, all contaminants known or strongly suspected to be present on the site). The "Area of Contamination" is defined as the area or volume of contaminated media (soil, sediment, groundwater, surface water) exceeding appropriate environmental criteria.	A larger quantity of a potentially toxic substance can result in a larger frequency of exposure as well as a greater probability of migration, therefore, larger quantities of these substances earn a higher score.
"Known" -score	2			
"Potential" - score	---			
5. Modifying Factors				
Does the chemical fall in the class of persistent chemicals based on its behavior in the environment? Yes No Do Not Know	No	The metals present, which according to the Method of Evaluation listed on this sheet, are not to be classified as persistent substances. It is noted that alkylated lead is a persistent substance, however alkylated lead (as from a leaded fuel source) is not expected at the CS.	Persistent chemicals, e.g., PCBs, chlorinated pesticides etc. either do not degrade or take longer to degrade, and therefore may be available to cause effects for a longer period of time. Canadian Environmental Protection Act (CEPA) classifies a chemical as persistent when it has at least one of the following characteristics: (a) in air, (i) its half-life is equal to or greater than 2 days, or (ii) it is subject to atmospheric transport from its source to a remote area; (b) in water, its half-life is equal to or greater than 182 days; (c) in sediments, its half-life is equal to or greater than 365 days; or (d) in soil, its half-life is equal to or greater than 182 days. This list does not include metals or metalloids, which in their elemental form do not degrade. However metals and metalloids form chemical species in the environment, many of which are not readily bioavailable.	*Examples of Persistent Substances are provided in attached Reference Materials*
Are there contaminants present that could cause damage to utilities and infrastructure, either now or in the future, given their location? Yes No Do Not Know	No	The metals contaminants present are not suspected to cause damage to utilities and infrastructure.		Some contaminants may react or absorb into underground utilities and infrastructure. For example, organic solvents may degrade some plastics, and salts could cause corrosion of metal.
How many different contaminant classes have representative CCME guideline exceedances? one two to four five or more Do Not Know	One	Only antimony, arsenic, barium, copper, lead, selenium and zinc metals CCME SQG exceedances were exhibited at the contaminated sites, therefore, only one contaminant class is present.	For the purposes of the revised NCS ranking system, the following chemicals represent distinct chemical "classes": inorganic substances (including metals), volatile petroleum hydrocarbons, light extractable petroleum hydrocarbons, heavy extractable petroleum hydrocarbons, PAHs, phenolic substances, chlorinated hydrocarbons, halogenated methanes, phthalate esters, pesticides.	*Refer to the Reference Material sheet for a list of example substances that fall under the various chemical classes.*
"Known" - Score	0			
"Potential" - Score	---			

Contaminant Characteristic Total

Raw Total Scores- "Known"	16
Raw Total Scores- "Potential"	1
Raw Combined Total Scores	17
Total Score (Raw Combined / 40 * 33)	**14.0**

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
1. Groundwater Movement				
A. Known COPC exceedances and an operable groundwater pathway within and/or beyond the property boundary.				
i) For **potable groundwater environments**, 1) groundwater concentrations exceed background concentrations and 1X the Guideline for Canadian Drinking Water Quality (GCDWQ) or 2) there is known contact of contaminants with groundwater, based on physical evidence of groundwater contamination. For **non-potable environments** (typically urban environments with municipal services), 1) groundwater concentrations exceed 1X the applicable non potable guidelines or modified generic guidelines (which exclude ingestion of drinking water pathway) or 2) there is known contact of contaminants with groundwater, based on physical evidence of groundwater impacts. ii) Same as (i) except the information is not known but <u>strongly suspected</u> based on indirect observations. iii) Meets GCDWQ for **potable environments**; meets non-potable criteria or modified generic criteria (excludes ingestion of drinking water pathway) for **non-potable environments** **or** Absence of groundwater exposure pathway (i.e., there is no aquifer (see definition at right) at the site or there is an adequate isolating layer between the aquifer and the contamination, and within 5 km of the site there are no aquatic receiving environments and the groundwater does not daylight). Score	12 9 0 Go to Potential ---	Ground water has not been investigated; it is not known if it has been impacted.	Review chemical data and evaluate groundwater quality. The evaluation method concentrates on 1) a potable or non-potable groundwater environment; 2) the groundwater flow system and its potential to be an exposure pathway to known or potential receptors An aquifer is defined as a geologic unit that yields groundwater in usable quantities and drinking water quality. The aquifer can currently be used as a potable water supply or could have the potential for use in the future. Non-potable groundwater environments are defined as areas that are serviced with a reliable alternative water supply (most commonly provided in urban areas). The evaluation of a non-potable environment will be based on a site specific basis. Physical evidence includes significant sheens, liquid phase contamination, or contaminant saturated soils. Seeps and springs are considered part of the groundwater pathway. In Arctic environments, the potability and evaluation of the seasonal active layer (above the permafrost) as a groundwater exposure pathway will be considered on a site-specific basis.	The 1992 NCS rationale evaluated the off-site migration as a regulatory issue. The exposure assessment and classification of hazards should be evaluated regardless of the property boundaries. Someone experienced must provide a thorough description of the sources researched to determine the presence/absence of a groundwater supply source in the vicinity of the contaminated site. This information must be documented in the NCS Site Classification Worksheet including contact names, phone numbers, e-mail correspondence and/or reference maps/reports and other resources such as internet links. Note that for potable groundwater that also daylights into a nearby surface water body, the more stringent guidelines for both drinking water and protection of aquatic life should be considered. **Selected References** <u>Potable Environments</u> Guidelines for Canadian Drinking Water Quality: <u>www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/doc_sup-appui/sum_guide-res_recom/index_e.html</u> <u>Non-Potable Environments</u> Canadian Water Quality Guidelines for Protection of Aquatic Life. CCME. 1999 <u>www.ccme.ca</u> Compilation and Review of Canadian Remediation Guidelines, Standards and Regulations. Science Applications International Corporation (SAIC Canada), report to Environment Canada, January 4, 2002.
NOTE: If a score is assigned here for Known COPC Exceedances, then you can skip Part B (Potential for groundwater pathway) and go to Section 2 (Surface Water Pathway)				
B. Potential for groundwater pathway.				
a. Relative Mobility High Moderate Low Insignificant Do Not Know Score	Insignificant 0	pH of soils in the contaminated site was measured at 7.21 (neutral). In neutral soils, metals generally have an insignificant mobility.	Organics Koc (L/kg) / Metals with higher mobility at acidic conditions / Metals with higher mobility at alkaline conditions Koc < 500 (i.e., log Koc < 2.7) / pH < 5 / pH > 8.5 Koc = 500 to 5000 (i.e., log Koc = 2.7 to 3.7) / pH = 5 to 6 / pH = 7.5 to 8.5 Koc = 5,000 to 100,000 (i.e., log Koc = 3.7 to 5) / pH > 6 / pH < 7.5 Koc > 100,000 (i.e., log Koc > 5)	Reference: US EPA Soil Screening Guidance (Part 5 - Table 39) If a score of zero is assigned for relative mobility, it is still recommended that the following sections on potential for groundwater pathway be evaluated and scored. Although the Koc of an individual contaminant may suggest that it will be relatively immobile, it is possible that, with complex mixtures, there could be enhanced mobility due to co-solvent effects. Therefore, the Koc cannot be relied on solely as a measure of mobility. An evaluation of other factors such as containment, thickness of confining layer, hydraulic conductivities and precipitation infiltration rate are still useful in predicting potential for groundwater migration, even if a contaminant is expected to have insignificant mobility based on its chemistry alone.
b. Presence of engineered sub-surface containment? No containment Partial containment Full containment Do Not Know Score	No containment 3	There are no known sub-surface containment facilities on the contaminated sites.	Review the existing engineered systems or natural attenuation processes for the site and determine if full or partial containment is achieved. Full containment is defined as an engineered system or natural attenuation processes, monitored as being effective, which provide for full capture and/or treatment of contaminants. All chemicals of concern must be contained for "Full Containment" scoring. Natural attenuation must have sufficient data, and reports cited with monitoring data to support steady state conditions and the attenuation processes. If there is no containment or insufficient natural attenuation process, this category is evaluated as high. If there is less than full containment or if uncertain, then evaluate as medium. In Arctic environments, permafrost will be evaluated, as appropriate, based on detailed evaluations, effectiveness and reliability to contain/control contaminant migration.	Someone experienced must provide a thorough description of the sources researched to determine the containment of the source at the contaminated site. This information must be documented in the NCS Site Classification Worksheet including contact names, phone numbers, e-mail correspondence and/or reference maps, geotechnical reports or natural attenuation studies and other resources such as internet links. **Selected Resources:** United States Environmental Protection Agency (USEPA) 1998. Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater. EPA/600/R-98/128. Environment Canada – Ontario Region – Natural Attenuation Technical Assistance Bulletins (TABS) Number 19 –21.
c. Thickness of confining layer over aquifer of concern or groundwater exposure pathway 3 m or less including no confining layer or discontinuous confining layer 3 to 10 m > 10 m Do Not Know Score	3 m or less 1	The native soils at the site are comprised of a clayey silt (Halton) till which would be considered to have a low hydraulic ocnductivity, however, a subsurface investigation, which woud provide depth and type of confining layer over the aquifer of concern or the groundwater exposure pathwayhas not been performed. No confining layer has been assumed.	The term "confining layer" refers to geologic material with little or no permeability or hydraulic conductivity (such as unfractured clay); water does not pass through this layer or the rate of movement is extremely slow. Measure the thickness and extent of materials that will impede the migration of contaminants to the groundwater exposure pathway. The evaluation of this category is based on: 1) The presence and thickness of saturated subsurface materials that impede the vertical migration of contaminants to lower aquifer units which can or are used as drinking water sources or 2) The presence and thickness of unsaturated subsurface materials that impede the vertical migration of contaminants from the source location to the saturated zone (e.g., water table aquifer, first hydrostratigraphic unit or other groundwater pathway).	

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
d. Hydraulic conductivity of confining layer $>10^{-4}$ cm/s or no confining layer 10^{-4} to 10^{-6} cm/s $<10^{-6}$ cm/s Do Not Know Score	10-4 to 10-6 cm/s 0.5	Based on a review of Map 2556, Quaternary Geology of Ontario, Southern Ontario (1991), the native soils at the site are comprised of a clayey silt (Halton) till which would be considerd to have a low hydraulic conductivity between 10^{-4} to 10^{-10} cm/s.	Determine the nature of geologic materials and estimate hydraulic conductivity from published material (or use "Range of Values of Hydraulic Conductivity and Permeability" figure in the Reference Material sheet). Unfractured clays should be scored low. Silts should be scored medium. Sand, gravel should be scored high. The evaluation of this category is based on: 1) The presence and hydraulic conductivity ("K") of saturated subsurface materials that impede the vertical migration of contaminants to lower aquifer units which can or are used as a drinking water source, groundwater exposure pathway or 2) The presence and permeability ("k") of unsaturated subsurface materials that impede the vertical migration of contaminants from the source location to the saturated water table aquifer, first hydrostratigraphic unit or other groundwater pathway.	
B. Potential for groundwater pathway.				
e. Precipitation infiltration rate (Annual precipitation factor x surface soil relative permeability factor) High Moderate Low Very Low None Do Not Know Score	Low 0.4	Average annual precipitation at the closest known weather station to the site (i.e., Stouffville WPCP) is 868.6 mm (Environment Canada National Climate Data and Information Archive). Assumed topsoil surface soil present in the contaminated site (i.e., a loam) has a permeability factor of 0.3. 0.87 x 0.3 = 0.26, therefore select infiltration rate of 0.4.	Precipitation Refer to Environment Canada precipitation records for relevant areas. Divide annual precipitation by 1000 and round to nearest tenth (e.g., 667 mm = 0.7 score). Permeability For surface soil relative permeability (i.e., infiltration) assume: gravel (1), sand (0.6), loam (0.3) and pavement or clay (0). Multiply the surface soil relative permeability factor with precipitation factor to obtain the score for precipitation infiltration rate.	
f. Hydraulic conductivity of aquifer $>10^{-2}$ cm/s 10^{-2} to 10^{-4} cm/s $<10^{-4}$ cm/s Do Not Know Score	<10-4 cm/s 0	The native soils at the site are comprised of a clayey silt (Halton) till which would be considerd to have a low hydraulic conductivity between 10^{-4} to 10^{-10} cm/s.	Determine the nature of geologic materials and estimate hydraulic conductivity of all aquifers of concern from published material (refer to "Range of Values of Hydraulic Conductivity and Permeability" in the Reference Material sheet).	
Potential groundwater pathway total	4.9			
Allowed Potential score	4.9	Note: If a "known" score is provided, the "potential" score is disallowed.		
Groundwater pathway total	**4.9**			
2. Surface Water Movement				
A. Demonstrated migration of COPC in surface water above background conditions				
Known concentrations of surface water: i) Concentrations exceed background concentrations and exceed CCME CWQG for protection of aquatic life, irrigation, livestock water, and/or recreation (whichever uses are applicable at the site) by >1 X; or There is known contact of contaminants with surface water based on site observations. or In the absence of CWQG, chemicals have been proven to be toxic based on site specific testing (e.g. toxicity testing; or other indicator testing of exposure). ii) Same as (i) except the information is not known but strongly suspected based on indirect observations. iii) Meets CWQG or absence of surface water exposure pathway (i.e., Distance to nearest surface water is > 5 km.) Score	12 8 0 Go to Potential ---	There is a permanent water body on the site, a pond east of contaminated area by the program building. There is no information to assess migration of COPC in surface water.	Collect all available information on quality of surface water near to site. Evaluate available data against Canadian Water Quality Guidelines (select appropriate guidelines based on local water use, e.g., recreation, irrigation, aquatic life, livestock watering, etc.). The evaluation method concentrates on the surface water flow system and its potential to be an exposure pathway. Contamination is present on the surface (above ground) and has the potential to impact surface water bodies. Surface water is defined as a water body that supports one of the following uses: recreation, irrigation, livestock watering, aquatic life.	General Notes: Someone experienced must provide a thorough description of the sources researched to classify the surface water body in the vicinity of the contaminated site. This information must be documented in the NCS Site Classification Worksheet including contact names, phone numbers, e-mail correspondence and/or reference maps/reports and other resource such as internet links. Selected References: CCME. 1999. Canadian Water Quality Guidelines for the Protection of Aquatic Life www.ccme.ca CCME. 1999. Canadian Water Quality Guidelines for the Protection of Agricultural Water Uses (Irrigation and Livestock Water) www.ccme.ca Health and Welfare Canada. 1992. Guidelines for Canadian Recreational Water Quality.
NOTE: If a score is assigned here for Demonstrated Migration in Surface Water, then you can skip Part B (Potential for migration of COPCs in surface water) and go to Section 3 (Surface Soils)				

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
B. Potential for migration of COPCs in surface water				
a. Presence of containment No containment Partial containment Full containment Do Not Know Score	No containment 5	No containment structures are present on the site.	Review the existing engineered systems and relate these structures to site conditions and proximity to surface water and determine if full containment is achieved: score low if there is full containment such as capping, berms, dikes; score medium if there is partial containment such as natural barriers, trees, ditches, sedimentation ponds; score high if there are no intervening barriers between the site and nearby surface water. Full containment must include containment of all chemicals.	
b. Distance to Surface Water 0 to <100 m 100 - 300 m >300 m Do Not Know Score	0 to <100 m 3	The distance to the closest surface water body is to the Canoeing Pond, some 5 m east of contaminated area by the program building.	Review available mapping and survey data to determine distance to nearest surface water bodies.	
c. Topography Contaminants above ground level and slope is steep Contaminants at or below ground level and slope is steep Contaminants above ground level and slope is intermediate Contaminants at or below ground level and slope is intermediate Contaminants above ground level and slope is flat Contaminants at or below ground level and slope is flat Do Not Know Score	At/below and flat 0	Metals contaminated soil at ground level extending below ground surface and the site is generally flat and level.	Review engineering documents on the topography of the site and the slope of surrounding terrain. Steep slope = >50% Intermediate slope = between 5 and 50% Flat slope = < 5% Note: Type of fill placement (e.g., trench, above ground, etc.).	
d. Run-off potential High (rainfall run-off score > 0.6) Moderate (0.4 < rainfall run-off score <0.6) Low (0.2 < rainfall run-off score <0.4) Very Low (0 < rainfall run-off score < 0.2) None (rainfall run-off score = 0) Do Not Know Score	Moderate 0.6	Average annual precipitation at the closest known weather station to the site (i.e., Stouffville WPCP) is 868.6 mm (Environment Canada National Climate Data and Information Archive). Assumed topsoil surface soil present in the contaminated site (i.e., a loam) has a permeability factor of 0.6. 0.87 x 0.6 = 0.52, therefore select potential runoff of 0.6.	Rainfall Refer to Environment Canada precipitation records for relevant areas. Divide rainfall by 1000 and round to nearest tenth (e.g., 667 mm = 0.7 score). The former definition of "annual rainfall" did not include the precipitation as snow. This minor adjustment has been made. The second modification was the inclusion of permeability of surface materials as an evaluation factor. Permeability For infiltration assume: gravel (0), sand (0.3), loam (0.6) and pavement or clay (1). Multiply the infiltration factor with precipitation factor to obtain rainfall run off score.	Selected Sources: Environment Canada web page link: www.msc.ec.gc.ca Snow to rainfall conversion apply ratio of 15 (snow):1(water)
e. Flood potential 1 in 2 years 1 in 10 years 1 in 50 years Not in floodplain Do Not Know Score	Not in floodplain 0	The site is not located within or adjacent to a surface water body that would be prone to flooding (i.e., not in a floodplain) therefore there is limited flood potential.	Review published data such as flood plain mapping or flood potential (e.g., spring or mountain run-off) and Conservation Authority records to evaluate flood potential of nearby water courses both up and down gradient. Rate zero if site not in flood plain.	
Potential surface water pathway total Allowed Potential score **Surface water pathway total**	8.6 8.6 **8.6**	Note: If a "known" score is provided, the "potential" score is disallowed.		
3. Surface Soils (potential for dust, dermal and ingestion exposure)				
A. Demonstrated concentrations of COPC in surface soils (top 1.5 m)				
COPCs measured in surface soils exceed the CCME soil quality guideline. Strongly suspected that soils exceed guidelines COPCs in surface soils does not exceed the CCME soil quality guideline or is not present (i.e., bedrock). Score	12 9 0 12 12	Exceedances to the CCME R/P SQGs metals were exhibited from surface grade to at least 0.75 m depth.	Collect all available information on quality of surface soils (i.e., top 1.5 metres) at the site. Evaluate available data against Canadian Soil Quality Guidelines. Select appropriate guidelines based on current (or proposed future) land use (i.e., agricultural, residential/parkland, commercial, or industrial), and soil texture if applicable (i.e., coarse or fine).	Selected References: CCME. 1999. Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health www.ccme.ca
NOTE: If a score is assigned here for Demonstrated Concentrations in Surface Soils, then you can skip Part B (Potential for a surface soils migration pathway) and go to Section 4 (Vapour)				

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
B. Potential for a surface soils (top 1.5 m) migration pathway				
a. Are the soils in question covered? Exposed Vegetated Landscaped Paved Do Not Know	Vegetated	The contaminated soils at the contaminiated sites are under a lawn.	Consult engineering or risk assessment reports for the site. Alternatively, review photographs or perform a site visit. Landscaped surface soils must include a minimum of 0.5 m of topsoil.	The possibility of contaminants in blowing snow have not been included in the revised NCS as it is difficult to assess what constitutes an unacceptable concentration and secondly, spills to snow or ice are most efficiently mitigated while freezing conditions remain.
Score	4			
b. For what proportion of the year does the site remain covered by snow? 0 to 10% of the year 10 to 30% of the year More than 30% of the year Do Not Know	0-10% of year	Number of days with >= 5 mm of snow cover for the Sotuffville WPCP area is 10.2 days or 2.8 % of the year (Environment Canada National Climate Data and Information Archive).	Consult climatic information for the site. The increments represent the full span from soils which are always wet or covered with snow (and therefore less likely to generate dust) to those soils which are predominantly dry and not covered by snow (and therefore are more likely to generate dust).	
Score	6			
Potential surface soil pathway total	10			
Allowed Potential score	---	**Note: If a "known" score is provided, the "potential" score is disallowed.**		
Soil pathway total	**12**			
4. Vapour				
A. Demonstrated COPCs in vapour.				
Vapour has been measured (indoor or outdoor) in concentrations exceeding risk based concentrations.	12	Metals contaminated soils cannot release vapours. No potential for volatile hydrocarbons are expected.	Consult previous investigations, including human health risk assessments, for reports of vapours detected.	
Strongly suspected (based on observations and/or modelling)	9			
Vapour has not been measured and volatile hydrocarbons have not been found in site soils or groundwater.	0			
	0			
Score	0			
NOTE: If a score is assigned here for Demonstrated COPCs in Vapour, then you can skip Part B (Potential for COPCs in vapour) and go to Section 5 (Sediment)				
B. Potential for COPCs in vapour				
a. Relative Volatility based on Henry's Law Constant, H' (dimensionless) High (H' > 1.0E-1) Moderate (H' = 1.0E-1 to 1.0E-3) Low (H' < 1.0E-3) Not Volatile Do Not Know	Do Not Know		Reference: US EPA Soil Screening Guidance (Part 5 - Table 36) *Provided in Attached Reference Materials*	If the Henry's Law Constant for a substance indicates that it is not volatile, and a score of zero is assigned here for relative volatility, then the other three questions in this section on Potential for COPCs will be automatically assigned scores of zero and you can skip to section 5.
Score	2.5			
b. What is the soil grain size? Fine Coarse Do Not Know	Do Not Know		Review soil permeability data in engineering reports. The greater the permeability of soils, the greater the possible movement of vapours. Fine-grained soils are defined as those which contain greater than 50% by mass particles less than 75 µm mean diameter (D50 < 75 µm). Coarse-grained soils are defined as those which contain greater than 50% by mass particles greater than 75 µm mean diameter (D50 > 75 µm).	
Score	3			
c. Is the depth to the source less than 10m? Yes No Do Not Know	Do Not Know		Review groundwater depths below grade for the site.	
Score	1			
d. Are there any preferential pathways? Yes No Do Not Know	Do Not Know		Visit the site during dry summer conditions and/or review available photographs. Where bedrock is present, fractures would likely act as preferential pathways.	Preferential pathways refer to areas where vapour migration is more likely to occur because there is lower resistance to flow than in the surrounding materials. For example, underground conduits such as sewer and utility lines, drains, or septic systems may serve as preferential pathways. Features of the building itself that may also be preferential pathways include earthen floors, expansion joints, wall cracks, or foundation perforations for subsurface features such as utility pipes, sumps, and drains.
Score	1			
Potential vapour pathway total	7.5			
Allowed Potential score	---	Note: If a "known" score is provided, the "potential" score is disallowed.		
Vapour pathway total	**0**			

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
5. Sediment Movement				
A. Demonstrated migration of sediments containing COPCs				
There is evidence to suggest that sediments originally deposited to the site (exceeding the CCME sediment quality guidelines) have migrated.	12	The canoeing pond is located approximately 5 m east of the contaminated area located south and east from the program building. An investigation of the sediments in this pond has not been performed.	Review sediment assessment reports. Evidence of migration of contaminants in sediments must be reported by someone experienced in this area.	Usually not considered a significant concern in lakes/marine environments, but could be very important in rivers where transport downstream could be significant.
Strongly suspected (based on observations and/or modelling)	9			
Sediments have been contained and there is no indication that sediments will migrate in future. **or** Absence of sediment exposure pathway (i.e., within 5 km of the site there are no aquatic receiving environments, and therefore no sediments).	0			
	Go to Potential			
Score	---			
NOTE: If a score is assigned here for Demonstrated Migration of Sediments, then you can skip Part B (Potential for Sediment Migration) and go to Section 6 (Modifying Factors)				
B. Potential for sediment migration				
a. Are the sediments having COPC exceedances capped with sediments having no exceedances ("clean sediments")?	Do Not Know	There is no information to assess the potential for sediment migration.	Review existing sediment assessments. If sediment coring has been completed, it may indicate that historically contaminated sediments have been covered over by newer "clean" sediments. This assessment will require that cores collected demonstrate a low concentration near the top and higher concentration with sediment depth.	
Yes No Do Not Know	2			
b. For lakes and marine habitats, are the contaminated sediments in shallow water and therefore likely to be affected by tidal action, wave action or propeller wash?	Do Not Know		Review existing sediment assessments. If the sediments present at the site are in a river, select "no" for this question.	
Yes No Do Not Know	2			
c. For rivers, are the contaminated sediments in an area prone to sediment scouring?	Do Not Know		Review existing sediment assessments. It is important that the assessment is made under worst case flows (high yearly flows). Under high yearly flows, areas which are commonly depositional	
Yes No Do Not Know	2			
Potential sediment pathway total	6			
Allowed Potential score	6	Note: If a "known" score is provided, the "potential" score is disallowed.		
Sediment pathway total	**6**			
6. Modifying Factors				
Are there subsurface utility conduits in the area affected by contamination?	No	Subsurface utilities would not be affected by metals contaminated soils.	Consult existing engineering reports. Subsurface utilities can act as conduits for contaminant migration.	
Yes No Do Not Know				
Known	0			
Potential	0			

Migration Potential Total

Raw "known" total	12	
Raw "potential" total	19.5	
Raw combined total	31.5	Note: If "Known" and "Potential" scores are provided, the checklist defaults to known. Therefore,
Total (max 33)	**16.2**	the total "Potential" Score may not reflect the sum of the individual "Potential" scores.

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
1. Human				
A. Known exposure				
Documented adverse impact or high quantified exposure which has or will result in an adverse effect, injury or harm or impairment of the safety to humans as a result of the contaminated site. (Class 1 Site*) Same as above, but "Strongly Suspected" based on observations or indirect evidence. No quantified or suspected exposures/impacts in humans. Score	22 10 0 Go to Potential ---	There is no documented adverse impacts on humans related to the metals contaminated soils identified at the contaminated sites, however, there is exposure potential to the residents, park patrons and PWGSC personnell and contractors conducting site visits.	*Where adverse effects on humans are documented, the site should be automatically designated as a Class 1 site (i.e., action required). There is no need to proceed through the NCS in this case. However, a scoring guideline (22) is provided in case a numerical score for the site is still desired (e.g., for comparison with other Class 1 sites). This category can be based on the outcomes of risk assessments and applies to studies which have reported Hazard Quotients >1 for noncarcinogenic chemicals and incremental cancer risks that exceed acceptable levels defined by the jurisdiction for carcinogenic chemicals (for most jurisdictions this is typically either $>10^{-5}$ or $>10^{-6}$). Known impacts can also be evaluated based on blood testing (e.g. blood lead >10 ug/dL) or other health based testing. This category can be based on the outcomes of risk assessments and applies to studies which have reported Hazard Quotients of less than 0.2 for non-carcinogenic chemicals and incremental lifetime cancer risks for carcinogenic chemicals that are within acceptable levels as defined by the jurisdiction (for most jurisdictions this is less than either 10^{-6} or 10^{-5}).	Known adverse impact includes domestic and traditional food sources. Adverse effects based on food chain transfer to humans and/or animals can be scored in this category. However, the weight of evidence must show a direct link of a contaminated food source/supply and subsequent ingestion/transfer to humans. Any associated adverse effects to the environment are scored separately later in this worksheet. Someone experienced must provide a thorough description of the sources researched to evaluate and determine the quantified exposure/impact (adverse effect) in the vicinity of the contaminated site. **Selected References:** Health Canada – Federal Contaminated Site Risk Assessment in Canada Parts 1 and 2 Guidance on Human Heath Screening Level Risk Assessments (www.hc-sc.gc.ca/ewh-semt/pubs/contamsite/index_e.html) United States Environmental Protection Agency, Integrated Risk Information System (IRIS) – http://toxnet.nml.nih.gov
NOTE: If a score is assigned here for Known Exposure, then you can skip Part B (Potential for Human Exposure) and go to Section 2 (Human Exposure Modifying Factors)				
B. Potential for human exposure				
a) Land use (provides an indication of potential human exposure scenarios) Agricultural Residential / Parkland Commercial Industrial Do Not Know Score	Res / Parkland 2	The site is currently used for agricultural, commercial and residential purposes however, the contaminated areas are located in the western portion of the site that is residential.	Review zoning and land use maps over the distances indicated. If the proposed future land use is more "sensitive" than the current land use, evaluate this factor assuming the proposed future use is in place. Agricultural land use is defined as uses of land where the activities are related to the productive capability of the land or facility (e.g., greenhouse) and are agricultural in nature, or activities related to the feeding and housing of animals as livestock. Residential/Parkland land uses are defined as uses of land on which dwelling on a permanent, temporary, or seasonal basis is the activity (residential), as well as uses on which the activities are recreational in nature and require the natural or human designed capability of the land to sustain that activity (parkland). Commercial/Industrial land uses are defined as land on which the activities are related to the buying, selling, or trading of merchandise or services (commercial), as well as land uses which are related to the production, manufacture, or storage of materials (industrial).	This is the main "receptor" factor used in site scoring. A higher score implies a greater exposure and/or exposure of more sensitive human receptors (e.g., children).
b. Indicate the level of accessibility to the contaminated portion of the site (e.g., the potential for coming in contact with contamination) Limited barriers to prevent site access; contamination not covered Moderate access or no intervening barriers, contaminants are covered. Remote locations in which contaminants not covered. Controlled access or remote location and contaminants are covered Do Not Know Score	Access, not covered 2	Access to the site is by municipal road and is not restricted and the contaminated soils at the contaminated site are exposed at surface.	Review location and structures and contaminants at the site and determine if there are intervening barriers between the site and humans. A low rating should be assigned to a (covered) site surrounded by a fence or in a remote location, whereas a high score should be assigned to a site that has no cover, fence, natural barriers or buffer.	
B. Potential for human exposure				
c) Potential for intake of contaminated soil, water, sediment or foods for operable or potentially operable pathways, as identified in Worksheet II (Migration Potential). i) direct contact Is dermal contact with contaminated surface water, groundwater, sediments or soils anticipated? Yes No Do Not Know Score	Yes 3	There is exposure potential to the residents, park patrons and PWGSC personnell and contractors conducting site visits.	If soils or potable groundwater are present exceeding their respective CCME guidelines, dermal contact is assumed. Exposure to surface water, non-potable groundwater or sediments exceeding their respective CCME guidelines will depend on the site. Select "Yes" if dermal exposure to surface water, non-potable groundwater or sediments is expected. For instance, dermal contact with sediments would not be expected in an active port. Only soils in the top 1.5 m are defined by CCME (2003) as surface soils. If contaminated soils are only located deeper than 1.5 m, direct contact with soils is not anticipated to be an operable contaminant exposure pathway.	Exposure via the skin is generally believed to be a minor exposure route. However for some organic contaminants, skin exposure can play a very important component of overall exposure. Dermal exposure can occur while swimming in contaminated waters, bathing with contaminated surface water/groundwater and digging in contaminated dirt, etc.

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
ii) inhalation (i.e., inhalation of dust, vapour) Vapour - Are there inhabitable buildings on the site within 30 m of soils or groundwater with volatile contamination as determined in Worksheet II (Migration Potential)? Yes No Do Not Know	No	Metals contaminated soils at the contaminated site cannot release vapours. No potential for volatile hydrocarbons are expected.	If inhabitable buildings are on the site within 30 m of soils or groundwater exceeding their respective guidelines for volatile chemicals, there is a potential of risk to human health (Health Canada, 2004). Review site investigations for location of soil samples (having exceedances of volatile substances) relative to buildings. Refer to (II) Migration Potential worksheet, 4B.a), *Potential for COPCs in Vapour* for a definition of volatility.	Exposure via the lungs (inhalation) can be a very important exposure pathway. Inhalation can be via both particulates (dust) and gas (vapours). Vapours can be a problem where buildings have been built on former industrial sites or where volatile contaminants have migrated below buildings resulting in the potential for vapour intrusion. Assesses the potential for humans to be exposed to vapours originating from site soils. The closer the receptor is to a source of volatile chemicals in soil, the greater the potential of exposure. Also, coarser-grained soil will convey vapour much more efficiently in the soil than finer grained material such as clays and silts. General Notes; Someone experienced must provide a thorough description of the sources researched to determine the presence/absence of a vapour migration and/or dust generation in the vicinity of the contaminated site. This information must be documented in the NCS Site Classification Worksheet including contact names, phone numbers, e-mail correspondence and/or reference maps/reports and other resource such as internet links. Selected References; Canadian Council of Ministers of the Environment (CCME). 2006. Protocol for the Derivation of Environmental and Human Health Soil Quality Guidelines. PN 1332. www.ccme.ca Golder, 2004. Soil Vapour Intrusion Guidance for Health Canada Screening Level Risk Assessment (SLRA) Submitted to Health Canada, Burnaby, BC
Score	0			
Dust - If there is contaminated surface soil (e.g. top 1.5 m) , indicate whether the soil is fine or coarse textured. If it is known that surface soil is not contaminated, enter a score of zero. Fine Coarse Surface soil is not contaminated or absent (bedrock) Do Not Know Texture		The metals contaminated soils are present from surface to a depth of at least 0.75 m. The soils in the contaminated site are comprised of topsoil or sand and gravel fill which are considered med/fine textured.	Consult grain size data for the site. If soils (containing exceedances of the CCME soil quality guidelines) predominantly consist of fine material (having a median grain size of 75 microns; as defined by CCME (2006)) then these soils are more likely to generate dusts.	
Score	Fine			
	3			
inhalation total	3			
B. Potential for human exposure				
iii) Ingestion (i.e., ingestion of food items, water and soils [for children]), including traditional foods. Drinking Water: Choose a score based on the proximity to a drinking water supply, to indicate the potential for contamination (present or future). 0 to 100 m 100 to 300 m 300 m to 1 km 1 to 5 km No drinking water present Do Not Know	0 to 100 m	The site obtains its potable water from two drilled wells on-site. One of the wells is located northwest of the barn, approximately 35 m from the contaminated area by the baseball office. Another is located north of the pond, approximately 50 m northeast of the contaminated area by the program building.	Review available site data to determine if drinking water (groundwater, surface water, private, commercial or municipal supply) is known or suspected to be contaminated above Guidelines for Canadian Drinking Water Quality. If drinking water supply is known to be contaminated, some immediate action (e.g., provision of alternate drinking water supply) should be initiated to reduce or eliminate exposure. The evaluation of significant potential for exceedances of the water supply in the future may be based on the capture zones of the drinking water wells; contaminant travel times; computer modelling of flow and contaminant transport.	**Selected References:** Guidelines for Canadian Drinking Water Quality: www.hc-sc.gc.ca/hecs-sesc/water/publications/drinking_water_quality_guidelines/toc.htm Drinking water can be an extremely important exposure pathway to humans. If site groundwater or surface water is not used for drinking, then this pathway is considered to be inoperable. Consider both wild foods such as salmon, venison, caribou, as well as agricultural sources of food items if the contaminated site is on or adjacent to agricultural land uses.
Score	3			
Is an alternative water supply readily available? Yes No Do Not Know	Yes	Bottled water is also used to as a supplementary source of drionking water.		
Score	0			
Is human ingestion of contaminated soils possible? Yes No Do Not Know	Yes	The metals contaminated soils at the contaminated sites are present from surface to a depth of at least 0.75 m, therefore, it is assumed that ingestion of soils is an operable exposure pathway.	If contaminated soils are located within the top 1.5 m, it is assumed that ingestion of soils is an operable exposure pathway. Exposure to soils deeper than 1.5 m is possible, but less likely, and the duration is shorter. Refer to human health risk assessment reports for the site in question.	
Score	3			
Are food items consumed by people, such as plants, domestic animals or wildlife harvested from the contaminated land and its surroundings? Yes No Do Not Know	Yes	There is no harvesting of anything within the built-up third western portion of the site, however, the balance of the site is agricultural.	Use human health risk assessment reports (or others) to determine if there is significant reliance on traditional food sources associated with the site. Is the food item in question going to spend a large proportion of its time at the site (e.g., large mammals may spend a very small amount of time at a small contaminated site)? Human health risk assessment reports for the site in question will also provide information on potential bioaccumulation of the COPC in question.	
Score	1			
Ingestion total	7			
Human Health Total "Potential" Score	17	Note if a "Known" Human Health score is provided, the "Potential" score is disallowed.		
Allowed "Potential" Score	17			

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
2. Human Exposure Modifying Factors				
a) Strong reliance of local people on natural resources for survival (i.e., food, water, shelter, etc.)	Yes	The tenants at the site (and elsewhere within the PLS) rely on ground water as a natural resource.		
Yes No Do Not Know				
Known	6			
Potential	---			
Raw Human "known" total	6			
Raw Human "potential" total	17			
Raw Human Exposure Total Score	23			
Human Health Total (max 22)	**22.0**			
3. Ecological				
A. Known exposure				
Documented adverse impact or high quantified exposure which has or will result in an adverse effect, injury or harm or impairment of the safety to terrestrial or aquatic organisms as a result of the contaminated site.	18	A Risk Assessment has not been performed for the contaminated site.	Some low levels of impact to ecological receptors are considered acceptable, particularly on commercial and industrial land uses. However, if ecological effects are deemed to be severe, the site may be categorized as class one (i.e., a priority for remediation or risk management), regardless of the numerical total NCS score. For the purpose of application of the NCS, effects that would be considered severe include observed effects on survival, growth or reproduction which could threaten the viability of a population of ecological receptors at the site. Other evidence that qualifies as severe adverse effects may be determined based on professional judgement and in consultation with the relevant jurisdiction. If ecological effects are determined to be severe and an automatic Class 1 is assigned, there is no need to proceed through the NCS. However, a scoring guideline (18) is provided in case a numerical score for the site is still desired (e.g., for comparison with other Class 1 sites).	CCME, 1999: Canadian Water Quality Guidelines for the Protection of Aquatic Life. www.ccme.ca CCME, 1999: Canadian Water Quality Guidelines for the Protection of Agricultural Water Uses. www.ccme.ca Sensitive receptors- review: Canadian Council on Ecological Areas; www.ccea.org. Ecological effects should be evaluated at a population or community level, as opposed to at the level of individuals. For example, population-level effects could include reduced reproduction, growth or survival in a species. Community-level effects could include reduced species diversity or relative abundances. Further discussion of ecological assessment endpoints is provided in *A Framework for Ecological Risk Assessment: General Guidance* (CCME 1996). Notes: Someone experienced must provide a thorough description of the sources researched to classify the environmental receptors in the vicinity of the contaminated site. This information must be documented in the NCS Site Classification Worksheet including contact names, phone numbers, e-mail correspondence and/or reference maps/reports and other resource such as internet links.
Same as above, but "Strongly Suspected" based on observations or indirect evidence.	12		This category can be based on the outcomes of risk assessments and applies to studies which have reported Hazard Quotients >1. Alternatively, known impacts can also be evaluated based on a weight of evidence assessment involving a combination of site observations, tissue testing, toxicity testing and quantitative community assessments. Scoring of adverse effects on individual rare or endangered species will be completed on a case-by-case basis with full scientific justification.	
No quantified or suspected exposures/impacts in terrestrial or aquatic organisms	0		This category can be based on the outcomes of risk assessments and applies to studies which have reported Hazard Quotients of less than 1 and no other observable or measurable sign of impacts. Alternatively, it can be based on a combination of other lines of evidence showing no adverse effects, such as site observations, tissue testing, toxicity testing and quantitative community assessments.	
	Go to Potential			
Score	---			
NOTE: If a score is assigned here for Known Exposure, then you can skip Part B (Potential for Ecological Exposure) and go to Section 4 (Ecological Exposure Modifying Factors)				
B. Potential for ecological exposure (for the contaminated portion of the site)				
a) Terrestrial i) Land use Agricultural (or Wild lands) Residential/Parkland Commercial Industrial Do Not Know	Residential/Parkland	The site is currently used for agricultural, commercial and residential pruposes however, the contaminated areas are located in the western portion of the site that is residential and commercial.	Review zoning and land use maps. If the proposed future land use is more "sensitive" than the current land use, evaluate this factor assuming the proposed future use is in place (indicate in the worksheet that future land use is the consideration). Agricultural land use is defined as uses of land where the activities are related to the productive capability of the land or facility (e.g., greenhouse) and are agricultural in nature, or activities related to the feeding and housing of animals as livestock. Wild lands are grouped with agricultural land due to the similarities in receptors that would be expected to occur there (e.g., herbivorous mammals and birds) and the similar need for a high level of protection to ensure ecological functioning. Residential/Parkland land uses are defined as uses of land on which dwelling on a permanent, temporary, or seasonal basis is the activity (residential), as well as uses on which the activities are recreational in nature and require the natural or human designed capability of the land to sustain that activity (parkland). Commercial/Industrial land uses are defined as land on which the activities are related to the buying, selling, or trading of merchandise or services (commercial), as well as land uses which are related to the production, manufacture, or storage of materials (industrial).	
Score	2			
ii) Uptake potential				
Direct Contact - Are plants and/or soil invertebrates likely exposed to contaminated soils at the site? Yes No Do Not Know	Yes	The metals contaminated soils are present from surface to a depth of at least 0.75 m, therefore, it is assumed that direct contact of soils with plants and soil invertebrates is an operable exposure pathway.	If contaminated soils are located within the top 1.5 m, it is assumed that direct contact of soils with plants and soil invertebrates is an operable exposure pathway. Exposure to soils deeper than 1.5 m is possible, but less likely.	
Score	1			

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
iii) Ingestion (i.e., wildlife or domestic animals ingesting contaminated food items, soils or water) Are terrestrial animals likely to be ingesting contaminated water at the site? Yes No Do Not Know	Yes	There is a permanent pond on the site.	Refer to an Ecological Risk Assessment for the site. If there is contaminated surface water at the site, assume that terrestrial organisms will ingest it.	
Score	1			
Are terrestrial animals likely to be ingesting contaminated soils at the site? Yes No Do Not Know	Yes	The metals contaminated soils are present from surface to a depth of at least 0.75 m, therefore, it is assumed that direct contact of soils with plants and soil invertebrates is an operable exposure pathway.	Refer to an Ecological Risk Assessment report. Most animals will co-ingest some soil while eating plant matter or soil invertebrates.	
Score	1			
Can the contamination identified bioaccumulate? Yes No Do Not Know	Yes	Environment Canada Canadian Environmental Protection Act (CEPA) registry defines bioaccumulation as a Bioconcentration Factors/Bioaccumulation Factors (BCF/BAF): >= 1000 or log Kow: >= 4 (*http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=F1BDDFD0-1&offset=3*). The Risk Assessment Information System (RAIS) database (Oak Ridge National Laboratory) indicate a BCF = 1,000 for zinc. As a result, the contaminants are able to bioaccumulate.	Bioaccumulation of contaminants within food items is considered possible if: 1) The Log(Kow) of the contaminant is greater than 4 (as per the chemical characteristics work sheet) and concentrations in soils exceed the most conservative CCME soil quality guideline for the intended land use, or 2) The contaminant in collected tissue samples exceeds the Canadian Tissue Residue Guidelines.	
Score	1			
Distance to sensitive terrestrial ecological area 0 to 300 m 300 m to 1 km 1 to 5 km > 5 km Do Not Know	> 5 km	Based on a search of the Ontario Ministry of Natural Resources on-line Biodiversity Explorer database, the closest Areas of Natural and Scientific Interest (ANSIs) are the Maple Formation (Earth Science Site) and the Whitevale Corridor Wetland, located within 5 km from the site.	It is considered that within 300 m of a site, there is a concern for contamination. Therefore an environmental receptor located within this area of the site will be subject to further evaluations. It is also considered that any environmental receptor located greater than 5 km will not be a concern for evaluation. Review Conservation Authority mapping and literature including Canadian Council on Ecological Areas link: www.ccea.org.	Environmental receptors include: local, regional or provincial species of interest or significance; arctic environments (on a site specific basis); nature preserves, habitats for species at risk, sensitive forests, natural parks or forests.
Score	0.5			
Raw Terrestrial Total Potential	6.5	Note if a "Known" Ecological Effects score is provided, the "Potential" score is disallowed.		
Allowed Terrestrial Total Potential	6.5			
B. Potential for ecological exposure (for the contaminated portion of the site)				
b) Aquatic i) Classification of aquatic environment Sensitive Typical Not Applicable (no aquatic environment present) Do Not Know	Sensitive	There ia a permanent natural pond at the site.	"Sensitive aquatic environments" include those in or adjacent to shellfish or fish harvesting areas, marine parks, ecological reserves and fish migration paths. Also includes those areas deemed to have ecological significance such as for fish food resources, spawning areas or having rare or endangered species. "Typical aquatic environments" include those in areas other than those listed above.	
Score	3			
ii) Uptake potential Does groundwater daylighting to an aquatic environment exceed the CCME water quality guidelines for the protection of aquatic life at the point of contact? Yes No (or Not Applicable) Do Not Know	Do Not Know	No studies were performed to assess the quality of the surface or groundwater.	Groundwater concentrations of contaminants at the point of contact with an aquatic receiving environment can be estimated in three ways: 1) by comparing collected nearshore groundwater concentrations to the CCME water quality guidelines (this will be a conservative comparison, as contaminant concentrations in groundwater often decrease between nearshore wells and the point of discharge). 2) by conducting groundwater modeling to estimate the concentration of groundwater immediately before discharge. 3) by installing water samplers, "peepers", in the sediments in the area of daylighting groundwater.	
Score	0.5			
Distance from the contaminated site to an important surface water resource 0 to 300 m 300 m to 1 km 1 to 5 km > 5 km Do Not Know	300 m to 1 km	A small creek is located approximately 500 m east of the site, bisecting the forested area east of the property..	It is considered that within 300 m of a site, there is a concern for contamination. Therefore an environmental receptor or important water resource located within this area of the site will be subject to further evaluation. It is also considered that any environmental receptor located greater than 5 km away will not be a concern for evaluation. Review Conservation Authority mapping and literature including Canadian Council on Ecological Areas link: www.ccea.org.	Environmental receptors include: local, regional or provincial species of interest or significance, sensitive wetlands and fens and other aquatic environments.
Score	2			
Are aquatic species (i.e., forage fish, invertebrates or plants) that are consumed by predatory fish or wildlife consumers, such as mammals and birds, likely to accumulate contaminants in their tissues? Yes No Do Not Know	Yes	Environment Canada Canadian Environmental Protection Act (CEPA) registry defines bioaccumulation as a Bioconcentration Factors/Bioaccumulation Factors (BCF/BAF): >= 1000 or log Kow: >= 4 (*http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=F1BDDFD0-1&offset=3*). The Risk Assessment Information System (RAIS) database (Oak Ridge National Laboratory) indicate a BCF = 1,000 for zinc. As a result, the contaminants are able to bioaccumulate.	Bioaccumulation of food items is possible if: 1) The Log(Kow) of the contaminant is greater than 4 (as per the chemical characteristics work sheet) and concentrations in sediments exceed the CCME ISQGs. 2) The contaminant in collected tissue samples exceeds the CCME tissue quality guidelines.	
Score	1			
Raw Aquatic Total Potential	6.5	Note if a "Known" Ecological Effects score is provided, the "Potential" score is disallowed.		
Allowed Aquatic Total Potential	6.5			

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
4. Ecological Exposure Modifying Factors				
a) Known occurrence of a species at risk. Is there a potential for a species at risk to be present at the site? Yes No Do Not Know	Yes	Based on a search of the Canada Species at Risk Act (SARA) registry, nine species at risk are located in the area of the site, however, it is not known if any of the species inhabit the vicinity.	Consult any ecological risk assessment reports. If information is not present, utilize on-line databases such as Eco Explorer. Regional, Provincial (Environment Ministries), or Federal staff (Fisheries and Oceans or Environment Canada) should be able to provide some guidance.	Species at risk include those that are extirpated, endangered, threatened, or of special concern. For a list of species at risk, consult Schedule 1 of the federal Species at Risk Act (http://www.sararegistry.gc.ca/species/schedules_e.cfm?id=1). Many provincial governments may also provide regionally applicable lists of species at risk. For example, in British Columbia, consult: BCMWLAP. 2005. Endangered Species and Ecosystems in British Columbia. Provincial red and blue lists. Ministry of Sustainable Resource Management and Water, Land and Air Protection. http://srmwww.gov.bc.ca/atrisk/red-blue.htm
Score	2 ---			
b) Potential impact of aesthetics (e.g., enrichment of a lake or tainting of food flavor).				
Is there evidence of aesthetic impact to receiving water bodies?	No	There is no evidence of aesthetic impact from site contaminants to receiving water bodies.	Documentation may consist of environmental investigation reports, press articles, petitions or other records.	This Item will require some level of documentation by user, including contact names, addresses, phone numbers, e-mail addresses. Evidence of changes must be documented, please attach copy of report containing relevant information.
Yes No Do Not Know	0 ---			
Is there evidence of olfactory impact (i.e., unpleasant smell)? Yes No Do Not Know	No 0 ---	Metals contaminated soils do not typically exhibit olfactory evidence of impact.	Examples of olfactory change can include the smell of a COPC or an increase in the rate of decay in an aquatic habitat.	
Is there evidence of increase in plant growth in the lake or water body? Yes No Do Not Know	No 0 ---	There is no evidence of an increase in plant growth in receiving water bodies.	A distinct increase of plant growth in an aquatic environment may suggest enrichment. Nutrients e.g., nitrogen or phosphorous releases to an aquatic body can act as a fertilizer.	
Is there evidence that fish or meat taken from or adjacent to the site smells or tastes different? Yes No Do Not Know	No 0 ---	There is no evidence that meat or fish taken from or adjacent to the site smells or tastes different.	Some contaminants can result in a distinctive change in the way food gathered from the site tastes or smells.	
Ecological Modifying Factors Total - Known	**2**			
Ecological Modifying Factors Total - Potential	**---**			
Raw Ecological Total - Known	2			
Raw Ecological Total - Potential	13			
Raw Ecological Total	15			
Ecological Total (Max 18)	**15.0**			
5. Other Potential Contaminant Receptors				
a) Exposure of permafrost (leading to erosion and structural concerns)				Plants and lichens provide a natural insulating layer which will help prevent thawing of the permafrost during the summer. Plants and lichens may also absorb less solar radiation. Solar radiation is turned into heat which can also cause underlying permafrost to melt.
Are there improvements (roads, buildings) at the site dependant upon the permafrost for structural integrity? Yes No Do Not Know	No 0 ---	The site is not located in an area subject to permafrost.	Consult engineering reports, site plans or air photos of the site. When permafrost melts, the stability of the soil decreases, leading to erosion. Human structures, such as roads and/or buildings are often dependent on the stability that the permafrost provides.	
Is there a physical pathway which can transport soils released by damaged permafrost to a nearby aquatic environment? Yes No Do Not Know	No 0 ---	The site is not located in an area subject to permafrost.	Melting permafrost leads to a decreased stability of underlying soils. Wind or surface run-off erosion can carry soils into nearby aquatic habitats. The increased soil loadings into a river can cause an increase in total dissolved solids and a resulting decrease in aquatic habitat quality. In addition, the erosion can bring contaminants from soils to aquatic environments.	
Other Potential Receptors Total - Known	**0**			
Other Potential Receptors Total - Potential	**0**			

Exposure Total		
Raw Human Health + Ecological Total - Known	8	
Raw Human Health + Ecological Total - Potential	30	Only includes "Allowed potential" - if a "Known" score was supplied under a given category then the "Potential" score was not included.
Raw Total	38	
Exposure Total (max 34)	**28.1**	

CCME National Classification System (2008, 2010 v 1.2)
Score Summary

Scores from individual worksheets are tallied in this worksheet.
Refer to this sheet after filling out the revised NCS completely.

I. Contaminant Characteristics

	Known	Potential
1. Residency Media	4	1
2. Chemical Hazard	8	---
3. Contaminant Exceedance Factor	2	---
4. Contaminant Quantity	2	---
5. Modifying Factors	0	---
Raw Total Score	16	1
Raw Total Score (Known + Potential)	17	
Adjusted Total Score (Raw Total / 40 *33)	14.0	(max 33)

II. Migration Potential

	Known	Potential
1. Groundwater Movement	---	4.9
2. Surface Water Movement	---	8.6
3. Soil	12	---
4. Vapour	0	---
5. Sediment Movement	---	6
6. Modifying Factors	0	0
Raw Total Score	12	19.5
Raw Total Score (Known + Potential)	31.5	
Adjusted Total Score (Raw Total / 64 * 33)	16.2	(max 33)

III. Exposure

	Known	Potential
1. Human Receptors		
A. Known Impact	---	
B Potential		
a. Land Use		2
b. Accessibility		2
c. Exposure Route		
i. Direct Contact		3
ii. Inhalation		3
iii. Ingestion		7
2. Human Receptors Modifying Factors	6	---
Raw Total Human Score	6	17
Raw Total Human Score (Known + Potential)	23	
Adjusted Total Human Score	22.0	(maximum 22)
3. Ecological Receptors		
A. Known Impact	---	
B. Potential		
a. Terrestrial		6.5
b. Aquatic		6.5
4. Ecological Receptors Modifying Factors	2	---
Raw Total Ecological Score	2	13
Raw Total Ecological Score (Known + Potential)	15	
Adjusted Total Ecological Score	15.0	(maximum 18)
5. Other Receptors	0	0
Total Other Receptors Score (Known + Potential)	0	
Total Exposure Score (Human + Ecological + Other)	37.0	
Adjusted Total Exposure Score (Total Exposure / 46 * 34)	27.3	(max 34)

Site Score

CS-614110/111/112-1

Site Letter Grade	**D**
Certainty Percentage	**69%**
% Responses that are "Do Not Know"	**5%**
Total NCSCS Score for site	**57.6**
Site Classification Category	**2**

Site Classification Categories*:
Class 1 - High Priority for Action (Total NCS Score >70)
Class 2 - Medium Priority for Action (Total NCS Score 50 - 69.9)
Class 3 - Low Priority for Action (Total NCS Score 37 - 49.9)
Class N - Not a Priority for Action (Total NCS Score <37)
Class INS - Insufficient Information (>15% of responses are "Do Not Know")

* NOTE: The term "action" in the above categories does not necessarily refer to remediation, but could also include risk assessment, risk management or further site characterization and data collection.

APPENDIX I

PHASE II/III ESA REMEDIATION CHECKLIST

APPENDIX I

REMEDIATION CHECKLIST FOR PHASE II/III ESA REPORTS

Task		YES	NO	Comments
1.	Have remediation standards been appropriately established?	X		Follow questions 2 through 10 to confirm
2.	Have federal (CCME) vs. provincial (MOE) standards been confirmed as remediation standards?	X		Discuss requirement with client
3.	Is site in a non-potable area?		X	If yes, answer questions 4 and 5. If no, skip to questions 6
4.	If remediation is the preferred option, has the recommendation been made to notify the municipality of plans to use non-potable criteria?		X	O. Reg 153 states that municipalities must be notified of intention to use non-potable standards. Use is acceptable if no response is received from the municipality within 30 days.
5.	Is the site located within 30 m of a water body?	X		If yes, the site may be considered sensitive
6.	Is the site adjacent to an area of natural and scientific interest?		X	If yes, the site may be considered sensitive
7.	Is the bedrock deeper than 2 m below ground surface	X		If no, the site may be considered sensitive
8.	Is the pH between 5 and 9 (5 to 11 for subsurface soils, 6 to 8 for CCME)?	X		If no, the site may be considered sensitive
9.	Has the intended land use been confirmed with client (residential, commercial or industrial)?	X		
10.	Have grain size analyses been completed to confirm coarse or fine/medium texture?	X		If no, complete questions 11. If yes skip to question 12.
11.	If not, can the soil type be definitively determined based on visual observations?			Grain size analyses recommended if soil type cannot be definitively determined.
12.	Is an RSC required under O. Reg 153? (An RSC is required in order to change zoning to a more stringent land use)		X	If no, skip to question 14. If yes, Client should be contacted to verify that they would like an RSC completed.
13.	Is there sufficient information to complete an RSC?			If no, additional investigations may be required.
14.	Have all issues and areas of concern identified in the Phase I as well as subsequent studies been investigated?	X		If no, additional investigations may be required.
15.	Have all media of concern (soil, groundwater, sediment, surface water) been addressed?	X		If no, additional investigations may be required.
16.	Have investigations been completed within the last 3 to 4 years.	X		If investigations used to develop remedial estimates are greater than 3 or 4 years old additional investigations may be required to verify current site conditions. Also ensure current generic or site specific criteria are still applicable.
17.	Have TCLP analyses been completed?	X		Analysis requirements vary with disposal location

Task		YES	NO	Comments
18.	If so, are the results hazardous?		X	If waste is hazardous pre- treatment may be required to reduce disposal costs and ensure compliance with Land Disposal Restrictions (O. Reg 558)
19.	Has the extent of the impacts been horizontally delineated for all parameters of concern?		X	If no, additional investigations may be required therefore provide cost estimate in comments column of 22a.
20.	Is there potential for off site impacts from on-site sources of contamination?		X	If yes continue to Question 21. If no skip to Question 22.
21	Have off site investigations and delineation been completed?			If no, additional investigations may be required.
22.	Have the impacts been vertically delineated for all parameters of concern?		X	If no, additional investigations may be required therefore provide cost estimate in comments column of 22a.
22a	Will further assessment be required to fully delineate the site (both horizontally and vertically) and if yes how much (put cost in comments column)	X		Estimated cost for Supplementary Phase III ESA is $32,900.
23.	Does the investigation extend to the water table?		X	If no, additional investigations may be required.
24.	Has a risk assessment been completed?		X	If yes continue to questions 25. If no skip to question 26.
25.	If so will site specific target levels be used for remediation? (If SSTL's are not acceptable to purchaser generic CCME or MOE standards may be used)			Confirm with client
26.	Has a legal surveys of property limits been completed?		X	If no a legal survey should be completed prior to remediation
27.	Have volumes and areas of impact been estimated?	X		
28.	Have all areas been presented on a scaled site map?	X		
29.	Have alternative remedial technologies been investigated for possible use at the site (i.e., bioremediation)	X		If no, investigate possibilities of alternative technologies
30.	Has each remedial alternative been evaluated based on feasibility, effectiveness, time frames, cost, risk etc?	X		If no, evaluate alternatives
31.	Have bench scale pilot studies been undertaken to confirm feasibility of alternative technologies?		X	If no, complete additional testing if required *DCS: Not required*
32.	Has a remedial work plan been completed based on appropriate standards and remedial technologies?	X		If no, complete remedial work plan
33.	Is there a need for an EA under the Canadian Environmental Assessment Act (CEAA)?	X		If yes, ensure an EA is done and the mitigation measures incorporated in the tender documents.

If shaded boxes are checked additional work may be required. If only unshaded boxes are checked you may be ready for remediation.

APPENDIX J

QUALIFICATIONS OF THE ASSESSORS

Steven T. Ruminsky, P.Eng., P.Geo.

General Manager, Hydrogeology

EDUCATION

B.E.S., Environmental Studies (Geography), University of Waterloo, 1983
B.A.Sc., Geological Engineering (Management Sciences Option), University of Waterloo, 1987

PROFESSIONAL AFFILIATIONS

Association of Professional Engineers of Ontario
Association of Professional Geoscientists of Ontario

EXPERIENCE

Decommissioning Consulting Services Limited, Richmond Hill, Ontario

1997 – 2007	Manager, Hydrogeological Services
2008 – Present	General Manager, Hydrogeology

Mr. Ruminsky is General Manager, Hydrogeology at DCS. He has 20 years of experience in the management and assessment of contaminated sites and waste disposal sites. Prior to joining DCS, he worked eight years with the MOE and has spent one year at Trow Associates Inc. He has been responsible for evaluation of contaminated sites, including their effects on groundwater. He is currently on a team undertaking reviews of risk assessments on behalf of the MOE. Some of the projects he has been involved in include:

<u>Landfill/Waste Disposal Site Investigations</u>

- Preparation of landfill gas management and closure plans at three landfills for the Municipal Corporation of Delhi (India). The landfills range in size from 17 to 30 hectares and together accommodate 6,300T/day of waste generated within the municipality.
- Preparation of the Closure Plan for the Boyeco Landfill in Temuco, Chile. This landfill services Temuco and surrounding municipalities, which generate 250T/day of waste to be managed at the landfill. The closure plan is designed to provide an orderly 5-year closeout of the site.
- Investigation of groundwater contamination in bedrock originating from the former Aerospace Maintenance and Development Unit (AMDU) landfill adjacent to Canadian Forces Base Trenton in Ontario.
- Project manager for the design of the third landfill cell at the Calstock Ash Landfill. The landfill is designed to accommodate ash residual from EPCOR Power's woodwaste-fired power plant. Also managed preparation of closure specifications for Cells 1 and 2.
- Design of the proposed sewage sludge landfill at Chalk River for AECL. Work commenced at conceptual design, and carried through to final design and project specifications.
- Preparation of 2004 and 2005 Annual Groundwater and Surface Water Monitoring Reports for Grant Forest Products (GFP) Englehart woodwaste landfill.
- Project Manager for waste disposal site monitoring program, Ministry of Natural Resources. Monitoring of groundwater, surface water, drinking water and landfill gas at 15 waste disposal sites located across northern Ontario.
- Design Engineer for subslab landfill gas venting system on proposed parking facility adjacent to the Morningside Landfill in Scarborough. Assisted with Air Certificate of Approval application to the MOE.
- Investigation of a former municipal landfill in Midland, Ontario, to support residential development downgradient of the landfill site.
- Design and estimating for two municipal landfill sites in St. Kitts and Nevis. The work also involved assessing and developing the most appropriate approach to leachate management, and presenting the project to the Caribbean Development Bank on behalf of the St. Christopher and Nevis Solid Waste Management Corporation.

<u>Peer Reviews</u>

- Reviewer of hydrogeological and risk management components on various risk assessments (RAs) on behalf of the Ministry of the Environment.
- Preparation of environmental reviews of more than 100 air navigation facilities on sites across Canada on behalf of NavCanada, the private sector corporation that has acquired the national air navigation system which consists of over 2,000 facilities, from Transport Canada under terms of a $1.5 billion purchase agreement.
- Peer review of Phase I and Phase II environmental site assessments, remedial work plans and verification sampling reports on behalf of The City of Vaughan and the City of Toronto. The reviews are undertaken to provide the cities advice on the adequacy of the work done prior to the issuance of zoning amendments and building permits.

<u>Risk Assessments</u>

- Project Manager for completion of Risk Assessment (RA) at the former Hotz industrial recycling facility in Hamilton, Ontario to prepare site for conversion to a commercial/retail development. Portions of the site were set aside for residential development in accordance with City requirements. Prepared site characterization and risk management components of RA report.
- Oversaw the site characterization for a risk assessment of a public park developed on a Mississauga, Ontario landfill
- Preparation of three site specific risk assessment reports for lands to be conveyed to the City of Toronto at the former Molson Brewery on the Toronto lakeshore.

<u>Environmental Litigation Support</u>

- Investigation of dry cleaning facility to support owner of retail plaza in litigation with neighbouring landowner (Gowlings).

<u>Environmental Site Assessment/Decommissioning</u>

- Project Manager for investigation of a retail fuel service station in Markham, Ontario. Work included assessment of soil and groundwater conditions, negotiation with parties representing neighbouring landowners, and development of conceptual groundwater remediation design.
- Investigation of metal recycling facility in Sault Ste. Marie, Ontario in preparation of potential purchase of business and land holdings.

- Project manager for 2008 groundwater and surface water monitoring and reporting program at Canadian Forces Base Petawawa.
- Preparation of Phase III ESA for the Killiniq Marine Communications Traffic Services Transmitter Site in Nunavut in the Canadian Arctic.
- Project Manager for the investigation of the former Canadian Forces training facility in Niagara-on-the-Lake. A former grenade range, ammunitions building, incinerator and landfill were assessed. Participated in the ordnance clearances of the sites prior to drilling and sampling.
- Project Manager for the investigation of soil, groundwater and sediment quality throughout Oshawa Harbour for Transport Canada. Upon completion, the report results were presented to City Council. Prepared update of site conditions for PWGSC in 2009.
- Preliminary liabilities assessment for Toronto Port Area. Previously existing Phase I and II ESAs, cleanup and risk management reports were reviewed in order to evaluate remedial costs on approximately 120 properties covering 320 ha of land.
- Investigation of the former Molson Brewery on the Toronto Lakeshore. The work involved assessing earlier Phase I and II ESAs completed by others, installation of boreholes and monitoring wells, evaluation of soil contamination versus industrial, residential and stratified criteria; assessment of VOC contamination (vinyl chloride and cis-1,2-DCE) in groundwater; estimation of costs for residential development, and preparing three site specific risk assessment reports. Responsible for implementation of contract documents and supervision of the groundwater remediation program.
- Phase I investigation of 330,000 ha of forestry, mining, recreational and commercial lands within 37 townships north of Sault Ste. Marie, Ontario, as part of a $60 million purchase from Algoma Central Properties, Inc.
- PWGSC/DND – Review of previous Phase I and II ESA work that had been completed on the CFB Downsview property. Specifications were prepared for Phase II ESA investigations on 25 sub-areas of the property, which were then tendered to four separate consultants by PWGSC. Phase II results were then consolidated into environmental disclosure, remedial options and cost reports by DCS staff.
- Assessment of liquid and PCB wastes at former Cronish leasehold in Toronto Port Area. All liquid wastes were characterized and contract documents were prepared for the removal of over 86,000 ℓ of liquid waste, 90,000 ℓ of PCB waste and one 205 ℓ drum of solid PCB wastes.
- Review of environmental site conditions at 15 transformer stations (TS) to assess potential adverse effects on TS drainage system improvements.
- Evaluation of spill containment liner options for refurbishment of subsurface liners at transformer spill containment facilities.
- Management of preparation of 21 Enhanced Phase I ESAs and 14 Phase III ESAs for Public Works and Government Services Canada and Department of Fisheries and Oceans. Works involved soil, groundwater and sediment sampling, designated substances surveys, screening level risk assessments, remedial costing, NCS classification scoring and reporting.
- Management and reporting of a groundwater monitoring program at seven NAV CANADA air navigation facility sites in Ontario. The site locations ranged from Fort Severn on the Hudson Bay coast in the north to Pelee Island in Lake Erie in the south.
- Decommissioning of the former CN rail property along the Port of Midland waterfront for residential redevelopment purposes. The work involved a risk assessment associated with relocation of contaminated soil from the rail corridor to beneath the future municipal roadway, and submission of Records of Site Condition for residential land parcels.

February 2007 – June 2008 Trow Associates Inc.

Senior Environmental Consultant

Risk Assessments (RAs)
- Preparation of the site characterization and risk management sections of a Risk Assessment for the former Arrow shirt factory in Kitchener.
- Oversaw characterization of soil and groundwater to support a RA at the Toronto Waterfront (TEDCO-Corus project). Work involved being part of a design team to select the appropriate risk management measures to be implemented at the site. Prepared the site characterization and risk management measures for the RA report.
- Managed the submission of a RA for a railway safety right-of-way in the City of Toronto. In addition to managing the project, Mr. Ruminsky prepared the site characterization and risk management sections of the RA Report.

Environmental Litigation Support
- Review of site assessment documents as environmental expert for litigation at a trucking facility near Sudbury, Ontario. The contaminants of concern related to diesel fuel use at the site (Heenan Blakie).
- Review of trichloroethylene source remediation proposed for a groundwater contaminant plume in the City of Toronto (Rogers Partners).
- Investigation to determine contaminant migration from automobile maintenance facility onto residential (apartment complex) site in the City of Toronto. (Willms & Shier).
- Provision of expert advice on Phase I and II Environmental Site Assessments and subsequent remediation carried out on a former car and truck rental facility (Gowlings).
- Development of remediation and risk assessment alternatives and detailed cost estimate for cleanup of commercial lands adjacent to a former refinery facility in the City of Toronto (Willms & Shier).

Environmental Site Assessments (ESAs)
- Conducted ESA and prepared remedial workplan for the residential redevelopment of the former Centennial College site. Work involved coordination with City officials on environmental issues to obtain development approvals.
- Managed investigation at Ashbridges bay Treatment Plant for Toronto Water. Over 50 boreholes were completed. A factual report presenting data in an innovative GIS-compatible manner was prepared.

Site Remediation
- Management of preparation of a Remedial Action Plan (RAP) to address migration of chlorinated VOCs from a

former dry cleaner onto a municipal roadway. Managed the design of the remediation of adjacent residential lands in Mississauga.

- Management of the excess soil excavated from the TEDCO-Corus facility, treated on-site and subsequently relocated to a TEDCO facility in the Toronto Portlands.
- Review of permeable reactive barrier (PRB) to prevent migration of chlorinated volatile organic compounds (VOCs) from an off-site source onto the client's property in Cambridge.

Landfill Assessment

- Prepared a monitoring report for a municipal landfill near Sault Ste. Marie, Ontario
- Review of reports prepared for the City of Toronto's Keele Valley Landfill Site on behalf of the Ontario Ministry of the Environment (MOE). The Keele Valley Landfill was the country's largest landfill, operating between 1984 and 2002. Ongoing post-closure monitoring is critically reviewed for the MOE.

1990-1997 - Ontario Ministry of Environment

Area Supervisor, York Region (1994-1997)

Supervision of 10 technical staff. Duties included:

- serving as member of inaugural Central Audit Team, established to audit reports submitted with Records of Site Condition (RSC) in accordance with the *Guideline for Use at Contaminated Sites in Ontario*;
- scheduling of surveys for waste disposal sites, industrial sources, water and sewage treatment plants, PCB sites, MISA-regulated plants;
- approving district reviews of approval applications, site decommissioning and land use planning applications;
- ensuring compliance with acts, regulations and instruments;
- approving complaint responses;
- initiating recommendations for prosecutorial actions;
- overseeing preparation and implementation of Orders;
- provided evidence to Ontario Municipal Board and Environmental Appeal Board.

Senior Engineer, GTA Waste Disposal Group (1992-1994)

Provide engineering evaluation of reports submitted to the Ministry in support of expansions/revisions to the three major GTA waste sites and forecast future waste quantities to be managed within the GTA. Other duties included:

- review of site decommissioning, environmental assessments and hydrogeological reports;
- review co-ordinator for Environmental Assessment Board hearing (Lindsay);
- IWA Review co-ordinator at Approvals Branch March-June 1994, assisting Branch for EA review.

Waste Management Hydrogeologist (1990-1992)

Review co-ordinator and technical reviewer of hydrogeological studies and design and operations reports for waste disposal sites. Duties included:

- co-ordination of Ministry comments for Environmental Assessments;
- preparation of Provisional Certificates of Approval;
- preparation of documentation for hearings.

1988-1990 - Conestoga Rovers & Associates, Waterloo, Ontario

Project Engineer

- Remedial Investigation/Feasibility Study reporting at various CERCLA sites in the United States;
- annual reporting on various municipal landfills sites in Southern Ontario.

1987-1988 - R.W. McKay Construction, Sarnia, Ontario

Assistant Superintendent

CO-OP AND SUMMER WORK EXPERIENCE

1987 - MPH Consulting Ltd. Field geology duties at 15 Mile Stream gold deposits in Nova Scotia.

1986 - Esso Resources Canada Computer modelling of horizontal fracture pressure profiles and reservoir pressures.

1985 - Petro-Canada Risk analysis of iceberg collisions with offshore structures using computer simulations.

1984 - Syncrude Canada Identification and analysis of brine-saturated sands using geophysical logs, core descriptions and bitumen grades.

PUBLICATIONS

Overview on Problems of Pond Construction, presented at "Prevention and Treatment of Groundwater and Soil Contamination in Exploration and Production", Calgary, Alberta, 10 May 1989 (with D.H. Haycock, G.T. Turchan).

TEDCO and Toronto's Port Lands, Brownfields Development on the Waterfront, presented at The Strategy Institute Conference, 19 September 2002 (with J. Steiner, R.B. German, M.D. Weber and TEDCO staff).

RENE RODRIGUEZ, M.ENG.

ENVIRONMENTAL SPECIALIST

EDUCATION

Masters in Business Administration, Dalhousie University, Halifax, NS May 2007,
B.A. Honours, Economics, Laurentian University, Sudbury, Ontario 2005
Masters Degree in Environmental Engineering, Yucatán University, Merida, Mexico 1996
B.A.Sc., Chemical Engineering, Merida Institute of Technology, Merida, Mexico 1990

EXPERIENCE

June 2007 - Present – Decommissioning Consulting Services Limited, Richmond Hill, Ontario

Environmental Specialist

Responsibilities include performing Phase I and II environmental site assessments, analysis and interpretation of chemical data, analysis and monitoring of drinking water treatment systems and preparation of reports. Also, research and analysis on various other environmental issues, as required.

Typical projects as described below

- Performed bi-annual drinking water sampling program for the Pickering Lands Site (PLS) for Public Works and Government Services Canada (PWGSC). Work included field work, water analysis technical review, data base creation and management, and reporting.
- Performed groundwater and surface water sampling program at Canada Forces Base (CFB) Petawawa on behalf of Defence Construction Canada. Work included water analysis technical review and reporting.
- Conducted water sampling at primary and secondary schools for several District School Board to investigate for the presence of lead and nitrate/nitrite in drinking water. Assisted in preparation of the report outlining the sample results.
- Assisted in Greenhouse Gases (Clean Development Mechanism) analysis for the Landfill of the city of Puebla (Mexico) and reviewed and translated background technical information.
- Involved in Phase I ESAs at several commercial and industrial properties in Toronto for a variety of clients, including purchasers, vendors, financial institutions and real estate developers. Work included data bases research, site reconnaissance and reporting.
- Involved in Phase II ESAs plus Designated Substance and Hazardous Materials Surveys at commercial and industrial properties. Work included site reconnaissance, sampling and reporting.
- Assisted in Phase III ESA Killiniq Base, Nunavut, for PWGSC. Work included data analysis and the preparation of NCSCS (National Classification System for Contaminated Sites) Scoring Sheets.
- Conducted research on applications and potential market for a proprietary PCBs (Polychlorinated Biphenyls) destruction technology for six Latin American countries.

January 2001 - 2005 – Sudbury Neutrino Observatory, Sudbury, Ontario

Assistant Engineer, Ultra-pure Water System

- Provided operational support for scientific staff.
- Critically reviewed and created new procedures
- Trained and supervised students on lab theory and procedures.
- Ran radioactivity assays and maintained or modified hardware as needed.

1999 May - September – BOC (British Oxygen Company), Atasta, México

Production Supervisor

- Supervised operating team for the whole facility (biggest Nitrogen producing facility in the world, servicing off-shore oil fields).
- Received training from Linde, in Munich, Germany, and by ABB and General Electric.

1997 November - 1998 December - Fenoquimia S.A. DE C.V. (Resistol Chemical Group), Veracruz, México

Customer Service Engineer

- Implemented post-sale services for national and export customers, including technical advice on safety, transportation and waste treatment.
- Designed and operated complaints attention system (ISO 9002 procedure).

1996 November - 1997 November - Comision Nacional del Agua, CNA (Méxican Nacional Water Commission), Chetumal, Mexico

Environmental Regulatory Officer

- Assessed and counselled establishments and individuals applying for, or holding a water concession.
- Provided expertise on national water concessions, for its extraction and use, and the discharge conditions of wastewater, including the feasibility of proposed wastewater treatment systems.

1993 July - 1994 September - REPAMA, (Water Treatment Systems, Chemical Analysis Equipment and Service), Mérida, México

Chemical Analysis Laboratory Manager

- Project Manager: Starting from zero, implemented and expanded laboratory operations.
- Trained technical staff, performed quality control and administrative procedures.
- Sold water treatment and analysis equipment and promoted chemical analysis services.

1990 November - 1992 October CEMEX, "Cementos Mexicanos", (Mexican Cements), Mérida Plant, México

Process Engineer

- Conducted new cement kiln production line start up, as member of interdisciplinary team, in coordination with the engineering groups involved.
- Supervised kiln operation and support staff from control room in the stabilization and normal operation periods.
- Managed workers' teams during major repairs.

RECENT SHORT COURSES

Workplace Hazardous Materials Information System (WHMIS) Sudbury Neutrino Observatory, 2004
Fall Protection Systems Safety Training, RGM, Richmond Hill, Ontario, 2008
Operation of Small Drinking Water Systems, Walkerton Clean Water Centre, 2008

ADDITIONAL EDUCATION, AWARDS AND ACHIEVEMENTS

- Recipient of the Northstar Fellowship in International Business granted by the Centre for International Business Studies (CIBS) at Dalhousie University. 2006-2007.
- Recipient of the Graduate School Scholarship, Dalhousie University: Fall 2006.
- Courses in Cross Border Strategic Management and Business to Business Marketing at the Copenhagen Business School (CBS). June - August 2006.
- Implemented solid waste recycling system for Kearny County, Kansas, U.S.A., as member of an interdisciplinary team, in an academic exchange between the Yucatán University and Kansas State University (KSU). July - August 1995.
- President and Vice-President of the Chemical Engineers Mexican Institute, (IMIQ) Mérida Tech Section. 1989 - 1990.

COMPUTER SKILLS

Windows Office, including Excel VBA and Data Base design (Access)

LANGUAGE SKILLS

Fully fluent in English and Spanish. Presently learning French.

Public Works and Government Services Canada | Transport Canada

Enhanced Phase I Environmental Site Assessment - Final

Pickering Lands Site

PIN 614110, 614111 and 614112 -

10243 and 10251 Reesor Road, Markham, ON

MA-09-245-00-MA

CALL-UP NO. 1405
PROJECT NO. R.032028.002

MARCH 2010

GENIVAR CONSULTANTS LP
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1. Introduction

GENIVAR Consultants LP (GENIVAR) was retained by Public Works and Government Services Canada (PWGSC), on behalf of Transport Canada (TC), to undertake Enhanced Phase I Environmental Site Assessments (ESAs) for forty-three (43) residential, commercial and agricultural properties within the Pickering Lands Site (PLS). As part of the Government of Canada's Accelerated Infrastructure Program (AIP), various PLS properties have been selected to undergo an Enhanced Phase I ESA to ensure continued due diligence and to address any new potential environmental concerns that may exist since the property was last assessed. The Enhanced Phase I ESA reported herein was conducted for the subject properties identified as Property Identification Number (PIN) 614110, 614111 and 614112, hereby referred to as the site. Part of the site is currently occupied by Camp Robin Hood (CRH, located at 10243 Reesor Road, Markham Ontario), a children's day camp under a year-to-year commercial lease agreement A residential lease for PIN 614112.2 is identified at 10251 Reesor Road, Markham, Ontario. The remainder of the site is occupied by agricultural land.

The subject property is one of over 800 properties located on 7,530 hectares of mainly rural land within the regional municipalities of York and Durham. The PLS properties were expropriated by TC in 1972 for the construction of an international airport to service the Greater Toronto Area. The proposed International Airport Project in Pickering was postponed indefinitely in 1975 due to withdrawal of provincial government support for essential off-site services. Since that time, various properties have been leased to the public for agricultural, commercial and residential uses, while others are vacant parcels. **Figure 1** shows the boundaries of the PLS.

2. Scope of Work

The scope of this assessment includes all of PIN 614110, PIN 614111 and PIN 614112.

The objectives of the Enhanced Phase I ESA were to establish the environmental and physical condition of the property, to determine if the general condition of the site has changed significantly from previous assessments and to identify any areas of concern and/or issues related to environmental compliance. Previously conducted assessments (environmental and compliance audits) were used as background information for this study.

As per the PWGSC Terms of Reference (TOR) and as documented in GENIVAR's proposal dated June 24, 2009, the scope of this assessment did not include the request of information from federal, provincial or municipal agencies or other records or sources of information listed in the *Canadian Standards Association (CSA) Standard Z768-01* Phase I Environmental Site Assessment document (November 2001, revised April 2003), herein referred to as *CSA Standard Z768-01*. Federal, provincial and municipal agency information requests were completed during previous Phase I ESA investigations (i.e. Shaheen and Peaker 1997).

The scope of work for the Enhanced Phase I ESA included the following:

- Background and Records Review;
- Tenant Interview;
- Site Visit including interior and exterior inspections of on-site buildings;
- Field screening and sampling for soil (where warranted);
- Assessment of AST/UST compliance;
- Assessment of water wells and septic systems; and
- Inspection of hazardous materials and designated substances (As per the TOR no sampling of these materials or substances was conducted).

3. Methodology

The Enhanced Phase I ESA was carried out by GENIVAR's team of professional and technical personnel trained in site assessments, environmental sampling, hazardous materials and designated substances management, data analysis and reporting.

GENIVAR maintained a project specific health and safety plan throughout the implementation of the field program. All field workers were instructed on the protocols of the plan and the proper use of personal protective equipment. Worker health and safety standards were assured by following stringent safety precautions in accordance with the applicable sections specified under the *Canada Labour Code* and the *Ontario Occupational Health and Safety Act*.

The Enhanced Phase I ESA was carried out in accordance with the general principles of the CCME *Guidance Document on the Management of Contaminated Sites in Canada* (April 1997) as it relates to the identification of potential areas of concern associated with contaminants and as prescribed in *CSA Z768-01*. As stated in *CSA Z768-01*, the purpose of the Phase I ESA is to identify actual and potential site contamination through the evaluation and reporting of existing information collected through records review (available through PWGSC, as per the TOR), site visits and interviews. Methodologies associated with specific sections of the ESA are detailed below.

3.1 Background and Records Review

The Enhanced Phase I ESA included a review of site history and background records maintained by PWGSC, however, as per the TOR, did not include a search and review of information from federal, provincial, and municipal agencies. Federal, provincial and municipal agency information requests were completed during previous Phase I ESA investigations (i.e. Shaheen and Peaker 1997).

Information provided by PWGSC allowed for the identification of potential areas of environmental concern associated with the historical use of the property and was used to guide the site investigation and audit. A summary of documents reviewed is presented in Section 5.

3.2 Tenant Interview

The *Tenant Interview Form* provided by PWGSC was used as a guideline for the interview, however questions regarding observed or previously recorded site activities were specific to each interviewee.

3.3 Site Visit

A site visit was conducted by GENIVAR staff trained in site assessments to assess current site conditions, conduct field screening and preliminary soil sampling (if warranted), and to complete applicable checklists. As per the TOR, the interior and exterior of residential buildings and outbuildings (i.e. other structures) were inspected where accessible.

The site visit encompassed the subject property and surrounding areas. At the subject site, observations were made with respect to:

- The physical and environmental characteristics of the site including topography, surface water drainage and vegetation;
- Structures and improvements at the site (including fuel storage systems);
- Materials stored, used or discarded at the site; and
- Signs of potential environmental impacts (i.e. areas of stressed vegetation, former structures, staining, and the presence of fill and/or debris materials).

Adjoining properties were identified and visually assessed from the subject site boundaries or other publicly accessible areas. Any indications of potential environmental concern relating to the subject property or adjacent properties (that may have impacted the subject property) were documented accordingly.

Field notes documenting the current condition of the subject site are included in **Appendix A**, while site photographs are included in **Appendix B**.

3.3.1 Field Screening and Sampling

The findings of the background review (i.e. previous sampling conducted at the site) as well as observations made during the site visit helped to determine whether soil sampling was required. These observations included visual/olfactory indications of soil contamination and/or exposed soil existing beneath cracked and peeling painted surfaces (suspected of containing lead). As per the TOR, painted surfaces were not sampled as part of the scope of work.

However, due to the availability of cracked and peeling paint throughout the site, four (4) exterior paint samples were retained for future considerations.

Limited soil sampling was conducted at the site in an area identified as being a potential environmental concern. Ten soil samples were collected via a trowel and in accordance with the following documentation:

- *CCME EPC-NCS62E Guidance Manual on Sampling, Analysis, and Data Management for Contaminated Sites – Volume I: Main Report, December 1993*
- *CCME EPC-NCS66E Guidance Manual on Sampling, Analysis, and Data Management for Contaminated Sites – Volume II: Analytical Method Summaries, December 1993*
- *CCME EPCNCSRP-48E Subsurface Assessment Handbook for Contaminated Sites, March 1994*
- *Ministry of the Environment (MOE) Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario, May 1996*
- *Phase II Environmental Site Assessment CSA Standard Z769-00*

Due to the nature of the study, soil sampling was limited to the surficial soils; the maximum depth at which a sample was collected was 0.2 metres (m). All samples were divided into 2 halves, separately bagged/jarred and placed in laboratory supplied glass jars. After the collection of each sample, sampling equipment was rinsed with an Alconox solution and distilled water. Field observations were recorded at the time of sampling. The sample identification numbers, GPS coordinates, depth and analysis performed at each sampling location are presented Section 7.2.

All soil samples (i.e. ten samples) were submitted to AGAT Laboratories in Mississauga, Ontario, through standard chain-of-custody procedures. AGAT is accredited by the Canadian Association for Laboratory Accreditation (CALA).

The subject site is a Federally-owned property and is therefore subject to the CCME Canadian Environmental Quality Guidelines (2007) and the CCME Canada-Wide Standard (CWS) for Petroleum Hydrocarbons in Soil (January 2008). Parameters for which the CCME documents do not provide guidelines or standards have been compared to the appropriate provincial site condition standards developed by the Ministry of the Environment (MOE). In the instance that CCME guidelines and/or standards are not provided, the *Ontario Regulation 153/04 Table 2* Standard in accordance with the MOE “Soil, Ground Water and Sediment Standards for Use under Part XV.1 Of the Environmental Protection Act”, Published on March 9, 2004, was applied for comparison purposes.

As the subject property is currently utilized for agricultural, commercial and residential purposes, analytical results were compared to the more stringent criteria of the Agricultural and Agricultural and Other Property Use criteria for CCME CEQG/CWS and MOE Reg. 153/04, respectively.

Groundwater is used as a potable source and for cleaning purposes both on the subject property and potentially for the surrounding properties. In order to take a conservative approach, the coarse grained standard and a potable ground water condition was applied.

3.3.2 AST/UST Compliance

A visual inspection of the site along with a review of background documents was conducted to determine the presence of aboveground storage tanks (ASTs) and underground storage tanks (USTs) at the subject site.

Information relevant to any observed ASTs, USTs or associated vent and fill piping was documented on the *Tank Compliance Checklist* (**Appendix A**).

3.3.3 Water Wells and Septic Systems

A visual inspection of the site along with a review of background documents was conducted to determine the presence of water and wastewater systems, including on-site well(s), septic tank(s), septic bed(s), and indoor/outdoor storage tanks.

Information relevant to any observed water wells and/or septic systems was documented on the *Water Well and Septic System Checklist* (**Appendix A**).

3.3.4 Designated Substances and Hazardous Materials

The site (including structures) was inspected for the presence of Designated Substances and Hazardous Materials (DSHM) as per CSA Standard Z768-01. This involved a recorded inventory of hazardous materials and unidentified substances (including wastes), their approximate quantities, types of containers used for storage and storage conditions. In addition, four paint samples were collected for future consideration.

The inspection was aimed at identifying the eleven designated substances in the *Occupational Health and Safety Act* (i.e. asbestos, lead, mercury, silica, etc.) as well as any existing hazardous materials, such as polychlorinated biphenyls (PCBs), ozone depleting substances (ODS), petroleum hydrocarbons, and other stored chemicals. The requirement for conducting a complete designated substances survey was not included in the scope of work, and as such, the inspection did not include bulk material sampling for designated substances (e.g. potential asbestos-containing materials, lead based paint).

If identified, the locations, quantities and condition of these materials were recorded based on visual observations. Findings of these materials are documented in Section 7.

3.4 QA/QC

A quality assurance and quality control (QA/QC) program was implemented to address office and field components of the project. All project documentation and correspondence was maintained and controlled through a dedicated filing system with unique site file identifiers assigned to each site. Overall QA/QC measures were supervised by the Project Manager.

A field QA/QC coordinator was responsible for ensuring uniform site assessment, sampling, survey and auditing protocols. Where applicable, field work was carried out in accordance with the MOE document entitled *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*.

Office QA/QC procedures during the data reduction and reporting phases involved review of all figures and report components by senior staff prior to report completion.

4. Site Overview

4.1 Site Description

The subject properties are located at 10243 and 10251 Reesor Road, Markham, Ontario (PIN 614110, PIN 614111 AND PIN 614112) and are part of the “Pickering Lands Site”, which comprises 7,530 hectares of land. A Site Location Plan of the property is presented as **Figure 2**, a Site Plan as **Figure 3** and a recent aerial photograph as **Figure 4A and Figure 4B**. Key features observed during the site visit are also identified on **Figure 4A and Figure 4B**. A site plan provided by the tenant outlining the site within Camp Robin Hood (CRH), is presented in **Figure 5**.

The site occupies an area of approximately 30 ha and is municipally zoned as agricultural and rural residential. Environmental reports completed for the property (summarized in Section 5) indicate the site has not been used for industrial purposes. Two distinct land-uses are featured at the site. For the purpose of this assessment, the western third of the property is considered residential land as tenanted residences exist on-site (PIN 614112.2), although the majority of the site is used for commercial purposes operated by Camp Robin Hood (CRH). The remaining two-thirds of the property is considered agricultural.

The property is rectangular in shape and generally has a flat topography that slopes towards the southeast corner of the site. The developed portion of the site is located on the western portion of the site and is comprised of two residential buildings, a barn, numerous wooden cabins and shelters, portables, several wooden buildings, a dome, three pools and sport fields.

The eastern two-thirds of the site is used for agricultural purposes of which the northern and southern extents are defined by mature trees. The south central portion is defined by a triangular shaped forested area which is bisected by a small stream. It is understood that the forested area is used by CRH who have fondly named it “Sherwood Forest”. Access to the forested area is gained via a narrow pathway extending along the southern border of PIN 614111

4.1.1 Utilities and Site Services

The property is not serviced by municipal drinking water or sewer. Private water wells (supplying drinking water) located to northwest of the barn and north of the pond) and septic systems were identified at the north house, south house, main office and seven washroom stations on-site. The site is supplied with electricity via overhead wires.

4.2 Adjacent Properties

The subject property is bounded by PIN 614119 to the north, PIN 614104 to the south, Reesor Road followed by PIN 614038 to the west, and PIN 614118 to PIN 614259 to the east. Details of the adjacent properties are summarized in Section 7.

5. Background and Records Review

5.1 Previous Records and Reports

GENIVAR conducted a review of background documents including records, correspondence and reports provided by PWGSC in order to identify potential environmental risks associated with the subject property stemming from historical, current and adjacent property uses. The information gathered during the background review was used to identify areas requiring further investigation during the site visits.

GENIVAR reviewed the reports identified below for PIN 614110, PIN 614111.1 and PIN 614112.2 (provided by PWGSC). The relevant findings are summarized below:

1. Shaheen and Peaker (March 1997). Environmental Evaluation, Pickering Land Site, <u>Phase 1D, Commercial Properties PIN 614110/111.1</u>

   - Asbestos found in vinyl floor tiles adjacent to hitting cubicles, main office and health centre.
   - Lead was found in paint in:
     - Window sill, second floor bedroom, baseball office

    - Exterior paint, baseball office
    - Exterior trim, baseball office
    - Exterior paint, photography building
    - Exterior paint, archery huts
    - Painted chalk board, arts and crafts building
    - Exterior paint, program office
    - Wood trim, main floor living room, house
    - Exterior wall, house
- Possible PCBs in light ballasts
- Nine ASTs on-site:
    - 3 fuel oil tanks
    - 5 propane tanks
    - 1 4500 l sewage waste tank (no longer in use)
- Minor staining associated with house AST
- TDS exceedance in tap water

2. Terraprobe (March 1997). Environmental Evaluation, Pickering Land Site, Phase 1D, PIN 614111.2

- Two discarded ASTs on-site. One contains 180 L of diesel.
- Extensive amount of refuse along access road.
- Holding tank may be present along access road.

3. Pinchin Environmental. (August 1997). Pickering Airport Lands Asbestos and Lead Evaluation of, PIN 614110.

- Asbestos present in floor tiles (under carpet) east of baseball diamonds
- Asbestos no longer present in main office/health centre
- Lead in paint in second floor window sill and living room in baseball office.
- Lead not detected in paint on chalk board in arts and crafts building.

4. Shaheen and Peaker (September 1997). Pickering Airport Lands – Storage Tank Inventory (PIN 614111.2).

- Two AST's located at east end of debris pile. 900 L AST designated for future use. 1000 L AST designated for disposal.

5. Shaheen and Peaker (September 1997). Pickering Lands Site - AST/UST Removal and Disposal Program (PIN 614111.2)

- 1000 L tank was removed from site.

6. Pinchin Environmental. (December 1997). Pickering Airport Lands Lead Abatement of PIN 614110.

- Removed lead paint from window sills in baseball office.

7. Transport Canada (March 2003). Tank and Water Well Survey

Four wells:

- NW of Green Barn, poor condition
- East of Mom's Place, poor condition
- North of Main/Health office, inaccessible
- South of swimming pool, poor condition

Six tanks:

- Propane, NE of Cooper Dome, small propane tank inside Cooper Dome
- Two 910 L heating oil ASTs, NW corner of basement at 10243 Reesor Road
- Two 3,785 gallon propane tanks south of swimming pools, poor condition
- 680 L heating oil, SW corner of basement at 10251 Reesor Road.

8. Transport Canada (January 2006), Well Decommissioning Correspondence – Camp Robin Hood.

    - 1 well decommissioned, 2 remaining
    - Information on wells needs to be verified.

9. PWGSC (June, 2009). Water Source Database.

    - Five (5) wells were associated with PIN 614110: two bored wells with concrete casings, one drilled well with 6" steel casing (prior to 2001), a drilled well installed between July 2002 and February 2006 (since 2001), and an unknown type of well (not drilled).
    - The two bored wells were not observed in 2006.
    - The interior of the unknown type well was not accessible and was not in used during the well survey in 2006.
    - The tenant was the owner of the well and was responsible for any compliance issue related to the wells.

10. PWGSC (June, 2009). Water Quality Summary Sampling.

    - Parameters tested did not exceed the respective guidelines with the exception of marginally high sodium concentrations.

11. PWGSC (June, 2009). Tank Database.

    - There are 22 tanks on record for PIN 614110:
        - 8 propane tanks – 1 for the BBQ in the cooper dome (1-365 L tank rented from gas company) and 3 heating the swimming pool (2-3785 L tank rented from gas company, 1-675 L), 5 not observed in 2002);
        - 8 sanitary waste tanks (7 installed in various location on the site, 1 inactive and removed);
        - 1 empty steel tank(unknown content, discarded and removed);
        - 1 diesel steel tank (discarded and removed);
        - 1 fuel oil steel tank (not observed in 2002); and
        - 3 heating fuel/furnace oil steel tanks from the year 1967 (two interconnected 910 L tanks located at the northwest corner of basement of 10243 Reesor Road, one 800 L tank located at the southwest corner of basement at 10251 Reesor Road). All three tanks were observed to have various deficiencies and did not comply with the applicable code and standards.

5.2 Other Resources Reviewed

In addition to the records supplied by PWGSC, other available resources were reviewed (for the site and adjacent properties). These additional records reviewed are outlined in **Table 5.1** below.

Table 5.1 Records Reviewed

Records Searched	Date of Records Found (s)	Source
Aerial Photographs	1954, 1971 and 197	Shaheen and Peaker (March 1997). Environmental Evaluation, Pickering Land Site, Phase 1D, Commercial Properties PIN 614110/111.1
	1995, 1999, 2002, 2007 and 2009	Region of York on-line mapping services
Topographic Map (30M/14)	1989	Softmap Digital Topographic Maps
Geological and Soils Map	1980	Sharp, D.R., 1980: Quaternary Geology of Toronto and Surrounding Area, Ontario Geological Survey Preliminary Map P.2204, Geological Series. Scale 1:100,000. Compiled 1980.
Oak Ridges Moraine Mapping	April 17, 2002	Oak Ridges Moraine Website http://www.mah.gov.on.ca/Page1738.aspx
Rouge Park Mapping	August 18, 2008	Rouge Park Website http://www.rougepark.com/explore/park_map.php
Markham Zoning Map	September 30, 2009	Town of Markham http://www.markham.ca

Available information collected from the above records is summarized below.

5.2.2 Aerial Photographs

Aerial photographs dated 1954, 1971 and 1978 were reviewed by Shaheen and Peaker during their Phase ID report prepared for the site. The indications are that the 1954 aerial image depicted the presence of a house and a barn on the property. Shaheen and Peaker reported that the 1971 and 1978 aerial photographs revealed no other significant changes apart from a few more buildings which were noted in the 1978 aerial photograph provided in the report revealed the absence of. Camp Robin Hood. The eastern portion of the site was used for agricultural purposes and featured a triangular shaped forested area

Aerial photographs dated 1995, 1999, 2002, 2007 and 2009 were obtained and reviewed from the Region of York on-line mapping services. The photographs revealed that site has not undergone any significant changes since 1995. The most notable feature observed in all five aerial photographs was the large number of building structures present on the western portion of the property and the sport fields on the northern portion of the camp. The eastern portion of the property appears to have gone unchanged since the 1978 aerial photograph. The most recent available aerial photograph dated 2009, is provided in **Figures 3 and 4 (A & B)**.

A review of aerial photographs indicated that the neighbouring properties surrounding the site have not undergone any significant changes and have been used for rural agricultural purposes.

5.2.3 Topographic Mapping

A review of topographic mapping (30M/14) revealed the presence of as many as ten structures including a silo located on the western portion of the site. Additionally, a small feature resembling the current day pond was observed (**Figure 6**). The mapping also revealed that the lands surrounding the site are predominantly vacant, undeveloped, or agricultural.

Katabokakonk Creek and Major Creek were noted west and east of the site, respectively. These creeks are part of the Rouge watershed system, which drains into Lake Ontario.

A small watercourse was identified bisecting the forested area in a north to south direction.

5.2.4 Geological Records and Soil Mapping

A review of the Energy, Mines and Resources Canada National Topographic Map 30M/14 (1989) revealed numerous creeks and tributaries flowing in the general vicinity of the subject site. Based on the site's topography, the surface water flow is likely towards the southeast corner of the site. Based on the regional trends, it is anticipated that the direction of regional groundwater flow is southwards towards Lake Ontario.

According to the 1991 Quaternary Geology of Ontario geological survey map (OGS map, Southern sheet, Map 2556), the PLS surficial soils are Halton Till, which are generally comprised of fine grained silts and clays of glaciolacustrine origin.

The northern portion of the PLS is part of the Oak Ridges Moraine. The dominant sediments forming the Oak Ridges Moraine include interbedded fine sands and silts with locally prominent coarse sands and gravel. The subject property does not fall within the Oak Ridges Moraine.

5.3 Area of Concern

Based on the records reviewed GENIVAR has identified the following potential concerns associated with the site:

- Minor staining associated with house AST
- Investigate possible impacts to the site soils as a result of the co-mingling of elevated exterior lead-based paints.
- Extensive amount of refuse along access road on PIN 614111.2.

6. Tenant Interview

The current tenants of PIN 614110, PIN 614111 and PIN 614112.2 are members of the Taylor and Wharton family. The tenant interview was conducted with Mr. Jim Taylor on July 15, 2009. The Wharton family was not available for interview. Mr. Taylor answered the questions pertaining to the subject site and structures during the site visit. In addition, the owner of CRH, Mr. Howie Grossinger completed the Tenant Interview Form. Mr. Grossinger's and Mr. Taylor's responses were recorded on the *Tenant Interview Form* (**Appendix A**). It is noted that the *Tenant Interview Form* provides information gathered from the tenant during the interview and does not necessarily reflect information gathered during the records review or observations made during the site visit. Key findings of the tenant interview are summarized below:

- Vehicle maintenance (oil changes and vehicle repair) is conducted in the barn and maintenance sheds of the property. This activity has been taking place for over ten years. Mr. Grossinger did not recall any spill occurrences relating to this activity. The waste oil is typically placed in sealed plastic containers which are taken to the Miller Transfer Station located in the area of Woodbine south of Highway 7. The facility is in operation from May to October. The camp participates in both the green and blue bin programs and has their garbage picked up weekly.

- Mr. Taylor and Mr. Grossinger indicated that the site has never been used for the purposes manufacturing. He confirmed that pesticides, pool chemicals and petroleum products have been used on the site. It was reported that spills and leaks of these items have not occurred.

- A number of above ground tanks are present on the site and include three plastic tanks used to store chlorine and acid. The volumes of these tanks ranged from 200 L to 1000 L. In addition, there are two, 6,000L horizontal propane tanks associated with the pool and two, 120L propane tanks used for cooking purposes in the area of the Cooper Dome. Further, there are two home heating oil ASTs located in the northwest corner of the basement of the house located to the south of the main parking area (PIN 614110) and one AST located in the basement of the house occupied by the Wharton family located to the north side of the parking area (PIN 614112.2).

- No concerns were raised regarding the neighbouring properties surrounding the site.
- The site is supplied with water via two drilled wells. One of the wells is located to the northwest of the barn and the second well is located to the north of the pond. The water is maintained through the use of chlorine injections, ultra violet lights and a filtration system. The water is checked weekly by trained onsite staff. An abandoned well is located outside the Health Centre under the picnic table. The condition of this well is unknown.
- The site is equipped with a septic tank and tile beds associated with the two houses and the Camp Office as well as seven holding tanks which service the bathrooms. The septic tanks are typically cleaned out weekly from July to September by Les Coulter Septic. It was reported that the septic system associated with the main office was installed five years ago as a result of weeping tile system not functioning properly.
- Mr. Grossinger was not aware of asbestos, lead-based paints or Urea Formaldehyde-Foam Insulation (UFFI) present on the site.

7. Site Visit

GENIVAR staff (John Edwards, Elizabeth Tsui, Andre Lyn and Andrew O'Connell) visited the subject property on July 15, 2009 to observe the existing conditions of the site. GENIVAR was accompanied by the tenant during the site inspections. The inspection consisted of a visual survey of the grounds, the residential building and the outbuildings. Site photographs are provided in **Appendix B**. A second site visit was conducted on December 22, 2009 to collect representative soil samples in areas identified as potential environmental concern.

Weather conditions were sunny with a clear sky during the site visit. General site characteristics were observed and documented during the site visit, including an inspection for designated substances, hazardous materials and water well(s)/septic system(s).

7.1 Property Information and Assessment Findings

General Site Information

Identification / Location					
Township:	Markham	**Conc:**	10	**Lot:**	22
Common Property Name (Ex-owner)		Camp Robin Hood (CRH)			
Street Address (Emergency I.D.#)		10243 and 10251 Reesor Road, Markham			
Property Identification Number (PIN)		614110, 614111 and 614112			
Located Within Oak Ridges moraine (ORM) or Rouge Park North Corridor (RPNC) or Both		The site does not fall within the ORM or RPNC			
Current Property Tenant		Camp Robin Hood (CRH) Taylor and Wharton families			

Climatic Conditions	
Description: 23.9 ^{o}C, Sunny	**Limitations / Concerns**
Date of Site Visit: July 15, 2009	None

Land Use Status		
Description: Currently the property is occupied by two residential buildings, a barn, sport fields, swimming pools, domes, shelters and numerous buildings. The site is operated by CRH from July to September and functions as a day camp facility providing a wide range of activities and programs for children.		**Comments / Concerns**
PWGSC Lease Type	Year-to-Year commercial	
Present Land Use	Commercial with year round residential occupancy for the Site Manager. Agricultural land in areas not occupied by Camp Robin Hood	
Past Land Use(s)	Agricultural	
Municipal Land Zoning	Rural residential/agricultural	
Comments/Discussion: Municipal land zoning information was referenced from the Town of Markham Official Plan Schedule A, consolidated July 2005.		

PHYSICAL / BIOLOGICAL CHARACTERISTICS

Property Boundaries / Adjacent Lands and Land Use		
	Description	**Potential Concerns**
North:	Agricultural – 614119	None observed during the time of the site visit.
East:	Reesor Road followed by Agricultural – 614038	None observed during the time of the site visit.
South:	Agricultural – 614104	None observed during the time of the site visit.
West:	Agricultural – 614118 to 614259	None observed during the time of the site visit.
Comments/Discussion: The surrounding properties are used primarily for agricultural purposes as well as public roadways. No significant environmental concerns were identified from the limits of the site. Possible pesticide usages on the adjacent properties are not expected to be a significant environmental concern.		

Surface Water / Wetlands on Property		***none identified***	X
Description	**Location**	**Comments/Concerns**	
Pond	southeast of main office	no concerns	
Seasonal drainage	Through Sherwood Forest	No concerns	
Sampling/Analytical Testing Results: N/A			

Physical Characteristics
Topography: Generally flat with slight slope to the south
Vegetative Cover: Grass (manicured), mature trees and a forested area to the south-eastern portion of the site.

Physical Characteristics
Comments/Discussion: A review of topographic mapping (30M/14) revealed the presence of as many as ten structures including a silo located on the western portion of the site. Additionally, a small feature resembling the current day pond was observed (**Figure 6**). The mapping also revealed that the lands surrounding the site are predominantly vacant, undeveloped, or agricultural. Katabokakonk Creek and Major Creek were noted west and east of the site, respectively. These creeks are part of the Rouge watershed system, which drains into Lake Ontario. No watercourses were identified within 30 m of the site.

STRUCTURES

Inventory of Structures / Foundations on-site				***none identified***	
No.	**Structure**	**Building Footprint Size**	**Age**	**Construction**	**Use**
1	house	$70m^2$	~40yrs	wood frame	baseball office and residence (July to September)
2	U-shaped barn	$600m^2$	"-50yrs	wood frame, stone foundation	arts, crafts, music and drama building (some storage)
3	house	$180m^2$	-50yrs	wood frame	residential (employee for camp Robin Hood)
4	main office	$345m^2$	~40yrs	wood frame	main office
5	photography building (there are 2 smaller sheds attached to the north side of the building)	$188m^2$	~50yrs	wood frame with wood and metal siding	photography building (sheds used for storage)
6	program office	$77m^2$	~40yrs	wood frame	program office
7	nature building	$25m^2$	-30yrs	wood frame	nature building
8	shed (northeast corner of property)	$9m^2$	~30yrs	wood frame and sides	storage (ceiling tiles)
9	portables (4 welded together)	$280m^2$	~30yrs	wood frame, metal siding	empty
10	shelter, east of pools	$150m^2$	~20yrs	wood frame	shelter
11	pool shed #1	$16m^2$	-20yrs	wood frame	houses pool equipment
12	pool shed #2	$12m^2$	~20yrs	wood frame	houses pool equipment

Inventory of Structures / Foundations on-site				***none identified***	
13	pool shed #3	$19m^2$	~30yrs	wood frame	houses pool equipment
14	garage with stage attached	$170m^2$	~30yrs	wood frame, concrete floor	equipment storage, canoes, etc.
15	campcraft and 2 adjoining sheds	$18m^2 + 4m^2 + 9m^2$	-30yrs	campcraft wood frame sheds wood and tin	campcraft: office sheds: storage
16	fun and fitness Portable	$105m^2$	-30yrs	wood frame, wood clad	storage of gym equipment and games
17	Coopers Dome	$180m^2$	~30yrs	open wood shelter with concrete floor	shelter for picnic tables, barbecues, etc.
18	Archery huts	$28m^2$	-30yrs	3 small attached sheds: wood frame and wood clad	presently empty; used for storage of archery equipment when the camp is open
19	arts and crafts building (old portable)	$65m^2$	~40yrs	wood frame	storage of art supplies
20	mom's place	$70m^2$	30-40 yrs	wood frame, wood clad	kitchen with walk-in refrigerator, food storage
21	shed	$36m^2$	25yrs	wood frame, wood clad	houses pool equipment
Comments/Discussion: Extensive interior and exterior evidence of cracked and peeling painted surfaces observed throughout the majority of the buildings located on the site.					

DESIGNATED SUBSTANCES

Asbestos-containing Materials						***none identified***	
No.	**Structure & Location** (Shaheen & Peaker 1997)	**Sample Description** (Shaheen & Peaker 1997)	**Asbestos Fibre %**		**Friable/ Non-friable** (Shaheen & Peaker 1997)	**Est. Quantity** (Shaheen & Peaker 1997)	**Current Condition GENIVAR 2009**
			Chrysotile	**Amosite**			
111.1-A1	baseball office: kitchen	vinyl tile, off white	0	0	N/A	N/A	Not observed, possibly under carpet
111.1-A2	baseball office: Lrg rm	vinyl tile under carpet	0	0	N/A	N/A	Not observed, possibly under carpet

Asbestos-containing Materials						***none identified***	
No.	**Structure & Location** (Shaheen & Peaker 1997)	**Sample Description** (Shaheen & Peaker 1997)	**Asbestos Fibre %**		**Friable/ Non-friable** (Shaheen & Peaker 1997)	**Est. Quantity** (Shaheen & Peaker 1997)	**Current Condition GENIVAR 2009**
			Chrysotile	**Amosite**			
111.1-A3	NW shed attached to photography building	vinyl tile inside on floor	0	0	N/A	N/A	Cannot confirm
111.1-A4	photography building	acoustic tile	0	0	N/A	N/A	Cannot confirm
111.1-A5	shed, northeast corner of site	acoustic tile	0	0	N/A	N/A	0.3 x0.6m ACT pinhole regular
111.1-A6	barn: overhead beams	textured plaster	0	0	N/A	N/A	Not observed (wood painted white)
111.1-A7	portables beside hitting cubicles (now known as the Play Place)	vinyl tile under carpet	1-5	0	non-friable	good (280m2)	VFT, White with grey flakes
111.1-A8	portables beside hitting cubicles (now known as the Play Place)	acoustic tiles	0	0	N/A	N/A	Wood
111.1-A9	campcraft	acoustic tiles	0	0	N/A	N/A	Plywood
111.1-A10	arts and crafts building	sheet flooring (linoleum)	0	0	N/A	N/A	Not observed (0.3 x0.3m cream with brown streaks VFT)
111.1-A11	arts and crafts building	strips of flooring (felt layer)	0	0	N/A	N/A	Not observed (0.3 x0.3m cream with brown streaks VFT)
111.1-A12	arts and crafts building	subfloor under sheet flooring	0	0	N/A	N/A	Not observed (0.3 x0.3m cream with brown streaks VFT)
111.1-A13	mom's place	sheet flooring	0	0	N/A	N/A	VFT – beige and linoleum – white and green

Asbestos-containing Materials							***none identified***	
No.	**Structure & Location** (Shaheen & Peaker 1997)	**Sample Description** (Shaheen & Peaker 1997)	**Asbestos Fibre %**		**Friable/ Non-friable** (Shaheen & Peaker 1997)	**Est. Quantity** (Shaheen & Peaker 1997)	**Current Condition GENIVAR 2009**
			Chrysotile	**Amosite**			
111.1-A14	main office & Health Centre	vinyl floor tile	1-5	0	non-friable	good (171m2)	0.3 x0.3m VFT blue and white streaks & cream with streaks
111.1-A15	main office	plaster under white paint	0	0	N/A	N/A	Not observed
111.1-A16	main office, second floor office	acoustic tiles	0	0	N/A	N/A	0.3 x0.3 m ACT present
111.1-A17	house: kitchen	sheet flooring	0	0	N/A	N/A	Not observed (laminate flooring)
111.1-A18	house: kitchen	sheet flooring, second layer	0	0	N/A	N/A	Not observed (laminate flooring)
111.1-A19	house: kitchen	vinyl tile, third layer	0	0	N/A	N/A	Not observed (laminate flooring)
111.1-A20	house: office area, kitchen	vinyl tile	0	0	N/A	N/A	Not observed (laminate flooring)
111.1-A21	house: office area, kitchen	vinyl tile, second layer	0	0	N/A	N/A	Not observed (laminate flooring)
111.1-A22	house: office area, bathroom	vinyl tile	0	0	N/A	N/A	Not observed (laminate flooring)

Asbestos-containing Materials						*none identified*	
No.	**Structure & Location** (Shaheen & Peaker 1997)	**Sample Description** (Shaheen & Peaker 1997)	**Asbestos Fibre %**		**Friable/ Non-friable** (Shaheen & Peaker 1997)	**Est. Quantity** (Shaheen & Peaker 1997)	**Current Condition GENIVAR 2009**
			Chrysotile	**Amosite**			

Comments: During the recent site visit conducted by GENIVAR on July 15, 2009 numerous forms of VFT and acoustic ceiling tiles (ACT) were observed throughout the site. Floor tile occurrences/descriptions were as follows: Main office 0.3x0.3m blue with white streaks (VFT), Arts & Crafts 0.3x0.3m cream with streaks (VFT), Friar Tuck 0.3x0.3m cream and brown (VFT), Portable east of Friar Tuck 0.3x0.3m white with grey streaks (VFT), Will Scarlet 0.3x0.3m cream and blue (VFT), Little John 0.3x0.3m cream with brown streaks (VFT), Dance Studio 0.3x0.3m cream with white (VFT), Cooper Dome 0.6x0.9m grey with streaks (VFT), Arrow Sports Dome 0.3x0.3m cream with streaks (VFT) and the Canteen vinyl floor sheeting. Acoustical ceiling tiles (ACTs) were observed in the following buildings: Main office 0.6x1.2m (pinhole fissure white), Main office – 2nd floor office lounge 0.3x0.3m white, Program Chalet 0.6x1.2m (pinhole fissure white), Arts and Crafts 0.6x1.2m (pinhole fissure white), the portable to the east of the Friar Tuck building 0.6x1.2m (pinhole fissure white), Friar Tuck 0.6x1.2m(pinhole white), Will Scarlet 0.6x1.2m (pinhole white), Little John 0.6x1.2m (pinhole and pinhole fissure white), Dance Studio 0.6x1.2m (pinhole fissure white) and the Sports Dome (Portable attached) 0.3x0.6m (pinhole regular white).

Past analytical results indicating 'Non Detect' (0.) were included in the above table because, with the inception of O. Reg. 278/05, the number of sample required to be tested to determine whether a material is asbestos-containing or not, has changed. As such, previous sample results may not be sufficient to deem a material as non asbestos-containing.

O. Reg 278/.05, Section 3. (1) states, *"For the purposes of this Regulation, the method and procedures for establishing whether material is asbestos-containing material and for establishing its asbestos content and the type of asbestos shall be in accordance with the following standard: (3) The minimum number of bulk material samples to be collected from an area of homogeneous material is set out in Table 1. O. Reg. 278/05, s. 3 (3)."*

Lead-containing Materials				*none identified*	
No.	**Structure/Location** (Previous Consultant)	**Description** (Previous Consultant)	**Lead (ppm)** (Previous Consultant)	**Est. Quantity** (Previous Consultant)	**Current Condition GENIVAR 2009**
111.1-P1	baseball office (Shaheen & Peaker 1997)	kitchen: ceiling paint, white, some cracking	1.63	14m'	Good
111.1-P2	baseball office (Shaheen & Peaker 1997)	bathroom: wall and ceiling paint, peeling	355	20m"	White, good
111.1-P3	baseball office (Shaheen & Peaker 1997)	living room: wall paint (light blue), deteriorated at window	161	20m'	Blue, good
111.1-P4	baseball office (Shaheen & Peaker 1997)	second floor bedroom: window sill paint, peeling	113,770	5m'	Blue and beige, good
111.1-P5	baseball office (Shaheen & Peaker 1997)	exterior house paint, yellow, some areas peeling	64,959	153m'	Baby blue, cracked and peeling. No signs of yellow layer underneath
111.1-P6	baseball office (Shaheen & Peaker 1997)	exterior trim paint: green paint, peeling	64,846	10m'	Not present. White exterior trimming, good condition

Lead-containing Materials				***none identified***	
No.	**Structure/Location** (Previous Consultant)	**Description** (Previous Consultant)	**Lead (ppm)** (Previous Consultant)	**Est. Quantity** (Previous Consultant)	**Current Condition GENIVAR 2009**
111.1-P7	photography building (now known as Coaches' Corner) (Shaheen & Peaker 1997)	exterior green paint on wood siding, some sections peeling	37,586	100m4	Green paint on aluminum siding - good
111.1-P8	barn (Shaheen & Peaker 1997)	over head beams: white paint (white wash), loose, flaky	75	>200m'	White paint, loose, flaky
111.1-P9	fun and fitness building (Shaheen & Peaker 1997)	wall paint, cracks in paint, but not peeling	4.7	100m'	Blue/grey cracked and peeling - poor
111.1P10	archery huts (Shaheen & Peaker 1997)	exterior wall paint, brown, good condition, some faded areas	13,192	46m'	Brown exterior, cracked and peeling
111.1-P11	arts and crafts building (Shaheen & Peaker 1997)	ceiling paint, peeling	670	55m'	Not observed (0.6x1.2m ACT)
111.1-P12	arts and crafts building (Shaheen & Peaker 1997)	painted chalk board, west wall, black paint, peeling	8,471	5m'	Not observed
111.1-P13	program office (Shaheen & Peaker 1997)	exterior paint, orange, peeling	18,936	102m'	Multi coloured building (brown, red, yellow, green, blue) signs of cracking and peeling
111.1-P14	program office (Shaheen & Peaker 1997)	interior ceiling paint, white, generally good, some peeling near dividers on ceiling	261	85m'	Not observed (0.6x1.2m ACT)
111.1-P15	main office (Shaheen & Peaker 1997)	offices: white paint, good	40.6	118m'	Not observed (light blue, peach and yellow) evidence of cracking
111.1-P16	sleeping huts (Shaheen & Peaker 1997)	exterior walls: brown paint with old green paint underneath, some areas peeling	2,305	numerous lots, - 15m2 each	Painted green and brown, fair condition
111.1-P17	House: office area (Shaheen & Peaker 1997)	main floor living room: wood trim and window sill paint, white, good	53,668	10m'	Not observed (painted white and blue) good condition

Lead-containing Materials				***none identified***	
No.	**Structure/Location** (Previous Consultant)	**Description** (Previous Consultant)	**Lead (ppm)** (Previous Consultant)	**Est. Quantity** (Previous Consultant)	**Current Condition GENIVAR 2009**
111.1-P18	House (Shaheen & Peaker 1997)	exterior wall paint, yellow, some peeling	17,374	224m'	Not observed (painted light blue) cracked and peeling
	Baseball Office (Pinchin Environmental. 1997)	2^{nd} Floor North Window sill, white, poor	13 mg/cm^2	-	Fair to good
	Baseball Office (Pinchin Environmental. 1997)	2^{nd} Floor South Window sill, white, poor	2.4 mg/cm^2	-	Fair to good
	Baseball Office (Pinchin Environmental. 1997)	Stairs to 2^{nd} Floor, brown	<0.2 mg/cm^2	-	Fair to good
	Baseball Office (Pinchin Environmental. 1997)	Living room, west window, white, poor	2 mg/cm^2	-	Fair to good
	Baseball Office (Pinchin Environmental. 1997)	S/W Bedroom window sill, white, poor	0.5 mg/cm^2	-	Fair to good
	Jr. Arts and Crafts (Pinchin Environmental. 1997)	Wall below chalkboard	0.4 mg/cm^2	-	Fair to good
	Jr. Arts and Crafts (Pinchin Environmental. 1997)	Chalkboard, black	<0.2 mg/cm^2	-	Fair to good
Additional interior and exterior painted surface observations for other buildings not described above noted during GENIVAR's recent 2009 site investigation.					
Interior	Main Office – Print area	Light green walls White ceiling	N/A	-	Fair
	Main Office – 2^{nd} Floor office lounge	Grey floor	N/A	-	Poor
	Sports Building	Grey/blue floors, electric blue walls and white ceiling	N/A	-	Poor
	Cooper Dome	White walls and ceiling	N/A	-	Poor
	Campcraft	Grey floor	N/A	-	Poor
	Castle	White ceiling	N/A	-	Poor
	South House - Basement	White exposed wood joists	N/A	-	Poor
Exterior	Arts & Crafts Building	Green aluminum siding and white window sills	N/A	-	Poor
	Friar Tuck Building	Light blue aluminum siding	N/A	-	Poor
	Portable east of Friar Tuck Building	White window sills	N/A	-	Poor (PNT-110-1 retained/not analyzed)
	Will Scarlet Building	Blue aluminum siding	N/A	-	Poor

Lead-containing Materials				***none identified***	
No.	**Structure/Location** (Previous Consultant)	**Description** (Previous Consultant)	**Lead (ppm)** (Previous Consultant)	**Est. Quantity** (Previous Consultant)	**Current Condition GENIVAR 2009**
	Little John Building	Brown door and light blue aluminum siding	N/A	-	Poor (PNT-110-2 and PNT-110-3 retained/not analyzed)
	Sports Building	Green/blue walls	N/A	-	Poor (PNT-110-4 retained/not analyzed)
	Dance Studio	White window sills	N/A	-	Poor
	Campcraft	Brown window sill	N/A	-	Poor
	Swim Office	White trim around door and windows	N/A	-	Poor
Other	A car battery was found discarded on the east side of the Action Centre/Sports Locker facility.			1	**No sign of leak/stain**

Comments/Discussion: The *Surface Coating Materials Regulation*, enacted under the amended *Federal Hazardous Products Act* (April 2005), has set the lead concentration limit at 600 ppm for new surface coatings. Since the lead concentrations found in 11 of the previous samples were greater than 600 ppm they would be considered lead-based. An additional seven samples were analyzed by Pinchin by way of a Scitec MAP Z-ray fluorescence spectrum analyzer. The detection limit of the analyzer is 0.2 mg/cm^2. It was indicated that any samples recording at least 1 mg/cm^2 was considered lead-based. As such, 3 of these paints would be considered lead-based.

The recent site visit indicated that the exterior painted surfaces for many of the buildings were in poor condition (refer to table above for further details). Although not analyzed, a total of four exterior paint samples were retained. These samples were retrieved from the building located to the east of the Lasses's cabins (white), the Little John Building, brown door paint and light blue paint from the north wall, and greenish blue paint from the south exterior wall of the sports building. The general condition of the interior painted surfaces could be described as good to fair, with poor conditions noted on the floor (grey) of the 2nd floor of the main office, portable to the north of the Arrow sports dome (cream), walls and ceiling of the Cooper Dome (white), the floor of Camp Crafts (white), floors and walls of the Sports Building (blue and electric blue), the ceiling of the Castle building (white) and the presence of stored paint chips (multi-coloured) in the Senior Flag Pole Outdoor Theatre.

If renovation or demolition activities are conducted at the site the potential exists that lead-based paint will be disturbed in known locations as well as those that have not been sampled. Under these circumstances, these materials should be handled in accordance with O. Reg. 843 under the *Occupational Health and Safety Act* as well as the Ministry of Labour Guideline *Lead on Construction Projects*, September 2004, to prevent the exposure of workers to inhaling lead dust during demolition activities.

Lead is a component in lead-acid car batteries. A car battery was observed on the east side of the Action Centre/Sports Locker facility. No sign of leaking and no staining was observed under the batteries.

Silica			
	Y	**N**	**Unknown**
Masonry products are present in many of the structures located on the site (houses, barn, swimming pools, Senior Flag Pole Outdoor Theatre, domes etc).	X		

Comments/Discussion: Cement containing materials are known to contain silica, which is present in the basement of the house and foundation walls of barn on the site.

Silica is a designated substance that occurs naturally in the environment. Construction materials such as sand, sandstone, granite, clay, and concrete and masonry products may contain silica. Disturbance of silica in the form of dust would only be a health and safety issue for workers during future construction and demolition activities. Construction/demolition related activities that disturb silica include grinding, cutting, drilling, scraping or crushing of silica-containing materials. There are no current compliance issues or environmental concerns related to silica for this property. However, precautions should be taken in accordance with *Ontario Regulation 845/90* (amended by *O. Reg. 391/00*) and the Ministry of Labour Guideline *Silica on Construction Projects* September 2004, during any future demolition or renovation work to prevent inhalation of silica dust.

Mercury			
	Y	**N**	**Unknown**
1 White Rodgers Thermostat – Arts and Crafts building – was opened and was found to contain mercury	X		
1 Honey Well Thermostat (round) – Friar Tuck Building – mercury bulb observed	X		
2 Honey Well Thermostat – Little John Building – could not open			X
1 Honey Well Thermostat was observed in the house located to the northwest of the barn	X		
1 Honey Well Thermostat (round) was observed in the Will Scarlet Building	X		
Compact fluorescent and fluorescent lamps were used in light fixtures throughout the site. Fluorescent lamps are known to contain small amounts of mercury. Approximately 500, 1.2 m bulbs were in use at the site.	X		

Comments/Discussion: Mercury is toxic, persistent, and has a tendency to bioaccumulate in the environment. Therefore, it is listed in Schedule I of the Canadian Environmental Protection Act, 1999 (CEPA), the List of Toxic Substances.

The mercury-containing thermostats located on the site are currently in use and would only be a concern during future renovation or demolition activities if the bulb is broken and the mercury within the bulb becomes exposed.

Fluorescent lights are known to contain small amounts of mercury vapour.

Mercury is regulated by Ontario Regulation 844/90 (amended to O. Reg. 390/00) to protect the health and safety of workers who come into contact with mercury. In addition, the disposal of mercury is regulated by Ontario, Regulation 347/90 General Waste Management, as amended by Ontario Regulation 558/00. There are currently no environmental concerns or compliance issues regarding mercury on the subject property.

Other Designated Substances		***none identified*** X
Description	**Location**	**Comments/Concerns**
Not applicable	Not applicable	Not applicable

Comments/Discussion: No other designated substances were observed on-site. Therefore, there are no compliance issues related to other designated substances.

PCB-containing Materials	
Is there any electrical equipment (ballasts, capacitors, transformers) on-site?	Yes

PCB-containing Materials					
Was any of the equipment manufactured prior to 1979, or is askarel/PCB suspected? List Below:					Unknown
Equipment	**# Units**	**Location**	**Manufacturer Code/Date**	**PCB content**	**In Use Y/N/Unknown**
Fluorescent Light ballast	14	Main Office	N/A	unknown	Yes
	12	Health Centre	Only 1 was inspected: ULT1M8	No	Yes
	14	Main Office – Office area	N/A	unknown	Yes
	4	Main Office – Print area	N/A	unknown	Yes
	2	Main Office – 2nd floor office lounge	N/A	unknown	Yes
	12	Program Chalet	N/A	unknown	Yes
	4	Nature Building	N/A	unknown	Yes
	3	The Cottage	N/A	unknown	Yes
	42	Art and Crafts Building	N/A	unknown	Yes
	42	Friar Tuck Building	N/A	unknown	Yes
	10	Lasses Building	N/A	unknown	Yes
	42	Will Scarlet Building	N/A	unknown	Yes
	39	Little John Building	N/A	unknown	Yes
	6	Archery Hut	N/A	unknown	Yes
	6	Sport Building	Only 1 was inspected: Universal-Thermo-Matic Cat No. 446-LR-TC-P, Class P	unknown	Yes
	21	Dance Studio	N/A	unknown	Yes
	15	Cooper Dome	N/A	unknown	Yes
	18	Arrow Sports Dome	N/A	unknown	Yes
	2	Camp Craft	N/A	unknown	Yes
	1	Castle	N/A	unknown	Yes
	4	Pavilion	N/A	unknown	Yes
	9	Canteen	N/A	unknown	Yes

PCB-containing Materials					
	3	Swim Office	N/A	unknown	Yes
	1	Pool House west of Pavilion	N/A	unknown	Yes
	3	Large Boiler Room (at the Pool)	N/A	unknown	Yes
	8	Barn	N/A	unknown	Yes
	14	Mom's Place	N/A	unknown	Yes
	9	TBS Center	N/A	unknown	Yes
	40	The Quad	N/A	unknown	No (no light bulbs installed)
	38	The Playplace	N/A	unknown	Yes

Comments/Discussion: It is estimated that there is approximately 300 ballasts in use on the site. Only two ballasts were inspected (as listed above) due to the large number currently present on-site. It is possible that some of the ballast contain PCBs.

Ozone Depleting Substances (ODS)				
Is there any refrigeration or cooling equipment (air-conditioners, refrigerators, freezers) on-site?				Yes
Equipment	**Location**	**Manufacturer Code/Date**	**Refrigerant**	**In Use Y/N/Unknown**
AC unit	Main Office (north)	Hampton Bay HBX050	Unknown	Y
AC unit	Main Office (north)	Danby DAC12077EE	R-22	Y
Refrigerator	Main Office Kitchen (north)	Kelvinator MRT13CRBW	R-12	Y
AC unit	Main Office Kitchen (north)	Simplicity M# SAC5204	R-22	Y
AC unit	Health Centre	Maytag M# M7Q8F2A-L	R-22	Y
AC unit	Health Centre	Electrohome	Unknown	Y
AC unit	Health Centre	Danby M# DAC 6097-1	R-22	Y
Water Cooler	Health Centre	Arizona M# 805L	R-134A	Y
Refrigerator	Main Office (south)	GE Medallion 850	Unknown	Y
Water Cooler	Main Office (south)	Vitapur	R-134A	Y
Ac units	Main Office (south)	Haier	R-22	Y

Ozone Depleting Substances (ODS)				
AC unit	Main Office (south)	Maytag M# M7X05F2A-H	Unknown	Y
2 AC units	Main Office (south)	Amana M# APO73M	R-22	Y
AC unit	Main Office 2nd Floor Lounge	Fedder M# A6010F2A-E	R-22	Y
AC unit	The Cottage	Amana M# APO73M	R-22	Y
AC unit	Arts and Crafts	LG	Unknown	Y
AC unit	Bldg. East of Lasses' Cabins	Microsonic	Unknown	Y
AC unit	Bldg. East of Lasses' Cabins	Citizen M# JAC 5718	Unknown	Y
Freezer	Cooper Dome	Cold Spot 160	Unknown	Y
Refrigerator	Camp Crafts	Sanyo M# SR-362W	R134A	Y
2 Beverage Coolers	Swim Office	No name/plate	R-124.8	Y
Water cooler	Swim Office	Greenway M# GWD160W	R-134A	Y
AC unit	House south	Frigidaire M#FAA055P7A	Unknown	Y
Refrigerator	House south	Kenmore M# 5388091 S# ED0513230	Unknown	Y
Freezer	House south	Westinghouse	Unknown	Y
Freezers (2) and refrigerator (2)	Mom's Place	Unknown	Unknown	Y
2 AC units	Mom's Place	Danby	Unknown	Y
Refrigerator	Coach's Corner	Frigidaire	Unknown	Y
AC unit	Play Place	Simplicity	Unknown	Y
Refrigerator	Play Place	Kenmore	Unknown	Y
Refrigerator	House (north)	Beaumark	Unknown	Y
Freezer	House (north)	Kenmore S# 373737, M# C675-30750-0J	R-12	Y
Refrigerator	Barn	Leonard – National Electric	Unknown	N
2 Refrigerators	Barn	Unknown	Unknown	N
1 AC units	Maintenance barn	Unknown	Unknown	N

Ozone Depleting Substances (ODS)

Comments/Discussion: Most of the commonly known ozone depleting substances (ODS), as well as certain alternatives, are halocarbons.

The *Federal Halocarbon Regulations 2003*, Section 3 states that *"No person shall release, or allow or cause the release of, a halocarbon that is contained in (a) a refrigeration system or an air-conditioning system, or any associated container or device, unless the release results from a purge system that emits less than 0.1 kg of halocarbons per kilogram of air purged to the environment."*

The disposal of halocarbon is also covered under the *Federal Halocarbon Regulations 2003,* Section 8, which states *"Before dismantling, decommissioning or destroying any system, a person shall recover all halocarbons contained in the system into a container designed and manufactured to be refilled and to contain that specific type of halocarbon."*

The *Refrigerants Regulation* (Ontario Regulation 189/94) developed under the Ontario *Environmental Protection Act* March 29, 1994 applies to chlorofluorocarbons (CFC), hydrochlorofluorocarbons (HCFCs), and hydrofluorcarbons. Ontario Regulation 717/94 lists a number of compounds that are ODSs, such as R-22. Disposing of equipment containing such refrigerant is covered under O. Reg. 189/94, s. 10 (1) *No person shall dismantle, destroy or incinerate refrigeration equipment or dispose of it by landfilling or by depositing it at a dump unless there is a notice issued under subsection 9 (1,) on the equipment.* A person under section 9 (1) can only be a certified technician as defined under section 21 of the regulation.

Ontario Regulation 189/94 does not prohibit the continued use of controlled refrigerants in existing or new equipment, however that equipment must not emit refrigerant to the natural environment.

The disposal of ODSs is also regulated under O. Reg 347 - *General Waste Management Regulation*.

R134A are not listed as a ODS, however R-12, R-22 and R-124 are listed as ODS. It is unknown whether the other equipment identified contains ozone depleting refrigerants.

Urea Formaldehyde Foam Insulation

	Y	N	Unknown
Is urea formaldehyde insulation present on this property?		X	
If yes, are there any indications it has been exposed to moisture?			

Comments/Discussion: No UFFI was identified on the property during the site visit.

Mould

	Y	N	Unknown
Was any suspected mould growth observed at the site:	X		

Comments/Discussion: Site observations indicated visual signs of staining and possibly mould proliferation on the ceilings of the following buildings: Nature Building, Arts and Crafts Building, Friar Tuck Building, Will Scarlet Building, Little John, Sports Building, Campcraft and the Castle. It is unknown that the stains (dry) observed were the results of one time events which were subsequently remedied or if they are ongoing problems. Due to limited accessibility above the ceiling levels, the extent of these observations is unknown.

SERVICES

Wells — ***none identified***

No.	Location	Type/Depth	In Use Y/N	Condition	Use of Water
1	Northwest of Barn	Drilled	Y	Good	Drinking
2	North of Pond	Drilled	Y	Good	Drinking

Comments/Discussion: The tenant indicated that there are two drilled wells located on the property that are used as a source of drinking water for the site. One well is located to the northwest of the barn and is approximately 40 m in depth and the second well is located to the north of the canoe pond and is approximately 60 m in depth. CRH treats the well water with chlorine, filters and UV lights. Weekly water quality sampling is conducted by trained CRH personnel.

During the site visit the drilled well located to the northwest of the barn was opened to obtain the static water level. The well had a diameter of 0.15 m. The well stick-up was 0.64 m and the static water level reading was at 5.5 m below the top of the casing. The depth of the well was greater than the length of the water level meter tape (30 m).

The second well located to the north of the pond was not accessible due to rusted screws.

The drilled wells were in general compliance with R.R.O. 1990, Regulation 903 (Amended to O. Reg. 128/03), as it is located at least 15 metres from the septic system. Section 12 (2) of O. Reg. 903 (amended to O. Reg. 128/03) states *"The site of a new drilled well that has a watertight casing that extends to a depth of more than six metres below ground level shall be at least 15 metres from a source of pollution other than one mentioned in subsection (1,). O. Reg. 128/03 s15."* Also, The Ontario Building Code, Section 8.2.1.6 (2) states *"Except as provided in Sentences 8.2.1.4 (1) and (2), a distribution pipe shall not be located closer than the minimum horizontal distances set out in Table 8.2.1.6B and these distances shall be increased when required by Sentence 8.7.4.2 (9,)."* This table indicates that the minimum clearance for a well (with a water tight casing to a depth of 6 m) from the sewage distribution piping is 15 metres.

Information relevant to water well and septic systems was documented on the *Water Well and Septic System Checklist* (**Appendix A**).

	Abandoned Wells		***none identified***
	Location	**Description (i.e. Dug, drilled, etc.)**	**Condition**
1	North of Health Centre	Dug well (6.5 m depth, Shaheen and Peaker, March 1997)	Not in use

Comments/Discussion: The interview indicated that there is a dug well located to the north of the Health Centre which is not in use and has not been decommissioned. Mr. Grossinger indicated that the condition of this well is unknown, The status of this information is inconsistent with the information provided from PWGSC which indicated that that there are currently two wells on-site and that the third well has been decommissioned.

The previous report prepared by Shaheen and Peaker indicated that there was a dug well located to the west of the barn as well as a 30 m drilled well located to the east of "Mom's Place" which is surrounded by the barn. In addition, a well was located in the main driveway and to the south of the Nature building which were reported to be filled in. It is unknown whether or not the dug well located to the west of the barn and the drilled well located to the east of Mom's Place have been decommissioned as per O. Reg. 903 or if the reported decommissioned wells previously located in the main driveway and to the south of the Nature building were done in accordance to O. Reg. 903.

	Waste Water		***none identified***
	System	**Description**	**Concerns**
	municipal	-	-
	septic	North house (Baseball Office): Holding and leaching bed to the north of the house	None observed
		South house: Holding tank and tile bed to the east and south of the house	None observed
		Main office: Holding tank and tile bed to the southeast	None observed

Waste Water			***none identified***
	System	**Description**	**Concerns**
		7 washroom station with holding tanks	None observed
	other discharges	-	-
Comments/Discussion: The tenant indicated that the septic tanks associated with the site are typically cleaned out weekly from July to September by Les Cowlter Septic. The septic tank associated with the main office was replaced 5 years ago due to the septic weeping system not working properly.			

MATERIALS IN USE, STORED OR DISCARDED

Aboveground Storage Tanks						***none identified***		
No.	**In Use Y/N/ Unknown**	**Location**	**Contents**	**Age**	**Mat'l of Const.**	**Condition**	**Approx. Capacity**	**Containment Y/N**
1	Y	North house (baseball office) southwest corner of basement	Heating oil	4 yrs	Steel	Good	910 L	N
2& 3	Y	South house, northwest corner of basement	Heating oil	4 yrs	Steel	Good	910 L	N
4	Y	Pool Filter Room	Chlorine	10 +	Plastic	Good	1,000L	N
5	Y	Pool Filter Room	Acid	10+	Plastic	Good	200L	N
6	Y	Water Filter Room	Chlorine	1	Plastic	Good	200L	N
7& 8	Y	North of pond	Propane	10+	Steel	Good	6,000L	N
9& 10	Y	North side of Cooper Dome	Propane	2+	Steel	Good	120L	N
11	Y	Inside Cooper Dome	Propane	Unknown	Steel	Good	~30 L	N
Evidence of spills/leaks: No visual signs of staining were observed on the ground surfaces in the area of the tanks.								

Aboveground Storage Tanks	*none identified*	

Comments/testing: The following issues were noted regarding the heating oil tanks:

South House: The inspection of the ASTs (located in the basement) did not meet the minimum height requirements for the vent and fill pipes, there was no secondary containment and the tank was covered with combustible materials.

North House (baseball office): The inspection of the AST (located in the basement) did not meet the minimum height requirements for the vent and fill pipes, there was no secondary containment, the tank did not have 60 cm of clearance on one side of the tank and was closer than 1.5 m from an appliance (freezer). It was noted that these distances were layout as per the PWGSC tank checklist; 0.46 m clearance and 0.6 m from a fuel-fired appliance were outlined as per CSA B139-09.

The fill pipe did not meet the minimum height requirement of 1 m (Tanks 1,2 & 3):

CSA B 139-09, Section 7.8.7 states *"A fill pipe with an entry adjacent to a building shall be installed so that the entry point is c) not less than 1 m (3 ft) above the ground level."*

The vent pipe does not meet the minimum height requirement of 2 m (Tanks 1,2 & 3):

TSSA Liquid Fuels Handling Code 2007, Section 4.3.1.9 states *"Storage tanks installed inside a building for Class II products shall have vent pipes located outside the building at (a) a minimum of 2 m above grade or 1 m above the top of the tanks, whichever is higher; and (b) a minimum of 600 mm from any opening into the building."*

Tanks 2 & 3 were covered with combustible materials; Tank 1 did not have 0.46 cm clearance on one side of the tank.

CSA B139-09, Section 7.3.3 states that *"Supply tanks shall be accessible after installation for inspection purposes."*

CSA B139-09, Section 7.3.5 states *"Supply tanks shall be installed so that there is at least 460 mm (18 in) clearance along one side and one end, ensuring clearance for service of any device attached to the supply line at the tank."*

The tank was not equipped with a secondary containment system (Tanks 1, 2 & 3).

The National Fire Code (NFC), Section 4.3.7.1(1) states, *"The area surrounding a storage tank or group of storage tanks shall be designed to accommodate accidental spillage in conformance with Subsection 4.1.6.*" Section 4.1.1.1 (3) (b) of the NFC states that this code does not apply to appliances and their ancillary equipment within the scope of B 139-04; however, the use of secondary spill containment is considered a Best Management Practice.

The propane tank was not protected against vehicular damages (Tanks 7, 8, 9 & 10).

Section 7.1.14 of the CSA 149.2-10 states "*When a tank is installed in a location that does not afford reasonable protection from motor vehicle damage, it shall be protected by posts or guardrails as specified in Clause 7.19.4."*

nformation relevant to the observed ASTs and asociated vent and fill pipings was documented on the *Tank Compliance Checklist* (**Appendix A**).

Underground Storage Tanks						***none identified***	X
No.	**In Use Y/N/ Unknown**	**Location**	**Contents**	**Approx. Volume**	**Date Installed**	**Tank Type & Protection**	**Material of Construction**

Register of Underground Storage Tank Systems	**Y**	**N**	**Unknown**
Is there any indication of leaks or spills from tank(s)?			
Have any underground tanks been removed from site?			
Is there any indication that the removal was improperly conducted?			

Did a soil analysis accompany the removal?			
Comments/Discussion:			

Evidence of Spills / Staining / Other			
	Y	**N**	**Unknown**
Is there any evidence of spills, stained soil/pavement, vegetation distress on-site?		X	
Specify location, estimated extent, and suspected material: Soil samples were collected from the ground where lead-based paint surfaces were previously identified and found to be peeling, from stockpiled fill found on-site as well as from fire pits.			

Sampling Results:

Location	**Sample Date**	**Criteria Applied**	**Parameter Exceeded**	**Measured Concentration**	**CCME Guideline - Agricultural**	**O.Reg 153 Standard – Table 1/2**
West of Archery hut (SS-110-1)	07/15/2009	CCME (residential) and O.Reg 153/04 Table 2 (residential/ parkland/ institutional)	Naphthalene	<0.03 ug/g	0.013 ug/g~	0.46 ug/g
Fire Pit in Sherwood Forest (SS-110-2)	12/22/2009	CCME (residential) and O.Reg 153/04 Table 1 (all other property use)	Naphthalene	<0.03 ug/g	0.013 ug/g	0.05 ug/g
Fire Pit west of Cooper Dome (SS-110-3)	12/22/2009	CCME (residential) and O.Reg 153/04 Table 2 (residential/ parkland/ institutional)	Arsenic Boron++ Chromium (total)^ Copper Zinc Electrical Conductivity + Naphthalene	276 ug/g 24.5 ug/g **234** ug/g 479 ug/g 641 ug/g ***0.839*** mS/cm 0.58 ug/g	12 ug/g NV 64 ug/g 63 ug/g 200 ug/g 2 mS/cm 0.013 ug/g~	20 ug/g 1.5 ug/g 750 ug/g 225 ug/g 600 ug/g 0.7 mS/cm 4.6 ug/g
Fire Pit East of Campcraft (SS-110-4)	12/22/2009		Naphthalene	0.03 ug/g	0.013 ug/g~	0.46 ug/g
Southwest corner of Program Building within animal pen (SS-110-5)	12/22/2009		Arsenic Copper^ Lead^ Zinc^ Electrical Conductivity	***30.9*** ug/g **69** ug/g **175** ug/g **430** ug/g ***2.67*** mS/cm	12 ug/g 63 ug/g 140 ug/g 200 ug/g 2 mS/cm	17 ug/g 85 ug/g 120 ug/g 160 ug/g 0.57 mS/cm
Southeast corner of southernmost Boys Change Room shelter (SS-110-6)	12/22/2009		-	-	-	-

Southeast corner of southernmost Girls Change Room shelter (SS-110-7)	12/22/2009		-	-	-	-
Southwest corner of southernmost house on the site (SS-110-8)	12/22/2009		Barium Lead Zinc	1290 ug/g 437 ug/g 1670 ug/g	500 ug/g 140 ug/g 200 ug/g	750 ug/g 200 ug/g 600 ug/g
North house (baseball office) (SS-112.2-1)	07/15/2009		Lead	295 ug/g	70 ug/g	200 ug/g
Stockpiled fill on northeast corner of site (SS-112.2-2)	07/15/2009		-	-	-	-

*** exceeded CCME/CWS guideline only**
+ exceeded MOE O.Reg 153 Standards only
^ Interim remediation criteria for soil that have not yet been replaced by Canadian Soil Quality Guideline
++ Hot Water Extraction
NV – No value
~ CCME Soil Quality Guidelines for Protection of freshwater life (SQG_{FL})

Comments: It is noted that samples SS-110-2 and SS-110-5 were within 30 m of a water body, therefore O.Reg. 153/04 Table 1 Standard for used for the two samples. The analytical results for the soil samples identified as SS-112.2.-1, SS-110-3, SS-110-5 and SS-110-8 indicated various metals and inorganics concentrations exceeding the applicable Federal Guidelines and Provincial Standard.

Analytical results for the samples taken from the fire pits (SS-110-3 at 0.58 ug/g and SS-110-4 at 0.03 ug/g) on-site indicate that naphthalene exceeded the Soil Quality Guideline for the protection of freshwater life (SQG_{FL}) of 0.013 ug/g. The CCME Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (Polycyclic Aromatic Hydrocarbons 2008) states that the application of the SQG_{FL} may be considered by users "on a site-specific basis where potential impacts on nearby surface water are a concern". In the interests of remaining consistent with Provincial Regulation 153/04, "nearby surface water" was considered to be 30m or less from a water body. As the sample (which exceeded the SQG_{FL}) was taken from an area located beyond 30m of the on-site water body, the exceedances are deemed not to represent naphthalene -related contamination for this site.

Analytical results for the sample taken from under flaking paint (SS-110-1) and from the fire pit (SS-110-2) on-site reported a concentration for naphthalene of <0.03 ug/g, however the method detection limit in the CCME Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (Polycyclic Aromatic Hydrocarbons 2008) - Protection of freshwater life (SQG_{FL}), is lower than this value; listed at 0.013 mg/kg. As such, although not expected, the potential exists that the actual result slightly exceeds this criteria. As this is considered unlikely, and the CCME states that the application of the SQG_{FL} may be considered by users "on a site-specific basis where potential impacts on nearby surface water are a concern", the result for naphthalene is considered not to represent contamination for this site.

Although there is no Federal Guidelines or Provincial Standard for chloride in soil, it was noted that the chloride concentration near the pond (SS-110-5) was significantly high (1420 ug/g) compare to all other samples analyzed (5.6 ug/g -25.5 ug/g).

The analytical results and the Laboratory Certificate of Analysis are attached as **Appendix D**.

Non-hazardous Debris / Discarded Materials			***none identified***
Location	**Approx. Quantity**	**Type**	**Concerns**
West of Cooper dome	$2m^2$	Fire wood	-
NE corner of site		Wood debris	

Non-hazardous Debris / Discarded Materials			***none identified***
NE corner of site	12	Tires	
North of Arrowdome		Old farming equipment	
Northeast corner of site in a trailer	1, 910 L AST	Steel	Not in use
The laneway dividing the eastern portion of PIN 614111 and 614112	$24m^2$	Black and light green PVC piping 12" dia	stored
	$9m^2$	Wire fencing (9 bundles) and wood skids	stored
	2	Farm tires	Debris
	$4m^2$	Wood poles	Stored
	$11m^2$	Concrete blocks, bricks, patio stones	Stored
	$24m^2$	Wood pile (stumps)	Stored
	$14m^2$	Wood poles	Stored
	$20m^2$	Plastic Playground equipment	Debris
	$42m^2$	Wood poles pressure treated	Stored
	$8m^2$	Scrap metal	Debris
	3	Old portable washroom	Debris
	$49m^2$	Wood pile	Stored
	$49m^2$	Construction wood	Stored
	$88m^2$	Wood chip pile	Stored
Southwest of Sherwood forest fire pit	$50m^2$	Metal debris	Debris

Additional Comments: With the exception of fire wood, most of the debris observed were discarded and no longer in used. These items should be properly disposed of.

Ontario Environmental Protection Act, (EPA), Section 86 (Littering Prohibited), states *"No person shall abandon any material in a place, manner, receptacle or wrapping such that it is likely that the material will become litter."* Disposal of waste shall be conducted in accordance with *O. Reg. 347* (amended by *O. Reg. 558*). The debris is also not in compliance with the Town of Markham By-Law number 126-72 Section 2, which states *"All land or structures shall be kept free and clear of domestic waste of any kind or industrial waste of any kind."*

Hazardous Materials Stored / Used / Discarded				***none identified***
	Type	**Description/Quantity**	**Status/Use**	**Location**
	Pesticides	2, 2LKillex, Round up	Stored	Maintenance west side of barn

	Hazardous Materials Stored / Used / Discarded			***none identified***
	Type	**Description/Quantity**	**Status/Use**	**Location**
	Chemicals	22 Fire extinguishers	-	Through out site
		4, 4L of paint	Stored	Program Chalet
		2 Helium cylinders	Stored	Program Chalet
		6, 20L of Clor-12	Pool chemicals	Pool house
		10, 20L pH Downer	Pool chemicals	Pool boiler room
		4, 20L of Clor-12	Pool chemicals	Pool boiler room
		1, car battery	Discarded	East side of Action center
		19, 4L cans of paint	Stored	Basement of south house
		2, 7.5L cans of paint	Stored	Basement of south house
		2, 4LSodiumHypochlorite	Stored	Maintenance barn
		3, 19 L Tele-blast (holding tank addictives for odour control)		
		Numerous quantities of paints, stains, antifreeze, 9, 4L of Sodium hypochlorite	Stored	Maintenance west side of barn
		18+, 19 L BEHR wood stain		
		Car Battery	Discarded	West side of the Quad
		Spray Paint	Stored	Coaches corner
		4, 4L Wind shield fluid	Stored	Basement of north house
		Various spray paint, lubricant cans, paint		
	Petroleum products	3, furnace oil ASTs	Home heating	1, North house (baseball office) 2, South house
	radioactive materials	Not observed		
	waste materials	Garbage bins and recycling	Stored for removal (weekly)	Northeast corner of site
	Explosives	Not observed		
	Other	Fluorescent bulbs	Stored	Maintenance barn

Comments/Discussion: The unused vehicle battery observed on the site should be removed from the property in accordance with O. Reg. 347 (amended by O. Reg. 558). The products stored in these locations are stored in a safe manner.

The helium cylinders are not secured along the wall with a metal chain. This is not compliant with the OHSA *Occupational Health and Safety Act*, *R.S.O. 1990,* section 25. (1) which states *"An employer shall ensure that, (a) the equipment, materials and protective devices as prescribed are provided".* There is a potential that the helium cylinders may fall and injure site personnel, if they are not secured in place.

Landfilling					
					Y/N/ Unknown
Is there any evidence of placement of fill or other landfilling activity on-site? Specify location, estimated extent, material suspected:					N
Sample(s) collected and tested? Describe:					N
Analytical results: Guidelines exceeded?					N/A
Location	**Sample Date**	**Criteria Applied**	**Parameter Exceeded**	**Measured Concentration**	**Guideline**

BACKGROUND AND SUPPORTING INFORMATION

Documents Reviewed — Findings					
DOCUMENTS REVIEWED:					
X	**1) Environmental Report**	X	**2) PPMO File Summary**	X	**3) Other**

Documents reviewed included:

Shaheen and Peaker (March 1997). Environmental Evaluation, Pickering Land Site, Phase 1D, Commercial Properties PIN 614110/111.1
Terraprobe (March 1997). Environmental Evaluation, Pickering Land Site, Phase 1D, PIN 614111.2
Pinchin Environmental. (August 1997). Pickering Airport Lands Asbestos and Lead Evaluation of, PIN 614110.
Shaheen and Peaker (September 1997). Pickering Airport Lands – Storage Tank Inventory (PIN 614111.2).
Shaheen and Peaker (September 1997). Pickering Lands Site - AST/UST Removal and Disposal Program (PIN 614111.2)
Pinchin Environmental. (December 1997). Pickering Airport Lands Lead Abatement of PIN 614110.
Transport Canada (March 2003). Tank and Water Well Survey
Transport Canada (January 2006), Well Decommissioning Correspondence – Camp Robin Hood.
PWGSC (June, 2009). Water Source Database.
PWGSC (June, 2009). Water Quality Summary Sampling.
PWGSC (June, 2009). Tank Database.

Individuals/ Agencies Contacted		
Person Contacted, Title	**Affiliation (Organization, Department)**	**Subject/Outcome**

Comments: It was agreed with PWGSC and documented in our final proposal submission dated June 24, 2009, that GENIVAR was not required to request information from Federal, Provincial or Municipal agencies or other records or sources of information listed in the CSA standards.

7.2 Field Screening and Sampling

Table 7.1 details the sample information taken from the site.

Table 7.1 Sampling details

Matrix	Sample ID	Northing	Easting	Depth (m)	Rationale	Analysis Performed
Soil	SS-110-1	4865063	643136	0 – 0.2	Lead-based paint exceedance	Metals/Inorganics, PAH
	SS-110-2	4865234	643332	0 – 0.2	Fire pit	Metals/Inorganics, PAH
	SS-110-3	4865172	643061	0 – 0.2	Fire pit	Metals/Inorganics, PAH
	SS-110-4	4865181	643047	0 – 0.2	Fire pit	Metals/Inorganics, PAH
	SS-110-5	4865078	642919	0 – 0.2	Lead-based paint exceedance	Metals/Inorganics
	SS-110-6	4865046	642890	0 – 0.2	Lead-based paint exceedance	Metals/Inorganics
	SS-110-7	4865098	642883	0 – 0.2	Lead-based paint exceedance	Metals/Inorganics
	SS-110-8	4865134	642853	0 – 0.2	Lead-based paint exceedance	Metals/Inorganics
	SS-112.2-1	4865238	642843	0 – 0.2	Lead-based paint exceedance	Metals/Inorganics
	SS-112.2-2	4865417	643036	0 - 0.2	Unknown quality of stockpiled materials	Metals/Inorganics

Soil sample SS-110-1 was obtained from the soil around the Archery hut where elevated lead-based paint concentrations were identified (no photo available). Soil sample SS-112.2-1 was obtained from around the north house (baseball office) where elevated lead-based paint concentrations were observed (**Figure 7**). Soil sample SS-112.2-2 was obtained from a stockpile of soil located in the northeast portion of the site (**Figure 7**). The quality of this material was unknown. All other soil sampling locations are identified in the photolog attached as Appendix B.

The analytical results for soil samples SS-110-3, SS-110-5, SS-110-8, and SS-112.2-1 indicates various metals/inorganic concentrations exceeding the applicable Federal Guideline/Provincial Standards as listed in Table 7.2 to 7.5:

Table 7.2 Parameters Exceeding the Federal/Provincial Standards from Soil Sample SS-110-3

Parameter Exceeded	Measured Concentration	Guideline – CCME Residential	Standard – MOE Table 2 Residential
Arsenic	276 ug/g	12 ug/g	20 ug/g
Boron (Hot water extractable)	24.5 ug/g	No Value	1.5 ug/g
Chromium (total)	234 ug/g	64 ug/g	750 ug/g
Copper	479 ug/g	63 ug/g	225 ug/g
Zinc	641 ug/g	200 ug/g	600 ug/g
Electrical Conductivity	0.839 mS/cm	2^ mS/cm	0.7 mS/cm
Naphthalene	0.58 ug/g	0.013 ug/g	4.6 ug/g

Table 7.3 Parameters Exceeding the Federal/Provincial Standards from Soil Sample SS-110-5

Parameter Exceeded	Measured Concentration	Guideline – CCME Residential	Standard – MOE Table 2 Residential
Arsenic	30.9 ug/g	12 ug/g	17 ug/g
Copper	69 ug/g	63 ug/g	85 ug/g
Lead	175 ug/g	140 ug/g	120 ug/g
Zinc	430 ug/g	200 ug/g	160 ug/g
Electrical Conductivity	2.67 mS/cm	2^ mS/cm	0.57 mS/cm

Table 7.4 Parameters Exceeding the Federal/Provincial Standards from Soil Sample SS-110-8

Parameter Exceeded	Measured Concentration	Guideline – CCME Residential	Standard – MOE Table 2 Residential
Barium	1290 ug/g	500 ug/g	750 ug/g
Lead	437 ug/g	140 ug/g	200 ug/g
Zinc	1670 ug/g	200 ug/g	600 ug/g

Table 7.5 Parameters Exceeding the Federal/Provincial Standards from Soil Sample SS-112.2-1

Parameter Exceeded	Measured Concentration	Guideline – CCME Residential	Standard – MOE Table 2 Residential
Lead	295 ug/g	70 ug/g	200 ug/g

It is noted that samples SS-110-2 and SS-110-5 were within 30 m of a water body, therefore O.Reg. 153/04 Table 1 Standard for used for the two samples. No exceedences were found in soil samples SS-110-1, SS-110-2, SS-110-4, SS-110-7, and SS-112.2-2.

Analytical results for the samples taken from the fire pits (SS-110-3 at 0.58 ug/g and SS-110-4 at 0.03 ug/g) on-site indicate that naphthalene exceeded the Soil Quality Guideline for the protection of freshwater life (SQG_{FL}) of 0.013 ug/g. The CCME Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (Polycyclic Aromatic Hydrocarbons 2008) states that the application of the SQG_{FL} may be considered by users "on a site-specific basis where potential impacts on nearby surface water are a concern". In the interests of remaining consistent with Provincial Regulation 153/04, "nearby surface water" was considered to be 30m or less from a water body. As the sample (which exceeded the SQG_{FL}) was taken from an area located beyond 30m of the on-site water body, the exceedances are deemed not to represent naphthalene -related contamination for this site.

Analytical results for the sample taken from under flaking paint (SS-110-1) and from the fire pit (SS-110-2) on-site reported a concentration for naphthalene of <0.03 ug/g, however the method detection limit in the CCME Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (Polycyclic Aromatic Hydrocarbons 2008) - Protection of freshwater life (SQG_{FL}), is lower than this value; listed at 0.013 mg/kg. As such, although not expected, the potential exists that the actual result slightly exceeds this criteria. As this is considered unlikely, and the CCME states that the application of the SQG_{FL} may be considered by users "on a site-specific basis where potential impacts on nearby surface water are a concern", the result for naphthalene is considered not to represent contamination for this site.

Although there is no Federal Guidelines or Provincial Standard for chloride in soil, it was noted that the chloride concentration near the pond (SS-110-5) was significantly high (1420 ug/g) compare to all other samples analyzed (5.6 ug/g -25.5 ug/g).

Appendix D includes a detailed table of all results with exceedances highlighted as well as the Laboratory Certificate of Analyses.

The recent site visit indicated that the exterior painted surfaces for many of the buildings were in poor condition. Although not analyzed, a total of four exterior paint samples were retained. These samples were retrieved from the building located to the east of the Lasses's cabins (white), the Little John Building, brown door paint and light blue paint from the north wall, and greenish blue paint from the south exterior wall of the sports building.

8. Summary of Enhanced Phase I ESA Findings and Conclusions

A Summary of Areas of Concern is provided in **Table 8.1**. A Summary of Issues Related to Environmental Compliance and Best Management Practices is provided in **Table 8.2**. As per the PWGSC Terms of Reference, each issue associated with a PIN is considered to reflect some degree of “violation” of environmental requirements. These degrees are categorized as follows:

1. a determined threat to human health or safety
2. a violation of law
3. non-compliance with a policy, guideline, code, standard or the like
4. not reflective of good environmental practices
5. future management considerations

U requires PH II investigation
NC (No Concern)

Each “Area of Concern”, or “Issue Related to Environmental Compliance”, identified in the summary tables hereafter, has been categorized according to the above noted ranking method.

The findings of GENIVAR’s Enhanced Phase I ESA of PIN 614110, PIN 614111 AND PIN 614112, located at 10243 (Camp Robin Hood) and 10251 (PIN 614112.2) Reesor Road, Markham, Ontario, are summarized as follows:

1. PIN 614110, PIN 614111 and PIN 614112, comprise an area of approximately 30 ha and is currently occupies by a children summer camp (Camp Robin Hood) as well as two residences on it, which is currently occupied. Additionally, the eastern portion of the site is made up of agricultural lands and a small forested area (Sherwood Forest) which is used by CRH.
2. A total of ten soils samples were collected from the site. Six of the soil samples were taken from areas where previous exterior paint samples indicated the presence of lead-based paints, three samples taken from soil under the ash of a fire pit and one sample was taken from a soil stockpile located on the property. These samples were all analyzed for metals and inorganics and/or poly aromatic hydrocarbons (PAH). Soil sample SS-110-3 revealed arsenic (276 ug/g), boron (24.5 ug/g), total chromium (234 ug/g), copper (479 ug/g), zinc (641 ug/g) and electrical conductivity (0.839 mS/cm), soil sample SS-110-5 revealed arsenic (30.9 ug/g), copper (69 ug/g), lead (175 ug/g), zinc (430 ug/g) and electrical conductivity (2.67 mS-cm), soil sample SS-110-8 revealed barium (1290 ug/g), lead (437 ug/g) and zinc (1670 ug/g) exceeding the applicable Federal Guidelines/Provincial Standards. Soil sample SS-112.2-1 revealed a lead exceedance of 295 ug/g which is greater than the applicable CCME guideline value of 70 ug/g and MOE standard of 200 ug/g. Exceedances were not observed in samples SS-110-1, SS-110-4, SS-110-7, SS-110-8 or SS-112.2-2.
3. Although there is no Federal Guidelines or Provincial Standard for chloride in soil, it was noted that the chloride concentration near the pond (SS-110-5) was significantly high (1420 ug/g) compare to all other samples analyzed (5.6 ug/g -25.5 ug/g).
4. The site is currently supplied with drinking water via two drilled wells; one located to the northwest of the barn and the second located to the north of the pond. The water is treated using a combination of UV, chlorine injection and filtration. The water supplying the site is monitored and tested on a weekly basis. A third unused well is located to the north of the Health Centre.
5. Although similar building materials were observed, it is inconclusive whether the two identified ACM locations previously identified in previous reports were present due to the lack of description. As a result of the recent changes stipulated in O. Reg. 278/05 where the number of sample required to be tested to determine whether a material is asbestos-containing or not, has changed, the previously conducted survey (Shaheen & Peaker, 1997) does not meet the sampling requirements to confirm that a material is non-detect.

Summary of Areas of Concern

PIN	CATEGORY	ISSUE / SOURCE	REF. LOCATION	SITE BACKGROUND	SUSPECTED COC	PICTURE	RECOMMENDATIONS FOR ACTION
614110, 614111 and 614112	U	Soil sample SS-110-5 taken from the southwest corner of the Program Building within the animal pen revealed arsenic (30.9 ug/g), copper (69 ug/g), lead (175 ug/g), zinc (430 ug/g) and electrical conductivity (2.67 mS-cm) exceeding the applicable Federal Guidelines (arsenic - 12 ug/g, copper - 63 ug/g, lead - 140 ug/g, zinc - 200 ug/g, electrical conductivity - 2 mS/cm) / Provincial Standards (arsenic - 17 ug/g, copper - 85 ug/g, lead - 120 ug/g, zinc - 160 ug/g, electrical conductivity - 0.57 mS/cm).	pgs. 28, 29, 33 & 34	The main drainage course within the PLS area is the West Duffin's Creek, which eventually discharges to Lake Ontario at Squires Beach via Duffin's Creek. Based on regional trends, it is anticipated that the direction of regional groundwater flow is southwards towards Lake Ontario. The local surface and groundwater flow is likely towards Katabokakonk Creek located west of the site.	Arsenic, copper, lead, zinc and electrical conductivity	Photograph 29	Complete additional soil sampling to determine the extent of the impacts. The sampling program should include as many as five soil samples in the area of the southwest corner of the Program building within the animal pen as well as a background sample in an area not anticipated to be impacted. The soils should also be characterized for waste disposal purposes. Options for going forward should be evaluated (e.g. remedial options or risk assessment).
	U	Soil sample SS-110-8 taken from the southwest corner of southernmost house on the site revealed barium (1290 ug/g), lead (437 ug/g) and zinc (1670 ug/g) exceeding the applicable Federal Guidelines (barium - 500 ug/g, lead - 140 ug/g, zinc - 200 ug/g) / Provincial Standards (barium - 750 ug/g, lead - 200 ug/g, zinc - 600 ug/g).			Barium, lead and zinc	Photograph 32	Complete additional soil sampling to determine the extent of the impacts. The sampling program should include as many as five soil samples in the area of the southwest corner of the southermost house as well as a background sample in an area not anticipated to be impacted. The soils should also be characterized for waste disposal purposes. Options for going forward should d be evaluated (e.g. remedial options or risk assessment).
	U	Soil sample SS-112.2-1 revealed a lead exceedance of 295 ug/g which is greater than the applicable CCME guideline value of 70 ug/g and MOE standard of 200 ug/g.			Lead	Figure 7	Complete additional soil sampling to determine the extent of the impacts. The sampling program should include as many as five soil samples in the area of the north house as well as a background sample in an area not anticipated to be impacted. The soils should also be characterized for waste disposal purposes. Options for going forward should be evaluated (e.g. remedial options or risk assessment).

CATEGORY:
U requires PH II investigation

GENIVAR

Summary of Issues Related to Environmental Compliance and Best Management Practices

PIN	CATEGORY	ISSUE / SOURCE	PICTURE	REF. LOCATION	FEDERAL/ PROVINCIAL ISSUE	RATIONALE	COMMENTS	RECOMMENDATIONS FOR ACTION
	1	Although the presence of mould was not confirmed, potential mould growth may be present. Site observations indicated visual signs of staining and possibly mould proliferation on the ceilings of the following buildings: Nature Building, Arts and Crafts Building, Friar Tuck Building, Will Scarlet Building, Little John, Sports Building, Campcraft and the Castle. It is unknown that the stains (dry) observed were the results of one time events which were subsequently remedied or if they are ongoing problems. Due to limited accessibility above the ceiling levels, the extent of the staining is unknown.	Photograph 17 & 18	pg. 24	Federal	Although mould was not observed, water staining was observed on the ceilings of several buildings. These conditions can contribute to future mould growth. Health Canada's Residential Indoor Air Quality Guidelines, 2007 states that: Health Canada considers that mould growth in residential buildings may pose a health hazard. Health risks depend on exposure and, for asthma symptoms, on allergic sensitization. However, the large number of mould species and strains growing in buildings and the large inter-individual variability in human response to mould exposure preclude the derivation of exposure limits. Therefore, Health Canada recommends: - to control humidity and diligently repair any water damage in residences to prevent mould growth; and - to clean thoroughly any visible or concealed mould growing in residential buildings.	The most common types of mould are generally not hazardous to healthy individuals, but some moulds may be hazardous to certain individuals (e.g. people who have asthma). The presence of mould can affect indoor air quality.	It is recommended that if the eight buildings are to remain in use (Nature Building, Arts and Crafts Building, Friar Tuck Building, Will Scarlet Building, Little John, Sports Building, Campcraft and the Castle) that the presence of mould be determined. If mould is present, it should be remediated and the sources of water ingress be identified and rectified so as to prevent further mould growth in the future. Any renovation or demolition work conducted in this area should be done in accordance with applicable guidelines referencing safe practices (i.e. Mould Guidelines for the Canadian Construction Industry).
	1	The brown exterior painted surface of the archery hut and the exterior multi-coloured (red, yellow, green, blue and brown) surfaces of the Program Office were recently observed to be in poor condition. In addition, the light blue exterior painted surfaces of the north house (baseball office) and south house as well as the green and brown exterior painted surfaces of the sleeping huts were observed to be in poor condition. It is unknown if the houses and the sleeping huts underwent paint abatement prior to being repainted, therefore it is possible that these painted surface still exist underneath. These structures were previously tested (Shaheen and Peaker Limited, 1998) and confirmed to be lead-based.	Photograph 24, 29, 30, 31 & 32	pgs. 18 and 19	Provincial	Lead is identified as a designated substance under the *Occupational Health and Safety Act* (OHSA). Where lead-based paint is flaking, peeling or is otherwise in a disturbed state, the potential for inhalation of lead dust or ingestion of paint chips exists, which creates concern relating to lead exposure. Also, in the event that renovation or demolition activities be conducted on surfaces painted with lead-based paint, the potential for further disruption exists. As such, O. Reg. 843 under the OHSA and the Ministry of Labour Guideline *Lead on Construction Projects, September 2004,* should be referenced to ensure the protection of workers to the exposure of lead material. In addition, the disposal of lead is regulated by Ontario Regulation 347/90 - *General Waste Management*, as amended by Ontario Regulation 558/00, and these should be referenced when lead-based products are disposed of.	Lead-based paint that is in good condition, undisturbed and out of reach of children is not considered a health hazard. Where paint is flaking, peeling or is otherwise in a disturbed state, the potential for inhalation of lead dust or ingestion of paint chips exists, which creates concern relating to lead exposure. Where this situation exists, surfaces should be abated (i.e. brushed down to remove loose and flaking paint and, if structure is to remain; repainted) to minimize the potential for human exposure.	The lead-based paint that is currently in poor condition should be brushed down to remove loose and flaking paint and, if the residence is to remain occupied, the surface should be repainted to minimize the potential for lead exposure. Appropriate actions, including compliance with the requirements of O. Reg. 843 under the OHSA, the Ministry of Labour Guideline *Lead on Construction Projects* and O. Reg. 347/90 - *General Waste Management*, should be taken to protect workers and the environment from lead material.
	2	The following discarded non-hazardous materials were identified to be present on the site: - NE corner of site, wood debris - NE corner of site, 12 tires - North of Arrowdome, old farming equipment - Northeast corner of site in a trailer 1, 910 L AST steel not in-use - The laneway dividing the eastern portion of PIN 614111 and 614112, 2 farm tires debris - The laneway dividing the eastern portion of PIN 614111 and 614112, 20m^2 plastic playground equipment debris - The laneway dividing the eastern portion of PIN 614111 and 614111, 8m^2 Scrap metal Debris - The laneway dividing the eastern portion of PIN 614111 and 614112, 3 old portable washroom debris - Southwest of Sherwood forest fire pit 50m^2 of metal debris	Photograph 11, 34 & 37	pg. 17	Provincial	Does not comply with waste management legislation and municipal by-laws. *Ontario Environmental Protection Act,* (EPA), Section 86 (Littering Prohibited), states *"No person shall abandon any material in a place, manner, receptacle or wrapping such that it is likely that the material will become litter."* The debris is also not in compliance with the Town of Markham By-Law number 126-72 Section 2, which states *"All land or structures shall be kept free and clear of domestic waste of any kind or industrial waste of any kind."*	Some material on-site may be considered unused debris. Disposal of waste shall be conducted in accordance with O. Reg. 347/90 - General Waste Management, as amended by Ontario Regulation 558/00.	In order to comply with the appropriate legislation, the unused items should be disposed of appropriately. Management action should be taken to require the tenants to meet their lease obligations and comply with applicable legislation.
	2	Hazardous materials in the form of two car batteries were observed to be stored on the site (1 east of the Action Centre and 1to the west side of the Quad) stored properly.	Photographs 12 & 13	pg. 28	Provincial	Does not comply with waste management regulations and municipal by-laws. Ontario Environmental Protection Act, (EPA), Section 86 (Littering Prohibited), states *"No person shall abandon any material in a place, manner, receptacle or wrapping such that it is likely that the material will become litter."* The debris is also not in compliance with the Town of Markham By-Law number 126-72 Section 2, which states *"All land or structures shall be kept free and clear of domestic waste of any kind or industrial waste of any kind"*.	Some material on-site may be considered unused hazardous debris. Disposal of waste shall be conducted in accordance with O. Reg.347/90 - *General Waste Management*, as amended by Ontario Regulation 558/00.	In order to prevent potential environmental impacts to soil and surface water/ground water, these hazardous materials should be properly stored and disposed of appropriately when no longer in-use. Management action should be taken to require the tenant to meet their lease obligations and to comply with all applicable legislation.
	3	One AST was observed at the southwest corner of basement of the North house (baseball office) containing heating oil. The following issues were noted regarding this tank:	Photograph 7	pgs. 26 and 27	Federal	Does not comply with CAN/CSA-B139-09, TSSA Liquid Fuels Handling Code 2007 and National Fire Code.	The tank did not have 60 cm of clearance on one side of the tank and was closer than 1.5 m from an appliance (freezer). It was noted that these distances were layout as per the PWGSC tank checklist; 0.46 m clearance and 0.6 m from a fuel-fired appliance were outlined as per CSA B139-09.	
		- There are various household items surrounding the tank which may restrict access to the tank during maintenance or repair.				CSA B139-09, Section 7.3.3 states that *"Supply tanks shall be accessible after installation for inspection purposes."* and Section 7.3.5 states *"Supply tanks shall be installed so that there is at least 460 mm (18 in) clearance along one side and one end, ensuring clearance for service of any device attached to the supply line at the tank."*		The tank area should be cleared to allow access for inspection/service.
		- The fill pipe does not meet the minimum height requirement of 1 m.				CSA B139-09, Section 7.8.7 states, *"A fill pipe with an entry adjacent to a building shall be installed so that the entry point is (c) not less than 1 m (3 ft) above the ground level"*.		The fill pipe should be replaced such that the height of the fill pipe is at least 1 m.
		- The vent pipe does not meet the minimum height requirement of 2 m.				TSSA Liquid Fuels Handling Code 2007, Section 4.3.1.9 stated that *"Storage tanks installed inside a building for Class II products shall have vent pipes located outside the building at (a) a minimum of 2 m above grade or 1 m above the top of the tanks, whichever is higher; and (b) a minimum of 600 mm from any opening into the building."*		The vent pipe should be replaced such that the height of the vent pipe should be at least 2 m.
		- No secondary containment system was in place for the tank.				The National Fire Code (NFC), Section 4.3.7.1(1) states, *"The area surrounding a storage tank or group of storage tanks shall be designed to accommodate accidental spillage in conformance with Subsection 4.1.6."*. Section 4.1.1.1 (3)(b) of the NFC states that this code does not apply to appliances and their ancillary equipment within the scope of B139-04; however, the use of secondary spill containment is considered a Best Management Practice.		Secondary containment should be considered.
	3	Two ASTs were observed side by side at the northwest corner of basement of the South house containing heating oil. The following issues were noted regarding these tanks:	Photograph 6	pgs. 26 and 27	Federal	Does not comply with CAN/CSA-B139-09, TSSA Liquid Fuels Handling Code 2007 and National Fire Code.	Two tanks were observed side by side in the basement of the south house. The tanks were each connected to a separate furnace.	
		- The distance between the two tanks was less than 100 mm.				CSA B139-09, Section 7.3.6 states *"When supply tanks are installed adjacent to one another, the space between the tanks shall be at least 100 mm (4 in), unless certified otherwise."*		The tanks should be relocated such that the minimum 100 m distance between the tanks are met.
		- There are various household items surrounding the tanks which may restrict access to the tank during maintenance or repair.				CSA B139-09, Section 7.3.3 states that *"Supply tanks shall be accessible after installation for inspection purposes."* and Section 7.3.5 states *"Supply tanks shall be installed so that there is at least 460 mm (18 in) clearance along one side and one end, ensuring clearance for service of any device attached to the supply line at the tank."*		The tank area should be cleared to allow access for inspection/service.
		- The fill pipe does not meet the minimum height requirement of 1 m. (Both tanks)				CSA B139-09, Section 7.8.7 states, *"A fill pipe with an entry adjacent to a building shall be installed so that the entry point is (c) not less than 1 m (3 ft) above the ground level"*.		The fill pipe should be replaced such that the height of the fill pipe is at least 1 m.
		- The vent pipe does not meet the minimum height requirement of 2 m. (Both tanks)				TSSA Liquid Fuels Handling Code 2007, Section 4.3.1.9 stated that *"Storage tanks installed inside a building for Class II products shall have vent pipes located outside the building at (a) a minimum of 2 m above grade or 1 m above the top of the tanks, whichever is higher; and (b) a minimum of 600 mm from any opening into the building."*		The vent pipe should be replaced such that the height of the vent pipe should be at least 2 m.
		- No secondary containment system was in place for the tank. (Both tanks)				The National Fire Code (NFC), Section 4.3.7.1(1) states, *"The area surrounding a storage tank or group of storage tanks shall be designed to accommodate accidental spillage in conformance with Subsection 4.1.6."*. Section 4.1.1.1 (3)(b) of the NFC states that this code does not apply to appliances and their ancillary equipment within the scope of B139-04; however, the use of secondary spill containment is considered a Best Management Practice.		Secondary containment should be considered.
	3	Four propane ASTs were observed north of pond (2) and on the north side of Cooper Dome (2) . The following issues were noted regarding these tanks:	Photograph 8 and 9	pgs. 26 and 27	Federal	Does not comply with CAN/CSA-B149.2-10.	No visual signs of staining were observed on the ground surfaces in the area of the tank.	
		- No protection against vehicular damages was in place for the tanks.				Section 7.1.14 of the CSA 149.2-10 states *"When a tank is installed in a location that does not afford reasonable protection from motor vehicle damage, it shall be protected by posts or guardrails as specified in Clause 7.19.4."*		The tanks should be protected against vehicular damages posts or guardrails.
	3	The tenant interview indicated that there is an abandoned well located to the north of the health centre. It is unclear whether this well has be decommissioned as no documentation was found to suggest this. Previous reporting suggests that the seal of the well was not capped properly, which could allow foreign materials and surface water to enter. However, this could not be confirmed as this well as not observed during GENIVAR's 2009 site visit. Additionally, Shaheen and Peaker indicated that there was a dug well located to the west of the barn and a 30 m drilled well located to the east of "Mom's Place". However, these wells were not observed during GENIVAR's 2009 site visit. Finally, Shaheen and Peaker indicated that a well was located in the main driveway to the south of the Nature building, which was reportedly filled in. It is unknown whether or not any of these wells were decommissioned in accordance with O. Reg. 903 as there was no supporting documentation available.	N/A	pgs. 23 and 24	Provincial	Does not comply with O. Reg. 903. No details were provided detailing how and if the wells were decommissioned. As per O. Reg. 903, Section 20 (2), *"a well owner shall maintain the well at all times after the completion date in a manner sufficient to prevent entry into the well of surface water or other foreign materials"*. It is unknown whether or not the dug/drilled wells were decommissioned as per O. Reg.903 as supporting documentation was not provided at the time of the reporting.	Wells not in use should be decommissioned as per O, Reg. 903. Wells not in use or those that have improper protection from foreign materials can act as a pathway for contamination.	Abandoned wells, if present on the site should be decommissioned in accordance to O. Reg. 903.

614110, 614111 and 614112	3	Many of the building materials were found to be non-detect for asbestos previously by Shaheen and Peaker, 1997. In addition, the presence of these items could not be confirmed as other materials were observed during GENIVAR's 2009 site visit, and it is unknown if they were removed. No updated asbestos survey has been completed since the inception of O.Reg. 278/05 and previous sample results may not be sufficient to deem a material as non asbestos-containing; such as: - Baseball office: kitchen vinyl tile, off white, not observed, possibly under carpet - Baseball office: Living room vinyl tile under carpet, not observed, possibly under carpet - NW shed attached to photography building vinyl tile inside on floor, not observed - Photography building acoustic tile, not observed - Shed, northeast corner of site acoustic tile 0.3 x 0.6m ACT pinhole regular - Portables beside hitting cubicles (now known as the Play Place) acoustic tiles - Arts and crafts building sheet flooring (linoleum), not observed (cream with brown streaks VFT) - Arts and crafts building strips of flooring (felt layer), not observed (cream with brow - Arts and crafts building subfloor under sheet flooring, not observed (cream with bro - Mom's place sheet flooring VFT – beige and linoleum – white and green - Main office plaster under white paint, not observed - Main office, second floor office acoustic tiles, 0.3 x0.3 m ACT present	Photograph 1	pgs. 15, 16 and 17	Provincial	As asbestos is identified as a designated substance under the Occupational Health and Safety Act (OHSA), handling and identification procedures should be conducted in accordance with requirements of the OHSA and its regulations (O. Reg. 278/05). Section 8 of Ontario Regulation 278/05 states that if, *(c) the owner of a building knows or ought reasonably to know that asbestos-containing material has been used in a building for any purpose related to the building, including insulation, fireproofing and ceiling tiles; the owner shall prepare and keep on the premises a record containing the information set out in subsection (4)* - which describes the requirements of a survey report. In O.Reg. 278/05, the number of samples required to be tested to determine whether a material is asbestos-containing, have changed from the past. As no updated asbestos survey has been conducted (since 2005), a non-compliance issue exists.	In the event that ACMs are identified on-site, handling or disturbance of such materials (such as during building renovations or demolition) shall be conducted in accordance with Ontario Regulation 278/05 respecting Asbestos on Construction Projects and in Buildings and Repair Operations, to protect the health and safety of workers and occupants (i.e. to prevent inhalation of asbestos fibres). Ontario Regulation 347/90 - *General Waste Management* as amended by Ontario Regulation 558/00, regulates the disposal of ACMs.	An asbestos survey (or DSS) needs to be conducted to comply with O.Reg. 278/05. Prior to renovation or demolition activities conducted on-site, identified or suspected ACM likely to disturbed, require removal to the extent practicable by procedures specified in Ontario Regulation 278/05.
	3	The helium cylinders stored in the program chalet were not secured along the wall with a metal chain. There is a potential that the helium cylinders may fall and may injured the site personnel if they are not secured in place.	Photograph 10	pg. 31	Provincial	Occupational Health and Safety Act, R.S.O. 1990, section 25. (1) states *"An employer shall ensure that, (a) the equipment, materials and protective devices as prescribed are provided".*	The helium cylinders are not secured along the wall with a metal chain. This is not compliant with O. Reg. 860. as there is a potential for the workers to be injured if the cylinders fall.	The helium tanks should be properly secured with a metal chain.
	5	The following materials and locations were observed not to have been previously sampled: Main office 0.3x0.3m blue with white streaks (VFT), Arts & Crafts 0.3x0.3m cream with streaks (VFT), Friar Tuck 0.3x0.3m cream and brown (VFT), Portable east of Friar Tuck 0.3x0.3m white with grey streaks (VFT), Will Scarlet 0.3x0.3m cream and blue (VFT), Little John 0.3x0.3m cream with brown streaks (VFT), Dance Studio 0.3x0.3m cream with white (VFT), Cooper Dome 0.6x0.9m grey with streaks (VFT), Arrow Sports Dome 0.3x0.3m cream with streaks (VFT) and the Canteen vinyl floor sheeting. Acoustical ceiling tiles (ACTs) were observed in the following buildings: Main office 0.6x1.2m (pinhole fissure white), Main office – 2nd floor office lounge 0.3x0.3m white, Program Chalet 0.6x1.2m (pinhole fissure white), Arts and Crafts 0.6x1.2m (pinhole fissure white), the portable to the east of the Friar Tuck building 0.6x1.2m (pinhole fissure white), Friar Tuck 0.6x1.2m (pinhole white), Will Scarlet 0.6x1.2m (pinhole white), Little John 0.6x1.2m (pinhole and pinhole fissure white), Dance Studio 0.6x1.2m (pinhole fissure white) and the Sports Dome (Portable attached) 0.3x0.6m (pinhole regular white). It is also possible that other building materials in the form of plaster, parging and window caulking materials are present in these structures may be asbestos-containing.	Photograph 42 & 43	pgs. 13, 14, 15 and 16	Provincial	As asbestos is identified as a designated substance under the Occupational Health and Safety Act (OHSA), handling and identification procedures should be conducted in accordance with requirements of the OHSA and its regulations (O. Reg. 278/05). Section 8 of Ontario Regulation 278/05 states that if, *(c) the owner of a building knows or ought reasonably to know that asbestos-containing material has been used in a building for any purpose related to the building, including insulation, fireproofing and ceiling tiles; the owner shall prepare and keep on the premises a record containing the information set out in subsection (4)* - which describes the requirements of a survey report. In O.Reg. 278/05, the number of samples required to be tested to determine whether a material is asbestos-containing, have changed from the past. As no updated asbestos survey has been conducted (since 2005), a non-compliance issue exists.	Although not expected, in the event that ACMs are identified on-site, handling or disturbance of such materials (such as during building renovations or demolition) shall be conducted in accordance with Ontario Regulation 278/05 respecting Asbestos on Construction Projects and in Buildings and Repair Operations, to protect the health and safety of workers and occupants (i.e. to prevent inhalation of asbestos fibres). Ontario Regulation 347/90 - *General Waste Management* as amended by Ontario Regulation 558/00, regulates the disposal of ACMs.	An asbestos survey (or DSS) needs to be conducted to comply with O.Reg. 278/05. Prior to renovation or demolition activities conducted on-site, identified or suspected ACM likely to disturbed, require removal to the extent practicable by procedures specified in Ontario Regulation 278/05.
	5	Soil sample SS-110-3 was taken from the fire pit located west of the Cooper Dome. Metal exceedances of applicable guidelines/provincial standards were detected for arsenic, boron, chromium (total), copper, zinc and electrical conductivity. In addition, naphthalene exceeded the Soil Quality Guideline for the protection of freshwater life (SQG_{FL}).	Photograph 27	pgs. 28, 29, 33 & 34	Federal/Provincial	Localized soil contamination was identified in the area of the fire pit. The CCME Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (Polycyclic Aromatic Hydrocarbons 2008) states that the application of the SQG_{FL} may be considered by users "on a site-specific basis where potential impacts on nearby surface water are a concern". In the interests of remaining consistent with Provincial Regulation 153/04, "nearby surface water" was considered to be 30m or less from a water body. As the sample (which exceeded the SQG_{FL}) was taken from an area located beyond 30m of the on-site water body, the exceedance is deemed not to represent naphthalene-related contamination for this site.	The exceeding concentrations of arsenic, boron, chromium (total), copper, zinc and electrical conductivity in the soil beneath the ash of the fire pit may be a result from burnt material aside from firewood, such as garbage, or these metals may naturally exist at such concentrations.	It is recommended that upon vacancy of the site the fire pit should be removed. Confirmatory sampling should be taken to ensure that the remaining soil meets the applicable criteria. Any contaminated soil found in and around the fire pit at the time of re-sampling should be excavated and disposed of at a licensed landfill. *Ontario Regulation 347* leachate quality testing should be conducted before disposal. Verification sampling should be conducted following the soil removal to ensure satisfactory remediation.
	5	Of the samples previously sampled by Shaheen and Peaker, 1997 only the following two samples were confirmed to contain asbestos and were recently found to be in good condition by GENIVAR, 2009: - Portables beside hitting cubicles (now known as the Play Place) - VFT, white with grey flakes was observed (previously identified as vinyl tile under carpet with 1-5% chrysotile) - Main office & Health Centre - 0.3 x0.3m VFT blue and white streaks & cream with streaks was observed (previously identified as vinyl floor tile with 1-5% chrysotile) .	-	pg. 16		As asbestos is identified as a designated substance under the Occupational Health and Safety Act (OHSA), handling and identification procedures should be conducted in accordance with requirements of the OHSA and its regulations (O. Reg. 278/05). Section 6. (1) states: *The demolition of all or part of machinery, equipment, a building, aircraft, locomotive, railway car, vehicle or ship shall be carried out or continued only when any asbestos-containing material that may be disturbed during the work has been removed to the extent practicable. O. Reg. 278/05, s. 6 (1).*	The handling or disturbance of ACM (such as during building renovations or demolition) shall be conducted in accordance with Ontario Regulation 278/05 respecting *Asbestos on Construction Projects and in Buildings and Repair Operations*, to protect the health and safety of workers and occupants (i.e. to prevent inhalation of asbestos fibres).	Prior to demolition activities, identified asbestos-containing materials require removal by procedures specified in Ontario Regulation 278/05.
	5	Mercury-containing thermostats were identified in the following locations (currently in-use): - Friar Tuck Building - Honey Well Thermostat (1) - North House - Honey Well Thermostat (1) - Will Scarlet Building - Honey Well Thermostat (1)	Photograph 2	pgs. 20 and 31	Federal/Provincial	Mercury is listed in Schedule I of the *Canadian Environmental Protection Act*, 1999 (CEPA); the List of Toxic Substances. Mercury is a designated substance and is regulated by Ontario Regulation 844/90 (amended to O. Reg. 390/00) to protect the health and safety of workers who will come into contact with mercury. In addition, the disposal of mercury is regulated by Ontario Regulation 347/90 - *General Waste Management*, as amended by Ontario Regulation 558/00.	There are currently no environmental concerns or compliance issues regarding mercury on the subject property. The mercury-containing thermostats observed on-site would only be a concern during any future renovation or demolition activities of the house.	The thermostats should be handled properly to avoid mercury release if the bulb is broken. Upon vacancy of the site, the mercury-containing thermostat should be disposed of appropriately.
	5	Potentially mercury-containing thermostats were identified in the following location (currently in-use): - Little John Building - Honey Well Thermostat (2)	Photograph 44	pg. 20	Federal/Provincial	Mercury is listed in Schedule I of the *Canadian Environmental Protection Act*, 1999 (CEPA); the List of Toxic Substances. Mercury is a designated substance and is regulated by Ontario Regulation 844/90 (amended to O. Reg. 390/00) to protect the health and safety of workers who will come into contact with mercury. In addition, the disposal of mercury is regulated by Ontario Regulation 347/90 - *General Waste Management*, as amended by Ontario Regulation 558/00.	There are currently no environmental concerns or compliance issues regarding mercury on the subject property. The potentially mercury-containing thermostats observed on-site would only be a concern during any future renovation or demolition activities of the house.	It is unknown whether the thermostats in the Little John Building contain mercury. Prior to any handling of the thermostats, the mercury content should be verified. If confirmed to contain mercury, the thermostats should be handled properly to avoid mercury release and disposed of appropriately.
	5	Mercury is a component of fluorescent light bulbs. It is estimated that there are approximately 500 such bulbs currently in use at the site. Fluorescent lights were observed to be in-use in most buildings on-site with the exception of sleeping huts and storage sheds.	Photograph 3	pg. 20	Federal/Provincial	Mercury is listed in Schedule I of the *Canadian Environmental Protection Act*, 1999 (CEPA); the List of Toxic Substances. Mercury is a designated substance and is regulated by Ontario Regulation 844/90 (amended to O. Reg. 390/00) to protect the health and safety of workers who will come into contact with mercury. In addition, the disposal of mercury is regulated by Ontario Regulation 347/90 - *General Waste Management,* as amended by Ontario Regulation 558/00.	There are currently no environmental concerns or compliance issues regarding mercury on the subject property. The continued use of fluorescent light bulbs is acceptable.	The lights should be handled properly to avoid mercury vapour release if the bulb is broken. Bulbs should be disposed of appropriately when they are no longer in-use. The Canada Wide Standards on Fluorescent Lamps Containing Mercury requires that quantities of fluorescent light tubes destined for waste in excess of 25 tubes are to be considered hazardous waste and thus must be disposed of in a manner that is compliant with O. Reg. 347.
	5	The refrigerants used in the following equipment are R-12 which is an Ozone Depleting Substance (ODS). - Nine (9) air conditioner units located in: Main Office north (1), Main Office South (3), Main Office Kitchen north (1), Main Office 2nd Floor Lounge (1), Health Centre (2) and The Cottage (1). The refrigerants used in the following equipment are R-22 which is also an Ozone Depleting Substance (ODS). - One (1) refrigerator in the Main Office Kitchen north and one (1) freezer in the North House. The refrigerants used in two (2) Beverage Coolers in the Swim Office are R-124.8. R124 is an Ozone Depleting Substance (ODS).	Photographs 4 & 5	pgs. 22, 23 and 24	Federal/Provincial	The *Federal Halocarbon Regulations, 2003*, Section 3 states that *No person shall release, or allow or cause the release of, a halocarbon that is contained in (a) a refrigeration system or an air-conditioning system, or any associated container or device, unless the release results from a purge system that emits less than 0.1 kg of halocarbons per kilogram of air purged to the environment.* The *Refrigerants Regulation (*Ontario Regulation 189/94*)* developed under the *Ontario Environmental Protection Act March 29, 1994* applies to chlorofluorocarbons (CFC), hydrochlorofluorocarbons (HCFCs), and hydrofluorcarbons. Ontario Regulation 717/94 lists a number of compounds that are ODSs, such as R-22. Disposing of equipment containing such refrigerant is covered under O. Reg. 189/94*, s. 10 (1) No person shall dismantle, destroy or incinerate refrigeration equipment or dispose of it by landfilling or by depositing it at a dump unless there is a notice issued under subsection 9 (1) on the equipment. A person under Section 9 (1) can only be a certified technician as defined under Section 21 of the regulation.* The disposal of halocarbon is covered under the *Federal Halocarbon Regulations, 2003,* Section 8, which states b*efore dismantling, decommissioning or destroying any system, a person shall recover all halocarbons contained in the system into a container designed and manufactured to be refilled and to contain that specific type of halocarbon.* The disposal of ODS is also regulated under O. Reg 347 - *General Waste Management Regulation*.	Ozone-depleting substances (ODS) breakdown in the stratosphere and release chlorine or bromine, which destroy the stratospheric ozone layer.	The ODS-containing equipment should be properly disposed of when it is no longer in-use in accordance with *O.Reg. 189, O.Reg. 347* and the *Federal Halocarbon Regulations, 2003.*
	5	The ODS content in the refrigerants used in the following equipment are unknown. - Ten (10) air conditioner units currently in-use located at the following locations: Main Office north (1), Main Office south (1), Health Centre (1), Arts and Crafts (1), Building east of Lasses' Cabins (2), South House (1), Mom's Place (2) and Play Place (1). - One (1) air conditioner unit not in-use in the Maintenance barn. - Five (5) freezers currently in-use located in the following locations: Cooper Dome (1), South House (1), North House (1), Mom's Place (2). - Seven (7) refrigerators currently in-use located in the following locations: Main Office south (1), South house (1), Coach's Corner (1), Play Place (1), North House (1) and Mom's Place (2 walk-in). - Three (3) refrigerators currently not in-use located in the barn.	Photographs 45	pgs. 22, 23 and 24	Federal/Provincial	The *Federal Halocarbon Regulations, 2003*, Section 3 states that *No person shall release, or allow or cause the release of, a halocarbon that is contained in (a) a refrigeration system or an air-conditioning system, or any associated container or device, unless the release results from a purge system that emits less than 0.1 kg of halocarbons per kilogram of air purged to the environment.* The *Refrigerants Regulation (*Ontario Regulation 189/94*)* developed under the *Ontario Environmental Protection Act March 29, 1994* applies to chlorofluorocarbons (CFC), hydrochlorofluorocarbons (HCFCs), and hydrofluorcarbons. Ontario Regulation 717/94 lists a number of compounds that are ODSs, such as R-22. Disposing of equipment containing such refrigerant is covered under O. Reg. 189/94*, s. 10 (1) No person shall dismantle, destroy or incinerate refrigeration equipment or dispose of it by landfilling or by depositing it at a dump unless there is a notice issued under subsection 9 (1) on the equipment. A person under Section 9 (1) can only be a certified technician as defined under Section 21 of the regulation.*	Ozone-depleting substances (ODS) breakdown in the stratosphere and release chlorine or bromine, which destroy the stratospheric ozone layer.	The potential for the equipment to contain ODS should be confirmed. If confirmed, the ODS-containing equipment should be handled and disposed of in accordance with O.Reg. 189, O.Reg. 347 and the *Federal Halocarbon Regulations 2003.*

		- Three (3) refrigerators currently not in-use located in the barn.				The disposal of halocarbon is covered under the *Federal Halocarbon Regulations, 2003,* Section 8, which states b*efore dismantling, decommissioning or destroying any system, a person shall recover all halocarbons contained in the system into a container designed and manufactured to be refilled and to contain that specific type of halocarbon.* The disposal of ODS is also regulated under O. Reg 347 - *General Waste Management Regulation*.		
	5	Silica-containing foundations were identified on-site.	Photograph 13 & 24	pgs. 19 and 20	Provincial	Silica is a component of concrete. As silica is identified as a designated substance under the Occupational Health and Safety Act (OHSA), handling should be conducted in accordance with requirements of the OHSA and its regulations (O. Reg. 845/90, amended to O.Reg. 111/04) as well as the MOL Guideline *Silica on Construction Projects*, *September 2004*.	Should renovation or demolition activities be conducted in the house, silica-containing products may be disturbed. As such, handling should be conducted in accordance with O.Reg. 845/90 under OHSA, the MOL Guideline *Silica on Construction Projects, September 2004*, and O. Reg 347 (amended to O. Reg. 558/00) of the EPA., 1990.	Appropriate preventative actions should be taken prior to any renovation or demolition activities conducted to prevent the exposure of workers to the inhalation of silica dust.
	5	The potential exists that PCB-containing light ballasts are in use in the in the following locations: - Main Office (14) - Health Centre (12) - Main Office – Office area (14) - Main Office – Print area (4) - Main Office – 2nd floor office lounge (2) - Program Chalet (12) - Nature Building (4) - The Cottage (3) - Art and Crafts Building (42) - Friar Tuck Building (42) - Lasses Building (10) - Will Scarlet Building (42) - Little John Building (39) - Archery Hut (6) - Dance Studio (21) - Cooper Dome (15) - Arrow Sports Dome (18) - Camp Craft (2) - Castle (1) - Pavilion (4) - Canteen (9) - Swim Office (3) - Pool House west of Pavilion (1) - Large Boiler Room (at the Pool) (3) - Barn (8) - Mom's Place (14) - TBS Center (9) - The Playplace (38) An additional 40 ballasts were observed in the Quad but not currently in-use as no light bulbs were installed.	Photograph 3	pgs. 21 and 22	Provincial	PCB is listed in Schedule 3 of the *Canadian Environmental Protection Act*, 1999 (CEPA), the list of Substances Subject to Notification or Consent. Its disposal management is regulated under O. Reg. 362 - *Waste Management - PCB's*. Section 16. (2) of the CEPA PCB Regulations (SOR/2008-273) states, "A person may use the following equipment containing PCBs in a concentration of 50 mg/kg or more until December 31, 2025, if these equipment is in-use on the day on which the Regulations come into force: (a) light ballasts; and (b) pole-top electrical transformers and their pole-top auxiliary electrical equipment." Section 1 of O. Reg 362, states, "PCB waste" means PCB equipment, PCB liquid or PCB material, but does not include, (b) PCB equipment that is, (i) an electrical capacitor that has never contained over one kilogram of PCBs."	According to CEPA PCB Regulations (SOR/2008-273), the continual use of PCB containing equipment (light ballast and pole-top electrical transformers) is acceptable until 2025. Materials containing less than 1 kg of PCBs are exempt from the Waste Management Regulation O.Reg. 362. Therefore, small quantity disposal of ballasts (totaling less than 40) can be considered non-hazardous waste. The rationale is that a typical ballast used for two-4 ft fluorescent light bulbs contains less than 25 g of PCBs. As such, 40 ballasts will contain approximately 1 kg of PCB. As long as the quantity of ballasts does not exceed this amount they can be disposed of with municipal refuse. Disposal of anything above 40 is required to be disposed of as hazardous waste in accordance with O. Reg. 362 (formerly O. Reg. 11/82).	If the light ballasts are confirmed to contain PCBs, they must be disposed of as hazardous waste in accordance with O. Reg 362 since there is more than 40 ballasts on-site. If the ballasts do not contain PCBs there are no special disposal requirements.
	5	The window sills and trim of the north house (baseball office) previously sampled by both Shaheen and Peaker and Pinchin, 1997 and were found to contain lead-based paints were identified recently by GENIVAR to be in good condition. In addition, the painted ceiling in the Arts and Crafts building was not observed (ACTs present) and the wood trim and window sills of the south house were also found to be in good condition. These locations were also previously sampled by Shaheen and Peaker, 1997 and were determined to be lead-containing.	Photograph 24	pg. 16	Provincial	Lead is identified as a designated substance under the *Occupational Health and Safety Act* (OHSA). Lead-based paint that is in good condition, undisturbed and out of reach of children is not considered a health hazard. In the event that renovation or demolition activities be conducted on surfaces painted with lead-based paint, the potential for disruption exists. As such, O. Reg. 843 under the OHSA and the Ministry of Labour Guideline *Lead on Construction Projects, September 2004*, should be referenced to ensure the protection of workers to the exposure of lead material. In addition, the disposal of lead is regulated by Ontario Regulation 347/90 - *General Waste Management*, as amended by Ontario Regulation 558/00, and these should be referenced when lead-based products are disposed of.	Lead-based paint that is in good condition, undisturbed and out of reach of children is not considered a health hazard. Where paint is flaking, peeling or is otherwise in a disturbed state, the potential for inhalation of lead dust or ingestion of paint chips exists, which creates concern relating to lead exposure. Where this situation exists, surfaces should be abated (i.e. brushed down to remove loose and flaking paint and, if structure is to remain; repainted) to minimize the potential for human exposure.	In the event that renovation or demolition activities be conducted on surfaces painted with lead-based paint, the potential for disruption exists. As such, O. Reg. 843 under the Occupational Health and Safety Act and the Ministry of Labour Guideline Lead on Construction Projects, September 2004, should be referenced to ensure the protection of workers to the exposure of lead material. In addition, the disposal of lead is regulated by Ontario Regulation 347/90 - General Waste Management, as amended by Ontario Regulation 558/00, and these should be referenced when lead based products are disposed of.
	5	Numerous interior painted surfaces were observed to be in poor condition in many of the other buildings located on the site during GENIVAR's 2009 site visit. These painted surfaces have not been tested, therefore it is unknown whether they are lead-based. These painted surfaces are located in the following locations: Main Office – Print area light green walls and white ceiling fair, Main Office – 2nd Floor office lounge grey floor, Sports Building grey/blue floors, electric blue walls and white ceiling, Cooper Dome white walls and ceiling, Campcraft grey floors, Castle white ceiling and South House - basement white exposed wood joists. With the exception of the Main Office Print Area where the walls and ceiling were fair in condition, all the other painted surfaces were observed to be in poor condition.	Photograph 17, 19 & 20	pgs. 18 and 19	Provincial	Although it is unknown whether the paint contains lead, the potential exists that lead-based paint was used based on the age of the structure. Lead is identified as a designated substance under the *Occupational Health and Safety Act* (OHSA). Where lead-based paint is flaking, peeling or is otherwise in a disturbed state, the potential for inhalation of lead dust or ingestion of paint chips exists, which creates concern relating to lead exposure. Also, in the event that renovation or demolition activities be conducted on surfaces painted with lead-based paint, the potential for further disruption exists. As such, O. Reg. 843 under the OHSA and the Ministry of Labour Guideline *Lead on Construction Projects, September 2004,* should be referenced to ensure the protection of workers to the exposure of lead material. In addition, the disposal of lead is regulated by Ontario Regulation 347/90 - *General Waste Management*, as amended by Ontario Regulation 558/00, and these should be referenced when lead-based products are disposed of.	Based on the age of the structure(s), lead-based paint may have been used. As no analysis was previously conducted, the lead content of the paint is unknown.	All peeling/flaking painted surfaces not previously sampled, should be sampled and analyzed to determine whether they contain lead. If identified as lead-containing, all lead-based painted surfaces not in good condition should be brushed down to remove loose and flaking paint and, if structure is to remain, the surface should be repainted to minimize the potential for lead exposure. Appropriate actions, including compliance with the requirements of O. Reg. 843 under the *Occupational Health and Safety Act*, the Ministry of Labour Guideline *Lead on Construction Projects* and O. Reg. 347/90 - General Waste Management, should be taken to protect workers and the environment from lead material.
	5	Numerous exterior painted surfaces were observed to be in poor condition in many of the other buildings located on the site during GENIVAR's 2009 site visit. These painted surfaces have not been tested, therefore it is unknown whether they are lead-based. These painted surfaces are located in the following locations: Arts & Crafts Building green aluminum siding and white window sills, Friar Tuck Building light blue aluminum siding, portable east of Friar Tuck Building white window sills, Will Scarlet Building blue aluminum siding Little John Building brown door and light blue aluminum siding, Sports Building green/blue walls, Dance Studio white window sills, Campcraft brown window sill, Swim Office white trim around door and windows.	Photographs 19, 20 & 29	pgs. 18 and 19	Provincial	Although it is unknown whether the paint contains lead, the potential exists that lead-based paint was used based on the age of the structure. Lead is identified as a designated substance under the *Occupational Health and Safety Act* (OHSA). Where lead-based paint is flaking, peeling or is otherwise in a disturbed state, the potential for inhalation of lead dust or ingestion of paint chips exists, which creates concern relating to lead exposure. Also, in the event that renovation or demolition activities be conducted on surfaces painted with lead-based paint, the potential for further disruption exists. As such, O. Reg. 843 under the OHSA and the Ministry of Labour Guideline *Lead on Construction Projects, September 2004,* should be referenced to ensure the protection of workers to the exposure of lead material. In addition, the disposal of lead is regulated by Ontario Regulation 347/90 - *General Waste Management*, as amended by Ontario Regulation 558/00, and these should be referenced when lead-based products are disposed of.	Based on the age of the structure(s), lead-based paint may have been used. As no analysis was previously conducted, the lead content of the paint is unknown.	All peeling/flaking painted surfaces not previously sampled, should be sampled and analyzed to determine whether they contain lead. If identified as lead-containing, all lead-based painted surfaces not in good condition should be brushed down to remove loose and flaking paint and, if structure is to remain, the surface should be repainted to minimize the potential for lead exposure. Appropriate actions, including compliance with the requirements of O. Reg. 843 under the *Occupational Health and Safety Act*, the Ministry of Labour *Guideline Lead on Construction Projects* and O. Reg. 347/90 - *General Waste Management*, should be taken to protect workers and the environment from lead material.

CATEGORY:

1. a determined threat to human health or safety
2. a violation of law
3. non-compliance with a policy, guideline, code, standard or the like
4. not reflective of good environmental practices
5. future management considerations

6. GENIVAR's site visit indicated that the exterior painted surfaces for many of the buildings were in poor condition. The general condition of the interior painted surfaces could be described as good to fair, with poor conditions noted on the floor (grey) of the 2nd floor of the main office, portable to the north of the Arrow sports dome (cream), walls and ceiling of the Cooper Dome (white), the floor of Camp Crafts (white), floors and walls of the Sports Building (blue and electric blue), the ceiling of the Castle building (white) and the presence of stored paint chips (multi-coloured) in the Senior Flag Pole Outdoor Theatre.
7. Silica is assumed to exist in the building foundations.
8. Mercury-containing bulbs were observed in 4 of the 6 thermostats inspected (two of the thermostats could not be opened and therefore it is unknown at this time if they contain mercury). Mercury is also expected to be present in 500 + fluorescent light bulbs currently in use across the site. No other designated substances were identified on the site.
9. There are approximately 300 light ballasts in-use at the site. Two ballasts were inspected, however, only one could be confirmed not to be PCB-containing. It is possible that PCBs are present in ballasts that have not been recently changed. It is unknown the number of ballasts that have been recently changed.
10. ODSs have been confirmed to be present in 10 of the 38 refrigerators, freezer, water coolers and air conditioners present on the site, all of which are in use. It is possible that more exist in those where the information was not available.
11. Site observations indicated visual signs of staining and possibly mould proliferation on the ceilings of the following buildings: Nature Building, Arts and Crafts Building, Friar Tuck Building, Will Scarlet Building, Little John, Sports Building, Campcraft and the Castle. It is unknown that the stains (dry) observed were the results of one time events which were subsequently remedied or if they are ongoing problems.
12. Three, 910 L heating oil tanks were observed on the site. Two of the tanks were located in the basement level of the south house and one was located in the basement of the north house. Each of the tanks were reported to be in good condition. The tanks however, were not compliant with several of the items stipulated in the NFC and B 139-09. These included the vent and fill pipes did not meet the minimum height requirement, various material was stored around the tanks, and they did not have a secondary containment system.
13. Various non hazardous materials are stored on-site and include used tires, old farming equipment and an unused AST.
14. Various hazardous materials are present on-site, most of which are related to the maintenance of the buildings (paint) and water treatment and are stored in a safe manner. Hazardous materials observed not to be in use on the site included a car battery.

9. Closure

This report is furnished as privileged and confidential to PWGSC and TC. Release to any other company or individual is solely the responsibility of the addressee. Any use that a third party makes of this report, or any reliance on decisions made based on it, is the responsibility of such third parties. GENIVAR accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made, or actions taken, based on this report.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted engineering and scientific practices current at the time the work was performed. It should be noted that environmental regulations are dynamic in nature and conclusions presented herein are based on current municipal, provincial and Federal regulatory conditions and may not be applicable in the future. Conclusions presented in this report should not be construed as legal advice and represent the best technical judgment of GENIVAR.

The conclusions are based on-site conditions observed at the time the work was performed and at the specific testing and/or sampling locations, if applicable. Findings can only be extrapolated to an undefined limited area around these locations.

GENIVAR reserves the right to amend and/or supplement this report in the event that additional information, documentation or evidence becomes available. If any conditions become apparent that differ significantly from our understanding of conditions as presented in this report, we request that we be notified immediately to reassess the conclusions and recommendations provided herein.

We appreciate the opportunity to conduct this work on behalf of PWGSC.

Yours truly,

GENIVAR Consultants LP

M. M. Husain

Muin Husain, Ph.D., P.Geo.
Director, Environment

John Chadwick

John M Chadwick, P.Geo.
Project Manager

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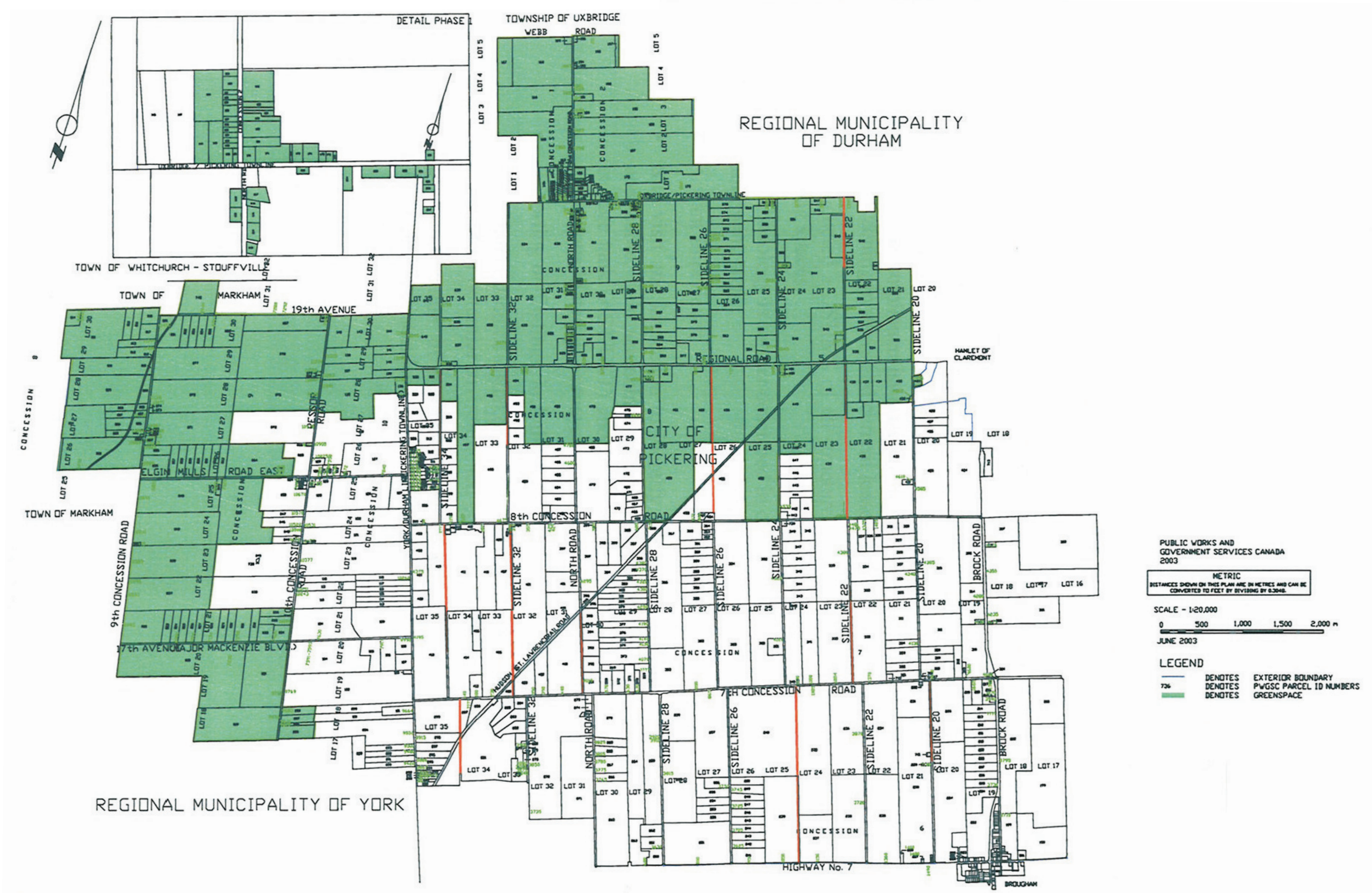
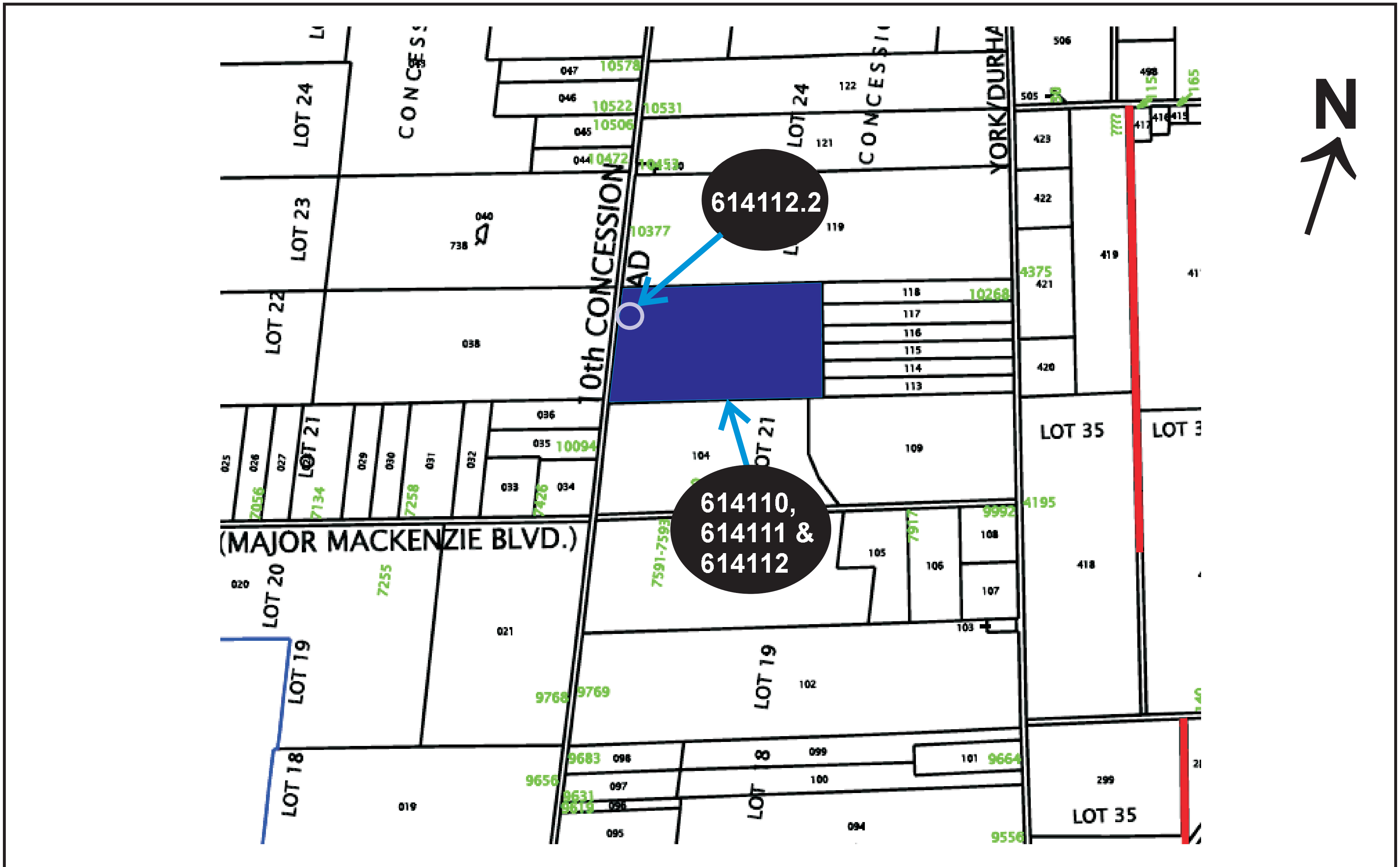
*The Audit Criteria used in this assessment are listed in **Appendix C**.

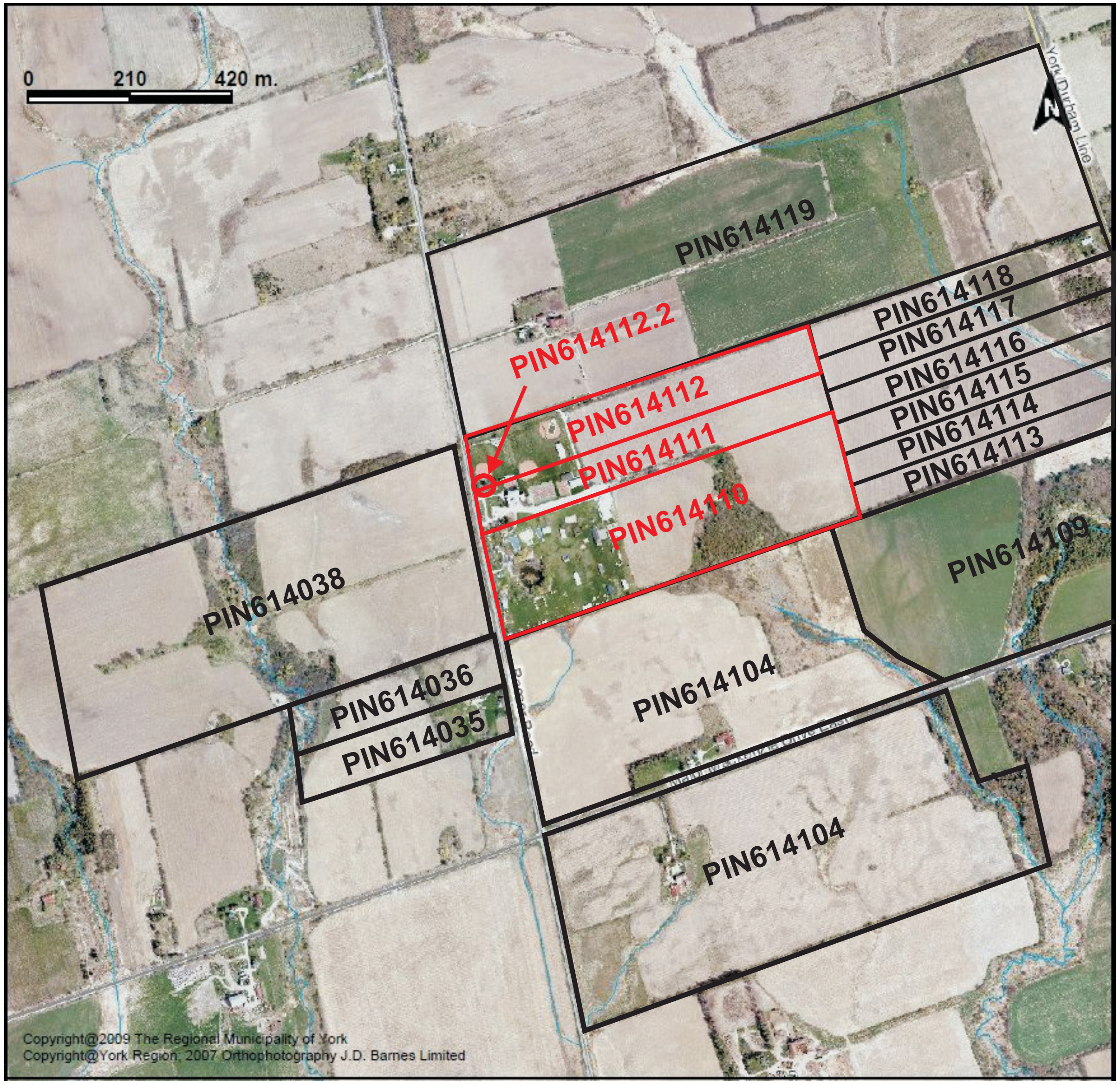
Figures



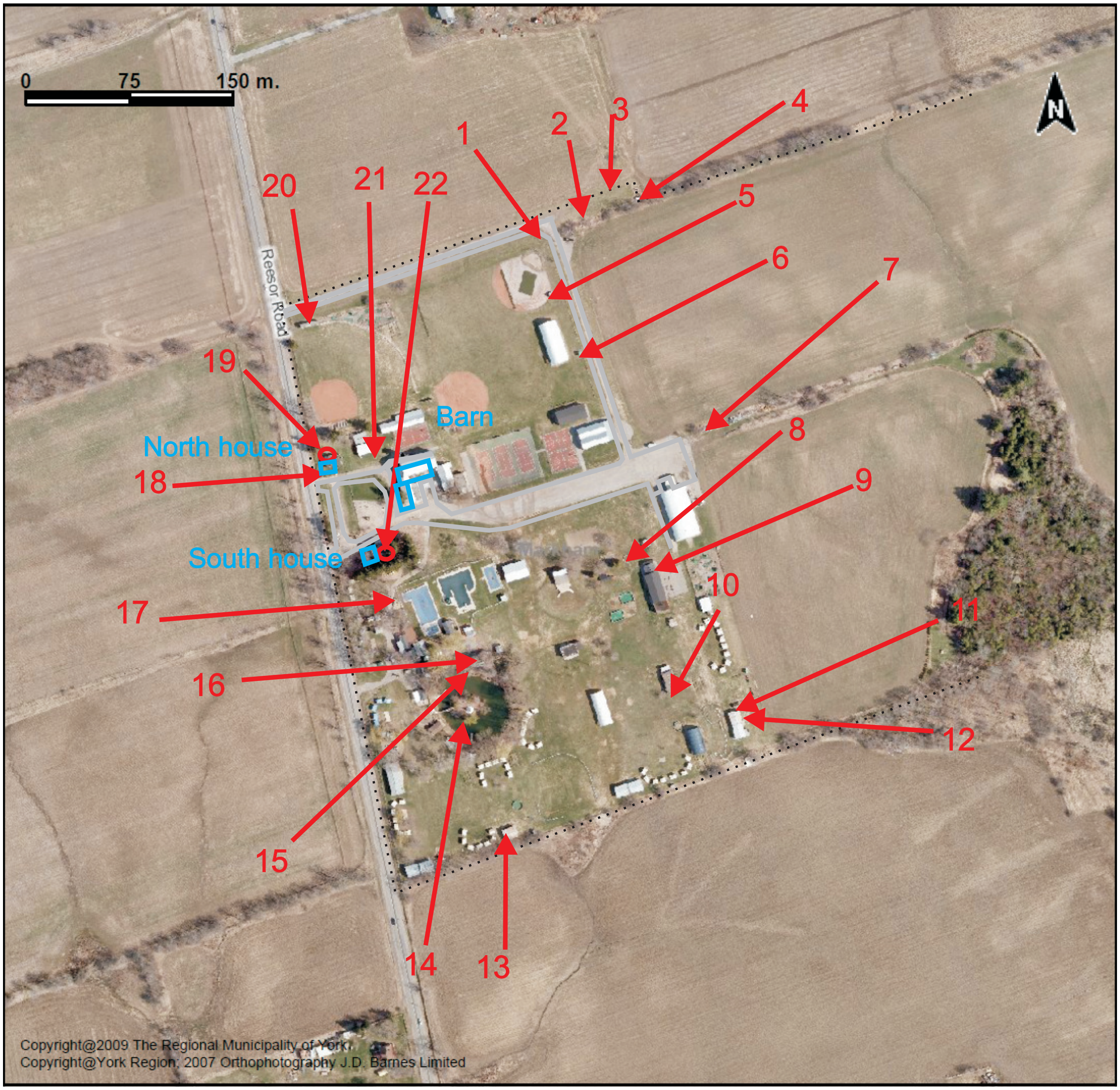
DATE : MARCH 2010	**PICKERING LANDS SITE PROPERTY BOUNDARIES**	Public Works and Government Services Canada	GENIVAR
SCALE : NTS			
FILE No. : MA-09-245-00-MA	**10243 & 10251 REESOR ROAD, PIN 614110, PIN 614111 AND PIN 614112 TOWN OF MARKHAM, ONTARIO**	**FIGURE: 1**	
APP'VD : M.H.			



DATE : MARCH 2010	SITE LOCATION PLAN	Public Works and Government Services Canada	GENIVAR
SCALE : NTS			
FILE No. : MA-09-245-00-MA	10243 & 10251 REESOR ROAD, PIN 614110, PIN 614111 AND PIN 614112 TOWN OF MARKHAM, ONTARIO	FIGURE: 2	
APP'VD : M.H.			



DATE : MARCH 2010	SITE PLAN	Public Works and Government Services Canada	GENIVAR
SCALE : NTS			
FILE No. : MA-09-245-00-MA	10243 & 10251 REESOR ROAD, PIN 614110, PIN 614111 AND PIN 614112 TOWN OF MARKHAM, ONTARIO	FIGURE: 3	
APP'VD : M.H.			



1 - Garbage and recycling
2 - Soil stockpile
3 - Wood debris, tires (12)
4 - Tank in trailer
5 - Golf equipment storage
6 - Hockey equipment storage
7 - Old farm equipment
8 - Active fire pit
9 - Propane tank (2)
10 - PNT-110-4 (not analyzed)
11 - PNT-110-3 (not analyzed)
12 - PNT-110-2 (not analyzed)
13 - PNT-110-1 (not analyzed)
14 - Pond
15 - Propane tanks (2)
16 - Drilled well
17 - Swimming pool
18 - Vent and fill pipes
19 - Septic system (north house)
20 - Transport truck trailer
21 - Drilled well
22 - Septic tank (south house)

Property Boundary of PIN 614110, 614111 and 614112   Driveway

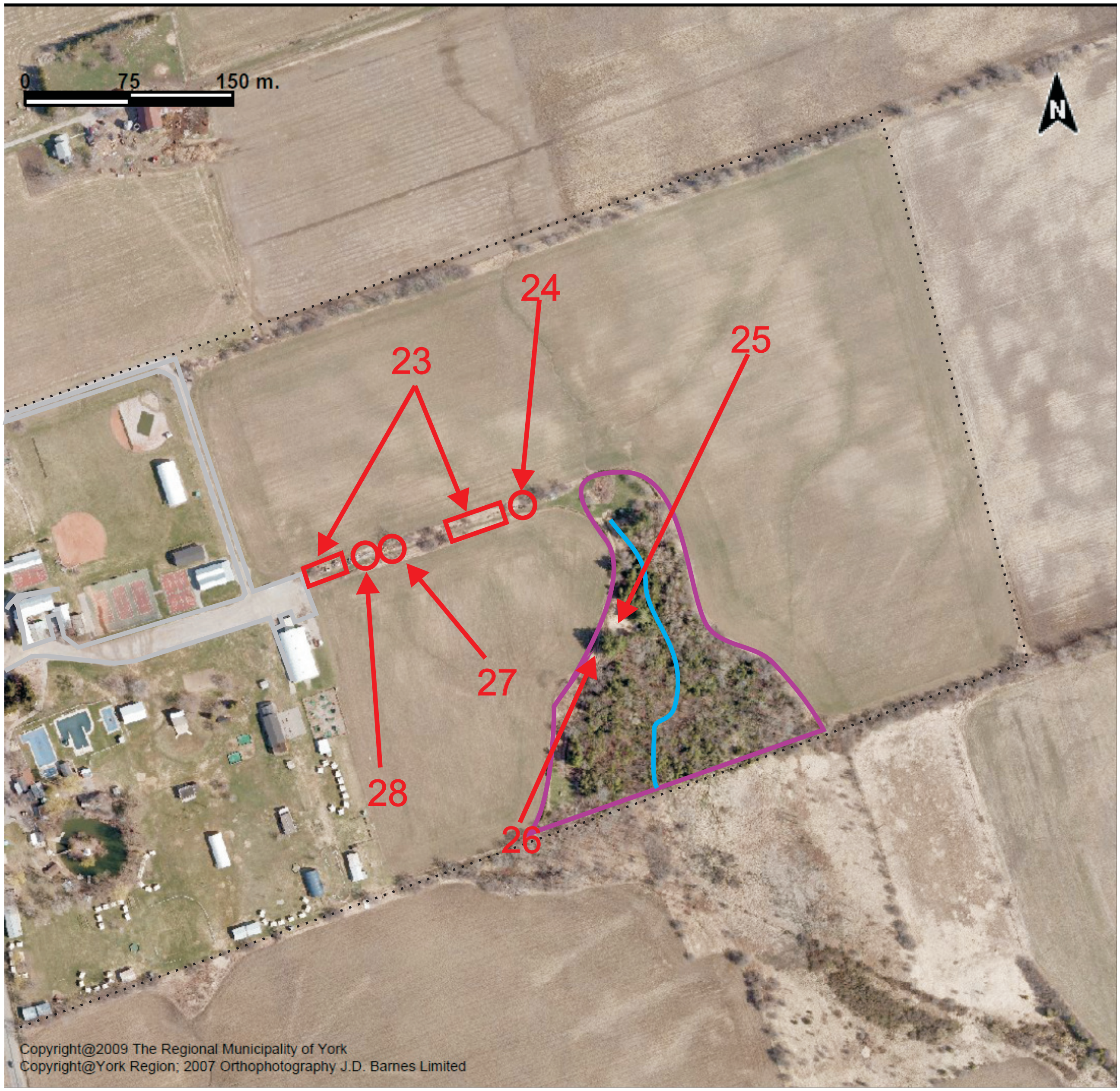
DATE :	MARCH 2010
SCALE :	NTS
FILE No. :	MA-09-245-00-MA
APP'VD :	MH

SITE FEATURES MAP
10243 & 10251REESOR ROAD,
PIN 614110, PIN 614111
AND PIN 614112
TOWN OF MARKHAM, ONTARIO

Public Works and Government Services Canada

FIGURE: 4a

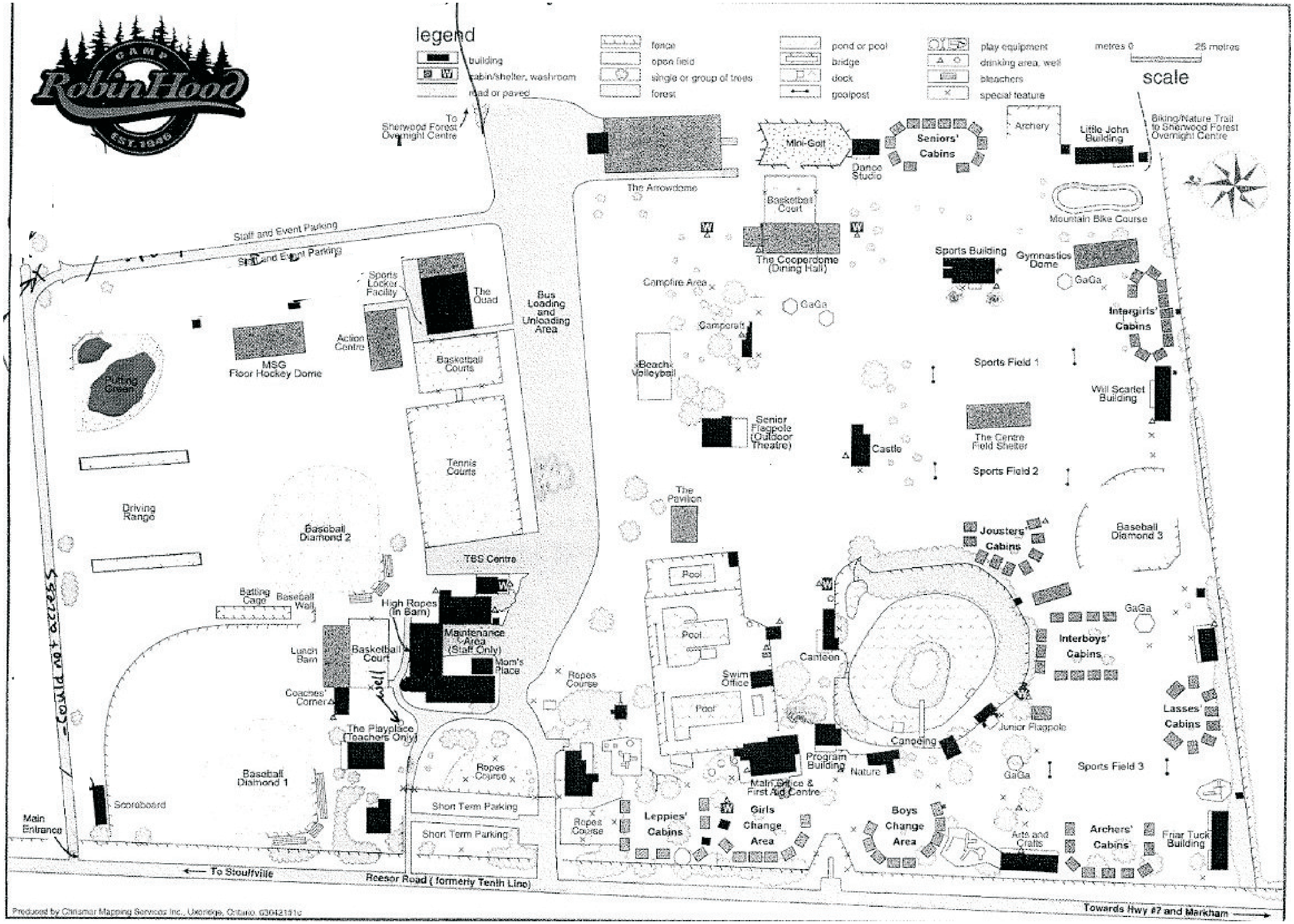
GENIVAR



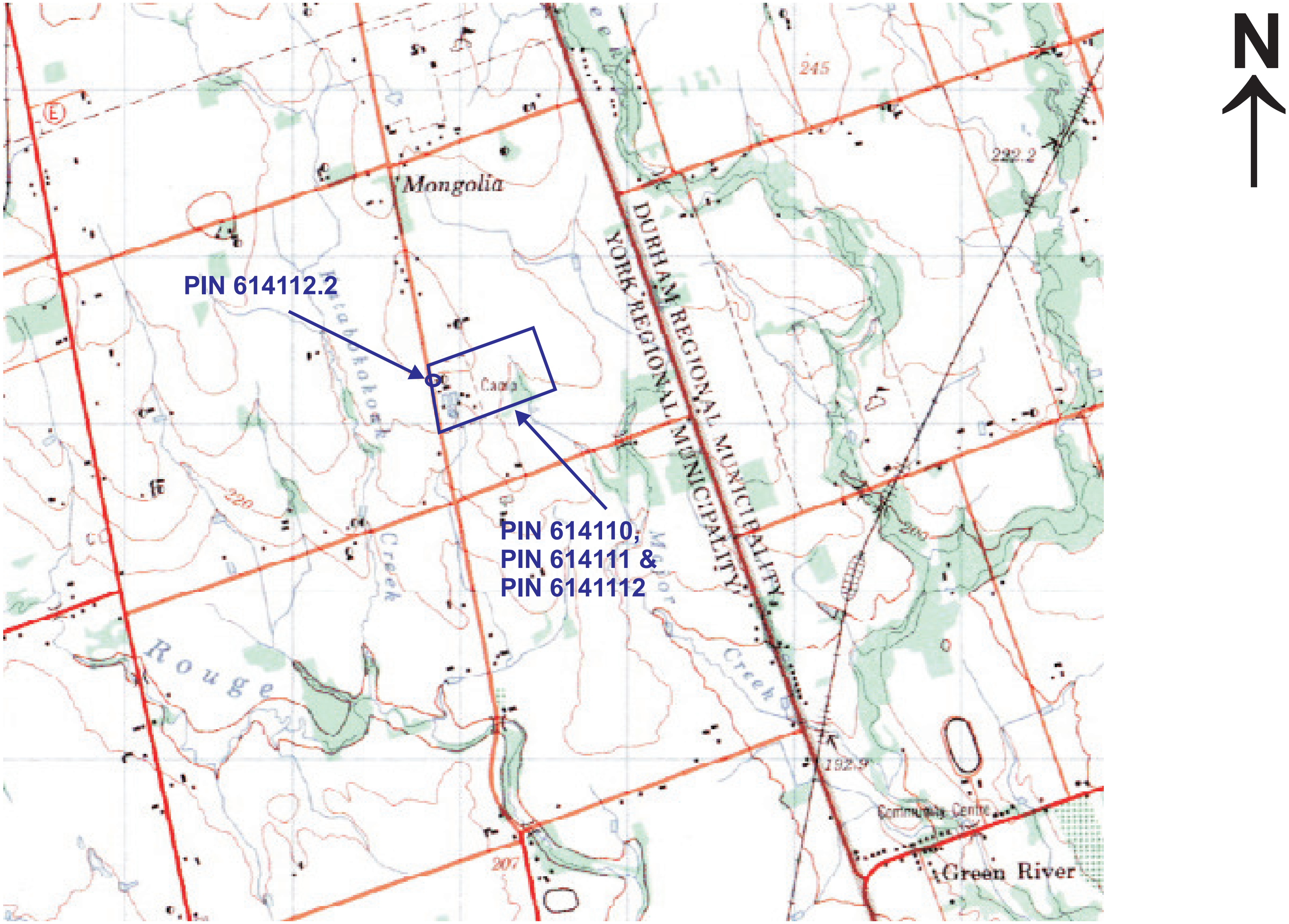
23 - Stored Material (Wood, concrete
Construction wood, PVC, Piping)
24 - Used tires
25 - Fire pit
26 - Metal debris
27 - Plastic playground equipment
28 - Scrap metal

Property Boundary of PIN 614110, 614111 and 614112 | Driveway | Sherwood Forest | Creek

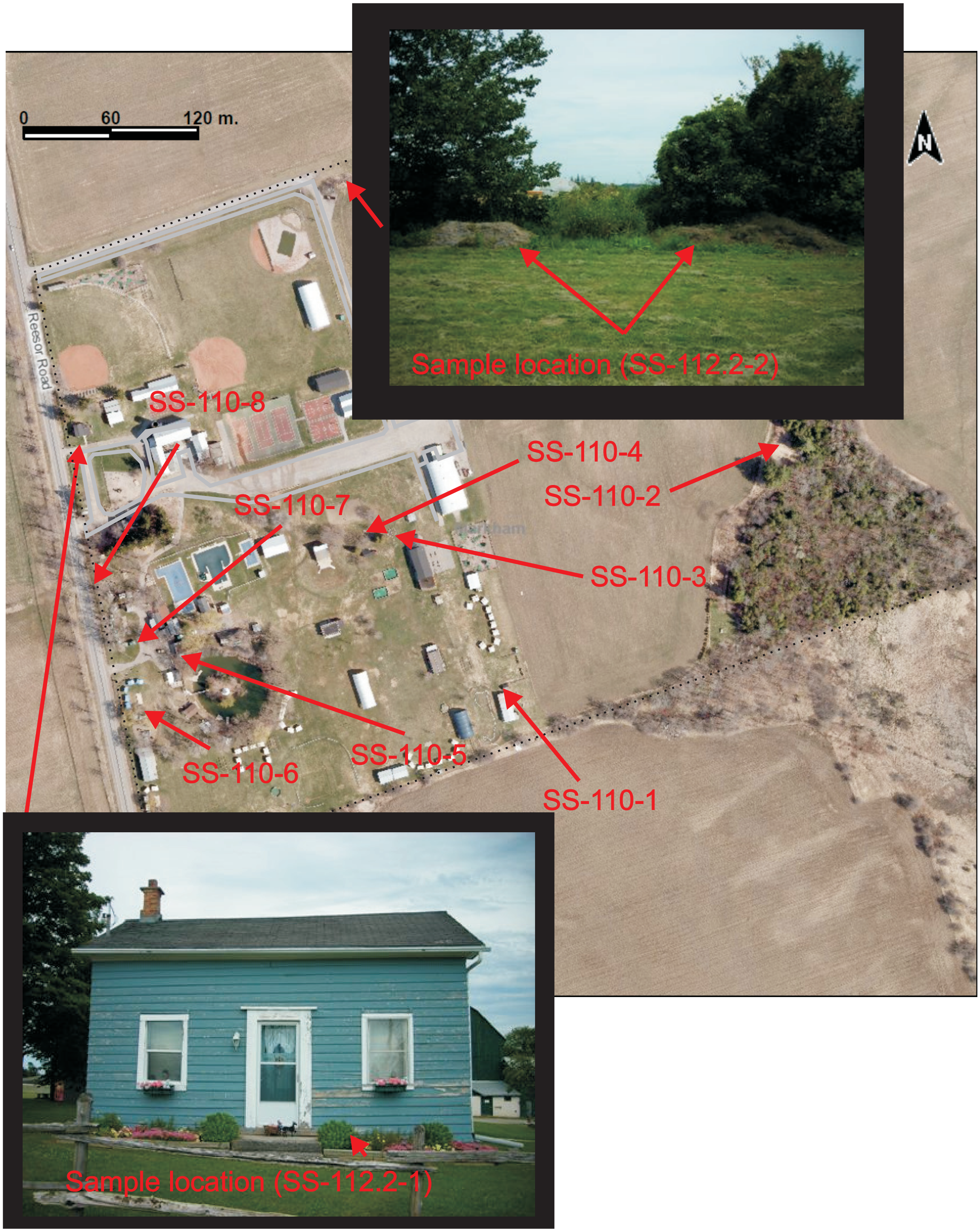
DATE : MARCH 2010	SITE FEATURES MAP 10243 & 10251REESOR ROAD, PIN 614110, PIN 614111 AND PIN 614112 TOWN OF MARKHAM, ONTARIO	Public Works and Government Services Canada	GENIVAR
SCALE : NTS		FIGURE: 4b	
FILE No. : MA-09-245-00-MA			
APP'VD : MH			



DATE : MARCH 2010	CAMP ROBIN HOOD SITE MAP	Public Works and Government Services Canada	GENIVAR
SCALE : NTS			
FILE No. : MA-09-245-00-MA	10243 & 10251 REESOR ROAD, PIN 614110, PIN 614111 AND PIN 614112 TOWN OF MARKHAM, ONTARIO	FIGURE: 5	
APP'VD : M.H.			



DATE : MARCH 2010	TOPOGRAPHIC MAP	Public Works and Government Services Canada	GENIVAR
SCALE : NTS			
FILE No. : MA-09-245-00-MA	10243 & 10251 REESOR ROAD, PIN 614110, PIN 614111 AND PIN 614112 TOWN OF MARKHAM, ONTARIO	FIGURE: 6	
APP'VD : M.H.			



Property Boundary of PIN 614110, 614111 and 614112

Driveway

DATE :	MARCH 2010	**SITE FEATURES MAP** **10243 & 10251REESOR ROAD,** **PIN 614110, PIN 614111** **AND PIN 614112** **TOWN OF MARKHAM, ONTARIO**	Public Works and Government Services Canada	GENIVAR
SCALE :	NTS		**FIGURE: 7**	
FILE No. :	MA-09-245-00-MA			
APP'VD :	MH			

Appendix A

Field Notes

Date: July 15, 2009
Interviewer: AL/AO

Pickering Lands Site Environmental Evaluation
Tenant Interview Form

GENERAL

Background

1) What is your full name and address?

Tenant Name: Camp Robin Hood
Address: 10243 Ressor Road
Phone Number: (905) 640-3407
Contact: Howie Grossinger

Past and Present Land Use

1) Has equipment or vehicle maintenance ever taken place on any of the properties you currently lease?

☒ **Yes** ☐ **No** ☐ **Unknown**

If yes, in which location(s)?
Barn and Maintenance Shed - 10 + years. Oil changes are typically completed. Oil is placed in plastic containers and taken to transfer station (Miller – Markham)

2) Have any manufacturing or processing operations been carried out on-site?

☐ **Yes** ☒ **No** ☐ **Unknown**

If yes, what was manufactured/processed, when and where were these activities conducted?

3) Have any of the substances listed below ever been used, stored, or disposed of on-site?

If yes, please specify the substance and location where it is or was located.

a) **Pesticides** Yes - Barn
b) **Soil amendments** No
c) **Chemicals** Yes – Pool Filter Rooms
d) **Petroleum products** Yes – Gas Shed – Near Barn
e) **Radioactive material** No
f) **Other wastes (specify)** No

4) Have spills or leaks of any of the following substances ever occurred on the property?

☐ **Yes** ☒ **No** ☐ **Unknown**

If yes, please specify the substance and if possible the source and general site location of the spill or leak.

a) Pesticides ____________________
b) Chemicals ____________________
c) Petroleum products ____________________
d) Radioactive material ____________________
e) Other wastes (specify) ____________________

5) a) Are there, or have there ever been [redacted] or aboveground tanks, drums or storage containers on the property?

☒ Yes aboveground tanks ☐ No ☐ Unknown

If yes, what did they contain and where were they located? Please also indicate their age, size, material of construction and present status of use below.

#	In Use? (Y/N)	Location	Contents	Age	Material of Construction	Volume	Condition
1	Y	Pool Filter Rooms	Chlorine	10 + years	Plastic	1000 L	Good
2	Y	Pool Filter Room	Acid	10 + years	Plastic	200 L	Good
3	Y	Water Filter Room	Chlorine	1 year	Plastic	200 L	Good
4	Y	Canoe Pond	Propane	10 years	Steel	6000 L	Good
5	Y	Coppers Dome	Propane	2 years	Steel	120 L	Good
6	Y	North House (Baseball Office)	Heating Oil	4 years	Steel	910 L	Good
7 and 8	Y	South House	Heating Oil	4 years	Steel	910 L	Good

b) Have non-operational tanks been removed?

☐ Yes ☐ No ☐ Unknown

Don't exist

If yes, to your knowledge, was any soil testing carried out?

☐ Yes ☒ No ☐ Unknown

6) Is there currently any garbage, such as old cars, scrap metal, or car batteries on the property?

☒ Yes ☐ No ☐ Unknown

If yes, what type or garbage is it and where is it located?
- Assorted scrap metal – down property line / barn
- Car batteries – barn and lean to parking area

7) Has fill ever been placed on the site?

☐ Yes ☒ No ☐ Unknown

If yes, what type of fill was it and where was it placed?

Land Characteristics

1) Do any easements, such ask creek, railway or a Bell Canada easement run through the property?

☐ Yes ☒ No ☐ Unknown

If yes, indicate the type and location of the easement:

Adjacent Land Use

1) Are you aware of any spills, leaks or dumping of any of the following substances on adjacent properties?

☐ Yes ☒ No ☐ Unknown

If yes, please specify the substance, and, if possible, the source of the spill or leak and the general site location of the spill, leak or dumping.

e) **Pesticides** ____
f) **Chemicals** ____
g) **Petroleum products** ____
h) **Radioactive material** ____
e) Other wastes (specify) ____

2) Do adjacent lands have any of the following concerns or problems?

Concern	*Yes/No/Unknown*	PIN	Comments
a) odours: e.g. gasoline	No		
b) abnormally dark soil or concrete	No		
c) abnormal appearance of run-off	No		
d) concern with pesticide application	No		
e) garbage: i.e. drums, car batteries, tires	No		
f) septic tank problems	No		

RESIDENTIAL AND/OR FARM RESIDENTIAL

Water Supply

1) a) What source supplies your drinking water? If drinking water is supplied from an individual well, what is the location of that well?

3 wells - 1 outside barn silo.

2 wells north side of Canoe Pond between washroom and POW (Pearls of Wisdom).

b) Any problems with the taste, smell or appearance of your drinking water?

☐ Yes ☒ No

c) What type(s) of water treatment systems do you have? i.e. water softener or filters.

3- Disinfectants - Chlorine, Filters / UV Lights

2) a) Are there any other wells that supply water for livestock or irrigation?

☐ Yes ☒ No ☐ Unknown

If yes, where are they located?

b) Any problems with water from these wells?

☐ Yes ☒ No ☐ Unknown

Comments:

3) Is there a non-operational well present on the property?

☒ Yes ☐ No ☐ Unknown

If yes, where is it located and what condition is it in?
- Outside health centers (under picnic table)
- Condition – Unknown

Waste Water

1) a) What type of waste water system do you have on the property? For example, a cess pool, a tile bed or a septic tank.
3 septic tanks
7 holding tanks – Each bathroom (6 and behind office).

b) Where is the system located?
- Two farm houses / under camp office

c) If you have a septic tank, is it periodically pumped out?
- Yes – Les Coulter Septic
- All holding tanks and pumped out weekly between July 1, 2009 and September 1, 2009

d) Have you had any problems with the wastewater system?
- Yes – Holding tank behind office was installed 5 years ago due to septic tank weeping bed not working properly

AGRICULTURAL AND/OR FARM RESIDENTIAL

1) What structures, such as buildings, old foundations barns or sheds, are on the property?
 - Numerous school portables (12)
 - 1 barn, 2 houses, 1 office complex, 1 health centre

 Please specify the type of structure (i.e. barn, old foundation) its location, use, age, size and materials of construction.
 - Barn/houses – wood frame/strong foundation
 - Portables – steel frame and cladding
 - Office/health centre and other out building – wood frame and wood siding

2) Are you aware of any asbestos containing materials on the property?

 ☐ Yes ☒ No ☐ Unknown

 If yes, where are they located and what is their condition?

3) Are you aware of any lead based paint on the property?

 ☐ Yes ☒ No ☐ Unknown

 If yes, where is it located and what is its condition?

4) Are you aware of any urea foam insulation on the property?

 ☐ Yes ☒ No ☐ Unknown

 If yes, where is it located and what is its condition?

Tank Compliance Checklist – Heating Oil Tanks and Storage Tanks Supplying Emergency Generators

PIN : 614110 Tank No.: 1

General Information

1. **Name of tank owner:** Transport Canada - 2 indentical tanks
2. **Location of storage tank system (be specific)** : NW corner of basement
3. **Installation** Tank Installer: Unknown
   Year of Installation: 2006
4. **Manufacturing** Tank Manufacturer: Parrsboro Metal Fabricators
   Year Manufactured: 2005
5. **(a) Type of tank** ☒ Aboveground-Horizontal ☐ Aboveground – Vertical (shop fab.)
   ☐ Aboveground – Vertical (field erected) ☐ Other ________
   (b) Tank dimensions: Length: 1.54 m Width: 0.58 m
   Height: 1.16 m Diameter: ________
   (c) Capacity of storage tank: 909 Units: ☒ Litres ☐ Imperial Gallons
6. **Tank contents**
   ☒ Heating Fuel/Furnace Oil ☐ Diesel
   ☐ Other (Specify: ________)
7. **Year of installation:** 2006 **Year of Manufactured:** 2005
8. **Distance and position relative to nearest water well:** ________
9. **Distance and position relative to nearest surface water bodies:** N/A

Tank Specific Information

1. **Tank Material** ☒ Steel ☐ Fibreglass Reinforced Plastic (FRP)
   Tank Wall: ☒ Single Wall ☐ Double Wall
2. **Piping Material** ☒ Steel (bare, painted, wrapped, tar coated) ☐ Galvanized steel
   (check all that apply) ☐ Steel (plastic coated) ☐ Fibreglass
   ☐ Enviroflex/Bufflex (or equivalent) ☒ Copper Tubing ***with plastic sheathing**
   ☐ Other (Specify) ________
3. **Tank status** ☒ Active ☐ Inactive ☐ Temporarily active ☐ Temporarily inactive
4. **ULC Tag** ☐ Not Present ☒ Present ULC Standard: S602
   Serial No.: S-291898, S-291894
5. **Tank Supports (check all that apply)**
   ☒ Tank evenly settled ☐ Tank resting on ground/floor ☒ Steel supports
   ☐ Tank unevenly settled ☐ Tank not resting on ground/floor ☐ Wood supports
   ☐ Tank anchored (flooding) ☒ Acceptable support

PIN : 614110 Tank No.: 1

- ☐ Other construction (specify ______________________)
- ☐ Unacceptable support (Reason: ____________________)
- ☐ Distance from tank bottom to ground/floor: 1 ft

6. **Tank secondary containment** ☒No ☐Yes (Type: ______________________________)

7. **Overfill protection**
   - ☒ None
   - ☐ Level gauge
   - ☐ Overfill Device
   - ☐ Audible and visual alarm
   - ☐ Automatic shut off valve
   - ☐ Visual by trained personnel

8. **Tank corrosion protection** ☐ None ☒ Painted

9. **Tank condition**
   - ☒ No corrosion
   - ☐ Satisfactory
   - ☐ Minor corrosion (where: ____________________)
   - ☐ Severe corrosion (where: ____________________)

10. **Tank location**

Tank is on lowest level of the building (if indoor tank).	☒ Yes	☐ No
Tank is at least 50 mm from all walls. *** 0.07 m**	☒ Yes	☐ No
One side of tank has a minimum of 60 cm clearance for access.	☒ Yes	☐ No
Tank is at least 1.5 m from appliance *** 2.5 m from furnace**	☒ Yes	☐ No

***(According to the latest update (August, 2009) to CSA B 139-09, Section 7.4.8 states "*The tank shall be located and operated so that the (b) horizontal distance from the tank to any fuel-fired appliance…is not less than 0.6 m (2 ft)…*")**

Tank is protected from physical damage incident to outdoor location.	☒ Yes	☐ No

11. **Interconnected Tanks (2 or more tanks connected with common fill and/or vent pipes)** **None**

Tanks at same elevation	☐ Yes	☐ No	Tanks on a common slab	☐ Yes	☐ No
Bottom Connected	☐ Yes	☐ No	Connected with 50 mm pipe	☐ Yes	☐ No

Number of interconnected tanks in the system: _______________

Combined Capacity of interconnected tanks: _______________ Units: ☐ Litres ☐ Imperial Gallons

(include pictures of interconnected piping)

Associated Piping

1. **Location** ☐ No piping ☒ Aboveground piping ☐ Underground piping

2. **Piping below product level**
   - ☐ No shut-off valve present
   - ☒ Manual shut-off valve
   - ☐ Automatic shut-off valve
   - ☐ No piping below product level

3. **Piping corrosion protection** (Specify for copper, a/g pipes, and u/g pipes)
   - ☐ None
   - ☐ Painted
   - ☒ Other (Specify: plastic sheathing________)

4. **Fill pipe (check all that apply)**

Capped	☒ Yes	☐ No
50 mm diameter	☒ Yes	☐ No
Galvanised steel construction	☒ Yes	☐ No
Terminates below the vent pipe	☒ Yes	☐ No
Access to fill located outdoors	☒ Yes	☐ No
Outdoor portion is close to the building	☒ Yes	☐ No (Distance: 0.035 m)
At least 60cm from building openings (includes windows)	☒ Yes	☐ No (Distance: 0.80 m)
Distance from fill pipe (terminating point) to nearest well:	70 m	
Top of fill pipe is less than 4 m (vertically) from top of tank	☒ Yes	☐ No
Top of fill pipe is at least 1 m above grade	☐ Yes	☒ No **0.41 m**
Fill pipe has vapour and liquid tight cover	☒ Yes	☐ No

PIN : 614110 Tank No.: 1

5. Vent pipe (check all that apply)

32 mm diameter ☒ Yes ☐ No — Terminates above the fill pipe (min 15 cm) ☒ Yes ☐ No
Vent alarm present ☒ Yes ☐ No — Vents to the outdoors ☒ Yes ☐ No
Weatherproof cap/hood ☒ Yes ☐ No — Steel or galvanised construction ☒ Yes ☐ No
Other construction (Specify: ______________)
Outdoor portion is close to the building ☒ Yes ☐ No (Distance: 0.085 m)
At least 2 m above ground level ☐ Yes ☒ No (Distance: 0.72 m)
Terminates within 1 m horizontally of the fill pipe ☒ Yes ☐ No (Distance: 0.115 m)
Minimum 60 cm from building openings (includes windows) ☒ Yes ☐ No (Distance: 0.65 m)
All portions of vent piping drain towards the tank ☒ Yes ☐ No
Vent terminates less than 4.15 m above the top of the tank ☒ Yes ☐ No

6. Transfer lines (check all that apply)

☐ Wrought iron construction
☐ Steel construction
At least 10 mm in diameter ☒ Yes ☐ No
Properly supported ☒ Yes ☐ No
Secondary containment ☐ Yes ☒ No
☐ Brass construction
☒ Copper construction *** with plastic sheathing**
Other construction (specify:______________)
Protected against physical damage ☐ Yes ☐ No

7. Underground piping (check all that apply)

Secondary containment ☐ Yes ☐ No
Protected against physical damage ☐ Yes ☐ No
Leak detection for primary pipe ☐ Yes ☐ No
Corrosion protection ☐ Yes ☐ No
Less than 40 cm underground below driveway ☐ Yes ☐ No
Joined using threaded elbows and nipples ☐ Yes ☐ No
Piping construction (e.g. steel, copper): ______________
☒ No underground piping

Operations and Maintenance

1. Annual Inspection (Check all items that are inspected) **No documentation was available during the site visit**

☐ Fuel oil tank for leaks ☐ Vent whistle ☐ Fuel pump
☐ Fuel oil lines for leaks ☐ Fuel filter ☐ Sight gauge

Other

1. Fuel oil Filter

☒ Installed properly (fuel in/out) ☐ Inside building ☐ Not present
☒ Outside building

2. All unused openings ☒ Closed ☐ Open (not including vent)

3. Contamination ☒ None observed
☐ Known spill or leak (location: ______________)
☐ Staining observed (Approximate size and location: ______________)

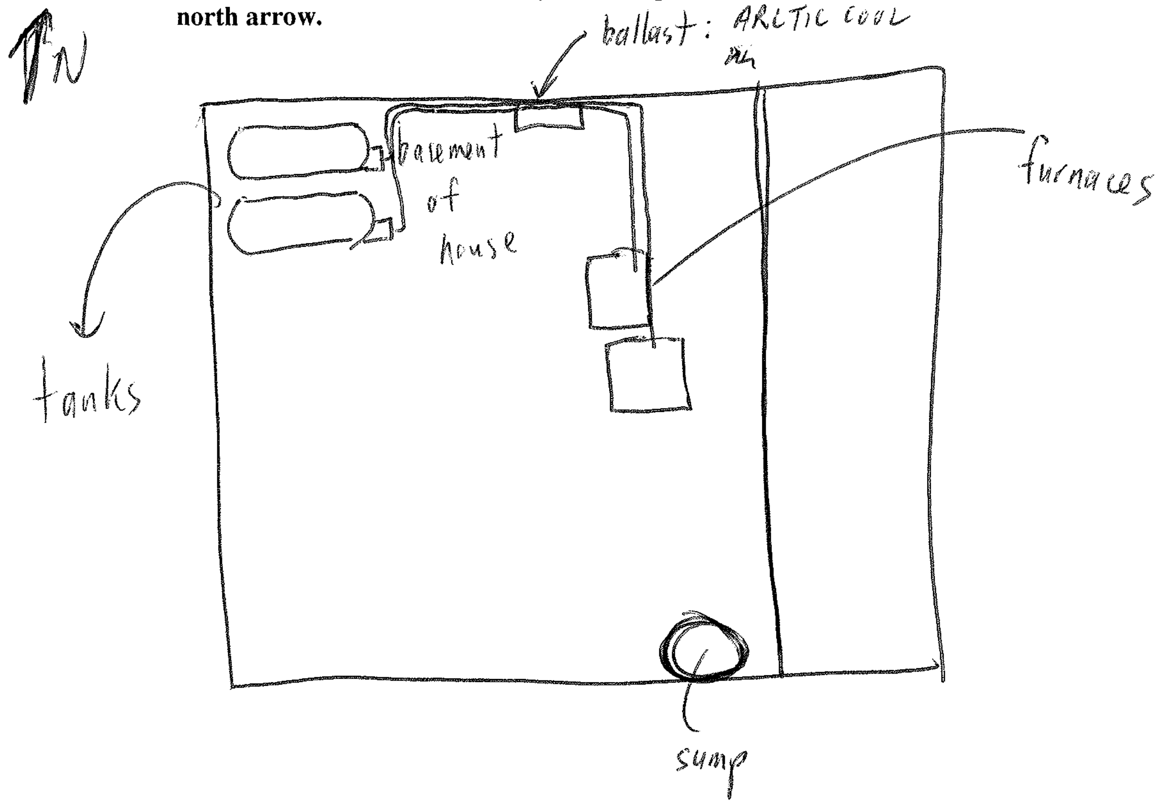
4. Tank Area

Free of vegetation ☒ Yes ☐ No — Sources of ignition present ☐ Yes ☒ No
Combustible materials nearby ☒ Yes ☐ No

Tank Compliance Checklist – Heating Oil Tanks and Storage Tanks Supplying Emergency Generators

PIN : 614110 Tank No.: 1

Sketch: **Sketch the tank area. Please include the tank, transfer line, furnace, filter, pump, fill and vent pipes, sump pump, and any other important structures. Please remember to include a north arrow.**



Comments

basement only covers western portion of house

Form Completed by AO

Date Form Completed 15/07/09

Tank Compliance Checklist – Heating Oil Tanks and Storage Tanks Supplying Emergency Generators

PIN :614112.2 Tank No.: 1

General Information

1. **Name of tank owner:** Transport Canada
2. **Location of storage tank system (be specific)** : Southwest corner of basement at 10251 Ressor Rd.
3. **Installation** Tank Installer: ______
   Year of Installation: ______
4. **Manufacturing** Tank Manufacturer: Parrsboro Metal Fabrication Ltd.
   Year Manufactured: 2005
5. **(a) Type of tank**
   ☒ Aboveground-Horizontal ☐ Aboveground – Vertical (shop fab.)
   ☐ Aboveground – Vertical (field erected) ☐ Other ______

   (b) Tank dimensions: Length: 1.52m Width: 0.53m
   Height: 1.17m Diameter: ______

   (c) Capacity of storage tank: 909______ Units: ☒ Litres ☐ Imperial Gallons
6. **Tank contents**
   ☒ Heating Fuel/Furnace Oil ☐ Diesel
   ☐ Other (Specify: ______)
7. **Year of installation:** ______ **Year of Manufactured:** 2005
8. **Distance and position relative to nearest water well:** ~40 m
9. **Distance and position relative to nearest surface water bodies:** N/A

<u>Tank Specific Information</u>

1. **Tank Material** ☒ Steel ☐ Fibreglass Reinforced Plastic (FRP)
   Tank Wall: ☐ Single Wall ☐ Double Wall
2. **Piping Material** ☒ Steel (bare, painted, wrapped, tar coated) ☐ Galvanized steel
   (check all that apply) ☐ Steel (plastic coated) ☐ Fibreglass
   ☐ Enviroflex/Bufflex (or equivalent) ☐ Copper Tubing
   ☐ Other (Specify) ______
3. **Tank status** ☒ Active ☐ Inactive ☐ Temporarily active ☐ Temporarily inactive
4. **ULC Tag** ☐ Not Present ☒ Present ULC Standard: S602
   Serial No.:291895
5. **Tank Supports (check all that apply)**
   ☒ Tank evenly settled ☐ Tank resting on ground/floor ☐ Steel supports
   ☐ Tank unevenly settled ☐ Tank not resting on ground/floor ☐ Wood supports
   ☐ Tank anchored (flooding) ☐ Acceptable support

☐ Other construction (specify ______________________)
☐ Unacceptable support (Reason: ____________________)
☐ Distance from tank bottom to ground/floor: ____________

6. **Tank secondary containment** ☒No ☐Yes (Type: ________________________________)

7. **Overfill protection**
   - ☐ None
   - ☒ Level gauge
   - ☐ Overfill Device
   - ☒ Audible and visual alarm **– vent alarm**
   - ☐ Automatic shut off valve
   - ☐ Visual by trained personnel

8. **Tank corrosion protection** ☐ None ☒ Painted

9. **Tank condition**
   - ☒ No corrosion
   - ☐ Satisfactory
   - ☐ Minor corrosion (where: ___________________)
   - ☐ Severe corrosion (where: ___________________)

10. **Tank location**

Tank is on lowest level of the building (if indoor tank).	☒ Yes	☐ No
Tank is at least 50 mm from all walls.	☒ Yes	☐ No
One side of tank has a minimum of 60 cm clearance for access.	☐ Yes	☒ No
Tank is at least 1.5 m from appliance	☐ Yes	☒ No

***(According to the latest update (August, 2009) to CSA B 139-09, Section 7.4.8 states "The tank shall be located and operated so that the (b) horizontal distance from the tank to any fuel-fired appliance…is not less than 0.6 m - (2 ft)…")**

Tank is protected from physical damage incident to outdoor location.	☒ Yes	☐ No

11. **Interconnected Tanks (2 or more tanks connected with common fill and/or vent pipes) – N/A**

Tanks at same elevation	☐ Yes	☐ No	Tanks on a common slab	☐ Yes	☐ No
Bottom Connected	☐ Yes	☐ No	Connected with 50 mm pipe	☐ Yes	☐ No

Number of interconnected tanks in the system: ______________
Combined Capacity of interconnected tanks: ______________ Units: ☐ Litres ☐ Imperial Gallons
(include pictures of interconnected piping)

Associated Piping

1. **Location** ☐ No piping ☒ Aboveground piping ☐ Underground piping

2. **Piping below product level**
   - ☐ No shut-off valve present
   - ☐ Automatic shut-off valve
   - ☒ Manual shut-off valve
   - ☐ No piping below product level

3. **Piping corrosion protection** (Specify for copper, a/g pipes, and u/g pipes)
   - ☐ None
   - ☐ Other (Specify:_______________)
   - ☒ Painted

4. **Fill pipe (check all that apply)**

Capped	☒ Yes	☐ No
50 mm diameter	☒ Yes	☐ No
Galvanised steel construction	☒ Yes	☐ No
Terminates below the vent pipe	☒ Yes	☐ No
Access to fill located outdoors	☒ Yes	☐ No
Outdoor portion is close to the building	☒ Yes	☐ No (Distance: 4 cm)
At least 60cm from building openings (includes windows)	☒ Yes	☐ No (Distance: 1.25 m)
Distance from fill pipe (terminating point) to nearest well:	> 30 m	
Top of fill pipe is less than 4 m (vertically) from top of tank	☒ Yes	☐ No
Top of fill pipe is at least 1 m above grade	☐ Yes	☒ No

Fill pipe has vapour and liquid tight cover ☐ Yes ☒ No

5. **Vent pipe (check all that apply)**
32 mm diameter ☒ Yes ☐ No Terminates above the fill pipe (min 15 cm) ☒ Yes ☐ No
Vent alarm present ☒ Yes ☐ No Vents to the outdoors ☒ Yes ☐ No
Weatherproof cap/hood ☒ Yes ☐ No Steel or galvanised construction ☒ Yes ☐ No
Other construction (Specify: ________________)
Outdoor portion is close to the building ☒ Yes ☐ No (Distance: 2 cm)
At least 2 m above ground level ☐ Yes ☒ No (Distance: 1.72 m)
Terminates within 1 m horizontally of the fill pipe ☒ Yes ☐ No (Distance: 0.82 m)
Minimum 60 cm from building openings (includes windows) ☒ Yes ☐ No (Distance: 1.35 m)
All portions of vent piping drain towards the tank ☒ Yes ☐ No
Vent terminates less than 4.15 m above the top of the tank ☒ Yes ☐ No

6. **Transfer lines (check all that apply)**
☐ Wrought iron construction ☒ Brass construction
☐ Steel construction ☐ Copper construction
At least 10 mm in diameter ☒ Yes ☐ No Other construction (specify:________________)
Properly supported ☒ Yes ☐ No Protected against physical damage ☐ Yes ☐ No
Secondary containment ☐ Yes ☒ No

7. **Underground piping (check all that apply)**
Secondary containment ☐ Yes ☐ No
Protected against physical damage ☐ Yes ☐ No
Leak detection for primary pipe ☐ Yes ☐ No
Corrosion protection ☐ Yes ☐ No
Less than 40 cm underground below driveway ☐ Yes ☐ No
Joined using threaded elbows and nipples ☐ Yes ☐ No
Piping construction (e.g. steel, copper): __________________
☒ No underground piping

Operations and Maintenance **No documentation was available during the site visit**

1. **Annual Inspection (Check all items that are inspected)**
☐ Fuel oil tank for leaks ☐ Vent whistle ☐ Fuel pump
☐ Fuel oil lines for leaks ☐ Fuel filter ☐ Sight gauge

Other

1. **Fuel oil Filter**
☒ Installed properly (fuel in/out) ☒ Inside building ☐ Not present
☐ Outside building

2. **All unused openings** ☒ Closed ☐ Open (not including vent)

3. **Contamination** ☒ None observed
☐ Known spill or leak (location: __________________)
☐ Staining observed (Approximate size and location: ________________)

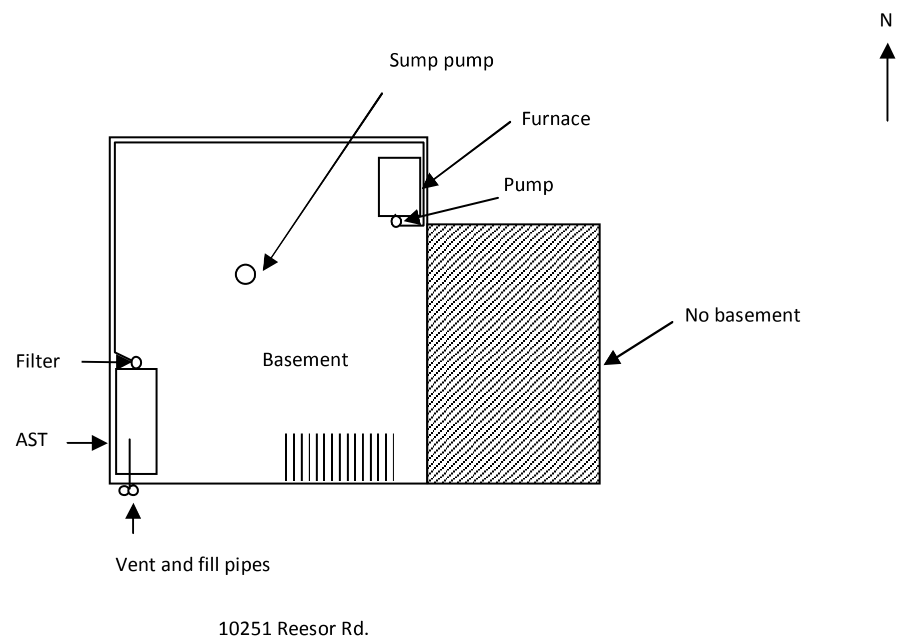
4. **Tank Area**

Free of vegetation ☒ Yes ☐ No Sources of ignition present ☐ Yes ☒ No
Combustible materials nearby ☐ Yes ☒ No

Tank Compliance Checklist – Heating Oil Tanks and Storage Tanks Supplying Emergency Generators

PIN :614112.2 Tank No.: 1

Sketch: **Sketch the tank area. Please include the tank, transfer line, furnace, filter, pump, fill and vent pipes, sump pump, and ay other important structures. Please remember to include a north arrow.**



Comments

Form Completed by

John Edwards

Date Form Completed

July 15 2009

GENIVAR
GENIVAR Ontario Inc.
500 - 600 Cochrane Drive, Markham, ON L3R 5K3
Tel: (905) 475-7270 Fax: (905) 475-5994

WELL INSPECTION CHECKLIST

Project Name	Pickering Lands Site	Representative	
Project Number	614110	Address	10243 Reesor Road
Date	July 15, 2009	Phone Number	(416) 736-4443 and (905) 640-6506
Field Personnel	A.Lyn, A.O'Connell, J.Edwards, & E. Tsui	Occupant Type	Commercial
Recorded By	Andre Lyn	Permanent or Seasonal?	Seasonal
Property Owner	Camp Robin Hood (Bob Murray - Sublet)	Lot Size	20.2 ha

WELL INSPECTION

Type of Well: ☐ Dug ☑ Drilled ☐ Bored ☐ Other, describe ______

Well Diameter: 0.15 metres Total Depth 60 metres

Depth to Water ______ metres ______ Not accessible RUSTED SCREWS

Casing/Wellhead Stickup 0.36 metres Surface runoff away fom well? ☑ Yes ☐ No

Surface Seal intact: ☑ Yes ☐ No

Notes on surface seal condition: ______

Type of Pump: ☑ Submersible ☐ Jet ☐ Other, Describe: ______

Pipe Connection: ☐ Steel ☐ Plastic ☐ PVC ☐ Other, Describe: ______

Number of Residents: ______ Adults ______ Children

Number of Bedrooms: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Other: ______ NA

Water Use: Residential Commercial Irrigation Livestock Other, Describe: ______

Historic Water Quality/Quantity Problems? ______

Bottled Water Used for Drinking? ☐ Yes ☑ No

Sample Collected: ☐ Yes ☑ No (Refer to Private Well Sampling Record)

Distance from Well to closest contaminant source (septic): ~10 metres (upgradient/downgradient)

HOME WATER TREATMENT DEVICE INSPECTION

Water treatment device present: Yes ☑ No ☐

Type of water treatment device: Reverse Osmosis ☐ Water Softener ☐ Charcoal Filter ☐
Distillation ☐ Chlorination ☑ Mechanical Filter ☑
Other UV

Date of installation: ______

Maintenance: Routine maintenance schedule followed: Yes ☐ No ☐
Maintained By: ______
Last done: ______
Next schedule: ______
Major repairs completed: ______

Water treatment device operational: Yes ☑ No ☐

Description of general condition: ______

Other Notes: ______

GENIVAR
GENIVAR Ontario Inc.
500 - 600 Cochrane Drive, Markham, ON L3R 5K3
Tel: (905) 475-7270 Fax: (905) 475-5994

SEWAGE DISPOSAL

Sewage System Classification:
- [ ] Class 1 (e.g. Chemical Toilet)
- [ ] Class 2 (e.g. *Greywater* system)
- [ ] Class 3 (e.g. Cesspool)
- [x] Class 4 (e.g. Leaching bed system)
- [x] Class 5 (e.g. Holding tank) → WEEKLY

Tile Bed Raised or Inground?

Location of System (see site sketch): ______

Age of System: ____ Years

When last pumped out? ______ By Whom? ______

Inspection ports: [x] Accessible E OF HOUSE [x] Inaccessible S. OF HOUSE → SOUTH HOUSE ☐ INACCESSIBLE (S.E OF MAIN OFFICE)

Odours Present: [ ] Yes [x] No

Visual Inspection: [ ] Breakout [ ] Ponding [ ] Wet Yard [ ] Direct Discharge [ ] Overly lush lawn [x] No Deficiencies Observed

Description of Deficiency: ______

Sump Present: [x] Yes IN BASEMENT OF HOUSE [ ] No If Yes, where connected? ______

Laundry connected to: [x] Septic [ ] Sump [ ] Direct Discharge

Dishwasher connected to: [x] Septic [ ] Sump [ ] Direct Discharge

Kitchen sink connected to: [x] Septic [ ] Sump [ ] Direct Discharge

Shower connected to: [x] Septic [ ] Sump [ ] Direct Discharge

Is there space/room on lot for replacement bed? [x] Yes [ ] No

Distance to closest: Well 15 metres HOLDING TANK Building ____ metres Surface Water Body ____ metres

Comments: ______

EXTERIOR WATER QUALITY INFLUENCES

On-Site: Road Salt [ ] Pesticide [ ] Herbicide [ ] Fertilizer [ ] Animal Feces Run-off [ ] Above-ground Storage Tank [ ] Under-ground Storage Tank [ ] Hazardous Materials [ ] Other [ ]

Description of On-Site Influences: ______

Off-Site: Road Salt [ ] Pesticide [ ] Herbicide [ ] Fertilizer [ ] Animal Feces Run-off [ ] Above-ground Storage Tank [ ] Under-ground Storage Tank [ ] Hazardous Materials [ ] Other [ ]

Description of Off-Site Influences: ______

Additional Comments: ______

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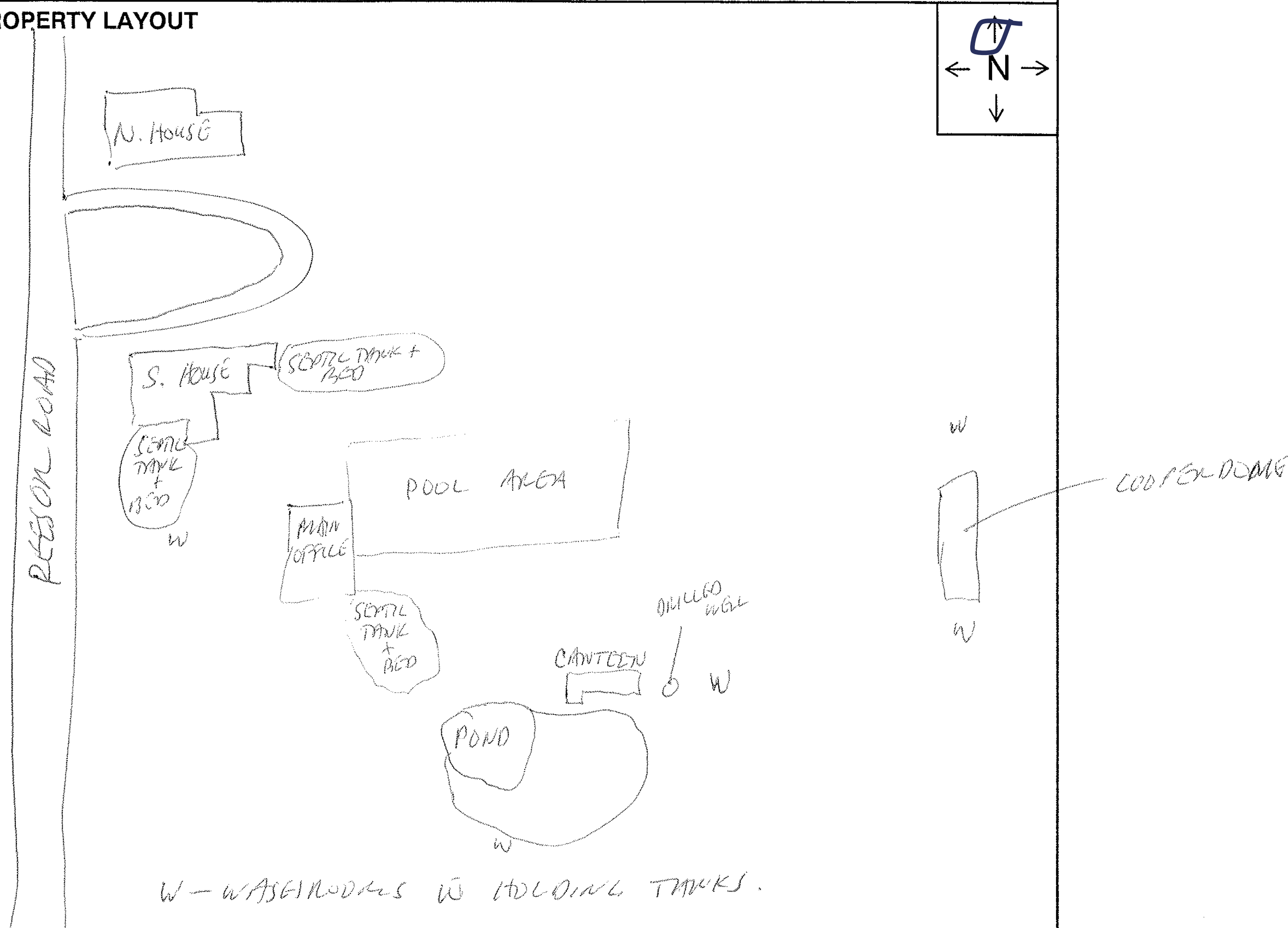
500 - 600 Cochrane Drive, Markham, ON L3R 5K3
Tel: (905) 475-7270 Fax: (905) 475-5994

WELL INSPECTION & INTERVIEW CHECKLIST

Project Name	Pickering Lands Site
Project Number	614110
Date	July 15, 2009
Field Personnel	Andre Lyn and Andrew O'Connell
Recorded By	Andre Lyn

PROPERTY LAYOUT



Note: Include location of active and unused wells, septic system, property boundary, surrounding land use, surface water bodies, roadways, street names, including approximate distance (in metres) and indication of topography

Describe location of well relative to walls of buildings or other reference points: ____________

Camera Number: ____________ Photograph Reference Number: ____________

Orientation of Photograph(s): ____________

Notes: ____________

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Tel: (905) 475-7270 Fax: (905) 475-5994

WELL INSPECTION CHECKLIST

Project Name	Pickering Lands Site	Representative	
Project Number	614112.2	Address	10251 Reesor Road
Date	July 15, 2009	Phone Number	(416) 736-4443 & (905) 640-6506
Field Personnel	A.Lyn, A. O'Connell, F.Tsui & J.Edwards	Occupant Type	Commercial
Recorded By	John Edwards	Permanent or Seasonal?	Seasonal
Property Owner	Camp Robin Hood	Lot Size	20.2 ha

WELL INSPECTION Well NW of barn UTM - ~~642~~ 642886 ~~Y864~~ Y865251

Type of Well: ☐ Dug ☑ Drilled ☐ Bored ☐ Other, describe ______

Well Diameter: 0.16 metres Total Depth ______ metres

Depth to Water 5.50m metres ______ Not accessible

Casing/Wellhead Stickup 0.64 metres Surface runoff away fom well? ☑ Yes ☐ No

Surface Seal intact: ☑ Yes ☐ No

Notes on surface seal condition: ______

Type of Pump: ☑ Submersible ☐ Jet ☐ Other, Describe: ______

Pipe Connection: ☐ Steel ☑ Plastic ☐ PVC ☐ Other, Describe: ______

Number of Residents: 2 Adults ______ Children

Number of Bedrooms: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Other: ______

Water Use: Residential Commercial Irrigation Livestock Other, Describe: Camp

Historic Water Quality/Quantity Problems? ______

Bottled Water Used for Drinking? ☐ Yes ? ☑ No

Sample Collected: ☐ Yes ☑ No (Refer to Private Well Sampling Record)

Distance from Well to closest contaminant source (septic): 30 metres (upgradient/downgradient)

HOME WATER TREATMENT DEVICE INSPECTION

Water treatment device present: Yes ☑ No ☐

Type of water treatment device: Reverse Osmosis ☐ Water Softener ☐ Charcoal Filter ☐

Distillation ☐ Chlorination ☑ Mechanical Filter ☑

Other UV

Date of installation: unknown

Maintenance: Routine maintenance schedule followed: Yes ☑ No ☐

Maintained By: CRH

Last done: ______

Next schedule: ______

Major repairs completed: ______

Water treatment device operational: Yes ☑ No ☐

Description of general condition: ______

Other Notes: ______

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WELL INSPECTION CHECKLIST

SEWAGE DISPOSAL

Sewage System Classification:
- ☐ Class 1 (e.g. Chemical Toilet)
- ☐ Class 2 (e.g. *Greywater* system)
- ☐ Class 3 (e.g. Cesspool)
- ☑ Class 4 (e.g. Leaching bed system)
- ☑ Class 5 (e.g. Holding tank)
- Tile Bed Raised or Inground?

Location of System (see site sketch): ______

Age of System: ____ Years UNKNOWN

When last pumped out? PUMPE OUT WEEKLY FROM JULY 1/09 - SEPT 1/09 By Whom? BY COULTER SEPTIC

Inspection ports: ☐ Accessible ☑ Inaccessible

Odours Present: ☐ Yes ☑ No

Visual Inspection: ☐ Breakout ☐ Ponding ☐ Wet Yard ☐ Direct Discharge ☐ Overly lush lawn ☑ No Deficiencies Observed

Description of Deficiency: ______

Sump Present: ☑ Yes ☐ No If Yes, where connected? ______

¢ BASEMENT

	Septic	Sump	Direct Discharge
Laundry connected to:	☑	☐	☐
Dishwasher connected to:	☑	☐	☐
Kitchen sink connected to:	☑	☐	☐
Shower connected to:	☑	☐	☐

Is there space/room on lot for replacement bed? ☑ Yes ☐ No

Distance to closest: Well 30 metres Building ____ metres Surface Water Body ____ metres

Comments: ______

EXTERIOR WATER QUALITY INFLUENCES

On-Site: ☐ Road Salt ☐ Pesticide ☐ Herbicide ☐ Fertilizer ☐ Animal Feces Run-off ☐ Above-ground Storage Tank ☐ Under-ground Storage Tank ☐ Hazardous Materials ☐ Other

Description of On-Site Influences: ______

Off-Site: ☐ Road Salt ☐ Pesticide ☐ Herbicide ☐ Fertilizer ☐ Animal Feces Run-off ☐ Above-ground Storage Tank ☐ Under-ground Storage Tank ☐ Hazardous Materials ☐ Other

Description of Off-Site Influences: ______

Additional Comments: ______

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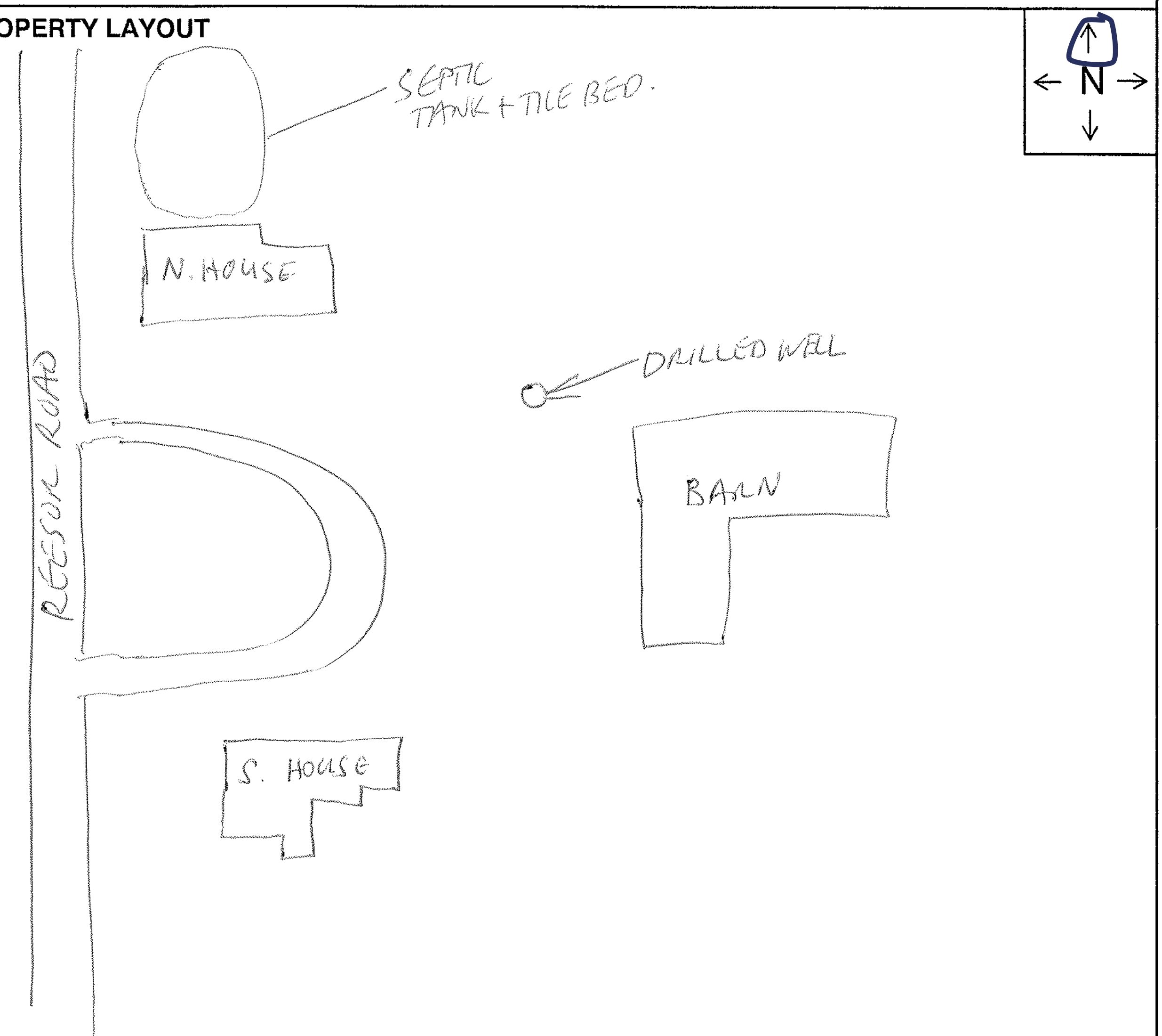
WELL INSPECTION & INTERVIEW CHECKLIST

Project Name	Pickering Lands Site
Project Number	614112.1
Date	July 15, 2009
Field Personnel	J.Edwards, E.Tsui, A.Lyn, & A.O'Connell
Recorded By	Andre Lyn

PROPERTY LAYOUT



Note: Include location of active and unused wells, septic system, property boundary, surrounding land use, surface water bodies, roadways, street names, including approximate distance (in metres) and indication of topography

Describe location of well relative to walls of buildings or other reference points: ______

Camera Number: ______ Photograph Reference Number: ______

Orientation of Photograph(s): ______

Notes: ______

PIN 110   JULY 15/09

GPS

SEPTIC - E OF HOUSE
17T0642891
4865187

SEPTIC - S OF HOUSE
17T0642883
4865170

S WELL 17T0642946
4865108

CAMP MUSIN MUD

MAIN OFFICE

OFFICE

FLOOR - 1X1 VFT CREAM W STREAKS
WALLS - DRYWALL LIGHT BLUE
CEILING - DRYWALL WHITE.

- 14 BALLASTS 28 BULBS, 4 FT IN LENGTH.
- 1 FIRE EXT - ABC DRY.
- 2 WINDOW MOUNTED AC UNITS. - HAMPTON BAY. M# HBX050
- DANBY. - R22 M# DAC12077EE.

KITCHEN

FLOOR 1X1 VFT CREAM W STREAKS - GOOD.
WALLS - DRYWALL PEACH - GOOD
CEILING - WHITE - GOOD.

1 FRIDGE - KELVINATOR M# MRT13CRSW
R-12
CHARGE 5.25 OZ, 149 gm.

1 A/C - SIMPLICITY
M# SAC5204
R-22, CHARGE 320g.

NORTH ~~[illegible]~~ PARK AREA

FLOOR - 1X1 VFT CREAM W STREAKS.
WALLS - PLYWOOD - PEACH, BLUE YELLOW.
~~[illegible]~~

I CHECKED
ULTIMS - NO PCBS.

- 12 UNITS, 72 BALLASTS, 24, 4FT BULBS.
- (1) AC - MAYTAG - R22 M# M7Q8F2A-C AC - MAYTAG M# M6Q10F2A
AC - ELECTROHOME
AC - DANBY - R22 # DAC 6047-1
WATER COOLER - ARIZONA - R134A M# 805C

MAIN OFFICE

OFFICE AREA

- 4 OFFICES.

FLOOR — 1X1 VFTS BLUE + WHITE SQUARES.

WALLS — DRYWALL — LIGHT BLUE

CEILING — 2 x 4 LAY IN ACOUSTICAL TILES.
PINHOLE / FISSURE

- LIGHTS — 14 BALLASTS, 28 BULBS.
- 2 ABC FIRE EXTINGUISHER.
- FRIDGE - GE MEDALLION 850
- WATER COOLER VITAPUR R 134A
MA VWD2460BL.
- 4 AC UNITS HAIER — R-22
M# HWR06XC5

MAYTAG - M# M7X05F2A-H

2 x AMANA — R 22
MODEL # AP073M.

PRINT AREA

FLOOR - 1X1 CREAM

WALLS - DRYWALL — LIGHT GREEN — FAIR — A/C - OVERWINDING

CEILING. DRYWALL - WHITE - FAIR.

4 BALLASTS, 8 - 4FT BULBS. — 7 CONTAINERS OF TONER.

- 3 COLOUR DRUMS — RISOGRAPH GR

2ND FLOOR OFFICE LOUNGE

FLOOR - WAX GREY FLOOR
WALLS - WOOD PANELING
CEILING - 1X1 LAY IN ACT.

- 2 BALLASTS, 4. 4 FT BULBS
- AC UNIT - FEDDERS, R22, MA AGQ10F2A-E.
- 1 ABC F.E.

* MAIN OFFICE - EXTERIOR
WOOD + ALUMINUM

PROGRAM CLASSROOM 8 + 8

FLOOR - WOOD PAINTED GREY
WALLS - WOOD - PAINTED BLUE.
CEILING - 2X4 LAY IN ACOUSTICAL CEILING TILES.

12 BALLASTS, 24, 4 FT BULBS.

2 + HELIUM TANKS.

EXTERIOR

WOOD EXTERIOR - BROWN CRACKED + PEELING.
WEST WALL - MULTI COLORS - RED YELLOW GREEN, BLUE.

NATURE BLDG

FLOOR - WOOD
WALLS - WOOD
CEILING. WOOD JOISTS.

- 4 BALLASTS, 8 BULBS, 4 FT IN LENGTH.
- 1 CANADIANA F.E.
- SIGNS OF MOLD ON WOOD -
- EXTERIOR - WOOD.

THE COTTAGE

FLOOR - WOOD PANELLING NOT PAINTED
WALLS - WOOD PANELLING - NOT PAINTED.
CEILING - WOOD JOIST OPEN

- 3, BALLASTS, 6, 4 FT BULBS
- 1 AC UNIT AMANA R-22 MFR APO7 3[illegible].
- 1 ABC DRY TYPE F.E.

ARTS + CRAFTS BLDG

FLOOR - 1x1 CREAM W BROWN STREAKS.
CEILING - 2x4" PINHOLE ACT.

42 BALLASTS, 84 BULBS - 4 FT EACH.

- 1 ABC F.E.
- 1 TH - WHITE RODGERS W MERCURY SWITCH
- ACT - SIGNS OF WATER STAINING.

EXTERIOR

ALUMINUM - GREEN
CRACKED + PEELING PAINT AROUND WINDOW SEIL.

FRIAR TUCK BLDG.

FLOOR - GREY + BLUE CARPET OVER 1x1 CREAM/BROWN VFT.

WALLS - PLYBOARD/WALLPAPER.

CEILING - 2x4 ACT PINHOLE

- RADIANT HEATERS.
- 2 ABC FIRE EXTINGUISHERS.

1 HONEYWELL TH w MERCURY

EXTERIOR

ALUMINUM - CRACKED + PEELING LIGHT BLUE PAINT.

CLASSES BLDG (UNNAMED)

- FLOOR - VFT 1x1 WHITE w GREY STREAKS.
- WALLS - WOOD
- CEILING - 2x4 ACT PINHOLE w SIGNS OF STAINING.
- 10 BALLASTS, 20, 4FT BULBS.
- RADIANT HEATERS.

2 AC UNITS - ① MICRO SONIC
- ② CITRON JAC 5718

- 1 ABC F.E.
- EXTERIOR - ALUMINUM CREAM

WHITE AROUND WINDOWS.

- WATER TANK.

A WHITE PAINT CHIP SAMPLE - PNT-110-1

WASHROOM (INTER AGES)

WOOD FRAME + PLYWOOD WITH PLEXI-GLASS CEILING.
* WITH SEPTIC TANK. → CLEANED OUT WEEKLY.

WILL SCARLET BLDG

FLOOR - CARPET OVER 1×1 VFT. CREAM + BLUE
WALLS - PLYWOOD.
CEILING - 2×4 ACT. → PINK INSULATION ABOVE.
- RADIANT HEATERS ELECTRIC. (N. WALL)
- 1 TH. - HONEYWELL - ROUND.
- 42 BALLAST, 84 BULBS.
→ POTENTIAL H_2O DAMAGE
- 1 ABC DRYTYPE F.E.
~~EXTERIOR~~ — BLUE. - SIGNS OF CRACKING + PEELING.

LITTLE JOHN RIDE

FLOOR 1×1 VFT CREAM W/ BROWN STREAKS.
WALLS. PLYWOOD W/ WALLPAPER.
CEILING. 2×4 PINHOLE / PINHOLE FISSURE. — WATER DAMAGE.
- 2 - F.E. DRY TYPE ABC.
- 2 TH - HONEYWELL
39 UNITS 78 BULBS, 4FT.

2 SAMPLES	
PNT - 110 - 2	EAST DOOR BROWN DOOR
PNT - 110 - 3	L. BLUE N. WALL

✓ DOOR - BROWN PAINT - CRACKED + PEELING.
- EXTERIOR - LIGHT BLUE - ALUMINUM CRACKED + PEELING

ARCHERY HUT

WOOD FRAME + SIDING
CRACKED + PEELING BROWN EXTERIOR
↳ SS-110-1

SPORTS BLDG

FLOOR - GREY/BLUE WOOD CRACKED + PEELING - POOR
WALL - WOOD - ELECTRIC BLUE. - C/P - SOUTH WALL
CEILING - WHITE - CRACK/PEELING - DRYWALL

6 BALLASTS, 12 BULBS.

* BALLAST - UNIVERSAL - THERMO-MATIC
CAT NO. 446-LR-TC-P
CLASS P

EXTERIOR

WOOD - GREEN + BLUE CRACKED/PEELING

* 2 SAMPLES PNT-110-4
SS-110-2

LOWER DOME - SOUTH W/R

WOOD FLOOR (SIDING + JOISTS. / CREAM EXTERIOR WHITE INTERIOR.
PLEXI-GLASS ROOF

DANCE STUDIO

FLOOR 1X1 VCT - CREAM / WHITE TILES.
WALLS - DRY WALL / WALL PAPER.
CEILING - 2X4 ACT PINHOLE FISSURE

- 21 BALLASTS, 42 4 FT BULBS.
- 1 ABC F.E.
- 3 ELECTRIC BASEBOARD HEATER.
- CRACKED + PEELING PAINT AROUND WINDOW SILL.

EXTERIOR - ALUMINUM - GREEN.

COOPER DOME - DINING HALL

FLOOR - 2X3 VCT GREY W STREAKS

15 BALLASTS, 30, 4 FT BULBS.

WALLS WHITE, CRACKED + PEELING.
CEILING - WHITE CRACKED + PEELING.
- 1 PROPANE TANK.
- 1 COLD SPOT 160 FREEZER.
- 2, 420 LB PROPANE TANKS.

* FIRE PIT NW OF BLDG - ACTIVE - COLLECT SAMPLE.

MAIN SPORTS DOME

FLOOR GREEN - OUTDOOR CARPET.
WALLS - WOOD FRAME + TARP.
CEILING - METAL + TARP.
- 1 ABC F.E.

→ PORTABLE TO THE NORTH
FLOOR - 1X1 VCT CREAM W STREAKS
WALLS CREAM - FAIR
CEILING 1X2 ACT PINHOLE REGULAR
- 18 BALLAST, 36 BULBS - 4 FT.

WASHROOMS - NORTH OF CUDDLE ... ACRE
- AS PREVIOUS.

CAMP CRAFT

FLOOR WOOD - PAINT - BAD CONDITION
WALLS - WOOD PANELLING.
CEILING - PLYWOOD WHITE - STAINING.

- 2 BALLASTS, 4 BULBS.
- 1 FRIDGE - SANYO - R134A M# - SR-362W
EXTERIOR - WOOD PAINTED BROWN
ASPHALTED ROOF.

CASTLE

FLOOR - PLYWOOD BROWN - GOOD
WALLS - PLYWOOD - WHITE - COVERED W PAPER.
CEILING - WHITE - CRACKED / PEELING.
SIGNS OF MOLD.

- 1 BALLAST, 2 BULBS.
- 1 F.E. ABC

SENIOR FLAGPOLE OUTDOOR THEATRE

- ~~LOWER~~
- FLOOR - CONCRETE.

WALLS - PLYWOOD WHITE.
CEILING - JOIST, WOOD - WHITE.
- 1 F.E. ABC DRY TYPE.

PAVILLION

FLOOR - ~~CO~~ ASPHALT
WALLS - PLYWOOD - REDDISH BROWN
CEILING - EXPOSED JOISTS.

4 ~~FLASTS~~ BALLASTS - 8, 4FT BULBS.
EXTERIOR - REDDISH BROWN ON PLYWOOD.

CANTEEN.

FLOOR - VF SHEETING - FAIR TO POOR.
WALLS - WOOD + PLYWOOD.
CEILING - WOOD JOIST EXPOSED.

- 9 BALLAST, 18 BULBS.

- 2 FIRE EXTINGUISHES.
- EXTERIOR REDDISH BROWN.

SWIM OFFICE

FLOOR - ~~WOO~~ PLYWOOD - CARPET - FAIR
WALLS - PLYWOOD - NO PAINT.
CEILING - EXPOSED WOOD JOIST.

- 3 BALLASTS, 6 BULBS.

- 2, ROOM COOLER - R-124.8 - NO NAME.

- 1 WATERCOOLER - GREENWAY - R134A, 28g
MODEL # GWD160W.

- EXTERIOR - BLUE, AROUND WINDOWS WHITE.

POOL HOUSE WEST OF PAVILION

- 6, 20L OF CLOR-12 - SODIUM HYPOCHLORITE.

- ~~1~~ BALLAST ~~2~~ BULBS.

FLOOR - CONCRETE

WALLS & CEILING EXPOSED WOOD & JOISTS.

1 F.E.

EXTERIOR - LIGHT BLUE

LARGE BOILER ROOM

2 FURNACES - PROPANE??

1~~0~~, 20L PLASTIC CONTAINERS OF TABLEX / PH DOWN..
(25kg).

1 ABC DRY F.E.

WALLS WOOD EXPOSED.

CEILING " "

FLOOR - CONCRETE.

4, 20L PLASTIC CONTAINERS OF CLOR-12

7 BALLASTS, 6 BULBS.

EXTERIOR - WOOD - REDDISH BROWN.

* - NO SAMPLING CONDUCTED @ ORIGINAL HOUSE - NO SIGNS OF PAINT CHIPS, GRAVEL SURFACE

2 LARGE HORIZONTAL PROPANE TANKS
SERIAL # S.524588
SH 3206
HD 2306
WP 250
GW RB SPXR 1980
USWG 1000 O.T. W2.

HOUSE + MRS TAYLOR

ENTRANCE

FLOOR - HARDWOOD.
WALLS - DRYWALL / PLASTER - YELLOW. - GOOD
CEILING - PLASTER WHITE

KITCHEN

FLOOR - HARDWOOD
WALLS. - WOOD + PLASTER. - YELLOW GOOD.

LIVING ROOM

— WATER COOLER - SUNROOM.
R134A - MH YLR2-5-90
CH.

CARPET - CREAM
WALLS - WOOD PANELLING. - PALE CREAM.
CEILING - PLASTER WHITE - SIGNS OF DAMAGE.

2ND FLOOR

BATHROOM
FLOOR - 1X1 VFT NEW
WALLS - BLUE - WOOD + CERAMIC TILES.

2ND FLOOR

~~SOUTH~~ EAST BEDROOM

FLOOR - CARPET
WALLS - WOOD PANELLING - LIGHT GREEN.
CEILING - PLASTER WHITE.

WEST BEDROOM

FLOOR - CARPET.
WALLS - PLASTER - LIGHT BROWN.
CEILING - PLASTER - WHITE.
1 AC UNIT. — FRIGIDAIRE MA# FAA055P7A.

MAIN FLOOR - WEST SIDE.

FAMILY ROOM

FLOOR - WOOD
WALLS - PLASTER BLUE - GOOD.

OFFICE

FLOOR - LAMINATE
WALLS - PLASTER - GREEN GOOD.
CEILING - PLASTER - WHITE - GOOD

BATHROOM

FLOOR - LAMINATE
WALLS - CERAMIC + PLASTER - CREAM - GOOD
CEILING - PLASTER WHITE.

2ND FLOOR

NW BEDROOM

FLOOR - HARDWOOD

WALLS - PLASTER WALL PAPER - YELLOW

CEILING PLASTER WHITE WALL PAPER

- 2 BALLAST 2 BULBS.

SW BEDROOM

FLOOR HARDWOOD

WALLS - PLASTER ~~CREAM~~. PEACH GREEN
DOOR MOLDING WINDOW.

CEILING - PLASTER ~~CREAM~~ - PEACH.
2 BALLASTS 4 BULBS.

BASEMENT

- 1 SUMP - DRAINS TO SOUTHSIDE OF HOUSE.
- 2 FRIDGES - KENMORE
MODEL # 5388041
SERIAL # ED0513230

- 1 FREEZER - WESTINGHOUSE - FREEZER - NO ID.

- 2 FURNACES.

WALLS - FIELDSTONE WHITE WASHED

CEILING - EXPOSED JOISTS - WHITE CRACKED/PEELING - POOR.

PAINT

19, 4L CANS OF PAINT
2, 7.5L PLASTIC CONTAINERS OF PAINT.

main office front room - 12 fluoresant sets x 2 bulbs
laundry/kitchen - 2 fluo sets x 2 bulbs
large kitchen - 4 fluo sets x 2 bulbs
small office - 1 fluo sets x 2 bulbs
small bathroom - 1 x 2 bulbs 2 AC units 1 water cooler
health office - 5 x 2 bulbs

back office area - 14 x 2 bulbs

office print room - 4 x 2 bulbs - same ballast as in small bathroom of health centre - no PCBs

2nd floor lounge - 2 x 2 bulbs

Program Chalet - 6 units x 4 bulbs

Campcraft - 2 units x 2 bulbs

Nature 4 units x 2 bulbs

Castle - 1 unit x 2 bulbs

Cottage - 3 units x 2 bulbs

Senior Flagpole Outdoor Theatre - 3 units x 2 bulbs

~~Water Cooler~~ RZZ LW250CE

Arts + Crafts - 42 units x 2 bulbs

Friar Tuck Building - 44 units x 2 bulbs

Pavilion - 4 units x 2 bulbs

Lassie Building - 10 units x 2 bulbs - water tank in back

Washroom by Inter Boys -

Will Scarlett Building - 42 units x 2 bulbs
Little John Building - 39 units x 2 bulbs
Sports Building - 6 units x 2 bulbs
Dance Studio - 21 units x 2 bulbs

Canteen - 8 units x 1 bulb
3 units x 2 bulbs

Swim Office 2 units x 2 bulbs
Small Pool House - 1 unit x 2 bulbs
Boiler Room (Pool) - 4 units x 2 bulbs

Copperdome - 15 units x 2 bulbs - could not sample fire pit - in use
Arrowdome - 18 units x 2 bulbs

PIN: 614112.2 Address: Camp Robin Hood, 10251 Reesor Road

Room Name: Lower Adjoining Storage Room

Location: Barn

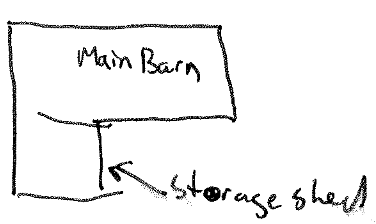
	Excellent	Satisfactory	Poor	Inaccessible	Yes/No	Comments
Ceiling						
Stucco						
Drywall						
Other		✓				Unfinished
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						
Paint (colour)?						
Walls						
Stucco						
Drywall						
Wood			✓			- unfinished
Other						
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						
Paint (colour)?						
Floor						
VFT (describe)						
Linoleum (describe)						
Wood						
General Appearance						Concrete, cracked
Evidence of moisture?					N	
Evidence of suspect mold?					N	

- Storage of camp stuff

N

Ceiling

Floor



GENIVAR

PIN: 614112.2 Address: Camp Robin Hood, 10251 Reesor Road

Room Name: Upper Storage Adjoining Barn
Location: Barn

	Excellent	Satisfactory	Poor	Inaccessible	Yes/No	Comments
Ceiling						
Stucco						
Drywall						
Other			✓			wood
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						
Paint (colour)?						
Walls						
Stucco						
Drywall						
Wood			✓			
Other						
General Appearance						
Evidence of moisture?					N	
Evidence of suspect mold?					N	
Paint (colour)?						
Floor						
VFT (describe)						
Linoleum (describe)						
Wood			✓			
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						

- storage - does not seem to be in current use
- raccoons

N

Ceiling

Floor

GENIVAR

PIN: 614112.2 Address: Camp Robin Hood, 10251 Reesor Road

Room Name: Maintenance Large Shed

Location: Immediately east of barn

	Excellent	Satisfactory	Poor	Inaccessible	Yes/No	Comments
Ceiling						
Stucco						
Drywall						
Other		✓				particle board
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						
Paint (colour)?						
Walls						
Stucco						
Drywall						
Wood			✓			-peeling paint
Other						
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						
Paint (colour)?						
Floor						
VFT (describe)						
Linoleum (describe)						
Wood						
General Appearance						Concrete - good condition
Evidence of moisture?						
Evidence of suspect mold?						

Storage
- riding mowers + golf carts
- generators

N

Sodium Hypochlorite - 2-4L containers

6 ~~ea~~ 4L containers of soap

200L White drum - water + 1000ml of killer

toilet bowl cleaner

Ceiling

Floor

GENIVAR

PIN: 614112.2 Address: Camp Robin Hood, 10251 Reesor Road

Room Name: ~~Boo~~ Lower level
Location: Barn
- maintenance

	Excellent	Satisfactory	Poor	Inaccessible	Yes/No	Comments
Ceiling						
Stucco						
Drywall						
Other			✓			wood
General Appearance						
Evidence of moisture?					N	
Evidence of suspect mold?					N	
Paint (colour)?						white, flaking
Walls						
Stucco						
Drywall						
Wood						
Other			✓			- white paint
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						
Paint (colour)?						
Floor						
VFT (describe)						
Linoleum (describe)						
Wood						
General Appearance			✓			- concrete / dirt
Evidence of moisture?						
Evidence of suspect mold?						

Workshop
↳ woodworking
↳ golf cart maintenance
- very old fridges (3)
-> fluorescent bulbs storage (appear new)

N

Ceiling

Floor

-> Water treatment (northwell)
- filters
- sumps
- water on floor
- Sodium Hypochlorite 24L
- possible mould on door frame
- minor staining

Adjoining room (West)
-> paints
-> stains
-> Anti freeze
-> Round Up
-> pesticides
-> stored on cracked concrete floor

GENIVAR

PIN: 614112.2 Address: Camp Robin Hood, 10251 Reesor Road

Room Name: Mom's Place
Location: East of barn
- used as kitchen

	Excellent	Satisfactory	Poor	Inaccessible	Yes/No	Comments
Ceiling						
Stucco						
Drywall						
Other			✓			- panels
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						
Paint (colour)?						
Walls						
Stucco						
Drywall						
Wood		✓				
Other						
General Appearance						
Evidence of moisture?					N	
Evidence of suspect mold?					N	
Paint (colour)?						- white
Floor						
VFT (describe)	✓					- biege
Linoleum (describe)						- north storage - white + green
Wood						
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						

- large freezers + fridges > walk in

- food storage

N

Ceiling

Floor

GENIVAR

PIN: 614112.2 Address: Camp Robin Hood, 10251 Reesor Road

Room Name: T.B.S. Centre Location: Sports Equipment Storage	Excellent	Satisfactory	Poor	Inaccessible	Yes/No	Comments
Ceiling						
Stucco						
Drywall		✓				
Other						
General Appearance						
Evidence of moisture?					N	
Evidence of suspect mold?					N	
Paint (colour)?						white
Walls						
Stucco						
Drywall						
Wood			✓			
Other						
General Appearance						
Evidence of moisture?					N	
Evidence of suspect mold?					N	
Paint (colour)?						peach, white
Floor						
VFT (describe)						
Linoleum (describe)	~~✓~~		✓			biege ([illegible]
Wood						
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						

- fluorescent lights

N

Ceiling

Floor

GENIVAR

PIN: 614112.2 Address: Camp Robin Hood, 10251 Reesor Road

Room Name: The Quad
Location:

-could not access
-looks vacant

	Excellent	Satisfactory	Poor	Inaccessible	Yes/No	Comments
Ceiling						
Stucco						
Drywall						
Other		✓				unfinished
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						
Paint (colour)?						
Walls						
Stucco						
Drywall						
Wood						
Other						
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						
Paint (colour)?						white
Floor						
VFT (describe)						
Linoleum (describe)						
Wood						
General Appearance						-green carpet
Evidence of moisture?						
Evidence of suspect mold?						

West Externer
→ tractor for mowing
→ ~~bott~~ car battery sitting on ground

+old farming equipment in field room West of building

N

Locker rooms
→ Carpet - poor condition
~ ceiling - unfinished
→ ~~walk~~ walls → white paint + wood panelling

Ceiling

Floor

GENIVAR

PIN: 614112.2 Address: Camp Robin Hood, 10251 Reesor Road

Room Name Bobby Jone's Locker / Coaches Corner Location North of Barn - baseball equipment storage	Excellent	Satisfactory	Poor	Inaccessible	Yes/No	Comments
Ceiling						
Stucco						
Drywall						
Other			✓			- particle board
General Appearance						
Evidence of moisture?					N	
Evidence of suspect mold?					N	
Paint (colour)?						
Walls						
Stucco						
Drywall						
Wood			✓			particle board
Other			✓			sheet metal
General Appearance						
Evidence of moisture?					N	
Evidence of suspect mold?					N	
Paint (colour)?						
Floor						
VFT (describe)						
Linoleum (describe)						
Wood						
General Appearance						- concrete, flaking paint
Evidence of moisture?					N	
Evidence of suspect mold?					N	

- spray paint

N

Ceiling

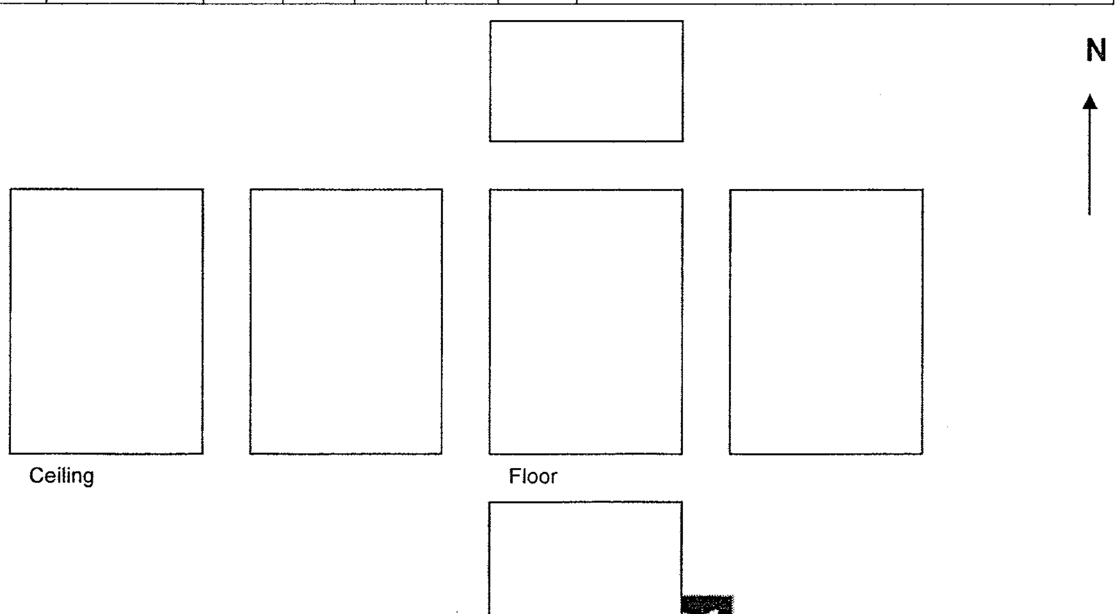
Floor

GENIVAR

PIN: 614112.2 Address: Camp Robin Hood, 10251 Reesor Road

Room Name
The Play Place
Location
NW of Barn
~could not access

	Excellent	Satisfactory	Poor	Inaccessible	Yes/No	Comments
Ceiling						
Stucco						
Drywall						
Other						
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						
Paint (colour)?						
Walls						
Stucco						
Drywall						
Wood						
Other						
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						
Paint (colour)?						
Floor						
VFT (describe)						
Linoleum (describe)						
Wood						
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						



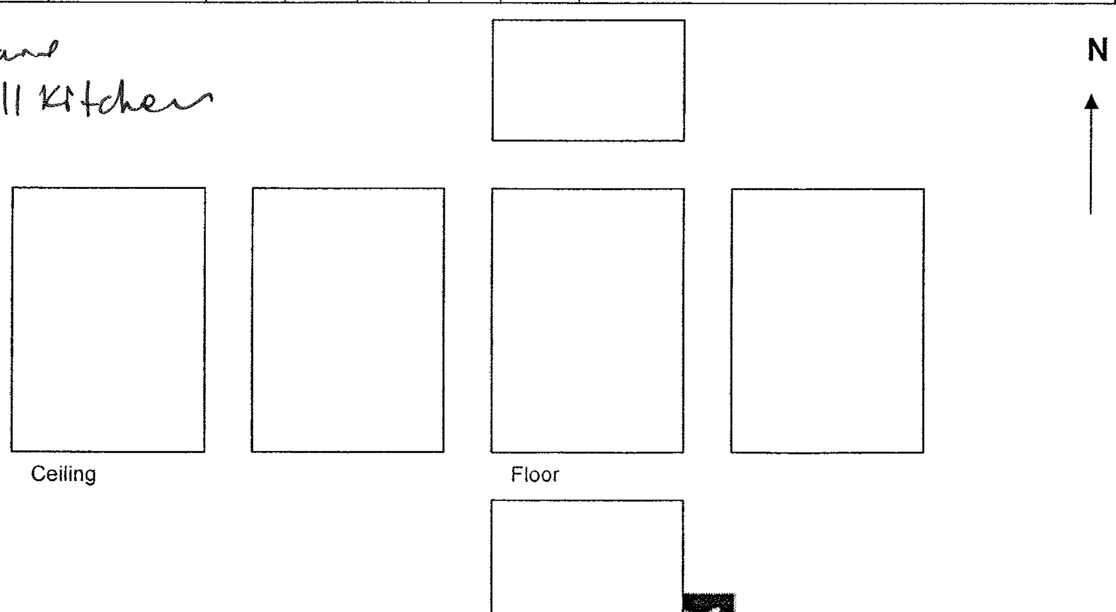
GENIVAR

PIN: 614112.2 Address: Camp Robin Hood, 10251 Reesor Road

Room Name: Play Place
Location: NW of barn
- 2 adjoining portables

	Excellent	Satisfactory	Poor	Inaccessible	Yes/No	Comments
Ceiling						
Stucco						
Drywall						
Other		✓				- wood
General Appearance						
Evidence of moisture?					N	
Evidence of suspect mold?					N	
Paint (colour)?						white
Walls						
Stucco						
Drywall						
Wood		✓				
Other						
General Appearance						
Evidence of moisture?					N	
Evidence of suspect mold?					N	
Paint (colour)?						white
Floor						
VFT (describe)		✓				→ North side - White, grey flecks
Linoleum (describe)						
Wood						
General Appearance		✓				blue carpet
Evidence of moisture?					N	
Evidence of suspect mold?					N	

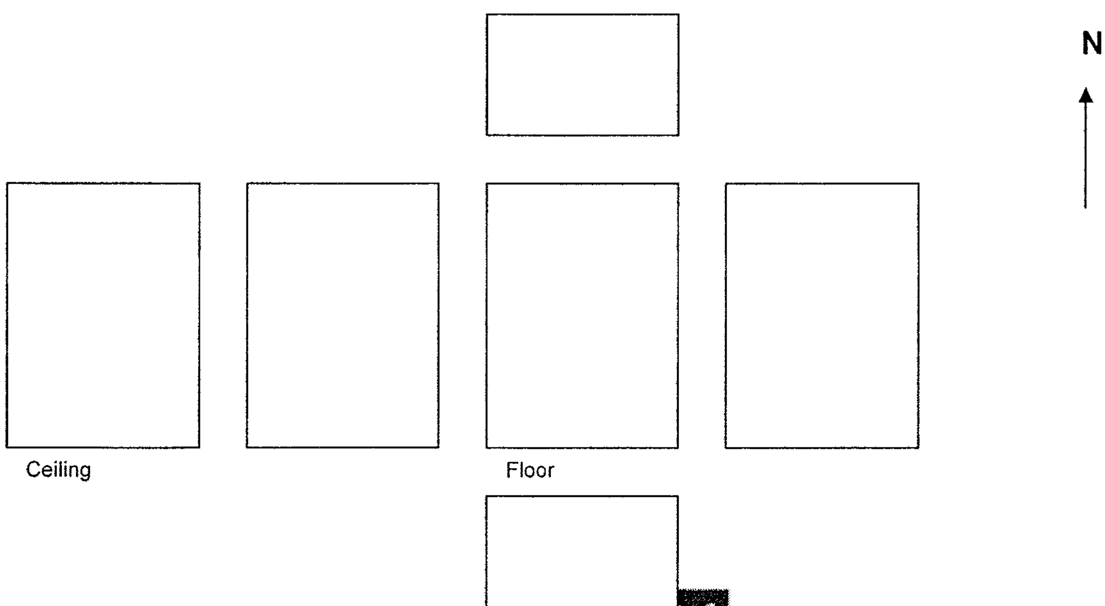
- daycare
- small kitchen



GENIVAR

PIN: 614112.2 Address: Camp Robin Hood, 10251 Reesor Road

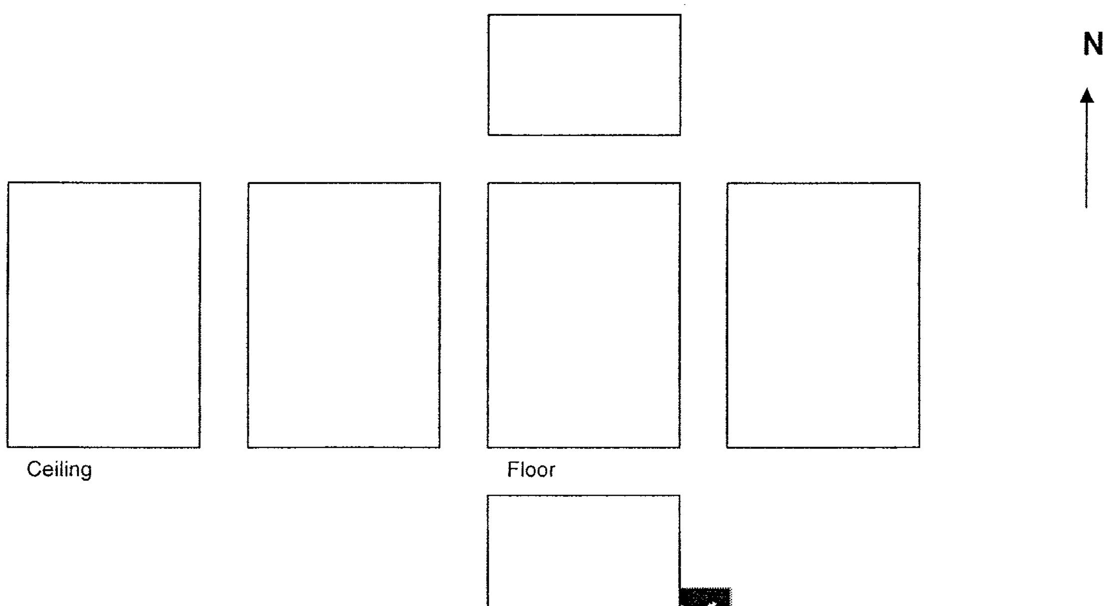
Room Name ____ Location ____	Excellent	Satisfactory	Poor	Inaccessible	Yes/No	Comments
Ceiling						
Stucco						
Drywall						
Other						
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						
Paint (colour)?						
Walls						
Stucco						
Drywall						
Wood						
Other						
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						
Paint (colour)?						
Floor						
VFT (describe)						
Linoleum (describe)						
Wood						
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						



GENIVAR

PIN: 614112.2 Address: Camp Robin Hood, 10251 Reesor Road

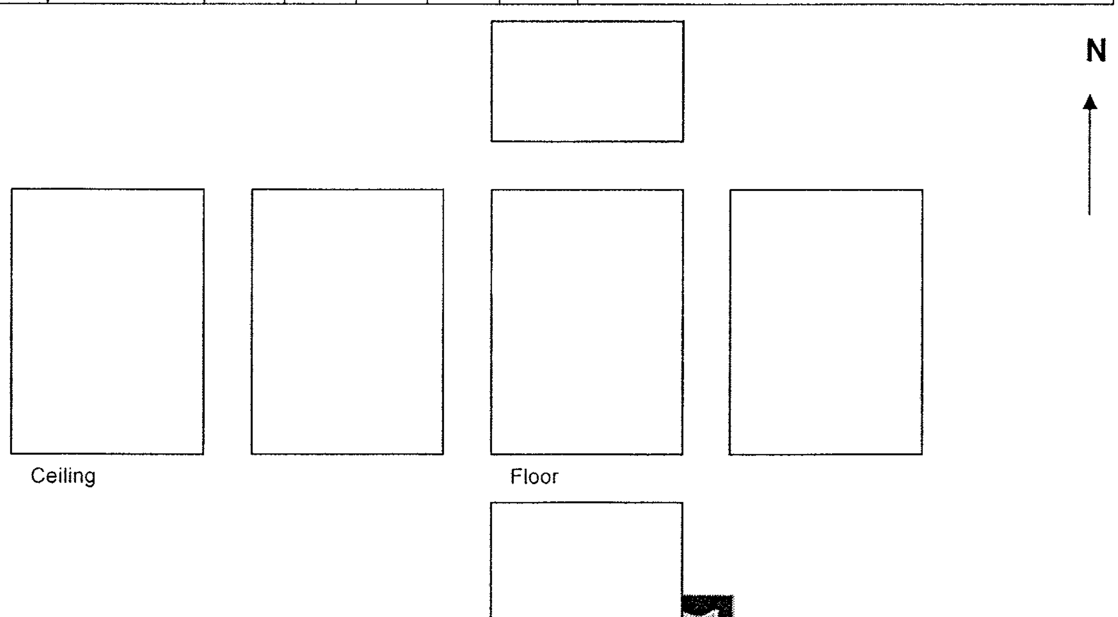
Room Name ____________ Location ____________	Excellent	Satisfactory	Poor	Inaccessible	Yes/No	Comments
Ceiling						
Stucco						
Drywall						
Other						
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						
Paint (colour)?						
Walls						
Stucco						
Drywall						
Wood						
Other						
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						
Paint (colour)?						
Floor						
VFT (describe)						
Linoleum (describe)						
Wood						
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						



GENIVAR

PIN: 614112.2 Address: Camp Robin Hood, 10251 Reesor Road

Room Name ____ Location ____	Excellent	Satisfactory	Poor	Inaccessible	Yes/No	Comments
Ceiling						
Stucco						
Drywall						
Other						
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						
Paint (colour)?						
Walls						
Stucco						
Drywall						
Wood						
Other						
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						
Paint (colour)?						
Floor						
VFT (describe)						
Linoleum (describe)						
Wood						
General Appearance						
Evidence of moisture?						
Evidence of suspect mold?						



GENIVAR

Appendix B

Site Photographs

Photograph 1: Vinyl floor tiles in the main office.

Photograph 2: Mercury-containing thermostat located in the Arts and Crafts building.

Photograph 3: Mercury-containing fluorescent light fixture.

Photograph 4: Window mounted air conditioning (potential ODS) unit located in the main office.

Photograph 5: A water cooler (potential ODS) and beverage cooler (potential ODS) located in the swim office.

Photograph 6: Two ASTs located in the basement level of the south house.

Photograph 7: AST located in the basement of the north house (baseball office).

Photograph 8: Two propane ASTs located to the north of the canoe pond.

Photograph 9: Two propane tanks located to the east side of the cooper dome.

Photograph 10: Two helium cylinders located in the program chalet.

Photograph 11: A wood pile used for a fire pit located northwest of the cooper dome.

Photograph 12: Discarded car battery located to the northeast corner of the south house.

Photograph 13: Discarded car battery located on north face of the Quad building.

Photograph 14: The drilled well located north of the canoe pond.

Photograph 15: Drilled well located northwest of the barn.

Photograph 16: Concrete floor of the pavilion located east of the pool area.

Photograph 17: Damaged wall surface on the interior of the sports building.

Photograph 18: Water staining observed in the camp craft building.

Photograph 19: Cracked and peeling paint in the southern portion of the cooper dome.

Photograph 20: Cracked and peeling door paint of the sports building.

Photograph 21: Contained paint chips located in the Senior Flagpole Theatre.

Photograph 22: Chemicals stored in the pool house located southeast of the pools.

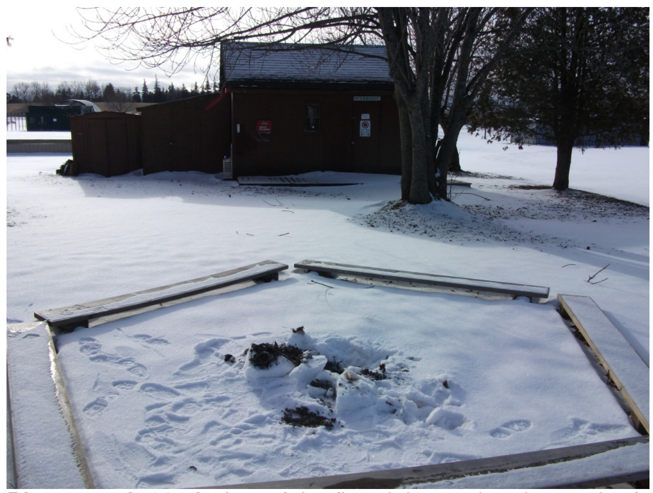
Photograph 23: Septic tanks located east of the south house on site.

Photograph 24: North house (baseball office) located to the northwest of the barn.

Photograph 25: Soil sample location (SS-110-2), obtained from the fire pit located within the forested area adjacent to a small stream.

Photograph 26: A closer look at the soils contained within the fire pit located in the forested area.

Photograph 27: A view of the fire pit located to the west of the Copper Dome (SS-110-3).



Photograph 28: A view of the fire pit located to the north of the Campcraft building (SS-110-4).

Photograph 29: A view of the soil sample obtained from the southwest corner of the Program building where cracked and peeling lead-based paint was identified (SS-110-5).

Photograph 30: A view of the soil sample obtained from the southeast corner of the southernmost building of the boys change area (SS-110-6).

Photograph 31: A view of the soil sample obtained from the southeast corner of the southernmost building of the girls change area (SS-110-7).

Photograph 32: A view of the soil sample location taken from the southwest corner of the southernmost house on the site (SS-110-8).

Photograph 33: A view of a trail located to the north of the fire pit located in the forest.

Photograph 34: A view of the portable washroom debris located on the laneway on the eastern portion of the site.

Photograph 35: Stored PVC piping located along the laneway of the eastern portion of the site.

Photograph 36: A view of the stream bisecting the forested area of the site.


Photograph 37: Metal debris located southwest of the forest fire pit.


Photograph 38: A wood chip stockpile located to the east of the Arrow Dome.


Photograph 39: The lands on the northern portion of the site.


Photograph 40: The lands on the eastern portion of the site.


Photograph 42: Vinyl floor tiles located in the Friar Tuck building.


Photograph 43: Vinyl floor tiles located in the portable to the east of the Friar Tuck building.

Photograph 44: Potential mercury-containing thermostat located in the Friar Tuck building.

Photograph 45: Potential ODS containing air conditioning unit located in the portable located to the east of the Friar Tuck building.

Photograph 46: Cracking and peeling paint located on the window sill of the portable to the east of the Friar Tuck building.

Photograph 47: Cracked and peeling exterior paint located on the Cooper Dome building.

Appendix C

List of Applicable Audit Criteria

Audit Criteria

List of Acts, Regulations, Codes, Guidelines, and Policies

FEDERAL

- Canadian Environmental Protection Act R.S.C. 1985, c. 16 (4^{th} Supp.)
- Storage of PCB Material Regulations (SOR/92-507)
- Federal above ground Storage Tank Technical Guidelines
- Federal under ground Storage Tank Technical Guidelines
- Chlorobiphenyls Regulations (SOR/91-152)
- Canada Water Act R.S.C. 1985, c. C-11
- Guidelines for Canadian Drinking Water Quality
- Guidelines for Effluent Quality and Wastewater Treatment at Federal Establishments
- Fisheries Act R.S.C. 1985, c. F-14
- Hazardous Products Act R.S.C. 1985, c. H-3
- Pest Control Products Act R.S.C. 1985, c. P-9
- Pest Control Products Regulations C.R.C., C. 1253
- Transport of Dangerous Goods Act, 1992 S.C. 1992, c. 34
- Transport of Dangerous Goods Regulations SOR/2001-286
- Canadian Council of Ministers of the Environment (CCME), CWS, CEQG.
- Environmental Code of Practice for Underground Storage Tank Systems Containing Petroleum Products and Allied Petroleum Products, March 1993
- Environmental Code of Practice for Aboveground Storage Tank Systems Containing Petroleum Products, 1993
- Government of Canada Asbestos Abatement Guidelines, 1991-01-04
- Code of Good Practice for Handling Solid Wastes at Federal Establishments (Environment Canada)
- Domestic Substances List
- Workplace Hazardous Materials Information System
- Canada Labor Code
- National Fire Code of Canada
- Canadian Environmental Assessment Act (CEAA)
- Atomic Energy Control Act, and Atomic Energy Control Regulations
- Guidelines for the Management of Biomedical Waste in Canada, CCME, 1992
- Environmental Contaminants Act
- Federal Code of Environmental Stewardship
- PWGSC PLS – Related Lease Agreements
- Registration of Storage Tank Systems for Petroleum Products and Allied Petroleum Products on Federal Lands
- Canadian Environmental Protection Act, Ozone Depleting Substances Regulations, 1998.
- Code of Practice for the Reduction of CFC Emissions from Refrigeration and Air Conditioning Systems

PROVINCIAL

- Environmental Protection Act R.S. O. 1990, c.E.19
- Environmental Protection Act, Regulation 346- General – Air Pollution, Revised Regulations of Ontario
- Environmental Protection Act, Regulation 583, General – Waste Management, Revised Regulations of Ontario
- Environmental Protection Act, Regulation 362, Waste Management – PCBs Regulation, Revised Regulations of Ontario
- Environmental Protection Act, Regulation 356, Ozone Depleting Substances – General
- Environmental Protection Act, Regulation 347 amended to O. Reg. 501/01 General – Waste Management
- Environmental Protection Act, Regulation 360 – Spills
- Environmental Protection Act, Regulation 358 – Sewage Systems
- Environmental Protection Act, Regulation 101/94 to 105/94
- Environmental Protection Act, Record of Site Condition, Regulation 153/04
- Ambient Air Quality Criteria R.R.O. 1990, Reg. 337
- Halon Fire Extinguishing Equipment O. Reg. 413/94
- Industrial, Commercial and Institutional Source Separation Programs O. Reg. 103/94
- Packaging Audits and Packaging Reduction Work Plans O. Reg. 104/94
- Recycling and Composting of Municipal Waste O. Reg. 101/94
- Solvents O. Reg. 717/94
- Sterilants O. Reg. 718/94 Waste Audits and Waste Reduction Work Plans o. reg. 102/94
- Environmental Assessment Act, Revised Statutes of Ontario, September 1990
- Pesticides Act R.S.O. 1990, c. P.11
- General – Pesticides R.R.O. 1990, Reg. 914
- Technical Standards and Safety Act, 2000 (S.O. 2000, c. 16)
- Fuel Oil (O. Reg. 213/01) and Fuel Oil Code Adoption Document (June 1, 2001)
- Liquid Fuels (O.Reg. 217/01) and Liquid Fuels handling Code Adoption Document (June , 2007)
- Occupational Health and Safety Act, Revised Statutes of Ontario
- Designated Substance Regulations (as amended) including: O.Reg 835/90, O.Reg 836/90, O.Reg 837/90, O.Reg. 278/05, O.Reg. 839/90, O.Reg. 840/90, O.Reg. 841/90, O. Reg. 842/90, O. Reg. 843/90, O.Reg. 844/90, O.Reg. 845/90, O.Reg 846/90
- A Guide to the Regulation Respecting Asbestos on Construction Projects and in Buildings and Repair Operations
- Guideline Lead on Construction Projects, 2004
- Guideline Silica on Construction Projects, 2004
- Fire Code O. Reg. 388/97 (Section 4 only)
- Ontario Water Resources Act, Revised Statutes of Ontario
- Surface Water Quality Guidelines
- Ontario Drinking Water Quality Regulation
- O. Reg. 903 as amended, Of the Ontario Water Resources Act
- Ontario Building Code (O. Reg. 278/99) Section 8
- Gasoline Handling Act, Revised Statutes of Ontario
- Gasoline Handling Code, Regulation 521/93
- Energy Act, revised Statues of Ontario
- Ontario Regulation 329 Fuel Oil Code
- Guidelines for Environmental Protection Measures at Chemical Storage Facilities, October 1988

- Cost Recovery Policy and Procedures for cleanup of Fuel Spills and Escape of Other Dangerous Things (Chemical Spills) or Other Pollution, May, 1978
- Storm Water Pollution Control Manual, April, 1983
- Solid Waste Collection and Disposal Manual, February 1983
- Petroleum Oil and Lubricants – Storage and Distribution, December, 1984
- Environmental Protection: Planning Southern Canada, March 1983
- Manual of Environmental Protection: Design and Construction – Southern Canada, March 1983
- Guideline for Use at Contaminated Sites in Ontario, Ministry of Environment and Energy, February 1997
- MISA, for Storm water Control Study Protocol, August, 1992
- Nutrient Management Act, 2002

MUNICIPAL

- Ontario Model Municipal Noise By-Law
- Ontario Model Sewer Use By-Law
- Pickering Official Plan

Appendix D

Analytical Results and Laboratory Certificates of Analysis

Soil Analysis Results
10243 and 10251 Reesor Road, (PIN 614110 and 614112.2), Markham, Ontario
Pickering Lands Site

Parameters	CCME, 1999 revised 2007[1]	O. Reg. 153 Table 2 Agricultural or Other Property Uses[2]	RDL	Units	SS-110-1	SS-110-3	SS-110-4	SS-110-6	SS-110-7	SS-110-8	SS-112.2-1	SS-112.2-2	O. Reg. 153 Table 1 All Other Types of Property Uses[2]	SS-110-2	SS-110-5
Metals and Inorganics															
Antimony	20*	13	0.8	µg/g	<0.8	2.2	<0.8	<0.8	<0.8	74.4	<0.8	<0.8	1	<0.8	<0.8
Arsenic	12	20	0.3	µg/g	3.5	***276***	4.2	2.7	5	9.4	2.5	2.4	17	4.6	***30.9***
Barium	500	750	0.2	µg/g	90.4	359	76.4	90.6	96.7	***1290***	135	110	210	153	59.6
Beryllium	4*	1.2	0.2	µg/g	0.7	0.2	0.6	0.6	0.7	0.6	0.6	0.7	1.2	0.7	0.2
Boron (Hot Water Extractable)	NV	1.5	0.10	µg/g	0.42	***24.5***	0.89	0.35	0.29	0.35	0.74	0.32	NV	0.63	0.71
Cadmium	10	3	0.2	µg/g	0.3	0.9	0.2	0.4	0.4	1.7	0.4	0.3	1	0.3	0.3
Chromium (total)	64	750	0.3	µg/g	19.9	***234***	17.5	17.4	19.3	28.6	19	21.4	71	19.9	33.6
Cobalt	50*	40	0.2	µg/g	7.7	6.1	6.2	6.5	7.3	8.4	8.1	7.3	21	6.6	4.3
Copper	63	225	0.2	µg/g	15.4	***479***	60.9	15.5	15.6	28.3	18.3	14	85	18.8	***69***
Lead	140	200	0.3	µg/g	17.2	34.2	16.9	19.1	20.1	***437***	***295***	27.2	120	17.8	***175***
Molybdenum	10*	40	0.3	µg/g	0.3	0.3	0.4	0.3	0.4	0.3	<0.3	0.3	2.5	0.3	0.4
Nickel	50	150	0.3	µg/g	14.2	11.7	12.8	13.9	14.2	16	15.6	13.9	43	13.2	7.7
Selenium	1+	10	0.4	µg/g	<0.4	<0.4	0.5	0.5	<0.4	0.7	<0.4	<0.4	1.9	0.5	0.6
Silver	20*	20	0.2	µg/g	<0.2	0.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.42	<0.2	<0.2
Thallium	1	4.1	0.2	µg/g	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	2.5	<0.2	<0.2
Vanadium	130	200	0.2	µg/g	27.3	15.2	27	25.5	28.8	26.7	24.9	30.8	91	28.2	9.1
Zinc	200	600	0.2	µg/g	67	***641***	50.4	60	66.5	***1670***	198	60	160	74	***430***
Chromium, Hexavalent	0.4	8	0.40	µg/g	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	2.5	<0.40	<0.40
Cyanide, Free	0.9	100	0.08	µg/g	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	0.12	<0.08	<0.08
Mercury	6.6	10	0.011	µg/g	0.033	0.211	0.039	0.055	0.06	0.24	0.096	0.042	0.23	0.051	0.061
Electrical Conductivity (2:1)	2*	0.7	0.002	mS/cm	0.257	***0.839***	0.25	0.273	0.262	0.278	0.708	0.31	0.57	0.326	***2.67***
Sodium Adsorption Ratio (2:1)	5*	5	N/A	N/A	0.321	3.79	0.171	0.122	0.434	0.294	0.524	0.135	2.4	0.164	2.17
pH, 2:1 CaCl2 Extraction	6 to 8*	5 to 9	N/A	N/A	7.35	8.13	7.3	7.31	7.33	7.17	7.5	7.43	5 to 9	7.35	7.32
Chloride (2:1)	NV	NV	2.0	µg/g	17.2	13	5.6	12.7	11.5	11.1	25.5	7.9	58	21.3	1420
Nitrate + Nitrite (2:1)	NV	NV	1.0	µg/g	4.1	5.5	<1.0	5.3	5	5.6	27.4	34.5	40	2.9	11.3
					-							-			
Polycyclic Aromatic Hydrocarbons															
Naphthalene	0.013	4.6	0.03	ug/g	<0.03	0.58	0.03	-	-	-	-	-	0.05	<0.03	-
Acenaphthylene	320	100	0.02	ug/g	<0.02	<0.02	<0.02	-	-	-	-	-	0.08	<0.02	-
Acenaphthene	0.28	15	0.03	ug/g	<0.03	<0.03	<0.03	-	-	-	-	-	0.07	<0.03	-
Fluorene	0.25	340	0.02	ug/g	<0.02	<0.02	<0.02	-	-	-	-	-	0.12	<0.02	-
Phenanthrene	0.046	40	0.02	ug/g	<0.02	0.23	0.03	-	-	-	-	-	0.69	<0.02	-
Anthracene	2.5	28	0.02	ug/g	<0.02	0.02	<0.02	-	-	-	-	-	0.16	<0.02	-
Fluoranthene	50	40	0.02	ug/g	<0.02	0.05	0.04	-	-	-	-	-	0.24	<0.02	-
Pyrene	7.7	250	0.02	ug/g	<0.02	0.04	0.03	-	-	-	-	-	1	0.02	-
Benzo(a)anthracene	0.33	6.6	0.02	ug/g	<0.02	<0.02	0.03	-	-	-	-	-	0.74	<0.02	-
Chrysene	2.1	12	0.02	ug/g	<0.02	0.03	<0.02	-	-	-	-	-	0.69	<0.02	-
Benzo(b)fluoranthene	0.16	12	0.02	ug/g	<0.02	0.03	0.04	-	-	-	-	-	0.47	<0.02	-
Benzo(k)fluoranthene	0.034	12	0.02	ug/g	<0.02	<0.02	<0.02	-	-	-	-	-	0.48	<0.02	-
Benzo(a)pyrene	0.37**	1.2	0.02	ug/g	<0.02	<0.02	<0.02	-	-	-	-	-	0.49	<0.02	-
Indeno(1,2,3-cd)pyrene	2.7	12	0.02	ug/g	<0.02	<0.02	<0.02	-	-	-	-	-	0.38	0.04	-
Dibenzo(a,h)anthracene	0.23	1.2	0.02	ug/g	<0.02	<0.02	<0.02	-	-	-	-	-	0.16	<0.02	-
Benzo(g,h,i)perylene	6.8	40	0.02	ug/g	<0.02	<0.02	<0.02	-	-	-	-	-	0.68	0.02	-

NOTES
Applicable Soil Criteria
[1] CCME - Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (1999, updated 2007) as listed in Table 1 for Agricultural
[2] MOE Standards in Ontario Regulation 153/04 under the Environmental Protection Act as proposed in Table 2 for Agricultural or Other property uses, March 2004
*Interim remediation criteria for soil that have not yet been replaced by Canadian Soil Quality Guideline
+ Updated 2009
Soil Quality Guidelines for Carcinogenic and Other PAHs for Protection of Freshwater Life (SQG_{FL}), updated 2008
Soil Quality Guidelines for Carcinogenic and Other PAHs for Envrionment (SQG_{E}) and Soil Contact (SQG_{SC}), updated 2008
Soil Quality Guidelines for Carcinogenic and Other PAHs for Soil and Food Ingestion (SQG_{I}), updated 2008
Soil Quality Guidelines for Carcinogenic and Other PAHs for Protection of Potable Water (SQG_{PW}), updated 2008
** Soil Quality Guideline for Human Health - 10^{-6} Incremental Lifetime Cancer Risk (ILCR) Total Potency Equivalents is 0.6 mg/kg, updated 2008
"-" - Not Tested
RDL - Reportable Detection Limit
N/A - Not Applicable
NV - No Value
Bolded and Highlighted Values Exceed CCME Guidelines
Italicized **and Bolded Values Exceed O.Reg. 153/04 Table 1 or Table 2 Standards**

Analytical results for the sample taken from the fire pit on-site reported a concentration for naphthalene of <0.03 ug/g, however this method detection limit is higher than the value in the CCME Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (Polycyclic Aromatic Hydrocarbons 2008) - Protection of freshwater life (SQG_{FL}); listed at 0.013 mg/kg. As such, although not expected, the potential exists that the actual result slightly exceeds this criteria. As this is considered unlikely, and the CCME states that the application of the SQG_{FL} may be considered by users "on a site-specific basis where potential impacts on nearby surface water are a concern", the result for naphthalene is considered not to represent contamination for this site.

Analytical results for the sample taken from the fire pit on-site indicate that naphthalene exceeded the Soil Quality Guideline for the protection of freshwater life (SQG_{FL}). The CCME Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (Polycyclic Aromatic Hydrocarbons 2008) states that the application of the SQGFL may be considered by users "on a site-specific basis where potential impacts on nearby surface water are a concern". In the interests of remaining consistent with Provincial Regulation 153/04, "nearby surface water" was considered to be 30m or less from a water body. As the sample (which exceeded the SQG_{FL}) was taken from an area located beyond 30m of the on-site water body, the exceedance is deemed not to represent naphthalene-related contamination for this site.

GENIVAR

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Certificate of Analysis

AGAT WORK ORDER: 09T344020
PROJECT NO: MA-09-245-00-MA

CLIENT NAME: GENIVAR ONTARIO INC.   ATTENTION TO: Andre Lyn

O. Reg. 153 Metals & Inorganics in Soil

DATE SAMPLED: Jul 15, 2009   DATE RECEIVED: Jul 16, 2009   DATE REPORTED: Jul 24, 2009   SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	SS-110-1 1393681	SS-112.2-1 1393684	SS-112.2-2 1393688
Antimony	µg/g	1.0	0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	14	0.3	3.5	2.5	2.4
Barium	µg/g	190	0.2	90.4	135	110
Beryllium	µg/g	1.2	0.2	0.7	0.6	0.7
Boron (Hot Water Extractable)	µg/g		0.10	0.42	0.74	0.32
Cadmium	µg/g	1.0	0.2	0.3	0.4	0.3
Chromium	µg/g	67	0.3	19.9	19.0	21.4
Cobalt	µg/g	19	0.2	7.7	8.1	7.3
Copper	µg/g	56	0.2	15.4	18.3	14.0
Lead	µg/g	55	0.3	17.2	295	27.2
Molybdenum	µg/g	2.5	0.3	0.3	<0.3	0.3
Nickel	µg/g	43	0.3	14.2	15.6	13.9
Selenium	µg/g	1.4	0.4	<0.4	<0.4	<0.4
Silver	µg/g	0.35	0.2	<0.2	<0.2	<0.2
Thallium	µg/g	2.5	0.2	<0.2	<0.2	<0.2
Vanadium	µg/g	91	0.2	27.3	24.9	30.8
Zinc	µg/g	150	0.2	67.0	198	60.0
Chromium, Hexavalent	µg/g	2.5	0.40	<0.40	<0.40	<0.40
Cyanide, Free	µg/g	0.12	0.08	<0.08	<0.08	<0.08
Mercury	µg/g	0.16	0.011	0.033	0.096	0.042
Electrical Conductivity (2:1)	mS/cm	0.47	0.002	0.257	0.708	0.310
Sodium Adsorption Ratio (2:1)	N/A	1.0	N/A	0.321	0.524	0.135
pH, 2:1 CaCl2 Extraction	N/A		N/A	7.35	7.50	7.43
Chloride (2:1)	µg/g	58	2.0	17.2	25.5	7.9
Nitrate + Nitrite (2:1)	µg/g	40	1.0	4.1	27.4	34.5

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T1(AG)
Samples received at 17.3 degrees celsius

1393681-1393688 EC, SAR, Chloride & Nitrate/Nitrite were determined on the extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil).
pH was determined on the extract obtained from the 2:1 leaching procedure (2 parts 0.01M CaCl2:1 part soil).

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 09T344020
PROJECT NO: MA-09-245-00-MA

CLIENT NAME: GENIVAR ONTARIO INC.

ATTENTION TO: Andre Lyn

O. Reg. 153 PAHs in Soil

DATE SAMPLED: Jul 15, 2009 DATE RECEIVED: Jul 16, 2009 DATE REPORTED: Jul 24, 2009 SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	SS-110-1 1393681
Naphthalene	µg/g	0.05	0.03	<0.03
Acenaphthylene	µg/g	0.08	0.02	<0.02
Acenaphthene	µg/g	0.05	0.03	<0.03
Fluorene	µg/g	0.05	0.02	<0.02
Phenanthrene	µg/g	0.19	0.02	<0.02
Anthracene	µg/g	0.05	0.02	<0.02
Fluoranthene	µg/g	0.24	0.02	<0.02
Pyrene	µg/g	0.19	0.02	<0.02
Benzo(a)anthracene	µg/g	0.10	0.02	<0.02
Chrysene	µg/g	0.18	0.02	<0.02
Benzo(b)fluoranthene	µg/g	0.3	0.02	<0.02
Benzo(k)fluoranthene	µg/g	0.05	0.02	<0.02
Benzo(a)pyrene	µg/g	0.1	0.02	<0.02
Indeno(1,2,3-cd)pyrene	µg/g	0.11	0.02	<0.02
Dibenzo(a,h)anthracene	µg/g	0.15	0.02	<0.02
Benzo(g,h,i)perylene	µg/g	0.2	0.02	<0.02

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T1(AG)
Samples received at 17.3 degrees celsius

1393681 Results are based on the dry weight of the soil.
Surrogate Recovery of Chrysene-d12: 82%.
Percent moisture:13.5 %.

Certified By: Jocky Takeuchi

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Guideline Violation

AGAT WORK ORDER: 09T344020
PROJECT NO: MA-09-245-00-MA

CLIENT NAME: GENIVAR ONTARIO INC.
ATTENTION TO: Andre Lyn

SAMPLE ID	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
1393684	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil	Electrical Conductivity (2:1)	0.47	0.708
1393684	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil	Lead	55	295
1393684	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil	Zinc	150	198

AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 09T376969

PROJECT NO: MA-09-245-00-MA

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CLIENT NAME: GENIVAR ONTARIO INC. ATTENTION TO: Andre Lyn

O. Reg. 153 Metals & Inorganics in Soil - Table 1

DATE SAMPLED: Dec 18, 2009 DATE RECEIVED: Dec 21, 2009 DATE REPORTED: Dec 24, 2009 SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	SS-110-2 1618574	SS-110-3 1618575	SS-110-4 1618577	SS-110-5 1618578	SS-110-6 1618579	SS-110-7 1618581	SS-110-8 1618594
Antimony	µg/g	1.0	0.8	<0.8	2.2	<0.8	<0.8	<0.8	<0.8	74.4
Arsenic	µg/g	14	0.3	4.6	276	4.2	30.9	2.7	5.0	9.4
Barium	µg/g	190	0.2	153	359	76.4	59.6	90.6	96.7	1290
Beryllium	µg/g	1.2	0.2	0.7	0.2	0.6	0.2	0.6	0.7	0.6
Boron (Hot Water Extractable)	µg/g		0.10	0.63	24.5	0.89	0.71	0.35	0.29	0.35
Cadmium	µg/g	1.0	0.2	0.3	0.9	0.2	0.3	0.4	0.4	1.7
Chromium	µg/g	67	0.3	19.9	234	17.5	33.6	17.4	19.3	28.6
Cobalt	µg/g	19	0.3	6.6	6.1	6.2	4.3	6.5	7.3	8.4
Copper	µg/g	56	0.2	18.8	479	60.9	69.0	15.5	15.6	28.3
Lead	µg/g	55	0.3	17.8	34.2	16.9	175	19.1	20.1	437
Molybdenum	µg/g	2.5	0.3	0.3	0.3	0.4	0.4	0.3	0.4	0.3
Nickel	µg/g	43	0.3	13.2	11.7	12.8	7.7	13.9	14.2	16.0
Selenium	µg/g	1.4	0.4	0.5	<0.4	0.5	0.6	0.5	<0.4	0.7
Silver	µg/g	0.35	0.2	<0.2	0.9	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	2.5	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Vanadium	µg/g	91	0.2	28.2	15.2	27.0	9.1	25.5	28.8	26.7
Zinc	µg/g	150	0.2	74.0	641	50.4	430	60.0	66.5	1670
Chromium, Hexavalent	µg/g	2.5	0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Cyanide, Free	µg/g	0.12	0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Mercury	µg/g	0.16	0.011	0.051	0.211	0.039	0.061	0.055	0.060	0.240
Electrical Conductivity (2:1)	mS/cm	0.47	0.002	0.326	0.839	0.250	2.67	0.273	0.262	0.278
Sodium Adsorption Ratio (2:1)	N/A	1.0	N/A	0.164	3.79	0.171	2.17	0.122	0.434	0.294
pH, 2:1 CaCl2 Extraction				7.35	8.13	7.30	7.32	7.31	7.33	7.17
Chloride (2:1)	µg/g	58	2.0	21.3	13.0	5.6	1420	12.7	11.5	11.1
(Nitrate + Nitrite) as N (2:1)	µg/g	40	1.0	2.9	5.5	<1.0	11.3	5.3	5.0	5.6

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T1(AG)

1618574-1618594 EC, SAR, Chloride & Nitrate/Nitrite were determined on the extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil).
pH was determined on the extract obtained from the 2:1 leaching procedure (2 parts 0.01M CaCl2:1 part soil).

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Certificate of Analysis

AGAT WORK ORDER: 09T376969
PROJECT NO: MA-09-245-00-MA

CLIENT NAME: GENIVAR ONTARIO INC.
ATTENTION TO: Andre Lyn

O. Reg. 153 PAHs in Soil

DATE SAMPLED: Dec 18, 2009 | DATE RECEIVED: Dec 21, 2009 | DATE REPORTED: Dec 24, 2009 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	SS-110-2 1618574	SS-110-3 1618575	SS-110-4 1618577
Naphthalene	µg/g	0.05	0.03	<0.03	0.58	0.03
Acenaphthylene	µg/g	0.08	0.02	<0.02	<0.02	<0.02
Acenaphthene	µg/g	0.05	0.03	<0.03	<0.03	<0.03
Fluorene	µg/g	0.05	0.02	<0.02	<0.02	<0.02
Phenanthrene	µg/g	0.19	0.02	<0.02	0.23	0.03
Anthracene	µg/g	0.05	0.02	<0.02	0.02	<0.02
Fluoranthene	µg/g	0.24	0.02	<0.02	0.05	0.04
Pyrene	µg/g	0.19	0.02	0.02	0.04	0.03
Benzo(a)anthracene	µg/g	0.10	0.02	<0.02	<0.02	0.03
Chrysene	µg/g	0.18	0.02	<0.02	0.03	<0.02
Benzo(b)fluoranthene	µg/g	0.3	0.02	<0.02	0.03	0.04
Benzo(k)fluoranthene	µg/g	0.05	0.02	<0.02	<0.02	<0.02
Benzo(a)pyrene	µg/g	0.1	0.02	<0.02	<0.02	<0.02
Indeno(1,2,3-cd)pyrene	µg/g	0.11	0.02	0.04	<0.02	<0.02
Dibenzo(a,h)anthracene	µg/g	0.15	0.02	<0.02	<0.02	<0.02
Benzo(g,h,i)perylene	µg/g	0.2	0.02	0.02	<0.02	<0.02
Moisture Content	%			35.2	43.3	27.4

Surrogate	Unit	Acceptable Limits	SS-110-2 1618574	SS-110-3 1618575	SS-110-4 1618577
Chrysene-d12	%	60-130	74	87	77

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T1(AG)
1618574-1618577 Results are based on the dry weight of the soil.

Certified By:

Guideline Violation

AGAT WORK ORDER: 09T376969

PROJECT NO: MA-09-245-00-MA

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CLIENT NAME: GENIVAR ONTARIO INC. ATTENTION TO: Andre Lyn

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
1618575	SS-110-3	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Antimony	1.0	2.2
1618575	SS-110-3	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Arsenic	14	276
1618575	SS-110-3	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Barium	190	359
1618575	SS-110-3	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Chromium	67	234
1618575	SS-110-3	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Copper	56	479
1618575	SS-110-3	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Electrical Conductivity (2:1)	0.47	0.839
1618575	SS-110-3	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Mercury	0.16	0.211
1618575	SS-110-3	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Silver	0.35	0.9
1618575	SS-110-3	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Sodium Adsorption Ratio (2:1)	1.0	3.79
1618575	SS-110-3	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Zinc	150	641
1618575	SS-110-3	T1(AG)	O. Reg. 153 PAHs in Soil	Naphthalene	0.05	0.58
1618575	SS-110-3	T1(AG)	O. Reg. 153 PAHs in Soil	Phenanthrene	0.19	0.23
1618577	SS-110-4	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Copper	56	60.9
1618578	SS-110-5	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Arsenic	14	30.9
1618578	SS-110-5	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Chloride (2:1)	58	1420
1618578	SS-110-5	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Copper	56	69.0
1618578	SS-110-5	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Electrical Conductivity (2:1)	0.47	2.67
1618578	SS-110-5	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Lead	55	175
1618578	SS-110-5	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Sodium Adsorption Ratio (2:1)	1.0	2.17
1618578	SS-110-5	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Zinc	150	430
1618594	SS-110-8	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Antimony	1.0	74.4
1618594	SS-110-8	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Barium	190	1290
1618594	SS-110-8	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Cadmium	1.0	1.7
1618594	SS-110-8	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Lead	55	437
1618594	SS-110-8	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Mercury	0.16	0.240
1618594	SS-110-8	T1(AG)	O. Reg. 153 Metals & Inorganics in Soil - Table 1	Zinc	150	1670

ENVIRONMENTAL EVALUATION
PICKERING LANDS SITE
PHASE 1D
COMMERCIAL PROPERTIES
PROPERTY IDENTIFICATION NUMBER 614110/111.1

Prepared For:

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Prepared by:

SHAHEEN & PEAKER LIMITED

Project: SP1490
March 24, 1997

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Project: SP1490 **March 24, 1997**

Public Works and Government Services Canada
Architectural and Engineering Services
Ontario Region/Environmental Services Division
4900 Yonge Street
Willowdale, Ontario
M2N 6A6

Attention: Mr. W. David Lewis

Dear Sirs:

Environmental Evaluations
Pickering Lands Site
Phase 1D
Commercial Properties
Property Identification Number 614110 and 614111.1

Please find enclosed our Environmental Evaluation (EE) report for the above noted properties which are currently utilized for Camp Robin Hood, a children's day camp. The purpose of the EE was to identify environmental concerns associated with the property and provide recommendations for remediation. The scope of work consisted of research into available public and private records and reports regarding the property; consultation with groups, agencies, and individuals familiar with the property including tenant interviews; a visual reconnaissance of the property; testing of the potable water supply and potential hazardous materials found on the property; and documentation of the findings including recommendations regarding remedial work. Items of environmental concern are summarized below:

- BACKGROUND INFORMATION

A review of the Pickering Project Management Office (PPMO) file summary indicated that the water was tested in 1994 and all parameters were found to be under the CCME Drinking Water Guidelines except total dissolved solids at 568 mg/L versus the guidelines at 500 mg/L.

- ASBESTOS-CONTAINING MATERIALS

A total of 22 samples of potential asbestos containing materials were analyzed for asbestos content and the following materials were found to contain asbestos:

- vinyl floor tile, portables adjacent to hitting cubicles (1 to 5% Chrysotile)
- vinyl floor tiles, main office and health centre (1 to 5% Chrysotile)

Abatement of all asbestos containing materials is recommended, particularly if the asbestos containing material is friable. Abatement measures include removal and encapsulation of the asbestos containing material and all abatement work must be carried out in accordance with Ontario Regulation 838/90. Since the vinyl floor tiles in the main office are non-friable and in good condition and the vinyl floor tiles in the portables are covered by carpet, abatement can be deferred until such time as the condition deteriorates. These materials should be inspected periodically for signs of deterioration. The tenant and any contractors working at the site should be notified of the presence of asbestos to avoid any unnecessary contact and exposure.

- LEAD-CONTAINING MATERIALS

A total of 18 paint samples were collected from various buildings on the property and submitted for analysis of lead. The analytical results indicated lead concentrations ranging from 1.63 to 113,770 ppm. Nine (9) of the 18 samples analyzed were found to contain lead concentrations over 5000 ppm:

- window sill paint in second floor bedroom of baseball office - 113,770 ppm (peeling)
- exterior house paint, baseball office - 64,959 ppm (peeling in some areas)
- exterior trim paint, baseball office - 64,846 ppm (peeling)
- exterior paint, photography building - 37,586 ppm (some sections peeling)
- exterior paint, archery huts - 13,192 ppm (good condition)
- painted chalk board, arts and crafts building - 8,471 ppm (peeling)
- exterior paint, program office - 18,936 ppm (peeling)
- wood trim paint, main floor living room, house - 53,668 ppm (good)
- exterior wall paint, house - 17,374 ppm (some peeling)

Abatement of all lead-based paint (as defined in this report to be in excess of 5,000 ppm of lead) is recommended, particularly in the case of flaking or peeling paints. Abatement measures may include encapsulation, replacement, or removal of the lead-based paint. All abatement work should be performed in accordance with the worker protection protocols outlined in Ontario Regulation 843/90. If the lead-based paint is in good condition, abatement can be deferred until such time as the condition deteriorates; the paint should be inspected periodically for signs of deterioration. Regardless of the condition of the lead-based paint, the tenant and all contractors must be notified of the lead paint concentrations, to avoid unnecessary contact and exposure. Until such time as an abatement program is initiated, limited accessibility to the lead-based paint surfaces should be ensured for young children, as they are more susceptible to the effects of lead. The Canada Mortgage and Housing Corporation publication, Renovation, Lead in your Home, can provide further information on safety precautions.

- PCBs

There were fluorescent light fixtures in use in many of the buildings on the property. A number of representative ballasts were inspected for PCB content. Serial numbers noted on some of the ballasts suggest that the ballasts may contain PCBs as these numbers were indicative of the transition period between PCB containing ballasts and non-PCB containing ballasts. Other ballasts inspected during the site visit indicated the possible presence of PCBs but this could not be confirmed as the required date codes could not be accessed without dismantling the light fixtures. As such it should be assumed that at least a portion of the fluorescent lights on the property contain PCBs. The current Regulations do not prohibit the continued use of PCB bearing ballast and can remain in use. If identified or suspected PCB containing ballasts are taken out of service, the PCB content should be verified and the Pickering Project Management Office should be notified so that arrangements can be made for their storage in a registered PCB storage facility in accordance with the Canadian Environmental Protection Act and Ontario Regulation 362.

- STORAGE TANKS

There are nine (9) above ground storage tanks on the property including three (3) fuel oil tanks and five (5) propane tanks. These tank are in use when the Camp is operational. In addition, according to the tenant, a former 4500 L sewage waste tank was formerly used to store sewage prior to off-site disposal. The tenant indicated that the tank was previously filled with soil as it was no longer used but was unsure whether the tank was still present on the property. Shaheen & Peaker Limited did not observe the tank on the day of inspection. If the tank is still present, any remnants of sewage remaining in the tank will biodegrade naturally over time. Some staining was noted on the concrete floor under the fuel oil tank in the house used as a residence on the property. The staining is likely restricted to the surface of the concrete and likely has not had an adverse impact on the property. However, it would be prudent to have a heating/plumbing contractor evaluate the fuel oil tank in the basement of the house and determine if the tank is leaking on a continuous basis. If this is the case, the tank/supply line may require repairs to prevent further leakage.

- POTABLE WATER

Water samples obtained from the kitchen tap in the baseball office and the kitchen tap at mom's place (cafeteria) were analyzed only for fecal and total coliforms. The results showed that the tested concentrations did not exceed the Federal guidelines. Another sample was taken from the tap in the health centre. This sample was analyzed for total and fecal coliforms as well as general inorganic parameters. The concentration of total dissolved solids was found to be in exceedance of the CCME Drinking Water remediation criteria and the Guidelines for Canadian Drinking Water Quality (GCDWQ). The concentration of total dissolved solids is not considered health related but rather an aesthetic related parameter which may affect the taste and/or appearance of the water.

Further details regarding the findings of the assessment are presented in the enclosed report. Should you have any questions regarding any of the enclosed information, please do not hesitate to contact this office. Thank you for the opportunity to have been of assistance.

Yours very truly,
SHAHEEN & PEAKER LIMITED

Rodney Obdeyn, P.Eng.
Project Coordinator

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PICKERING LANDS SITE
PHASE 1D
COMMERCIAL PROPERTIES
PROPERTY IDENTIFICATION NUMBERS 614110, 614111.1

1.0 INTRODUCTION

1.1 BACKGROUND

In 1973, approximately 7,530 hectares (18,600 acres) of land were expropriated by Transport Canada north of Pickering, Ontario for the construction of a second major airport to handle international traffic for the greater Toronto area. In 1975, the New International Airport Project at Pickering was indefinitely postponed. Since then, the lands forming the site (subsequently referred to as the Pickering Lands Site) - mainly rural residences, farms and agricultural land- have been leased to the public and managed by Public Works and Government Services (PWGSC) on behalf of Transport.

The Environmental Services Division (ESD) of Architectural and Engineering Services, Public Works and Government Services Canada (PWGSC) retained the services of Shaheen & Peaker Limited (S&P) on behalf of the Pickering Lands Office to complete environmental evaluations (EE) at 25 properties with commercial leases (designated as Phase 1D) located on the Pickering Lands Site.

The commercial properties which required EEs are situated in the Towns of Pickering and Markham. Land use on the subject properties is commercial, ranging from retail stores to golf clubs to auto garages.

1.2 OBJECTIVES

The purpose of the environmental evaluation is to determine the physical condition of a property with emphasis on the determination of any contamination and/or potential environmental liability. The objectives of the EE are to:

- collect all pertinent information on the property under consideration (also referred to as the subject property), as guided by an EE checklist
- through the evaluation of this information, identify, describe and quantify any potential environmental concerns that may be present at the time of the review, with consideration of their adverse impacts
- where applicable, define site remediation requirements

1.3 SCOPE OF WORK

The scope of the assessment of the subject property conformed to the terms of reference for this project as provided by PWGSC comprised of:

- research
- consultation
- reconnaissance
- testing
- documentation

1.3.1 RESEARCH

A review of available information pertaining to the subject properties was carried out to verify land use and suspected environmental concerns. The research work included a review of the following information:

- preliminary environmental assessments of the subject property provided by ESD, where available
- PWGSC's Pickering Project Management Office (PPMO) property file summaries provided by ESD
- published information including topographic maps, aerial photography, municipal and/or provincial documents
- adjacent land use activities, as deemed necessary

1.3.2 CONSULTATION

Consultations with various agencies were carried out to obtain additional information of environmental significance regarding the subject property. A request was submitted to the Ministry of Environment and Energy (MOEE) Freedom of Information and Protection of Privacy Office for a search of MOEE records regarding any environmental issues on file regarding the subject property. In addition, the MOEE was requested to search Spills Action Centre (SAC) files for records of any documented hazardous spills which may have occurred near the property. In addition, the Ministry of Consumer and Commercial Relations (MCCR), Inspection and Enforcement Branch was asked to search for any information regarding the current or previous existence of registered underground tanks and/or historical reports of spills or leaks. Personal interviews with property residents were conducted as part of Section 1.3.3.

1.3.3 RECONNAISSANCE

A site visit was carried out to conduct a visual reconnaissance of the property and informal interviews with property residents, as well as sampling and testing of materials. The reconnaissance was carried out to document the land use of the subject property and adjacent properties; identify the presence and condition of above ground or underground storage tanks; note evidence of spills, hazardous and non-hazardous waste; and conduct an inventory of structures, wells, cisterns, and waste water systems on the property. Tenant interviews were carried out to obtain additional information from the current tenants regarding the property and were carried out as per the tenant interview form supplied by PWGSC (**Appendix A**). Samples of the tap water, interior and/or exterior paint as well as suspected asbestos containing materials were submitted to an environmental laboratory for analysis. Any surface water or soils suspected of being contaminated as well as any other on-site materials suspected of being hazardous were also submitted for analysis upon approval by PWGSC. Site photographs are presented in **Appendix B**.

1.3.4 TESTING

Water samples collected during the site reconnaissance were submitted to Entech environmental laboratory for analytical testing as described in Section 2.5 and results were reported in parts per million (ppm). Suspected lead based paint and asbestos containing materials were submitted to Entech and Norrox Technical Services respectively. The results for lead were reported in ppm and those for asbestos were reported in percentage.

1.3.5 DOCUMENTATION

The findings of the site reconnaissance and results of the chemical testing are presented in Section 3. Conclusions and recommendations regarding the presence of hazardous materials identified on the property are found in Section 4. Certificates of analyses for the analytical testing carried out are provided in **Appendix C**.

1.4 SITE SETTING

The subject property is located at Reesor Road (**Drawing 1**) and has been assigned property identification numbers (PIN) 614110 and 614111.1 by PWGSC. The legal description is Part of Lot 22, Concession 10 in the Township of Pickering, Ontario consisting of an area of 20.2 ha (49.5 acres).

The property is currently used as a children's camp and a residence for the maintenance personnel. There are several buildings on the property including a large U-shaped barn, a house, a main office, numerous outbuildings, and many sleep huts for the campers. A plan showing the site configuration is presented as **Drawing 2** and building layout sketches are presented as **Drawings 3** and **4** for buildings which were found to contain asbestos.

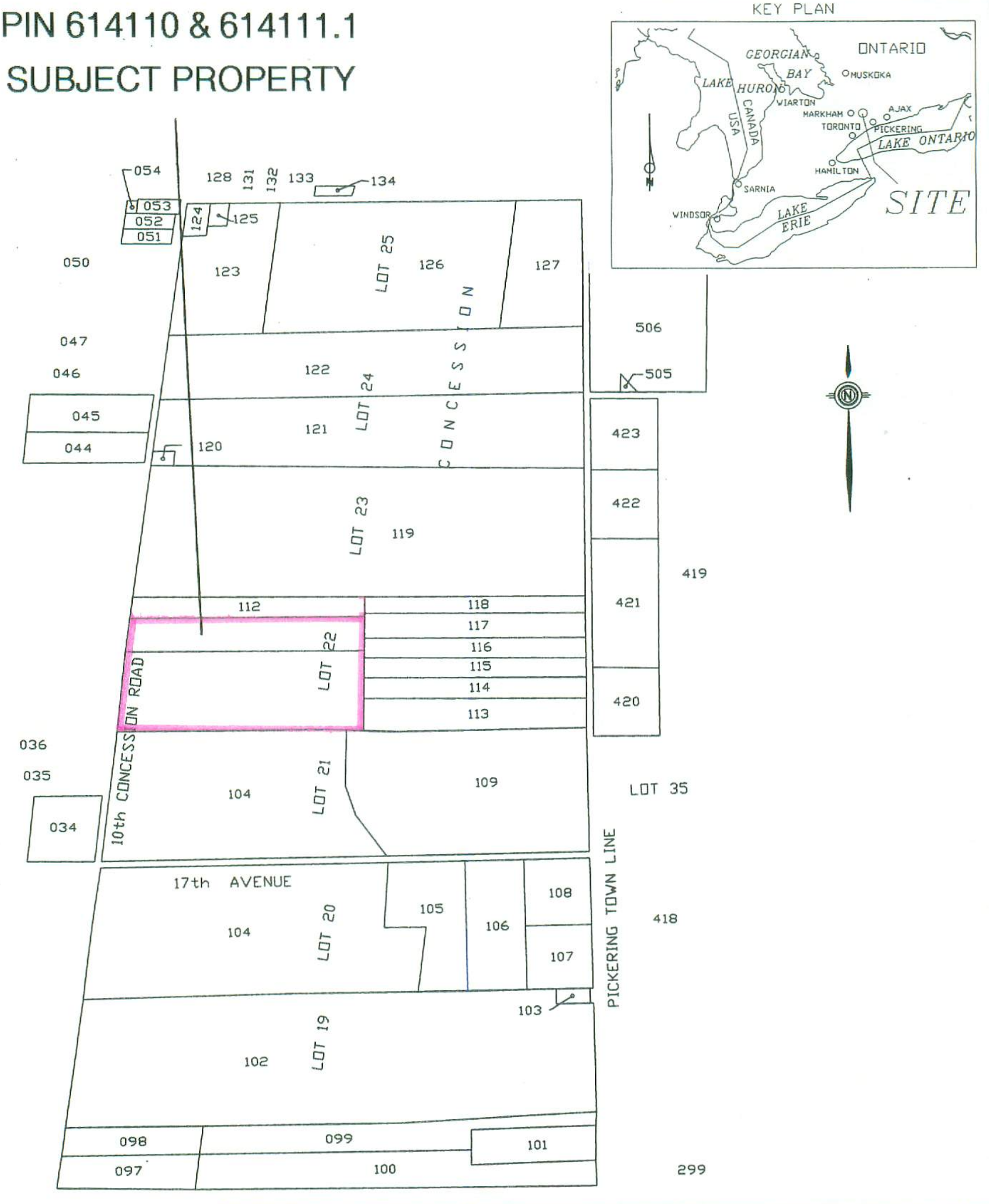
The camp is surrounded by farmland. The topography is relatively flat and slopes in a southerly direction. The topographic map for this area indicates that any streams in the vicinity of the camp flow in a southerly direction. A copy of the topographic map for this area is presented in **Drawing 5**.

According to the Ontario Geological Survey Preliminary Map P2204, issued by the Ministry of Natural Resources, the subject site is located in an area of glacial silt till deposits (**Drawing 6**). These till deposits have a relatively low permeability and consequently, the ground water is not overly susceptible to contamination from surface spills. A report review of Ground-Water Resources of the Duffins Creek-Rouge River Drainage Basin published by the Ministry of the Environment in 1977 indicated that an upper and a lower aquifer are present in the overburden material overlying the bedrock. The depth to the upper aquifer is reported to be approximately 3 to 6 m while the top of bedrock is approximately 60 to 75 m below ground surface.

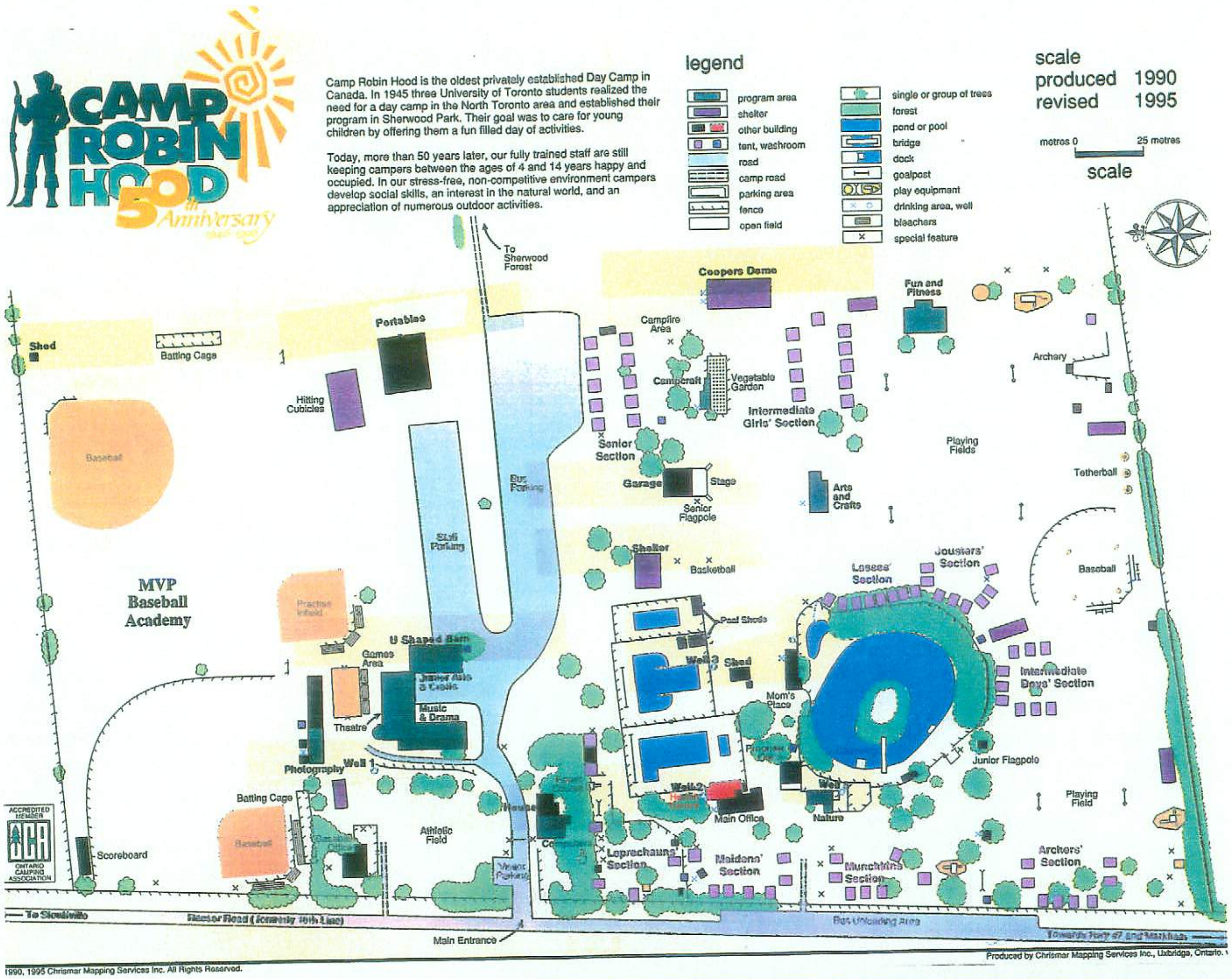
Aerial photographs for the years 1954, 1971, and 1978 were reviewed at the Ministry of Natural Resources Information Centre and a copy of the 1978 photograph is enclosed as **Drawing 7.** In the 1954 aerial the subject property consisted of a house and barns and it appeared that at this time Camp Robin Hood was not in existence. Both the 1971 and 1978 photographs revealed the existing buildings with no obvious change between the two years. There have been a few more buildings added since 1978.

A plan of Significant Natural Areas in the Oak Ridges Moraine Area as prepared for the Ministry of Natural Resources (1991) shows no significant life science, earth science, conservation, wetlands or environmentally significant sensitive areas in the immediate area of the subject property.

PIN 614110 & 614111.1
SUBJECT PROPERTY



SHAHEEN & PEAKER LIMITED		
Scale: NTS	ENVIRONMENTAL EVALUATION	Drawn By:
Date: January 1997	PICKERING LANDS SITE	Reviewed By:
SITE LOCATION PLAN - PIN 614110, 614111.1		
Project: SP1490	PICKERING, ONTARIO	Drawing No. 1



SHAHEEN & PEAKER LIMITED		
Scale: NTS	ENVIRONMENTAL EVALUATION	Drawn By:
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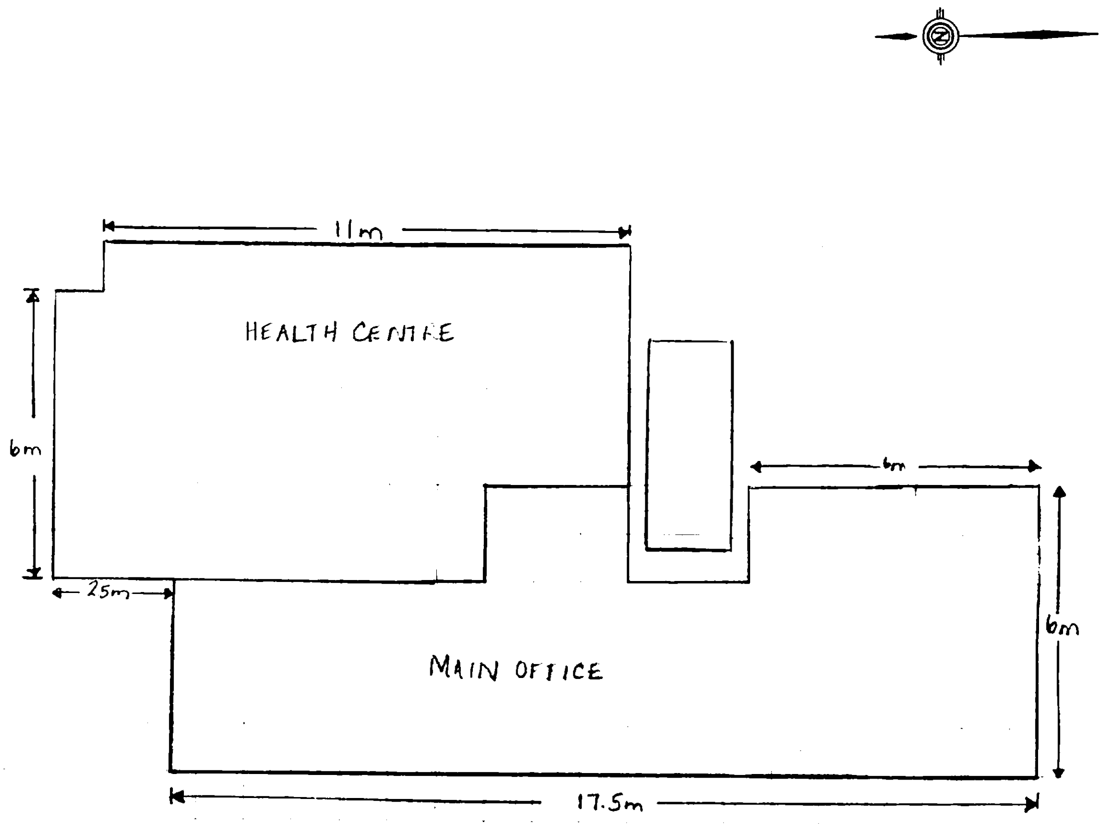
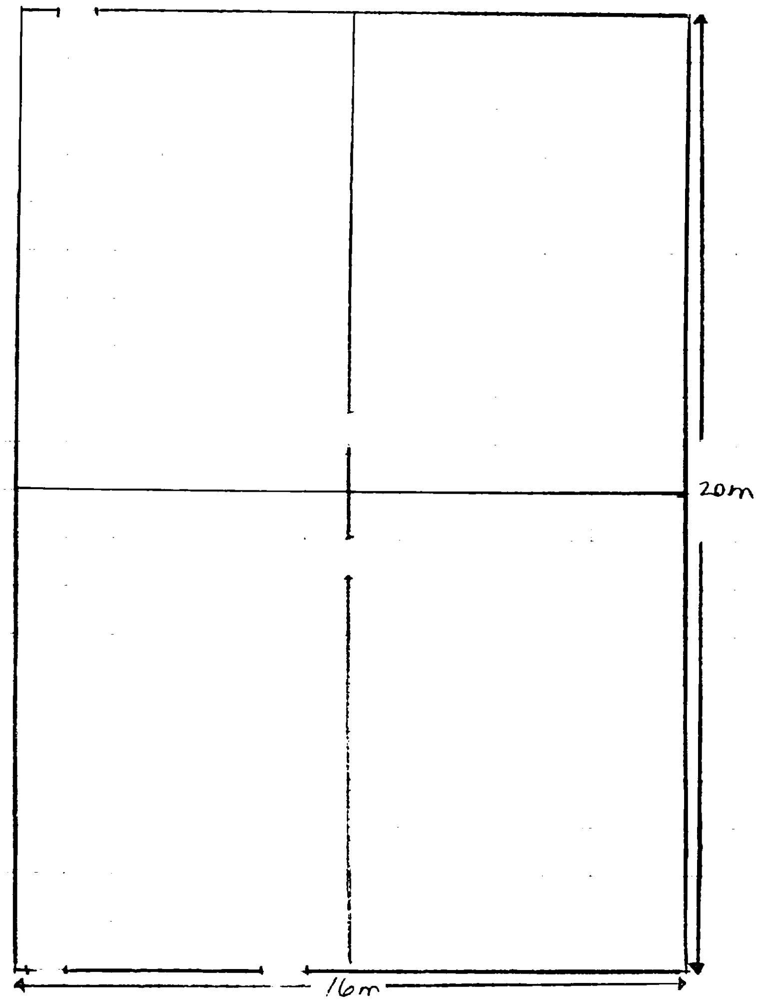
SITE LAYOUT PLAN - PIN 614110,111.1		
Project: SP1490	PICKERING, ONTARIO	Drawing No. 2



SHAHEEN & PEAKER LIMITED		
Scale: **NTS**	ENVIRONMENTAL EVALUATION	Drawn By:
Date: **January 1997**	PICKERING LANDS SITE	Reviewed By:
MAIN OFFICE FLOOR PLAN - PIN 614110, 614111.1		
Project: **SP1490**	PICKERING, ONTARIO	Drawing No. **3**

VAT IN PORTABLES



SHAHEEN & PEAKER LIMITED		
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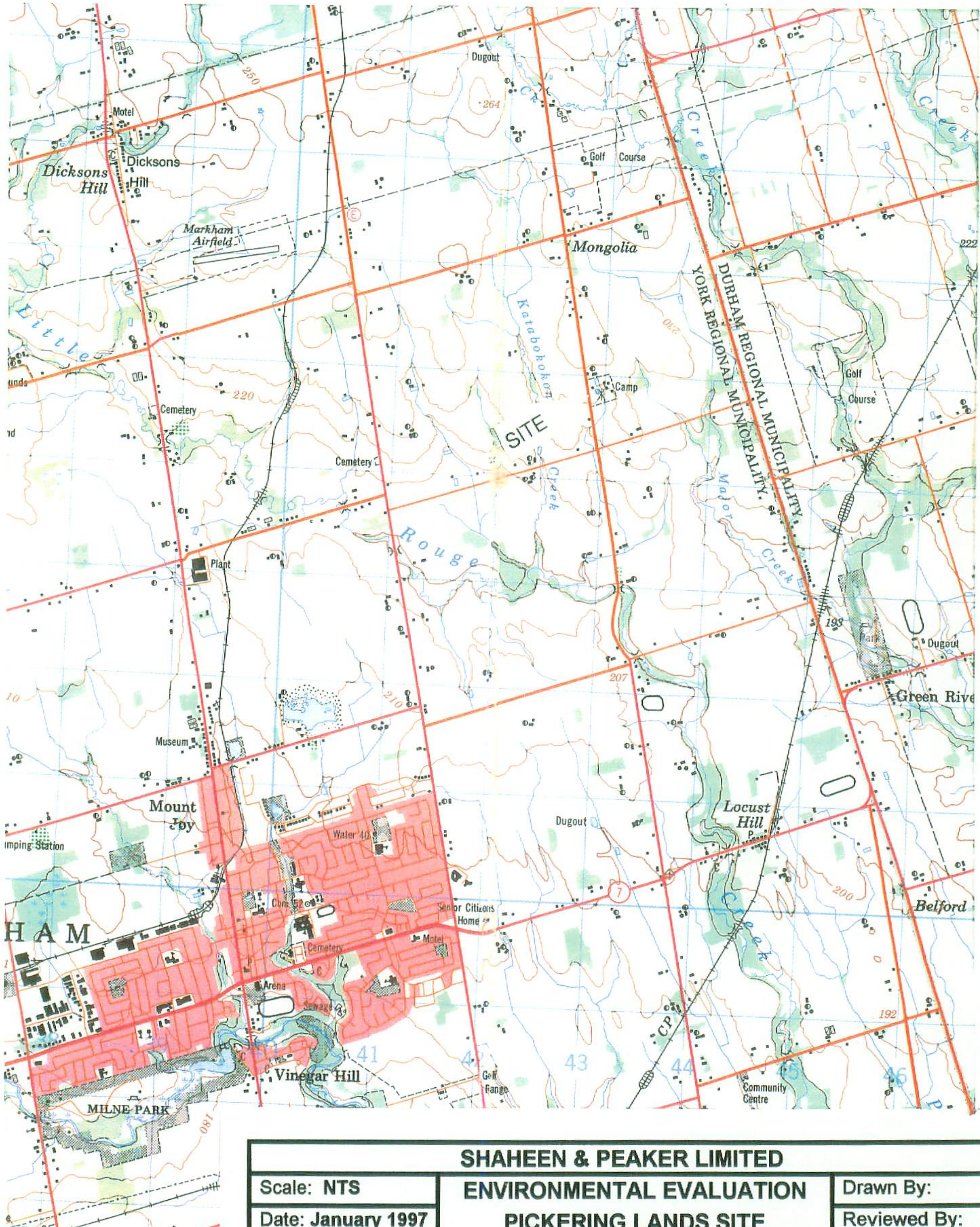
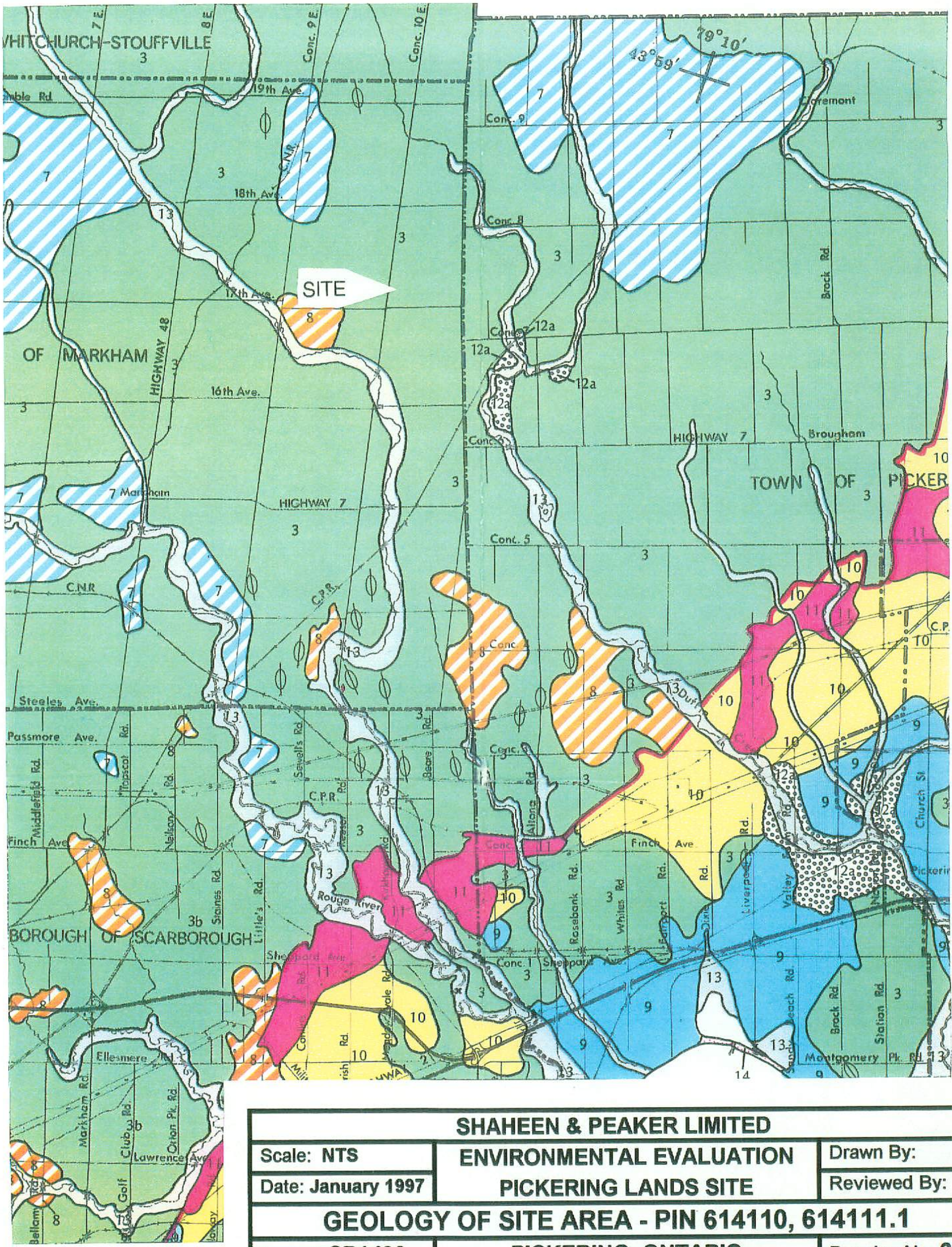
Date: January 1997	PICKERING LANDS SITE	Reviewed By:
PORTABLE FLOOR PLAN - PIN 614110, 614111.1		
Project: SP1490	PICKERING, ONTARIO	Drawing No. 4



SHAHEEN & PEAKER LIMITED		
Scale: NTS	ENVIRONMENTAL EVALUATION	Drawn By:
Date: January 1997	PICKERING LANDS SITE	Reviewed By:
TOPOGRAPHY OF SITE AREA - PIN 614110, 614111.1		
Project: SP1490	PICKERING, ONTARIO	Drawing No. 5



	SHAHEEN & PEAKER LIMITED	
Scale: NTS	ENVIRONMENTAL EVALUATION	Drawn By:
Date: January 1997	PICKERING LANDS SITE	Reviewed By:
	GEOLOGY OF SITE AREA - PIN 614110, 614111.1	
Project: SP1490	PICKERING, ONTARIO	Drawing No. 6

SHAHEEN & PEAKER LIMITED		
Scale: **NTS**	**ENVIRONMENTAL EVALUATION**	Drawn By:
Date: **January 1997**	**PICKERING LANDS SITE**	Reviewed By:
AERIAL PHOTOGRAPHY: 1978 - PIN 614110, 614111.1		
Project: **SP1490**	**PICKERING, ONTARIO**	Drawing No. **7**

2.0 METHODOLOGY

2.1 REVIEW OF BACKGROUND INFORMATION

A review of any previous chemical testing of groundwater as well as previous assessments and reports associated with the subject property was carried out to identify previously documented concerns. In addition, published information pertaining to the subject site area was also reviewed to identify any additional potential environmental concerns. This included a review of the following:

- PWGSC's Document Search Findings
- Aerial Photography, Ministry of Natural Resources, 1954, 1971, 1978
- Topographic Map 30M/14, Energy, Mines, and Resources Canada, 1985
- Ontario Geological Survey Preliminary Map P2204, Ministry of Natural Resources, 1990
- Ground-Water Resources of the Duffins Creek-Rouge River Drainage Basin, Ministry of the Environment, 1977

2.2 SITE INSPECTION AND INTERVIEWS

The property was visited on Wednesday September 20, 1996 by Rodney Obdeyn, Simone Norman, and Collette Rowan of Shaheen & Peaker Limited. The subject property is utilized by Camp Robin Hood Day Camp. A copy of the completed tenant interview checklist (**Appendix A**) contains information obtained during the tenant interview only and does not necessarily reflect information gathered during the rest of the site inspection.

2.2.1 ADJACENT LAND USE

Cursory visual assessments of the land use of adjacent properties were carried out to identify potentially sensitive receptors and/or potential sources of contamination. Any potential environmental concerns including the presence of underground tanks, above ground tanks, and waste materials were noted.

2.2.2 PHYSICAL AND NATURAL ENVIRONMENT

The current status of the physical condition of the subject property was documented including the general topography, surface hydrology, vegetation, and any observed natural habitats.

2.2.3 STRUCTURES

An inventory of the structures present on the property at the time of inspection was documented including the type of structure, approximate size, age and materials of construction as well as the normal use of the building(s).

2.2.4 UREA FORMALDEHYDE FOAM INSULATION (UFFI) AND ASBESTOS

An inspection of the property and building(s) was carried out to identify the presence and condition of UFFI and/or potential asbestos containing materials.

UFFI was used in the late 1970s as an injected foam insulation material for homes. The installation of UFFI in homes was banned in 1980 under the Hazardous Products Act following health complaints and research findings linking health problems to elevated levels of formaldehyde. Sampling for UFFI was not carried out as part of this assessment as it involves destructive sampling techniques. However, observations for evidence of the injection of the foam insulation were made.

Inhalation of asbestos fibres has been associated with several diseases including asbestosis, fibrosis, lung cancer, mesothelioma, and others. Ontario Regulation 838 deals with the proper procedures for handling of asbestos containing materials and exposure limits for airborne asbestos. Asbestos containing materials can be divided into two categories, namely, friable and non-friable. Friable materials can readily release asbestos fibres into the air whereas non-friable materials only release asbestos fibres when cut, shaped, or sanded. Work involving the disturbance of asbestos containing materials, particularly friable asbestos containing materials, must be carried out in accordance with the Regulation.

Typical materials suspected of containing asbestos included vinyl floor tiles, acoustic ceiling tiles, some forms of insulation, and some plaster/stucco. Samples of suspected asbestos containing materials were collected and submitted to Norrox Technical Services for microscopic analysis of asbestos content.

2.2.5 Lead-Based Paint

Due to the age of the building(s) on the property, paint used on the interior and/or exterior of the buildings could be lead-based. Because lead dust poses a health risk through inhalation, absorption through skin and/or ingestion, the concentration of lead in paint is a concern during demolition activities which involve the scraping, sanding, grinding or cutting of lead-based paints. In addition, loose or peeling lead-based paint may pose a risk to small children who may peel off and ingest the paint. There are currently no specific Canadian regulations, federal or provincial, dealing directly with the requirement for repair or removal of materials such as leaded paints. However, current regulations under the Hazardous Products Act specify that paints manufactured in Canada can contain no more than 5000 ppm of lead. Therefore, for the purposes of this assessment , paint containing more than 5000 ppm of lead is considered to be lead-based paint.

Representative samples of paint were submitted to Entech environmental laboratory for chemical analysis of lead content. The condition of the paint was also noted.

2.2.6 PCB-Containing Materials

An inspection of the buildings was carried out to identify the presence of potential PCB containing materials such as transformers, fluorescent light ballasts, etc. Environment Canada has indicated that ingestion, inhalation, or absorption of PCBs has been known to cause adverse health effects to the skin, eyes, and gastrointestinal system and PCBs are also a suspected carcinogenic agent in humans. By definition, PCB material is equipment, or any liquid or solid substance, that contains more than 50 mg of PCBs per kilogram (or 50 ppm). Equipment and substances containing less than 50 mg of PCBs per kilogram are not classified as PCB materials.

The inspection for PCBs included documentation of the following:

- type, number, and location PCB containing equipment
- equipment manufacturer
- serial number
- status of use

2.2.7 SERVICES

The presence and general condition of the water supply and sewage systems as well as the source of heating including any associated fuel storage tanks was documented.

2.2.8 UNDERGROUND STORAGE TANKS

A reconnaissance of the property was carried out to identify indications of underground storage tanks such as fill pipes or vent pipes normally associated with such tanks. Details of the age, history, contents, use and condition of any underground tanks were determined. If an underground storage tank was found to be: 1) leaking, 2) completely empty, 3) of unknown age, or 4) 25 years old (or greater), such information was documented and the PWGSC Project Manger was notified.

2.2.9 ABOVE GROUND STORAGE TANKS

An inventory of above ground storage tanks was carried out, including documentation of the location, contents, material of construction, approximate capacity, condition of the tank(s) and the presence or absence of a containment system.

2.2.10 OTHER STORAGE AREAS

Other storage areas which were found to contain hazardous and/or non-hazardous materials were documented including a brief inventory of the contents.

2.2.11 WASTE MANAGEMENT PRACTICES

Waste management practices were documented and debris found on the property during the site inspection was noted in the site reconnaissance report in Section 3.

2.2.12 Spills

A visual inspection of the property as well as tenant interviews were conducted to determine if any spills had occurred on the property which may have impacted the environmental quality of the property. A request for a search by the SAC and MCCR for reported spills in the area of the subject site is discussed in Section 2.3.

2.3 CONTACTS WITH REGULATORY AGENCIES

A request was submitted to MOEE's Freedom of Information and Protection of Privacy Office in order to determine if there were any outstanding violations or orders associated with the property, whether any previous investigations have been carried out at the property which were filed with the MOEE, and whether the property has ever been registered as a waste disposal site. Similarly, a search request was forwarded to the SAC to determine if any reported spills had occurred in the site vicinity. Note that the SAC's database dates back only to 1988 and many of the occurrences on file have only been reported voluntarily. As stated in Section 2.2.12, a request was submitted to the MCCR to provide information regarding the current or previous existence of registered underground tanks and/or historical reports of spills or leaks.

2.4 SAMPLING

2.4.1 Tap Water Sampling

Water samples were collected from taps in three (3) separate buildings, each supplied by a different well. The taps were allowed to run for approximately five (5) minutes prior to sampling. The water samples were collected in sample bottles provided by the analytical laboratory which had prepared the bottles with the required preservatives as part of the testing program. A total of four (4) sample bottles were provided by the laboratory for testing of various parameters for each sampling location. The bottles were filled to the top and care was taken not to overfill the bottles which could cause spillage of any preservatives. The samples were stored and transported in coolers containing ice packs in order to maintain a constant temperature of approximately 4°C. The samples were stored in a refrigerator overnight and were picked-up by the analytical laboratory the following morning for analysis on the same day.

2.4.2 WELL WATER SAMPLING

There are 5 wells on the property, two of which are filled in. No samples were taken directly from the wells, all were taken from taps directly associated with the operating wells.

2.4.3 SURFACE WATER SAMPLING

There is a small pond located on the south side of the property. The pond was not sampled as there were no indications of contamination of the water.

2.4.4 SOIL SAMPLING

No soil sampling was undertaken at the time of the site visit.

2.5 ANALYTICAL TESTING

The water samples collected from the tap were submitted to the analytical laboratory for analysis of physical and microbiological parameters including total and fecal coliform listed in the Canadian Council of Ministers of the Environment (CCME) Interim Canadian Environmental Quality Criteria for Contaminated Sites, 1991 (Remediation Criteria for Drinking Water) and the Guidelines for Canadian Drinking Water Quality (Health and Welfare Canada, 1993) which both specify the same criteria for the tested parameters. Where hydrocarbons or other compounds were suspected, the appropriate parameters were added to the analytical list, as approved by the PWGSC Project Manager. As part of the Quality Assurance/ Quality Control (QA/QC) program, duplicate samples were periodically taken and submitted for chemical analysis with the rest of the samples. In addition to the duplicates, Entech also carried out standard in-house QA/QC procedures.

Paint samples and the suspected asbestos containing materials that were collected at the time of the site visit were analyzed for lead and asbestos content, respectively. The lead concentrations were reported in ppm and the asbestos content was reported in percentage of Amosite and/or Chrysotile asbestos fibres.

3.0 PROPERTY INFORMATION AND SITE ASSESSMENT

3.1 GENERAL SITE INFORMATION

3.1.1. IDENTIFICATION / LOCATION					
Township:	*Markham*	Concession:	*10*	Lot	*22*
Common Property Name (Ex-owner)	*Camp Robin Hood*				
Street Address (Emergency I.D.#)	*Reesor Road, Markham*				
Property Identification Number (PIN)	*614110, 614111.1*				
Current Property Tenant	*Camp Robin Hood*				

3.1.2. LAND USE STATUS - History of Tenure		
	owner/tenant - type of land use	comments/concerns
present land use	*camp Robin Hood*	
past land use(s)	*farmland*	
1919 - present	*unknown*	
comments/discussion:		

3.2 PHYSICAL/BIOLOGICAL CHARACTERISTICS

3.2.1. PROPERTY BOUNDARIES / ADJACENT LANDS and LAND USE		
	description	potential concerns
north:	*farmland (PIN 614112)*	*none*
east:	*farmland (PIN 614113 to PIN 614117, inclusive)*	*none*
south:	*farmland (PIN 614104)*	*none*
west:	*Reesor Road, then farmland (PIN 614039)*	*none*
comments/discussion:		

3.2.2. SURFACE WATER / WETLANDS ON PROPERTY		*none identified*
description	location	comments/concerns
pond	*southeast of main office*	*no concerns*
sampling/analytical testing results:		

3.2.3. PHYSICAL CHARACTERISTICS
topography: *flat to rolling hills*
vegetative cover: *grass, mature trees, 2-3 acres of forested area*

3.2.4. WILDLIFE AND NATURAL HABITAT AREAS *none identified*	*X*
	Y/N/?
Does this property contain or constitute any specially designated natural protection/conservation zones? Specify:	*N*
Are there any protected species (plants/animals) present on the property? Specify:	*N*
Are there any significant habitat areas present on the property? Specify:	*N*
comments/discussion:	

3.3 STRUCTURES

3.3.1. INVENTORY OF STRUCTURES/FOUNDATIONS ON SITE *none identified*					
#	structure	~ size	age	construction	use
1	*house*	*70m²*	*~ 30 yrs*	*wood frame*	*baseball office*
2	*U-shaped barn*	*600m²*	*~40 yrs*	*wood frame, stone foundation*	*arts, crafts, music and drama building (some storage)*
3	*house*	*180m²*	*~40 yrs*	*wood frame*	*residential (employee for camp Robin Hood)*
4	*main office*	*345m²*	*~30 yrs*	*wood frame*	*main office*
5	*photo-graphy building (there are 2 smaller sheds attached to the north side of the building)*	*188m2*	*~40 yrs*	*wood frame with wood and metal siding*	*photography building (sheds used for storage)*
6	*program office*	*77m²*	*~30 yrs*	*wood frame*	*program office*
7	*nature building*	*25m²*	*~20 yrs*	*wood frame*	*nature building*

3.3.1. INVENTORY OF STRUCTURES/FOUNDATIONS ON SITE					none identified
#	structure	~ size	age	construction	use
8	*shed (northeast corner of property)*	*$9m^2$*	*~20 yrs*	*wood frame and sides*	*storage (ceiling tiles)*
9	*portables (4 welded together)*	*$280m^2$*	*~20 yrs*	*wood frame, metal siding*	*empty*
10	*shelter, east of pools*	*$150m^2$*	*~10 yrs*	*wood frame*	*shelter*
11	*pool shed #1*	*$16m^2$*	*~10 yrs*	*wood frame*	*houses pool equipment*
12	*pool shed #2*	*$12m^2$*	*~10 yrs*	*wood frame*	*houses pool equipment*
13	*pool shed #3*	*$19m^2$*	*~20 yrs*	*wood frame*	*houses pool equipment*
14	*garage with stage attached*	*$170m^2$*	*~20 yrs*	*wood frame, concrete floor*	*equipment storage, canoes, etc.*
15	*campcraft and 2 adjoining sheds*	*$18m^2$ $+4m^2 + 9m^2$*	*~20 yrs*	*campcraft wood frame sheds wood and tin*	*campcraft: office sheds: storage*
16	*fun and fitness portable*	*$105m^2$*	*~ 20 yrs*	*wood frame, wood clad*	*storage of gym equipment and games*
17	*Coopers Dome*	*$180m^2$*	*~20 yrs*	*open wood shelter with concrete floor*	*shelter for picnic tables, barbecues, etc.*
18	*archery huts*	*$28m^2$*	*~20 yrs*	*3 small attached sheds: wood frame and wood clad*	*presently empty; used for storage of archery equipment when the camp is open*
19	*arts and crafts building (old portable)*	*$65m^2$*	*~30 yrs*	*wood frame*	*storage of art supplies*
20	*mom's place*	*$70m^2$*	*20-30 yrs*	*wood frame, wood clad*	*kitchen with walk-in refrigerator, food storage*
21	*shed*	*$36m^2$*	*15 yrs*	*wood frame, wood clad*	*houses pool equipment*
comments/discussion:					

3.3.2. ASBESTOS-CONTAINING MATERIALS						
#	structure & location	sample description	asbestos fibre (%) Chrysotile	Amosite	friable/ non-friable	condition (quantity)
111.1-A1	*baseball office: kitchen*	*vinyl tile, off white*	*0*	*0*	*N/A*	*N/A*
111.1-A2	*baseball office: Lvg rm*	*vinyl tile under carpet*	*0*	*0*	*N/A*	*N/A*
111.1-A3	*NW shed attached to photography building*	*vinyl tile inside on floor*	*0*	*0*	*N/A*	*N/A*
111.1-A4	*photography building*	*acoustic tile*	*0*	*0*	*N/A*	*N/A*
111.1-A5	*shed, northeast corner of site*	*acoustic tile*	*0*	*0*	*N/A*	*N/A*
111.1-A6	*barn: overhead beams*	*textured plaster*	*0*	*0*	*N/A*	*N/A*
111.1-A7	*portables beside hitting cubicles*	*vinyl tile under carpet*	*1-5*	*0*	*non-friable*	*good ($280m^2$)*
111.1-A8	*portables beside hitting cubicles*	*acoustic tiles*	*0*	*0*	*N/A*	*N/A*
111.1-A9	*campcraft*	*acoustic tiles*	*0*	*0*	*N/A*	*N/A*
111.1-A10	*arts and crafts building*	*sheet flooring (linoleum)*	*0*	*0*	*N/A*	*N/A*
111.1-A11	*arts and crafts building*	*strips of flooring (felt layer)*	*0*	*0*	*N/A*	*N/A*
111.1-A12	*arts and crafts building*	*subfloor under sheet flooring*	*0*	*0*	*N/A*	*N/A*
111.1-A13	*mom's place*	*sheet flooring*	*0*	*0*	*N/A*	*N/A*
111.1-A14	*main office & Health Centre*	*vinyl floor tile*	*1-5*	*0*	*non-friable*	*good ($171m^2$)*
111.1-A15	*main office*	*plaster under white paint*	*0*	*0*	*N/A*	*N/A*
111.1-A16	*main office, second floor office*	*acoustic tiles*	*0*	*0*	*N/A*	*N/A*
111.1-A17	*house: kitchen*	*sheet flooring*	*0*	*0*	*N/A*	*N/A*
111.1-A18	*house: kitchen*	*sheet flooring, second layer*	*0*	*0*	*N/A*	*N/A*

3.3.2. ASBESTOS-CONTAINING MATERIALS						
#	structure & location	sample description	asbestos fibre (%) Chrysotile	Amosite	friable/ non-friable	condition (quantity)
111.1-A19	***house: kitchen***	***vinyl tile, third layer***	***0***	***0***	***N/A***	***N/A***
111.1-A20	***house: office area, kitchen***	***vinyl tile***	***0***	***0***	***N/A***	***N/A***
111.1-A21	***house: office area, kitchen***	***vinyl tile, second layer***	***0***	***0***	***N/A***	***N/A***
111.1-A22	***house: office area, bathroom***	***vinyl tile***	***0***	***0***	***N/A***	***N/A***
comments: ***Certificates of analysis are presented in Appendix C.***						

3.3.3. LEAD PAINT				***none identified***	X
#	structure	location	lead (ppm)	est. quantity	condition
111.1-P1	***baseball office:***	***kitchen: ceiling paint, white***	***1.63***	***14m²***	***some cracking***
111.1-P2	***baseball office***	***bathroom: wall and ceiling paint***	***355***	***20m²***	***peeling***
111.1-P3	***baseball office***	***living room: wall paint (light blue)***	***161***	***20m²***	***deteriorated at window***
111.1-P4	***baseball office***	***second floor bedroom: window sill paint,***	***113,770***	***5m²***	***peeling***
111.1-P5	***baseball office***	***exterior house paint, yellow***	***64,959***	***153m²***	***some areas peeling***
111.1-P6	***baseball office***	***exterior trim paint: green paint***	***64,846***	***10m²***	***peeling***
111.1-P7	***photography building***	***exterior green paint on wood siding***	***37,586***	***100m²***	***some sections peeling***
111.1-P8	***barn***	***over head beams: white paint (white wash)***	***75***	***>200m²***	***loose, flaky***
111.1-P9	***fun and fitness building***	***wall paint***	***4.7***	***100m²***	***cracks in paint, but not peeling***
111.1P10	***archery huts***	***exterior wall paint, brown***	***13,192***	***46m²***	***good condition, some faded areas***
111.1-P11	***arts and crafts building***	***ceiling paint***	***670***	***55m²***	***peeling***

3.3.3. LEAD PAINT				none identified	
#	structure	location	lead (ppm)	est. quantity	condition
111.1-P12	*arts and crafts building*	*painted chalk board, west wall, black paint*	*8,471*	*5m²*	*peeling*
111.1-P13	*program office*	*exterior paint, orange*	*18,936*	*102m²*	*peeling*
111.1-P14	*program office*	*interior ceiling paint, white*	*261*	*85m²*	*generally good, some peeling near dividers on ceiling*
111.1-P15	*main office*	*offices: white paint*	*40.6*	*118m²*	*good*
111.1-P16	*sleeping huts*	*exterior walls: brown paint with old green paint underneath*	*2,305*	*numerous lots, ~15m² each*	*some areas peeling*
111.1-P17	*house: office area*	*main floor living room: wood trim and window sill paint, white*	*53,668*	*10m²*	*good*
111.1-P18	*house*	*exterior wall paint, yellow*	*17,374*	*224m²*	*some peeling*
comments/discussion: ***Certificates of analysis are enclosed in Appendix C.***					

3.3.4. PCB-CONTAINING MATERIALS					none identified	
Is there any electrical equipment (ballasts, capacitors, transformers) on site?						
Was any of the equipment manufactured prior to 1979, or is askarel/PCB suspected? List below:						
equipment	# unit	location	manufacturer /date	serial number	PCB content	in use Y/N
fluorescent lights	*6*	*barn: junior arts and crafts*	*Philips*	*RQM 2S40-TPC (no date code visible)*	*possible*	*Y*
fluorescent lights	*10-20*	*barn: central portion*	*Philips*	*RQM 2S40-TPC (no date code visible)*	*possible*	*Y*
fluorescent lights	*42*	*portable*	*Advance*	*RQM 2S40 3TP*		*Y*
fluorescent lights	*4*	*wood framed shelter*				*Y*
fluorescent lights	*2*	*campcraft building*				*Y*
fluorescent lights	*6*	*fun and fitness*	*General Electric*	*17A 240T*	*possible*	*Y*
fluorescent lights	*1*	*arts and crafts building*				*y*

3.3.4. PCB CONTAINING MATERIALS					*none identified*	
equipment	# unit	location	manufacturer /date	serial number	PCB content	in use Y/N
fluorescent lights	***12***	***mom's place***	***General Electric***	***17A 240T***	***possible***	***Y***
fluorescent lights	***3***	***nature building***				***Y***
fluorescent lights	***27***	***main office***	***Magnetek***	***indicates no PCBs***	***No PCBs (some ballasts have been replaced recently; others are older and may contain PCBs)***	***Y***
fluorescent lights	***3***	***house***	***second floor, west wing***			***Y***
comments/discussion:						

3.3.5. UREA FORMALDEHYDE FOAM INSULATION			
	Y	N	?
Is urea formaldehyde insulation present on this property?			*X*
If yes, are there any indications it has been exposed to moisture?			*X*
comments/discussion: ***none identified***			

3.4 SERVICES

3.4.1. WELLS						none identified
#	location	type/depth	in use Y/N	condition	use of water	sampled Y / N
1	*west of barn*	*dug*	*Y*	*fair*	*washing, drinking, toilet*	*Y*
2	*north of main office*	*dug/~6.5m*	*Y*	*fair*		*Y*
3	*east of mom's place*	*drilled/~30m*	*Y*	*fair*		*Y*
4	*in main driveway*		*N*	*filled in*		*N*
5	*south of nature building*		*N*	*filled in*		*N*
comments/discussion: *for well locations, see site map (Drawing 2)*						

3.4.2. POTABLE WATER QUALITY - Exceedances					no potable water source	
source	sample date	criteria applied	parameter exceeded	measured conc. (ppm)	guideline (ppm)	health/ aesthetic
baseball office: kitchen tap	*20/09/96* *sample # 23159*	*Federal Drinking Water Quality Guidelines*	*none*			
mom's place: kitchen tap	*20/09/96* *sample # 23160*	*Federal Drinking Water Quality Guidelines*	*none*			
health centre	*20/09/96* *sample # 23158*	*Federal Drinking Water Quality Guidelines*	*Total Dissolved Solids*	*756*	*500*	*aesthetic*
comments/discussion: *the samples taken from the baseball office and mom's place were analyzed only for fecal and total coliforms, the samples taken from the health centre were analyzed for all parameters, including coliforms and metals. Certificates of analysis are presented in Appendix C.*						

3.4.3. WASTEWATER			none identified
system		description	concerns
	municipal		
	septic	**3 septic tanks and tile beds:** **1. tank is southeast of main office, tile bed is between swimming pools and pond** **2. east of house, there are 2 tile beds** **3. tile bed is east of baseball office**	
	other discharges		
comments/discussion:			

3.5 MATERIALS in USE, STORED, or DISCARDED

3.5.1. ABOVE-GROUND STORAGE TANKS							none identified	
#	in use Y/N	location	contents	age	material of construction	approx. capacity	condition	containment Y/N
1	**N**	**basement of baseball office**	**fuel oil**	**~30 yrs**	**steel**	**900L**	**fair**	**N**
2	**Y**	**south of pool shed**	**propane**	**~7yrs**	**steel**	**675L**	**good**	**N**
3	**Y**	**east of Cooper Dome**	**propane**	**~10 yrs**	**steel**	**10L**	**fair**	**N**
4	**Y**	**south of mom's place**	**propane**	**~15yrs**	**steel**	**4500 L**	**fair**	**N**
5	**Y**	**west of mom's place**	**propane**	**~5 yrs**	**steel**	**4500L**	**good**	**N**
6	**Y**	**southeast corner of office**	**propane**	**~5 yrs**	**steel**	**900L**	**good**	**N**
7	**Y**	**house: basement**	**fuel oil**	**~30 yrs**	**steel**	**900L**	**fair**	**N**
8	**Y**	**house: basement**	**fuel oil**	**~30 yrs**	**steel**	**900L**	**fair**	**N**
9	**N**	**east property line**	**sewage waste**	**un-known**	**concrete or steel**	**4500L**	**un-known**	**N**

comments/testing: ***According to the tenant, tank #9 was formerly used as a holding tank to collect sewage but is no longer in use and was reportedly filled. However, the tenant was not sure if the tank was still on the property and Shaheen & Peaker did not locate the tank***

3.5.2. UNDERGROUND STORAGE TANKS						*none identified*	*X*
#	in use Y/N	location	contents	material of construction	approx. capacity	date installed	protection Y/N
1							
2							
comments/discussion: ***No USTs with the exception of septic tanks.***							

3.5.3. EVIDENCE of SPILLS / STAINING			
	Y	N	?
Is there any evidence of spills, stained soil/pavement, vegetation distress on-site? Specify location, estimated extent, suspected material: ***- some staining under dumpster at east end of the site, behind portables*** ***- staining below chimney clean out valve in basement of house (see photo)*** ***- minor surficial staining around fill pipes on the west side of the house*** ***- minor surficial staining noted on the concrete floor at the base of the fuel oil tank in the basement of the house***	*X*		
sampling results:			

comments: ***none of the above-noted staining is likely to have a significant impact on the subject site and further action is not warranted in general. However, it would be prudent to have a heating/plumbing contractor evaluate the fuel oil tank in the basement of the house and determine if the tank is leaking on a continuous basis. If this is the case, the tank/supply line may require repairs to prevent further leakeage.***

location	sample date	criteria applied	parameter exceeded	measured concentration	guideline

3.5.4. NON-HAZARDOUS DEBRIS / DISCARDED MATERIALS		*none observed*	
type	approx. quantity	location	concerns
wood, empty drums and farm equipment	***located throughout ~200m^2 of barn***	***storage area in U-shaped barn***	***no concerns***
Additional comments ***The tenant indicated that some old car parts were present on the property but were not observed by Shaheen & Peaker.***			

3.5.5. HAZARDOUS MATERIALS STORED/USED/DISCARDED			none identified	
	type	description/quantity	status/use	location
	pesticides			
	chemicals	***small quantities of film developing chemicals, paint*** ***large quantities of pool chemicals***	***seasonal use (summers)*** ***pool chemicals - seasonal use***	***arts and crafts section of barn and cupboard in developing room of photography building*** ***paint is stored in the basement of the barn*** ***pool chemicals are stored in a large cupboard attached to the north side of the shed, north of mom's place***
	petroleum products	***small quantities of oil and gasoline***	***in use***	***basement of the barn***
	radioactive materials			
	waste materials			
	explosives			
	other			
comments/discussion:				

3.5.6. LANDFILLING			
	Y	N	?
Is there any evidence of placement of fill or other landfilling activity on site? Specify location, estimated extent, material suspected:		*X*	
Sample(s) collected and tested? Describe:			
Analytical results: Guidelines exceeded? Results:			

3.6 BACKGROUND & SUPPORTING INFORMATION

3.6.1. DOCUMENTS REVIEWED - FINDINGS					
DOCUMENTS REVIEWED:					
	1) Fisher-Lovegrove PTA Report	*X*	2) PPMO File Summary		3) Other

comments/concerns arising:

- PPMO File, Volume 2: water tested February 28, 1994, all parameters were under CCME drinking water quality guidelines except TDS at 568mg/L vs 500mg/L

- baseball office was once a residence and vacated in 1975, presently considered part of Camp Robin Hood

3.6.2. INDIVIDUALS / AGENCIES CONTACTED		
person contacted, title	affiliation (organization, dept.)	subject/outcome
Fred Ruiter	***Ministry of Environment and Energy, Freedom of Information and Protection of Privacy Office***	***no files on record regarding spills or environmental issues***
Carde Robyn	***Ministry of Consumer and Commercial Relations***	***no records of tanks or spills on subject property***
Larry Bell	***Tenant***	***see tenant interview in Appendix A***

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 BACKGROUND INFORMATION

A review of the PPMO file summary indicated that the water was tested in 1994 and all parameters were found to be under the CCME Drinking Water Guidelines except total dissolved solids at 568 mg/L versus the guidelines at 500 mg/L. The file also indicated that there is a Bell easement running through the property. There were no environmental reports previously documented regarding the property.

A response to the request for an environmental file search submitted to the MOEE indicated that the York-Durham Regional office of the MOEE and the Spills Action Centre have no records regarding spills or environmental issues regarding the subject property. A response to a request submitted to the MCCR indicated that there are no registered tanks nor report of spills on file with the MCCR regarding this property.

A review of the documents listed below indicated that no waste sites, industrial coal tar sites, or coal gasification plants had ever been in the immediate vicinity of the subject property.

- Waste Disposal Site Inventory - Ontario MOEE
- Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario - Ontario MOEE
- Inventory of Coal Gasification Plant Waste Sites in Ontario - Ontario MOEE

4.2 TENANT INTERVIEWS

The tenant interview did not reveal any environmental concerns.

4.3 ASBESTOS-CONTAINING MATERIALS

A total of 22 samples of potential asbestos containing materials were analyzed for asbestos content and the following materials were found to contain asbestos:

- vinyl floor tile, portables adjacent to hitting cubicles (1 to 5% Chrysotile)
- vinyl floor tiles, main office and health centre (1 to 5% Chrysotile)

Abatement of all asbestos containing materials is recommended, particularly if the asbestos containing material is friable. Abatement measures include removal and encapsulation of the asbestos containing material and all abatement work must be carried out in accordance with Ontario Regulation 838/90. Since the vinyl floor tiles in the main office are non-friable and in good condition and the vinyl floor tiles in the portables are covered by carpet, abatement can be deferred until such time as the condition deteriorates. These materials should be inspected periodically for signs of deterioration. The tenant and any contractors working at the site should be notified of the presence of asbestos to avoid any unnecessary contact and exposure.

4.4. Lead-Containing Materials

A total of 18 paint samples were collected from various buildings on the property and submitted for analysis of lead. The analytical results indicated lead concentrations ranging from 1.63 to 113,770 ppm. The sampling locations are described in section 3.3.3. Nine (9) of the 18 samples analyzed were found to contain lead concentrations over 5000 ppm:

- window sill paint in second floor bedroom of baseball office - 113,770 ppm (peeling)
- exterior house paint, baseball office - 64,959 ppm (peeling in some areas)
- exterior trim paint, baseball office - 64,846 ppm (peeling)
- exterior paint, photography building - 37,586 ppm (some sections peeling)
- exterior paint, archery huts - 13,192 ppm (good condition)
- painted chalk board, arts and crafts building - 8,471 ppm (peeling)
- exterior paint, program office - 18,936 ppm (peeling)
- wood trim and windowsill paint, main floor living room, house - 53,668 ppm (good)
- exterior wall paint, house - 17,374 ppm (some peeling)

Abatement of all lead-based paint (as defined in this report to be in excess of 5,000 ppm of lead) is recommended, particularly in the case of flaking or peeling paints. Abatement measures may include encapsulation, replacement, or removal of the lead-based paint. All abatement work should be performed in accordance with the worker protection protocols outlined in Ontario Regulation 843/90. If the lead-based paint is in good condition, abatement can be deferred until such time as the condition deteriorates; the paint should be inspected periodically for signs of deterioration. Regardless of the condition of the lead-based paint, the tenant and all contractors must be notified of the lead paint concentrations, to avoid unnecessary contact and exposure. Until such time as an abatement program is initiated, limited accessibility to the lead-based paint surfaces should be ensured for young children, as they are more susceptible to the effects of lead. The Canada Mortgage and Housing Council publication, Renovation, Lead in your Home, can provide further information on safety precautions.

4.5 PCBs

There were fluorescent light fixtures in use in many of the buildings as noted in Section 3.3.4. A number of representative ballasts were inspected for PCB content. Serial numbers noted on some of the ballasts suggest that the ballasts may contain PCBs as these numbers were indicative of the transition period between PCB containing ballasts and non-PCB containing ballasts. Other ballasts inspected during the site visit indicated the possible presence of PCBs but this could not be confirmed as the required date codes could not be accessed without dismantling the light fixtures. As such it should be assumed that at least a portion of the fluorescent lights on the property contain PCBs. The current Regulations do not prohibit the continued use of PCB bearing ballast and can remain in use. If identified or suspected PCB containing ballasts are taken out of service, the PCB content should be verified and the Pickering Project Management Office should be notified so that arrangements can be made for their storage in a registered PCB storage facility in accordance with the Canadian Environmental Protection Act and Ontario Regulation 362.

4.6 UFFI

No evidence of UFFI was noted on the premises during the site inspection.

4.7 STORAGE TANKS

There are nine (9) above ground storage tanks on the property including three (3) fuel oil tanks and five (5) propane tanks. These tank are in use when the Camp is operational. In addition, according to the tenant, a former 4500 L sewage waste tank was formerly used to store sewage prior to off-site disposal. The tenant indicated that the tank was previously filled with soil as it was no longer used but was unsure whether the tank was still present on the property. Shaheen & Peaker Limited did not observe the tank on the day of inspection. If the tank is still present, any remnants of sewage remaining in the tank will biodegrade naturally over time. Some staining was noted on the concrete floor under the fuel oil tank in the house used as a residence on the property. The staining is likely restricted to the surface of the concrete and likely has not had an adverse impact on the property. However, it would be prudent to have a heating/plumbing contractor evaluate the fuel oil tank in the basement of the house and determine if the tank is leaking on a continuous basis. If this is the case, the tank/supply line may require repairs to prevent further leakage.

4.8 WASTE MANAGEMENT

No waste materials were observed on the site which required disposal.

4.9 POTABLE WATER

Water samples obtained from the kitchen tap in the baseball office and the kitchen tap at mom's place (cafeteria) were analyzed only for fecal and total coliforms. The results showed that the tested concentrations did not exceed the Federal guidelines. Another sample was taken from the tap in the health centre. This sample was analyzed for total and fecal coliforms as well as general inorganic parameters listed in **Appendix C**. The concentration of total dissolved solids was found to be in exceedance of the CCME Drinking Water remediation criteria and the Guidelines for Canadian Drinking Water Quality (GCDWQ). The concentration of total dissolved solids is not considered health related but rather an aesthetic related parameter which may affect the taste and/or appearance of the water.

4.10 SURFACE WATER

A pond is located on the south side of the property. There were no indications of potential environmental concern and no water samples were taken.

4.11 SOILS

There was minor staining noticed in a few isolated areas as summarized below:

- under the dumpster located on the east side of the portables.
- below the chimney cleanout valve on the concrete floor in the basement of the house
- around the fill pipes on the west side of the house.

None of the above noted staining is likely to have had a significant impact on the subject site and further action is not required.

The recommendations of the EE can be summarized as shown in the following table.

Environmental Evaluation Recommendations		
	1.	The information presented in this report is complete, and satisfies the objectives of the Environmental Evaluaton. No further evaluation is warranted at this time.
X	2.	The information presented in this report is complete and satisfies the objectives of the Environmental Evaluation. The following concerns have been noted which require mitigation: o Water Quality ***X*** o Lead Paint ***X*** o Asbestos Containing Material ***X*** o Other: ***Check fuel oil tank/supply line in residence for leak***
	3.	The information presented in this report is complete, but does not yet satisfy the objectives set out for the Environmental Evaluation. Findings to date indicate that further investigation, beyond the scope of this evaluation, is required to adequately establish the environmental condition of the property.

5. LIMITATIONS

Shaheen and Peaker Ltd. have performed this environmental evaluation in accordance with local generally accepted professional practices and procedures at the time of the assessment within the scope suggested by Public Works and Government Services Canada. Occupancy use, codes, rules, and procedures change rapidly with time in the environmental engineering field and the reader is advised to update the findings and recommendations on a regular basis. The report herein comprises a statement of professional opinion based on visual observation and limited sampling and the reader is advised that visual observation is not effective in determining **all** conditions that affect environmental compliance. These services are not subject to any express or implied warranties and none should be inferred.

SHAHEEN & PEAKER LIMITED

Rodney Obdeyn, P.Eng.

Shaheen A. Ahmad, M.A.Sc., P.Eng.

APPENDIX A
TENANT INTERVIEW FORM

Pickering Lands Site PTA: *Tenant Interview*

Date: ***September September 20, 1996*** Interviewer: ***Simone Norman***

GENERAL

Background:

1. *What is your full name and address?*

Tenant Name:	***Larry Bell***
Address:	***141 Kingslake Road, Willowdale***
Phone Number:	***(416) 491-9651***
Contact:	***same***

Past and Present Land Use:

1. *Has equipment or vehicle maintenance ever taken place on any of the properties you currently lease?*

X Yes No Do Not Know

If yes, in what locations?

tractor maintenance near the barn

2. *Have any manufacturing or processing operations been carried out on-site?*

Yes ***X*** No Do Not Know

If yes, what was manufactured/processed, when and where were these activites conducted?

3. *Have any of the substances listed below ever been used, stored or disposed of on-site?*

X Yes No Do Not Know

If yes, please specify the substance and location where it is, or has been, used (U), stored (S) or disposed (D) of on-site

a) Pesticides	***yes, used and stored in a segregated area in the basement of the barn***
b) Soil amendments	***no***
c) Chemicals	***yes, pool chemicals stored behind the filter room***
d) Petroleum products	***yes, small quantities of gasoline and oil used and stored in a segregated area in the basement of the barn***
e) Radioactive material	***no***
f) Other wastes - specify	***no***

4. *Have spills or leaks of any of the following substances ever occurred on the property?*

Yes ***X*** No Do Not Know

If yes, please specify the substance and property and, if possible, the source and general site location of the spill or leak.

a) Pesticides
b) Chemicals
c) Petroleum products
d) Radioactive material
e) Other wastes - specify

5. a) *Are there, or have there ever been underground or aboveground tanks, drums or storage containers on the property?*

X Yes No Do Not Know

If yes, what did they contain and where were they located? Please also indicate their age, size, material of construction and present status of use.

#	in use Y/N	location	contents	age	material of construction	volume	condition
1	***N***	***holding tank, east side of site***	***waste (sewage)***		***steel***	***4500L***	***fair***
Comments: ***in the past there was no septic system, waste was stored in the holding tank and then disposed of off-site***							

b) *Have non-operational tanks been removed?*

Yes	No	X	Do Not Know	N/A

If yes, to your knowledge, was any soil testing carried out?

Yes	No	X	Do Not Know	N/A

6. *Is there currently any garbage, such as old cars, scrap metal, or car batteries, on the property?*

X	Yes	No	Do Not Know

If yes, what type and where is it located?

old car remnants located to the east of the property

7. *Has fill ever been placed on site?*

Yes	X	No	Do Not Know

If yes, what type and where was it placed?

Land Characteristics

1. *Do any easements, such as creek, railway or a Bell Canada easement, run through the property?*

Yes	X	No	Do Not Know

If yes, indicate the type and location of the easement:

Adjacent Land Use

1. *Are you aware of any spills, leaks or dumping of any of the following substances on adjacent properties?*

Yes   ***X*** No   Do Not Know

If yes, please specify the substance and, if possible, the source of the spill or leak and the general site location of the spill, leak, or dumping.

a) Pesticides
b) Chemicals
c) Petroleum products
d) Radioactive material
e) Other wastes - specify

2. *Do adjacent lands have any of the following concerns or problems?*

Concern	Yes/No/Do Not Know	PIN	Comments
a) odours: e.g., gasoline	***No***		
b) abnormally dark soil or concrete	***No***		
c) abnormal appearance of run-off	***No***		
d) concern with pesticide application	***No***		
e) garbage: i.e., drums, car batteries, tires	***No***		
f) septic tank problems	***No***		

RESIDENTIAL AND / OR FARM-RESIDENTIAL

Water Supply:

1. a) *What source supplies your drinking water? If drinking water is supplied from an individual well, what is the location of the well?*

there are three wells on the site: one close to the barn, another adjacent to the office and the other is located north of the pond (see site map)

b) *Any problems with the taste, smell, or appearance of your drinking water?*

Yes **X** No

c) *What types of water treatment systems do you have? For example, a softener or filters.*

chlorination system

2. a) *Are there any other wells which supply water for livestock or irrigation?*

Yes No **X** Do Not Know

If yes, where are they located?

b) *Any problems with water from these wells?*

Yes No Do Not Know

Comments:

3. *Is there a non-operational well present on the property?*

X Yes   No   Do Not Know

If yes, where is it located and what condition is it in?

there are two non-operational wells; one is located by the main driveway, the other is south of the nature building and west of the pond

Waste Water:

1. a) *What type of waste water system do you have on the property? For example, a cess pool; a tile bed; or a septic tank.*

septic tank
there are approximately 7 holding tanks (steel) in various locations that are pumped during the season (approximately 67,500L of waste per year)

b) *Where is the system located?*

the main underground septic tank is east of the main office and to the south, the tile bed is between the swimming pools and the pond

c) *If you have a septic tank, is it periodically pumped out?*

yes

d) *Have you had any problems with the wastewater system?*

no

AGRICULTURAL AND/OR FARM-RESIDENTIAL

1. *What structures, such as old foundations, barns or sheds, are on the property?*

one large barn, two houses, one main office building, six portables (school buildings and numerous outbuildings scattered over the property (see site reconnaissance form and site map)

Please specify the type of structure (i.e., barn, old foundation), its location, use, age, size and materials of construction.

most are wood frame, one is metal (see site reconnaissance form and site map)

2. *Are there any asbestos containing materials on the property?*

Yes	X	No	Do Not Know

If yes, where are they located and what is their condition?

3. *Is there any lead containing paint on the property?*

Yes	X	No	Do Not Know

If yes, where is it located and what is its condition?

4. *Is there any urea formaldehyde foam insulation on the property?*

Yes	X	No	Do Not Know

If yes, where is it located and what is its condition?

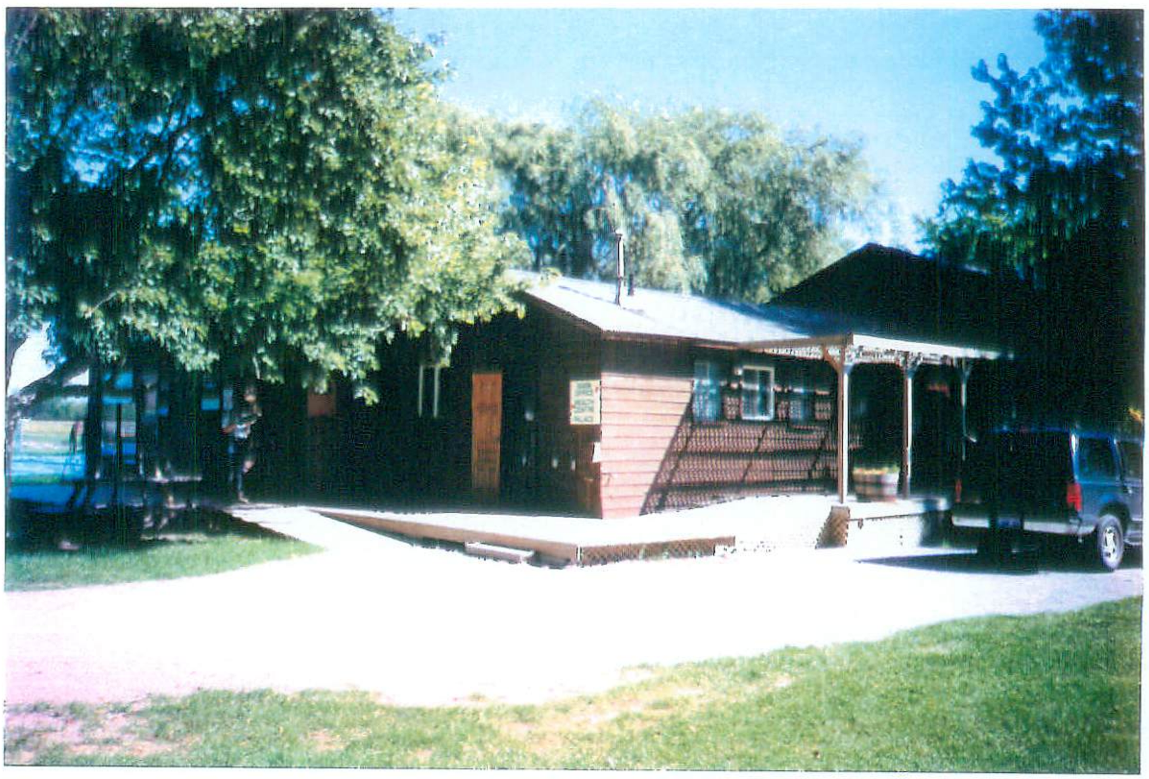
House - Used as the Baseball Office

House - Used as a Residence

U-Shaped Barn - View From the South

Photography Building and Attached Sheds - View From the North

East Wing of Barn - Storage of Photography Chemicals and Arts and Crafts Supplies



Main Office

Portables and Shelter (Used as Batting Cubicles)

Cooper's Dome - Open Wood Shelter

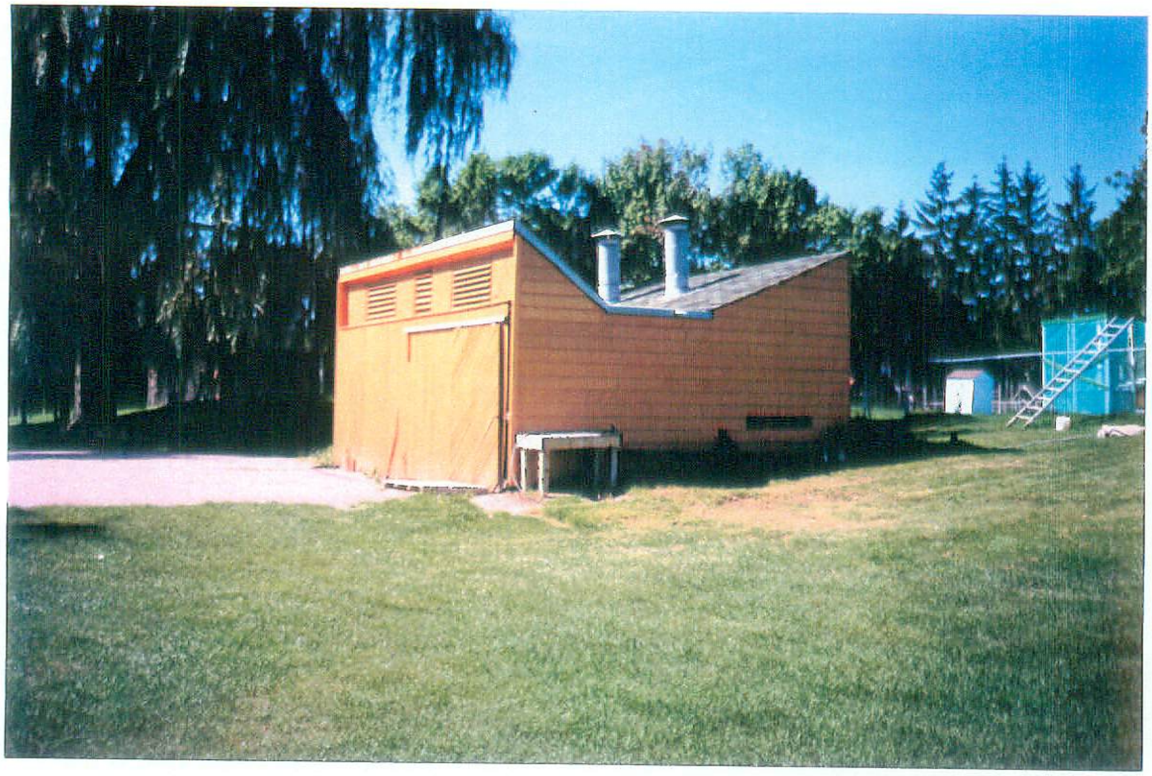
Fun and Fitness Portable

Arts and Crafts building

Camp Craft Building

Stage and Garage

Pool Sheds 1, 2 and 3 - Used to House Pool Equipment



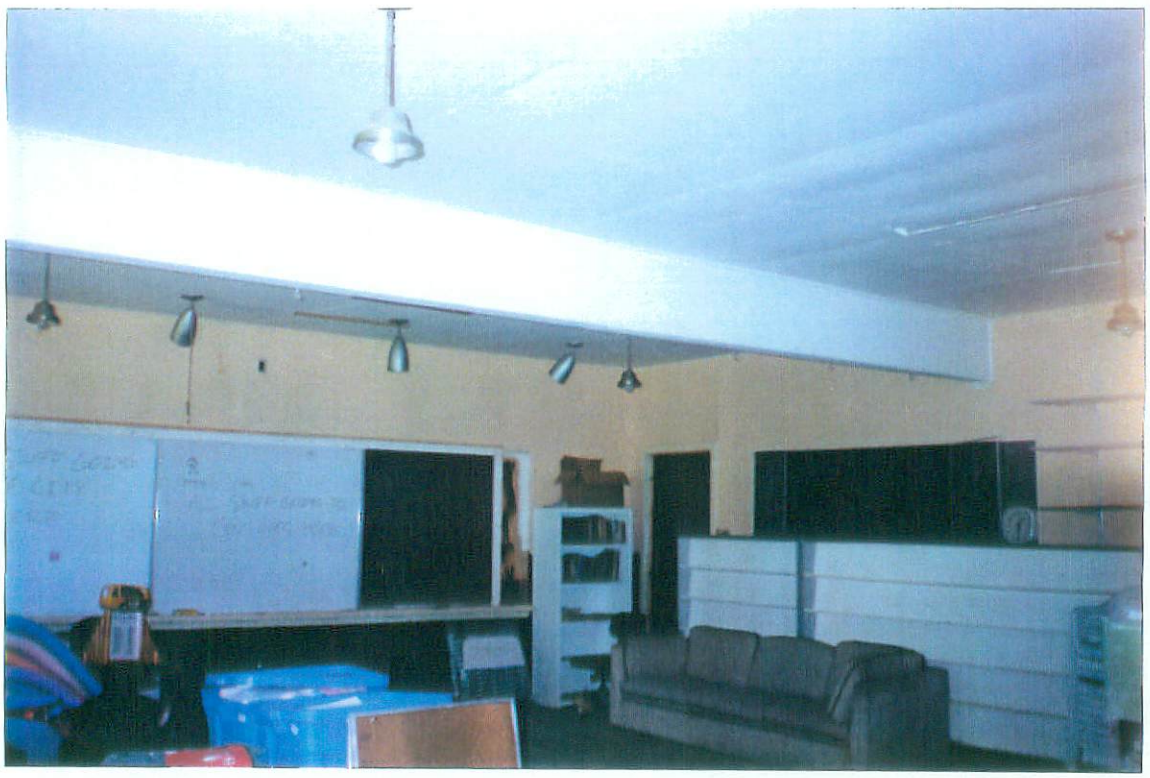
Shed - Houses Pool Equipment

Storage Cabinet for Pool Chemicals - Attached to Pool Equipment Shed

Nature Building

Mom's Place - Storage and Kitchen Facilities

Program Chalet



Interior of Program Chalet

Pond Located in the Southwest Quadrant of the Site

Canoe and Paddle Storage Hut Adjacent to the Pond

Client: Shaheen & Peaker
Attention: R. Obdeyn
Project : SP1490
P.O. :
Matrix: Paint
Date Received: Oct 01/96
Date Reported: Oct 04/96

ENTECH

A Division of Agri-Service Lab Inc.

6820 Kitimat Rd., Unit #4

Mississauga, ONT L5N 5M3

TEL: (905) 821-1112

FAX: (905) 821-2095

for Sam Sanyal, M.Sc., C. Chem
(ANN VIRAVONG, B.Sc)

MISC. SAMPLE TEST

PARAMETER	Units	Method Detection Limit (ug/g)	CONTROL SAMPLE DATA			TEST SAMPLE DATA							
			Expected (ug/g)	Found (ug/g)	Recovery %	23541 111.1 P1	23542 111.1 P2	23543 111.1 P3	23544 111.1 P4	23545 111.1 P5	23546 111.1 P6	23547 111.1 P8B	23548 111.1 P7
Lead	µg/g	1	1.00	1.04	104	1.63	355	161	113770	64959	64846	75	37586

Client: Shaheen & Peaker
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for Sam Sanyal, M.Sc., C. Chem
(ANN VIRAVONG, B.Sc)

MISC. SAMPLE TEST

PARAMETER	Units	Method Detection Limit (ug/g)	CONTROL SAMPLE DATA Expected (ug/g)	Found (ug/g)	Recovery %	TEST SAMPLE DATA 23549 111.1 P8A	23550 111.1 P9	23551 111.1 P10	23552 111.1 P11	23553 111.1 P12	23554 111.1 P13	23555 111.1 P14	23556 111.1 P15
Lead	µg/g	1	1.00	1.04	104	63.4	4.70	13192	670	8471	18936	261	40.6

Client: Shaheen & Peaker
Attention: R. Obdeyn
Project : SP1490
P.O. :
Matrix: Paint
Date Received: Oct 01/96
Date Reported: Oct 04/96

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for Sam Sanyal, M.Sc., C. Chem
(ANN VIRAVONG, B.Sc)

MISC. SAMPLE TEST

PARAMETER	Units	Method Detection Limit (ug/g)	CONTROL SAMPLE DATA Expected (ug/g)	Found (ug/g)	Recovery %	TEST SAMPLE DATA 23557 111.1 P16	23558 111.1 P17	23559 111.1 P18					
Lead	µg/g	1	1.00	1.04	104	2305	53668	17374					

NORROX

Technical Services

P. O. Box 20, Gilford, Ontario, L0L 1R0
Phone & Facsimile: (705) 456-5458

ASBESTOS FIBRE ANALYSIS IN BULK MATERIAL
(POLARIZED LIGHT MICROSCOPY WITH DISPERSION STAINING RESULTS)

Client: Shaheen & Peaker Limited
250 Galaxy Boulevard
Etobicoke, Ontario
M9W 5R8

Clients Project Name: PIN 110/111.1

Clients Project Number: SP1490

Attention: Ms. Fiona Wilson / Rodney Obdeyn

NORROX Project Number: 96120 - S October 4, 1996

LABORATORY SAMPLE NUMBER	CLIENT SAMPLE NUMBER / DESCRIPTION	ASBESTOS FIBRES	NON-ASBESTOS FIBRES	SOLID MATERIAL
96319-B	111.1-AS1 / VAT in kitchen area			>75% incl. vinyl and quartz
96320-B	111.1-AS2 / VAT nder carpet in living room			>75% incl. vinyl and quartz
96321-B	111.1-AS3 / Vinyl tile in NW storage building			>75% incl. vinyl and quartz
96322-B	111.1-AS4 / Acoustic tile in photography bldg.		Mineral Wool >75% Cellulose 5 - 10%	10 - 25%
96323-B	111.1-AS5 / Storage shed with acoustic tile		Mineral Wool 50 - 75% Cellulose 25 - 50%	10 - 25%
96324-B	111.1-AS6 / Textured plaster		Cellulose 1 - 5%	>75%
96325-B	111.1-AS7 / VAT in portables	Chrysotile 1 - 5%		>75% incl. vinyl & quartz

NORROX

Technical Services

P. O. Box 20, Gilford, Ontario, L0L 1R0
Phone & Facsimile: (705) 456-5458

ASBESTOS FIBRE ANALYSIS IN BULK MATERIAL
(POLARIZED LIGHT MICROSCOPY WITH DISPERSION STAINING RESULTS)

Client: Shaheen & Peaker Limited
250 Galaxy Boulevard
Etobicoke, Ontario
M9W 5R8

Clients Project Name: PIN 110/111.1

Clients Project Number: SP1490

Attention: Ms. Fiona Wilson / Rodney Obdeyn

NORROX Project Number: 96120 - S   October 4, 1996

LABORATORY SAMPLE NUMBER	CLIENT SAMPLE NUMBER / DESCRIPTION	ASBESTOS FIBRES	NON-ASBESTOS FIBRES	SOLID MATERIAL
96326-B	111.1-AS8 / Acoustic tile		Mineral Wool >75% Cellulose 1 - 5%	1 - 5%
96327-B	111.1-AS9 / Acoustic tile, craft building		Cellulose >75%	1 - 5%
96328-B	111.1-AS10 / Floor in arts and craft building		Cellulose 1 - 5%	>75%
96329-B	111.1-AS11 / Flooring (felt layer)		Cellulose 50 - 75%	Tar 25 - 50%
96330-B	111.1-AS12 / Sub floor in arts and crafts		Cellulose 50 - 75% Mineral Wool 25 - 50%	10 - 25%
96331-B	111.1-AS13 / Sheet flooring (felt layer), mom's place		Cellulose >75% Fibreous glass 1 - 5%	10 - 25%
96332-B	111.1-AS14 / Floor tiles - VAT	Chrysotile 1 - 5%		>75% incl. vinyl & quartz
96333-B	111.1-A15 / Plaster under white paint		Talc 1 - 5%	>75%

NORROX

Technical Services

P. O. Box 20, Gilford, Ontario, L0L 1R0
Phone & Facsimile: (705) 456-5458

ASBESTOS FIBRE ANALYSIS IN BULK MATERIAL
(POLARIZED LIGHT MICROSCOPY WITH DISPERSION STAINING RESULTS)

Client: Shaheen & Peaker Limited
250 Galaxy Boulevard
Etobicoke, Ontario
M9W 5R8

Clients Project Name: PIN 110/111.1

Clients Project Number: SP1490

Attention: Ms. Fiona Wilson / Rodney Obdeyn

NORROX Project Number: 96120 - S

October 4, 1996

LABORATORY SAMPLE NUMBER	CLIENT SAMPLE NUMBER / DESCRIPTION	ASBESTOS FIBRES	NON-ASBESTOS FIBRES	SOLID MATERIAL
96334-B	111.1-AS16 / Acoustic tile, 2nd floor office		Cellulose >75%	1 - 5%
96335-B	111.1-AS17 / Sheet flooring (felt layer), Kitchen		Cellulose >75%	10 - 25%
96336-B	111.1-AS18 / Sheet floor, 2nd layer		Cellulose <1%	>75% incl. vinyl
96337-B	111.1-AS19 / 3rd layer of kitchen flooring VAT			>75% incl vinyl and quartz
96338-B	111.1-AS20 / House, Office Area, Kitchen, floor VAT			>75% incl vinyl and quartz
96339-B	111.1-AS21 / House, Office, Kitchen, 2nd layer VAT			>75% incl vinyl and quartz
96340-B	111.1-AS22 / House, Bathroom, Office side VAT			>75% incl. vinyl & mica

NORROX

Technical Services

P. O. Box 20, Gilford, Ontario, L0L 1R0
Phone & Facsimile: (705) 456-5458

ASBESTOS FIBRE ANALYSIS IN BULK MATERIAL
(POLARIZED LIGHT MICROSCOPY WITH DISPERSION STAINING RESULTS)

Client:	Shaheen & Peaker Limited 250 Galaxy Boulevard Etobicoke, Ontario M9W 5R8	Clients Project Name: Clients Project Number:	PIN 110/111.1 SP1490

Attention: Ms. Fiona Wilson / Rodney Obdeyn

NORROX Project Number: 96120 - S   October 4, 1996

Bulk samples were analyzed using Polarized Light Microscopy with Dispersion Staining Techniques. This analysis is performed in accordance with the procedures specified in the "Code for the Determination of Asbestos from Bulk Samples", specified in "The Regulation Respecting Asbestos of Construction Projects and in Buildings and Repair Operations - made under the Occupational Health and Safety Act, Revised Regulations of Ontario (R.R.O.) 1990 / 838.

The % composition of asbestos and non-asbestos fibres reported are measured by subjective visual means based on specialized training, experience and comparison to standard area projections. As per the code all concentrations are reported under the following categories: >1%; 1 - 5%; 5 - 10%; 10 - 25%; 25 - 50%; 50 - 75%; and >75%.

All results pertain only to the material tested. NORROX Technical Services assumes no responsibility what so ever with the interpretation or application of these results.

Analyst and Authorized Signature

Norman Chudzinski, B.Sc.

Client: Shaheen & Peaker
Attention: Rodney Obdeyn
Project : PIN 111.1-Health Center
P.O. : SP1490
Matrix: Water
Date Received: Sept 19/96
Date Reported: Sept 25/96
Date Revised: Oct 22/96

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6820 Kitimat Rd., Unit #4
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SKSanyal
Sam Sanyal, M.Sc., C. Chem

MISC. SAMPLE TEST

PARAMETER	Units	Method Detection Limit (ug/ml)	CONTROL SAMPLE Expected (µg/ml)	Found (µg/ml)	Recovery %	SAMPLE DATA 23158 Health Center				
pH	-	-	9.08	8.59	95	7.04				
Nitrite-N	ug/ml	0.06	2.03	2.04	100	<0.06				
Nitrate-N	ug/ml	0.05	90.3	89.2	99	5.48				
Nitrite & Nitrate-N	ug/ml	0.05	3.23	3.10	96	5.48				
Fluoride	ug/ml	0.2	100	92.8	93	<0.2				
Chloride	ug/ml	0.2	200	202.9	101	125.3				
Sulphate	ug/ml	0.2	400	413	103	56.1				
Total Cyanide	ug/ml	0.005	0.005	0.005	100	<0.005				
Fecal Coliform	CFU/100ml	-	-	-	-	0				
Total Coliform	CFU/100ml	-	-	-	-	0				
TDS	ug/ml	2	133	133	100	756				
Arsenic	ug/ml	0.005	5	5.02	100	<0.005				
Barium	ug/ml	0.005	1	1.03	103	0.045				
Boron	ug/ml	0.002	1	0.95	95	0.046				
Cadimum	ug/ml	0.005	1	1.03	103	0.003				
Chromium	ug/ml	0.01	1	0.99	99	<0.01				
Copper	ug/ml	0.01	1	1.03	103	0.42				
Iron	ug/ml	0.01	10	10.1	101	<0.01				
Lead	ug/ml	0.01	1	1.03	103	<0.01				
Manganese	ug/ml	0.01	1	1.03	103	<0.01				
Mercury	ug/ml	0.0001	5.85	5.88	101	0.0005				
Selenium	ug/ml	0.005	5	5.21	104	<0.005				
Sodium	ug/ml	0.1	10	9.94	99	21.8				
Zinc	ug/ml	0.01	1	1.03	103	0.06				

Client: Shaheen & Peaker

Attention: Rod Obdeyn
Project : PIN 111.1-Baseball Office
P.O. : SP1490
Matrix: Water
Date Received: Sept 20/96
Date Reported: Sept 25/96

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A Division of Agri-Service Lab Inc.
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MISC. SAMPLE TEST

PARAMETER	Units	Method Detection Limit (ug/ml)	CONTROL SAMPLE Expected (ug/ml)	Found (ug/ml)	Recovery %	SAMPLE DATA 23159 Baseball Office				
Fecal Coliform	CFU/100ml	-	-	-	-	0				
Total Coliform	CFU/100ml	-	-	-	-	0				

Sam Sanyal, M.Sc., C. Chem
f (ANN VICKAVONG, B.Sc.)

Client. Shaheen & Peaker
Attention: Rod Obdeyn
Project : PIN 111.1-Mom's Place
P.O. : SP1490
Matrix: Water
Date Received: Sept 20/96
Date Reported: Sept 25/96

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FAX: (905) 821-2095

MISC. SAMPLE TEST

PARAMETER	Units	Method Detection Limit (ug/ml)	CONTROL SAMPLE Expected (ug/ml)	Found (ug/ml)	Recovery %	SAMPLE DATA 23160 Mom's Place				
Fecal Coliform	CFU/100ml	-	-	-	-	0				
Total Coliform	CFU/100ml	-	-	-	-	0				

Sam Sanyal, M.Sc., C. Chem
for (ANN VIRAVONG, B.Sc.)

REFERENCES

- Ontario Geological Survey Preliminary Map P2204, Ministry of Natural Resources, reprinted 1990
- Groundwater Resources of the Duffins Creek - Rouge River Drainage Basin, Ministry of Environment, 1977
- Public Works and Government Services Canada Pickering Project Management Office Property File Summary
- Aerial Photographs, Ministry of Natural Resources, 1954, 1971, and 1978
- Topographic Map 30M/14, Energy, Mines and Resources Canada, 1985
- Remediating Lead-Based Paint, Journal of Property Management, 1994
- Question and Answer Guide Concerning Polychlorinated Biphenyls, Environment Canada, 1986
- Waste Disposal Site Inventory, Ontario Ministry of Environment,1991
- Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario, Ontario Ministry of Environment, 1988
- Inventory of Coal Gasification Plant Waste Sites in Ontario, Ontario Ministry of Environment, 1987
- Water Quality Sourcebook, A Guide to Water Quality Parameters, Environment Canada, 1979

CAMP ROBIN HOOD

REMEDIAL ACTION PLAN
LEAD-BASED PAINT ABATEMENT

10234 Reesor Road, Markham, Ontario

DRAFT REPORT

NOVEMBER 24, 2016

Terrapex Environmental Ltd.
90 Scarsdale Road
Toronto, Ontario, M3B 2R7
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DISTRIBUTION:	**CAMP ROBIN HOOD**	**1 PDF COPY**	**PROJECT # CT2460.00**
	TERRAPEX ENVIRONMENTAL LTD.	**1 PDF COPY**	

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1.0 INTRODUCTION

Terrapex Environmental Ltd. (Terrapex) was retained by Camp Robin Hood (CRH) to prepare a remedial action plan (RAP) to address lead-based paint (LBP) on building exteriors and LBP impacts in soil at their facility located at 10243 Reesor Road in Markham, Ontario. The property is currently owned by Parks Canada, and forms part of the Rouge National Urban Park. It is our understanding that Parks Canada requires preparation of this LBP RAP as a requirement of CRH's lease of the property.

The CRH property comprises an area of approximately 10 hectares. The property is occupied with approximately 30 buildings used for the summer day camp including two residences, a barn, a main office building and approximately fifty day-use huts and structures used for various purposes. Recreational facilities on the property include three pools are varying in size from 400 square meters to 100 square meters, four baseball diamonds, three basketball courts and three tennis courts . A pond approximately 2,000 square meters in size is present in south west corner of CRH. The CRH property is bisected by an access road leading from Reesor Road leading to a small forest present near the back of the property. CRH also uses a forest located to the east for overnight camping.

The site location is presented on Figure 1. The general site layout is presented on Figure 2.

2.0 REMEDIATION OBJECTIVES

The *Surface Coating Materials Regulation* establishes limits of 90 parts per million (ppm) for lead and 10 ppm mercury in paint. Terrapex (2015) outlined four potential abatement alternatives for LBP:

- **Replacement** entails the complete removal of all substrates covered with LBP.
- **Removal** of LBP entails the complete removal of LBP from the substrates, typically accomplished by hand scraping, wet sanding and application of paint removers.
- **Enclosure** is the mechanical attachment of a rigid, durable barrier to the building components having LBP. Typical materials used are vinyl or aluminum siding, fibreboard, wood products and cementitious materials.
- **Encapsulation** is the application of a durable liquid coating or reinforced coating (lead barrier compound (LBC)) to prevent the contact of LBP dust/chips with the environment.

As outlined above, the complete removal of paint exceeding the *Surface Coating Materials Regulation* limits represent only two of the potential abatement alternatives for LBP.

The Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for protection of human health (SQG_{HH}) are the soil remediation objectives for the site. The SQG_{HH} for lead is 140 ug/g, 12 ug/g for arsenic and 6.6 ug/g for mercury in a residential/parkland land use. The SQG_{HH} are the applicable standards from which to evaluate LBP-related impacts in soil.

3.0 BACKGROUND

Relevant historic reports pertaining to the Site (CRH) and the scope of work for this project (lead-based exterior paint and surface or near-surface soil impacted by metals in paint) are:

- Environmental Evaluation Pickering Lands Site Phase 1D Commercial properties Property Identification Number 614110/111.1 prepared by Shaheen & Peaker Limited (S&P), dated March 24, 1997;
- Enhanced Phase I Environmental Site Assessment – Final Pickering Lands Site PIN614110, PIN614111 and PIN614112 – 10243 and 10251 Reesor Road, Markham , ON prepared by Genivar, dated March 2010;
- Public Works and Government Services Canada and Transport Canada Phase II/III Environmental Site Assessment PWGSC Project No. R.022117.003 PINS 614110, PIN 614111, and 614112 At The Pickering Land Site (PLS) (10243 and 10251 Reesor Road Markham, Ontario) prepared by Decommissioning Consulting Services Limited (DCS), dated March 2011;
- Screening Level Review, prepared by Terrapex, dated March 11, 2015;
- Public Works and Government Services Canada Supplemental Site Investigation and Lead Paint Survey, prepared by Terrapex, dated December 11, 2015; and
- Parks Canada Lead Sampling in Surface Soil Camp Robin Hood 10243 & 10251 Reesor Road, Markham, Ontario, prepared by Terrapex, dated May 17, 2016.

The Genivar (2010) report summarized lead paint sampling undertaken by others. Genivar (2010) collected soil samples from the ground where LBP surfaces were previously identified and found to be peeling. Soil samples from the following building locations were tested:

Soil Testing Locations (Genivar, 2010)

Building Number (Refer to Figure 2)	Building Name
1.	Baseball Office (North House)
7.	Program Office (Chalet)
10.	Owner's Residence – Office Area

The soil sample collected from each of these areas exceeded The CCME Soil Quality Guidelines for Human Health (SQG_{HH}) for lead in soil in a residential/parkland land use. The sample collected from the Program Office also exceeded the SQG_{HH} for arsenic. These three areas were the subject of DCS' investigation (2011). DCS's results provide general delineation of lead (and arsenic) in soil at the three buildings. No further soil investigation was undertaken by Terrapex (2015) adjacent to these three buildings.

In order to assess soil conditions in the vicinity of other buildings identified to have exterior LBP, Terrapex investigated shallow soil surrounding the following twelve buildings:

Soil Testing Locations (Terrapex, 2015)

Building Number (Refer to Figure 2)	Building Name
D.	Lunch Barn
E.	TBS Centre
F.	Maintenance Area
G.	Mom's Place
K.	Dance Studio
L.	Camp Craft
N.	Castle
W.	Will Scarlet Building
X1.	Shed behind Building "X"
Y.	Friar Tuck Building
2.	Photography Building (Coaches' Corner)
5.	Archers Huts

The only Terrapex soil sample that exceeded the SQG_{HH} for lead was collected from 0-15 cm depth and located adjacent to the south wall of the Photography Building/Coaches' Corner (Building 2).

The extent of soil contamination resulting from LBP is shown on Figure 3A (overall site plan) and Figures 3B through 3E (details of Baseball Office/North House (3B), Photography Building/Coaches' Corner (3C), Program Building (3D) and Owner's Residence (3E)).

In addition to LBP, Terrapex (2015) identified one building (Dance Studio (Building K as shown on Figure 2)) with exterior paint exceeding the *Surface Coating Materials Regulation* limit of 10 ppm mercury in paint. The locations of buildings identified as having LBP and mercury in paint above the *Surface Coating Materials Regulation* limits are shown on Figure 4.

No soil samples exceeded the SQG_{HH} for mercury, therefore mercury is not present as a contaminant in soil at the CRH site.

Terrapex (May 2016) sampled soil surrounding the former location of the Castle ("N" on Figure 2) which was demolished by CRH staff. All soil samples were below the SQG_{HH} for lead, therefore lead is not present as a contaminant in soil in the vicinity of the former Castle.

The table below summarizes the locations of exterior paint exceeding the *Surface Coating Materials Regulation* limits and soil exceeding the SQG_{HH} for lead and arsenic.

Summary of Locations with LBP and LBP-contaminants in Soil

Building Number (Refer to Figure 2)	Building Name	Paint exceeding *Surface Coating Materials Regulation* limits	Soil exceeding SQG_{HH} as a Result of LBP
D.	Lunch Barn	X - lead	
E.	TBS Centre	X - lead	
F.	Maintenance Area	X - lead	
G.	Mom’s Place	X - lead	
K.	Dance Studio	X - mercury	
L.	Camp Craft	X - lead	
N.	Castle	None – demolished 2016	
W.	Will Scarlet Building	X – lead, mercury	
X1.	Shed behind Building "X"	X - lead	
Y.	Friar Tuck Building	X - lead	
1.	Baseball Office (North House)	X - lead	X - lead
2.	Photography Building (Coaches’ Corner)	X - lead	X - lead
5.	Archers Huts	X - lead	
7.	Program Office	X - lead	X – lead, arsenic
10.	Owner’s Residence – Office Area	X - lead	X – lead, arsenic

4.0 REMEDIAL ACTION PLAN (RAP)

4.1 LEAD-BASED PAINT ABATEMENT

Terrapex (2015) outlined four potential abatement alternatives for LBP:

- **Replacement** entails the complete removal of all substrates covered with LBP.
- **Removal** of LBP entails the complete removal of LBP from the substrates, typically accomplished by hand scraping, wet sanding and application of paint removers.
- **Enclosure** is the mechanical attachment of a rigid, durable barrier to the building components having LBP. Typical materials used are vinyl or aluminum siding, fibreboard, wood products and cementitious materials.
- **Encapsulation** is the application of a durable liquid coating or reinforced coating (lead barrier compound (LBC)) to prevent the contact of LBP dust/chips with the environment.

To date, LBP abatement activities undertaken by CRH staff have included the removal of the Castle, which was subsequently replaced with a new structure; enclosure of the Archers' Huts by attaching pine boards to the exterior of the structures, and encapsulation of buildings by applying new latex-based or non-lead-based paints and stains to the exposed exterior surfaces with LBP. Further details regarding the LBP abatement activities completed, as well as the abatement activities planned for the future are summarized in the table below.

Building Number (Refer to Figure 2)	Building Name	LBP Abatement Activities Taken to Date	Proposed LBP Abatement Activities (All Structures) and Soil Remediation Activities (Buildings 1, 2, 7 and 10 only)
D.	Lunch Barn	No action to date	Sealing building with LBC (encapsulation).
E.	TBS Centre	No action to date	Sealing building with LBC (encapsulation).
F.	Maintenance Area	Building repainted within last 5 years	Monitor building exterior to ensure integrity of paint is sufficient to continue to prevent the contact of LBP dust/chips with the environment (encapsulation).
G.	Mom's Place	Building completely repainted with latex paint in last 3 years; all previous surfaces sealed.	Monitor building exterior to ensure integrity of paint is sufficient to continue to prevent the contact of LBP dust/chips with the environment (encapsulation).
K.	Dance Studio	No action to date	Sealing buildings with LBC (encapsulation).
L.	Camp Craft	Building has been re-stained.	Monitor building exterior to ensure integrity of stain is sufficient to continue to prevent the contact of LBP dust/chips with the environment (encapsulation).
N.	Castle	Demolished 2016 (removal/replacement).	None required – abatement complete (removal/replacement).
W.	Will Scarlet Building (Theatre Arts)	Building completely repainted; all previous surfaces sealed.	Monitor building exterior to ensure integrity of paint is sufficient to continue to prevent the contact of LBP dust/chips with the environment (encapsulation).
X1.	Shed behind Building "X"	No action to date	Demolition and removal (removal).
Y.	Friar Tuck Building (Archers Portable)	Building completely repainted with latex paint in Spring of 2015; all previous surfaces sealed.	Monitor building exterior to ensure integrity of paint is sufficient to continue to prevent the contact of LBP dust/chips with the environment (encapsulation).
1.	Baseball Office (North House)	Building completely repainted within last 2 years; all previous surfaces sealed.	LBP - Monitor building exterior to ensure integrity of paint is sufficient to continue to prevent the contact of LBP dust/chips with the environment (encapsulation). Soil – remedial excavation .
2.	Photography Building (Coaches' Corner)	No action to date	LBP - Sealing building with LBC (encapsulation). Soil – Remedial excavation.
5.	Archers Huts	Re-clad with pine board in Fall 2015 (enclosure).	None required – abatement complete (enclosure).
7.	Program Office (Chalet)	Latex-based wood stain applied over last ten years.	LBP - Monitor building exterior to ensure integrity of stain is sufficient to continue to prevent the contact of LBP dust/chips with the environment (encapsulation). Soil – Remedial excavation.
10.	Owner's Residence – Office Area	Building repainted within last 5 years	LBP – Discuss application of siding with Town of Markham/Parks Canada (enclosure). If Town does not allow siding to be installed, seal with LCB (encapsulation). Soil – remedial excavation.

4.1.1 REMOVAL/DEMOLITION

CRH intends to demolish the small shed (X1) located behind Building “X” (refer to Figure 2). During demolition, care should be taken to line the ground with tarps in order to prevent potential soil contamination.

The demolition debris should be transported off-site to a licenced waste disposal facility.

4.1.2 SUBSTRATE PREPARATION

CRH intends to encapsulate or enclose the LBP in Buildings 1, 2, 7 and 10. Prior to enclosing or encapsulating a structure, existing exterior surfaces should be stripped to the extent practical using hand tools or hand-held power tools to remove loose paint. Care should be taken to line the ground with tarps below the place where work is being undertaken in order to prevent potential soil contamination.

Once the loose paint has been removed, the structures to be enclosed may be covered with Tyvek HomeWrap (or equivalent), which will act to prevent further paint flaking, and act as a protective layer below the cladding layer.

Gloss painted surfaces should be wet sanded or prepared with a deglossing product to ensure good adhesion prior to application of LBC (encapsulation).

Health and safety requirements to be followed are presented in Section 5.0.

4.1.3 ENCLOSURE

Enclosure is the mechanical attachment of a rigid, durable barrier such as vinyl or aluminum siding, fibreboard or wood products, to the building components of concern. In order to ensure proper enclosure, sealing all edges and seams with caulking (or an equivalent sealant) to create a dust-tight seal is required.

CRH intends to enclose Building 10 with siding. In the event that siding the building is not allowed by the City of Markham or Parks Canada, Building 10 will be encapsulated with LBC.

4.1.4 ENCAPSULATION

CRH intends to encapsulate Buildings 1, 2 and 7 with LBC. LBC can be applied using an airless sprayer, brush or roller. In order to obtain the recommended thickness of LBP (typically 0.18 mm (7 mils)) two brush or roller coats may be required.

Health and safety requirements are provided in Section 5.0. Refer to the respiratory protection requirements when using spray equipment.

4.1.5 MONITORING OF BUILDING EXTERIORS

Monitoring of the building exteriors is intended to be an annual activity, undertaken by CRH staff in the spring. The monitoring will comprise a visual inspection.

4.2 SOIL REMEDIATION

Prior to undertaking the soil remediation activities at a building location, it is necessary to complete the LBP abatement activities at that structure. Otherwise, there is a risk that the exterior LBP could re-contaminate the soils that have been remediated. Therefore, the soil remediation plan will be implemented following LBP abatement at the Baseball Office (North House), Photography Building (Coaches' Corner), Program Office (Chalet) and Owner's Residence.

The soil remediation activities will be undertaken by CRH staff, under the regular supervision of Terrapex field technicians and project management staff. The scope of work for the soil remediation is outlined below.

4.2.1 PRE-FIELD ACTIVITIES

Prior to the commencement of the field program, Terrapex will conduct the following tasks, as described below:

- *Information Review:* Existing information for the subject site will be assembled and reviewed with CRH staff. As outlined above, Terrapex has conducted a review of the previous environmental reports available for CRH. The areas requiring soil remediation are presented in Figures 3A through 3E.

- *Field Program Design:* Terrapex will carefully oversee the field program to maximize the efficiency of the time spent by CRH staff, and minimize the possibility of unforeseen circumstances jeopardizing the success of the program. The work program will include:

    - reviewing site plans showing the known areas of contamination and previously remediated areas (refer to Figures 3A through 3E) in the field;

    - having copies of relevant portions of previous reports such as data tables and figures available in the field;

- outlining the anticipated areas and depths of excavation in the field (refer to Table below);

Building Number	Building Name	Estimated Area of Impacted Soil (m^2)	Estimated Number of Confirmatory Samples	Estimated Depth of Impacted Soil (m)	Estimated Volume of Impacted Soil (m^3)
1.	Baseball Office (North House)	62.5	6	0.2	12.5
2.	Photography Building/ Coaches' Corner	45.5	5	0.15	6.8
7.	Program Building (Chalet)	29.5	5	0.2	5.9
10.	Owner's Residence - office area	93	6	0.2	18.6

- field screening of samples to guide the excavation program;
- adjusting the numbers and locations of confirmatory samples for laboratory analysis, based on the excavation sampling requirements outlined below;

Area of Excavation (m^2)	Minimum Number of Floor Samples Required	Minimum Number of Wall Samples Required
<25	2	2
>25 - 50	2	3
>50 - 100	3	3
>100 - 250	3	5

- collection of a soil sample for waste characterization purposes;
- arranging for adequate storage containers (e.g. lugger bins) for contaminated soil (by CRH);
- arranging for a MOECC-licenced waste hauler to transport contaminated soil to an MOECC-licenced disposal facility (by CRH); and
- preparing a health and safety plan.

• *Permits:* It is understood that permits will not be required to undertake this work. Any permitting that may be required will be the responsibility of CRH.

• *Health and Safety Plan:* Terrapex will prepare a site-specific health and safety plan (HASP) which will address potential hazards, exposure to lead and arsenic in soil, and the sampling and handling of potentially impacted material that may be encountered on the subject site. The HASP will be prepared in accordance with the *Occupational Health and Safety Act*, Revised Statutes of Ontario (R.S.O.) 1990.

One copy of the HASP will be submitted to CRH prior to the initiation of the initial site visit (approximately one week in advance) and, following acceptance, one copy of the HASP will remain with the CRH field crew on the site and one with the Terrapex field supervisor for the duration of the field activities.

- *Service Clearances:* Terrapex will contact Ontario 1-Call to obtain utility clearances. We have also allowed for a private locator to provide service locates within the proposed work areas. Since all the excavation work will be shallow (< 0.3 m), the potential for damage to buried utilities is low.

- *Pre-Field Teleconference:* If necessary, Terrapex will attend an initial project teleconference with CRH and Parks Canada staff.

- *Subcontractor Arrangements:* Terrapex will subcontract the services of other firms to complete specialized assignments for the project, as described below:

  - Laboratory analytical services will be provided by an independent laboratory accredited by the Standards Council of Canada (SCC) or the Canadian Association of Laboratory Accreditation (CALA).

  - All other subcontractors (waste haulers, waste receiving site, backfill suppliers, any supplemental on-site equipment requirements) shall be the responsibility of CRH.

4.2.2 REMEDIATION FIELD ACTIVITIES

During the field program, Terrapex will oversee the following tasks by CRH, as described below:

- *Excavation:* Terrapex will provide one field technician to oversee the excavation work. Terrapex will be responsible for directing the excavation work, conducting field screening as needed to assist in determining which soil should be excavated, and collecting verification samples for laboratory analysis.

  It is anticipated that the excavation work (approximately 230.5 m^2 in total) will take ten (10) days. Based on the information from the previous reports, the areas to be excavated will be delineated and marked in the field.

- *Backfilling:* Once an area has been deemed remediated (as determined by laboratory analysis of excavation confirmation samples), it will be backfilled to the extent practicable with soil or organic material sourced from elsewhere on the site, or from a commercial supplier. The location of the backfill source will be discussed with CRH. The frequency of laboratory analysis of backfill samples shall be a minimum of one per 160 cubic metres.

  In areas to be re-vegetated, backfill will be covered with topsoil and will be sodded or seeded.

- *Verification Soil Sampling: Soil samples will be collected from the remediated areas according to sampling and preservation protocols provided in the CCME Guidance*

Manual on Sampling, Analysis, and Data Management for Contaminated Sites, Volumes I and II (December 1993), and the Ontario Ministry of Environment and Energy (MOEE) Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario (December 1996). Soil samples will be collected during using stainless steel trowels. To prevent cross-contamination, the trowels will be sprayed with non-phosphate detergent and rinsed with clean water between uses, and the sampler will wear new nitrile gloves.

Each soil sample will be inspected in the field by the Terrapex technician who will document the geological properties of the materials encountered, as well as any visual and/or olfactory evidence of contamination on a designated field form.

- *Soil Analytical Program:* Verification soil samples and field duplicates (1 in 10 samples) for quality assurance/quality control (QA/QC) purposes, will be selected for laboratory analysis and submitted to an accredited laboratory for analysis of lead (and arsenic at buildings 7 and 10). Backfill soil samples will be analysed for metals and inorganics.

  Soil samples for analysis will be collected in appropriate certified, pre-cleaned containers provided by the laboratory (no preservative is required), packed in coolers with ice or ice-packs, and shipped to the laboratory, accompanied by completed chain-of-custody forms.

  In addition, one composite soil sample representing the excavated material will be prepared (from a subset of selected samples) and submitted for a Toxicity Characteristic Leaching Procedure (TCLP), with the leachate analyzed for metals and general inorganics. Additional analyses will be conducted as required by the receiving facility for waste characterization purposes. *It is assumed that the results will indicate that the material is non-hazardous waste.*

- *Measuring:* The extents of the excavated areas and the locations of the samples will be carefully measured in the field relative to the structures, and the depths of the excavated areas will be measured relative to adjacent ground surfaces.

- *Photographic Record:* A detailed photographic record will be made of all field activities and the general site features. Still photographs, including panoramic views of the site, will be taken each day, and of each excavation.

- *Soil Transportation and Disposal:* The excavated soil will be transported by an MOECC-licenced hauler to an MOECC-licenced disposal facility (to be arranged by CRH).

4.2.3 DATA INTERPRETATION

Following the completion of the field program, Terrapex will conduct the following tasks, as described below:

- *Laboratory Data Interpretation:* When the analytical results are received, compare the lead results to the designated cleanup criterion (SQG_{HH}) of 140 ug/g, the arsenic results to the SQG_{HH} of 12 ug/g, and the TCLP results to the leachate quality criteria provided in Schedule 4 of Ontario Regulation 347 (General - Waste Management).

4.2.4 REPORTING

A detailed report will be prepared based on the findings of the work program, as described below:

- *Draft Remediation Report*: One electronic copy of the Draft Report will be submitted to the CRH which will include the following:
  - an Executive Summary;
  - a description of the site and the physical site setting;
  - summaries of previous investigations;
  - a detailed description of the methodology for the LBP abatement and soil remediation, including the QA/QC program;
  - a discussion of the disposal method and location for the contaminated soil;
  - discussions and tables of laboratory analytical results compared to the appropriate criteria;
  - recommendations for any ongoing monitoring;
  - site plans, photographs, laboratory Certificates of Analysis, bills of lading from the shipping companies and landfill, references, and other relevant supporting information in appendices.
- *Final Remediation Report*: Terrapex will address comments provided by CRH and prepare the Final Report.

5.0 PROJECTED RISK ELEMENTS

The primary risk elements for this project involve potential exposure to lead and mercury while undertaking LBP abatement activities, and to lead and arsenic during soil remediation activities. Dermal contact, ingestion and inhalation of particulates are the main risk factors.

Symptoms of overexposure to these metals can include:

- Physical or mental weariness, insomnia, indecision, irritability
- Pallor, anemia
- Irritated nasal membrane, eye irritation
- Headaches, dizziness and nausea
- Abdominal pain, colic
- Cough, bronchial pneumonia

In order to eliminate and mitigate these risk factors, implementation of a health and safety plan is required.

A site specific health and safety plan will be prepared approximately one week prior to commencement of the work. The components of the health and safety plan are presented below.

5.1 PROHIBITIONS AND REQUIREMENTS

The following are prohibited for Terrapex staff, during working hours or while on Company business:

- Working or driving while under the influence of alcohol or illegal drugs;
- Use, consumption, possession, cultivation, manufacture, storage, distribution, offering or sale of alcohol, illegal drugs or drug paraphernalia;
- The possession, storage or use of prescription medications prescribed for another individual;
- The distribution, offering or sale of medications; and
- Smoking in a contaminated area or anywhere in a workplace except in a designated smoking area.

It is understood that CRH staff will abide by the above-noted practices during LBP abatement and soil remediation activities.

5.2 SITE SAFETY CONSIDERATIONS

5.1.2 LBP ABATEMENT

During LBP abatement activities, CRH and Terrapex staff shall:

- Ensure that there is no eating or drinking within the contaminant zones
- Wear Level “D-Modified” Personal Protective Equipment:
  - Work clothes or coveralls
  - Safety boots (CSA Z195 Grade 1)
  - Safety glasses or goggles (CAN/CSA Z94.3)
  - Half-face respirator sufficient to avoid contact with contaminated dust during paint removal (N100)
  - Dust mask optional (N95) when painting or applying sealants with a brush or roller
  - Half-face respirator with N,R or P 95+ organic vapour cartridge if applying paints or sealants by spraying
  - Hard hat (CAN/CSA Z94.1 Class E)
  - Gloves
  - Hearing protection (CSA Standard Z94.2-02) (as required when power equipment is in use)
- When working at heights above 3 m:
  - Proper training in fall protection is required
  - Fall protection must be worn
  - Ladders are not a suitable work platform
- In order to prevent potential contamination of the ground surface from LBP, ensure that a tarp or cover is placed below the work area where LBP abatement is occurring

5.2.2 SOIL REMEDIATION

During remediation and excavation activities, CRH and Terrapex staff shall:

- Ensure that there is no eating or drinking within the contaminant zones
- Wear Level "D" Personal Protective Equipment:
  - Work clothes or coveralls
  - Safety boots (CSA Z195 Grade 1)
  - Safety glasses or goggles (CAN/CSA Z94.3) (as needed)
  - Hard hat (CAN/CSA Z94.1 Class E)
  - Gloves
  - Hearing protection (CSA Standard Z94.2-02)
  - Safety vest (O. Reg. 213/91 S.69.1, or CSA Z96.09 (class 2 level 2))
- Use cones, flags, barricades and caution tape as required to define work areas and restricted areas
- Maintain visual contact with equipment operators at all times
- Keep work area uncluttered in order to prevent slips, trips and falls

6.0 SCHEDULE

LBP abatement of the Lunch Barn (D), TBS Centre (E), Dance Studio (K) and Photography/Coaches' Corner (2) are proposed to be undertaken in the Spring of 2017. All of these buildings are proposed to be encapsulated with LBC.

The shed behind "Building X" (X1) is proposed to be demolished. This could be undertaken at any time in 2017.

Soil remediation of the LBP-impacted soils surrounding the Baseball Office/North House (1), Photography Building/Coaches' Corner (2), and Program Building/Chalet (7) are proposed to be undertaken in the Spring of 2017.

In order to allow CRH time to discuss enclosure of the Owner's Residence (10) by siding with the Town of Markham and Parks Canada, the LBP abatement, and subsequent soil remediation of the Owner's Residence is proposed to take place in the Spring of 2018.

7.0 LIMITATIONS

This project and report have been prepared in accordance with the terms of reference for this project as agreed upon by our Client Camp Robin Hood and Terrapex Environmental Ltd. and generally accepted engineering or environmental consulting practices in this area. The reported information is believed to provide a reasonable representation of the general environmental conditions at the site, however, the data were collected at specific locations and conditions may vary at other locations. The assessment was also limited to a study of those chemical parameters specifically addressed in this report.

This report has been prepared for the sole use of Camp Robin Hood. Terrapex Environmental Ltd. accepts no liability for claims arising from the use of this report, or from actions taken or decisions made as a result of this report, by parties other than Camp Robin Hood.

Terrapex Environmental Ltd. also authorizes Parks Canada to rely on the report, to the same extent and subject to the same limitations as the party for whom the report was prepared.

Sincerely,

TERRAPEX ENVIRONMENTAL LTD.

Draft for Review

Steven Ruminsky, P.Eng., P.Geo.
Senior Project Manager

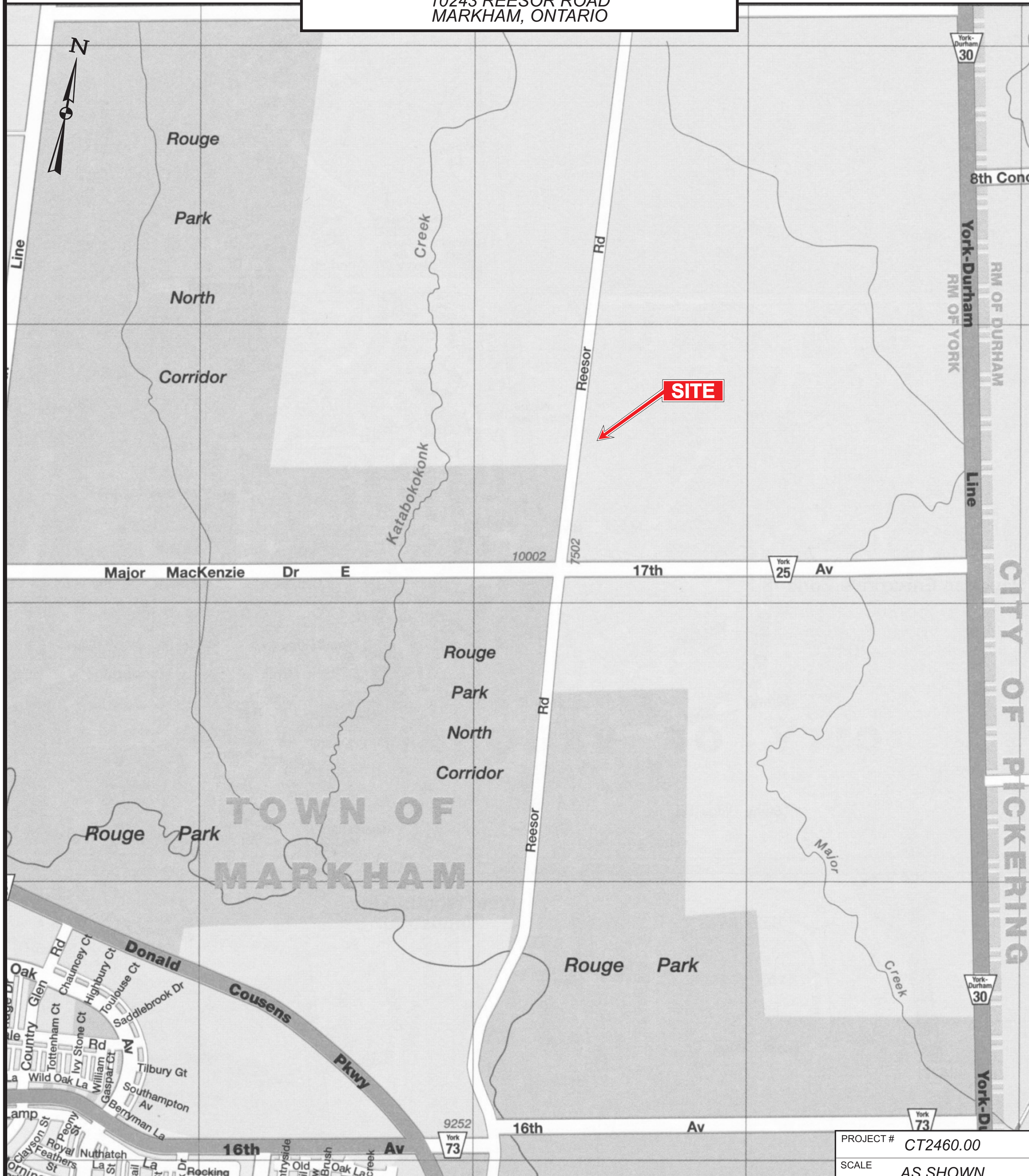
TERRAPEX

SITE LOCATION

CAMP ROBIN HOOD
10243 REESOR ROAD
MARKHAM, ONTARIO

CLIENT

CAMP ROBIN HOOD



0 500m 1km

(APPROXIMATE)

SOURCE: MAPART'S GOLDEN HORSESHOE 2008 EDITION, PAGE 351.

PROJECT #	CT2460.00
SCALE	AS SHOWN
DATE	NOVEMBER 2016
DRAWN	SF
CHECKED	SR
DRAWING #	FIGURE 1

TERRAPEX

GENERAL SITE LAYOUT

10243 REESOR ROAD
MARKHAM, ONTARIO

CLIENT

CAMP
ROBIN HOOD

LEGEND

② BUILDING REFERENCE

SOURCE: GOOGLE EARTH 2015 IMAGERY AND CAMP ROBIN HOOD SITE MAP BY GENIVAR., MARCH 2010.

0 50m 100m
(APPROXIMATE)

PROJECT #	CT2460.00
SCALE	AS SHOWN
DATE	NOVEMBER 2016
DRAWN SF	CHECKED SR
DRAWING #	FIGURE 2

TERRAPEX

EXTENT OF SOIL IMPACTS

10243 REESOR ROAD
MARKHAM, ONTARIO

CLIENT

CAMP ROBIN HOOD

LEGEND

BUILDING REFERENCE

INFERRED EXTENT OF SOIL EXCEEDING SQG_{HH}

CCME Soil Quality Guidelines for Human Health

SOURCE: GOOGLE EARTH 2015 IMAGERY AND CAMP ROBIN HOOD SITE MAP BY GENIVAR., MARCH 2010.

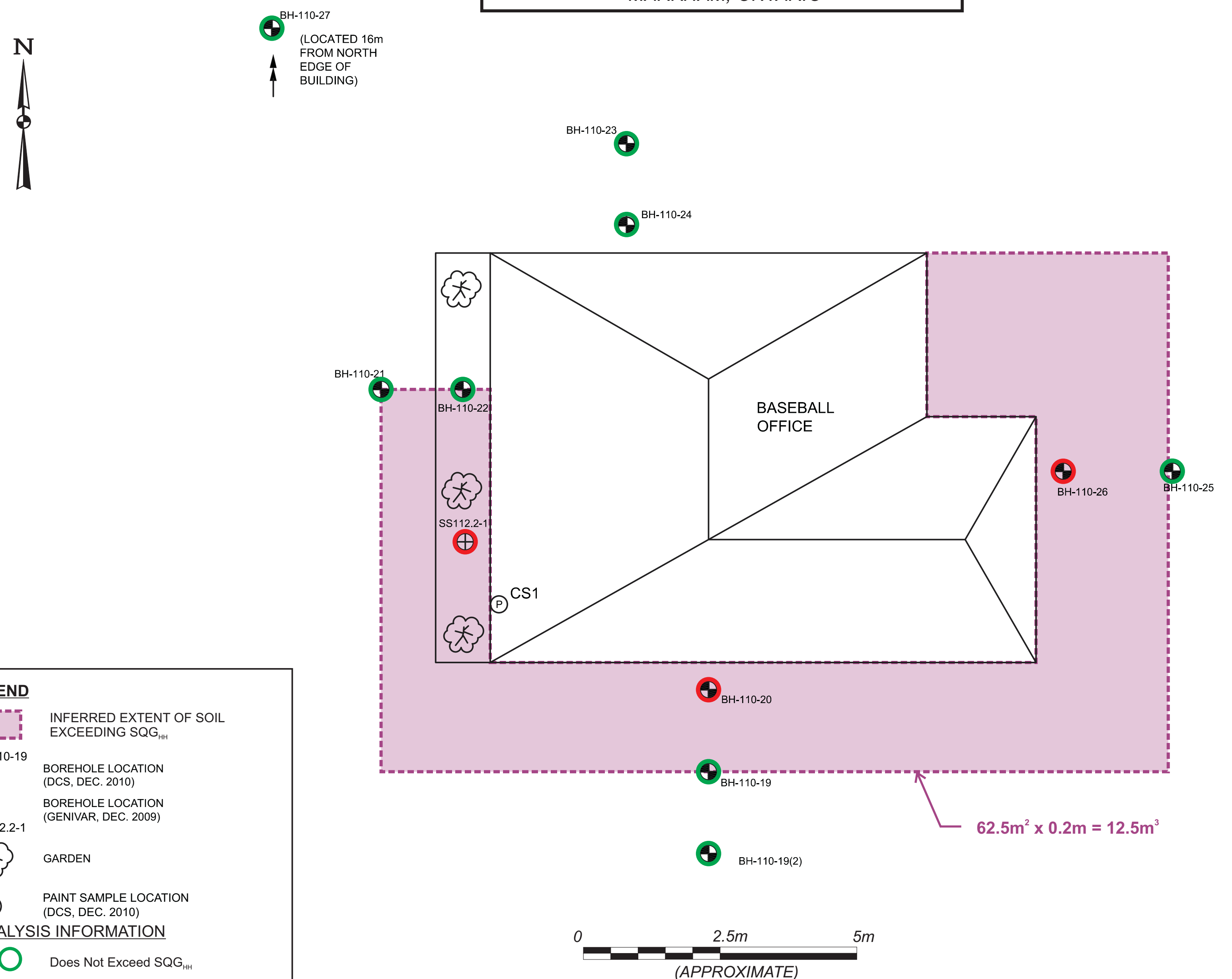
PROJECT #	CT2460.00
SCALE	AS SHOWN
DATE	NOVEMBER 2016
DRAWN	SF
CHECKED	SR
DRAWING #	FIGURE 3A

TERRAPEX

EXTENT OF SOIL IMPACTS - BASEBALL OFFICE / NORTH HOUSE

10243 REESOR ROAD
MARKHAM, ONTARIO

CLIENT: CAMP ROBIN HOOD



LEGEND

- INFERRED EXTENT OF SOIL EXCEEDING SQG_{HH}
- BH-110-19 BOREHOLE LOCATION (DCS, DEC. 2010)
- SS112.2-1 BOREHOLE LOCATION (GENIVAR, DEC. 2009)
- GARDEN
- PAINT SAMPLE LOCATION (DCS, DEC. 2010)

ANALYSIS INFORMATION

- Does Not Exceed SQG_{HH}
- Exceeds SQG_{HH}

CCME Soil Quality Guidelines for Human Health

SOURCE: SAMPLING PLAN BASEBALL OFFICE BY DECOMMISSIONING CONSULTING SERVICES LIMITED (DCS), JAN 2011.

PROJECT #	CT2460.00
SCALE	AS SHOWN
DATE	NOVEMBER 2016
DRAWN	SF
CHECKED	SR
DRAWING #	FIGURE 3B

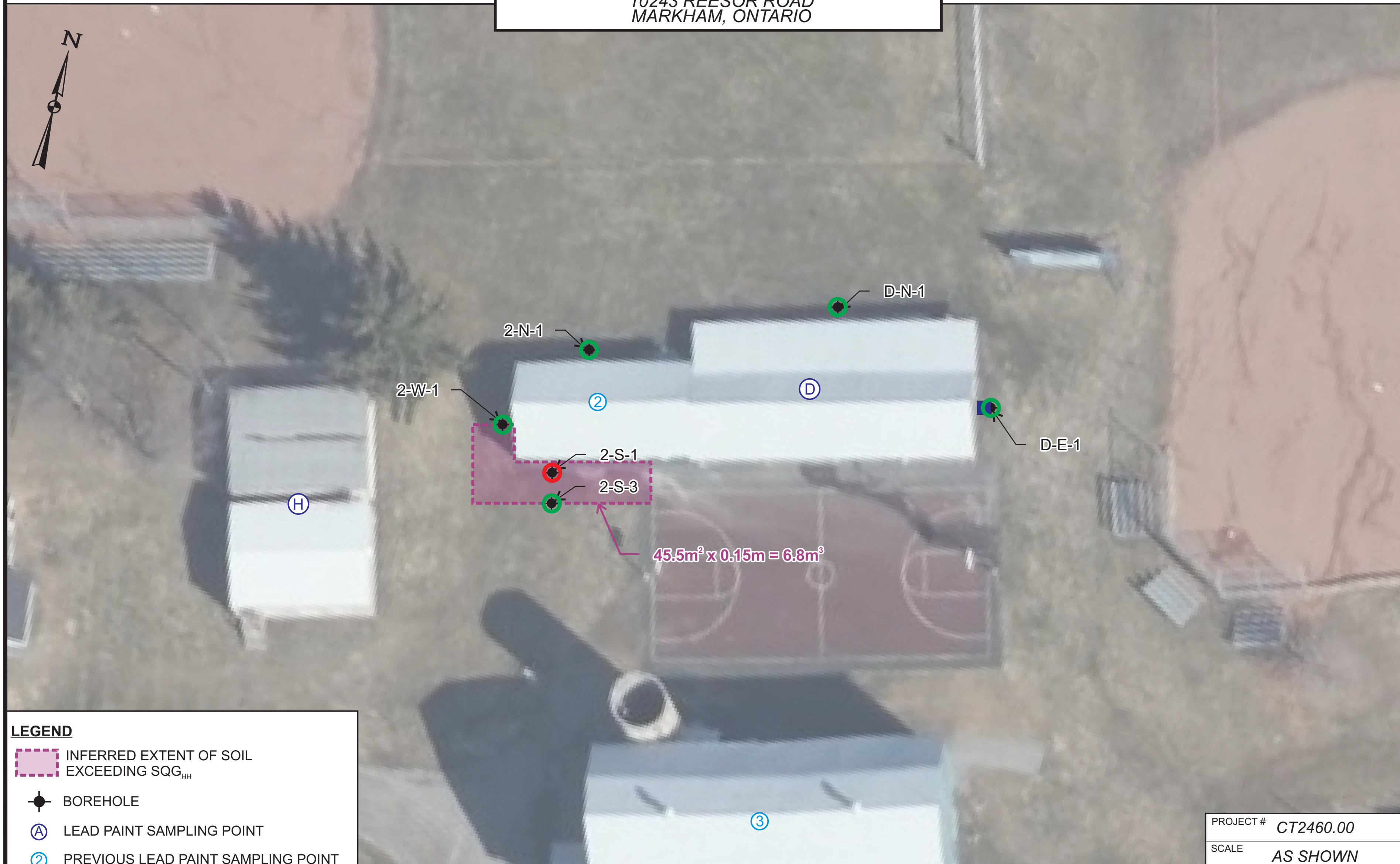
TERRAPEX

EXTENT OF SOIL IMPACTS - PHOTOGRAPHY BUILDING / COACHES' CORNER

10243 REESOR ROAD
MARKHAM, ONTARIO

CLIENT

CAMP ROBIN HOOD



LEGEND

INFERRED EXTENT OF SOIL EXCEEDING SQG_{HH}

BOREHOLE

LEAD PAINT SAMPLING POINT

PREVIOUS LEAD PAINT SAMPLING POINT

ANALYSIS INFORMATION

Does Not Exceed SQG_{HH}

Exceeds SQG_{HH}

CCME Soil Quality Guidelines for Human Health

NOTE: LEAD PAINT SAMPLING POINT NUMBER OR LETTER REFERS TO A BUILDING REFERENCE.
SOURCE: VUMAP FIRST BASE SOLUTIONS 2014 IMAGERY.

PROJECT #	CT2460.00
SCALE	AS SHOWN
DATE	NOVEMBER 2016
DRAWN SF	CHECKED SR
DRAWING #	FIGURE 3C

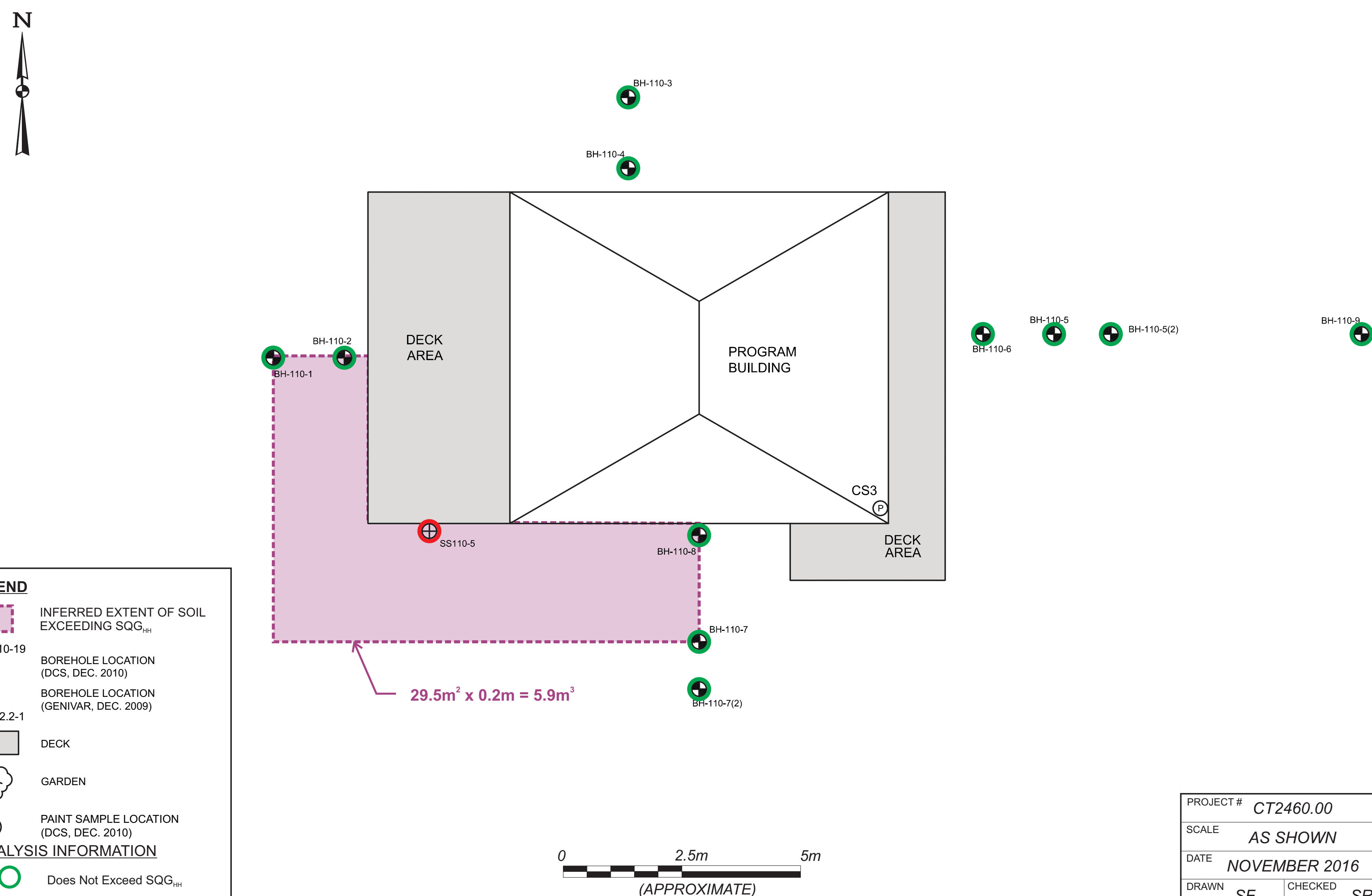
TERRAPEX

EXTENT OF SOIL IMPACTS - PROGRAM BUILDING

10243 REESOR ROAD
MARKHAM, ONTARIO

CLIENT

CAMP
ROBIN HOOD



LEGEND

- INFERRED EXTENT OF SOIL EXCEEDING SQG_{HH}
- BH-110-19 BOREHOLE LOCATION (DCS, DEC. 2010)
- SS112.2-1 BOREHOLE LOCATION (GENIVAR, DEC. 2009)
- DECK
- GARDEN
- PAINT SAMPLE LOCATION (DCS, DEC. 2010)

ANALYSIS INFORMATION

- Does Not Exceed SQG_{HH}
- Exceeds SQG_{HH}

CCME Soil Quality Guidelines for Human Health

SOURCE: SAMPLING PLAN PROGRAM BUILDING BY DECOMMISSIONING CONSULTING SERVICES LIMITED (DCS), JAN 2011.

PROJECT #	CT2460.00
SCALE	AS SHOWN
DATE	NOVEMBER 2016
DRAWN	SF
CHECKED	SR
DRAWING #	FIGURE 3D

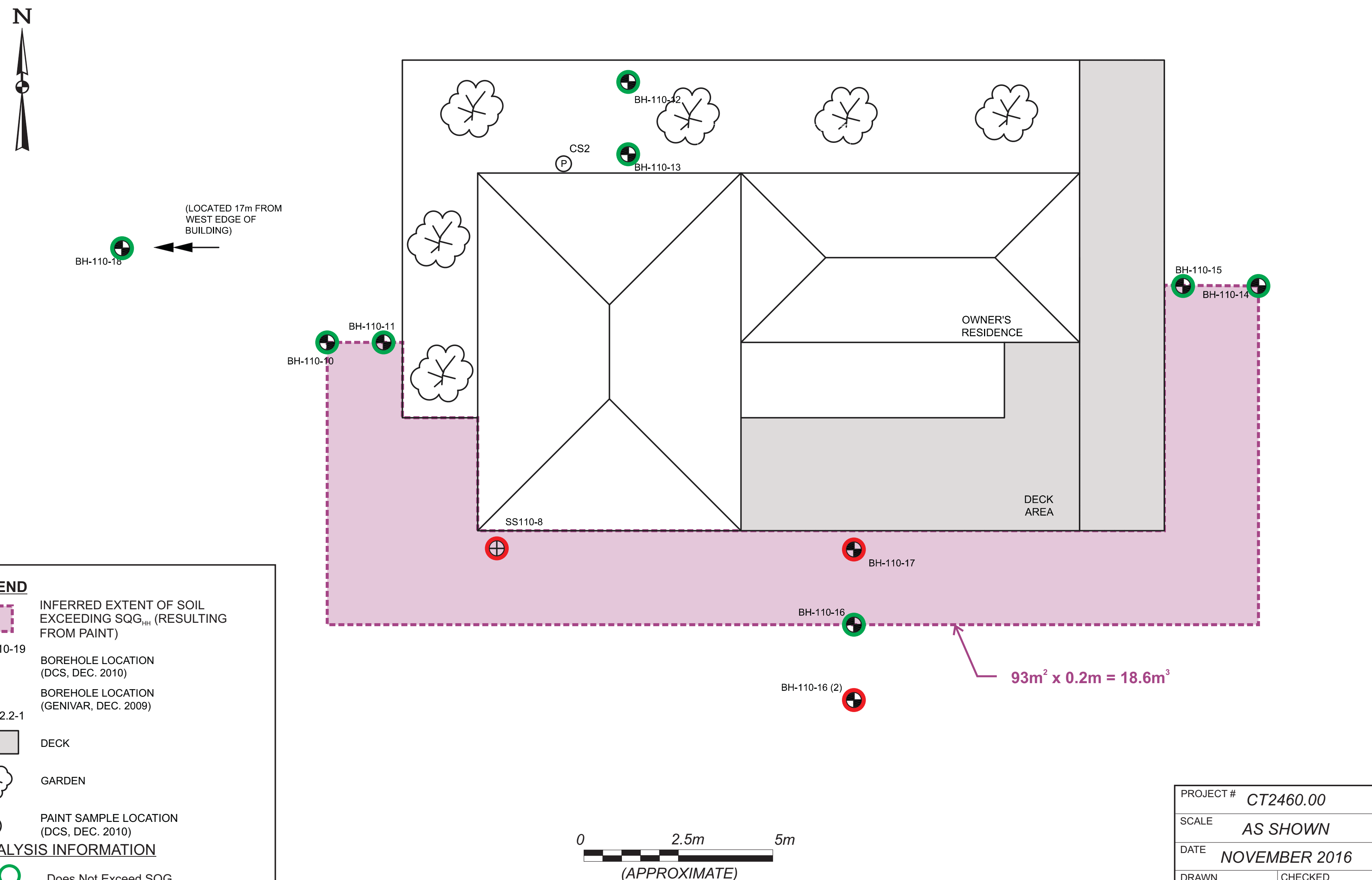
TERRAPEX

EXTENT OF SOIL IMPACTS - OWNER'S RESIDENCE

10243 REESOR ROAD
MARKHAM, ONTARIO

CLIENT

CAMP ROBIN HOOD



LEGEND

INFERRED EXTENT OF SOIL EXCEEDING SQG_{HH} (RESULTING FROM PAINT)

BH-110-19 BOREHOLE LOCATION (DCS, DEC. 2010)

SS112.2-1 BOREHOLE LOCATION (GENIVAR, DEC. 2009)

DECK

GARDEN

PAINT SAMPLE LOCATION (DCS, DEC. 2010)

ANALYSIS INFORMATION

Does Not Exceed SQG_{HH}

Exceeds SQG_{HH}

CCME Soil Quality Guidelines for Human Health

SOURCE: SAMPLING PLAN OWNER'S RESIDENCE BY DECOMMISSIONING CONSULTING SERVICES LIMITED (DCS), JAN 2011.

PROJECT #	CT2460.00
SCALE	AS SHOWN
DATE	NOVEMBER 2016
DRAWN SF	CHECKED SR
DRAWING #	FIGURE 3E

TERRAPEX

BUILDINGS HAVING EXTERIOR LBP OR MERCURY IN PAINT

10243 REESOR ROAD
MARKHAM, ONTARIO

CLIENT

CAMP ROBIN HOOD

LEGEND

- BUILDING REFERENCE
- PAINT SAMPLE EXCEEDING SURFACE COATING MATERIALS REGULATION FOR LEAD
- PAINT SAMPLE EXCEEDING SURFACE COATING MATERIALS REGULATION FOR MERCURY

SOURCE: GOOGLE EARTH 2015 IMAGERY AND CAMP ROBIN HOOD SITE MAP BY GENIVAR., MARCH 2010.

PROJECT #	CT2460.00
SCALE	AS SHOWN
DATE	NOVEMBER 2016
DRAWN	SF
CHECKED	SR
DRAWING #	FIGURE 4

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

SUPPLEMENTAL SITE INVESTIGATION AND LEAD PAINT SURVEY

PINs 614110, 614111 and 614112 (Camp Robin Hood)
Markham, Ontario

FINAL REPORT

DECEMBER 11, 2015

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1.0 SUMMARY

Terrapex Environmental Ltd. (Terrapex) was retained by Public Works and Government Services Canada (PWGSC) on behalf of Parks Canada to conduct a Supplemental Site Investigation and lead paint survey at Camp Robin Hood (CRH), located on portions of PINs 614110, 614111 and 614112 at 10234 and 10251 Reesor Road, Markham, Ontario (the Site). Those portions of PIN #s 614110, 614111 and 614112 that lie beyond the limits of CRH are outside of the scope of this study. The lead paint survey addresses only exterior paint. The Supplemental Site Investigation addresses only potential impacts to surface and near-surface soils resulting from lead- and mercury-based exterior paint. The Supplemental Site Investigation does not address other potential environmental concerns.

CRH has approximately 30 buildings used for the summer day camp including two residences, a barn, a castle, a main office building and numerous huts and structures for various purposes. Approximately 50 day-use huts are also present on the CRH property.

Exterior paint from ten buildings was sampled previously by others, therefore no further paint samples were collected from these ten locations by Terrapex. Terrapex staff collected samples of exterior paint from all remaining buildings and from representative day-use huts at the site on May 25, 2015. Paint samples were submitted to ALS Laboratories for analysis of lead, mercury, arsenic and zinc.

Lead- or mercury-based paint exceeding the *Surface Coating Materials Regulation* limits was verified to be present on the exterior of 15 of the structures. Soil surrounding three of these structures (Baseball Office, Program Building and Owner's Residence - office area) was previously characterized by others. Terrapex retained Alston Associates Inc. (Alston) to put down shallow boreholes (45 cm deep) in the vicinity of the remaining 12 structures found to have lead- or mercury-based exterior paint. Shallow soil samples (0-15 cm) adjacent to the building walls with the lead- or mercury-based exterior paint were submitted to ALS Laboratories for analysis. Only one shallow soil sample adjacent to the Photography Building/Coaches' Corner was found to exceed the CCME Soil Quality Guidelines for protection of human health (SQG_{HH}) for lead. The previously characterized Baseball Office (lead), Program Building (arsenic, lead) and Owner's Residence – office (arsenic, lead) area also had soil samples from surface to 15-20 cm depth that exceeded the SQG_{HH} for one or more parameters. The lateral and vertical extent of exceedances of SQG_{HH} in soil resulting from lead- and/or arsenic- containing paint has been delineated.

The following lead-based paint (LBP) and paint-impacted soil management measures are evaluated in the report:

Lead-based Paint Management Alternatives	Paint-impacted Soil Management Alternatives
• LBP management plan	• Interim Control Measures
• Interim Control Measures	• Excavation and Off-Site Disposal
• LBP Abatement - Replacement - Removal - Enclosure - Encapsulation	• Scoped Risk Assessment

It is understood that it is the responsibility of the site tenant to implement the selected alternatives. Therefore, with due consideration of budgetary requirements, PWGSC, Parks Canada and the tenant will select the LBP and paint-contaminated soil management alternatives best suited to the continued use of the site.

The Screening Level Review prepared by Terrapex (2015) identified additional potential environmental risks associated with LBP, mould and asbestos in the interior of various buildings, the presence of non-hazardous debris, and a well that was not properly maintained/abandoned. A designated substances survey was recommended to investigate the preceding risks, and to conduct a tank audit of three above ground storage tanks identified at the site.

Exceedances of CCME Soil Quality Guidelines have been identified in site soils. Delineation of the extent of exceedances should be undertaken, and alternatives for addressing the exceedances should be evaluated.

2.0 INTRODUCTION

Terrapex Environmental Ltd. (Terrapex) was retained by Public Works and Government Services Canada (PWGSC) on behalf of Parks Canada to conduct a Supplemental Site Investigation and lead paint survey at Camp Robin Hood (CRH), located on portions of PINs 614110, 614111 and 614112 at 10234 and 10251 Reesor Road, Markham, Ontario (the Site). The site location is presented on Figure 1.

This report is prepared in accordance with the PWGSC Statement of Work (SOW) received from Mr. Randy Power on May 8, 2015, and the Terrapex proposal of June 18, 2015.

The total area of CRH is approximately 10 hectares and stretches across the westernmost portions of PIN #s 614110, 614111 and 614112, forming part of the proposed Rouge National Urban Park. CRH has approximately 30 buildings used for the summer day camp including two residences, a barn, a castle, a main office building and numerous huts and structures for various purposes. Approximately fifty day-use huts are also present on the CRH property. Three pools are present on the CRH property and vary in size from 400 square meters to 100 square meters. A pond approximately 2,000 square meters in size is present in south west corner of CRH. CRH also has four ball diamonds, three basketball courts and three tennis courts. An access road leading from Reesor Rd. bisects CRH and leads to a small forest that is present in the agricultural fields near the back of the property. The forest located east of CRH is 2.3 hectares in size and is used for overnight camping.

The Supplemental Site Investigation and lead paint survey were limited to those portions of PIN #s 614110, 614111 and 614112 that are occupied by CRH. The Supplemental Site Investigation is intended to address potential impacts to surface and near-surface soils resulting from lead- and mercury-based exterior paint. The Supplemental Site Investigation does not address other potential environmental concerns. The lead paint survey addresses only exterior paint.

3.0 BACKGROUND

Relevant historic reports pertaining to the Site (CRH) and the scope of work for this project (lead-based exterior paint and surface or near-surface soil impacted by metals in paint) are:

- Environmental Evaluation Pickering Lands Site Phase 1D Commercial properties Property Identification Number 614110/111.1 prepared by Shaheen & Peaker Limited (S&P), dated March 24, 1997;
- Enhanced Phase I Environmental Site Assessment – Final Pickering Lands Site PIN614110, PIN614111 and PIN614112 – 10243 and 10251 Reesor Road, Markham , ON prepared by Genivar, dated March 2010;
- Public Works and Government Services Canada and Transport Canada Phase II/III Environmental Site Assessment PWGSC Project No. R.022117.003 PINS 614110, PIN 614111, and 614112 At The Pickering Land Site (PLS) (10243 and 10251 Reesor Road Markham, Ontario) prepared by Decommissioning Consulting Services Limited (DCS), dated March 2011; and
- Screening Level Review, prepared by Terrapex, dated March 11, 2015.

3.1 HISTORIC PAINT SAMPLING RESULTS

The Genivar (2010) report summarizes lead paint sampling undertaken by others (Shaheen Peaker, 1997; Pinchin 1997). Pinchin's results were based upon XRF readings which are not comparable to the current limits specified under the *Surface Coating Materials Regulation* under the *Federal Hazardous Products Act*. Based upon Genivar's summary, the following buildings were sampled from and those confirmed to have LBP in concentrations greater than 90 ppm (the *Surface Coating Materials Regulation* limit for lead in paint) are identified in the table below;

Building Number (refer to Figure 2)	Building Name	Lead Concentration in Exterior Paint (maximum reported)
1.	Baseball Office	64,959 ppm
2.	Photography Building (Coaches' Corner)	37,586 ppm
3.	Barn	< 90 ppm
4.	Fun and Fitness Building	< 90 ppm
5.	Archery Huts	13,192 ppm
6.	Arts and Craft Building	Interior paint only
7	Program Office	18,936 ppm
8.	Main Office	< 90 ppm
9.	Day-use Huts – numerous locations, and	2,305 ppm
10.	Owner's Residence – Office Area	17,374 ppm

Paint samples collected from The Barn (Building 3 as shown on Figure 2), Fun and Fitness Building (Building 4) and Main Office (Building 8) were tested but did not have lead at concentrations above 90 ppm. Only the interior of the Arts and Crafts Building (Building 6) was identified as potentially having LBP.

The locations of the buildings identified above, and throughout this report, are presented on Figure 2.

3.2 HISTORIC SOIL SAMPLING RESULTS

Genivar (2010) collected soil samples from the ground where LBP surfaces were previously identified and found to be peeling. Soil samples from the following building locations were tested:

Building Number	Building Name
1.	Baseball Office
7.	Program Office
10.	Owner's Residence – Office Area

The soil sample collected from each of these areas exceeded one or more CCME criteria for heavy metals in an agricultural land use. Genivar's soil analyses included mercury. The CCME Canadian Soil Quality Guideline for mercury was met in all samples, therefore mercury is not considered a contaminant of concern in these areas.

These three areas were the subject of DCS' investigation (2011). DCS' analyses included heavy metals (excluding mercury). DCS's results provide general delineation of contaminants, therefore *indicative* liability estimates were provided. The liability estimate for risk management ranged from $89,570 to $135,070. The excavation and off-site disposal estimate was $153,174. However further work was recommended by DCS to fully delineate the extent of soil impacts in order to be able to provide a *substantive* liability cost. Since PWGSC's May 8, 2015 SOW requires that an *indicative* estimate of liability be provided, no further work in the vicinity of these three structures (Baseball Office, Program Office and Owner's Residence - Office Area) was required to be undertaken by Terrapex.

Genivar also collected soil samples from the following areas which met all then-applicable CCME agricultural criteria:

Building Number	Building Name
U.	Little John Building
BB.	Girl’s change Area
CC.	Boy’s change Area

No further soil investigation was undertaken by Terrapex adjacent to these three buildings.

The results of Genivar's and DCS' soil sampling programs are presented on Figures 4A through 4G and on Table 3 together with Terrapex's 2015 soil sampling and analysis results.

Genivar did not collect soil samples in the vicinity of the Photography Building (Building 2) and Archer's Huts (refer to 5 on Figure 2) even though these buildings were found to have LBP on the building exteriors. As a result, surface and near-surface soil sampling adjacent to the Photography Building and Archer's Huts were conducted by Terrapex.

4.0 METHODOLOGY

4.1 LEAD PAINT SAMPLING

The following buildings were not previously tested for LBP, therefore, they were included in Terrapex's Lead Paint Survey:

Building Number (Refer to Figure 2)	Paint Sample Number	Building Name
A.	PA-1	MSG Floor Hockey
B.	PB-1	Action Centre
C.	PC-1	The Quad
D.	PD-1	Lunch Barn
E.	PE-1	TBS Centre
F.	PF-1	Maintenance Area
G.	PG-1	Mom’s Place
H.	PH-1	The Play Place
I.	P-1	Arrow Dome
J.	PJ-1	Cooper Dome
K.	PK-1	Dance Studio
L.	PL-1	Camp Craft
M.	PM-1	Senior Flagpole / Outdoor Theatre
N.	PN-1	Castle
O.	PO-1	The Pavilion
P.	PP-1	Swim Office
Q.	PQ-1	Canteen
R.	Not Sampled	Nature Building (No paint present)
S.	Not Sampled	Canoeing Building (No paint present)
T.	PT1-1	Junior Flagpole
T1.	PT1-1	GaGa (adjacent to Jr. Flagpole)
U.	PU-1	Little John Building
V.	Not Sampled	Gymnastics Dome (No paint present)
V1.	PV1-1	GaGa (adjacent to Gymnastics Dome)
W.	PW-1	Will Scarlet Building
X.	PX-1	Building (N. of Lasses’ Cabins)
X1.	PX1-1	Shed behind Bldg. X
X2.	PX2-1	GaGa (adjacent to Bldg. X)
Y.	PY-1	Friar Tuck Building
Z.	Not Sampled	Rope Course (No paint present)
AA.	PAA-1	Leppies’ Cabins
BB.	PBB-1	Girls Change Area
CC.	PCC-1	Boys Change Area
EE.	PEE-1	Inter boys’ Cabins
HH.	PHH-1	Inter girls’ Cabins
II.	PII-1	Seniors’ Cabins

Because there was no paint present on the exterior of Buildings R, S, V and Z, paint samples were not collected from those buildings.

Lead paint sampling was conducted on May 25, 2015 by Terrapex staff. The paint sampling locations are presented on Figure 2. The most prominent paint type present on the structure was sampled. Descriptions of the paint samples (i.e. colour, condition) are presented in Table 2. Note that between the time of sampling on May 25, and other on-site activities by Terrapex, it was apparent that some of the structures had been freshly painted by CRH staff. As a result, the paint descriptions in Table 2 may not match the actual paint present at the time of writing of this report.

Samples of paint were collected manually, and were submitted to ALS Laboratories (ALS) for analysis of lead, mercury, arsenic and zinc. ALS is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA).

Analytical results for the Terrapex paint sampling locations are presented in Table 2. Results are compared to the current *Surface Coating Materials Regulation* limits of 90 ppm for lead and 10 ppm mercury in paint. Arsenic and zinc concentrations are also shown on the table, for information. The results of S&P's paint samples for the Photography Building (Coaches' Corner (2)) and the Archers' Huts (5) are also shown on Table 2.

4.2 SOIL SAMPLING

In areas where paint samples were identified as lead-based (>90 ppm), or mercury-based (>10 ppm) one borehole was put down adjacent to each of the four walls of the building. A second series of four boreholes were put down approximately 3 m distant from the building, and a third set of boreholes were put down approximately 6 m from the building ("step-out" boreholes).

Boreholes were advanced on June 25 and 27, 2015 using a Terrier drill supplied by Alston Associates Inc (AAI). Soil samples were collected using a 600 mm long split spoon sampler. A field technician placed the soil samples within laboratory-supplied 120 mL glass jars for potential analysis. Metals samples do not require refrigeration, therefore step-out samples were temporarily stored in a secure location at our offices. Samples destined for analysis were kept refrigerated, and were shipped to ALS using ALS's internal couriers from Terrapex's offices under chain-of-custody protocols.

Boreholes were backfilled with bentonite. Since all soil was returned to the Terrapex office, no soil cuttings were left on site. As a result, no toxicity characteristic leaching procedure (TCLP) testing was undertaken since no soil disposal was required.

Soil samples were analysed for the contaminant(s) identified in the associated paint sample (i.e. lead, and/or mercury) which exceeded the *Surface Coating Materials Regulation* limit. As requested by PWGSC, one soil sample collected adjacent to each building that had lead- or mercury-exceedances in paint was also analysed for heavy metals (including mercury).

Given the building locations where paint analysis results exceeded the applicable limits (refer to Table 2), soil sampling adjacent to the following buildings was undertaken:

Building Number (Refer to Figure 2)	Building Name	First Round Soil Analysis
D.	Lunch Barn	Pb (3), Metals (incl Hg) (1)
E.	TBS Centre	Pb(3), Metals (incl Hg) (1)
F.	Maintenance Area	Pb(3), Metals (incl Hg) (1)
G.	Mom’s Place	Pb(3), Metals (incl Hg) (1)
K.	Dance Studio	Hg (3), Metals (incl Hg) (1)
L.	Camp Craft	Pb(3), Metals (incl Hg) (1)
N.	Castle	Pb(3), Metals (incl Hg) (1)
W.	Will Scarlet Building	Pb + Hg (3), Metals (incl Hg) (1)
X1.	Shed behind Building "X"	Pb(3), Metals (incl Hg) (1)
Y.	Friar Tuck Building	Pb(3), Metals (incl Hg) (1)
2.	Photography Building (Coaches’ Corner)	Pb(3), Metals (incl Hg) (1)
5.	Archers Huts	Pb(3), Metals (incl Hg) (1)

Note: Pb - lead
Hg - mercury

In addition, PWGSC requested that boreholes be put down adjacent to, and within the centre of, the Garden.

The borehole locations are presented on Figures 3A through 3C. Table 1 presents the borehole completion logs. The GPS coordinates of the borehole locations are also presented on the borehole logs in Table 1.

In total, 12 buildings required completion of approximately 12 boreholes each. Given surficial constraints (e.g. property limit, woodlot, asphalt or concrete pavements) and subsurface utility constraints, some buildings had fewer than 12 boreholes put down adjacent to them (i.e. Shed behind Building X (9), Friar Tuck Building (9), Photography Building/Coaches' Corner (9), Mom's Place (6), Lunch Barn (6)) while others had additional boreholes drilled (i.e. Castle (14)). Each borehole was completed to a depth of 45 cm. The borehole locations are presented on Figures 3A through 3C.

Generally, the 0-15 cm soil sample from the boreholes adjacent to the buildings was submitted for laboratory analysis first (exception was sample GARDEN-2, where PWGSC requested that the 15-45 cm interval be submitted for analysis), with the deeper interval (15-45 cm) and "step-out" boreholes (3 m and 6 m from the building) held in reserve.

Table 3 presents laboratory results from Terrapex's soil sample submissions. The historic results of Genivar's paint-related soil sampling program and DCS's soil sampling results in the vicinity of the Baseball Office (1), Program Office (7) and Owner's Residence - Office Area (10) are also presented on the table. Results are tabulated versus the CCME Soil Quality Guidelines for residential/parkland land use and the CCME Soil Quality Guidelines for Human Health (SQG_{HH}).

Results are also tabulated versus the provincial site condition standards (SCS) for information purposes. The Ontario Ministry of the Environment's *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* (April 15, 2011) Table 2 SCS were selected for the majority of the site samples. Information from the DCS report (March 2011) indicate that the Table 2 medium-fine grained SCS for residential/parkland/institutional land use were applicable to all portions of the site except for those sections within 30 m of the central pond at the site. As such, the analytical results from soil samples collected at the Program Building and the "Garden" , both of which are located within 30 m of the pond, are compared to the Table 8 SCS. Table 8 SCS are applied to sites within 30 m of a waterbody.

As shown on Table 3, the only Terrapex sample that exceeded the CCME Soil Quality Guidelines for Human Health (SQG_{HH}) was 2-S-1-1 (lead at 226 ug/g versus the SQG_{HH} of 140 ug/g) collected from 0-15 cm depth and located adjacent to the south wall of the Photography Building/Coaches' Corner. In order to delineate the extent of the lead exceedance, step-out samples 2-S-1-2 (depth interval 15-45 cm; located directly below sample 2-S-1-1) and 2-S-3-1 (depth interval 0-15 cm; located 3 m south of the south wall) were subsequently submitted for laboratory analysis.

Since both samples 2-S-1-2 and 2-S-3-1 met the SQG_{HH}, no further step-out sampling was required.

5.0 RESULTS

5.1 PAINT SAMPLE ANALYSIS RESULTS

Paint sample analysis results are presented on Table 2. Results are tabulated versus the *Surface Coating Materials Regulation* limits of 90 ppm for lead and 10 ppm mercury in paint. Arsenic and zinc concentrations are also shown on the table, for information. The results of S&P's paint samples for the Photography Building (Coaches' Corner (2)) and the Archers' Huts (5) and DCS's paint sample results for the Baseball Office (1), Program Building (7) and Owner's Residence (10) are also shown on Table 2. Sample locations exceeding the *Surface Coating Materials Regulation* limits are identified on Figure 2.

The laboratory certificate of analysis for the paint sample results of this current investigation is presented in Appendix I.

Excluding the three buildings previously assessed by Genivar and DCS (Buildings 1, 7 and 10), exceedances of the 90 ppm limit for lead were detected in paint samples from 11 buildings, and exceedances of the 10 ppm limit for mercury were detected in paint samples from two buildings as shown in the table below:

Building Number	Paint Sample	Building Name	Paint Sample Exceeding 90 ppm Lead	Paint Sample Exceeding 10 ppm Mercury
D.	PD-1	Lunch Barn	X	
E.	PE-1	TBS Centre	X	
F.	PF-1	Maintenance Area	X	
G.	PG-1	Mom's Place	X	
K.	PK-1	Dance Studio		X
L.	PL-1	Camp Craft	X	
N.	PN-1	Castle	X	
W.	PW-1	Will Scarlet Building	X	X
X1.	PX1-1	Shed behind Building "X"	X	
Y.	PY-1	Friar Tuck Building	X	
2.	1111.1-P7	Photography Building (Coaches' Corner)	X	
5.	1111.1-P10	Archers Huts	X	

5.2 SOIL SAMPLE ANALYSIS RESULTS

As described in Section 4, excluding the three buildings previously assessed by Genivar and DCS (Buildings 1, 7 and 10), soil samples were collected by Terrapex adjacent to the building locations where lead- or mercury-based paint was identified on the building exteriors in excess of the *Surface Coating Materials Regulation* limits. The locations of the soil samples analyzed (including the previously assessed Buildings 1, 7 and 10) are presented on Figures 4A through 4G and the results are tabulated on Table 3. The results are tabulated versus the CCME SQG and SQG_{HH}. Figures 4A through 4G also present the exceedances of the SQG_{HH} criteria.

Laboratory certificates of analysis for the soil sample results of this current investigation are presented in Appendix II.

The areas of the site with soil samples exceeding the SQG_{HH} are discussed below.

Baseball Office (Building 1 on Figure 2)

Historic results from Genivar and DCS are presented on Table 3 and the exceedances from their soil sampling results are shown on Figure 4D. Near-surface soil samples (0-20 cm depth) adjacent to the western wall, and near-surface samples (0-15 cm depth) adjacent to the southern and eastern walls of the Baseball Office exceeded the SQG_{HH} for lead. Samples analysed at depth (15-45 cm) and further away from the building walls (2 m) met the SQG_{HH}.

As a result, delineation of impacts above the SQG_{HH} is considered complete. The inferred volume of soil exceeding the SQG_{HH} is estimated to be 12.5 m^3 as illustrated on Figure 5A.

Photography Building/Coaches' Corner (Building 2 on Figure 2)

Only one soil sample analysed as part of Terrapex's investigation exceeded the SQG_{HH} (sample 2-S-1-1, located adjacent to the southern wall of the Photography Building/Coaches' Corner with lead detected at 226 ug/g). As a result, two step-out samples (2-S-1-2 and 2-S-3-1) were analysed for lead. Since both samples met the SQG_{HH} criteria, delineation of impacts above the SQG_{HH} is considered complete and no further step-out sampling was undertaken.

As shown on Figure 5B the inferred volume of soil exceeding the SQG_{HH} is estimated to be 5.8 m^3.

Program Building (Building 7 on Figure 2)

Only one historic soil sample (Genivar SS110-5, 0-20 cm depth located at the southwesterly limit of the deck of the building) exceeded the SQG_{HH} (lead and arsenic). Samples collected by DCS and submitted for laboratory analysis were all below the SQG_{HH}. As a result, the extent of soil exceeding the SQG_{HH} is expected to be limited to 20 cm depth in the southwestern area of the building, totalling 5.9 m^3 as shown on Figure 5C.

Owner's Residence - Office Area (Building 10 on Figure 2)

Lead was found to exceed the SQG_{HH} in two historic locations adjacent to the south side of the residence (Genivar SS110-8, 0-20 cm) and south side of the deck (DCS BH110-17 - SS1A, 0-15 cm depth). DCS borehole sample BH110-17 - SS1B (15-45 cm depth) located directly below sample BH110 - 17 - SS1A, and samples BH110-16 - SS1A and SS1B located 2 m south of BH110-17 met the SQG_{HH} for all parameters analysed. Sample BH110-16(2) - SS1A (0-15 cm) located 4 m south of BH-110-17 exceeded the SQG_{HH} for arsenic (16 ug/g versus the SQG_{HH} of 12 ug/g).

Because samples adjacent to the residence met the SQG_{HH} for arsenic, and there was a borehole location south of BH110-17 that met the SQG_{HH} for all parameters analysed, it is unlikely that the arsenic concentration detected in sample BH110-16(2) - SS1A is a result of exterior paint on the residence. Therefore, the surface and near-surface impacts due to paint are considered to be delineated as shown on Figure 5D, resulting in an estimated 18.6 m^3 of soil that exceeds the SQG_{HH} as a result of exterior paint on the adjacent building.

Garden (Southwest of Building N on Figure 3C)

Two soil samples were taken and submitted for analysis as part of the Terrapex investigation; one was from the northeast corner of the garden (0-15 cm) and the other was from the centre of the garden (15-45 cm) in depth. Both samples were analyzed for metals and compared to CCME SQG and SQG_{HH}. The samples met both the CCME SQG and $SQG_{HH,}$ therefore no further sampling in the garden area was deemed necessary as the samples met the current criteria.

5.3 QUALITY ASSURANCE/QUALITY CONTROL

A total of four blind field duplicate paint samples were collected as outlined in the table below.

Building Name	Original Paint Sample	Duplicate Paint Sample
The Quad (Building C)	PC-1	P-4000
The Arrowdome (Building I)	PI-1	P-1000
Castle (Building N)	PN-1	P-3000
Building North of Lasses' Cabins (Building X)	PX-1	P-2000

The Relative Percent Difference (RPD) was calculated for each of the original and duplicate pairs. All samples were within the alert criteria of 30% RPD except for the following samples: PI-1 and duplicate P-1000 for arsenic, PX-1 and duplicate P-2000 for zinc. Given the relatively high concentrations of arsenic and zinc in these two samples respectively, the variances are not anticipated to significantly affect the results.

A total of seven blind field duplicate soil samples were collected as outlined in the table below.

Building Name	Original Soil Sample	Duplicate Soil Sample
Archer's Huts (Building 5)	5-NJ2-1-1	5-NJ2-1-11
Camp Craft (Building L)	L-W-1-1	L-W-1-11
Castle (Building N)	N-W-1-1	N-W-1-11
Lunch Barn (Building D)	D-E-1-1	D-E-1-3
Photo Building (Building 2)	2-N-1-1	2-N-1-3
Photo Building (Building 2)	2-S-3-1	2-S-3-11
Will Scarlett Building (Building W)	W-S-1-1	W-S-1-11

The Relative Percent Difference (RPD) was calculated for each of the original and duplicate pairs. All samples were within the alert criteria of 30% RPD except for the following samples: 2-S-3-1 and duplicate 2-S-3-11 for lead, 2-N-11 and duplicate 2-N-1-3 for zinc, D-E-1-1 and duplicate D-E-1-3 for antimony and lead. However, the samples that exceeded the alert criteria were all below the standards of the CCME Soil Quality Guidelines (Residential/Parkland land use, and Human Health); with the exception of sample 2-N-1-1 and duplicate 2-N-1-3 where both samples exceeded the CCME Soil Quality Guidelines for Residential/Parkland land use. As a result, none of these variances are anticipated to affect the results of the investigation.

ALS' internal laboratory QA/QC samples comprised analysis of laboratory duplicates, method blanks, laboratory control samples and certified reference materials. Aside from instances where the relative percent difference (RPD) could not be calculated because of results being less than the detection limits, all results were within the laboratory acceptance criteria.

6.0 CONCLUSIONS

CRH has approximately 30 buildings used for the summer day camp including two residences, a barn, a castle, a main office building and numerous huts and structures for various purposes. Approximately fifty day-use huts are also present on the CRH property.

Exterior paint from ten buildings was sampled previously (S & P, 1997) therefore no further paint samples were collected from these locations by Terrapex. Terrapex staff collected samples of exterior paint from all remaining buildings and from representative day-use huts at the site on May 25, 2015. Paint samples were submitted to ALS Laboratories for analysis of lead, mercury, arsenic and zinc.

Lead- or mercury-based paint exceeding the *Surface Coating Materials Regulation* limits was verified to be present on the exterior of the following structures:

Building Number (Refer to Figure 2)	Building Name	Paint Sample Exceeding 90 ppm Lead	Paint Sample Exceeding 10 ppm Mercury
D.	Lunch Barn	X	
E.	TBS Centre	X	
F.	Maintenance Area	X	
G.	Mom’s Place	X	
K.	Dance Studio		X
L.	Camp Craft	X	
N.	Castle	X	
W.	Will Scarlet Building	X	X
X1.	Shed behind Building "X"	X	
Y.	Friar Tuck Building	X	
1.	Baseball Office	X	
2.	Photography Building (Coaches’ Corner)	X	
5.	Archers Huts	X	
7.	Program Building	X	
10.	Owner's Residence - office area	X	

On June 25 and 27, 2015, surface soil samples were collected by Terrapex/Alston in the vicinity of all buildings that had lead- or mercury-based exterior paint present in excess of the applicable surface coating limits (90 ppm lead or 10 ppm mercury). Note that previous studies by Genivar and DCS had characterized the soils in the vicinity of the Baseball Office (1), Program Building (7) and Owner's Residence - office area (10) therefore no further soil sampling was conducted in these areas by Terrapex/Alston.

Surface and near-surface soils 0.15 to 0.20m depth in the vicinity of four of the buildings exceeded the SQG_{HH} for lead and/or arsenic as a result of impacts from exterior paint. The buildings where soil impacts were identified as a result of exterior paint, and the estimated extent of impacted soil above the SQG_{HH} (resulting from paint impacts) are summarized in the table below:

Building Number	Building Name	Estimated Extent of Soil Exceeding SQG_{HH} as a Result of Paint
1.	Baseball Office	62.5 m^2 x 0.2 m = 12.5 m^3
2.	Photography Building/ Coaches' Corner	45.5 m^2 x 0.15 m = 6.8 m^3
7.	Program Building	29.5 m^2 x 0.2 m = 5.9 m^3
10.	Owner's Residence - office area	93 m^2 x 0.2 m = 18.6 m^3

The locations of the soil impacts exceeding SQG_{HH} as a result of flaking LBP are shown on Figure 5A (overall site) and are presented in detail on Figures 5B through 5E.

Section 7 evaluates alternatives for management of LBP and soil exceeding SQG_{HH} as a result of flaking LBP.

There are other areas of the site where soil samples were found to exceed SQGs. Further assessment of the extent of SQG exceedances should be undertaken. In addition, the Screening Level Review prepared by Terrapex (2015) identified potential environmental risks associated with LBP, mould and asbestos in the interior of various buildings, the presence of non-hazardous debris, and a well that was not properly maintained/abandoned. A designated substances survey was recommended to investigate the preceding risks, and to conduct a tank audit of three above ground storage tanks identified at the site.

7.0 EVALUATION OF ALTERNATIVES

It is understood that the tenant of the property will be responsible for carrying out any management programs and/or abatement/remediation at the site. As a result, where environmental professionals or environmental specialist contractor services are not required, costing will be discussed relative to commercial rates.

Management of LBP and management of soil contaminated with LBP are discussed separately.

7.1 LEAD-BASED PAINT MANAGEMENT

The LBP alternatives discussion is focussed on addressing exterior paint. It is the flaking and subsequent deposition of exterior LBP that can cause contamination of soil adjacent to the building structure(s).

The LBP present on the Baseball Office, Photography Building/Coaches' Corner, Program Building and Owner's Residence - Office is the source of soil contamination identified in nearby surface and near-surface soils; therefore these four buildings are tabulated separately from the ten buildings and ten day-use huts (Archer's Huts) identified to have LBP with no nearby soil contamination.

The areas of the building exteriors with known soil contamination adjacent to the buildings are outlined in the table below:

Building Number	Building Name	Approx. Building Area (m^2)	Approx. Exterior Wall Area (m^2)	Paint Samples Collected By: (Consultant/Report Date)
1.	Baseball Office	70	108	Genivar/2010
2.	Photography Building/ Coaches' Corner	88	120	Genivar/2010
7.	Program Building	77	110	Genivar/2010
10.	Owner's Residence - office area	180	312	Genivar/2010

LBP has been identified to be present on ten structures and ten day-use huts (Archers' Huts) as shown in the table below:

Building Number	Building Name	Approx. Building Area (m^2)	Approx. Exterior Wall Area (m^2)	Paint Samples Collected By: (Consultant/Report Date)
D.	Lunch Barn	350	(beams only)	Terrapex/2015
E.	TBS Centre	70	108	Terrapex/2015
F.	Maintenance Area	600	750	Terrapex/2015
G.	Mom's Place	70	108	Terrapex/2015
K.	Dance Studio	70	108	Terrapex/2015
L.	Camp Craft	70	78	Terrapex/2015
N.	Castle	110	126	Terrapex/2015
W.	Will Scarlet Building	160	174	Terrapex/2015
X1.	Shed behind Building "X"	5	24	Terrapex/2015
Y.	Friar Tuck Building	160	174	Terrapex/2015
5.	Archers' Huts	12 (x 10 huts)	240	Genivar/2010

The soil samples collected adjacent to these 20 structures did not exhibit lead or mercury contamination.

7.1.1 LEAD-BASED PAINT MANAGEMENT PLAN

Based on the results of the current work program, Terrapex recommends that a Lead Management Plan (LMP) be developed for the LBP observed and confirmed to be present on the exterior surfaces of the buildings present at the site. The LMP would be developed to address the ongoing monitoring and documentation of the condition of the paint located on the exterior surfaces of the site structures. At a minimum, the LMP should identify and address the following:

- health hazards of lead;
- training requirements for workers who may come into contact with lead-containing materials;
- medical surveillance, if required;
- requirements for personal protective equipment;
- hygiene facilities;
- operations and maintenance activities in areas with lead-containing materials (including routine cleaning of surfaces containing lead-based materials);
- acceptable and prohibited methods of interim control measures and lead removal; and,
- disposal of waste materials.

An environmental consultant would prepare a LMP for approximately $7,500.

7.1.2 INTERIM CONTROL MEASURES

The use of interim control measures are recommended to reduce the exposure to LBP by temporarily controlling the associated hazards. Interim control measures are not intended to permanently control the LBP hazards; however, if properly monitored and maintained, they can provide a long-term solution prior to abatement. The following is a list of some of the interim control measures that can be implemented at the site:

- Repairing all rotted or defective substrates;
- Stabilizing deteriorated LBP surfaces;
- Eliminating friction surfaces with LBP;
- Repairing doors and other building components; and
- Dust removal and control.

Interim control measures require monitoring and maintenance and should be developed in detail during the preparation of the LMP. The cost to implement interim control measures are highly variable and are dependent on the areal quantities of surfaces requiring controls, labour rates of local contractor as well as the costs of acceptable materials (as determined by the property tenant).

For comparative budgetary purposes, an allowance of $10,000 per year should be considered for implementing interim control measures.

7.1.3 LEAD-BASED PAINT ABATEMENT

Once it has been determined that interim control measures are no longer a viable option to provide a suitable control of LBP hazards, abatement of the LBP should be considered. Four of the more common approaches to LBP abatement are replacement, removal, enclosure, and encapsulation.

7.1.3.1 REPLACEMENT

Replacement entails the complete removal of all substrates covered with LBP and replacing them with new lead-free substrates. Replacement is the only permanent abatement method, as it removes all LBP and all residues left on the substrate. The cost of abatement by replacement is highly variable and typically dependent on labour rates of local contractors, costs of acceptable materials (as determined by the property tenant), and disposal rates for hazardous lead materials. The replacement method of abatement can be quite expensive; however, replacement can be a viable option for structures needing remodeling or upgrading, where the cost of labour and materials has already been determined as part of the work program.

The estimated cost of replacement of lead-painted exterior walls is presented in the table below:

Item	Units	Cost	Extension
Contractor Mobilization/Demobilization	L.S.	$2,500	$2,500
Exterior Wall Removal Bldgs 1, 2, 7 and 10	415 m^2	$15/ m^2	$6,225
Exterior Wall Removal 10 bldgs and 10 "huts"	1,890 m^2	$15/ m^2	$28,350
Material Disposal	L.S.	$2,500	$2,500
Contractor Oversight (wall removal; completion inspection)	11 days	$750/day	$8,250
Plywood Sheeting Bldgs 1, 2, 7 and 10	415 m^2	$50/ m^2	$20,750
Plywood Sheeting 10 bldgs and 10 "huts"	1,890 m^2	$50/ m^2	$94,500
Painting (2 coats) Bldgs 1, 2, 7 and 10	415 m^2	$12/ m^2	$4,980
Painting (2 coats) 10 bldgs and 10 "huts"	1,890 m^2	$12/ m^2	$22,680
Documentation and Reporting	L.S.	$6,750	$6,750
Subtotal			$197,485
Contingency	10 %	$197,485	$19,750
Total (Exterior Wall Removal/Replacement; excluding HST)			$217,235

7.1.3.2 REMOVAL

Removal of LBP from substrates can be accomplished using various methods, such as wire brushing or wet hand scraping with paint removers, wet sanding with an electric sander equipped with a high-efficiency particulate air (HEPA) filtered vacuum, and low temperature stripping and hand scraping. Removal methods of abatement do not require the same skill level of other abatement methods; however, it tends to be labour intensive making it one of the more expensive abatements methods, and it is probably the most hazardous of the abatement methods. Abatement of LBP by removal mobilizes the paint which increases the risk of exposure to site users and abatement workers. Given that the LBP abatement is for the exterior of a building/structure it is likely that the building/structure will have to be tented in order to minimize the dispersion of dust and paint chips during the removal. In addition, removal methods have a higher risk to contaminating the soil in the vicinity of the building and care needs to be taken to properly placing plastic sheeting (or equivalent material) on the ground to minimize exposure of the paint dust/chips to the soil. A soil sampling program would be recommended following the removal, and possibly a soil remediation program, should the measures to protect the soil prove to not have been sufficient and an impact is detected.

The estimated cost to carry out lead paint removal is presented below:

Item	Units	Cost	Extension
Contractor Mobilization/Demobilization	L.S.	$1,000	$1,000
Lead Paint Removal Bldgs 1, 2, 7 and 10	415 m^2	$65/ m^2	$26,975
Lead Paint Removal 10 bldgs and 10 "huts"	1,890 m^2	$65/ m^2	$122,850
Painting Bldgs 1, 2, 7 and 10 (2 coats)	415 m^2	$12/ m^2	$4,980
Painting 10 bldgs and 10 "huts" (2 coats)	1,890 m^2	$12/ m^2	$22,680
Contractor Oversight (start-up, 1 day/wk, completion)	10 days	$750/day	$7,500
Soil sampling program (incl. laboratory lead and mercury analysis)	100 sa	$50/sa	$5,000
Documentation and Reporting	L.S.	$7,500	$7,500
Subtotal			$198,485
Contingency	10 %	$198,485	$19,850
Total (Exterior lead paint removal and re-painting; excluding HST)			$218,335

7.1.3.3 ENCLOSURE

Enclosure is the mechanical attachment of a rigid, durable barrier to the building components of concern and includes sealing all edges and seams with caulking (or an equivalent sealant) to create a dust-tight seal. Enclosure methods may require replacement of some structural components which are determined inhibitive to the proper fastening or sealing of the barrier. Enclosure methods generally are less hazardous and less expensive than replacement or removal; however the LBP remains present at the site. On-going maintenance and monitoring of the structures is required to ensure that integrity of the enclosure does not deteriorate over time. Physical damage to the enclosure, water damage (i.e., leaking roof), and future renovations or repairs are all possible events that may cause an increased risk to LBP exposure. Enclosure methods of abatement would require a LMP which would be required to include at a minimum: procedures for labeling enclosed surfaces as lead containing, procedures for monitoring enclosure integrity, and procedures for dealing with unsound substrates. Typically materials used for exterior enclosure systems include, but are not limited to, vinyl or aluminum siding, synthetic fiberboard, wood byproduct composites, and cementitious materials.

The estimated cost of cladding the buildings with siding, using standard commercial/residential rates, is provided below:

Item	Units	Cost	Extension
Contractor Mobilization/Demobilization	L.S.	$2,500	$2,500
Loose Paint Removal Bldgs 1, 2, 7 and 10	415 m^2	$33/ m^2	$13,695
Loose Paint Removal 10 Bldgs and 10 Huts	1,890 m^2	$33/ m^2	$62,370
Cladding Bldgs 1, 2, 7 and 10	415 m^2	$50/ m^2	$20,750
Cladding 10 bldgs and 10 "huts"	1,890 m^2	$50/ m^2	$94,500
Contractor Oversight (start-up, 1 day/wk, completion)	7 days	$750/day	$5,250
Documentation and Reporting	L.S.	$6,500	$6,750
Subtotal			$205,815
Contingency	10 %	$205,815	$20,600
Total (Enclosure of Bldgs 1, 2, 7, 10 and ten Huts; excluding HST)			$226,415

7.1.3.4 ENCAPSULATION

Encapsulation is the application of a durable liquid coating or reinforced coating to prevent the contact of LBP dust/chips with the environment. Since encapsulation products rely on secure bonding with the substrate, pretreatment or additional abatement methods (i.e., replacement, removal) may be necessary. Field tests of the surfaces to be encapsulated are required to evaluate the performance of the encapsulant prior to application of encapsulation at the site as an abatement method. Encapsulation methods of abatement would require a LMP, development of job specifications, and implementation of proper worksite preparation. Encapsulation does not work on all surfaces. The following is a list of surfaces not recommended for encapsulation:

- friction surfaces (i.e., doorjambs, window jambs);
- surfaces that fail patch tests;
- surfaces with substrates and existing coatings that have a high level of deterioration;
- surfaces in which there is a known incompatibility between two existing paint layers;
- surfaces that cannot support the additional weight stress of encapsulation due to existing paint thickness; and,
- metal surfaces that are prone to rust or corrosion.

Encapsulation is often less expensive than other abatement methods, if the field tests are successful and additional treatment/abatement is not necessary. Encapsulation requires ongoing monitoring and maintenance and should be incorporated in the developed LMP.

The estimated cost to apply a lead barrier compound (LBC) to exterior walls with LBP is provided below:

Item	Units	Cost	Extension
LBP Management Plan	L.S.	$7,500	$7,500
Contractor Mobilization/Demobilization	L.S.	$1,000	$1,000
Loose Paint Removal Bldgs 1, 2, 7 and 10	415 m^2	$33/ m^2	$13,695
Loose Paint Removal 10 Bldgs and 10 Huts	1,890 m^2	$33/ m^2	$62,370
Apply Lead Barrier Compound Bldgs 1, 2, 7 and 10	415 m^2	$10/ m^2	$4,150
Apply Lead Barrier Compound 10 bldgs and 10 "huts"	1,890 m^2	$10/ m^2	$18,900
Contractor Oversight (start-up, 1 day/wk, completion)	6 days	$750/day	$4,500
Documentation and Reporting	L.S.	$6,500	$6,750
Subtotal			$118,865
Contingency	10 %	$118,865	$11,900
Total (Encapsulating Bldgs 1, 2, 7, 10 and ten Huts; excluding HST)			$130,765

7.2 PAINT-IMPACTED SOIL MANAGEMENT

Surface and near-surface soils exceeding the SQG_{HH} for lead and/or arsenic ranging from 0.15 m to 0.20 m depth, were identified in the vicinity of four buildings (Baseball Office, Photography Building/Coaches' Corner, Program Building and Owner's Residence - Office Area), the result of impacts from flaking LBP. The areas, depths and resultant volumes of impacted soils resulting from flaking lead-based paints are outlined below:

Building Number	Building Name	Soil Samples Collected By (Consultant/Report Date)	Estimated Area of Impacted Soil (m^2)	Estimated Depth of Impacted Soil (m)	Estimated Volume of Impacted Soil (m3)
1.	Baseball Office	DCS/2011	62.5	0.2	12.5
2.	Photography Building/ Coaches' Corner	Terrapex/2015	45.5	0.15	6.8
7.	Program Building	DCS/2011	29.5	0.2	5.9
10.	Owner's Residence - office area	DCS/2011	93	0.2	18.6

Alternatives for addressing paint-contaminated soil (interim control measures; excavation and off-site disposal; and, scoped risk assessment) are discussed below.

7.2.1 INTERIM CONTROL MEASURES

As a proportion of the overall site, the soil contamination areas are quite small [230 m^2 within a site area of approximately 100,000 m^2 (10 hectares)]. Since these near-surface soil impacts represent such a small overall proportion of the site, utilizing interim control measures to reduce potential exposure is a possibility.

Interim control measures would represent placement of a barrier between the contaminated soils and potential receptors (campers, staff, maintenance workers, etc.). These barriers can include:

- "Soft" covers over the contaminated soils, such as:
  - topsoil and grass;
  - mulch; and
  - "clean" soils (i.e. soils meeting the applicable parkland use CCME criteria).
- "Hard" covers over the contaminated soils, such as:
  - asphalt or concrete; and
  - paving stones underlain by "clean" soil or aggregate.
- Restrictions to access, such as:
  - administrative controls (do not enter); and
  - physical barriers (fences, hedgerows).

The costs to implement these various barriers are dependent upon the materials chosen, and the labour costs for installation. For comparative budgetary purposes, an allowance of between

$100 ("Do Not Enter" signage) to $12,500 (soil covers; fences; vegetative barriers) should be considered for implementing interim control measures.

Note that there is a potential that if soft covers are chosen as an interim soil control measure without implementation of LBP management measures, the soft covers themselves could become contaminated. The result could be that the volume of contaminated soil to be managed would increase.

7.2.2 EXCAVATION AND OFF-SITE DISPOSAL

Excavation and off-site disposal of LBP-impacted soils would remove the potential exposure to site receptors. Together with a LMP, control measures and/or abatement, the potential exposure risk from LBP-impacted soils would be permanently removed from the site.

Because the contaminated soils are in close proximity to structures, and the depth of impact is shallow (maximum 0.2 m), the working areas are small and heavy equipment would not be practical. As a result, the estimated cost for excavation and off-site disposal using an environmental contractor is approximately $165/m^3 excluding applicable taxes and backfilling of the excavated areas with topsoil is approximately $95/m^3 excluding applicable taxes.

The table below presents the estimated cost of excavation and disposal with rehabilitation of the excavations with topsoil and sod:

Item	Units	Cost	Extension
Contractor Mobilization/Demobilization	L.S.	$2,500	$2,500
Utility Clearances	L.S.	$1,900	$1,900
Soil Excavation and Disposal	45 m^3	$165/ m^3	$7,425
Backfill with topsoil	45 m^3	$95/ m^3	$4,275
Sod excavated areas	230 m^2	$6.50/ m^2	$1,495
Confirmatory testing	14 sa.	$50/sa	$700
Waste Characterization	1 sa.	$600/sa	$600
Contractor Oversight (excavation, backfilling, completion)	6 days	$750/day	$4,500
Documentation and Reporting	L.S.	$6,500	$6,500
Subtotal			$29,895
Contingency	10 %	$29,895	$3,000
Total (Excavation/Disposal/Rehabilitation; excluding HST)			$32,895

7.2.3 SCOPED RISK ASSESSMENT

In lieu of remediation of LBP-impacted soils, the alternative of conducting a scoped risk assessment (scoped RA) is evaluated. The scoped RA would be focussed on lead and arsenic impacts in soil, which are the contaminants of concern identified in soil which result from flaking LBP originating on the adjacent structures.

In order to determine a safe level (Slope Factor) for lead that can be applied in a risk evaluation, research would have to be conducted. If a suitable Slope Factor cannot be located, a value can be back calculated based on the CCME concentration of 140 ug/g or the more conservative Ontario Regulation 153/04 background concentration of 120 ug/g.

An evaluation of potential risks associated with lead and Arsenic only would not be consistent with the federal DQRA or PQRA requirements. The scoped RA would assess potential risks associated with children and youth that frequent the camp, but would also need to assess potential risks associated with staff and workers who may be on-Site more frequently than children. If the scoped RA identified potential risks associated with exposure to lead/arsenic, risk management measures (RMM) would be recommended that would likely include either the removal of lead /arsenic soil impacts or the application of a fill cover or hard cover.

The estimated cost of the scoped RA is $65,000 excluding applicable taxes. However, if the scoped RA indicates that RMM are required, "hard" or "soft" covers would likely have to be implemented. The estimated cost to prepare a scoped RA with "soft" covers comprising topsoil with sod is presented below:

Item	Units	Cost	Extension
Scoped Risk Assessment	L.S.	$65,000	$65,000
Contractor Mobilization/Demobilization	L.S.	$2,500	$2,500
Provide 0.5 m "soft" Cover (topsoil)	115 m^3	$95/ m^3	$10,925
Sod topsoil cover areas	230 m^2	$6.50/ m^2	$1,495
Confirmatory testing	14 sa.	$50/sa	$700
Contractor Oversight	5 days	$750/day	$3,750
Documentation and Reporting	L.S.	$6,500	$6,500
Subtotal (Scoped RA)			$90,870
Contingency	10 %	$90,870	$9,100
Total (Scoped RA plus Control Measures; excluding HST)			$99,970

7.3 DISCUSSION

It is understood that the implementation of management plans, control measures and/or abatement/remediation measures for lead-based paints and paint-contaminated soils is the responsibility of the site tenant.

With due consideration of budgetary requirements, PWGSC, Parks Canada and the tenant will select the LBP and paint-contaminated soil management alternatives best suited to the continued use of the site.

8.0 REFERENCES

1. Environmental Evaluation Pickering Lands Site Phase 1D Commercial properties Property Identification Number 614110/111.1 prepared by Shaheen & Peaker Limited (S&P), dated March 24, 1997.

2. Enhanced Phase I Environmental Site Assessment – Final Pickering Lands Site PIN614110, PIN614111 and PIN614112 – 10243 and 10251 Reesor Road, Markham , ON prepared by Genivar, dated March 2010.

3. Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing, Office of Healthy Homes and Lead Hazard Control, Second Edition, prepared by U.S. Department of Housing and Urban Development, July 2012.

4. Public Works and Government Services Canada and Transport Canada Phase II/III Environmental Site Assessment PWGSC Project No. R.022117.003 PINS 614110, PIN 614111, and 614112 At The Pickering Land Site (PLS) (10243 and 10251 Reesor Road Markham, Ontario) prepared by Decommissioning Consulting Services Limited (DCS), dated March 2011.

5. Screening Level Review, prepared by Terrapex, dated March 11, 2015.

9.0 CLOSURE

This project and report have been prepared in accordance with the terms of reference for this project as agreed upon by Public Works and Government Services Canada and Terrapex Environmental Ltd. and generally accepted engineering or environmental consulting practices in this area. The reported information is believed to provide a reasonable representation of the general environmental conditions at the site, however, the data were collected at specific locations and conditions may vary at other locations. The assessment was also focused on a study of those chemical parameters specifically addressed in this report.

This lead paint survey addressed only exterior paint. Borehole locations, soil samples and contaminants of concern were selected based primarily upon exterior paint analysis results that exceeded the *Surface Coating Materials Regulation* limits for lead and mercury. The extent of contamination in soil was defined based on exceedances of SQG_{HH} as a result of paint on adjacent buildings. Therefore, the areas of impact identified in this Supplemental Site Investigation and Lead Paint survey are solely a result of exceedances of human health impact criteria resulting from flaking paint deposition on surface and near-surface soils surrounding on-site buildings within CRH.

Any potential contaminants of concern associated with potential risks other than lead- and mercury-based paint on the site, and any potential contaminants of concern and potential risks associated with those portions of PIN #s 614110, 614111 and 614112 that lie beyond the limits of CRH, are not addressed as part of this report.

This report has been prepared for the sole use of Public Works and Government Services Canada and Parks Canada. Terrapex Environmental Ltd. accepts no liability for claims arising from the use of this report, or from actions taken or decisions made as a result of this report, by parties other than Public Works and Government Services Canada and Parks Canada.

Sincerely,
TERRAPEX ENVIRONMENTAL LTD.

Michael Deans, B.A.T., C.E.T.
Project Manager

Steven Ruminsky, P.Geo., P.Eng.
Senior Reviewer

FIGURES

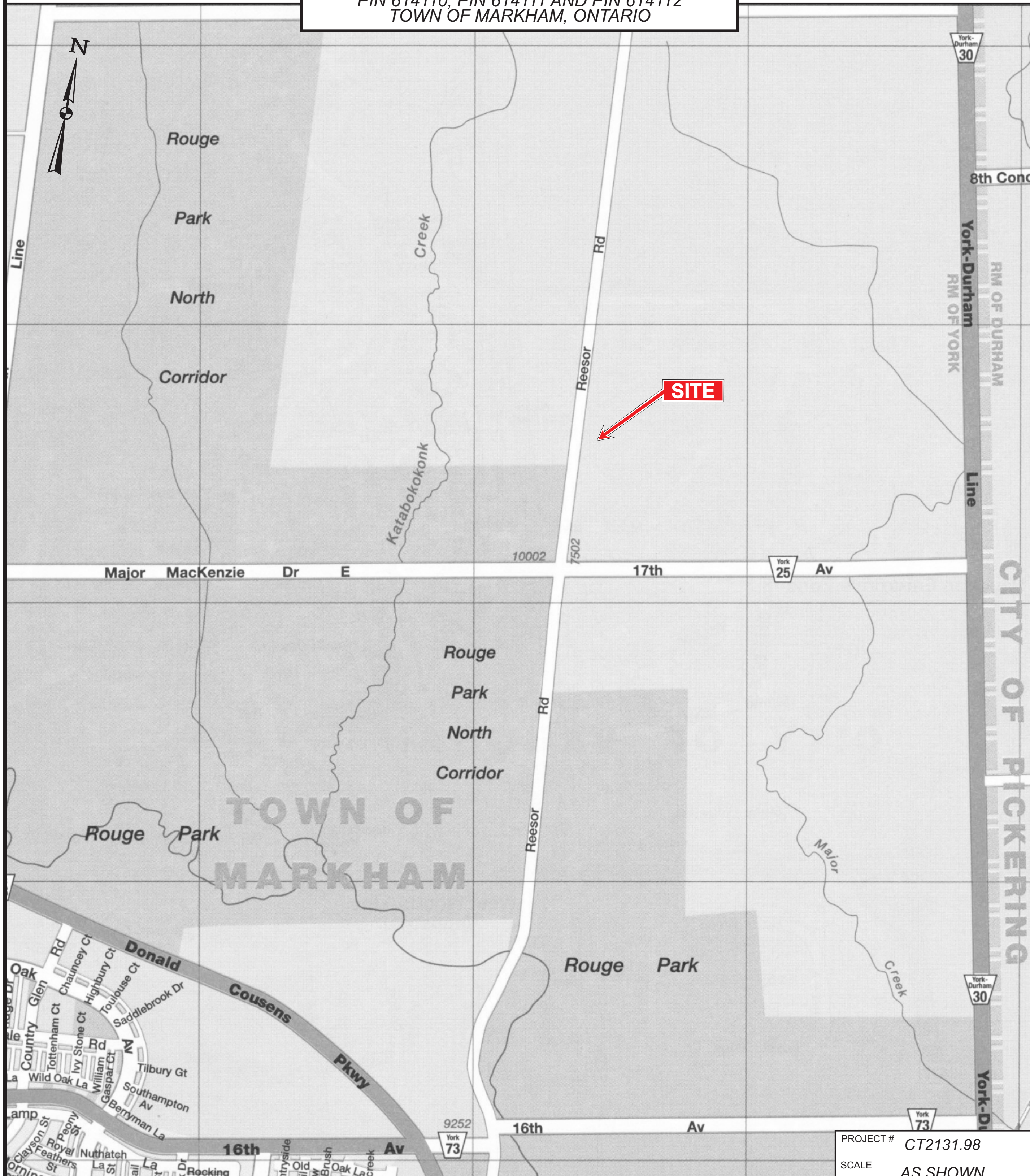
TERRAPEX

SITE LOCATION

10243 & 10251 REESOR ROAD
PIN 614110, PIN 614111 AND PIN 614112
TOWN OF MARKHAM, ONTARIO

CLIENT

Public Works and Government Services Canada



0 500m 1km
(APPROXIMATE)

SOURCE: MAPART'S GOLDEN HORSESHOE 2008 EDITION, PAGE 351.

PROJECT #	CT2131.98
SCALE	AS SHOWN
DATE	AUGUST 2015
DRAWN	SF
CHECKED	SR
DRAWING #	FIGURE 1

TERRAPEX

GENERAL SITE LAYOUT AND PAINT SAMPLING LOCATIONS

10243 & 10251 REESOR ROAD
PIN 614110, PIN 614111 AND PIN 614112
TOWN OF MARKHAM, ONTARIO

CLIENT

Public Works and Government Services Canada

LEGEND

- 2 PREVIOUS LEAD PAINT SAMPLING POINT
- PAINT SAMPLE LOCATION
- PAINT SAMPLE EXCEEDING SURFACE COATING MATERIALS REGULATION FOR LEAD
- PAINT SAMPLE EXCEEDING SURFACE COATING MATERIALS REGULATION FOR MERCURY

SOURCE: GOOGLE EARTH 2015 IMAGERY AND CAMP ROBIN HOOD SITE MAP BY GENIVAR., MARCH 2010.

PROJECT #	CT2131.98
SCALE	AS SHOWN
DATE	OCTOBER 2015
DRAWN	SF
CHECKED	MD
DRAWING #	FIGURE 2

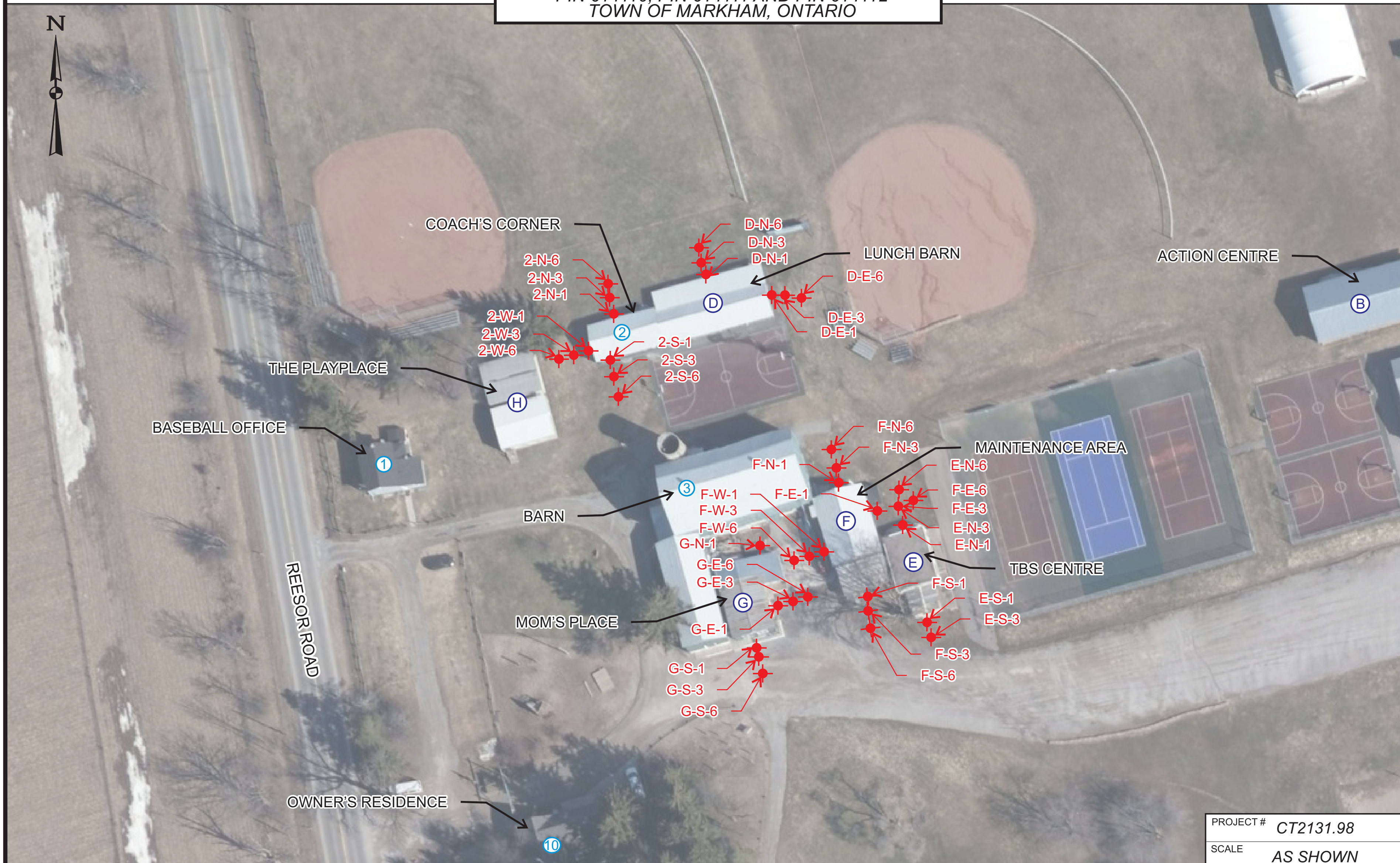
TERRAPEX

GENERAL SITE LAYOUT AND SOIL SAMPLE LOCATIONS

10243 & 10251 REESOR ROAD
PIN 614110, PIN 614111 AND PIN 614112
TOWN OF MARKHAM, ONTARIO

CLIENT

Public Works and Government Services Canada



LEGEND

- BOREHOLE
- (A) LEAD PAINT SAMPLING POINT
- (2) PREVIOUS LEAD PAINT SAMPLING POINT

0 25m 50m

(APPROXIMATE)

NOTE: LEAD PAINT SAMPLING POINT NUMBER OR LETTER REFERS TO A BUILDING REFERENCE.
SOURCE: VUMAP FIRST BASE SOLUTIONS 2014 IMAGERY.

PROJECT #	CT2131.98
SCALE	AS SHOWN
DATE	JULY 2015
DRAWN SF	CHECKED MD
DRAWING #	FIGURE 3A

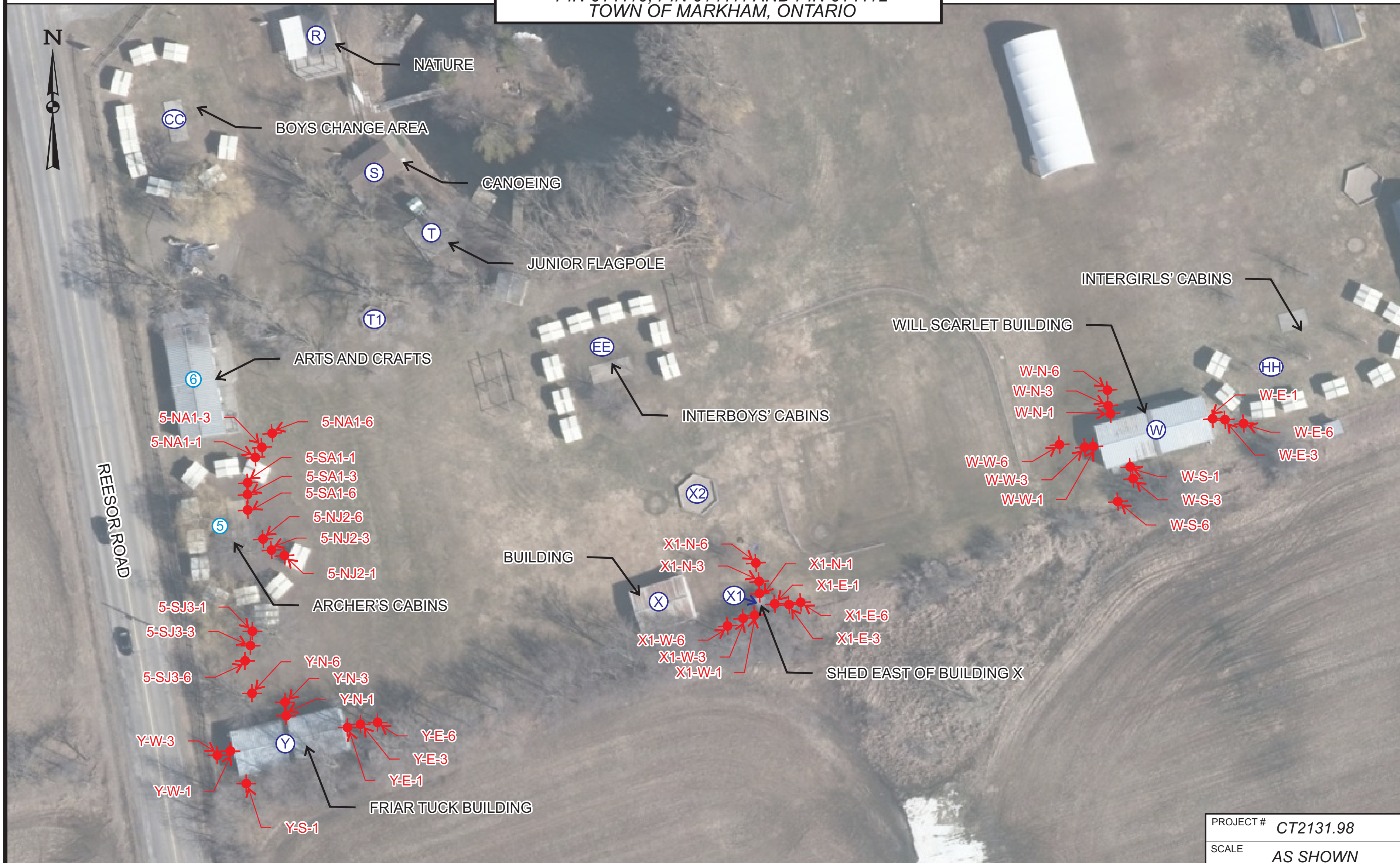
TERRAPEX

GENERAL SITE LAYOUT AND SOIL SAMPLE LOCATIONS

10243 & 10251 REESOR ROAD
PIN 614110, PIN 614111 AND PIN 614112
TOWN OF MARKHAM, ONTARIO

CLIENT

Public Works and Government Services Canada



LEGEND

- BOREHOLE
- Ⓐ LEAD PAINT SAMPLING POINT
- ② PREVIOUS LEAD PAINT SAMPLING POINT

0 25m 50m
(APPROXIMATE)

NOTE: LEAD PAINT SAMPLING POINT NUMBER OR LETTER REFERS TO A BUILDING REFERENCE.
SOURCE: VUMAP FIRST BASE SOLUTIONS 2014 IMAGERY.

PROJECT #	CT2131.98
SCALE	AS SHOWN
DATE	JULY 2015
DRAWN	SF
CHECKED	MD
DRAWING #	FIGURE 3B

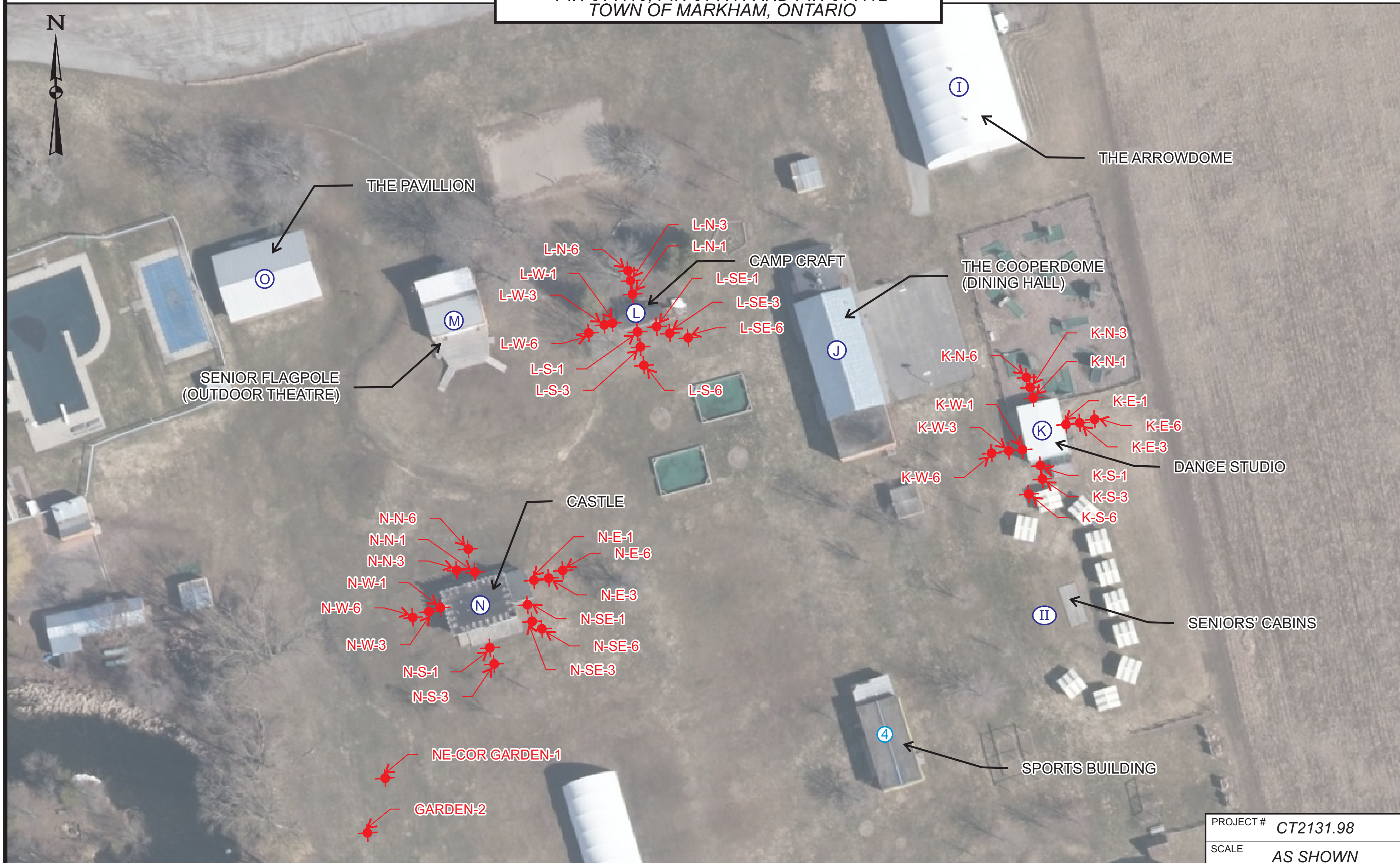
TERRAPEX

GENERAL SITE LAYOUT AND SOIL SAMPLE LOCATIONS

10243 & 10251 REESOR ROAD
PIN 614110, PIN 614111 AND PIN 614112
TOWN OF MARKHAM, ONTARIO

CLIENT

Public Works and Government Services Canada



LEGEND

- BOREHOLE
- Ⓐ LEAD PAINT SAMPLING POINT
- ② PREVIOUS LEAD PAINT SAMPLING POINT

0 25m 50m
(APPROXIMATE)

NOTE: LEAD PAINT SAMPLING POINT NUMBER OR LETTER REFERS TO A BUILDING REFERENCE.
SOURCE: VUMAP FIRST BASE SOLUTIONS 2014 IMAGERY.

PROJECT #	CT2131.98
SCALE	AS SHOWN
DATE	JULY 2015
DRAWN	SF
CHECKED	MD
DRAWING #	FIGURE 3C

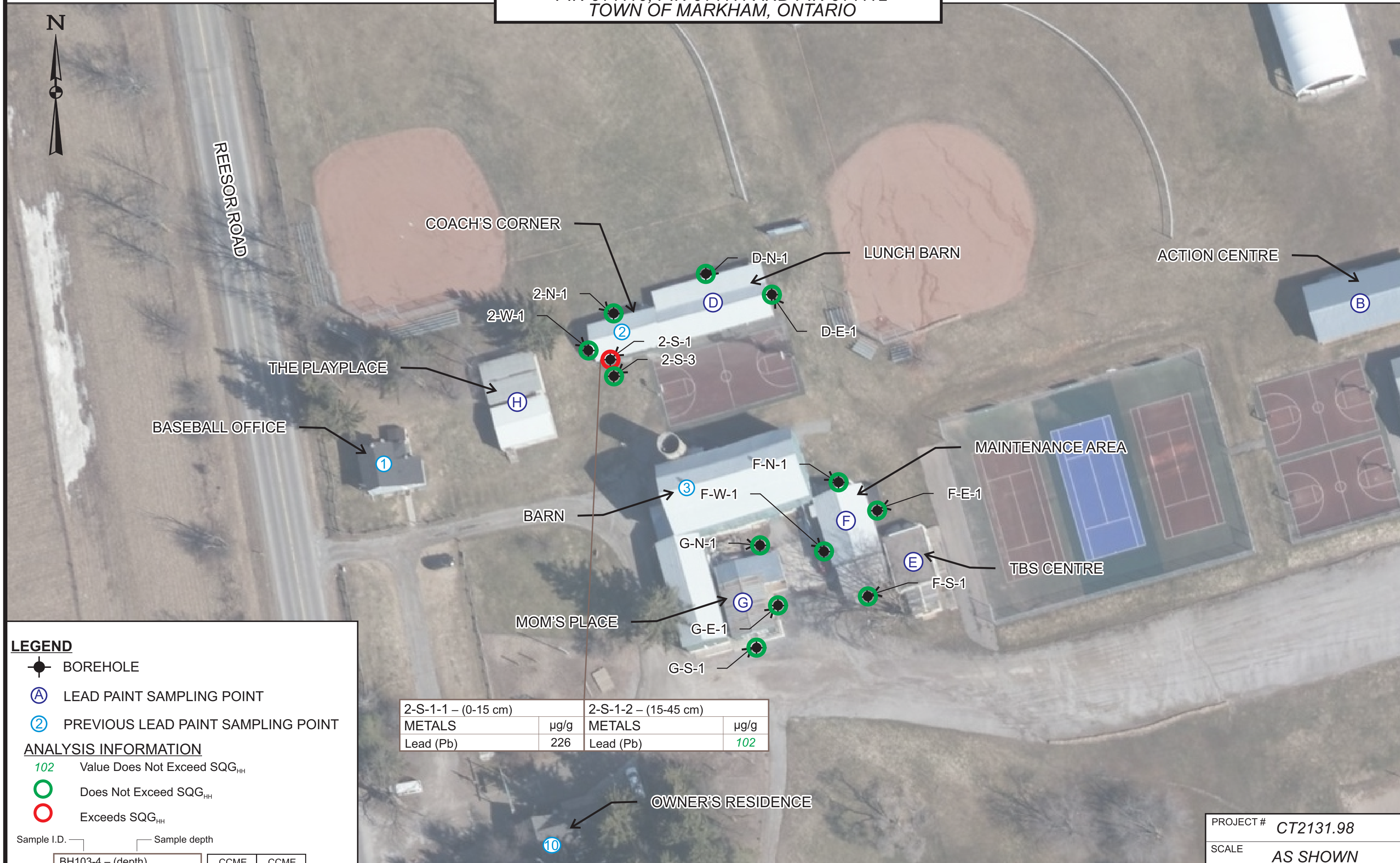
TERRAPEX

SOIL ANALYTICAL RESULTS

10243 & 10251 REESOR ROAD
PIN 614110, PIN 614111 AND PIN 614112
TOWN OF MARKHAM, ONTARIO

CLIENT

Public Works and Government Services Canada



2-S-1-1 – (0-15 cm)		2-S-1-2 – (15-45 cm)	
METALS	µg/g	METALS	µg/g
Lead (Pb)	226	Lead (Pb)	*102*

LEGEND

- BOREHOLE
- Ⓐ LEAD PAINT SAMPLING POINT
- ② PREVIOUS LEAD PAINT SAMPLING POINT

ANALYSIS INFORMATION

- *102* Value Does Not Exceed SQG_{HH}
- Does Not Exceed SQG_{HH}
- Exceeds SQG_{HH}

Sample I.D. — Sample depth

BH103-4 – (depth)		CCME SQG^1	CCME SQG_{HH}^2
METALS	µg/g		
Arsenic (As)	0.10	12	12
Lead (Pb)	0.50	140	140

Concentration

1 CCME Soil Quality Guidelines - Residential/Parkland land use
2 CCME Soil Quality Guidelines for Human Health

0 25m 50m
(APPROXIMATE)

NOTE: LEAD PAINT SAMPLING POINT NUMBER OR LETTER REFERS TO A BUILDING REFERENCE.
SOURCE: VUMAP FIRST BASE SOLUTIONS 2014 IMAGERY.

PROJECT #	CT2131.98
SCALE	AS SHOWN
DATE	JULY 2015
DRAWN	SF
CHECKED	MD
DRAWING #	FIGURE 4A

TERRAPEX

SOIL ANALYSIS RESULTS

10243 & 10251 REESOR ROAD
PIN 614110, PIN 614111 AND PIN 614112
TOWN OF MARKHAM, ONTARIO

CLIENT

Public Works and Government Services Canada

LEGEND

- BOREHOLE
- LEAD PAINT SAMPLING POINT
- PREVIOUS LEAD PAINT SAMPLING POINT
- BOREHOLE LOCATION (GENIVAR, DEC. 2009)

ANALYSIS INFORMATION

- Does Not Exceed SQG_{HH}
- Exceeds SQG_{HH}

CCME Soil Quality Guidelines for Human Health

0 25m 50m
(APPROXIMATE)

NOTE: LEAD PAINT SAMPLING POINT NUMBER OR LETTER REFERS TO A BUILDING REFERENCE.
SOURCE: VUMAP FIRST BASE SOLUTIONS 2014 IMAGERY.

PROJECT #	CT2131.98
SCALE	AS SHOWN
DATE	JULY 2015
DRAWN	SF
CHECKED	MD
DRAWING #	FIGURE 4B

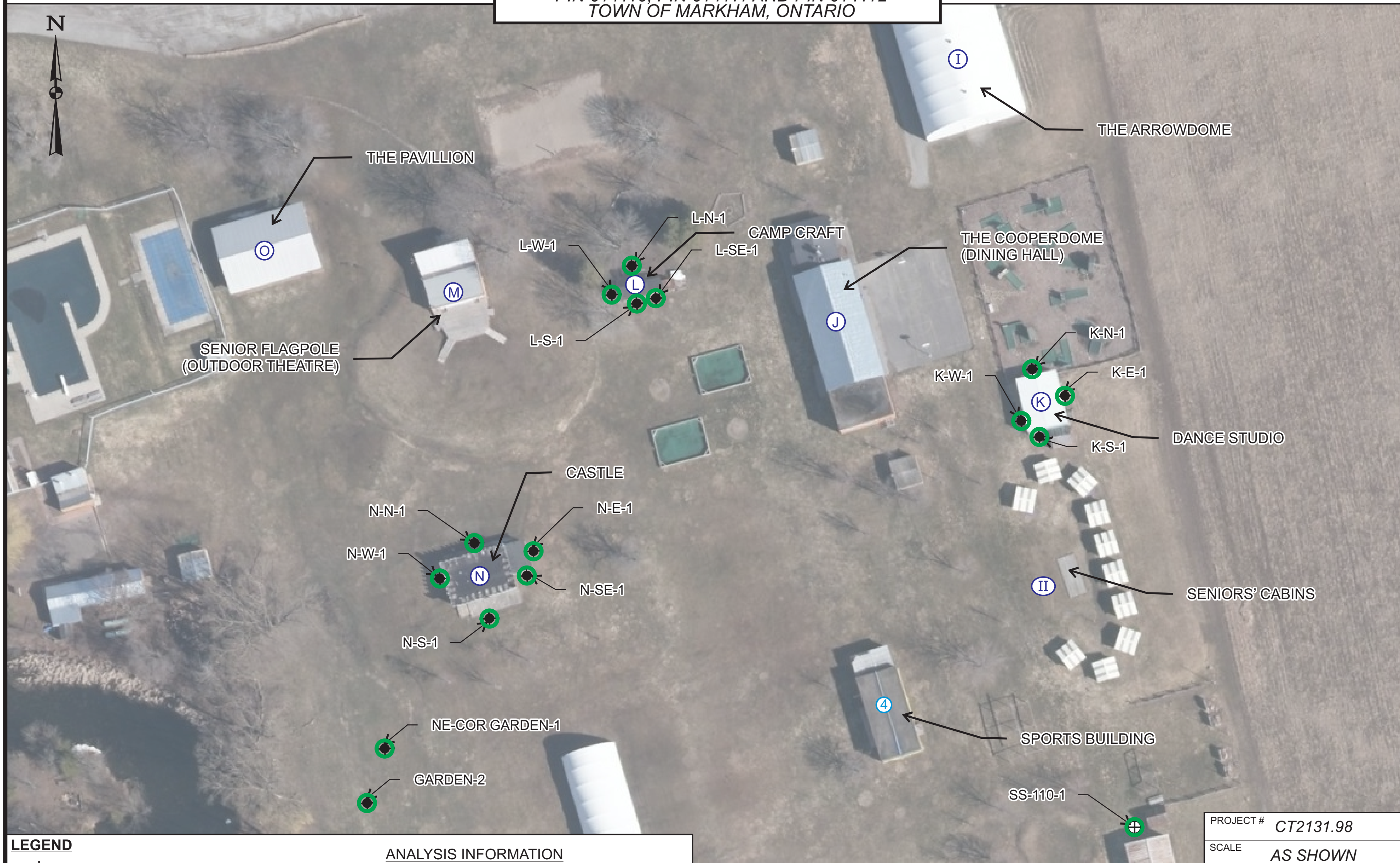
TERRAPEX

SOIL ANALYSIS RESULTS

10243 & 10251 REESOR ROAD
PIN 614110, PIN 614111 AND PIN 614112
TOWN OF MARKHAM, ONTARIO

CLIENT

Public Works and
Government Services
Canada



LEGEND

- BOREHOLE
- LEAD PAINT SAMPLING POINT
- PREVIOUS LEAD PAINT SAMPLING POINT
- BOREHOLE LOCATION (GENIVAR, DEC. 2009)

ANALYSIS INFORMATION

- Does Not Exceed SQG_{HH}
- Exceeds SQG_{HH}

CCME Soil Quality Guidelines for Human Health

0 25m 50m

(APPROXIMATE)

NOTE: LEAD PAINT SAMPLING POINT NUMBER OR LETTER REFERS TO A BUILDING REFERENCE.
SOURCE: VUMAP FIRST BASE SOLUTIONS 2014 IMAGERY.

PROJECT #	CT2131.98
SCALE	AS SHOWN
DATE	JULY 2015
DRAWN SF	CHECKED MD
DRAWING #	FIGURE 4C

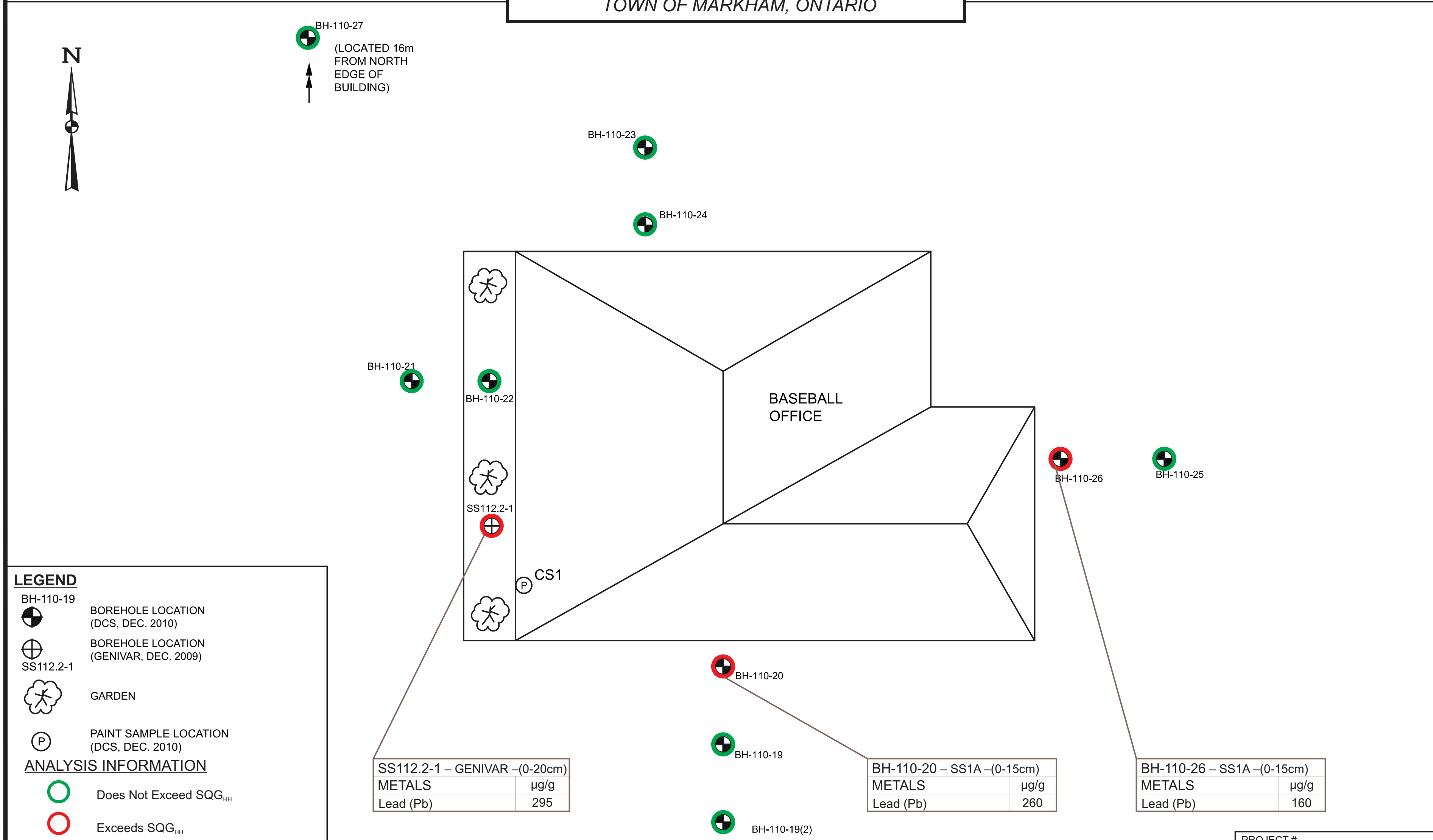
TERRAPEX

SOIL ANALYSIS RESULTS - BASEBALL OFFICE

10243 & 10251 REESOR ROAD
PIN 614110, PIN 614111 AND PIN 614112
TOWN OF MARKHAM, ONTARIO

CLIENT

Public Works and Government Services Canada



SS112.2-1 – GENIVAR –(0-20cm)	
METALS	µg/g
Lead (Pb)	295

BH-110-20 – SS1A –(0-15cm)	
METALS	µg/g
Lead (Pb)	260

BH-110-26 – SS1A –(0-15cm)	
METALS	µg/g
Lead (Pb)	160

LEGEND

BH-110-19 BOREHOLE LOCATION (DCS, DEC. 2010)

SS112.2-1 BOREHOLE LOCATION (GENIVAR, DEC. 2009)

GARDEN

PAINT SAMPLE LOCATION (DCS, DEC. 2010)

ANALYSIS INFORMATION

Does Not Exceed SQG_{HH}

Exceeds SQG_{HH}

Sample I.D. — Sample depth

BH103-4 – (depth)		CCME SQG[1]	CCME SQG_{HH}[2]
METALS	µg/g		
Arsenic (As)	0.10	12	12
Lead (Pb)	0.50	140	140

Concentration

1 CCME Soil Quality Guidelines - Residential/Parkland land use
2 CCME Soil Quality Guidelines for Human Health

SOURCE: SAMPLING PLAN BASEBALL OFFICE BY DECOMMISSIONING CONSULTING SERVICES LIMITED (DCS), JAN 2011.

PROJECT #	CT2131.98
SCALE	AS SHOWN
DATE	JULY 2015
DRAWN SF	CHECKED MD
DRAWING #	FIGURE 4D

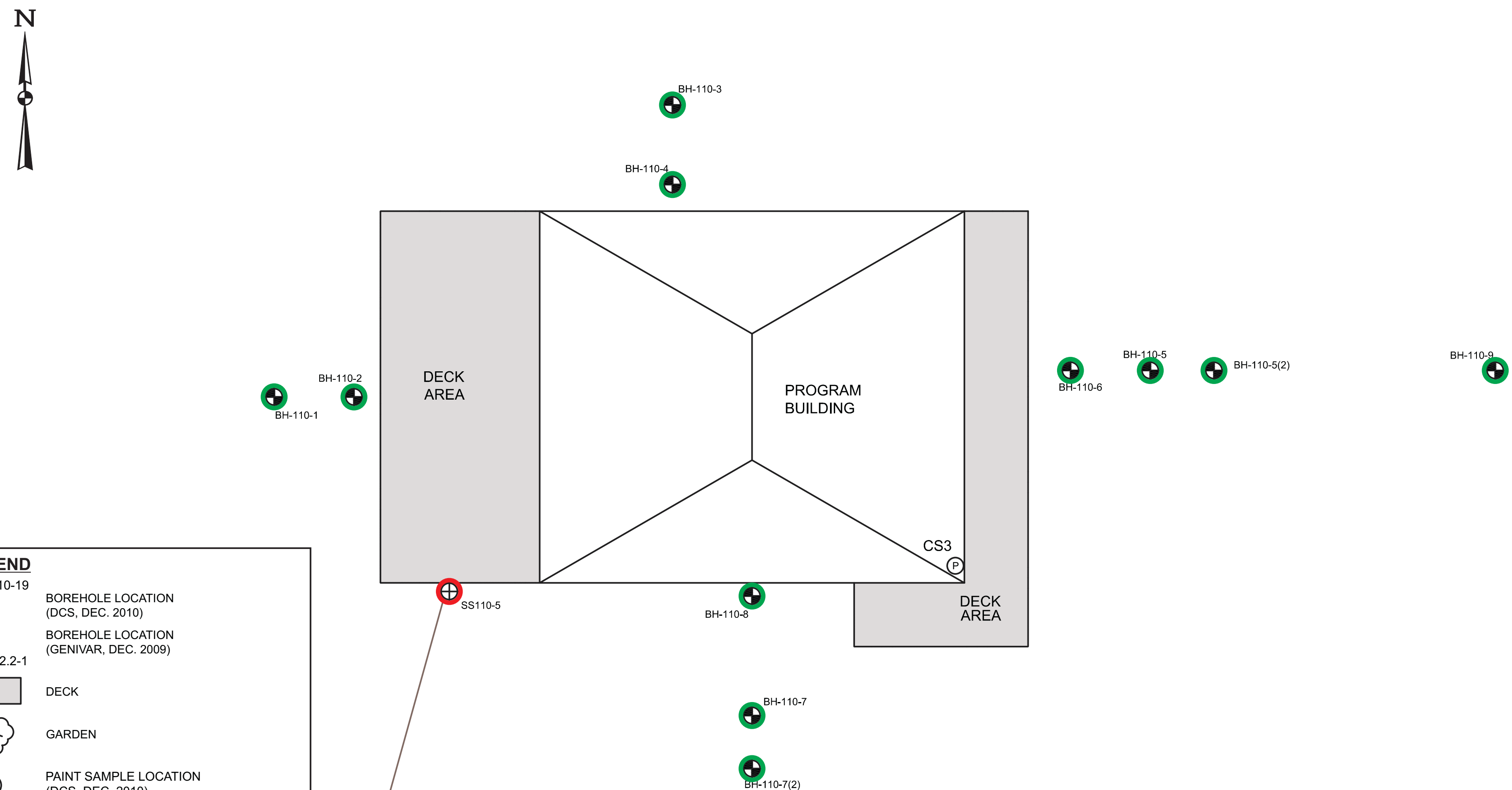
TERRAPEX

SOIL ANALYSIS RESULTS - PROGRAM BUILDING

10243 & 10251 REESOR ROAD
PIN 614110, PIN 614111 AND PIN 614112
TOWN OF MARKHAM, ONTARIO

CLIENT

Public Works and Government Services Canada



SS110-5 – GENIVAR –(0-20cm)	
METALS	µg/g
Arsenic (As)	30.9
Lead (Pb)	175

0 2.5m 5m
(APPROXIMATE)

LEGEND

BH-110-19 BOREHOLE LOCATION (DCS, DEC. 2010)

SS112.2-1 BOREHOLE LOCATION (GENIVAR, DEC. 2009)

DECK

GARDEN

PAINT SAMPLE LOCATION (DCS, DEC. 2010)

ANALYSIS INFORMATION

Does Not Exceed SQG_{HH}

Exceeds SQG_{HH}

Sample I.D. Sample depth

BH103-4 – (depth)		CCME SQG[1]	CCME SQG_{HH}[2]
METALS	µg/g		
Arsenic (As)	0.10	12	12
Lead (Pb)	0.50	140	140

Concentration

1 CCME Soil Quality Guidelines - Residential/Parkland land use
2 CCME Soil Quality Guidelines for Human Health

SOURCE: SAMPLING PLAN PROGRAM BUILDING BY DECOMMISSIONING CONSULTING SERVICES LIMITED (DCS), JAN 2011.

PROJECT #	CT2131.98
SCALE	AS SHOWN
DATE	JULY 2015
DRAWN	SF
CHECKED	MD
DRAWING #	FIGURE 4E

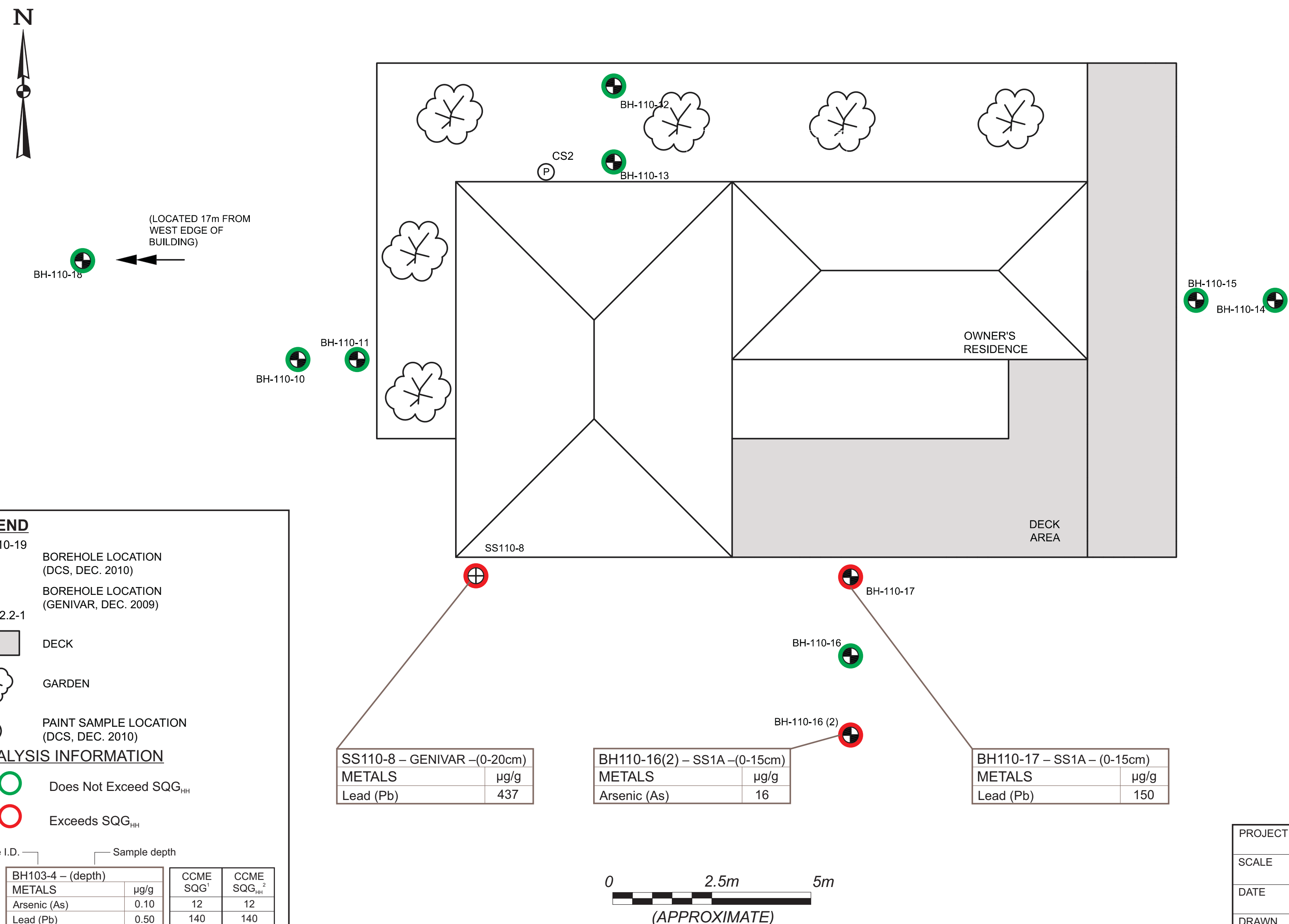
TERRAPEX

SOIL ANALYSIS RESULTS - OWNER'S RESIDENCE

10243 & 10251 REESOR ROAD
PIN 614110, PIN 614111 AND PIN 614112
TOWN OF MARKHAM, ONTARIO

CLIENT

Public Works and Government Services Canada



LEGEND

BH-110-19 BOREHOLE LOCATION (DCS, DEC. 2010)

SS112.2-1 BOREHOLE LOCATION (GENIVAR, DEC. 2009)

DECK

GARDEN

PAINT SAMPLE LOCATION (DCS, DEC. 2010)

ANALYSIS INFORMATION

Does Not Exceed SQG_{HH}

Exceeds SQG_{HH}

Sample I.D. — Sample depth

BH103-4 – (depth)		CCME SQG[1]	CCME SQG_{HH}[2]
METALS	µg/g		
Arsenic (As)	0.10	12	12
Lead (Pb)	0.50	140	140

Concentration

1 CCME Soil Quality Guidelines - Residential/Parkland land use
2 CCME Soil Quality Guidelines for Human Health

SOURCE: SAMPLING PLAN OWNER'S RESIDENCE BY DECOMMISSIONING CONSULTING SERVICES LIMITED (DCS), JAN 2011.

PROJECT #	CT2131.98
SCALE	AS SHOWN
DATE	JULY 2015
DRAWN	SF
CHECKED	MD
DRAWING #	FIGURE 4F

TERRAPEX

SOIL ANALYSIS RESULTS

10243 & 10251 REESOR ROAD
PIN 614110, PIN 614111 AND PIN 614112
TOWN OF MARKHAM, ONTARIO

CLIENT

Public Works and Government Services Canada

SS-110-5 – GENIVAR –(0-20cm)	
METALS	µg/g
Arsenic (As)	30.9
Lead (Pb)	175

LEGEND

- (A) LEAD PAINT SAMPLING POINT
- (2) PREVIOUS LEAD PAINT SAMPLING POINT
- ⊕ BOREHOLE LOCATION (GENIVAR, DEC. 2009)

ANALYSIS INFORMATION

- Does Not Exceed SQG_{HH}
- Exceeds SQG_{HH}

Sample I.D. — Sample depth

BH103-4 – (depth)		CCME SQG[1]	CCME SQG_{HH}[2]
METALS	µg/g		
Arsenic (As)	0.10	12	12
Lead (Pb)	0.50	140	140

Concentration

1 CCME Soil Quality Guidelines - Residential/Parkland land use
2 CCME Soil Quality Guidelines for Human Health

0 25m 50m
(APPROXIMATE)

NOTE: LEAD PAINT SAMPLING POINT NUMBER OR LETTER REFERS TO A BUILDING REFERENCE.
SOURCE: VUMAP FIRST BASE SOLUTIONS 2014 IMAGERY.

PROJECT #	CT2131.98
SCALE	AS SHOWN
DATE	JULY 2015
DRAWN SF	CHECKED MD
DRAWING #	FIGURE 4G

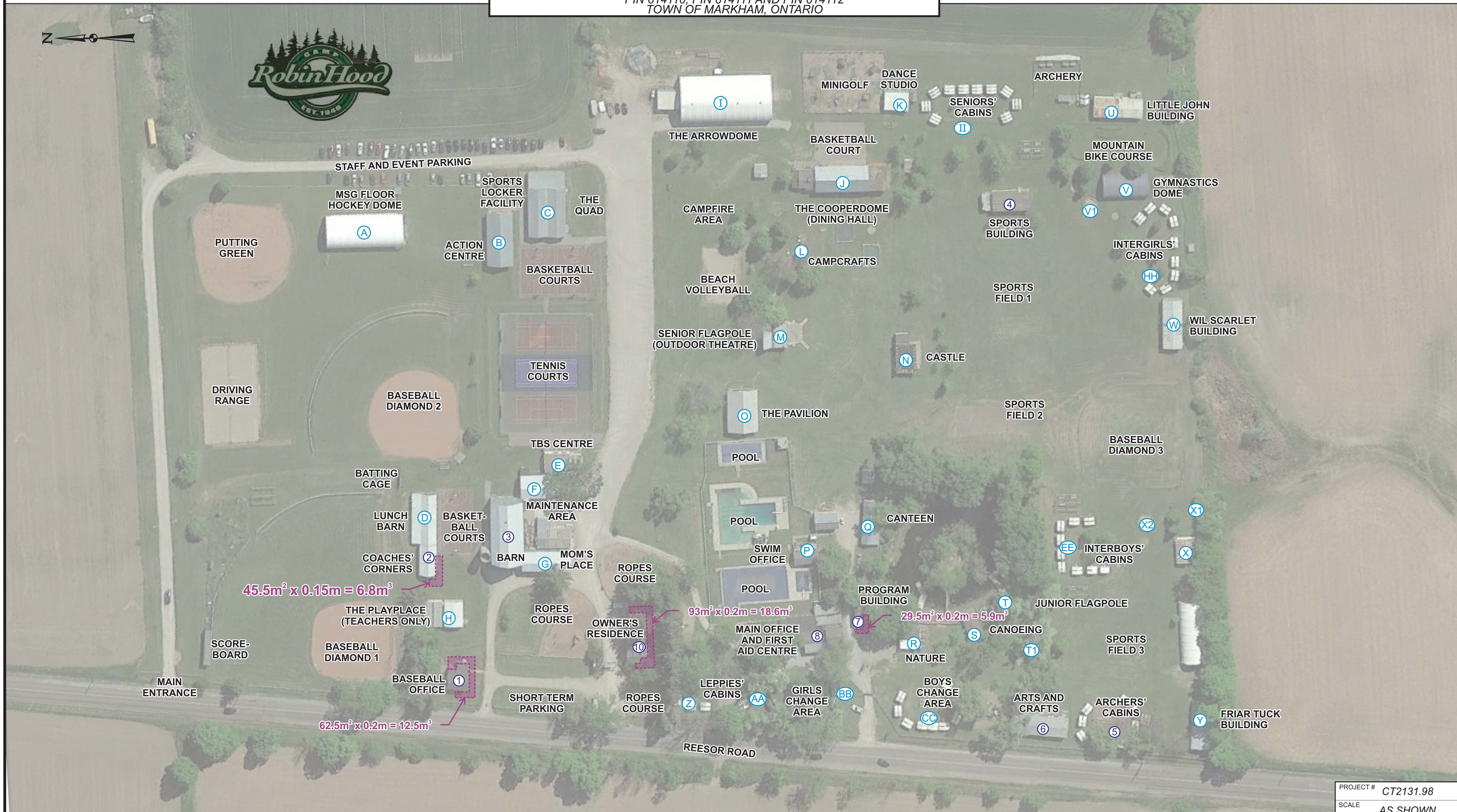
TERRAPEX

EXTENT OF SOIL IMPACTS SQG_{HH}

10243 & 10251 REESOR ROAD
PIN 614110, PIN 614111 AND PIN 614112
TOWN OF MARKHAM, ONTARIO

CLIENT

Public Works and Government Services Canada



LEGEND

- (A) LEAD PAINT SAMPLING POINT
- (2) PREVIOUS LEAD PAINT SAMPLING POINT
- INFERRED EXTENT OF SOIL EXCEEDING SQG_{HH}

CCME Soil Quality Guidelines for Human Health

NOTE: LEAD PAINT SAMPLING POINT NUMBER OR LETTER REFERS TO A BUILDING REFERENCE.
SOURCE: GOOGLE EARTH 2015 IMAGERY AND CAMP ROBIN HOOD SITE MAP BY GENIVAR., MARCH 2010.

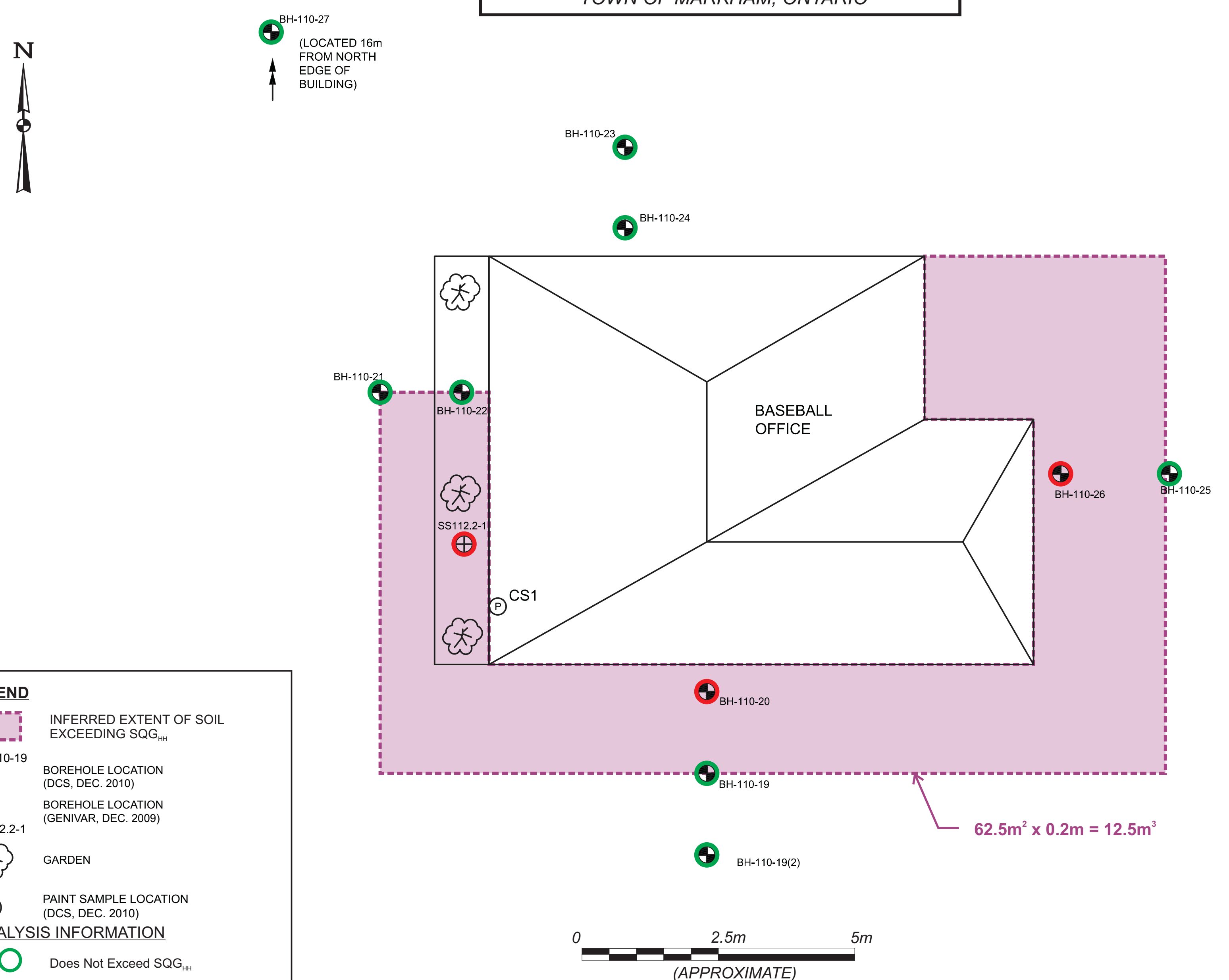
0 50m 100m
(APPROXIMATE)

PROJECT #	CT2131.98
SCALE	AS SHOWN
DATE	OCTOBER 2015
DRAWN	SF
CHECKED	MD
DRAWING #	FIGURE 5A

TERRAPEX

EXTENT OF SOIL IMPACTS SQG_{HH}- BASEBALL OFFICE
10243 & 10251 REESOR ROAD
PIN 614110, PIN 614111 AND PIN 614112
TOWN OF MARKHAM, ONTARIO

CLIENT
Public Works and Government Services Canada



LEGEND

INFERRED EXTENT OF SOIL EXCEEDING SQG_{HH}

BH-110-19 BOREHOLE LOCATION (DCS, DEC. 2010)

SS112.2-1 BOREHOLE LOCATION (GENIVAR, DEC. 2009)

GARDEN

PAINT SAMPLE LOCATION (DCS, DEC. 2010)

ANALYSIS INFORMATION

Does Not Exceed SQG_{HH}

Exceeds SQG_{HH}

CCME Soil Quality Guidelines for Human Health

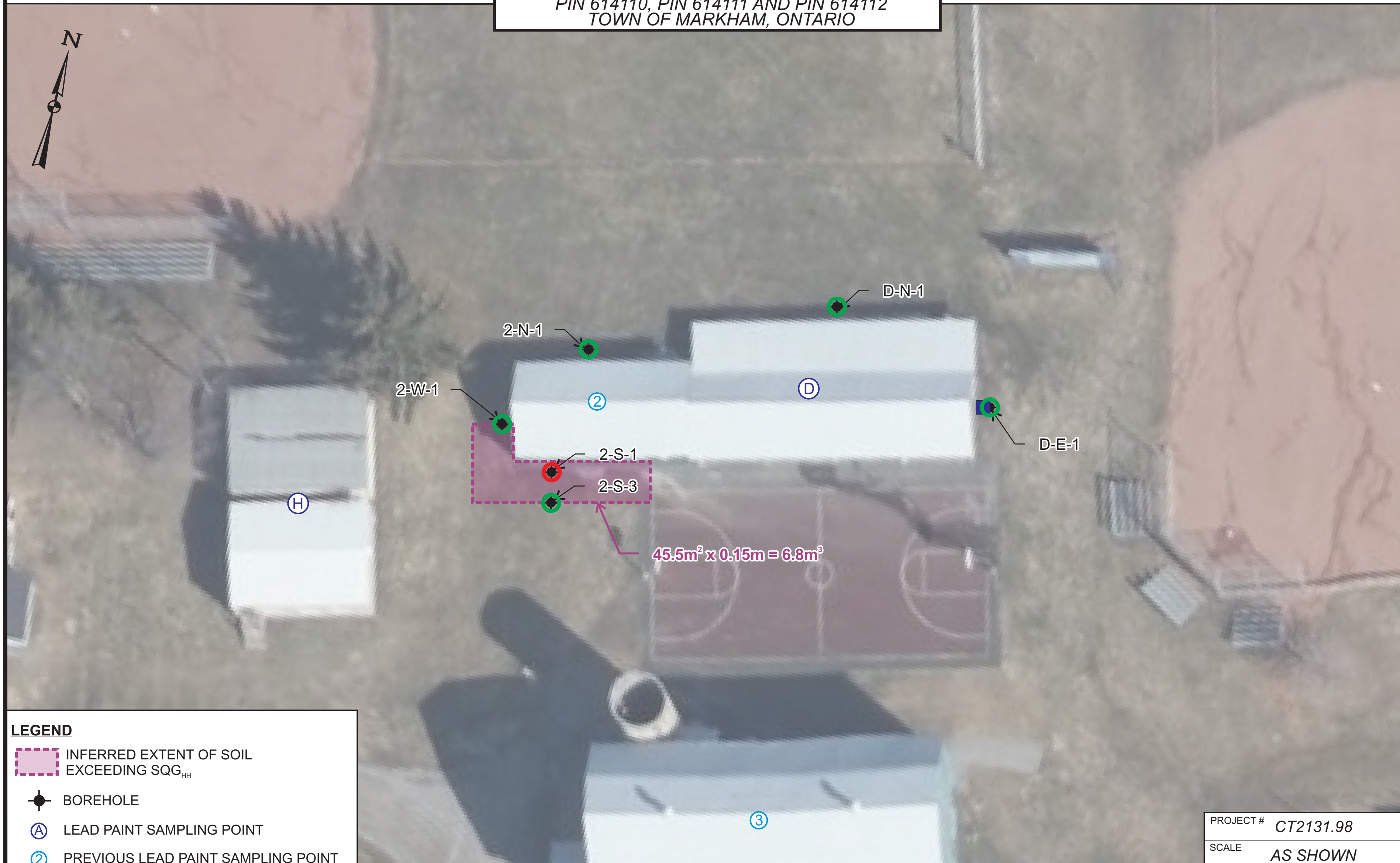
SOURCE: SAMPLING PLAN BASEBALL OFFICE BY DECOMMISSIONING CONSULTING SERVICES LIMITED (DCS), JAN 2011.

PROJECT #	CT2131.98
SCALE	AS SHOWN
DATE	AUGUST 2015
DRAWN	SF
CHECKED	SR
DRAWING #	FIGURE 5B

TERRAPEX

EXTENT OF SOIL IMPACTS SQG_{HH} - PHOTOGRAPHY BUILDING / COACHES' CORNER
10243 & 10251 REESOR ROAD
PIN 614110, PIN 614111 AND PIN 614112
TOWN OF MARKHAM, ONTARIO

CLIENT
Public Works and Government Services Canada



LEGEND

- INFERRED EXTENT OF SOIL EXCEEDING SQG_{HH}
- BOREHOLE
- Ⓐ LEAD PAINT SAMPLING POINT
- ② PREVIOUS LEAD PAINT SAMPLING POINT

ANALYSIS INFORMATION

- Does Not Exceed SQG_{HH}
- Exceeds SQG_{HH}

CCME Soil Quality Guidelines for Human Health

0 25m 50m
(APPROXIMATE)

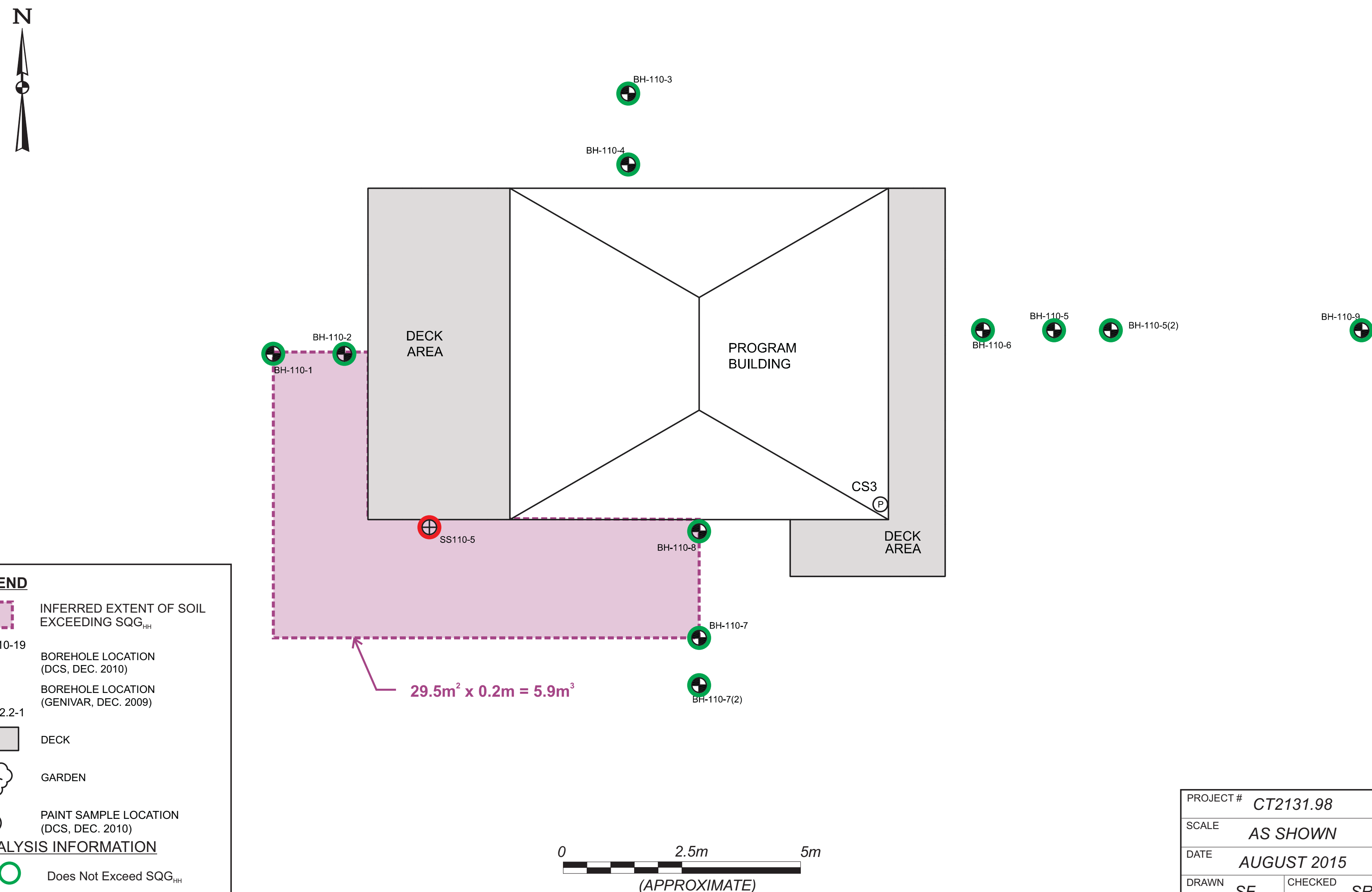
NOTE: LEAD PAINT SAMPLING POINT NUMBER OR LETTER REFERS TO A BUILDING REFERENCE.
SOURCE: VUMAP FIRST BASE SOLUTIONS 2014 IMAGERY.

PROJECT #	CT2131.98
SCALE	AS SHOWN
DATE	AUGUST 2015
DRAWN	SF
CHECKED	SR
DRAWING #	FIGURE 5C

TERRAPEX

EXTENT OF SOIL IMPACTS SQG$_{HH}$-
PROGRAM BUILDING
10243 & 10251 REESOR ROAD
PIN 614110, PIN 614111 AND PIN 614112
TOWN OF MARKHAM, ONTARIO

CLIENT
Public Works and Government Services Canada



LEGEND

INFERRED EXTENT OF SOIL EXCEEDING SQG$_{HH}$

BH-110-19
BOREHOLE LOCATION (DCS, DEC. 2010)

BOREHOLE LOCATION (GENIVAR, DEC. 2009)
SS112.2-1

DECK

GARDEN

PAINT SAMPLE LOCATION (DCS, DEC. 2010)

ANALYSIS INFORMATION

Does Not Exceed SQG$_{HH}$

Exceeds SQG$_{HH}$

CCME Soil Quality Guidelines for Human Health

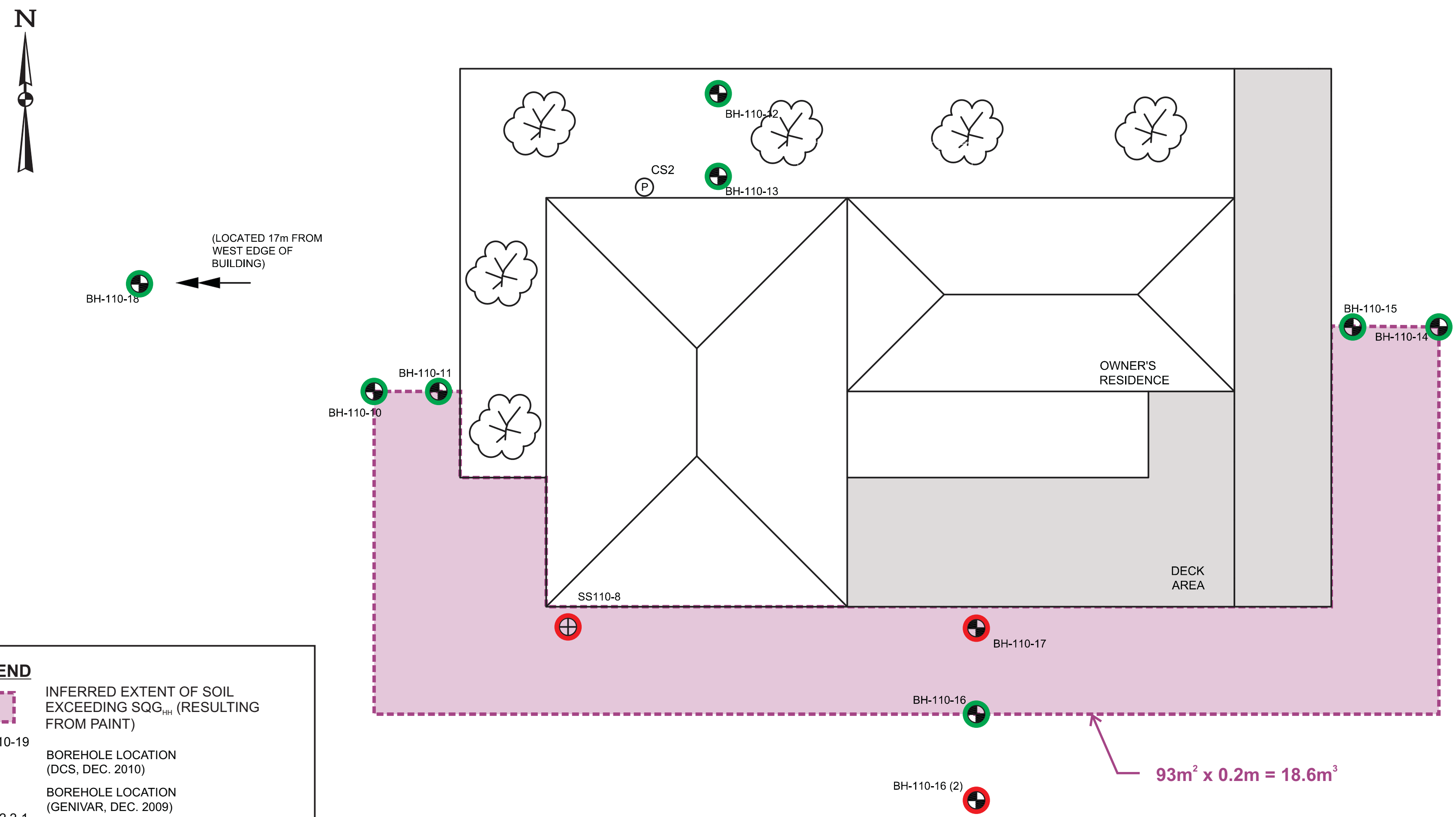
SOURCE: SAMPLING PLAN PROGRAM BUILDING BY DECOMMISSIONING CONSULTING SERVICES LIMITED (DCS), JAN 2011.

PROJECT #	CT2131.98
SCALE	AS SHOWN
DATE	AUGUST 2015
DRAWN SF	CHECKED SR
DRAWING #	FIGURE 5D

TERRAPEX

EXTENT OF SOIL IMPACTS SQG_{HH}-
OWNER'S RESIDENCE
10243 & 10251 REESOR ROAD
PIN 614110, PIN 614111 AND PIN 614112
TOWN OF MARKHAM, ONTARIO

CLIENT
Public Works and Government Services Canada



LEGEND

INFERRED EXTENT OF SOIL EXCEEDING SQG_{HH} (RESULTING FROM PAINT)

BH-110-19 BOREHOLE LOCATION (DCS, DEC. 2010)

SS112.2-1 BOREHOLE LOCATION (GENIVAR, DEC. 2009)

DECK

GARDEN

PAINT SAMPLE LOCATION (DCS, DEC. 2010)

ANALYSIS INFORMATION

Does Not Exceed SQG_{HH}

Exceeds SQG_{HH}

CCME Soil Quality Guidelines for Human Health

0 2.5m 5m
(APPROXIMATE)

SOURCE: SAMPLING PLAN OWNER'S RESIDENCE BY DECOMMISSIONING CONSULTING SERVICES LIMITED (DCS), JAN 2011.

PROJECT #	CT2131.98
SCALE	AS SHOWN
DATE	AUGUST 2015
DRAWN	SF
CHECKED	SR
DRAWING #	FIGURE 5E

TABLES

TABLE 1 BOREHOLE LOGS

10234 & 10251 Reesor Road, Markham, Ontario (Camp Robin Hood)

Building:	Photography Building - Coaches' Corner (2)
Location:	**North Wall**
Sample ID:	2-N-1-1/2-N-1-2
GPS location and measurement:	17 T 0642885 m E / 4865275 m N / 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm/ Field Duplicate 2-N-1-3 (40% recovery)
Description:	0-15 cm: Topsoil, rootlets, some gravel, brown, moist
	15-45 cm: Silty clay, some sand and gravel, brown, very moist
Location:	North Wall
Sample ID:	2-N-3-1/2-N-3-2
GPS location and measurement:	17 T 0642884 m E / 4865278 m N/ 3.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (70% recovery)
Description:	0-15 cm: Topsoil, rootlets, some gravel, brown, moist
	15-45 cm: Silty clay, some sand and gravel, brown, very moist
Location:	North Wall
Sample ID:	2-N-6-1/2-N-6-2
GPS location and measurement:	17 T 0642886 m E / 4865276 m N / 6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (50% recovery)
Description:	0-15 cm: Topsoil, rootlets, some gravel, brown, moist
	15-45 cm: Silty clay, some sand and gravel, brown, very moist
Location:	**West Wall**
Sample ID:	2-W-1-1/2-W-1-2
GPS location and measurement:	17 T 0642879 m E / 4865264 m N / 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (30% recovery)
Description:	0-15 cm: Topsoil, rootlets, some gravel , brown, moist
	15-45 cm: Silty sand, some gravel, brown, moist
Location:	West Wall
Sample ID:	2-W-3-1/2-W-3-2
GPS location and measurement:	17 T 0642875 m E / 4865266 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (50% recovery)
Description:	0-15 cm: Topsoil, rootlets, some gravel , brown, moist
	15-45 cm: Silty sand, some gravel, brown, moist
Location:	West Wall
Sample ID:	2-W-6-1/2-W-6-2
GPS location and measurement:	17 T 0642875 m E / 4865265 m N / 6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm/Field Duplicate 2-W-6-3 (60% recovery)
Description:	0-15 cm: Topsoil, rootlets, some gravel , brown, moist
	15-45 cm: Silty sand, some gravel, brown, moist
Location:	**South Wall**
Sample ID:	2-S-1-1/2-S-1-2
GPS location and measurement:	17 T 0642894 m E / 4865259 m N / 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (50% recovery)
Description:	0-15 cm: Topsoil, rootlets, some gravel , brown, moist
	15-45 cm: Silty sand, some gravel, brown, moist
Location:	South Wall
Sample ID:	2-S-3-1/2-S-3-2
GPS location and measurement:	17 T 0642896 m E/ 4865255 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (60% recovery)
Description:	0-15 cm: Topsoil, rootlets, some gravel , brown, moist
	15-45 cm: Silty sand, some gravel, brown, moist
Location:	South Wall
Sample ID:	2-S-6-1/2-S-6-2
GPS location and measurement:	17 T 06422892 m E / 4865252 m N / 7 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (35% recovery)
Description:	0-15 cm: Topsoil, rootlets, some gravel , brown, moist
	15-45 cm: Silty sand, some gravel, brown, moist

Entered by: ML
Checked By: KM

TABLE 1 BOREHOLE LOGS

10234 & 10251 Reesor Road, Markham, Ontario (Camp Robin Hood)

Building:	Archery Huts (5)
Location:	**Behind SJ3 (hut) - South**
Sample ID:	5-SJ3-1-1/5-SJ3-1-2
GPS location and measurement:	17 T 0642903 m E / 4864992 m N / 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,rootlets, trace clay, brown, moist
	15-45 cm: Clayey silt, brown, moist
Location:	Behind SJ3 (hut) - South
Sample ID:	5-SJ3-3-1/5-SJ3-3-2
GPS location and measurement:	17 T 0642906 m E / 4864988 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,rootlets, trace clay, brown, moist
	15-45 cm: Clayey silt, brown, moist
Location:	Behind SJ3 (hut) - South
Sample ID:	5-SJ3-6-1/5-SJ3-6-2
GPS location and measurement:	17 T 0642903 m E / 4864988 m N / 5.5 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,organic material, trace clay, brown, moist
	15-45 cm: Clayey silt, brown, moist
Location:	**North of Building J2**
Sample ID:	5-NJ2-1-1/5-NJ2-1-2
GPS location and measurement:	17 T 0642905 m E / 4864998 m N / 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,organic material, trace clay, brown, moist
	15-45 cm: Clayey silt, brown, moist
Location:	North of building J2
Sample ID:	5-NJ2-3-1/5-NJ2-3-2
GPS location and measurement:	17 T 0642902 m E / 4865003 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,organic material, trace clay, brown, moist
	15-45 cm: Clayey silt, brown, moist
Location:	North of building J2
Sample ID:	5-NJ2-6-1/5-NJ2-6-2
GPS location and measurement:	17 T 0642907 m E / 4865002 m N / 5.5 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,organic material, trace clay, brown, moist
	15-45 cm: Clayey silt, brown, moist
Location:	**South of Building A1**
Sample ID:	5-SA1-1-1/5-SA1-1-1
GPS location and measurement:	17 T 0642896m E / 4864973 m N / 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,organic material, trace clay, brown, moist
	15-45 cm: Clayey silt, brown, moist
Location:	South of Building A1
Sample ID:	5-SA1-3-1/5-SA1-3-2
GPS location and measurement:	17 T 0642900m E / 4864968 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,organic material, trace clay, brown, moist
	15-45 cm: Clayey silt, brown, moist
Location:	South of Building A1
Sample ID:	5-SA1-6-1/5-SA1-6-2
GPS location and measurement:	17 T 0642897 m E / 4864966 m N / 5.5 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,organic material, trace clay, brown, moist
	15-45 cm: Clayey silt, brown, moist
Location:	**North of Building A1**
Sample ID:	5-NA1-1-1/5-NA1-1-1
GPS location and measurement:	17 T 0642902 m E / 4864979 m N / 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,organic material, trace clay, brown, moist
	15-45 cm: Clayey silt, brown, moist
Location:	North of Building A1
Sample ID:	5-NA1-3-1/5-NA1-3-2
GPS location and measurement:	17 T 0642901 m E / 4864982 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,organic material, trace clay, brown, moist
	15-45 cm: Clayey silt, brown, moist
Location:	North of Building A1
Sample ID:	5-NA1-6-1/5-NA1-6-2
GPS location and measurement:	17 T 0642900 m E / 4864983 m N / 5.5 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,organic material, trace clay, brown, moist
	15-45 cm: Clayey silt, brown, moist

Entered by: ML
Checked By: KM

TABLE 1 BOREHOLE LOGS
10234 & 10251 Reesor Road, Markham, Ontario (Camp Robin Hood)

Building:	Lunch Barn (D)
Location:	**East Wall**
Sample ID:	D-E-1-1/D-E-1-2
GPS location and measurement:	17 T 0642917 m E / 4865275 m N / 0.3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm/ Field Duplicate D-E-1-3 (25% recovery)
Description:	0-15 cm: Topsoil, rootlets, silty sand, some gravel, brown, moist
	15-45 cm: No recovery
Location:	East Wall
Sample ID:	D-E-3-1/D-E-3-2
GPS location and measurement:	17 T 0642919 m E / 4865275 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (60% recovery)
Description:	0-15 cm: Topsoil, rootlets, silty sand, some gravel, brown, moist
	15-45 cm: Silty clay, some gravel, brown, moist
Location:	East Wall
Sample ID:	D-E-6-1/D-E-6-2
GPS location and measurement:	17 T 0642923 m E / 4865275 m N / 6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (50% recovery)
Description:	0-15 cm: Topsoil, rootlets, silty sand, some gravel, brown, moist
	15-45 cm: Silty clay, some sand and gravel, brown, moist
Location:	**North Wall**
Sample ID:	D-N-1-1/D-N-1-2
GPS location and measurement:	17 T 0642905 m E / 4865281 m N / 0.3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (30% recovery)
Description:	0-15 cm: Topsoil, rootlets, some gravel , brown, moist
	15-45 cm: Silty clay, sand and some gravel, brown, moist
Location:	North Wall
Sample ID:	D-N-3-1/D-N-3-2
GPS location and measurement:	17 T 0642902 m E / 4865284 m N/ 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (65% recovery)
Description:	0-15 cm: Topsoil, rootlets, some gravel, brown, moist
	15-45 cm: Silty clay, some sand and gravel, brown, very moist
Location:	North Wall
Sample ID:	D-N-6-1/D-N-6-2
GPS location and measurement:	17 T 0642901 m E / 4865286 m N / 6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (35% recovery)
Description:	0-15 cm: Topsoil, rootlets, some gravel, brown, moist
	15-45 cm: Silty clay, some sand and gravel, brown, very moist

Entered by: ML
Checked By: KM

TABLE 1 BOREHOLE LOGS
10234 & 10251 Reesor Road, Markham, Ontario (Camp Robin Hood)

Building:	TBS Centre (E)
Location:	**South Wall**
Sample ID:	E-S-1-1/E-S-1-2
GPS location and measurement:	17 T 0642942 m E / 4865219 m N / 0.3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (60% recovery)
Description:	0-15 cm: Silty sand some gravel, brown, moist
	15-45 cm: Silty clay, some gravel, brown, moist
Location:	South Wall
Sample ID:	E-S-3-1/E-S-3-2
GPS location and measurement:	17 T 0642945 m E / 4865214 m N / 4 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (20% recovery)
Description:	0-15 cm: Sand and gravel, brown to grey, moist
	15-45 cm: No recovery
Location:	**North Wall**
Sample ID:	E-N-1-1/E-N-1-2
GPS location and measurement:	17 T 0642940 m E / 4865237 m N / 1 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (65% recovery)
Description:	0-15 cm: Topsoil, rootlets, silty sand, some gravel, brown, moist
	15-45 cm: Silty clay, some gravel, organic material, brown, moist
Location:	North Wall
Sample ID:	E-N-3-1/E-N-3-2
GPS location and measurement:	17 T 0642937 m E / 4865249 m N / 4 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (35% recovery)
Description:	0-15 cm: Topsoil, rootlets, silty sand, some gravel, brown, moist
	15-45 cm: Silty clay, some gravel, organic material, brown, moist
Location:	North Wall
Sample ID:	E-N-6-1/E-N-6-2
GPS location and measurement:	17 T 0642938 m E / 4865236 m N / 7 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (40% recovery)
Description:	0-15 cm: Topsoil, rootlets, silty sand, some gravel, brown, moist
	15-45 cm: Silty clay, some gravel, organic material, brown, moist

Entered by: ML
Checked By: KM

TABLE 1 BOREHOLE LOGS

10234 & 10251 Reesor Road, Markham, Ontario (Camp Robin Hood)

Building:	Maintenance Area (F)
Location:	**West Wall**
Sample ID:	F-W-1-1/F-W-1-2
GPS location and measurement:	17 T 0642921 m E / 4865219 m N / 0.3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (30% recovery)
Description:	0-15 cm: Sand and gravel (fill), silty clay, brown, moist
	15-45 cm: No recovery
Location:	West Wall
Sample ID:	F-W-3-1/F-W-3-2
GPS location and measurement:	17 T 0642921 m E / 4865220 m N / 4 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (30% recovery)
Description:	0-15 cm: Sand and gravel (fill), silty clay, brown, moist
	15-45 cm: No recovery
Location:	West Wall
Sample ID:	F-W-6-1/F-W-6-2
GPS location and measurement:	17 T 0642928 m E / 4865220 m N / 7 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (0% recovery)
Description:	0-15 cm:Topsoil, rootlets, sand and gravel, brown to black, moist
	15-45 cm: Sand and gravel, silty clay, brown, moist
Location:	**South Wall**
Sample ID:	F-S-1-1/F-S-1-2
GPS location and measurement:	17 T 0642934 m E / 4865225 m N / 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (25% recovery)
Description:	0-15 cm: Topsoil, rootlets, sand and gravel, brown, moist
	15-45 cm: No recovery (tried another spoon and still no recovery)
Location:	South Wall
Sample ID:	F-S-3-1/F-S-3-2
GPS location and measurement:	17 T 0642934 m E / 4865219 m N / 3.5 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (50% recovery)
Description:	0-15 cm: Topsoil, rootlets, sand and gravel, brown, moist
	15-45 cm: No recovery
Location:	South Wall
Sample ID:	F-S-6-1/F-S-6-2
GPS location and measurement:	17 T 0642938 m E / 4865216 m N / 7 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (45% recovery)
Description:	0-15 cm:Topsoil, rootlets, sand and gravel, brown , moist
	15-45 cm: Sand and gravel, silty clay, brown, moist
Location:	**East Wall**
Sample ID:	F-E-1-1/F-E-1-2
GPS location and measurement:	17 T 0642941 m E / 4865237 m N / 0.3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (65% recovery)
Description:	0-15 cm: Topsoil, rootlets, silty sand, some gravel, brown, moist
	15-45 cm: Silty clay, some gravel, organic material, brown, moist
Location:	East Wall
Sample ID:	F-E-3-1/F-E-3-2
GPS location and measurement:	17 T 0642940 m E / 4865239 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (70% recovery)
Description:	0-15 cm: Topsoil, rootlets, silty sand, some gravel, brown, moist
	15-45 cm: Silty clay, some gravel, organic material, brown, moist
Location:	East Wall
Sample ID:	F-E-6-1/F-E-6-2
GPS location and measurement:	17 T 0642942 m E / 4865238 m N / 5 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (70% recovery)
Description:	0-15 cm: Topsoil, rootlets, silty sand, some gravel, brown, moist
	15-45 cm: Silty clay, some gravel, organic material, brown, moist
Location:	**North Wall**
Sample ID:	F-N-1-1/ F-N-1-2
GPS location and measurement:	17 T 0642931 m E / 4865240 m N / 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (40% recovery)
Description:	0-15 cm: Topsoil, rootlets, sand , brownish grey, moist
	15-45 cm: Sand and some gravel, grey to brown, moist
Location:	North Wall
Sample ID:	F-N-1-1/F-N-1-2
GPS location and measurement:	17 T 0642929 m E / 4865240 m N / 3.5 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (50% recovery)
Description:	0-15 cm: Topsoil, rootlets, sand and gravel, brown, moist
	15-45 cm: Silty sand to sand, brown, moist
Location:	North Wall
Sample ID:	F-N-6-1/F-N-6-2
GPS location and measurement:	17 T 0642929 m E / 4865248 m N / 7 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm (40% recovery)
Description:	0-15 cm:Topsoil, rootlets, sand and gravel, brown , moist
	15-45 cm: Silty sand, brown, moist

Entered by: ML
Checked By: KM

TABLE 1 BOREHOLE LOGS

10234 & 10251 Reesor Road, Markham, Ontario (Camp Robin Hood)

Building:	Mom's Place (G)
Location:	**South Wall**
Sample ID:	G-S-1-1/G-S-1-2
GPS location and measurement:	17 T 0642951 m E / 4865226 m N /0.3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Sand and gravel, brown, moist
	15-45 cm: Sand and gravel some clayey silt, brown, moist
Location:	South Wall
Sample ID:	G-S-1-1/G-S-1-2
GPS location and measurement:	17 T 0642949 m E / 4865226 m N /1.5 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Sand and gravel (fill), brown, moist
	15-45 cm: Sand and gravel fill to silty sand, trace clay, brown, moist
Location:	South Wall
Sample ID:	G-S-6-1/G-S-6-2
GPS location and measurement:	17 T 0642949 m E / 4865227 m N/ 5 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Sand and gravel, brown, moist
	15-45 cm: Medium sand, silty clay, brown, moist
Location:	**East Wall**
Sample ID:	G-E-1-1/G-E-1-2
GPS location and measurement:	17 T 0642979/ 4865231/ 0.3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Sand and gravel, brown, moist
	15-45 cm: Silty clay, some sand, trace gravel, organic material, brown, moist
Location:	East Wall
Sample ID:	G-E-3-1/G-E-3-2
GPS location and measurement:	17 T 0642978/ 4865231/ 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: crushed pieces of limestone, some gravel, brown, moist
	15-45 cm: Sand and gravel (Fill), organic material, brown, moist
Location:	East Wall
Sample ID:	G-E-6-1/G-E-6-2
GPS location and measurement:	17 T 0642979/ 4865232/ 6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Crushed pieces of limestone, brown, moist
	15-45 cm: Sand and gravel, trace silty clay with rock fragments, brown, moist

Entered by: ML
Checked By: KM

TABLE 1 BOREHOLE LOGS
10234 & 10251 Reesor Road, Markham, Ontario (Camp Robin Hood)

Building:	Garden (Garden)
Location:	**Northeast corner of garden**
Sample ID:	NE-COR Garden-1/NE-COR Garden-2
GPS location and measurement:	17 T 0643002 m E / 4865075 m N
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, organic material, brown, moist
	15-45 cm: clayey silt, trace sand, brown, moist
Location:	**Center of Garden**
Sample ID:	Garden-1/Garden-2
GPS location and measurement:	17 T 0642999 m E / 4865066 m N
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, organic material, black, moist
	15-45 cm: clayey silt, light brown to grey, moist

Entered by: ML
Checked By: KM

TABLE 1 BOREHOLE LOGS
10234 & 10251 Reesor Road, Markham, Ontario (Camp Robin Hood)

Building:	Dance Studio (K)
Location:	**West Wall**
Sample ID:	K-W-1-1/K-W-1-2
GPS location and measurement:	17 T 0643111 m E / 4865135 m N/ 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, organic material, brown, moist
	15-45 cm: rootlets, clayey silt, brown, moist
Location:	West Wall
Sample ID:	K-W-3-1/K-W-3-2
GPS location and measurement:	17 T 0643108 m E / 4865134 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, organic material, brown, moist
	15-45 cm: rootlets, clayey silt, brown, moist
Location:	West Wall
Sample ID:	K-W-6-1/K-W-6-2
GPS location and measurement:	17 T 0643106 m E / 4865135 m N / 6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, organic material, brown, moist
	15-45 cm: clayey silt, brown, moist
Location:	**South Wall**
Sample ID:	K-S-1-1/K-S-1-2
GPS location and measurement:	17 T 0643116 m E / 4865133 m N / 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, organic material, brown, moist
	15-45 cm: clayey silt, brown, moist
Location:	South Wall
Sample ID:	K-S-3-1/K-S-3-2
GPS location and measurement:	17 T 0643117 m E / 4865130 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, organic material, brown, moist
	15-45 cm: clayey silt, brown, moist
Location:	South Wall
Sample ID:	K-S-6-1/K-S-6-2
GPS location and measurement:	17 T 0643115 m E/ 4865128 m N/ 4 m from NW corner of hut
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, organic material, brown, moist
	15-45 cm: clayey silt, brown, moist
Location:	**East Wall**
Sample ID:	K-E-1-1/K-E-1-2
GPS location and measurement:	17 T 0643125 m E / 4865139 m N / 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, organic material, brown, moist
	15-45 cm: clayey silt, brown, moist
Location:	East Wall
Sample ID:	K-E-3-1/K-E-3-2
GPS location and measurement:	17 T 0643128 m E / 4865138 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, organic material, brown, moist
	15-45cm: clayey silt, brown, moist
Location:	East Wall
Sample ID:	K-E-6-1/K-E-6-2
GPS location and measurement:	17 T 0643127 m E / 4865140 m N / 5.7 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, organic material, brown, moist
	15-45cm: clayey silt, brown, moist
Location:	**North Wall**
Sample ID:	K-N-1-1/K-N-1-2
GPS location and measurement:	No GPS data/ 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, organic material, brown, moist
	15-45cm: clayey silt, brown, moist
Location:	North Wall
Sample ID:	K-N-3-1/K-N-3-2
GPS location and measurement:	No GPS data/ 4 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, organic material, brown, moist
	15-45cm: clayey silt, brown, moist
Location:	North Wall
Sample ID:	K-N-6-1/K-N-6-2
GPS location and measurement:	No GPS data/ 6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, organic material, brown, moist
	15-45 cm: clayey silt, brown, moist

Entered by: ML
Checked By: KM

TABLE 1 BOREHOLE LOGS
10234 & 10251 Reesor Road, Markham, Ontario (Camp Robin Hood)

Building:	Camp Craft (L)
Location:	**South Wall**
Sample ID:	L-S-1-1/L-S-1-2
GPS location and measurement:	17 T 0643048 m E / 4865156 m N / 0.5 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, trace clay, brown, moist
	15-45 cm:clayey silt, brown, moist
Location:	South Wall
Sample ID:	L-S-3-1/L-S-3-2
GPS location and measurement:	17 T 0643049 m E / 4865151 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, trace clay, brown, moist
	15-45 cm: clayey silt, brown to grey, moist
Location:	South Wall
Sample ID:	L-S-6-1/L-S-6-2
GPS location and measurement:	17 T 0643053 m E / 4865162 m N / 6.7 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, trace clay, brown, moist
	15-45 cm: clayey silt, brown, moist
Location:	**Southeast Wall**
Sample ID:	L-SE-1-1/L-SE-1-2
GPS location and measurement:	17 T 0643053 m E / 4865156 m N / 0.6 m from east wall south corner
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, trace clay, brown, moist
	15-45 cm: clayey silt, brown, moist
Location:	Southeast Wall
Sample ID:	L-SE-3-1/L-SE-3-2
GPS location and measurement:	17 T 0643058 m E / 4865157 m N / 2.5 m from east wall south corner
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, trace clay, brown, moist
	15-45 cm: clayey silt, brown, moist
Location:	Southeast Wall
Sample ID:	L-SE-6-1/L-SE-6-2
GPS location and measurement:	17 T 0643058 m E / 4865155 m N / 5 m from east wall south corner
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, trace clay, brown, moist
	15-45cm: clayey silt, brown, moist
Location:	**North Wall**
Sample ID:	L-N-1-1/L-N-1-2
GPS location and measurement:	17 T 0643046 m E / 4865162 m N / 0.6 , from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, trace clay, brown, moist
	15-45cm: clayey silt, brown, moist
Location:	North Wall
Sample ID:	L-N-3-1/L-N-3-2
GPS location and measurement:	17 T 0643046 m E / 4865166 m N / 1.5 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, organic material,trace clay, brown, moist
	15-45cm: clayey silt, trace clay, brown to light brown, moist
Location:	North Wall
Sample ID:	L-N-6-1/L-N-6-2
GPS location and measurement:	17 T 0643041 m E / 4865167 m N / 6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, trace clay, brown, moist
	15-45cm: clayey silt, brown to light brown, moist
Location:	**West Wall**
Sample ID:	L-W-1-1/L-W-1-2 Field Duplicate: L-W-1-11
GPS location and measurement:	17 T 0643037 m E / 4865157m N / 1.5 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, organic material, trace clay ,brown, moist
	15-45 cm: clayey silt, brown to light brown, moist
Location:	West Wall
Sample ID:	L-W-3-1/L-W-3-2
GPS location and measurement:	17 T 0643037 m E / 4865153 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, organic material, brown, moist
	15-45 cm: clayey silt, brown, moist
Location:	West Wall
Sample ID:	L-W-6-1/L-W-6-2
GPS location and measurement:	17 T 0643035 m E / 4865155 m N / 6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, brown, moist
	15-45 cm: clayey silt, brown, moist

Entered by: ML
Checked By: KM

TABLE 1 BOREHOLE LOGS
10234 & 10251 Reesor Road, Markham, Ontario (Camp Robin Hood)

Building:	Castle (N)
Location:	**Southeast Wall**
Sample ID:	N-SE-1-1/N-SE-1-2
GPS location and measurement:	17 T 0643027 m E / 4865108 m N / 4 m from east wall south corner
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, organic material, trace clay, brown, moist
	15-45 cm: clayey silt, trace sand, brown, moist
Location:	Southeast Wall
Sample ID:	N-SE-3-1/N-SE-3-2
GPS location and measurement:	17 T 0643029 m E / 4865103 m N / 5 m from east wall south corner
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, trace clay, brown, moist
	15-45 cm: clayey silt, brown to grey, moist
Location:	Southeast Wall
Sample ID:	N-SE-6-1/N-SE-6-2
GPS location and measurement:	17 T 0643030 m E / 4865103 m N / In line with east wall south corner
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, brown, moist
	15-45 cm: clayey silt, brown, moist
Location:	**East Wall**
Sample ID:	N-E-1-1/N-E-1-2
GPS location and measurement:	17 T 0643028 m E / 4865111 m N / 1 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, brown, moist
	15-45 cm: clayey silt, brown, moist
Location:	East Wall
Sample ID:	N-E-3-1/N-E-3-2
GPS location and measurement:	17 T 0643033 m E / 4865113 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, brown, moist
	15-45 cm: clayey silt, brown, moist
Location:	East Wall
Sample ID:	N-E-6-1/N-E-6-2
GPS location and measurement:	17 T 0643035 m E / 4865112 m N / 6.5 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, brown, moist
	15-45 cm: clayey silt, brown, moist
Location:	**North Wall**
Sample ID:	N-N-1-1/N-N-1-2
GPS location and measurement:	17 T 0643018 m E / 4865116 m N / 1.5 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, brown, moist
	15-45 cm: clayey silt, brown, moist
Location:	North Wall
Sample ID:	N-N-3-1/N-N-3-2
GPS location and measurement:	17 T 0643012 m E / UTM 4865111 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, brown, moist
	15-45cm: clayey silt, brown, moist
Location:	North Wall
Sample ID:	N-N-6-1/N-N-6-2
GPS location and measurement:	17 T 0643017 m E / 4865117 m N / 6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, brown, moist
	15-45 cm: clayey silt, brown, moist
Location:	**West Wall**
Sample ID:	N-W-1-1/N-W-1-2 Field Duplicate: N-W-1-11
GPS location and measurement:	17 T 0643002 m E / 4865101 m N / 0.6 , from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, brown, moist
	15-45 cm: clayey silt, brown to grey, moist
Location:	West Wall
Sample ID:	N-W-3-1/N-W-3-2
GPS location and measurement:	17 T 0643006 m E / 4865102 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, brown to light brown, moist
	15-45 cm: clayey silt ,trace sand, brown, moist
Location:	West Wall
Sample ID:	N-W-6-1/N-W-6-2
GPS location and measurement:	17 T 0643002 m E / 4865100 m N / 6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, brown, moist
	15-45 cm: clayey silt, trace sand, brown to light brown, moist
Location:	**South Wall**
Sample ID:	N-S-1-1/N-S-1-2
GPS location and measurement:	17 T 0643020 m E / 4865101 m N / 4 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, brown, moist
	15-45 cm: clayey silt, trace sand,brown, moist
Location:	South Wall
Sample ID:	N-S-3-1/N-S-3-2
GPS location and measurement:	17 T 0643022 m E / 4865095 m N / 7 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, brown, moist
	15-45 cm: clayey silt, trace sand, brown, moist

Entered by: ML
Checked By: KM

TABLE 1 BOREHOLE LOGS
10234 & 10251 Reesor Road, Markham, Ontario (Camp Robin Hood)

Building:	Will Scarlet Building (W)
Location:	**East Wall**
Sample ID:	W-E-1-1/W-E-1-2
GPS location and measurement:	17 T 0643079 m E / 4865003 m N / 0.9 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, organic material, brown, moist
	15-45 cm:clayey silt, brown, moist
Location:	East Wall
Sample ID:	W-E-3-1/W-E-3-2
GPS location and measurement:	17 T 0643078 m E / 4865010 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, organic material, brown, moist
	15-45 cm: clayey silt, brown to grey, moist
Location:	East Wall
Sample ID:	W-E-6-1/W-E-6-2
	17 T 0643078 m E / 4865009 m N / 6.7 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, organic material, brown, moist
	15-45 cm: clayey silt, brown, moist
Location:	**South Wall**
Sample ID:	W-S-1-1/\ Field Duplicate W-S-1-11
GPS location and measurement:	17 T 0643058 m E / 4864998 m N / 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, organic material,trace clay, brown to light brown, moist
	15-45 cm: clayey silt, trace sand, light brown, moist
Location:	South Wall
Sample ID:	W-S-3-1/W-S-3-2
GPS location and measurement:	17 T 0643060 m E / 4864998 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, organic material, brown to light brown, moist
	15-45 cm: clayey silt, brown, moist to wet
Location:	South Wall
Sample ID:	W-S-6-1/W-S-6-2
GPS location and measurement:	17 T 0643056 m E / 4864993 m N / 6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, organic material,trace clay, brown, moist
	15-45 cm: clayey silt, brown, moist
Location:	**North Wall**
Sample ID:	W-N-1-1/W-N-2-1
GPS location and measurement:	17 T 0643054 m E / 4865009 m N / 1 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,organic material,dark brown, moist
	15-45cm: clayey silt, dark brown, moist to wet
Location:	North Wall
Sample ID:	W-N-3-1/W-N-3-2
GPS location and measurement:	17 T 0643049 m E / 4865012 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, trace sand, brown, moist
	15-45cm: clayey silt, dark brown, moist to wet
Location:	North Wall
Sample ID:	W-N-6-1/W-N-6-2
GPS location and measurement:	17 T 0643052 m E / 4865016 m N / 5.5 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, trace clay, brown, moist
	15-45cm: clayey silt, brown, moist
Location:	**West Wall**
Sample ID:	W-W-1-1/W-W-1-2
GPS location and measurement:	17 T 0643045 m E / 4865006 m N / 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,organic material, trace silt ,brown, moist
	15-45 cm: clayey silt, brown, moist
Location:	West Wall
Sample ID:	W-W-3-1/W-W-3-2
GPS location and measurement:	17 T 0643048 m E / 4865004 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,organic material, trace silt ,brown, moist
	15-45 cm: clayey silt, brown, moist
Location:	West Wall
Sample ID:	L-W-6-1/L-W-6-2
GPS location and measurement:	17 T 0643044 m E / 4865002 m N / 6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,organic material, trace silt ,brown, moist
	15-45 cm: clayey silt, brown, moist

Entered by: ML
Checked By: KM

TABLE 1 BOREHOLE LOGS

10234 & 10251 Reesor Road, Markham, Ontario (Camp Robin Hood)

Building:	Shed Behind Building (X1)
Location:	**North Wall**
Sample ID:	X1-N-1-1/X1-N-1-2
GPS location and measurement:	17 T 0642989 m E / 4864979 m N / 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,rootlets, trace clay, brown, moist
	15-45 cm: Clayey silt,trace sand, brown to light brown, moist
Location:	North Wall
Sample ID:	X1-N-3-1/X1-N-3-2
GPS location and measurement:	17 T 0642989 m E / 4864983 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, trace clay, brown, moist
	15-45 cm: Clayey silt, trace sand, brown to light brown, moist
Location:	North Wall
Sample ID:	X1-N-6-1/X1-N-6-2
GPS location and measurement:	17 T 0642988 m E / 4864985 m N / 6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, trace clay, brown, moist
	15-45 cm: Clayey silt, trace sand, brown, moist
Location:	**East Wall**
Sample ID:	X1-E-1-1/X1-E-1-2
GPS location and measurement:	17 T 0642996 m E/ 4864977 m N / 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, rootlets, trace clay, brown, moist
	15-45 cm: Clayey silt, trace sand, brown, moist
Location:	East Wall
Sample ID:	X1-E-3-1/X1-E-3-2
GPS location and measurement:	17 T 0642998 m E / 4864979 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, organic material, trace clay, brown, moist
	15-45cm: Clayey silt, trace sand, brown to light brown, moist
Location:	East Wall
Sample ID:	X1-E-6-1/X1-E-6-2
GPS location and measurement:	17 T 0643000 m E / 4864981 m N / 5 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, organic material,trace clay, brown, moist
	15-45cm: Silty clay, brown, moist
Location:	**West Wall**
Sample ID:	X1-W-1-1/X1-W-1-2
GPS location and measurement:	17 T 0642991 m E / 4864975 m N / 1 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,organic material,dark brown, moist
	15-45cm: Clayey silt to sand, brown to light brown, moist
Location:	West Wall
Sample ID:	X1-W-3-1/X1-W-3-2
GPS location and measurement:	17 T 0642985 m E / 4864975 m N / 3 m from water
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, organic material, dark brown, moist
	15-45cm: Clayey silt, brown, moist
Location:	West Wall
Sample ID:	X1-W-6-1/X1-W-6-2
GPS location and measurement:	17 T 0642981 m E / 4864973 m N / 6.7 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, organic material, brown, moist
	15-45cm: Clayey silt, trace sand, brown, moist

Entered by: ML
Checked By: KM

TABLE 1 BOREHOLE LOGS

10234 & 10251 Reesor Road, Markham, Ontario (Camp Robin Hood)

Building:	Friar Tuck Building (Y)
Location:	**East Wall**
Sample ID:	Y-E-1-1/Y-E-1-2
GPS location and measurement:	17 T 0642921 m E / 4864953 m N / 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,organic material, trace clay, brown, moist
	15-45 cm: Clayey silt, brown to light brown, moist
Location:	East Wall
Sample ID:	Y-E-3-1/Y-E-3-2
GPS location and measurement:	17 T 0642923 m E / 4864954 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,organic material, trace clay, brown, moist
	15-45 cm: Clayey silt, brown to light brown, moist
Location:	East Wall
Sample ID:	Y-E-6-1/Y-E-6-2
GPS location and measurement:	17 T 0642925 m E / 4864956 m N / 6.7 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,some sand, brown, moist
	15-45 cm: Clayey silt, brown to light brown, moist
Location:	**North Wall**
Sample ID:	Y-N-1-1/Y-N-1-2
GPS location and measurement:	17 T 0642905 m E / 4864955 m N / 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, organic material, brown, moist
	15-45 cm: Clayey silt, trace sand, brown, moist
Location:	North Wall
Sample ID:	Y-N-3-1/Y-N-3-2
GPS location and measurement:	17 T 0642905 m E/ 4864957 m N/ 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, organic material, trace clay, brown, moist
	15-45cm: Clayey silt, trace sand, brown, moist
Location:	North Wall
Sample ID:	Y-N-6-1/Y-N-6-2
GPS location and measurement:	17 T 0642903 m E / 4864958 m N / 5.7 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, organic material,trace clay, brown, moist
	15-45cm: Clayey silt, trace sand, brown, moist
Location:	**West Wall**
Sample ID:	Y-W-1-1/Y-W-1-2
GPS location and measurement:	17 T 0642894 m E/ 4864947 m N/ 0.6 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,organic material, trace clay, brown, moist
	15-45cm: Clayey silt, trace sand, brown, moist
Location:	West Wall
Sample ID:	Y-W-3-1/Y-W-3-2
GPS location and measurement:	17 T 0642891 m E/ 4864946 m N / 3 m from wall
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil, organic material, trace clay, brown, moist
	15-45cm: Clayey silt, trace sand, brown, moist
Location:	**South Wall**
Sample ID:	Y-S-1-1/Y-S-1-2
GPS location and measurement:	No GPS data
Depth:	sample 1: 0-15 cm, sample 2: 15-45 cm
Description:	0-15 cm: Topsoil,rootlets, trace clay,dark brown, moist
	15-45cm: Clayey silt, brown, moist

Entered by: ML
Checked By: KM

TABLE 2 **ANALYTICAL RESULTS IN PAINT - INORGANICS**
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	COMPARITIVE GUIDELINES[1,2]	PA-1	PB-1	PC-1	P-4000 Field Duplicate of PC-1	PD-1
Sample Location	-	-	-	MSG Floor Hockey Dome	Action Center	The Quad	The Quad	Lunch Barn
Sample Colour	-	-	-	White	Orange	Brown	Brown	Green
Sample Description	-	-	-	poor, flaking	fair	fair	fair	poor, flaking
Sampling Date	-	-	-	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15
Certificate of Analysis No.	-	-	-	L1617744	L1617744	L1617744	L1617744	L1617744
Arsenic	µg/g	1.0	12	231	9.9	17.8	18.4	3.6
Lead	µg/g	1.0	90	4.7	2.9	55.4	51.1	**<u>47,000</u>**
Mercury	mg/kg	0.050	10.0	<0.050	<0.050	<0.050	<0.050	0.311
Zinc	µg/g	2.0	200	598	295	744	1,000	157

1 *Surface Coating Materials Regulation* under the *Federal Hazardous Products Act* for lead and mercury
2 CCME Soil Quality Guidelines - Residential/Parkland for arsenic and zinc
<u>BOLD</u> Exceeds *Surface Coating Materials regulation*

Entered by: KM

Checked by: BT

TABLE 2 ANALYTICAL RESULTS IN PAINT - INORGANICS
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	COMPARITIVE GUIDELINES[1,2]	PE-1	PF-1	PG-1	PH-1	PI-1
Sample Location	-	-	-	TBS Centre	Maintenance Area	Mom's Place	The Play Place	The Arrowdome
Sample Colour	-	-	-	Green	Green	Green	Brown	Green
Sample Description	-	-	-	poor, flaking	fair	fair	fair	poor, flaking
Sampling Date	-	-	-	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15
Certificate of Analysis No.	-	-	-	L1617744	L1617744	L1617744	L1617744	L1617744
Arsenic	µg/g	1.0	12	1.5	1.9	<1.0	4.1	1,720
Lead	µg/g	1.0	90	**306**	**16,400**	**1,630**	17.4	11.1
Mercury	mg/kg	0.050	10.0	0.570	<0.050	0.906	<0.050	<0.050
Zinc	µg/g	2.0	200	1,560	9,700	3,900	394	3,390

1 *Surface Coating Materials Regulation* under the *Federal Hazardous Products Act* for lead and mercury

2 CCME Soil Quality Guidelines - Residential/Parkland for arsenic and zinc

BOLD Exceeds *Surface Coating Materials regulation*

Entered by: KM

Checked by: BT

TABLE 2 ANALYTICAL RESULTS IN PAINT - INORGANICS
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	COMPARITIVE GUIDELINES[1,2]	P-1000 Field Duplicate of PI-1	P7-1 (PJ-1)	PK-1	PL-1	PM-1
Sample Location	-	-	-	The Arrowdome	The Cooperdome	Dance Studio	Camp Craft	Senior Flagpole Outdoor Theatre
Sample Colour	-	-	-	Green	Orange	Green	Brown	Orange
Sample Description	-	-	-	poor, flaking	Fair	poor, flaking	poor, flaking	poor, flaking
Sampling Date	-	-	-	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15
Certificate of Analysis No.	-	-	-	L1617744	L1617744	L1617744	L1617744	L1617744
Arsenic	µg/g	1.0	12	1,200	1.8	1.1	5.7	1.7
Lead	µg/g	1.0	90	12.7	2.1	42.0	**8,780**	10.4
Mercury	mg/kg	0.050	10.0	<0.050	<0.050	**16.3**	2.85	<0.050
Zinc	µg/g	2.0	200	3,570	3,190	230	3,660	55.5

1 *Surface Coating Materials Regulation* under the *Federal Hazardous Products Act* for lead and mercury

2 CCME Soil Quality Guidelines - Residential/Parkland for arsenic and zinc

BOLD Exceeds *Surface Coating Materials regulation*

Entered by: KM

Checked by: BT

TABLE 2 ANALYTICAL RESULTS IN PAINT - INORGANICS
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	COMPARITIVE GUIDELINES[1,2]	PN-1	P-3000 Field Duplicate of PN-1	PO-1	PP-1	PQ-1
Sample Location	-	-	-	Castle	Castle	The Pavillion	Swim Office	Canteen
Sample Colour	-	-	-	Blue/Grey	Blue/Grey	Orange	Blue	Orange
Sample Description	-	-	-	poor, flaking	poor, flaking	fair to poor	good	poor, flakey
Sampling Date	-	-	-	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15
Certificate of Analysis No.	-	-	-	L1617744	L1617744	L1617744	L1617744	L1617744
Arsenic	µg/g	1.0	12	5.5	4.2	1.3	1.3	3.7
Lead	µg/g	1.0	90	**19,600**	**16,100**	4.2	4.0	21.4
Mercury	mg/kg	0.050	10.0	9.27	7.34	<0.050	<0.050	<0.050
Zinc	µg/g	2.0	200	27,800	24,100	52.7	45.6	576

1 *Surface Coating Materials Regulation* under the *Federal Hazardous Products Act* for lead and mercury
2 CCME Soil Quality Guidelines - Residential/Parkland for arsenic and zinc
BOLD Exceeds *Surface Coating Materials regulation*

Entered by: KM

Checked by: BT

TABLE 2 ANALYTICAL RESULTS IN PAINT - INORGANICS
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	COMPARITIVE GUIDELINES[1,2]	PT-1	PT1-1	PU-1	PV1-1	PW-1
Sample Location	-	-	-	Junior Flagpole	GaGa	Little John Building	GaGa	Will Scarlet Building
Sample Colour	-	-	-	Beige	Red	Baby Blue	Orange	Blue
Sample Description	-	-	-	fair	poor, flaking	poor, flaking	poor, flaking	poor, flaking
Sampling Date	-	-	-	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15
Certificate of Analysis No.	-	-	-	L1617744	L1617744	L1617744	L1617744	L1617744
Arsenic	µg/g	1.0	12	<1.0	13.7	<1.0	3.4	<1.0
Lead	µg/g	1.0	90	1.8	8.2	83.3	2.1	**774**
Mercury	mg/kg	0.050	10.0	<0.050	<0.050	<0.050	<0.050	**24.2**
Zinc	µg/g	2.0	200	2,580	74.3	1,310.0	17.2	8,510

[1] *Surface Coating Materials Regulation* under the *Federal Hazardous Products Act* for lead and mercury

[2] CCME Soil Quality Guidelines - Residential/Parkland for arsenic and zinc

BOLD Exceeds *Surface Coating Materials regulation*

Entered by: KM

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TABLE 2 **ANALYTICAL RESULTS IN PAINT - INORGANICS**
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	COMPARITIVE GUIDELINES[1,2]	PX-1	P-2000 Field Duplicate of PX-1	PX1-1	PX2-1	PY-1
Sample Location	-	-	-	Building X (N. Of Lasses' Cabins)	Building X (N. Of Lasses' Cabins)	Building X1 (Shed beside Building X)	GaGa	Friar Tuck Building
Sample Colour	-	-	-	Beige	Beige	Brown	Blue	Brown
Sample Description	-	-	-	poor, flaking	poor, flaking	poor, flaking	poor/flaking	poor, flaking
Sampling Date	-	-	-	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15
Certificate of Analysis No.	-	-	-	L1617744	L1617744	L1617744	L1617744	L1617744
Arsenic	µg/g	1.0	12	<1.0	<1.0	3.6	9.2	1.8
Lead	µg/g	1.0	90	29.1	32.5	**41,000**	13.7	**93.9**
Mercury	mg/kg	0.050	10.0	<0.050	<0.050	2.89	<0.050	<0.050
Zinc	µg/g	2.0	200	996	1,490	5,630	39.7	7,960

1 *Surface Coating Materials Regulation* under the *Federal Hazardous Products Act* for lead and mercury
2 CCME Soil Quality Guidelines - Residential/Parkland for arsenic and zinc
BOLD Exceeds *Surface Coating Materials regulation*

Entered by: KM

Checked by: BT

TABLE 2 ANALYTICAL RESULTS IN PAINT - INORGANICS
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	COMPARITIVE GUIDELINES[1,2]	PAA-1	PBB-1	PCC-1	PEE-1	PHH-1
Sample Location	-	-	-	Leppies' Cabins	Girls' Change Area	Boys' Change Area	Inter Boy's Cabins	Inter Girls' Cabins
Sample Colour	-	-	-	Blue	Green	Red	Green	Red
Sample Description	-	-	-	fair to poor	fair to poor	fair to poor	poor, flaking	fair to poor
Sampling Date	-	-	-	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15
Certificate of Analysis No.	-	-	-	L1617744	L1617744	L1617744	L1617744	L1617744
Arsenic	µg/g	1.0	12	2.5	3.3	10.6	4.7	1.3
Lead	µg/g	1.0	90	10.8	6.5	9.6	9.9	2.4
Mercury	mg/kg	0.050	10.0	<0.050	<0.050	<0.050	<0.050	<0.050
Zinc	µg/g	2.0	200	1,730	45.1	76.2	83.4	31

1 *Surface Coating Materials Regulation* under the *Federal Hazardous Products Act* for lead and mercury

2 CCME Soil Quality Guidelines - Residential/Parkland for arsenic and zinc

BOLD Exceeds *Surface Coating Materials regulation*

Entered by: KM

Checked by: BT

TABLE 2 **ANALYTICAL RESULTS IN PAINT - INORGANICS**
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	COMPARITIVE GUIDELINES[1,2]	PII-5	1111.1-P7 (Building 2) (Shaheen and Peaker)	1111.1-P10 (Building 5) (Shaheen and Peaker)	CS-1 (Building 1) (DCS)
Sample Location	-	-	-	Senior's Cabins	Photography Bld'g (Coaches' Corner)	Archers' Huts	Baseball Office
Sample Colour	-	-	-	Green	Green	Brown	Blue
Sample Description	-	-	-	fair	Some Peeling	Good	-
Sampling Date	-	-	-	25-MAY-15	1-Oct-96	1-Oct-96	3-Dec-10
Certificate of Analysis No.	-	-	-	L1617744	SP1490	SP1490	B110225
Arsenic	µg/g	1.0	12	1.3	NA	NA	NA
Lead	µg/g	1.0	90	4.6	**37,586**	**13,192**	**31,000**
Mercury	mg/kg	0.050	10.0	<0.050	NA	NA	NA
Zinc	µg/g	2.0	200	1,670	NA	NA	NA

1 *Surface Coating Materials Regulation* under the *Federal Hazardous Products Act* for lead and mercury
2 CCME Soil Quality Guidelines - Residential/Parkland for arsenic and zinc
BOLD Exceeds *Surface Coating Materials regulation*

Entered by: KM

Checked by: BT

TABLE 2 **ANALYTICAL RESULTS IN PAINT - INORGANICS**
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	COMPARITIVE GUIDELINES[1,2]	CS-2 (Building 10) (DCS)	CS-3 (Building 7) (DCS)
Sample Location	-	-	-	Owner's Residence	Program Building
Sample Colour	-	-	-	Blue	Brown
Sample Description	-	-	-	-	-
Sampling Date	-	-	-	3-Dec-10	3-Dec-10
Certificate of Analysis No.	-	-	-	B110225	BOH6421
Arsenic	µg/g	1.0	12	NA	NA
Lead	µg/g	1.0	90	**26,000**	**1,300**
Mercury	mg/kg	0.050	10.0	NA	NA
Zinc	µg/g	2.0	200	NA	NA

[1] *Surface Coating Materials Regulation* under the *Federal Hazardous Products Act* for lead and mercury

[2] CCME Soil Quality Guidelines - Residential/Parkland for arsenic and zinc

BOLD Exceeds *Surface Coating Materials regulation*

Entered by: KM

Checked by: BT

TABLE 3 **SOIL ANALYTICAL RESULTS - INORGANICS**
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	CCME SQG[1] (res/park)	CCME SQG_{HH}[2] (res/park)	MOECC Table 2[4] (res/park/ingt)	MOECC Table 8[5] (res/park/ingt)	2-W-1-1	2-S-1-1	2-S-1-2	2-S-3-1	2-S-3-11 Field Duplicate of 2-S-3-1	2-N-1-1
Sample Location	-	-	-	-	-	-	Photo Building (Coaches' Corner)	Photo Building (Coaches' Corner)	Photo Building (Coaches' Corner)	Photo Building (Coaches' Corner)	Photo Building (Coaches' Corner)	Photo Building (Coaches' Corner)
Sampling Date	-	-	-	-	-	-	27-Jun-2015	27-Jun-2015	27-Jun-2015	27-Jun-2015	27-Jun-2015	27-Jun-2015
Depth of sample					-	-	0-15 cm	0-15 cm	15-45 cm	0-15 cm	0-15 cm	0-15 cm
Certificate of Analysis No.	-	-	-	-	-	-	L1634567	L1634567	L1640047	L1640047	L1640047	L1634567
Aluminum (Al)	ug/g	50	-	-	-	-	-	-	-	-	-	10,800
Antimony (Sb)	ug/g	0.10	20	-	7.5	1.3	-	-	-	-	-	0.33
Arsenic (As)	ug/g	0.10	12	12	18	18	-	-	-	-	-	2.41
Barium (Ba)	ug/g	0.50	500	6,800	390	220	-	-	-	-	-	125
Beryllium (Be)	ug/g	0.10	4	75	5	2.5	-	-	-	-	-	0.38
Bismuth (Bi)	ug/g	0.20	-	-	-	-	-	-	-	-	-	<0.20
Boron (B)	ug/g	5.0	-	-	120	36	-	-	-	-	-	6.6
Cadmium (Cd)	ug/g	0.020	10	14	1.2	1.2	-	-	-	-	-	0.537
Calcium (Ca)	ug/g	50	-	-	-	-	-	-	-	-	-	15,600
Chromium (Cr)	ug/g	0.50	64	220	160	70	-	-	-	-	-	18.4
Cobalt (Co)	ug/g	0.10	50	-	22	22	-	-	-	-	-	5.69
Copper (Cu)	ug/g	0.50	63	1,100	180	92	-	-	-	-	-	14.2
Iron (Fe)	ug/g	50	-	-	-	-	-	-	-	-	-	15,500
Lead (Pb)	ug/g	0.50	140	140	120	120	31.7	226	102	114	39.5	105
Lithium (Li)	ug/g	2.0	-	-	-	-	-	-	-	-	-	7.6
Magnesium (Mg)	ug/g	20	-	-	-	-	-	-	-	-	-	3,110
Manganese (Mn)	ug/g	1.0	-	-	-	-	-	-	-	-	-	479
Mercury (Hg)	ug/g	0.0050	6.6	6.6	1.8	0.27	-	-	-	-	-	0.0604
Molybdenum (Mo)	ug/g	0.10	10	-	6.9	2	-	-	-	-	-	0.35
Nickel (Ni)	ug/g	0.50	45	200.0	130.0	82	-	-	-	-	-	10.7
Phosphorus (P)	ug/g	50	-	-	-	-	-	-	-	-	-	1,530
Potassium (K)	ug/g	100	-	-	-	-	-	-	-	-	-	1,700
Selenium (Se)	ug/g	0.20	1	-	2.4	1.5	-	-	-	-	-	0.23
Silver (Ag)	ug/g	0.10	20	-	25	0.5	-	-	-	-	-	<0.10
Sodium (Na)	ug/g	50	-	-	-	-	-	-	-	-	-	127
Strontium (Sr)	ug/g	0.50	-	-	-	-	-	-	-	-	-	38.7
Sulfur (S)	ug/g	5000	-	-	-	-	-	-	-	-	-	<5000
Thallium (Tl)	ug/g	0.050	1	-	1	1	-	-	-	-	-	0.105
Tin (Sn)	ug/g	2.0	50	-	-	-	-	-	-	-	-	<2.0
Titanium (Ti)	ug/g	1.0	-	-	-	-	-	-	-	-	-	377
Uranium (U)	ug/g	0.050	23	23	23	2.5	-	-	-	-	-	0.466
Vanadium (V)	ug/g	0.20	130	-	86	86	-	-	-	-	-	28.2
Zinc (Zn)	ug/g	2.0	200	-	340	290	-	-	-	-	-	691
Zirconium (Zr)	ug/g	1.0	-	-	-	-	-	-	-	-	-	<1.0

1 CCME Soil Quality Guidelines - Residential/Parkland land use
2 CCME Soil Quality Guidelines for Human Health
3 Sample SS-110-1 also analyzed for PAHs. All results non-detect.
4 Standards from Table 2 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil
5 Standards from Table 8 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil within 30 meters of a water body

Bold Exceedsresidential/parkland SQG
Highlight Exceeds SQG_{HH}
Underlined Eceeds Table 2 R/P/I (or exeeds Table 8 R/P/I for samples at Program Office and Garden which are located within 30 m of a water body)

Entered by: KM/RL

Checked by: BT/MD

TABLE 3 **SOIL ANALYTICAL RESULTS - INORGANICS**
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	CCME SQG[1] (res/park)	CCME SQG_{HH}[2] (res/park)	MOECC Table 2[4] (res/park/ingt)	MOECC Table 8[5] (res/park/ingt)	2-N-1-3 Field Duplicate of 2-N-1-1	5-NA1-1-1	5-SJ3-1-1	5-NJ2-1-1	5-NJ2-1-11	5-SA1-1-1	N-E-1-1
Sample Location	-	-	-	-	-	-	Photo Building (Coaches' Corner)	Archer's huts	Archer's huts	Archer's huts	Archer's huts	Archer's huts	Castle
Sampling Date	-	-	-	-	-	-	27-Jun-2015	25-Jun-2015	25-Jun-2015	25-Jun-2015	25-Jun-2015	25-Jun-2015	25-Jun-2015
Depth of sample					-	-	0-15 cm	0-15 cm	0-15 cm	0-15 cm	0-15 cm	0-15 cm	0-15 cm
Certificate of Analysis No.	-	-	-	-	-	-	L1634567	L1634567	L1634567	L1634567	L1634567	L1634567	L1634567
Aluminum (Al)	ug/g	50	-	-	-	-	12,600	13,200	-	-	-	-	15,100
Antimony (Sb)	ug/g	0.10	20	-	7.5	1.3	0.42	0.18	-	-	-	-	0.23
Arsenic (As)	ug/g	0.10	12	12	18	18	2.91	2.95	-	-	-	-	4.17
Barium (Ba)	ug/g	0.50	500	6,800	390	220	123	73.9	-	-	-	-	113
Beryllium (Be)	ug/g	0.10	4	75	5	2.5	0.42	0.48	-	-	-	-	0.62
Bismuth (Bi)	ug/g	0.20	-	-	-	-	<0.20	<0.20	-	-	-	-	<0.20
Boron (B)	ug/g	5.0	-	-	120	36	7.1	7.7	-	-	-	-	11.4
Cadmium (Cd)	ug/g	0.020	10	14	1.2	1.2	0.576	0.214	-	-	-	-	0.402
Calcium (Ca)	ug/g	50	-	-	-	-	17,600	16,400	-	-	-	-	38,700
Chromium (Cr)	ug/g	0.50	64	220	160	70	20.2	19.7	-	-	-	-	26.7
Cobalt (Co)	ug/g	0.10	50	-	22	22	6.46	6.31	-	-	-	-	8.73
Copper (Cu)	ug/g	0.50	63	1,100	180	92	16.0	11.1	-	-	-	-	14.9
Iron (Fe)	ug/g	50	-	-	-	-	17,300	17,200	-	-	-	-	26,100
Lead (Pb)	ug/g	0.50	140	140	120	120	101	14.0	14.8	12.8	12.0	12.9	15.9
Lithium (Li)	ug/g	2.0	-	-	-	-	8.3	10.3	-	-	-	-	11.3
Magnesium (Mg)	ug/g	20	-	-	-	-	3,560	3,660	-	-	-	-	4,590
Manganese (Mn)	ug/g	1.0	-	-	-	-	599	483	-	-	-	-	964
Mercury (Hg)	ug/g	0.0050	6.6	6.6	1.8	0.27	0.0583	0.0333	-	-	-	-	0.0614
Molybdenum (Mo)	ug/g	0.10	10	-	6.9	2	0.41	0.35	-	-	-	-	0.48
Nickel (Ni)	ug/g	0.50	45	200.0	130.0	82	12.1	12.4	-	-	-	-	13.5
Phosphorus (P)	ug/g	50	-	-	-	-	1,490	656	-	-	-	-	1,180
Potassium (K)	ug/g	100	-	-	-	-	2,010	1,990	-	-	-	-	2,200
Selenium (Se)	ug/g	0.20	1	-	2.4	1.5	0.26	0.27	-	-	-	-	0.66
Silver (Ag)	ug/g	0.10	20	-	25	0.5	<0.10	<0.10	-	-	-	-	<0.10
Sodium (Na)	ug/g	50	-	-	-	-	139	144	-	-	-	-	288
Strontium (Sr)	ug/g	0.50	-	-	-	-	43.9	32.6	-	-	-	-	71.4
Sulfur (S)	ug/g	5000	-	-	-	-	<5000	<5000	-	-	-	-	<5000
Thallium (Tl)	ug/g	0.050	1	-	1	1	0.126	0.135	-	-	-	-	0.171
Tin (Sn)	ug/g	2.0	50	-	-	-	<2.0	<2.0	-	-	-	-	<2.0
Titanium (Ti)	ug/g	1.0	-	-	-	-	406	372	-	-	-	-	359
Uranium (U)	ug/g	0.050	23	23	23	2.5	0.517	0.502	-	-	-	-	0.536
Vanadium (V)	ug/g	0.20	130	-	86	86	32.4	31.5	-	-	-	-	44.7
Zinc (Zn)	ug/g	2.0	200	-	340	290	**471**	54	-	-	-	-	84.8
Zirconium (Zr)	ug/g	1.0	-	-	-	-	<1.0	<1.0	-	-	-	-	<1.0

1 CCME Soil Quality Guidelines - Residential/Parkland land use
2 CCME Soil Quality Guidelines for Human Health
3 Sample SS-110-1 also analyzed for PAHs. All results non-detect.
4 Standards from Table 2 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil
5 Standards from Table 8 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil within 30 meters of a water body

Bold Exceedsresidential/parkland SQG
Highlight Exceeds SQG_{HH}
Underlined Eceeds Table 2 R/P/I (or exeeds Table 8 R/P/I for samples at Program Office and Garden which are located within 30 m of a water body)

Entered by: KM/RL

Checked by: BT/MD

TABLE 3 **SOIL ANALYTICAL RESULTS - INORGANICS**
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	CCME SQG[1] (res/park)	CCME SQG_{HH}[2] (res/park)	MOECC Table 2[4] (res/park/ingt)	MOECC Table 8[5] (res/park/ingt)	N-N-1-1	N-W-1-1	N-W-1-11 Field Duplicate of N-W-1-1	N-S-1-1	N-SE-1-1	F-S-1-1	F-N-1-1
Sample Location	-	-	-	-	-	-	Castle	Castle	Castle	Castle	Castle	Maintenance Area	Maintenance Area
Sampling Date	-	-	-	-	-	-	25-Jun-2015	25-Jun-2015	25-Jun-2015	25-Jun-2015	25-Jun-2015	27-Jun-2015	27-Jun-2015
Depth of sample					-	-	0-15 cm	0-15 cm	0-15 cm	0-15 cm	0-15 cm	0-15 cm	0-15 cm
Certificate of Analysis No.	-	-	-	-	-	-	L1634567	L1634567	L1634567	L1634567	L1634567	L1634567	L1634567
Aluminum (Al)	ug/g	50	-	-	-	-	-	-	-	-	-	-	-
Antimony (Sb)	ug/g	0.10	20	-	7.5	1.3	-	-	-	-	-	-	-
Arsenic (As)	ug/g	0.10	12	12	18	18	-	-	-	-	-	-	-
Barium (Ba)	ug/g	0.50	500	6,800	390	220	-	-	-	-	-	-	-
Beryllium (Be)	ug/g	0.10	4	75	5	2.5	-	-	-	-	-	-	-
Bismuth (Bi)	ug/g	0.20	-	-	-	-	-	-	-	-	-	-	-
Boron (B)	ug/g	5.0	-	-	120	36	-	-	-	-	-	-	-
Cadmium (Cd)	ug/g	0.020	10	14	1.2	1.2	-	-	-	-	-	-	-
Calcium (Ca)	ug/g	50	-	-	-	-	-	-	-	-	-	-	-
Chromium (Cr)	ug/g	0.50	64	220	160	70	-	-	-	-	-	-	-
Cobalt (Co)	ug/g	0.10	50	-	22	22	-	-	-	-	-	-	-
Copper (Cu)	ug/g	0.50	63	1,100	180	92	-	-	-	-	-	-	-
Iron (Fe)	ug/g	50	-	-	-	-	-	-	-	-	-	-	-
Lead (Pb)	ug/g	0.50	140	140	120	120	15.1	20.4	24.4	16.8	20.8	78.5	7.8
Lithium (Li)	ug/g	2.0	-	-	-	-	-	-	-	-	-	-	-
Magnesium (Mg)	ug/g	20	-	-	-	-	-	-	-	-	-	-	-
Manganese (Mn)	ug/g	1.0	-	-	-	-	-	-	-	-	-	-	-
Mercury (Hg)	ug/g	0.0050	6.6	6.6	1.8	0.27	-	-	-	-	-	-	-
Molybdenum (Mo)	ug/g	0.10	10	-	6.9	2	-	-	-	-	-	-	-
Nickel (Ni)	ug/g	0.50	45	200.0	130.0	82	-	-	-	-	-	-	-
Phosphorus (P)	ug/g	50	-	-	-	-	-	-	-	-	-	-	-
Potassium (K)	ug/g	100	-	-	-	-	-	-	-	-	-	-	-
Selenium (Se)	ug/g	0.20	1	-	2.4	1.5	-	-	-	-	-	-	-
Silver (Ag)	ug/g	0.10	20	-	25	0.5	-	-	-	-	-	-	-
Sodium (Na)	ug/g	50	-	-	-	-	-	-	-	-	-	-	-
Strontium (Sr)	ug/g	0.50	-	-	-	-	-	-	-	-	-	-	-
Sulfur (S)	ug/g	5000	-	-	-	-	-	-	-	-	-	-	-
Thallium (Tl)	ug/g	0.050	1	-	1	1	-	-	-	-	-	-	-
Tin (Sn)	ug/g	2.0	50	-	-	-	-	-	-	-	-	-	-
Titanium (Ti)	ug/g	1.0	-	-	-	-	-	-	-	-	-	-	-
Uranium (U)	ug/g	0.050	23	23	23	2.5	-	-	-	-	-	-	-
Vanadium (V)	ug/g	0.20	130	-	86	86	-	-	-	-	-	-	-
Zinc (Zn)	ug/g	2.0	200	-	340	290	-	-	-	-	-	-	-
Zirconium (Zr)	ug/g	1.0	-	-	-	-	-	-	-	-	-	-	-

1 CCME Soil Quality Guidelines - Residential/Parkland land use
2 CCME Soil Quality Guidelines for Human Health
3 Sample SS-110-1 also analyzed for PAHs. All results non-detect.
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5 Standards from Table 8 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil within 30 meters of a water body

Bold Exceedsresidential/parkland SQG
Highlight Exceeds SQG_{HH}
Underlined Eceeds Table 2 R/P/I (or exeeds Table 8 R/P/I for samples at Program Office and Garden which are located within 30 m of a water body)

Entered by: KM/RL

Checked by: BT/MD

TABLE 3 SOIL ANALYTICAL RESULTS - INORGANICS

10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	CCME SQG[1] (res/park)	CCME SQG_{HH}[2] (res/park)	MOECC Table 2[4] (res/park/ingt)	MOECC Table 8[5] (res/park/ingt)	F-E-1-1	F-W-1-1	Y-S-1-1	Y-W-1-1	Y-E-1-1	Y-N-1-1	D-E-1-1
Sample Location	-	-	-	-	-	-	Maintenance Area	Maintenance Area	Friar Tuck Building	Friar Tuck Building	Friar Tuck Building	Friar Tuck Building	Lunch Barn
Sampling Date	-	-	-	-	-	-	27-Jun-2015	27-Jun-2015	25-Jun-2015	25-Jun-2015	25-Jun-2015	25-Jun-2015	27-Jun-2015
Depth of sample					-	-	0-15 cm	0-15 cm	0-15 cm	0-15 cm	0-15 cm	0-15 cm	0-15 cm
Certificate of Analysis No.	-	-	-	-	-	-	L1634567	L1634567	L1634567	L1634567	L1634567	L1634567	L1634567
Aluminum (Al)	ug/g	50	-	-	-	-	-	14,400	-	15,200	-	-	17,500
Antimony (Sb)	ug/g	0.10	20	-	7.5	1.3	-	0.19	-	0.17	-	-	0.28
Arsenic (As)	ug/g	0.10	12	12	18	18	-	2.69	-	3.23	-	-	3.29
Barium (Ba)	ug/g	0.50	500	6,800	390	220	-	93.0	-	86.4	-	-	105
Beryllium (Be)	ug/g	0.10	4	75	5	2.5	-	0.55	-	0.56	-	-	0.61
Bismuth (Bi)	ug/g	0.20	-	-	-	-	-	<0.20	-	<0.20	-	-	<0.20
Boron (B)	ug/g	5.0	-	-	120	36	-	9.6	-	8.4	-	-	10.6
Cadmium (Cd)	ug/g	0.020	10	14	1.2	1.2	-	0.242	-	0.271	-	-	0.210
Calcium (Ca)	ug/g	50	-	-	-	-	-	19,000	-	35,500	-	-	48,900
Chromium (Cr)	ug/g	0.50	64	220	160	70	-	22.1	-	22.3	-	-	25.8
Cobalt (Co)	ug/g	0.10	50	-	22	22	-	7.20	-	7.18	-	-	7.76
Copper (Cu)	ug/g	0.50	63	1,100	180	92	-	14.3	-	13.5	-	-	14.0
Iron (Fe)	ug/g	50	-	-	-	-	-	19,300	-	19,700	-	-	21,600
Lead (Pb)	ug/g	0.50	140	140	120	120	15.5	14.0	19.8	16.5	14.1	14.8	20.8
Lithium (Li)	ug/g	2.0	-	-	-	-	-	10.9	-	12.1	-	-	11.5
Magnesium (Mg)	ug/g	20	-	-	-	-	-	4,360	-	5,190	-	-	5,140
Manganese (Mn)	ug/g	1.0	-	-	-	-	-	540	-	542	-	-	591
Mercury (Hg)	ug/g	0.0050	6.6	6.6	1.8	0.27	-	0.0326	-	0.0347	-	-	0.0336
Molybdenum (Mo)	ug/g	0.10	10	-	6.9	2	-	0.40	-	0.37	-	-	0.29
Nickel (Ni)	ug/g	0.50	45	200.0	130.0	82	-	14.8	-	14.8	-	-	16.8
Phosphorus (P)	ug/g	50	-	-	-	-	-	1,090	-	674	-	-	829
Potassium (K)	ug/g	100	-	-	-	-	-	2,950	-	2,400	-	-	3,070
Selenium (Se)	ug/g	0.20	1	-	2.4	1.5	-	0.21	-	0.30	-	-	<0.20
Silver (Ag)	ug/g	0.10	20	-	25	0.5	-	<0.10	-	<0.10	-	-	<0.10
Sodium (Na)	ug/g	50	-	-	-	-	-	147	-	205	-	-	165
Strontium (Sr)	ug/g	0.50	-	-	-	-	-	40.5	-	65.1	-	-	92.5
Sulfur (S)	ug/g	5000	-	-	-	-	-	<5000	-	<5000	-	-	<5000
Thallium (Tl)	ug/g	0.050	1	-	1	1	-	0.150	-	0.153	-	-	0.168
Tin (Sn)	ug/g	2.0	50	-	-	-	-	<2.0	-	<2.0	-	-	<2.0
Titanium (Ti)	ug/g	1.0	-	-	-	-	-	447	-	413	-	-	564
Uranium (U)	ug/g	0.050	23	23	23	2.5	-	0.542	-	0.494	-	-	0.525
Vanadium (V)	ug/g	0.20	130	-	86	86	-	34.8	-	35.2	-	-	40.1
Zinc (Zn)	ug/g	2.0	200	-	340	290	-	70.7	-	66.6	-	-	67.6
Zirconium (Zr)	ug/g	1.0	-	-	-	-	-	<1.0	-	<1.0	-	-	1.2

1 CCME Soil Quality Guidelines - Residential/Parkland land use

2 CCME Soil Quality Guidelines for Human Health

3 Sample SS-110-1 also analyzed for PAHs. All results non-detect.

4 Standards from Table 2 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil

5 Standards from Table 8 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil within 30 meters of a water body

Bold Exceedsresidential/parkland SQG

Highlight Exceeds SQG_{HH}

Underlined Eceeds Table 2 R/P/I (or exeeds Table 8 R/P/I for samples at Program Office and Garden which are located within 30 m of a water body)

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TABLE 3 SOIL ANALYTICAL RESULTS - INORGANICS
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	CCME SQG[1] (res/park)	CCME SQG_{HH}[2] (res/park)	MOECC Table 2[4] (res/park/ingt)	MOECC Table 8[5] (res/park/ingt)	D-E-1-3 Field Duplicate of D-E-1-1	D-N-1-1	W-S-1-1	W-S-1-11 Field Duplicate of W-S-1-1	W-W-1-1	W-E-1-1	W-N-1-1
Sample Location	-	-	-	-	-	-	Lunch Barn	Lunch Barn	Will Scarlet Building	Will Scarlet Building	Will Scarlet Building	Will Scarlet Building	Will Scarlet Building
Sampling Date	-	-	-	-	-	-	27-Jun-2015	27-Jun-2015	25-Jun-2015	25-Jun-2015	25-Jun-2015	25-Jun-2015	25-Jun-2015
Depth of sample					-	-	0-15 cm	0-15 cm	0-15 cm	0-15 cm	0-15 cm	0-15 cm	0-15 cm
Certificate of Analysis No.	-	-	-	-	-	-	L1634567	L1634567	L1634567	L1634567	L1634567	L1634567	L1634567
Aluminum (Al)	ug/g	50	-	-	-	-	16,600	-	-	-	18,100	-	-
Antimony (Sb)	ug/g	0.10	20	-	7.5	1.3	0.40	-	-	-	0.19	-	-
Arsenic (As)	ug/g	0.10	12	12	18	18	3.46	-	-	-	3.87	-	-
Barium (Ba)	ug/g	0.50	500	6,800	390	220	100	-	-	-	129	-	-
Beryllium (Be)	ug/g	0.10	4	75	5	2.5	0.60	-	-	-	0.66	-	-
Bismuth (Bi)	ug/g	0.20	-	-	-	-	<0.20	-	-	-	<0.20	-	-
Boron (B)	ug/g	5.0	-	-	120	36	9.4	-	-	-	12.0	-	-
Cadmium (Cd)	ug/g	0.020	10	14	1.2	1.2	0.268	-	-	-	0.415	-	-
Calcium (Ca)	ug/g	50	-	-	-	-	51,900	-	-	-	14,400	-	-
Chromium (Cr)	ug/g	0.50	64	220	160	70	27.6	-	-	-	25.4	-	-
Cobalt (Co)	ug/g	0.10	50	-	22	22	7.99	-	-	-	7.43	-	-
Copper (Cu)	ug/g	0.50	63	1,100	180	92	14.7	-	-	-	17.8	-	-
Iron (Fe)	ug/g	50	-	-	-	-	21,800	-	-	-	22,800	-	-
Lead (Pb)	ug/g	0.50	140	140	120	120	32.2	22.0	9.7	8.0	17.4	13.1	13.8
Lithium (Li)	ug/g	2.0	-	-	-	-	11.2	-	-	-	14.2	-	-
Magnesium (Mg)	ug/g	20	-	-	-	-	5,240	-	-	-	4,500	-	-
Manganese (Mn)	ug/g	1.0	-	-	-	-	611	-	-	-	1,140	-	-
Mercury (Hg)	ug/g	0.0050	6.6	6.6	1.8	0.27	0.0323	-	0.0455	0.0405	0.0697	0.0544	0.0627
Molybdenum (Mo)	ug/g	0.10	10	-	6.9	2	0.33	-	-	-	0.47	-	-
Nickel (Ni)	ug/g	0.50	45	200.0	130.0	82	17.1	-	-	-	14.6	-	-
Phosphorus (P)	ug/g	50	-	-	-	-	903	-	-	-	1,370	-	-
Potassium (K)	ug/g	100	-	-	-	-	3,100	-	-	-	2,500	-	-
Selenium (Se)	ug/g	0.20	1	-	2.4	1.5	<0.20	-	-	-	0.90	-	-
Silver (Ag)	ug/g	0.10	20	-	25	0.5	<0.10	-	-	-	<0.10	-	-
Sodium (Na)	ug/g	50	-	-	-	-	175	-	-	-	285	-	-
Strontium (Sr)	ug/g	0.50	-	-	-	-	94.7	-	-	-	36.4	-	-
Sulfur (S)	ug/g	5000	-	-	-	-	<5000	-	-	-	<5000	-	-
Thallium (Tl)	ug/g	0.050	1	-	1	1	0.168	-	-	-	0.169	-	-
Tin (Sn)	ug/g	2.0	50	-	-	-	<2.0	-	-	-	<2.0	-	-
Titanium (Ti)	ug/g	1.0	-	-	-	-	534	-	-	-	255	-	-
Uranium (U)	ug/g	0.050	23	23	23	2.5	0.507	-	-	-	0.609	-	-
Vanadium (V)	ug/g	0.20	130	-	86	86	39.8	-	-	-	34.4	-	-
Zinc (Zn)	ug/g	2.0	200	-	340	290	81.9	-	-	-	100	-	-
Zirconium (Zr)	ug/g	1.0	-	-	-	-	1.1	-	-	-	<1.0	-	-

1 CCME Soil Quality Guidelines - Residential/Parkland land use
2 CCME Soil Quality Guidelines for Human Health
3 Sample SS-110-1 also analyzed for PAHs. All results non-detect.
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Bold Exceedsresidential/parkland SQG
Highlight Exceeds SQG_{HH}
Underlined Eceeds Table 2 R/P/I (or exeeds Table 8 R/P/I for samples at Program Office and Garden which are located within 30 m of a water body)

Entered by: KM/RL
Checked by: BT/MD

TABLE 3 **SOIL ANALYTICAL RESULTS - INORGANICS**
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	CCME SQG[1] (res/park)	CCME SQG$_{HH}$[2] (res/park)	MOECC Table 2[4] (res/park/ingt)	MOECC Table 8[5] (res/park/ingt)	L-W-1-1	L-W-1-11 Field Duplicate of L-W-1-1	L-S-1-1	L-SE-1-1	L-N-1-1	G-N-1-1	G-E-1-1
Sample Location	-	-	-	-	-	-	Camp Craft	Camp Craft	Camp Craft	Camp Craft	Camp Craft	Mom's Place	Mom's Place
Sampling Date	-	-	-	-	-	-	25-Jun-2015	25-Jun-2015	25-Jun-2015	25-Jun-2015	25-Jun-2015	25-Jun-2015	25-Jun-2015
Depth of sample					-	-	0-15 cm	0-15 cm	0-15 cm	0-15 cm	0-15 cm	0-15 cm	0-15 cm
Certificate of Analysis No.	-	-	-	-	-	-	L1634567	L1634567	L1634567	L1634567	L1634567	L1634567	L1634567
Aluminum (Al)	ug/g	50	-	-	-	-	14,100	14,800	-	-	-	-	-
Antimony (Sb)	ug/g	0.10	20	-	7.5	1.3	0.16	0.18	-	-	-	-	-
Arsenic (As)	ug/g	0.10	12	12	18	18	2.68	2.87	-	-	-	-	-
Barium (Ba)	ug/g	0.50	500	6,800	390	220	94.6	101	-	-	-	-	-
Beryllium (Be)	ug/g	0.10	4	75	5	2.5	0.53	0.56	-	-	-	-	-
Bismuth (Bi)	ug/g	0.20	-	-	-	-	<0.20	<0.20	-	-	-	-	-
Boron (B)	ug/g	5.0	-	-	120	36	11.3	10.4	-	-	-	-	-
Cadmium (Cd)	ug/g	0.020	10	14	1.2	1.2	0.260	0.265	-	-	-	-	-
Calcium (Ca)	ug/g	50	-	-	-	-	29,600	25,900	-	-	-	-	-
Chromium (Cr)	ug/g	0.50	64	220	160	70	22.4	23.0	-	-	-	-	-
Cobalt (Co)	ug/g	0.10	50	-	22	22	6.83	7.25	-	-	-	-	-
Copper (Cu)	ug/g	0.50	63	1,100	180	92	14.9	14.7	-	-	-	-	-
Iron (Fe)	ug/g	50	-	-	-	-	18,200	18,900	-	-	-	-	-
Lead (Pb)	ug/g	0.50	140	140	120	120	15.2	16.8	17.9	36.7	10.0	84.0	33.7
Lithium (Li)	ug/g	2.0	-	-	-	-	12.2	12.3	-	-	-	-	-
Magnesium (Mg)	ug/g	20	-	-	-	-	4,210	4,110	-	-	-	-	-
Manganese (Mn)	ug/g	1.0	-	-	-	-	626	554	-	-	-	-	-
Mercury (Hg)	ug/g	0.0050	6.6	6.6	1.8	0.27	0.0435	0.0481	-	-	-	-	-
Molybdenum (Mo)	ug/g	0.10	10	-	6.9	2	0.37	0.38	-	-	-	-	-
Nickel (Ni)	ug/g	0.50	45	200.0	130.0	82	13.6	13.9	-	-	-	-	-
Phosphorus (P)	ug/g	50	-	-	-	-	729	714	-	-	-	-	-
Potassium (K)	ug/g	100	-	-	-	-	2,480	2,400	-	-	-	-	-
Selenium (Se)	ug/g	0.20	1	-	2.4	1.5	0.30	0.36	-	-	-	-	-
Silver (Ag)	ug/g	0.10	20	-	25	0.5	<0.10	<0.10	-	-	-	-	-
Sodium (Na)	ug/g	50	-	-	-	-	172	164	-	-	-	-	-
Strontium (Sr)	ug/g	0.50	-	-	-	-	56.5	51.4	-	-	-	-	-
Sulfur (S)	ug/g	5000	-	-	-	-	<5000	<5000	-	-	-	-	-
Thallium (Tl)	ug/g	0.050	1	-	1	1	0.152	0.147	-	-	-	-	-
Tin (Sn)	ug/g	2.0	50	-	-	-	<2.0	<2.0	-	-	-	-	-
Titanium (Ti)	ug/g	1.0	-	-	-	-	433	432	-	-	-	-	-
Uranium (U)	ug/g	0.050	23	23	23	2.5	0.496	0.519	-	-	-	-	-
Vanadium (V)	ug/g	0.20	130	-	86	86	34.3	35.4	-	-	-	-	-
Zinc (Zn)	ug/g	2.0	200	-	340	290	58.3	58.4	-	-	-	-	-
Zirconium (Zr)	ug/g	1.0	-	-	-	-	<1.0	<1.0	-	-	-	-	-

1 CCME Soil Quality Guidelines - Residential/Parkland land use
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Bold Exceedsresidential/parkland SQG
Highlight Exceeds SQG$_{HH}$
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Entered by: KM/RL

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TABLE 3 **SOIL ANALYTICAL RESULTS - INORGANICS**
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	CCME SQG[1] (res/park)	CCME SQG_{HH}[2] (res/park)	MOECC Table 2[4] (res/park/ingt)	MOECC Table 8[5] (res/park/ingt)	G-S-1-1	NE COR GARDEN-1[5]	GARDEN-2[5]	X1-W-1-1	X1-E-1-1	X1-N-1-1
Sample Location	-	-	-	-	-	-	Mom's Place			Shed behind Building X	Shed behind Building X	Shed behind Building X
Sampling Date	-	-	-	-	-	-	25-Jun-2015	25-Jun-2015	25-Jun-2015	25-Jun-2015	25-Jun-2015	25-Jun-2015
Depth of sample					-	-	0-15 cm	0-15 cm	15-45 cm	0-15 cm	0-15 cm	0-15 cm
Certificate of Analysis No.	-	-	-	-	-	-	L1634567	L1634567	L1634567	L1634567	L1634567	L1634567
Aluminum (Al)	ug/g	50	-	-	-	-	6,870	21,200	13,700	-	-	18,100
Antimony (Sb)	ug/g	0.10	20	-	7.5	1.3	0.14	0.14	<0.10	-	-	0.22
Arsenic (As)	ug/g	0.10	12	12	18	18	2.30	3.48	3.11	-	-	3.64
Barium (Ba)	ug/g	0.50	500	6,800	390	220	36.2	162	83.1	-	-	139
Beryllium (Be)	ug/g	0.10	4	75	5	2.5	0.25	0.74	0.51	-	-	0.67
Bismuth (Bi)	ug/g	0.20	-	-	-	-	<0.20	<0.20	<0.20	-	-	<0.20
Boron (B)	ug/g	5.0	-	-	120	36	9.6	13.3	12.1	-	-	11.8
Cadmium (Cd)	ug/g	0.020	10	14	1.2	1.2	0.132	0.419	0.119	-	-	0.419
Calcium (Ca)	ug/g	50	-	-	-	-	175,000	26,200	95,900	-	-	8,040
Chromium (Cr)	ug/g	0.50	64	220	160	70	12.1	33.4	23.7	-	-	28.1
Cobalt (Co)	ug/g	0.10	50	-	22	22	4.03	9.83	8.33	-	-	8.17
Copper (Cu)	ug/g	0.50	63	1,100	180	92	14.1	16.9	11.2	-	-	15.0
Iron (Fe)	ug/g	50	-	-	-	-	11,700	26,200	21,200	-	-	22,400
Lead (Pb)	ug/g	0.50	140	140	120	120	11.2	14.3	8.26	17.1	19.4	72.8
Lithium (Li)	ug/g	2.0	-	-	-	-	7.3	15.7	12.2	-	-	16.0
Magnesium (Mg)	ug/g	20	-	-	-	-	7,620	6,690	6,650	-	-	4,900
Manganese (Mn)	ug/g	1.0	-	-	-	-	397	861	469	-	-	539
Mercury (Hg)	ug/g	0.0050	6.6	6.6	1.8	0.27	0.0131	0.0599	0.0165	-	-	0.0636
Molybdenum (Mo)	ug/g	0.10	10	-	6.9	2	0.33	0.38	0.31	-	-	0.44
Nickel (Ni)	ug/g	0.50	45	200.0	130.0	82	7.99	19.7	18.0	-	-	17.3
Phosphorus (P)	ug/g	50	-	-	-	-	869	1300	782	-	-	909
Potassium (K)	ug/g	100	-	-	-	-	2110	3780	2920	-	-	2,950
Selenium (Se)	ug/g	0.20	1	-	2.4	1.5	<0.20	0.70	<0.20	-	-	0.59
Silver (Ag)	ug/g	0.10	20	-	25	0.5	<0.10	<0.10	<0.10	-	-	<0.10
Sodium (Na)	ug/g	50	-	-	-	-	174	276	257	-	-	209
Strontium (Sr)	ug/g	0.50	-	-	-	-	277	61.0	165	-	-	27.3
Sulfur (S)	ug/g	5000	-	-	-	-	<5000	<5000	<5000	-	-	<5000
Thallium (Tl)	ug/g	0.050	1	-	1	1	0.100	0.209	0.146	-	-	0.190
Tin (Sn)	ug/g	2.0	50	-	-	-	<2.0	<2.0	<2.0	-	-	<2.0
Titanium (Ti)	ug/g	1.0	-	-	-	-	429	504	530	-	-	445
Uranium (U)	ug/g	0.050	23	23	23	2.5	0.482	0.776	0.512	-	-	0.681
Vanadium (V)	ug/g	0.20	130	-	86	86	20.1	46.8	39.2	-	-	42.0
Zinc (Zn)	ug/g	2.0	200	-	340	290	49.4	79.2	95.5	-	-	104
Zirconium (Zr)	ug/g	1.0	-	-	-	-	<1.0	1.3	5.7	-	-	1.0

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2 CCME Soil Quality Guidelines for Human Health
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Highlight Exceeds SQG_{HH}
Underlined Eceeds Table 2 R/P/I (or exeeds Table 8 R/P/I for samples at Program Office and Garden which are located within 30 m of a water body)

Entered by: KM/RL

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TABLE 3 **SOIL ANALYTICAL RESULTS - INORGANICS**
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	CCME SQG[1] (res/park)	CCME SQG_{HH}[2] (res/park)	MOECC Table 2[4] (res/park/ingt)	MOECC Table 8[5] (res/park/ingt)	K-W-1-1	K-S-1-1	K-N-1-1	K-E-1-1	SS-110-1[3] From 2010 GENIVAR Report	SS-110-6 From 2010 GENIVAR Report	SS-110-7 From 2010 GENIVAR Report
Sample Location	-	-	-	-	-	-	Dance Studio	Dance Studio	Dance Studio	Dance Studio	Little John Building	Boys Change Area	Girls Change Area
Sampling Date	-	-	-	-	-	-	25-Jun-2015	25-Jun-2015	25-Jun-2015	25-Jun-2015	15-Jul-2009	18-Dec-2009	18-Dec-2009
Depth of sample					-	-	0-15 cm	0-15 cm	0-15 cm	0-15 cm	0-20 cm	0-20 cm	0-20 cm
Certificate of Analysis No.	-	-	-	-	-	-	L1634567	L1634567	L1634567	L1634567	09T344020	09T376969	09T376969
Aluminum (Al)	ug/g	50	-	-	-	-	15,600	-	-	-	-	-	-
Antimony (Sb)	ug/g	0.10	20	-	7.5	1.3	0.13	-	-	-	<0.8	<0.8	<0.8
Arsenic (As)	ug/g	0.10	12	12	18	18	4.82	-	-	-	3.5	2.7	5.0
Barium (Ba)	ug/g	0.50	500	6,800	390	220	86.9	-	-	-	90.4	90.6	96.7
Beryllium (Be)	ug/g	0.10	4	75	5	2.5	0.55	-	-	-	0.7	0.6	0.7
Bismuth (Bi)	ug/g	0.20	-	-	-	-	<0.20	-	-	-	-	-	-
Boron (B)	ug/g	5.0	-	-	120	36	6.9	-	-	-	0.42	0.35	0.29
Cadmium (Cd)	ug/g	0.020	10	14	1.2	1.2	0.189	-	-	-	0.3	0.4	0.4
Calcium (Ca)	ug/g	50	-	-	-	-	7,970	-	-	-	-	-	-
Chromium (Cr)	ug/g	0.50	64	220	160	70	23.8	-	-	-	19.9	17.4	19.3
Cobalt (Co)	ug/g	0.10	50	-	22	22	7.66	-	-	-	7.7	6.5	7.3
Copper (Cu)	ug/g	0.50	63	1,100	180	92	13.7	-	-	-	15.4	15.5	15.6
Iron (Fe)	ug/g	50	-	-	-	-	20,000	-	-	-	-	-	-
Lead (Pb)	ug/g	0.50	140	140	120	120	11.4	-	-	-	17.2	19.1	20.1
Lithium (Li)	ug/g	2.0	-	-	-	-	10.5	-	-	-	-	-	-
Magnesium (Mg)	ug/g	20	-	-	-	-	4,230	-	-	-	-	-	-
Manganese (Mn)	ug/g	1.0	-	-	-	-	525	-	-	-	-	-	-
Mercury (Hg)	ug/g	0.0050	6.6	6.6	1.8	0.27	0.0323	0.0335	0.0370	0.0347	0.033	0.055	0.060
Molybdenum (Mo)	ug/g	0.10	10	-	6.9	2	0.28	-	-	-	0.3	0.3	0.4
Nickel (Ni)	ug/g	0.50	45	200.0	130.0	82	15.5	-	-	-	14.2	13.9	14.2
Phosphorus (P)	ug/g	50	-	-	-	-	567	-	-	-	-	-	-
Potassium (K)	ug/g	100	-	-	-	-	2,160	-	-	-	-	-	-
Selenium (Se)	ug/g	0.20	1	-	2.4	1.5	0.23	-	-	-	<0.4	0.5	<0.40
Silver (Ag)	ug/g	0.10	20	-	25	0.5	<0.10	-	-	-	<0.2	<0.2	<0.2
Sodium (Na)	ug/g	50	-	-	-	-	138	-	-	-	-	-	-
Strontium (Sr)	ug/g	0.50	-	-	-	-	24.0	-	-	-	-	-	-
Sulfur (S)	ug/g	5000	-	-	-	-	<5000	-	-	-	-	-	-
Thallium (Tl)	ug/g	0.050	1	-	1	1	0.156	-	-	-	<0.2	<0.2	<0.2
Tin (Sn)	ug/g	2.0	50	-	-	-	<2.0	-	-	-	-	-	-
Titanium (Ti)	ug/g	1.0	-	-	-	-	451	-	-	-	-	-	-
Uranium (U)	ug/g	0.050	23	23	23	2.5	0.544	-	-	-	-	-	-
Vanadium (V)	ug/g	0.20	130	-	86	86	35.7	-	-	-	27.3	25.5	28.8
Zinc (Zn)	ug/g	2.0	200	-	340	290	54.9	-	-	-	67	60	66.5
Zirconium (Zr)	ug/g	1.0	-	-	-	-	<1.0	-	-	-	-	-	-

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TABLE 3 **SOIL ANALYTICAL RESULTS - INORGANICS**
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	CCME SQG[1] (res/park)	CCME SQG_{HH}[2] (res/park)	MOECC Table 2[4] (res/park/ingt)	MOECC Table 8[5] (res/park/ingt)	SS-110-5[5] From 2010 GENIVAR Report	BH110-1[5] SS1A From 2011 DCS Report	BH110-2[5] SS1A From 2011 DCS Report	BH110-3[5] SS1A From 2011 DCS Report	BH110-4[5] SS1A From 2011 DCS Report	BH110-5[5] SS1A From 2011 DCS Report	BH110-5[5] SS1B From 2011 DCS Report
Sample Location	-	-	-	-	-	-	Program Office	Program Office	Program Office	Program Office	Program Office	Program Office	Program Office
Sampling Date	-	-	-	-	-	-	18-Dec-2009	3-Dec-2010	3-Dec-2010	3-Dec-2010	3-Dec-2010	3-Dec-2010	40,515.00
Depth of sample					-	-	0-20 cm	0-15 cm	0-15 cm	0-15 cm	0-15 cm	0-15 cm	15-45 cm
Certificate of Analysis No.	-	-	-	-	-	-	09T376969	B0H6421	B0H6421	B0H6421	B0H6421	B0H6421	B016787
Aluminum (Al)	ug/g	50	-	-	-	-	-	-	-	-	-	-	6,300
Antimony (Sb)	ug/g	0.10	20	-	7.5	1.3	<0.8	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arsenic (As)	ug/g	0.10	12	12	18	18	**30.9**	8	4	3	3	2	1
Barium (Ba)	ug/g	0.50	500	6,800	390	220	59.6	9.6	17	13	10	53	60
Beryllium (Be)	ug/g	0.10	4	75	5	2.5	0.2	<0.2	<0.2	<0.2	<0.2	0.3	0.4
Bismuth (Bi)	ug/g	0.20	-	-	-	-	-	-	-	-	-	-	-
Boron (B)	ug/g	5.0	-	-	120	36	0.71	-	-	-	-	-	-
Cadmium (Cd)	ug/g	0.020	10	14	1.2	1.2	0.3	0.2	0.1	<0.1	0.1	0.3	0.2
Calcium (Ca)	ug/g	50	-	-	-	-	-	-	-	-	-	-	100,000
Chromium (Cr)	ug/g	0.50	64	220	160	70	33.6	3	6	4	5	17	17
Cobalt (Co)	ug/g	0.10	50	-	22	22	4.3	1.8	2.1	1.6	1.6	5.3	4.7
Copper (Cu)	ug/g	0.50	63	1,100	180	92	**69.0**	7.1	6.7	4.5	4.5	23	19
Iron (Fe)	ug/g	50	-	-	-	-	-	-	-	-	-	-	10,000
Lead (Pb)	ug/g	0.50	140	140	120	120	**175**	13	7	5	4	12	7
Lithium (Li)	ug/g	2.0	-	-	-	-	-	-	-	-	-	-	-
Magnesium (Mg)	ug/g	20	-	-	-	-	-	-	-	-	-	-	5,200
Manganese (Mn)	ug/g	1.0	-	-	-	-	-	-	-	-	-	-	240
Mercury (Hg)	ug/g	0.0050	6.6	6.6	1.8	0.27	0.061	-	-	-	-	-	-
Molybdenum (Mo)	ug/g	0.10	10	-	6.9	2	0.4	0.9	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel (Ni)	ug/g	0.50	45	200.0	130.0	82	7.7	3.5	4.3	3.1	3.2	11	12
Phosphorus (P)	ug/g	50	-	-	-	-	-	-	-	-	-	-	-
Potassium (K)	ug/g	100	-	-	-	-	-	-	-	-	-	-	820
Selenium (Se)	ug/g	0.20	1	-	2.4	1.5	0.6	<0.5	<0.5	<0.5	<0.5	0.6	0.9
Silver (Ag)	ug/g	0.10	20	-	25	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Sodium (Na)	ug/g	50	-	-	-	-	-	-	-	-	-	-	130
Strontium (Sr)	ug/g	0.50	-	-	-	-	-	-	-	-	-	-	120
Sulfur (S)	ug/g	5000	-	-	-	-	-	-	-	-	-	-	-
Thallium (Tl)	ug/g	0.050	1	-	1	1	<0.2	0.07	0.05	<0.05	<0.05	0.11	0.11
Tin (Sn)	ug/g	2.0	50	-	-	-	-	-	-	-	-	-	-
Titanium (Ti)	ug/g	1.0	-	-	-	-	-	-	-	-	-	-	-
Uranium (U)	ug/g	0.050	23	23	23	2.5	-	-	-	-	-	-	-
Vanadium (V)	ug/g	0.20	130	-	86	86	9.1	5	13	11	11	19	16
Zinc (Zn)	ug/g	2.0	200	-	340	290	**430**	72	53	37	33	**360**	69
Zirconium (Zr)	ug/g	1.0	-	-	-	-	-	-	-	-	-	-	-

1 CCME Soil Quality Guidelines - Residential/Parkland land use
2 CCME Soil Quality Guidelines for Human Health
3 Sample SS-110-1 also analyzed for PAHs. All results non-detect.
4 Standards from Table 2 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil
5 Standards from Table 8 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil within 30 meters of a water body

Bold Exceedsresidential/parkland SQG
Highlight Exceeds SQG_{HH}
Underlined Eceeds Table 2 R/P/I (or exeeds Table 8 R/P/I for samples at Program Office and Garden which are located within 30 m of a water body)

Entered by: KM/RL

Checked by: BT/MD

TABLE 3 SOIL ANALYTICAL RESULTS - INORGANICS
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	CCME SQG[1] (res/park)	CCME SQG_{HH}[2] (res/park)	MOECC Table 2[4] (res/park/ingt)	MOECC Table 8[5] (res/park/ingt)	BH110-5(2)[5] SS1A From 2011 DCS Report	BH110-6[5] SS1A From 2011 DCS Report	BH110-7[5] SS1A From 2011 DCS Report	BH110-7[5] SS1B From 2011 DCS Report	BH110-7[5] SS1C From 2011 DCS Report	BH110-7(2)[5] SS1A From 2011 DCS Report	BH110-8[5] SS1A From 2011 DCS Report
Sample Location	-	-	-	-	-	-	Program Office	Program Office	Program Office	Program Office	Program Office	Program Office	Program Office
Sampling Date	-	-	-	-	-	-	22-Dec-2010	3-Dec-2010	3-Dec-2010	3-Dec-2010	3-Dec-2010	22-Dec-2010	3-Dec-2010
Depth of sample					-	-	0-15 cm	0-15 cm	0-15 cm	15-45 cm	45-75 cm	0-15 cm	0-15 cm
Certificate of Analysis No.	-	-	-	-	-	-	B016049	B0H6421	B0H6421	B016787	B107718	B016049	B0H6421
Aluminum (Al)	ug/g	50	-	-	-	-	5,600	-	-	7,400	7,500	6,100	-
Antimony (Sb)	ug/g	0.10	20	-	7.5	1.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arsenic (As)	ug/g	0.10	12	12	18	18	2	4	3	3	2	3	4
Barium (Ba)	ug/g	0.50	500	6,800	390	220	51	40	42	55	68	55	49
Beryllium (Be)	ug/g	0.10	4	75	5	2.5	0.2	0.2	0.4	0.5	0.4	0.3	<0.2
Bismuth (Bi)	ug/g	0.20	-	-	-	-	-	-	-	-	-	-	-
Boron (B)	ug/g	5.0	-	-	120	36	-	-	-	-	-	-	-
Cadmium (Cd)	ug/g	0.020	10	14	1.2	1.2	0.3	0.2	0.3	0.4	0.6	0.3	0.2
Calcium (Ca)	ug/g	50	-	-	-	-	85,000	-	-	54,000	37,000	77,000	-
Chromium (Cr)	ug/g	0.50	64	220	160	70	16	13	19	20	24	17	14
Cobalt (Co)	ug/g	0.10	50	-	22	22	4.1	3.8	4.8	4.9	3.0	4.3	3.5
Copper (Cu)	ug/g	0.50	63	1,100	180	92	22	16	24	28	46	28	19
Iron (Fe)	ug/g	50	-	-	-	-	9,500	-	-	10,000	6,100	10,000	-
Lead (Pb)	ug/g	0.50	140	140	120	120	13	11	17	15	11	16	37
Lithium (Li)	ug/g	2.0	-	-	-	-	-	-	-	-	-	-	-
Magnesium (Mg)	ug/g	20	-	-	-	-	4,600	-	-	4,900	2,900	6,000	-
Manganese (Mn)	ug/g	1.0	-	-	-	-	230	-	-	290	150	300	-
Mercury (Hg)	ug/g	0.0050	6.6	6.6	1.8	0.27	-	-	-	-	-	-	-
Molybdenum (Mo)	ug/g	0.10	10	-	6.9	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel (Ni)	ug/g	0.50	45	200.0	130.0	82	11	8.7	13	14	16	11	8.3
Phosphorus (P)	ug/g	50	-	-	-	-	890	-	-	1,600	1,300	1,000	-
Potassium (K)	ug/g	100	-	-	-	-	1,200	-	-	1,400	980	1,600	-
Selenium (Se)	ug/g	0.20	1	-	2.4	1.5	0.8	<0.5	1.0	**2.1**	**4.2**	**1.1**	0.7
Silver (Ag)	ug/g	0.10	20	-	25	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Sodium (Na)	ug/g	50	-	-	-	-	150	-	-	<100	<100	120	-
Strontium (Sr)	ug/g	0.50	-	-	-	-	130	-	-	88	57	110	-
Sulfur (S)	ug/g	5000	-	-	-	-	-	-	-	-	-	-	-
Thallium (Tl)	ug/g	0.050	1	-	1	1	0.06	0.08	0.12	0.13	0.10	0.07	0.06
Tin (Sn)	ug/g	2.0	50	-	-	-	-	-	-	-	-	-	-
Titanium (Ti)	ug/g	1.0	-	-	-	-	-	-	-	-	-	-	-
Uranium (U)	ug/g	0.050	23	23	23	2.5	-	-	-	-	-	-	-
Vanadium (V)	ug/g	0.20	130	-	86	86	17	15	19	19	15	17	16
Zinc (Zn)	ug/g	2.0	200	-	340	290	81	57	**510**	**310**	**210**	180	120
Zirconium (Zr)	ug/g	1.0	-	-	-	-	-	-	-	-	-	-	-

1 CCME Soil Quality Guidelines - Residential/Parkland land use
2 CCME Soil Quality Guidelines for Human Health
3 Sample SS-110-1 also analyzed for PAHs. All results non-detect.
4 Standards from Table 2 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil
5 Standards from Table 8 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil within 30 meters of a water body

Bold Exceedsresidential/parkland SQG
Highlight Exceeds SQG_{HH}
Underlined Eceeds Table 2 R/P/I (or exeeds Table 8 R/P/I for samples at Program Office and Garden which are located within 30 m of a water body)

Entered by: KM/RL

Checked by: BT/MD

TABLE 3 SOIL ANALYTICAL RESULTS - INORGANICS

10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	CCME SQG[1] (res/park)	CCME SQG_{HH}[2] (res/park)	MOECC Table 2[4] (res/park/ingt)	MOECC Table 8[5] (res/park/ingt)	SCS1-DUP1[5] (BH110-8 SS1A) From 2011 DCS Report	BH110-9[5] SS1A From 2011 DCS Report	SS-110-8 From 2010 GENIVAR Report	BH110-10 SS1A From 2011 DCS Report	BH110-11 SS1A From 2011 DCS Report	BH110-12 SS1A From 2011 DCS Report
Sample Location	-	-	-	-	-	-	Program Office	Program Office	Owner's Res.	Owner's Res.	Owner's Res.	Owner's Res.
Sampling Date	-	-	-	-	-	-	3-Dec-2010	3-Dec-2010	18-Dec-2009	3-Dec-2010	3-Dec-2010	3-Dec-2010
Depth of sample					-	-	0-15 cm	0-15 cm	0-20 cm	0-15 cm	0-15 cm	0-15 cm
Certificate of Analysis No.	-	-	-	-	-	-	B0H6421	B0H6421	09T376969	B0H6421	B0H6421	B0H6421
Aluminum (Al)	ug/g	50	-	-	-	-	-	-	-	-	-	-
Antimony (Sb)	ug/g	0.10	20	-	7.5	1.3	<0.2	<0.2	**74.4**	1.7	0.8	2.5
Arsenic (As)	ug/g	0.10	12	12	18	18	3	4	9.4	2	3	3
Barium (Ba)	ug/g	0.50	500	6,800	390	220	52	59	**1290**	49	49	77
Beryllium (Be)	ug/g	0.10	4	75	5	2.5	<0.2	0.3	0.6	<0.2	<0.2	0.2
Bismuth (Bi)	ug/g	0.20	-	-	-	-	-	-	-	-	-	-
Boron (B)	ug/g	5.0	-	-	120	36	-	-	0.35	-	-	-
Cadmium (Cd)	ug/g	0.020	10	14	1.2	1.2	0.2	0.3	1.7	0.2	0.1	0.3
Calcium (Ca)	ug/g	50	-	-	-	-	-	-	-	-	-	-
Chromium (Cr)	ug/g	0.50	64	220	160	70	13	16	28.6	8	8	13
Cobalt (Co)	ug/g	0.10	50	-	22	22	3.8	4.5	8.4	2.2	2.7	4.9
Copper (Cu)	ug/g	0.50	63	1,100	180	92	18	18	28.3	7.4	7.8	14
Iron (Fe)	ug/g	50	-	-	-	-	-	-	-	-	-	-
Lead (Pb)	ug/g	0.50	140	140	120	120	35	14	**437**	15	22	49
Lithium (Li)	ug/g	2.0	-	-	-	-	-	-	-	-	-	-
Magnesium (Mg)	ug/g	20	-	-	-	-	-	-	-	-	-	-
Manganese (Mn)	ug/g	1.0	-	-	-	-	-	-	-	-	-	-
Mercury (Hg)	ug/g	0.0050	6.6	6.6	1.8	0.27	-	-	0.240	-	-	-
Molybdenum (Mo)	ug/g	0.10	10	-	6.9	2	<0.5	<0.5	0.3	0.5	<0.5	<0.5
Nickel (Ni)	ug/g	0.50	45	200.0	130.0	82	8.7	9.1	16.0	4.9	6.5	10
Phosphorus (P)	ug/g	50	-	-	-	-	-	-	-	-	-	-
Potassium (K)	ug/g	100	-	-	-	-	-	-	-	-	-	-
Selenium (Se)	ug/g	0.20	1	-	2.4	1.5	0.7	<0.5	0.7	<0.5	<0.5	<0.5
Silver (Ag)	ug/g	0.10	20	-	25	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Sodium (Na)	ug/g	50	-	-	-	-	-	-	-	-	-	-
Strontium (Sr)	ug/g	0.50	-	-	-	-	-	-	-	-	-	-
Sulfur (S)	ug/g	5000	-	-	-	-	-	-	-	-	-	-
Thallium (Tl)	ug/g	0.050	1	-	1	1	0.07	0.06	<0.2	0.05	0.07	0.08
Tin (Sn)	ug/g	2.0	50	-	-	-	-	-	-	-	-	-
Titanium (Ti)	ug/g	1.0	-	-	-	-	-	-	-	-	-	-
Uranium (U)	ug/g	0.050	23	23	23	2.5	-	-	-	-	-	-
Vanadium (V)	ug/g	0.20	130	-	86	86	15	20	26.7	8	6	21
Zinc (Zn)	ug/g	2.0	200	-	340	290	110	63	**1670**	56	54	99
Zirconium (Zr)	ug/g	1.0	-	-	-	-	-	-	-	-	-	-

1 CCME Soil Quality Guidelines - Residential/Parkland land use

2 CCME Soil Quality Guidelines for Human Health

3 Sample SS-110-1 also analyzed for PAHs. All results non-detect.

4 Standards from Table 2 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil

5 Standards from Table 8 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil within 30 meters of a water body

Bold Exceedsresidential/parkland SQG

Highlight Exceeds SQG_{HH}

Underlined Eceeds Table 2 R/P/I (or exeeds Table 8 R/P/I for samples at Program Office and Garden which are located within 30 m of a water body)

Entered by: KM/RL

Checked by: BT/MD

TABLE 3 SOIL ANALYTICAL RESULTS - INORGANICS
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	CCME SQG[1] (res/park)	CCME SQG_{HH}[2] (res/park)	MOECC Table 2[4] (res/park/ingt)	MOECC Table 8[5] (res/park/ingt)	BH110-13 SS1A From 2011 DCS Report	BH110-13 SS1B From 2011 DCS Report	BH110-14 SS1A From 2011 DCS Report	BH110-15 SS1A From 2011 DCS Report	BH110-16 SS1A From 2011 DCS Report	BH110-16 SS1B From 2011 DCS Report	BH110-16(2) SS1A From 2011 DCS Report
Sample Location	-	-	-	-	-	-	Owner's Res.	Owner's Res.	Owner's Res.	Owner's Res.	Owner's Res.	Owner's Res.	Owner's Res.
Sampling Date	-	-	-	-	-	-	3-Dec-2010	3-Dec-2010	3-Dec-2010	3-Dec-2010	3-Dec-2010	3-Dec-2010	3-Dec-2010
Depth of sample					-	-	0-15 cm	15-45 cm	0-15 cm	0-15 cm	0-15 cm	15-45 cm	0-15 cm
Certificate of Analysis No.	-	-	-	-	-	-	B0H6421	B102314	B0H6421	B0H6421	B0H6421	B016787	B107718
Aluminum (Al)	ug/g	50	-	-	-	-	-	9,300	-	-	-	13,000	7,300
Antimony (Sb)	ug/g	0.10	20	-	7.5	1.3	16	8.9	0.9	2.8	3.9	1.0	1.1
Arsenic (As)	ug/g	0.10	12	12	18	18	3	2	4	4	6	3	**16**
Barium (Ba)	ug/g	0.50	500	6,800	390	220	160	150	84	93	170	100	92
Beryllium (Be)	ug/g	0.10	4	75	5	2.5	0.4	0.6	0.5	0.4	0.5	0.7	0.3
Bismuth (Bi)	ug/g	0.20	-	-	-	-	-	-	-	-	-	-	-
Boron (B)	ug/g	5.0	-	-	120	36	-	-	-	-	-	-	-
Cadmium (Cd)	ug/g	0.020	10	14	1.2	1.2	0.5	0.2	0.4	0.6	0.5	0.3	0.3
Calcium (Ca)	ug/g	50	-	-	-	-	-	20,000	-	-	-	35,000	27,000
Chromium (Cr)	ug/g	0.50	64	220	160	70	14	15	16	16	22	22	29
Cobalt (Co)	ug/g	0.10	50	-	22	22	5.1	6.2	5.8	5.7	7.1	8.9	4.8
Copper (Cu)	ug/g	0.50	63	1,100	180	92	14	12	15	19	23	21	34
Iron (Fe)	ug/g	50	-	-	-	-	-	16,000	-	-	-	22,000	12,000
Lead (Pb)	ug/g	0.50	140	140	120	120	99	78	32	49	92	36	51
Lithium (Li)	ug/g	2.0	-	-	-	-	-	-	-	-	-	-	-
Magnesium (Mg)	ug/g	20	-	-	-	-	-	2,900	-	-	-	4,700	3,300
Manganese (Mn)	ug/g	1.0	-	-	-	-	-	420	-	-	-	540	410
Mercury (Hg)	ug/g	0.0050	6.6	6.6	1.8	0.27	-	-	-	-	-	-	-
Molybdenum (Mo)	ug/g	0.10	10	-	6.9	2	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5
Nickel (Ni)	ug/g	0.50	45	200.0	130.0	82	10	12	20	12	15	19	11
Phosphorus (P)	ug/g	50	-	-	-	-	-	800	-	-	-	940	940
Potassium (K)	ug/g	100	-	-	-	-	-	1,100	-	-	-	2,000	1,500
Selenium (Se)	ug/g	0.20	1	-	2.4	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver (Ag)	ug/g	0.10	20	-	25	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Sodium (Na)	ug/g	50	-	-	-	-	-	<100	-	-	-	120	160
Strontium (Sr)	ug/g	0.50	-	-	-	-	-	38	-	-	-	66	47
Sulfur (S)	ug/g	5000	-	-	-	-	-	-	-	-	-	-	-
Thallium (Tl)	ug/g	0.050	1	-	1	1	0.08	0.09	0.08	0.09	0.13	0.16	0.06
Tin (Sn)	ug/g	2.0	50	-	-	-	-	-	-	-	-	-	-
Titanium (Ti)	ug/g	1.0	-	-	-	-	-	-	-	-	-	-	-
Uranium (U)	ug/g	0.050	23	23	23	2.5	-	-	-	-	-	-	-
Vanadium (V)	ug/g	0.20	130	-	86	86	22	25	23	23	29	33	19
Zinc (Zn)	ug/g	2.0	200	-	340	290	**430**	93	96	190	**250**	86	110
Zirconium (Zr)	ug/g	1.0	-	-	-	-	-	-	-	-	-	-	-

1 CCME Soil Quality Guidelines - Residential/Parkland land use
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3 Sample SS-110-1 also analyzed for PAHs. All results non-detect.
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Bold Exceedsresidential/parkland SQG
Highlight Exceeds SQG_{HH}
Underlined Eceeds Table 2 R/P/I (or exeeds Table 8 R/P/I for samples at Program Office and Garden which are located within 30 m of a water body)

Entered by: KM/RL

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TABLE 3 SOIL ANALYTICAL RESULTS - INORGANICS
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	CCME SQG[1] (res/park)	CCME SQG_{HH}[2] (res/park)	MOECC Table 2[4] (res/park/ingt)	MOECC Table 8[5] (res/park/ingt)	BH110-17 SS1A From 2011 DCS Report	SCS2-DUP2 (BH110-17 SS1A) From 2011 DCS Report	BH110-17 SS1B From 2011 DCS Report	BH110-17 SS1C From 2011 DCS Report	BH110-18 SS1A From 2011 DCS Report	SS-112.2-1 From 2010 GENIVAR Report
Sample Location	-	-	-	-	-	-	Owner's Res.	Owner's Res.	Owner's Res.	Owner's Res.	Owner's Res.	Baseball Office
Sampling Date	-	-	-	-	-	-	3-Dec-2010	3-Dec-2010	3-Dec-2010	3-Dec-2010	3-Dec-2010	15-Jul-2009
Depth of sample					-	-	0-15 cm	0-15 cm	15-45 cm	45-75 cm	0-15 cm	0-20 cm
Certificate of Analysis No.	-	-	-	-	-	-	B0H6421	B0H6421	B016787	B102314	B0H6421	09T344020
Aluminum (Al)	ug/g	50	-	-	-	-	-	-	13,000	15,000	-	-
Antimony (Sb)	ug/g	0.10	20	-	7.5	1.3	6.0	5.5	6.8	0.3	0.4	<0.8
Arsenic (As)	ug/g	0.10	12	12	18	18	9	9	5	1	5	2.5
Barium (Ba)	ug/g	0.50	500	6,800	390	220	200	210	190	120	60	135
Beryllium (Be)	ug/g	0.10	4	75	5	2.5	0.5	0.6	0.7	0.7	0.3	0.6
Bismuth (Bi)	ug/g	0.20	-	-	-	-	-	-	-	-	-	-
Boron (B)	ug/g	5.0	-	-	120	36	-	-	-	-	-	0.74
Cadmium (Cd)	ug/g	0.020	10	14	1.2	1.2	0.5	0.6	0.3	0.2	0.3	0.4
Calcium (Ca)	ug/g	50	-	-	-	-	-	-	77,000	32,000	-	-
Chromium (Cr)	ug/g	0.50	64	220	160	70	24	26	27	26	14	19.0
Cobalt (Co)	ug/g	0.10	50	-	22	22	6.8	7.2	9.0	9.8	5.4	8.1
Copper (Cu)	ug/g	0.50	63	1,100	180	92	28	29	30	24	15	18.3
Iron (Fe)	ug/g	50	-	-	-	-	-	-	21,000	25,000	-	-
Lead (Pb)	ug/g	0.50	140	140	120	120	**150**	120	140	40	43	**295**
Lithium (Li)	ug/g	2.0	-	-	-	-	-	-	-	-	-	-
Magnesium (Mg)	ug/g	20	-	-	-	-	-	-	5,600	5,700	-	-
Manganese (Mn)	ug/g	1.0	-	-	-	-	-	-	590	600	-	-
Mercury (Hg)	ug/g	0.0050	6.6	6.6	1.8	0.27	-	-	-	-	-	0.096
Molybdenum (Mo)	ug/g	0.10	10	-	6.9	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3
Nickel (Ni)	ug/g	0.50	45	200.0	130.0	82	14	14	19	2	10	15.6
Phosphorus (P)	ug/g	50	-	-	-	-	-	-	1,400	960	-	-
Potassium (K)	ug/g	100	-	-	-	-	-	-	2,300	2,300	-	-
Selenium (Se)	ug/g	0.20	1	-	2.4	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.4
Silver (Ag)	ug/g	0.10	20	-	25	0.5	<0.2	<0.2	0.2	<0.2	<0.2	<0.2
Sodium (Na)	ug/g	50	-	-	-	-	-	-	160	140	-	-
Strontium (Sr)	ug/g	0.50	-	-	-	-	-	-	140	90	-	-
Sulfur (S)	ug/g	5000	-	-	-	-	-	-	-	-	-	-
Thallium (Tl)	ug/g	0.050	1	-	1	1	0.13	0.13	0.16	0.09	0.09	<0.2
Tin (Sn)	ug/g	2.0	50	-	-	-	-	-	-	-	-	-
Titanium (Ti)	ug/g	1.0	-	-	-	-	-	-	-	-	-	-
Uranium (U)	ug/g	0.050	23	23	23	2.5	-	-	-	-	-	-
Vanadium (V)	ug/g	0.20	130	-	86	86	27	27	32	40	25	24.9
Zinc (Zn)	ug/g	2.0	200	-	340	290	**280**	**290**	160	82	76	198
Zirconium (Zr)	ug/g	1.0	-	-	-	-	-	-	-	-	-	-

1 CCME Soil Quality Guidelines - Residential/Parkland land use
2 CCME Soil Quality Guidelines for Human Health
3 Sample SS-110-1 also analyzed for PAHs. All results non-detect.
4 Standards from Table 2 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil
5 Standards from Table 8 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil within 30 meters of a water body

Bold Exceedsresidential/parkland SQG
Highlight Exceeds SQG_{HH}
Underlined Eceeds Table 2 R/P/I (or exeeds Table 8 R/P/I for samples at Program Office and Garden which are located within 30 m of a water body)

Entered by: KM/RL
Checked by: BT/MD

TABLE 3 **SOIL ANALYTICAL RESULTS - INORGANICS**
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	CCME SQG[1] (res/park)	CCME SQG_{HH}[2] (res/park)	MOECC Table 2[4] (res/park/ingt)	MOECC Table 8[5] (res/park/ingt)	BH110-19 SS1A From 2011 DCS Report	BH110-19 SS1B From 2011 DCS Report	BH110-19(2) SS1A From 2011 DCS Report	BH110-20 SS1A From 2011 DCS Report	BH110-20 SS1B From 2011 DCS Report	BH110-21 SS1A From 2011 DCS Report
Sample Location	-	-	-	-	-	-	Baseball Office	Baseball Office	Baseball Office	Baseball Office	Baseball Office	Baseball Office
Sampling Date	-	-	-	-	-	-	3-Dec-2010	3-Dec-2010	22-Dec-2010	3-Dec-2010	3-Dec-2010	3-Dec-2010
Depth of sample					-	-	0-15 cm	15-50 cm	0-15 cm	0-15 cm	15-45 cm	0-15 cm
Certificate of Analysis No.	-	-	-	-	-	-	B0H6421	B016787	B0H6421	B0H6421	B016787	B0H6421
Aluminum (Al)	ug/g	50	-	-	-	-	-	9,300	9,300	-	10,000	-
Antimony (Sb)	ug/g	0.10	20	-	7.5	1.3	0.3	<0.2	0.3	0.3	0.3	0.3
Arsenic (As)	ug/g	0.10	12	12	18	18	5	2	3	4	4	3
Barium (Ba)	ug/g	0.50	500	6,800	390	220	67	54	80	91	92	84
Beryllium (Be)	ug/g	0.10	4	75	5	2.5	0.3	0.5	0.4	0.3	0.5	0.4
Bismuth (Bi)	ug/g	0.20	-	-	-	-	-	-	-	-	-	-
Boron (B)	ug/g	5.0	-	-	120	36	-	-	-	-	-	-
Cadmium (Cd)	ug/g	0.020	10	14	1.2	1.2	0.4	0.2	0.4	0.8	0.4	0.3
Calcium (Ca)	ug/g	50	-	-	-	-	-	6,400	31,000	-	67,000	-
Chromium (Cr)	ug/g	0.50	64	220	160	70	13	14	16	14	18	18
Cobalt (Co)	ug/g	0.10	50	-	22	22	5.7	6.9	6.4	5.9	7.8	7.3
Copper (Cu)	ug/g	0.50	63	1,100	180	92	**<u>330</u>**	9	19	23	19	17
Iron (Fe)	ug/g	50	-	-	-	-	-	10,000	15,000	-	18,000	-
Lead (Pb)	ug/g	0.50	140	140	120	120	90	23	89	**<u>260</u>**	110	100
Lithium (Li)	ug/g	2.0	-	-	-	-	-	-	-	-	-	-
Magnesium (Mg)	ug/g	20	-	-	-	-	-	2,800	3,900	-	4,800	-
Manganese (Mn)	ug/g	1.0	-	-	-	-	-	520	480	-	540	-
Mercury (Hg)	ug/g	0.0050	6.6	6.6	1.8	0.27	-	-	-	-	-	-
Molybdenum (Mo)	ug/g	0.10	10	-	6.9	2	<0.5	<0.5	<0.5	<0..5	<0.5	<0.5
Nickel (Ni)	ug/g	0.50	45	200.0	130.0	82	11	11	14	13	16	16
Phosphorus (P)	ug/g	50	-	-	-	-	-	630	1,200	-	990	-
Potassium (K)	ug/g	100	-	-	-	-	-	800	1,800	-	1,500	-
Selenium (Se)	ug/g	0.20	1	-	2.4	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver (Ag)	ug/g	0.10	20	-	25	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Sodium (Na)	ug/g	50	-	-	-	-	-	<100	<100	-	140	-
Strontium (Sr)	ug/g	0.50	-	-	-	-	-	18	54	-	110	-
Sulfur (S)	ug/g	5000	-	-	-	-	-	-	-	-	-	-
Thallium (Tl)	ug/g	0.050	1	-	1	1	0.09	0.08	0.11	0.09	0.14	0.13
Tin (Sn)	ug/g	2.0	50	-	-	-	-	-	-	-	-	-
Titanium (Ti)	ug/g	1.0	-	-	-	-	-	-	-	-	-	-
Uranium (U)	ug/g	0.050	23	23	23	2.5	-	-	-	-	-	-
Vanadium (V)	ug/g	0.20	130	-	86	86	24	27	23	22	28	30
Zinc (Zn)	ug/g	2.0	200	-	340	290	130	44	120	**240**	130	80
Zirconium (Zr)	ug/g	1.0	-	-	-	-	-	-	-	-	-	-

1 CCME Soil Quality Guidelines - Residential/Parkland land use
2 CCME Soil Quality Guidelines for Human Health
3 Sample SS-110-1 also analyzed for PAHs. All results non-detect.
4 Standards from Table 2 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil
5 Standards from Table 8 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil within 30 meters of a water body

Bold Exceedsresidential/parkland SQG
Highlight Exceeds SQG_{HH}
<u>Underlined</u> Eceeds Table 2 R/P/I (or exeeds Table 8 R/P/I for samples at Program Office and Garden which are located within 30 m of a water body)

Entered by: KM/RL

Checked by: BT/MD

TABLE 3 SOIL ANALYTICAL RESULTS - INORGANICS

10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	CCME SQG[1] (res/park)	CCME SQG_{HH}[2] (res/park)	MOECC Table 2[4] (res/park/ingt)	MOECC Table 8[5] (res/park/ingt)	BH110-22 SS1A From 2011 DCS Report	BH110-23 SS1A From 2011 DCS Report	BH110-24 SS1A From 2011 DCS Report	BH110-25 SS1A From 2011 DCS Report	BH110-26 SS1A From 2011 DCS Report	CCS3-DUP3 (BH110-26 SS1A) From 2011 DCS Report
Sample Location	-	-	-	-	-	-	Baseball Office	Baseball Office	Baseball Office	Baseball Office	Baseball Office	Baseball Office
Sampling Date	-	-	-	-	-	-	3-Dec-2010	3-Dec-2010	3-Dec-2010	3-Dec-2010	3-Dec-2010	3-Dec-2010
Depth of sample					-	-	0-15 cm	0-15 cm	0-15 cm	0-15 cm	0-15 cm	0-15 cm
Certificate of Analysis No.	-	-	-	-	-	-	B0H6421	B0H6421	B0H6421	B0H6421	B0H6421	B0H6421
Aluminum (Al)	ug/g	50	-	-	-	-	-	-	-	-	-	-
Antimony (Sb)	ug/g	0.10	20	-	7.5	1.3	<0.2	<0.2	<0.2	0.3	0.3	0.3
Arsenic (As)	ug/g	0.10	12	12	18	18	12	3	3	6	4	3
Barium (Ba)	ug/g	0.50	500	6,800	390	220	47	85	75	85	89	84
Beryllium (Be)	ug/g	0.10	4	75	5	2.5	<0.2	0.6	0.4	0.6	0.4	0.4
Bismuth (Bi)	ug/g	0.20	-	-	-	-	-	-	-	-	-	-
Boron (B)	ug/g	5.0	-	-	120	36	-	-	-	-	-	-
Cadmium (Cd)	ug/g	0.020	10	14	1.2	1.2	0.2	0.2	0.3	0.4	0.9	0.8
Calcium (Ca)	ug/g	50	-	-	-	-	-	-	-	-	-	-
Chromium (Cr)	ug/g	0.50	64	220	160	70	16	19	15	18	18	13
Cobalt (Co)	ug/g	0.10	50	-	22	22	3.6	7.6	6.2	7.7	7	5.5
Copper (Cu)	ug/g	0.50	63	1,100	180	92	13	23	16	18	21	16
Iron (Fe)	ug/g	50	-	-	-	-	-	-	-	-	-	-
Lead (Pb)	ug/g	0.50	140	140	120	120	24	39	110	60	**160**	**240**
Lithium (Li)	ug/g	2.0	-	-	-	-	-	-	-	-	-	-
Magnesium (Mg)	ug/g	20	-	-	-	-	-	-	-	-	-	-
Manganese (Mn)	ug/g	1.0	-	-	-	-	-	-	-	-	-	-
Mercury (Hg)	ug/g	0.0050	6.6	6.6	1.8	0.27	-	-	-	-	-	-
Molybdenum (Mo)	ug/g	0.10	10	-	6.9	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel (Ni)	ug/g	0.50	45	200.0	130.0	82	6.6	16	14	15	14	12
Phosphorus (P)	ug/g	50	-	-	-	-	-	-	-	-	-	-
Potassium (K)	ug/g	100	-	-	-	-	-	-	-	-	-	-
Selenium (Se)	ug/g	0.20	1	-	2.4	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver (Ag)	ug/g	0.10	20	-	25	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Sodium (Na)	ug/g	50	-	-	-	-	-	-	-	-	-	-
Strontium (Sr)	ug/g	0.50	-	-	-	-	-	-	-	-	-	-
Sulfur (S)	ug/g	5000	-	-	-	-	-	-	-	-	-	-
Thallium (Tl)	ug/g	0.050	1	-	1	1	0.05	0.15	0.11	0.13	0.12	0.09
Tin (Sn)	ug/g	2.0	50	-	-	-	-	-	-	-	-	-
Titanium (Ti)	ug/g	1.0	-	-	-	-	-	-	-	-	-	-
Uranium (U)	ug/g	0.050	23	23	23	2.5	-	-	-	-	-	-
Vanadium (V)	ug/g	0.20	130	-	86	86	20	30	25	29	26	23
Zinc (Zn)	ug/g	2.0	200	-	340	290	66	68	90	90	200	**230**
Zirconium (Zr)	ug/g	1.0	-	-	-	-	-	-	-	-	-	-

[1] CCME Soil Quality Guidelines - Residential/Parkland land use

[2] CCME Soil Quality Guidelines for Human Health

[3] Sample SS-110-1 also analyzed for PAHs. All results non-detect.

[4] Standards from Table 2 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil

[5] Standards from Table 8 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil within 30 meters of a water body

Bold Exceedsresidential/parkland SQG

Highlight Exceeds SQG_{HH}

Underlined Eceeds Table 2 R/P/I (or exeeds Table 8 R/P/I for samples at Program Office and Garden which are located within 30 m of a water body)

Entered by: KM/RL

Checked by: BT/MD

TABLE 3 SOIL ANALYTICAL RESULTS - INORGANICS
10243 & 10251 Reesor Road, Town of Markham, Ontario

Terrapex Sample Name	Units	RDL	CCME SQG[1] (res/park)	CCME SQG_{HH}[2] (res/park)	MOECC Table 2[4] (res/park/ingt)	MOECC Table 8[5] (res/park/ingt)	BH110-26 SS1B From 2011 DCS Report	BH110-27 SS1A From 2011 DCS Report
Sample Location	-	-	-	-	-	-	Baseball Office	Baseball Office
Sampling Date	-	-	-	-	-	-	3-Dec-2010	3-Dec-2010
Depth of sample					-	-	15-45 cm	0-15 cm
Certificate of Analysis No.	-	-	-	-	-	-	B016787	B0H6421
Aluminum (Al)	ug/g	50	-	-	-	-	16,000	-
Antimony (Sb)	ug/g	0.10	20	-	7.5	1.3	0.2	<0.2
Arsenic (As)	ug/g	0.10	12	12	18	18	4	3
Barium (Ba)	ug/g	0.50	500	6,800	390	220	120	54
Beryllium (Be)	ug/g	0.10	4	75	5	2.5	0.8	0.3
Bismuth (Bi)	ug/g	0.20	-	-	-	-	-	-
Boron (B)	ug/g	5.0	-	-	120	36	-	-
Cadmium (Cd)	ug/g	0.020	10	14	1.2	1.2	0.4	0.3
Calcium (Ca)	ug/g	50	-	-	-	-	6,900	-
Chromium (Cr)	ug/g	0.50	64	220	160	70	25	13
Cobalt (Co)	ug/g	0.10	50	-	22	22	11.0	5.2
Copper (Cu)	ug/g	0.50	63	1,100	180	92	20	11
Iron (Fe)	ug/g	50	-	-	-	-	24,000	-
Lead (Pb)	ug/g	0.50	140	140	120	120	45	21
Lithium (Li)	ug/g	2.0	-	-	-	-	-	-
Magnesium (Mg)	ug/g	20	-	-	-	-	4,000	-
Manganese (Mn)	ug/g	1.0	-	-	-	-	830	-
Mercury (Hg)	ug/g	0.0050	6.6	6.6	1.8	0.27	-	-
Molybdenum (Mo)	ug/g	0.10	10	-	6.9	2	<0.5	<0.5
Nickel (Ni)	ug/g	0.50	45	200.0	130.0	82	22	9.7
Phosphorus (P)	ug/g	50	-	-	-	-	980	-
Potassium (K)	ug/g	100	-	-	-	-	2,000	-
Selenium (Se)	ug/g	0.20	1	-	2.4	1.5	<0.5	<0.5
Silver (Ag)	ug/g	0.10	20	-	25	0.5	<0.2	<0.2
Sodium (Na)	ug/g	50	-	-	-	-	<100	-
Strontium (Sr)	ug/g	0.50	-	-	-	-	24	-
Sulfur (S)	ug/g	5000	-	-	-	-	-	-
Thallium (Tl)	ug/g	0.050	1	-	1	1	0.18	0.09
Tin (Sn)	ug/g	2.0	50	-	-	-	-	-
Titanium (Ti)	ug/g	1.0	-	-	-	-	-	-
Uranium (U)	ug/g	0.050	23	23	23	2.5	-	-
Vanadium (V)	ug/g	0.20	130	-	86	86	37	24
Zinc (Zn)	ug/g	2.0	200	-	340	290	100	57
Zirconium (Zr)	ug/g	1.0	-	-	-	-	-	-

1 CCME Soil Quality Guidelines - Residential/Parkland land use
2 CCME Soil Quality Guidelines for Human Health
3 Sample SS-110-1 also analyzed for PAHs. All results non-detect.
4 Standards from Table 2 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil
5 Standards from Table 8 of April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*; Residential / Parkland / Institutional land use, medium and fine textured soil within 30 meters of a water body

Bold Exceedsresidential/parkland SQG
Highlight Exceeds SQG_{HH}
Underlined Eceeds Table 2 R/P/I (or exeeds Table 8 R/P/I for samples at Program Office and Garden which are located within 30 m of a water body)

Entered by: KM/RL

Checked by: BT/MD

APPENDIX I

LABORATORY CERTIFICATE OF ANALYSIS (PAINT SAMPLES)

TERRAPEX ENVIRONMENTAL
ATTN: STEVEN RUMINSKY
90 SCARSDALE ROAD
TORONTO ON M3B 2R7

Date Received: 27-MAY-15
Report Date: 03-JUN-15 13:43 (MT)
Version: FINAL

Client Phone: 416-245-0011

Certificate of Analysis

Lab Work Order #: L1617744

Project P.O. #: NOT SUBMITTED
Job Reference: CT 2131.98
C of C Numbers:
Legal Site Desc:

Mathy Ganeshakumar, M.Sc.
Account Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1617744-1	L1617744-2	L1617744-3	L1617744-4	L1617744-5
	Description	PAINT	PAINT	PAINT	PAINT	PAINT
	Sampled Date	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15
	Sampled Time					
	Client ID	PA-1	PB-1	PC-1	P-4000	PI-1
Grouping	**Analyte**					
MISC.						
Metals	Arsenic (As) (ug/g)	231	9.9	17.8	18.4	1720
	Lead (Pb) (ug/g)	4.7	2.9	55.4	51.1	11.1
	Mercury (Hg) (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Zinc (Zn) (ug/g)	598	295	744	1000	3390

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1617744-6	L1617744-7	L1617744-8	L1617744-9	L1617744-10
	Description	PAINT	PAINT	PAINT	PAINT	PAINT
	Sampled Date	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15
	Sampled Time					
	Client ID	P-1000	P7-1	PK-1	PII-5	PU-1
Grouping	**Analyte**					
MISC.						
Metals	Arsenic (As) (ug/g)	1200	1.8	1.1	1.3	<1.0
	Lead (Pb) (ug/g)	12.7	2.1	42.0	4.6	83.3
	Mercury (Hg) (mg/kg)	<0.050	<0.050	16.3	<0.050	<0.050
	Zinc (Zn) (ug/g)	3570	3190	230	1670	1310

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID		L1617744-11	L1617744-12	L1617744-13	L1617744-14	L1617744-15
Description		PAINT	PAINT	PAINT	PAINT	PAINT
Sampled Date		25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15
Sampled Time						
Client ID		PHH-1	PW-1	PX-1	P-2000	PEE-1
Grouping	**Analyte**					
MISC.						
Metals	Arsenic (As) (ug/g)	1.3	<1.0	<1.0	<1.0	4.7
	Lead (Pb) (ug/g)	2.4	774	29.1	32.5	9.9
	Mercury (Hg) (mg/kg)	<0.050	24.2	<0.050	<0.050	<0.050
	Zinc (Zn) (ug/g)	30.8	8510	996	1490	83.4

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1617744-16	L1617744-17	L1617744-18	L1617744-19	L1617744-20
	Description	PAINT	PAINT	PAINT	PAINT	PAINT
	Sampled Date	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15
	Sampled Time					
	Client ID	PY-1	PT1-1	PT-1	PCC-1	PBB-1
Grouping	**Analyte**					
MISC.						
Metals	Arsenic (As) (ug/g)	1.8	13.7	<1.0	10.6	3.3
	Lead (Pb) (ug/g)	93.9	8.2	1.8	9.6	6.5
	Mercury (Hg) (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Zinc (Zn) (ug/g)	7960	74.3	2580	76.2	45.1

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1617744-21	L1617744-22	L1617744-23	L1617744-24	L1617744-25
	Description	PAINT	PAINT	PAINT	PAINT	PAINT
	Sampled Date	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15
	Sampled Time					
	Client ID	PAA-1	PG-1	PF-1	PE-1	PD-1
MISC.						
Metals	Arsenic (As) (ug/g)	2.5	<1.0	1.9	1.5	3.6
	Lead (Pb) (ug/g)	10.8	1630	16400	306	47000
	Mercury (Hg) (mg/kg)	<0.050	0.906	<0.050	0.570	0.311
	Zinc (Zn) (ug/g)	1730	3900	9700	1560	157

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1617744-26	L1617744-27	L1617744-28	L1617744-29	L1617744-30
	Description	PAINT	PAINT	PAINT	PAINT	PAINT
	Sampled Date	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15
	Sampled Time					
	Client ID	PH-1	PO-1	PM-1	PL-1	PN-1
Grouping	**Analyte**					
MISC.						
Metals	Arsenic (As) (ug/g)	4.1	1.3	1.7	5.7	5.5
	Lead (Pb) (ug/g)	17.4	4.2	10.4	8780	19600
	Mercury (Hg) (mg/kg)	<0.050	<0.050	<0.050	2.85	9.27
	Zinc (Zn) (ug/g)	394	52.7	55.5	3660	27800

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1617744-31	L1617744-32	L1617744-33	L1617744-34	L1617744-35
	Description	PAINT	PAINT	PAINT	PAINT	PAINT
	Sampled Date	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15	25-MAY-15
	Sampled Time					
	Client ID	P-3000	PQ-1	PP-1	PV1-1	PX1-1
Grouping	**Analyte**					
MISC.						
Metals	Arsenic (As) (ug/g)	4.2	3.7	1.3	3.4	3.6
	Lead (Pb) (ug/g)	16100	21.4	4.0	2.1	41000
	Mercury (Hg) (mg/kg)	7.34	<0.050	<0.050	<0.050	2.89
	Zinc (Zn) (ug/g)	24100	576	45.6	17.2	5630

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1617744-36				
	Description	PAINT				
	Sampled Date	25-MAY-15				
	Sampled Time					
	Client ID	PX2-1				
Grouping	**Analyte**					
MISC.						
Metals	Arsenic (As) (ug/g)	9.2				
	Lead (Pb) (ug/g)	13.7				
	Mercury (Hg) (mg/kg)	<0.050				
	Zinc (Zn) (ug/g)	39.7				

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
HG-PAINT-WT	Misc.	Mercury by CVAA in Paint Chips	SW846 7470A
MET-200.2-CCMS-WT	Misc.	Metals in Paint	EPA 200.2/EPA6020A(mod)

Paint samples are digested with nitric and hydrochloric acids, followed by analysis by CRC ICPMS.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: TERRAPEX ENVIRONMENTAL
90 SCARSDALE ROAD
TORONTO ON M3B 2R7

Contact: STEVEN RUMINSKY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-PAINT-WT	**Misc.**							
Batch R3199070								
WG2098294-6 DUP		**WG2098294-5**						
Mercury (Hg)		<0.050	<0.050	RPD-NA	mg/kg	N/A	25	01-JUN-15
WG2098294-4 LCS								
Mercury (Hg)			93.1		%		70-130	01-JUN-15
WG2098294-1 MB								
Mercury (Hg)			<0.050		mg/kg		0.05	01-JUN-15
Batch R3199102								
WG2098295-8 DUP		**WG2098295-7**						
Mercury (Hg)		9.27	11.7		mg/kg	23	25	01-JUN-15
WG2098295-4 LCS								
Mercury (Hg)			97.9		%		70-130	01-JUN-15
WG2098295-1 MB								
Mercury (Hg)			<0.050		mg/kg		0.05	01-JUN-15
MET-200.2-CCMS-WT	**Misc.**							
Batch R3199596								
WG2098294-2 CRM		**WT-CANMET-TILL1**						
Arsenic (As)			106.7		%		70-130	01-JUN-15
Lead (Pb)			88.8		%		70-130	01-JUN-15
Zinc (Zn)			105.6		%		70-130	01-JUN-15
WG2098294-3 LCS								
Arsenic (As)			106.9		%		70-130	01-JUN-15
Lead (Pb)			102.7		%		70-130	01-JUN-15
Zinc (Zn)			102.7		%		70-130	01-JUN-15
WG2098294-1 MB								
Arsenic (As)			<1.0		mg/kg		1	01-JUN-15
Lead (Pb)			<1.0		mg/kg		1	01-JUN-15
Zinc (Zn)			<2.0		mg/kg		2	01-JUN-15
Batch R3200671								
WG2098295-2 CRM		**WT-CANMET-TILL1**						
Arsenic (As)			111.1		%		70-130	02-JUN-15
Lead (Pb)			93.0		%		70-130	02-JUN-15
Zinc (Zn)			105.2		%		70-130	02-JUN-15
WG2098295-3 LCS								
Arsenic (As)			96.7		%		70-130	02-JUN-15
Lead (Pb)			94.9		%		70-130	02-JUN-15
Zinc (Zn)			91.0		%		70-130	02-JUN-15
WG2098295-1 MB								

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Misc.**							
Batch **R3200671**								
WG2098295-1 **MB**								
Arsenic (As)			<1.0		mg/kg		1	02-JUN-15
Lead (Pb)			<1.0		mg/kg		1	02-JUN-15
Zinc (Zn)			<2.0		mg/kg		2	02-JUN-15

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1617744-COFC

COC Number: 14 -

Page 1 of 3

Report To	
Company:	Terrapex Environmental
Contact:	Steven Ruminsky
Address:	90 Scarsdale Road Toronto, ON, M3B 2R7
Phone:	416-245-0011 Ext. 256 416-245-0012

Report Format / Distribution			
Select Report Format:	[X] PDF	[X] EXCEL	[ ] EDD (DIGITAL)
Quality Control (QC) Report with Report	[ ] Yes	[ ] No	
[ ] Criteria on Report - provide details below if box checked			
Select Distribution:	[X] EMAIL	[ ] MAIL	[ ] FAX
Email 1 or Fax	s.ruminsky@terrapex.com		
Email 2			

Service Requested (Rush Turnaround Time (TAT) is not available for all tests)

- R [X] Regular (Standard TAT if received by 3 pm - business days)
- P [ ] Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
- E [ ] Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
- E2 [ ] Same day or weekend emergency - contact ALS to confirm TAT and surcharge

Specify Date Required for E2,E or P:

Invoice To		
	Same as Report To	[X] Yes [ ] No
	Copy of Invoice with Report	[ ] Yes [ ] No
Company:	Terrapex Environmental	
Contact:	Steven Ruminsky	

Invoice Distribution			
Select Invoice Distribution:	[X] EMAIL	[ ] MAIL	[ ] FAX
Email 1 or Fax	s.ruminsky@terrapex.com		
Email 2			

Project Information	
ALS Quote #:	Q50721
Job #:	CT 2131.98
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
Approver ID:	Cost Center:
GL Account:	Routing Code:
Activity Code:	
Location:	

ALS Lab Work Order # (lab use only): L617744

ALS Contact: Mathy G.

Sampler:

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	PB-PAINT-WT	ZN-PAINT-WT	AS-PAINT-WT	HG-PAINT-WT	Number of Containers
1	✓ PA-1	May 25 15	—	Paint	X	X	X	X	1
2	✓ PB-1	↓	—	↓	X	X	X	X	1
3	✓ PC-1		—		X	X	X	X	1
4	✓ P-4000		—		X	X	X	X	1
5	✓ PI-1		—		X	X	X	X	1
6	✓ P-1000		—		X	X	X	X	1
7	✓ PJ-1		—		X	X	X	X	1
8	✓ PK-1		—		X	X	X	X	1
9	✓ PII-5		—		X	X	X	X	1
10	✓ PU-1		—		X	X	X	X	1
11	✓ PHH-1		—		X	X	X	X	1
12	✓ PW-1	↓	—	↓	X	X	X	X	1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] Yes [ ] No

Are samples for human drinking water use? [ ] Yes [ ] No

Special Instructions / Specify Criteria to add on report (client Use)

CRITERIA: Please specifiy:

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ]		SIF Observations	Yes [ ] No [ ]
Ice packs	Yes [ ] No [X]	Custody seal intact	Yes [ ] No [ ]
Cooling Initiated [ ]			

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
	23.1

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: B. Talier	Date: May 26 15	Time: 15:00	Received by:	Date:	Time:	Received by: OJ	Date: 27/5/15	Time: 17:45

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION — WHITE - LABORATORY COPY — YELLOW - CLIENT COPY

NA-FM-0326e v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

L1617744-COFC

COC Number: 14 -

Report To	
Company:	Terrapex Environmental
Contact:	Steven Ruminsky
Address:	90 Scarsdale Road, Toronto, ON, M3B 2R7
Phone:	416-245-0011 Ext. 256 / 416-245-0012

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [ ] EDD (DIGITAL)

Quality Control (QC) Report with Report [ ] Yes [ ] No

[ ] Criteria on Report - provide details below if box checked

Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax s.ruminsky@terrapex.com

Email 2

Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)

R [X] Regular (Standard TAT if received by 3 pm - business days)

P [ ] Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT

E [ ] Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT

E2 [ ] Same day or weekend emergency - contact ALS to confirm TAT and surcharge

Specify Date Required for E2,E or P:

Invoice To Same as Report To [X] Yes [ ] No

Copy of Invoice with Report [ ] Yes [ ] No

Company: Terrapex Environmental

Contact: Steven Ruminsky

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax s.ruminsky@terrapex.com

Email 2

Project Information

ALS Quote #: Q50721

Job #: CT 2131.98

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

Approver ID: | Cost Center:

GL Account: | Routing Code:

Activity Code:

Location:

ALS Lab Work Order # (lab use only) L1617744

ALS Contact: Mathy G. | Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)		Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	PB-PAINT-WT	ZN-PAINT-WT	AS-PAINT-WT	HG-PAINT-WT	Number of Containers
13	✓	PX-1	May 25-15	–	Paint	X	X	X	X	1
14	✓	P-2000	↓	–	↓	X	X	X	X	1
15	✓	PEE-1		–		X	X	X	X	1
16	✓	PY-1		–		X	X	X	X	1
17	✓	PTI-1		–		X	X	X	X	1
18	✓	PT-1		–		X	X	X	X	1
19	✓	PCC-1		–		X	X	X	X	1
20	✓	PBB-1		–		X	X	X	X	1
21	✓	PAA-1		–		X	X	X	X	1
22	✓	PG-1		–		X	X	X	X	1
23	✓	PF-1		–		X	X	X	X	1
24	✓	PE-1	↓	–	↓	X	X	X	X	1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] Yes [ ] No

Are samples for human drinking water use? [ ] Yes [ ] No

Special Instructions / Specify Criteria to add on report (client Use)

CRITERIA: Please specifiy:

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]

Ice packs Yes [ ] No [ ] Custody seal intact Yes [ ] No [ ]

Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C | FINAL COOLER TEMPERATURES °C: 23.1

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: B-Takev	Date: May 26/15	Time: 15:00	Received by:	Date:	Time:	Received by: [illegible]	Date: 27/5/15	Time: 17:45

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

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1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1617744-COFC

COC Number: 14 -

Page 3 of 3

Report To	
Company:	Terrapex Environmental
Contact:	Steven Ruminsky
Address:	90 Scarsdale Road, Toronto, ON, M3B 2R7
Phone:	416-245-0011 Ext. 256 416-245-0012

Report Format / Distribution

Select Report Format: ☒ PDF ☒ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report ☒ Yes ☐ No
☐ Criteria on Report - provide details below if box checked
Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax s.ruminsky@terrapex.com
Email 2

Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)

R ☒ Regular (Standard TAT if received by 3 pm - business days)
P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge
Specify Date Required for E2,E or P:

Invoice To	
Same as Report To	☑ Yes ☐ No
Copy of Invoice with Report	☐ Yes ☐ No
Company:	Terrapex Environmental
Contact:	Steven Ruminsky

Invoice Distribution

Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax s.ruminsky@terrapex.com
Email 2

Project Information

ALS Quote #:	Q50721
Job #:	CT 2131.98
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

Approver ID:	Cost Center:
GL Account:	Routing Code:
Activity Code:	
Location:	

ALS Lab Work Order # (lab use only): L1617744

ALS Contact: Mathy G.

Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	PB-PAINT-WT	ZN-PAINT-WT	AS-PAINT-WT	HG-PAINT-WT	Number of Containers
25	✓ PD-1	May 25-15	—	Paint	X	X	X	X	1
26	✓ PH-1				X	X	X	X	1
27	✓ PO-1				X	X	X	X	1
28	✓ PM-1				X	X	X	X	1
29	✓ PL-1				X	X	X	X	1
30	✓ PN-1				X	X	X	X	1
31	✓ P-3000				X	X	X	X	1
32	✓ PQ-1				X	X	X	X	1
33	✓ PP-1				X	X	X	X	1
34	✓ PV1-1				X	X	X	X	1
35	✓ PX1-1				X	X	X	X	1
36	✓ PX2-1				X	X	X	X	1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ Yes ☐ No

Are samples for human drinking water use? ☐ Yes ☐ No

Special Instructions / Specify Criteria to add on report (client Use)

CRITERIA: Please specify:

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C:
FINAL COOLER TEMPERATURES °C: 23

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: B. Takev	Date: May 26 15	Time: 15:00	Received by:	Date:	Time:	Received by: Og	Date: 27/5/15	Time: 17:45

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION — WHITE - LABORATORY COPY — YELLOW - CLIENT COPY

NA-FM-0326e v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

APPENDIX II

LABORATORY CERTIFICATE OF ANALYSIS
(SOIL SAMPLES)

TERRAPEX ENVIRONMENTAL
ATTN: STEVEN RUMINSKY
90 SCARSDALE ROAD
TORONTO ON M3B 2R7

Date Received: 30-JUN-15
Report Date: 28-JUL-15 06:52 (MT)
Version: FINAL REV. 3

Client Phone: 416-245-0011

Certificate of Analysis

Lab Work Order #: L1634567

Project P.O. #: NOT SUBMITTED
Job Reference: CT2131.98
C of C Numbers:
Legal Site Desc:

Comments: JUL-28-15:
Sampling dates revised.

JUL-7-15:
Sample ID changed for -40 to GARDEN-2.

Mathy Ganeshakumar, M.Sc.
Account Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1634567-1	2-W-1-1							
Sampled By:	M.O./M.L. on 27-JUN-15							
Matrix:	SOIL							
Metals								
Lead (Pb)		31.7		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
L1634567-2	2-S-1-1							
Sampled By:	M.O./M.L. on 27-JUN-15							
Matrix:	SOIL							
Metals								
Lead (Pb)		226		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
L1634567-3	2-N-1-1							
Sampled By:	M.O./M.L. on 27-JUN-15							
Matrix:	SOIL							
Metals								
Aluminum (Al)		10800		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Antimony (Sb)		0.33		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Arsenic (As)		2.41		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Barium (Ba)		125		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Beryllium (Be)		0.38		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Bismuth (Bi)		<0.20		0.20	ug/g	01-JUL-15	02-JUL-15	R3218329
Boron (B)		6.6		5.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Cadmium (Cd)		0.537		0.020	ug/g	01-JUL-15	02-JUL-15	R3218329
Calcium (Ca)		15600		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Chromium (Cr)		18.4		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Cobalt (Co)		5.69		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Copper (Cu)		14.2		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Iron (Fe)		15500		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Lead (Pb)		105		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Lithium (Li)		7.6		2.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Magnesium (Mg)		3110		20	ug/g	01-JUL-15	02-JUL-15	R3218329
Manganese (Mn)		479		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Mercury (Hg)		0.0604		0.0050	ug/g	01-JUL-15	02-JUL-15	R3218202
Molybdenum (Mo)		0.35		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Nickel (Ni)		10.7		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Phosphorus (P)		1530		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Potassium (K)		1700		100	ug/g	01-JUL-15	02-JUL-15	R3218329
Selenium (Se)		0.23		0.20	ug/g	01-JUL-15	02-JUL-15	R3218329
Silver (Ag)		<0.10		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Sodium (Na)		127		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Strontium (Sr)		38.7		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Sulfur (S)		<5000		5000	ug/g	01-JUL-15	02-JUL-15	R3218329
Thallium (Tl)		0.105		0.050	ug/g	01-JUL-15	02-JUL-15	R3218329
Tin (Sn)		<2.0		2.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Titanium (Ti)		377		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Uranium (U)		0.466		0.050	ug/g	01-JUL-15	02-JUL-15	R3218329
Vanadium (V)		28.2		0.20	ug/g	01-JUL-15	02-JUL-15	R3218329

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1634567-3 2-N-1-1 Sampled By: M.O./M.L. on 27-JUN-15 Matrix: SOIL							
Metals							
Zinc (Zn)	691		2.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Zirconium (Zr)	<1.0		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
L1634567-4 5-NA1-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Aluminum (Al)	13200		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Antimony (Sb)	0.18		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Arsenic (As)	2.95		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Barium (Ba)	73.9		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Beryllium (Be)	0.48		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Bismuth (Bi)	<0.20		0.20	ug/g	01-JUL-15	02-JUL-15	R3218329
Boron (B)	7.7		5.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Cadmium (Cd)	0.214		0.020	ug/g	01-JUL-15	02-JUL-15	R3218329
Calcium (Ca)	16400		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Chromium (Cr)	19.7		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Cobalt (Co)	6.31		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Copper (Cu)	11.1		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Iron (Fe)	17200		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Lead (Pb)	14.0		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Lithium (Li)	10.3		2.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Magnesium (Mg)	3660		20	ug/g	01-JUL-15	02-JUL-15	R3218329
Manganese (Mn)	483		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Mercury (Hg)	0.0333		0.0050	ug/g	01-JUL-15	02-JUL-15	R3218202
Molybdenum (Mo)	0.35		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Nickel (Ni)	12.4		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Phosphorus (P)	656		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Potassium (K)	1990		100	ug/g	01-JUL-15	02-JUL-15	R3218329
Selenium (Se)	0.27		0.20	ug/g	01-JUL-15	02-JUL-15	R3218329
Silver (Ag)	<0.10		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Sodium (Na)	144		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Strontium (Sr)	32.6		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Sulfur (S)	<5000		5000	ug/g	01-JUL-15	02-JUL-15	R3218329
Thallium (Tl)	0.135		0.050	ug/g	01-JUL-15	02-JUL-15	R3218329
Tin (Sn)	<2.0		2.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Titanium (Ti)	372		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Uranium (U)	0.502		0.050	ug/g	01-JUL-15	02-JUL-15	R3218329
Vanadium (V)	31.5		0.20	ug/g	01-JUL-15	02-JUL-15	R3218329
Zinc (Zn)	54.0		2.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Zirconium (Zr)	<1.0		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
L1634567-5 5-SJ3-1-1 Sampled By: M.O./M.L. on 25-JUN-15							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1634567-5	5-SJ3-1-1							
Sampled By:	M.O./M.L. on 25-JUN-15							
Matrix:	SOIL							
Metals								
Lead (Pb)		14.8		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
L1634567-6	5-NJ2-1-1							
Sampled By:	M.O./M.L. on 25-JUN-15							
Matrix:	SOIL							
Metals								
Lead (Pb)		12.8		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
L1634567-7	5-NJ2-1-11							
Sampled By:	M.O./M.L. on 25-JUN-15							
Matrix:	SOIL							
Metals								
Lead (Pb)		12.0		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
L1634567-8	5-SA1-1-1							
Sampled By:	M.O./M.L. on 25-JUN-15							
Matrix:	SOIL							
Metals								
Lead (Pb)		12.9		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
L1634567-9	N-E-1-1							
Sampled By:	M.O./M.L. on 25-JUN-15							
Matrix:	SOIL							
Metals								
Aluminum (Al)		15100		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Antimony (Sb)		0.23		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Arsenic (As)		4.17		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Barium (Ba)		113		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Beryllium (Be)		0.62		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Bismuth (Bi)		<0.20		0.20	ug/g	01-JUL-15	02-JUL-15	R3218329
Boron (B)		11.4		5.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Cadmium (Cd)		0.402		0.020	ug/g	01-JUL-15	02-JUL-15	R3218329
Calcium (Ca)		38700		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Chromium (Cr)		26.7		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Cobalt (Co)		8.73		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Copper (Cu)		14.9		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Iron (Fe)		26100		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Lead (Pb)		15.9		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Lithium (Li)		11.3		2.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Magnesium (Mg)		4590		20	ug/g	01-JUL-15	02-JUL-15	R3218329
Manganese (Mn)		964		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Mercury (Hg)		0.0614		0.0050	ug/g	01-JUL-15	02-JUL-15	R3218202
Molybdenum (Mo)		0.48		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Nickel (Ni)		13.5		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Phosphorus (P)		1180		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Potassium (K)		2200		100	ug/g	01-JUL-15	02-JUL-15	R3218329
Selenium (Se)		0.66		0.20	ug/g	01-JUL-15	02-JUL-15	R3218329

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1634567-9 N-E-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Silver (Ag)	<0.10		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Sodium (Na)	288		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Strontium (Sr)	71.4		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Sulfur (S)	<5000		5000	ug/g	01-JUL-15	02-JUL-15	R3218329
Thallium (Tl)	0.171		0.050	ug/g	01-JUL-15	02-JUL-15	R3218329
Tin (Sn)	<2.0		2.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Titanium (Ti)	359		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Uranium (U)	0.536		0.050	ug/g	01-JUL-15	02-JUL-15	R3218329
Vanadium (V)	44.7		0.20	ug/g	01-JUL-15	02-JUL-15	R3218329
Zinc (Zn)	84.8		2.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Zirconium (Zr)	<1.0		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
L1634567-10 N-N-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Lead (Pb)	15.1		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
L1634567-11 N-W-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Lead (Pb)	20.4		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
L1634567-12 N-W-1-11 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Lead (Pb)	24.4		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
L1634567-14 N-S-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Lead (Pb)	16.8		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
L1634567-15 N-SG-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Lead (Pb)	20.8		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
L1634567-16 F-S-1-1 Sampled By: M.O./M.L. on 27-JUN-15 Matrix: SOIL							
Metals							
Lead (Pb)	78.5		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
L1634567-17 F-N-1-1 Sampled By: M.O./M.L. on 27-JUN-15 Matrix: SOIL							

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1634567-17 F-N-1-1 Sampled By: M.O./M.L. on 27-JUN-15 Matrix: SOIL							
Metals							
Lead (Pb)	7.8		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
L1634567-18 F-E-1-1 Sampled By: M.O./M.L. on 27-JUN-15 Matrix: SOIL							
Metals							
Lead (Pb)	15.5		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
L1634567-19 F-W-1-1 Sampled By: M.O./M.L. on 27-JUN-15 Matrix: SOIL							
Metals							
Aluminum (Al)	14400		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Antimony (Sb)	0.19		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Arsenic (As)	2.69		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Barium (Ba)	93.0		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Beryllium (Be)	0.55		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Bismuth (Bi)	<0.20		0.20	ug/g	01-JUL-15	02-JUL-15	R3218329
Boron (B)	9.6		5.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Cadmium (Cd)	0.242		0.020	ug/g	01-JUL-15	02-JUL-15	R3218329
Calcium (Ca)	19000		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Chromium (Cr)	22.1		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Cobalt (Co)	7.20		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Copper (Cu)	14.3		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Iron (Fe)	19300		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Lead (Pb)	14.0		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Lithium (Li)	10.9		2.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Magnesium (Mg)	4360		20	ug/g	01-JUL-15	02-JUL-15	R3218329
Manganese (Mn)	540		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Mercury (Hg)	0.0326		0.0050	ug/g	01-JUL-15	02-JUL-15	R3218202
Molybdenum (Mo)	0.40		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Nickel (Ni)	14.8		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Phosphorus (P)	1090		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Potassium (K)	2950		100	ug/g	01-JUL-15	02-JUL-15	R3218329
Selenium (Se)	0.21		0.20	ug/g	01-JUL-15	02-JUL-15	R3218329
Silver (Ag)	<0.10		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Sodium (Na)	147		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Strontium (Sr)	40.5		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Sulfur (S)	<5000		5000	ug/g	01-JUL-15	02-JUL-15	R3218329
Thallium (Tl)	0.150		0.050	ug/g	01-JUL-15	02-JUL-15	R3218329
Tin (Sn)	<2.0		2.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Titanium (Ti)	447		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Uranium (U)	0.542		0.050	ug/g	01-JUL-15	02-JUL-15	R3218329
Vanadium (V)	34.8		0.20	ug/g	01-JUL-15	02-JUL-15	R3218329

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1634567-19 F-W-1-1 Sampled By: M.O./M.L. on 27-JUN-15 Matrix: SOIL							
Metals							
Zinc (Zn)	70.7		2.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Zirconium (Zr)	<1.0		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
L1634567-20 Y-S-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Lead (Pb)	19.8		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
L1634567-21 Y-W-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Aluminum (Al)	15200		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Antimony (Sb)	0.17		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Arsenic (As)	3.23		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Barium (Ba)	86.4		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Beryllium (Be)	0.56		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Bismuth (Bi)	<0.20		0.20	ug/g	01-JUL-15	02-JUL-15	R3218329
Boron (B)	8.4		5.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Cadmium (Cd)	0.271		0.020	ug/g	01-JUL-15	02-JUL-15	R3218329
Calcium (Ca)	35500		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Chromium (Cr)	22.3		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Cobalt (Co)	7.18		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Copper (Cu)	13.5		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Iron (Fe)	19700		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Lead (Pb)	16.5		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Lithium (Li)	12.1		2.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Magnesium (Mg)	5190		20	ug/g	01-JUL-15	02-JUL-15	R3218329
Manganese (Mn)	542		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Mercury (Hg)	0.0347		0.0050	ug/g	01-JUL-15	02-JUL-15	R3218202
Molybdenum (Mo)	0.37		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Nickel (Ni)	14.8		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Phosphorus (P)	674		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Potassium (K)	2400		100	ug/g	01-JUL-15	02-JUL-15	R3218329
Selenium (Se)	0.30		0.20	ug/g	01-JUL-15	02-JUL-15	R3218329
Silver (Ag)	<0.10		0.10	ug/g	01-JUL-15	02-JUL-15	R3218329
Sodium (Na)	205		50	ug/g	01-JUL-15	02-JUL-15	R3218329
Strontium (Sr)	65.1		0.50	ug/g	01-JUL-15	02-JUL-15	R3218329
Sulfur (S)	<5000		5000	ug/g	01-JUL-15	02-JUL-15	R3218329
Thallium (Tl)	0.153		0.050	ug/g	01-JUL-15	02-JUL-15	R3218329
Tin (Sn)	<2.0		2.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Titanium (Ti)	413		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Uranium (U)	0.494		0.050	ug/g	01-JUL-15	02-JUL-15	R3218329

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1634567-21	Y-W-1-1							
Sampled By:	M.O./M.L. on 25-JUN-15							
Matrix:	SOIL							
Metals								
Vanadium (V)		35.2		0.20	ug/g	01-JUL-15	02-JUL-15	R3218329
Zinc (Zn)		66.6		2.0	ug/g	01-JUL-15	02-JUL-15	R3218329
Zirconium (Zr)		<1.0		1.0	ug/g	01-JUL-15	02-JUL-15	R3218329
L1634567-22	Y-E-1-1							
Sampled By:	M.O./M.L. on 25-JUN-15							
Matrix:	SOIL							
Metals								
Lead (Pb)		14.1		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
L1634567-23	Y-N-1-1							
Sampled By:	M.O./M.L. on 25-JUN-15							
Matrix:	SOIL							
Metals								
Lead (Pb)		14.8		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
L1634567-24	D-E-1-1							
Sampled By:	M.O./M.L. on 27-JUN-15							
Matrix:	SOIL							
Metals								
Aluminum (Al)		17500		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Antimony (Sb)		0.28		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Arsenic (As)		3.29		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Barium (Ba)		105		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Beryllium (Be)		0.61		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Bismuth (Bi)		<0.20		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897
Boron (B)		10.6		5.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Cadmium (Cd)		0.210		0.020	ug/g	01-JUL-15	02-JUL-15	R3218897
Calcium (Ca)		48900		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Chromium (Cr)		25.8		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Cobalt (Co)		7.76		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Copper (Cu)		14.0		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Iron (Fe)		21600		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Lead (Pb)		20.8		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Lithium (Li)		11.5		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Magnesium (Mg)		5140		20	ug/g	01-JUL-15	02-JUL-15	R3218897
Manganese (Mn)		591		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Mercury (Hg)		0.0336		0.0050	ug/g	01-JUL-15	02-JUL-15	R3218206
Molybdenum (Mo)		0.29		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Nickel (Ni)		16.8		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Phosphorus (P)		829		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Potassium (K)		3070		100	ug/g	01-JUL-15	02-JUL-15	R3218897
Selenium (Se)		<0.20		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897
Silver (Ag)		<0.10		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Sodium (Na)		165		50	ug/g	01-JUL-15	02-JUL-15	R3218897

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1634567-24 D-E-1-1							
Sampled By: M.O./M.L. on 27-JUN-15							
Matrix: SOIL							
Metals							
Strontium (Sr)	92.5		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Sulfur (S)	<5000		5000	ug/g	01-JUL-15	02-JUL-15	R3218897
Thallium (Tl)	0.168		0.050	ug/g	01-JUL-15	02-JUL-15	R3218897
Tin (Sn)	<2.0		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Titanium (Ti)	564		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Uranium (U)	0.525		0.050	ug/g	01-JUL-15	02-JUL-15	R3218897
Vanadium (V)	40.1		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897
Zinc (Zn)	67.6		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Zirconium (Zr)	1.2		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
L1634567-25 D-N-1-1							
Sampled By: M.O./M.L. on 27-JUN-15							
Matrix: SOIL							
Metals							
Lead (Pb)	22.0		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
L1634567-26 W-S-1-1							
Sampled By: M.O./M.L. on 25-JUN-15							
Matrix: SOIL							
Metals							
Lead (Pb)	9.7		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Mercury (Hg)	0.0455		0.0050	ug/g	01-JUL-15	02-JUL-15	R3218206
L1634567-27 W-S-1-11							
Sampled By: M.O./M.L. on 25-JUN-15							
Matrix: SOIL							
Metals							
Lead (Pb)	8.0		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Mercury (Hg)	0.0405		0.0050	ug/g	01-JUL-15	02-JUL-15	R3218206
L1634567-28 W-W-1-1							
Sampled By: M.O./M.L. on 25-JUN-15							
Matrix: SOIL							
Metals							
Aluminum (Al)	18100		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Antimony (Sb)	0.19		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Arsenic (As)	3.87		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Barium (Ba)	129		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Beryllium (Be)	0.66		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Bismuth (Bi)	<0.20		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897
Boron (B)	12.0		5.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Cadmium (Cd)	0.415		0.020	ug/g	01-JUL-15	02-JUL-15	R3218897
Calcium (Ca)	14400		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Chromium (Cr)	25.4		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Cobalt (Co)	7.43		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Copper (Cu)	17.8		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Iron (Fe)	22800		50	ug/g	01-JUL-15	02-JUL-15	R3218897

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1634567-28 W-W-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Lead (Pb)	17.4		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Lithium (Li)	14.2		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Magnesium (Mg)	4500		20	ug/g	01-JUL-15	02-JUL-15	R3218897
Manganese (Mn)	1140		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Mercury (Hg)	0.0697		0.0050	ug/g	01-JUL-15	02-JUL-15	R3218206
Molybdenum (Mo)	0.47		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Nickel (Ni)	14.6		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Phosphorus (P)	1370		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Potassium (K)	2500		100	ug/g	01-JUL-15	02-JUL-15	R3218897
Selenium (Se)	0.90		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897
Silver (Ag)	<0.10		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Sodium (Na)	285		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Strontium (Sr)	36.4		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Sulfur (S)	<5000		5000	ug/g	01-JUL-15	02-JUL-15	R3218897
Thallium (Tl)	0.169		0.050	ug/g	01-JUL-15	02-JUL-15	R3218897
Tin (Sn)	<2.0		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Titanium (Ti)	255		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Uranium (U)	0.609		0.050	ug/g	01-JUL-15	02-JUL-15	R3218897
Vanadium (V)	34.4		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897
Zinc (Zn)	100		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Zirconium (Zr)	<1.0		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
L1634567-29 W-E-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Lead (Pb)	13.1		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Mercury (Hg)	0.0544		0.0050	ug/g	01-JUL-15	02-JUL-15	R3218206
L1634567-30 W-N-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Lead (Pb)	13.8		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Mercury (Hg)	0.0627		0.0050	ug/g	01-JUL-15	02-JUL-15	R3218206
L1634567-31 L-W-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Aluminum (Al)	14100		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Antimony (Sb)	0.16		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Arsenic (As)	2.68		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Barium (Ba)	94.6		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Beryllium (Be)	0.53		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1634567-31 L-W-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Bismuth (Bi)	<0.20		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897
Boron (B)	11.3		5.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Cadmium (Cd)	0.260		0.020	ug/g	01-JUL-15	02-JUL-15	R3218897
Calcium (Ca)	29600		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Chromium (Cr)	22.4		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Cobalt (Co)	6.83		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Copper (Cu)	14.9		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Iron (Fe)	18200		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Lead (Pb)	15.2		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Lithium (Li)	12.2		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Magnesium (Mg)	4210		20	ug/g	01-JUL-15	02-JUL-15	R3218897
Manganese (Mn)	626		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Mercury (Hg)	0.0435		0.0050	ug/g	01-JUL-15	02-JUL-15	R3218206
Molybdenum (Mo)	0.37		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Nickel (Ni)	13.6		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Phosphorus (P)	729		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Potassium (K)	2480		100	ug/g	01-JUL-15	02-JUL-15	R3218897
Selenium (Se)	0.30		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897
Silver (Ag)	<0.10		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Sodium (Na)	172		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Strontium (Sr)	56.5		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Sulfur (S)	<5000		5000	ug/g	01-JUL-15	02-JUL-15	R3218897
Thallium (Tl)	0.152		0.050	ug/g	01-JUL-15	02-JUL-15	R3218897
Tin (Sn)	<2.0		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Titanium (Ti)	433		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Uranium (U)	0.496		0.050	ug/g	01-JUL-15	02-JUL-15	R3218897
Vanadium (V)	34.3		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897
Zinc (Zn)	58.3		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Zirconium (Zr)	<1.0		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
L1634567-32 L-W-1-11 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Aluminum (Al)	14800		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Antimony (Sb)	0.18		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Arsenic (As)	2.87		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Barium (Ba)	101		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Beryllium (Be)	0.56		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Bismuth (Bi)	<0.20		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897
Boron (B)	10.4		5.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Cadmium (Cd)	0.265		0.020	ug/g	01-JUL-15	02-JUL-15	R3218897
Calcium (Ca)	25900		50	ug/g	01-JUL-15	02-JUL-15	R3218897

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1634567-32	L-W-1-11							
Sampled By:	M.O./M.L. on 25-JUN-15							
Matrix:	SOIL							
Metals								
Chromium (Cr)		23.0		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Cobalt (Co)		7.25		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Copper (Cu)		14.7		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Iron (Fe)		18900		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Lead (Pb)		16.8		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Lithium (Li)		12.3		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Magnesium (Mg)		4110		20	ug/g	01-JUL-15	02-JUL-15	R3218897
Manganese (Mn)		554		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Mercury (Hg)		0.0481		0.0050	ug/g	01-JUL-15	02-JUL-15	R3218206
Molybdenum (Mo)		0.38		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Nickel (Ni)		13.9		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Phosphorus (P)		714		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Potassium (K)		2400		100	ug/g	01-JUL-15	02-JUL-15	R3218897
Selenium (Se)		0.36		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897
Silver (Ag)		<0.10		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Sodium (Na)		164		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Strontium (Sr)		51.4		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Sulfur (S)		<5000		5000	ug/g	01-JUL-15	02-JUL-15	R3218897
Thallium (Tl)		0.147		0.050	ug/g	01-JUL-15	02-JUL-15	R3218897
Tin (Sn)		<2.0		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Titanium (Ti)		432		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Uranium (U)		0.519		0.050	ug/g	01-JUL-15	02-JUL-15	R3218897
Vanadium (V)		35.4		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897
Zinc (Zn)		58.4		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Zirconium (Zr)		<1.0		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
L1634567-33	L-S-1-1							
Sampled By:	M.O./M.L. on 25-JUN-15							
Matrix:	SOIL							
Metals								
Lead (Pb)		17.9		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
L1634567-34	L-SE-1-1							
Sampled By:	M.O./M.L. on 25-JUN-15							
Matrix:	SOIL							
Metals								
Lead (Pb)		36.7		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
L1634567-35	L-N-1-1							
Sampled By:	M.O./M.L. on 25-JUN-15							
Matrix:	SOIL							
Metals								
Lead (Pb)		10.0		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
L1634567-36	G-N-1-1							
Sampled By:	M.O./M.L. on 25-JUN-15							
Matrix:	SOIL							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1634567-36	G-N-1-1							
Sampled By:	M.O./M.L. on 25-JUN-15							
Matrix:	SOIL							
Metals								
Lead (Pb)		84.0		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
L1634567-37	G-E-1-1							
Sampled By:	M.O./M.L. on 25-JUN-15							
Matrix:	SOIL							
Metals								
Lead (Pb)		33.7		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
L1634567-38	G-S-1-1							
Sampled By:	M.O./M.L. on 25-JUN-15							
Matrix:	SOIL							
Metals								
Aluminum (Al)		6870		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Antimony (Sb)		0.14		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Arsenic (As)		2.30		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Barium (Ba)		36.2		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Beryllium (Be)		0.25		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Bismuth (Bi)		<0.20		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897
Boron (B)		9.6		5.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Cadmium (Cd)		0.132		0.020	ug/g	01-JUL-15	02-JUL-15	R3218897
Calcium (Ca)		175000		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Chromium (Cr)		12.1		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Cobalt (Co)		4.03		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Copper (Cu)		14.1		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Iron (Fe)		11700		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Lead (Pb)		11.2		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Lithium (Li)		7.3		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Magnesium (Mg)		7620		20	ug/g	01-JUL-15	02-JUL-15	R3218897
Manganese (Mn)		397		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Mercury (Hg)		0.0131		0.0050	ug/g	01-JUL-15	02-JUL-15	R3218206
Molybdenum (Mo)		0.33		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Nickel (Ni)		7.99		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Phosphorus (P)		869		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Potassium (K)		2110		100	ug/g	01-JUL-15	02-JUL-15	R3218897
Selenium (Se)		<0.20		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897
Silver (Ag)		<0.10		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Sodium (Na)		174		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Strontium (Sr)		277		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Sulfur (S)		<5000		5000	ug/g	01-JUL-15	02-JUL-15	R3218897
Thallium (Tl)		0.100		0.050	ug/g	01-JUL-15	02-JUL-15	R3218897
Tin (Sn)		<2.0		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Titanium (Ti)		429		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Uranium (U)		0.482		0.050	ug/g	01-JUL-15	02-JUL-15	R3218897
Vanadium (V)		20.1		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1634567-38 G-S-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Zinc (Zn)	49.4		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Zirconium (Zr)	<1.0		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
L1634567-39 NECOR GARDEN-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Aluminum (Al)	21200		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Antimony (Sb)	0.14		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Arsenic (As)	3.48		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Barium (Ba)	162		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Beryllium (Be)	0.74		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Bismuth (Bi)	<0.20		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897
Boron (B)	13.3		5.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Cadmium (Cd)	0.419		0.020	ug/g	01-JUL-15	02-JUL-15	R3218897
Calcium (Ca)	26200		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Chromium (Cr)	33.4		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Cobalt (Co)	9.83		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Copper (Cu)	16.9		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Iron (Fe)	26200		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Lead (Pb)	14.3		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Lithium (Li)	15.7		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Magnesium (Mg)	6690		20	ug/g	01-JUL-15	02-JUL-15	R3218897
Manganese (Mn)	861		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Mercury (Hg)	0.0599		0.0050	ug/g	01-JUL-15	02-JUL-15	R3218206
Molybdenum (Mo)	0.38		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Nickel (Ni)	19.7		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Phosphorus (P)	1300		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Potassium (K)	3780		100	ug/g	01-JUL-15	02-JUL-15	R3218897
Selenium (Se)	0.70		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897
Silver (Ag)	<0.10		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Sodium (Na)	276		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Strontium (Sr)	61.0		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Sulfur (S)	<5000		5000	ug/g	01-JUL-15	02-JUL-15	R3218897
Thallium (Tl)	0.209		0.050	ug/g	01-JUL-15	02-JUL-15	R3218897
Tin (Sn)	<2.0		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Titanium (Ti)	504		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Uranium (U)	0.776		0.050	ug/g	01-JUL-15	02-JUL-15	R3218897
Vanadium (V)	46.8		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897
Zinc (Zn)	79.2		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Zirconium (Zr)	1.3		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
L1634567-40 GARDEN-2 Sampled By: M.O./M.L. on 25-JUN-15							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1634567-40 GARDEN-2 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Aluminum (Al)	13700		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Antimony (Sb)	<0.10		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Arsenic (As)	3.11		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Barium (Ba)	83.1		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Beryllium (Be)	0.51		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Bismuth (Bi)	<0.20		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897
Boron (B)	12.1		5.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Cadmium (Cd)	0.119		0.020	ug/g	01-JUL-15	02-JUL-15	R3218897
Calcium (Ca)	95900		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Chromium (Cr)	23.7		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Cobalt (Co)	8.33		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Copper (Cu)	11.2		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Iron (Fe)	21200		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Lead (Pb)	8.26		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Lithium (Li)	12.2		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Magnesium (Mg)	6650		20	ug/g	01-JUL-15	02-JUL-15	R3218897
Manganese (Mn)	469		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Mercury (Hg)	0.0165		0.0050	ug/g	01-JUL-15	02-JUL-15	R3218206
Molybdenum (Mo)	0.31		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Nickel (Ni)	18.0		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Phosphorus (P)	782		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Potassium (K)	2920		100	ug/g	01-JUL-15	02-JUL-15	R3218897
Selenium (Se)	<0.20		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897
Silver (Ag)	<0.10		0.10	ug/g	01-JUL-15	02-JUL-15	R3218897
Sodium (Na)	257		50	ug/g	01-JUL-15	02-JUL-15	R3218897
Strontium (Sr)	165		0.50	ug/g	01-JUL-15	02-JUL-15	R3218897
Sulfur (S)	<5000		5000	ug/g	01-JUL-15	02-JUL-15	R3218897
Thallium (Tl)	0.146		0.050	ug/g	01-JUL-15	02-JUL-15	R3218897
Tin (Sn)	<2.0		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Titanium (Ti)	530		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Uranium (U)	0.512		0.050	ug/g	01-JUL-15	02-JUL-15	R3218897
Vanadium (V)	39.2		0.20	ug/g	01-JUL-15	02-JUL-15	R3218897
Zinc (Zn)	95.5		2.0	ug/g	01-JUL-15	02-JUL-15	R3218897
Zirconium (Zr)	5.7		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
L1634567-41 X1-W-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Lead (Pb)	17.1		1.0	ug/g	01-JUL-15	02-JUL-15	R3218897
L1634567-42 X1-E-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1634567-42 X1-E-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Lead (Pb)	19.4		1.0	ug/g	02-JUL-15	02-JUL-15	R3218905
L1634567-43 X1-N-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Aluminum (Al)	18100		50	ug/g	02-JUL-15	02-JUL-15	R3218905
Antimony (Sb)	0.22		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Arsenic (As)	3.64		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Barium (Ba)	139		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Beryllium (Be)	0.67		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Bismuth (Bi)	<0.20		0.20	ug/g	02-JUL-15	02-JUL-15	R3218905
Boron (B)	11.8		5.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Cadmium (Cd)	0.419		0.020	ug/g	02-JUL-15	02-JUL-15	R3218905
Calcium (Ca)	8040		50	ug/g	02-JUL-15	02-JUL-15	R3218905
Chromium (Cr)	28.1		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Cobalt (Co)	8.17		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Copper (Cu)	15.0		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Iron (Fe)	22400		50	ug/g	02-JUL-15	02-JUL-15	R3218905
Lead (Pb)	72.8		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Lithium (Li)	16.0		2.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Magnesium (Mg)	4900		20	ug/g	02-JUL-15	02-JUL-15	R3218905
Manganese (Mn)	539		1.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Mercury (Hg)	0.0636		0.0050	ug/g	02-JUL-15	02-JUL-15	R3218199
Molybdenum (Mo)	0.44		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Nickel (Ni)	17.3		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Phosphorus (P)	909		50	ug/g	02-JUL-15	02-JUL-15	R3218905
Potassium (K)	2950		100	ug/g	02-JUL-15	02-JUL-15	R3218905
Selenium (Se)	0.59		0.20	ug/g	02-JUL-15	02-JUL-15	R3218905
Silver (Ag)	<0.10		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Sodium (Na)	209		50	ug/g	02-JUL-15	02-JUL-15	R3218905
Strontium (Sr)	27.3		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Sulfur (S)	<5000		5000	ug/g	02-JUL-15	02-JUL-15	R3218905
Thallium (Tl)	0.190		0.050	ug/g	02-JUL-15	02-JUL-15	R3218905
Tin (Sn)	<2.0		2.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Titanium (Ti)	445		1.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Uranium (U)	0.681		0.050	ug/g	02-JUL-15	02-JUL-15	R3218905
Vanadium (V)	42.0		0.20	ug/g	02-JUL-15	02-JUL-15	R3218905
Zinc (Zn)	104		2.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Zirconium (Zr)	1.0		1.0	ug/g	02-JUL-15	02-JUL-15	R3218905
L1634567-44 K-W-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1634567-44 K-W-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Aluminum (Al)	15600		50	ug/g	02-JUL-15	02-JUL-15	R3218905
Antimony (Sb)	0.13		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Arsenic (As)	4.82		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Barium (Ba)	86.9		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Beryllium (Be)	0.55		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Bismuth (Bi)	<0.20		0.20	ug/g	02-JUL-15	02-JUL-15	R3218905
Boron (B)	6.9		5.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Cadmium (Cd)	0.189		0.020	ug/g	02-JUL-15	02-JUL-15	R3218905
Calcium (Ca)	7970		50	ug/g	02-JUL-15	02-JUL-15	R3218905
Chromium (Cr)	23.8		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Cobalt (Co)	7.66		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Copper (Cu)	13.7		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Iron (Fe)	20000		50	ug/g	02-JUL-15	02-JUL-15	R3218905
Lead (Pb)	11.4		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Lithium (Li)	10.5		2.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Magnesium (Mg)	4230		20	ug/g	02-JUL-15	02-JUL-15	R3218905
Manganese (Mn)	525		1.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Mercury (Hg)	0.0323		0.0050	ug/g	02-JUL-15	02-JUL-15	R3218199
Molybdenum (Mo)	0.28		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Nickel (Ni)	15.5		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Phosphorus (P)	567		50	ug/g	02-JUL-15	02-JUL-15	R3218905
Potassium (K)	2160		100	ug/g	02-JUL-15	02-JUL-15	R3218905
Selenium (Se)	0.23		0.20	ug/g	02-JUL-15	02-JUL-15	R3218905
Silver (Ag)	<0.10		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Sodium (Na)	138		50	ug/g	02-JUL-15	02-JUL-15	R3218905
Strontium (Sr)	24.0		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Sulfur (S)	<5000		5000	ug/g	02-JUL-15	02-JUL-15	R3218905
Thallium (Tl)	0.156		0.050	ug/g	02-JUL-15	02-JUL-15	R3218905
Tin (Sn)	<2.0		2.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Titanium (Ti)	451		1.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Uranium (U)	0.544		0.050	ug/g	02-JUL-15	02-JUL-15	R3218905
Vanadium (V)	35.7		0.20	ug/g	02-JUL-15	02-JUL-15	R3218905
Zinc (Zn)	54.9		2.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Zirconium (Zr)	<1.0		1.0	ug/g	02-JUL-15	02-JUL-15	R3218905
L1634567-45 K-S-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Mercury (Hg)	0.0335		0.0050	ug/g	02-JUL-15	02-JUL-15	R3218199
L1634567-46 K-N-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1634567-46 K-N-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Mercury (Hg)	0.0370		0.0050	ug/g	02-JUL-15	02-JUL-15	R3218199
L1634567-47 K-E-1-1 Sampled By: M.O./M.L. on 25-JUN-15 Matrix: SOIL							
Metals							
Mercury (Hg)	0.0347		0.0050	ug/g	02-JUL-15	02-JUL-15	R3218199
L1634567-48 2-N-1-3 Sampled By: M.O./M.L. on 27-JUN-15 Matrix: SOIL							
Metals							
Aluminum (Al)	12600		50	ug/g	02-JUL-15	02-JUL-15	R3218905
Antimony (Sb)	0.42		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Arsenic (As)	2.91		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Barium (Ba)	123		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Beryllium (Be)	0.42		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Bismuth (Bi)	<0.20		0.20	ug/g	02-JUL-15	02-JUL-15	R3218905
Boron (B)	7.1		5.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Cadmium (Cd)	0.576		0.020	ug/g	02-JUL-15	02-JUL-15	R3218905
Calcium (Ca)	17600		50	ug/g	02-JUL-15	02-JUL-15	R3218905
Chromium (Cr)	20.2		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Cobalt (Co)	6.46		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Copper (Cu)	16.0		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Iron (Fe)	17300		50	ug/g	02-JUL-15	02-JUL-15	R3218905
Lead (Pb)	101		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Lithium (Li)	8.3		2.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Magnesium (Mg)	3560		20	ug/g	02-JUL-15	02-JUL-15	R3218905
Manganese (Mn)	599		1.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Mercury (Hg)	0.0583		0.0050	ug/g	02-JUL-15	02-JUL-15	R3218199
Molybdenum (Mo)	0.41		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Nickel (Ni)	12.1		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Phosphorus (P)	1490		50	ug/g	02-JUL-15	02-JUL-15	R3218905
Potassium (K)	2010		100	ug/g	02-JUL-15	02-JUL-15	R3218905
Selenium (Se)	0.26		0.20	ug/g	02-JUL-15	02-JUL-15	R3218905
Silver (Ag)	<0.10		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Sodium (Na)	139		50	ug/g	02-JUL-15	02-JUL-15	R3218905
Strontium (Sr)	43.9		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Sulfur (S)	<5000		5000	ug/g	02-JUL-15	02-JUL-15	R3218905
Thallium (Tl)	0.126		0.050	ug/g	02-JUL-15	02-JUL-15	R3218905
Tin (Sn)	<2.0		2.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Titanium (Ti)	406		1.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Uranium (U)	0.517		0.050	ug/g	02-JUL-15	02-JUL-15	R3218905
Vanadium (V)	32.4		0.20	ug/g	02-JUL-15	02-JUL-15	R3218905

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1634567-48 2-N-1-3							
Sampled By: M.O./M.L. on 27-JUN-15							
Matrix: SOIL							
Metals							
Zinc (Zn)	471		2.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Zirconium (Zr)	<1.0		1.0	ug/g	02-JUL-15	02-JUL-15	R3218905
L1634567-49 D-E-1-3							
Sampled By: M.O./M.L. on 27-JUN-15							
Matrix: SOIL							
Metals							
Aluminum (Al)	16600		50	ug/g	02-JUL-15	02-JUL-15	R3218905
Antimony (Sb)	0.40		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Arsenic (As)	3.46		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Barium (Ba)	100		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Beryllium (Be)	0.60		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Bismuth (Bi)	<0.20		0.20	ug/g	02-JUL-15	02-JUL-15	R3218905
Boron (B)	9.4		5.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Cadmium (Cd)	0.268		0.020	ug/g	02-JUL-15	02-JUL-15	R3218905
Calcium (Ca)	51900		50	ug/g	02-JUL-15	02-JUL-15	R3218905
Chromium (Cr)	27.6		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Cobalt (Co)	7.99		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Copper (Cu)	14.7		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Iron (Fe)	21800		50	ug/g	02-JUL-15	02-JUL-15	R3218905
Lead (Pb)	32.2		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Lithium (Li)	11.2		2.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Magnesium (Mg)	5240		20	ug/g	02-JUL-15	02-JUL-15	R3218905
Manganese (Mn)	611		1.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Mercury (Hg)	0.0323		0.0050	ug/g	02-JUL-15	02-JUL-15	R3218199
Molybdenum (Mo)	0.33		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Nickel (Ni)	17.1		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Phosphorus (P)	903		50	ug/g	02-JUL-15	02-JUL-15	R3218905
Potassium (K)	3100		100	ug/g	02-JUL-15	02-JUL-15	R3218905
Selenium (Se)	<0.20		0.20	ug/g	02-JUL-15	02-JUL-15	R3218905
Silver (Ag)	<0.10		0.10	ug/g	02-JUL-15	02-JUL-15	R3218905
Sodium (Na)	175		50	ug/g	02-JUL-15	02-JUL-15	R3218905
Strontium (Sr)	94.7		0.50	ug/g	02-JUL-15	02-JUL-15	R3218905
Sulfur (S)	<5000		5000	ug/g	02-JUL-15	02-JUL-15	R3218905
Thallium (Tl)	0.168		0.050	ug/g	02-JUL-15	02-JUL-15	R3218905
Tin (Sn)	<2.0		2.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Titanium (Ti)	534		1.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Uranium (U)	0.507		0.050	ug/g	02-JUL-15	02-JUL-15	R3218905
Vanadium (V)	39.8		0.20	ug/g	02-JUL-15	02-JUL-15	R3218905
Zinc (Zn)	81.9		2.0	ug/g	02-JUL-15	02-JUL-15	R3218905
Zirconium (Zr)	1.1		1.0	ug/g	02-JUL-15	02-JUL-15	R3218905

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

ALS Test Code	Matrix	Test Description	Method Reference**
MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CRC ICPMS.

Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. This method does not dissolve all silicate materials and may result in a partial extraction. depending on the sample matrix, for some metals, including, but not limited to Al, Ba, Be, Cr, Sr, Ti, Tl, and V.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L1634567 Report Date: 28-JUL-15

Client: TERRAPEX ENVIRONMENTAL
90 SCARSDALE ROAD
TORONTO ON M3B 2R7

Contact: STEVEN RUMINSKY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT	**Soil**							
Batch R3218199								
WG2120060-2 CRM		**WT-CANMET-TILL1**						
Mercury (Hg)			94.2		%		70-130	02-JUL-15
WG2120060-6 DUP		**WG2120060-5**						
Mercury (Hg)		<0.0050	<0.0050	RPD-NA	ug/g	N/A	40	02-JUL-15
WG2120060-4 LCS								
Mercury (Hg)			101.0		%		80-120	02-JUL-15
WG2120060-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	02-JUL-15
Batch R3218202								
WG2120058-2 CRM		**WT-CANMET-TILL1**						
Mercury (Hg)			91.8		%		70-130	02-JUL-15
WG2120058-6 DUP		**WG2120058-5**						
Mercury (Hg)		0.0386	0.0377		ug/g	2.3	40	02-JUL-15
WG2120058-4 LCS								
Mercury (Hg)			105.0		%		80-120	02-JUL-15
WG2120058-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	02-JUL-15
Batch R3218206								
WG2120059-2 CRM		**WT-CANMET-TILL1**						
Mercury (Hg)			91.0		%		70-130	02-JUL-15
WG2120059-6 DUP		**WG2120059-5**						
Mercury (Hg)		0.0359	0.0358		ug/g	0.2	40	02-JUL-15
WG2120059-4 LCS								
Mercury (Hg)			101.0		%		80-120	02-JUL-15
WG2120059-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	02-JUL-15
MET-200.2-CCMS-WT	**Soil**							
Batch R3218329								
WG2120058-2 CRM		**WT-CANMET-TILL1**						
Aluminum (Al)			104.2		%		70-130	02-JUL-15
Antimony (Sb)			105.6		%		70-130	02-JUL-15
Arsenic (As)			108.4		%		70-130	02-JUL-15
Barium (Ba)			104.8		%		70-130	02-JUL-15
Beryllium (Be)			94.7		%		70-130	02-JUL-15
Bismuth (Bi)			102.4		%		70-130	02-JUL-15
Cadmium (Cd)			106.8		%		70-130	02-JUL-15
Calcium (Ca)			119.3		%		70-130	02-JUL-15

Quality Control Report

Client: TERRAPEX ENVIRONMENTAL
90 SCARSDALE ROAD
TORONTO ON M3B 2R7
Contact: STEVEN RUMINSKY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3218329								
WG2120058-2 CRM		**WT-CANMET-TILL1**						
Chromium (Cr)			114.5		%		70-130	02-JUL-15
Cobalt (Co)			107.2		%		70-130	02-JUL-15
Copper (Cu)			102.0		%		70-130	02-JUL-15
Iron (Fe)			103.6		%		70-130	02-JUL-15
Lead (Pb)			91.2		%		70-130	02-JUL-15
Lithium (Li)			103.9		%		70-130	02-JUL-15
Magnesium (Mg)			108.3		%		70-130	02-JUL-15
Manganese (Mn)			104.7		%		70-130	02-JUL-15
Molybdenum (Mo)			99.4		%		70-130	02-JUL-15
Nickel (Ni)			106.2		%		70-130	02-JUL-15
Phosphorus (P)			102.1		%		70-130	02-JUL-15
Potassium (K)			118.0		%		70-130	02-JUL-15
Selenium (Se)			103.7		%		70-130	02-JUL-15
Silver (Ag)			105.7		%		70-130	02-JUL-15
Sodium (Na)			118.5		%		70-130	02-JUL-15
Strontium (Sr)			119.3		%		70-130	02-JUL-15
Thallium (Tl)			107.9		%		70-130	02-JUL-15
Tin (Sn)			101.4		%		70-130	02-JUL-15
Titanium (Ti)			123.0		%		70-130	02-JUL-15
Uranium (U)			113.0		%		70-130	02-JUL-15
Vanadium (V)			116.3		%		70-130	02-JUL-15
Zinc (Zn)			104.2		%		70-130	02-JUL-15
WG2120058-6 DUP		**WG2120058-5**						
Aluminum (Al)		N/A	11400		ug/g	1.3	40	02-JUL-15
Antimony (Sb)		N/A	0.25		ug/g	1.6	30	02-JUL-15
Arsenic (As)		N/A	2.98		ug/g	3.5	30	02-JUL-15
Barium (Ba)		N/A	68.1		ug/g	2.4	40	02-JUL-15
Beryllium (Be)		N/A	0.43		ug/g	0.9	30	02-JUL-15
Bismuth (Bi)		N/A	<0.20	RPD-NA	ug/g	N/A	30	02-JUL-15
Boron (B)		N/A	6.2		ug/g	3.6	30	02-JUL-15
Cadmium (Cd)		N/A	0.448		ug/g	1.9	30	02-JUL-15
Calcium (Ca)		N/A	22600		ug/g	9.6	30	02-JUL-15
Chromium (Cr)		N/A	18.2		ug/g	1.8	30	02-JUL-15

Quality Control Report

Client: TERRAPEX ENVIRONMENTAL
90 SCARSDALE ROAD
TORONTO ON M3B 2R7
Contact: STEVEN RUMINSKY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3218329								
WG2120058-6 DUP		**WG2120058-5**						
Cobalt (Co)		N/A	6.44		ug/g	3.6	30	02-JUL-15
Copper (Cu)		N/A	11.2		ug/g	2.8	30	02-JUL-15
Iron (Fe)		N/A	17200		ug/g	5.3	30	02-JUL-15
Lead (Pb)		31.7	31.0		ug/g	2.3	40	02-JUL-15
Lithium (Li)		N/A	8.3		ug/g	6.3	30	02-JUL-15
Magnesium (Mg)		N/A	3400		ug/g	5.1	30	02-JUL-15
Manganese (Mn)		N/A	578		ug/g	0.8	30	02-JUL-15
Molybdenum (Mo)		N/A	0.35		ug/g	2.6	40	02-JUL-15
Nickel (Ni)		N/A	15.4		ug/g	17	30	02-JUL-15
Phosphorus (P)		N/A	839		ug/g	9.7	30	02-JUL-15
Potassium (K)		N/A	1930		ug/g	5.0	40	02-JUL-15
Selenium (Se)		N/A	0.23		ug/g	7.5	30	02-JUL-15
Silver (Ag)		N/A	<0.10	RPD-NA	ug/g	N/A	40	02-JUL-15
Sodium (Na)		N/A	125		ug/g	4.6	40	02-JUL-15
Strontium (Sr)		N/A	42.9		ug/g	8.6	40	02-JUL-15
Sulfur (S)		N/A	<5000	RPD-NA	ug/g	N/A	25	02-JUL-15
Thallium (Tl)		N/A	0.119		ug/g	2.8	30	02-JUL-15
Tin (Sn)		N/A	<2.0	RPD-NA	ug/g	N/A	40	02-JUL-15
Titanium (Ti)		N/A	357		ug/g	1.9	40	02-JUL-15
Uranium (U)		N/A	0.390		ug/g	15	30	02-JUL-15
Vanadium (V)		N/A	29.4		ug/g	3.6	30	02-JUL-15
Zinc (Zn)		N/A	231		ug/g	4.3	30	02-JUL-15
Zirconium (Zr)		N/A	<1.0	RPD-NA	ug/g	N/A	30	02-JUL-15
WG2120058-3 LCS								
Aluminum (Al)			97.3		%		80-120	02-JUL-15
Antimony (Sb)			99.4		%		80-120	02-JUL-15
Arsenic (As)			96.3		%		80-120	02-JUL-15
Barium (Ba)			99.5		%		80-120	02-JUL-15
Beryllium (Be)			90.2		%		80-120	02-JUL-15
Bismuth (Bi)			95.1		%		80-120	02-JUL-15
Boron (B)			90.8		%		80-120	02-JUL-15
Cadmium (Cd)			94.6		%		80-120	02-JUL-15
Calcium (Ca)			94.9		%		80-120	02-JUL-15

ALS Environmental

Quality Control Report

Workorder: L1634567 Report Date: 28-JUL-15

Client: TERRAPEX ENVIRONMENTAL
90 SCARSDALE ROAD
TORONTO ON M3B 2R7
Contact: STEVEN RUMINSKY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3218329								
WG2120058-3 LCS								
Chromium (Cr)			97.1		%		80-120	02-JUL-15
Cobalt (Co)			96.3		%		80-120	02-JUL-15
Copper (Cu)			94.6		%		80-120	02-JUL-15
Iron (Fe)			103.9		%		80-120	02-JUL-15
Lead (Pb)			95.5		%		80-120	02-JUL-15
Lithium (Li)			103.0		%		80-120	02-JUL-15
Magnesium (Mg)			93.3		%		80-120	02-JUL-15
Manganese (Mn)			98.6		%		80-120	02-JUL-15
Molybdenum (Mo)			97.8		%		80-120	02-JUL-15
Nickel (Ni)			94.9		%		80-120	02-JUL-15
Phosphorus (P)			97.2		%		80-120	02-JUL-15
Potassium (K)			96.4		%		80-120	02-JUL-15
Selenium (Se)			96.3		%		80-120	02-JUL-15
Silver (Ag)			93.9		%		80-120	02-JUL-15
Sodium (Na)			94.9		%		80-120	02-JUL-15
Strontium (Sr)			97.7		%		80-120	02-JUL-15
Sulfur (S)			92.8		%		70-130	02-JUL-15
Thallium (Tl)			95.1		%		80-120	02-JUL-15
Tin (Sn)			94.3		%		80-120	02-JUL-15
Titanium (Ti)			96.1		%		80-120	02-JUL-15
Uranium (U)			95.6		%		80-120	02-JUL-15
Vanadium (V)			97.7		%		80-120	02-JUL-15
Zinc (Zn)			93.5		%		80-120	02-JUL-15
Zirconium (Zr)			94.9		%		80-120	02-JUL-15
WG2120058-1 MB								
Aluminum (Al)			<50		mg/kg		50	02-JUL-15
Antimony (Sb)			<0.10		mg/kg		0.1	02-JUL-15
Arsenic (As)			<0.10		mg/kg		0.1	02-JUL-15
Barium (Ba)			<0.50		mg/kg		0.5	02-JUL-15
Beryllium (Be)			<0.10		mg/kg		0.1	02-JUL-15
Bismuth (Bi)			<0.20		mg/kg		0.2	02-JUL-15
Boron (B)			<5.0		mg/kg		5	02-JUL-15
Cadmium (Cd)			<0.020		mg/kg		0.02	02-JUL-15
Calcium (Ca)			<50		mg/kg		50	02-JUL-15

Quality Control Report

Client: TERRAPEX ENVIRONMENTAL
90 SCARSDALE ROAD
TORONTO ON M3B 2R7
Contact: STEVEN RUMINSKY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3218329								
WG2120058-1 MB								
Chromium (Cr)			<0.50		mg/kg		0.5	02-JUL-15
Cobalt (Co)			<0.10		mg/kg		0.1	02-JUL-15
Copper (Cu)			<0.50		mg/kg		0.5	02-JUL-15
Iron (Fe)			<50		mg/kg		50	02-JUL-15
Lead (Pb)			<0.50		mg/kg		0.5	02-JUL-15
Lithium (Li)			<2.0		mg/kg		2	02-JUL-15
Magnesium (Mg)			<20		mg/kg		20	02-JUL-15
Manganese (Mn)			<1.0		mg/kg		1	02-JUL-15
Molybdenum (Mo)			<0.10		mg/kg		0.1	02-JUL-15
Nickel (Ni)			<0.50		mg/kg		0.5	02-JUL-15
Phosphorus (P)			<50		mg/kg		50	02-JUL-15
Potassium (K)			<100		mg/kg		100	02-JUL-15
Selenium (Se)			<0.20		mg/kg		0.2	02-JUL-15
Silver (Ag)			<0.10		mg/kg		0.1	02-JUL-15
Sodium (Na)			<50		mg/kg		50	02-JUL-15
Strontium (Sr)			<0.50		mg/kg		0.5	02-JUL-15
Sulfur (S)			<5000		mg/kg		5000	02-JUL-15
Thallium (Tl)			<0.050		mg/kg		0.05	02-JUL-15
Tin (Sn)			<2.0		mg/kg		2	02-JUL-15
Titanium (Ti)			<1.0		mg/kg		1	02-JUL-15
Uranium (U)			<0.050		mg/kg		0.05	02-JUL-15
Vanadium (V)			<0.20		mg/kg		0.2	02-JUL-15
Zinc (Zn)			<2.0		mg/kg		2	02-JUL-15
Zirconium (Zr)			<1.0		mg/kg		1	02-JUL-15
Batch R3218897								
WG2120059-2 CRM		**WT-CANMET-TILL1**						
Aluminum (Al)			105.2		%		70-130	02-JUL-15
Antimony (Sb)			103.6		%		70-130	02-JUL-15
Arsenic (As)			107.3		%		70-130	02-JUL-15
Barium (Ba)			105.7		%		70-130	02-JUL-15
Beryllium (Be)			89.9		%		70-130	02-JUL-15
Bismuth (Bi)			98.6		%		70-130	02-JUL-15
Cadmium (Cd)			102.2		%		70-130	02-JUL-15
Calcium (Ca)			121.7		%		70-130	02-JUL-15

Quality Control Report

Workorder: L1634567 Report Date: 28-JUL-15

Client: TERRAPEX ENVIRONMENTAL
90 SCARSDALE ROAD
TORONTO ON M3B 2R7
Contact: STEVEN RUMINSKY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3218897								
WG2120059-2 CRM		**WT-CANMET-TILL1**						
Chromium (Cr)			112.4		%		70-130	02-JUL-15
Cobalt (Co)			105.1		%		70-130	02-JUL-15
Copper (Cu)			100.7		%		70-130	02-JUL-15
Iron (Fe)			101.4		%		70-130	02-JUL-15
Lead (Pb)			89.9		%		70-130	02-JUL-15
Lithium (Li)			96.4		%		70-130	02-JUL-15
Magnesium (Mg)			103.3		%		70-130	02-JUL-15
Manganese (Mn)			105.5		%		70-130	02-JUL-15
Molybdenum (Mo)			99.2		%		70-130	02-JUL-15
Nickel (Ni)			104.7		%		70-130	02-JUL-15
Phosphorus (P)			99.3		%		70-130	02-JUL-15
Potassium (K)			124.6		%		70-130	02-JUL-15
Selenium (Se)			103.8		%		70-130	02-JUL-15
Silver (Ag)			101.4		%		70-130	02-JUL-15
Sodium (Na)			118.7		%		70-130	02-JUL-15
Strontium (Sr)			124.4		%		70-130	02-JUL-15
Thallium (Tl)			106.2		%		70-130	02-JUL-15
Tin (Sn)			97.9		%		70-130	02-JUL-15
Titanium (Ti)			129.6		%		70-130	02-JUL-15
Uranium (U)			111.6		%		70-130	02-JUL-15
Vanadium (V)			115.1		%		70-130	02-JUL-15
Zinc (Zn)			103.7		%		70-130	02-JUL-15
WG2120059-6 DUP		**WG2120059-5**						
Aluminum (Al)		11600	11200		ug/g	3.3	40	02-JUL-15
Antimony (Sb)		0.16	0.15		ug/g	6.0	30	02-JUL-15
Arsenic (As)		2.89	2.87		ug/g	1.0	30	02-JUL-15
Barium (Ba)		66.4	64.2		ug/g	3.3	40	02-JUL-15
Beryllium (Be)		0.44	0.43		ug/g	1.6	30	02-JUL-15
Bismuth (Bi)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	02-JUL-15
Boron (B)		6.9	6.6		ug/g	4.4	30	02-JUL-15
Cadmium (Cd)		0.220	0.204		ug/g	7.5	30	02-JUL-15
Calcium (Ca)		37600	34400		ug/g	8.9	30	02-JUL-15
Chromium (Cr)		17.7	17.5		ug/g	1.3	30	02-JUL-15

Quality Control Report

Client: TERRAPEX ENVIRONMENTAL
90 SCARSDALE ROAD
TORONTO ON M3B 2R7
Contact: STEVEN RUMINSKY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3218897								
WG2120059-6 DUP		**WG2120059-5**						
Cobalt (Co)		5.63	5.65		ug/g	0.3	30	02-JUL-15
Copper (Cu)		10.2	10.2		ug/g	0.4	30	02-JUL-15
Iron (Fe)		15400	15600		ug/g	1.4	30	02-JUL-15
Lead (Pb)		14.1	13.6		ug/g	3.6	40	02-JUL-15
Lithium (Li)		10.0	9.6		ug/g	3.8	30	02-JUL-15
Magnesium (Mg)		3960	3740		ug/g	5.7	30	02-JUL-15
Manganese (Mn)		439	425		ug/g	3.3	30	02-JUL-15
Molybdenum (Mo)		0.32	0.33		ug/g	2.4	40	02-JUL-15
Nickel (Ni)		11.1	10.9		ug/g	1.4	30	02-JUL-15
Phosphorus (P)		678	689		ug/g	1.6	30	02-JUL-15
Potassium (K)		1660	1660		ug/g	0.1	40	02-JUL-15
Selenium (Se)		0.32	0.32		ug/g	0.3	30	02-JUL-15
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	02-JUL-15
Sodium (Na)		150	146		ug/g	2.2	40	02-JUL-15
Strontium (Sr)		64.8	61.1		ug/g	5.8	40	02-JUL-15
Sulfur (S)		<5000	<5000	RPD-NA	ug/g	N/A	25	02-JUL-15
Thallium (Tl)		0.131	0.125		ug/g	4.4	30	02-JUL-15
Tin (Sn)		<2.0	<2.0	RPD-NA	ug/g	N/A	40	02-JUL-15
Titanium (Ti)		353	364		ug/g	3.0	40	02-JUL-15
Uranium (U)		0.476	0.470		ug/g	1.2	30	02-JUL-15
Vanadium (V)		28.7	28.9		ug/g	0.5	30	02-JUL-15
Zinc (Zn)		56.6	56.4		ug/g	0.3	30	02-JUL-15
Zirconium (Zr)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	02-JUL-15
WG2120059-3 LCS								
Aluminum (Al)			95.6		%		80-120	02-JUL-15
Antimony (Sb)			102.2		%		80-120	02-JUL-15
Arsenic (As)			97.3		%		80-120	02-JUL-15
Barium (Ba)			101.4		%		80-120	02-JUL-15
Beryllium (Be)			90.2		%		80-120	02-JUL-15
Bismuth (Bi)			96.5		%		80-120	02-JUL-15
Boron (B)			88.6		%		80-120	02-JUL-15
Cadmium (Cd)			99.0		%		80-120	02-JUL-15
Calcium (Ca)			96.4		%		80-120	02-JUL-15

Quality Control Report

Client: TERRAPEX ENVIRONMENTAL
90 SCARSDALE ROAD
TORONTO ON M3B 2R7
Contact: STEVEN RUMINSKY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3218897								
WG2120059-3 LCS								
Chromium (Cr)			97.3		%		80-120	02-JUL-15
Cobalt (Co)			97.4		%		80-120	02-JUL-15
Copper (Cu)			96.4		%		80-120	02-JUL-15
Iron (Fe)			97.7		%		80-120	02-JUL-15
Lead (Pb)			95.3		%		80-120	02-JUL-15
Lithium (Li)			89.9		%		80-120	02-JUL-15
Magnesium (Mg)			93.5		%		80-120	02-JUL-15
Manganese (Mn)			100.1		%		80-120	02-JUL-15
Molybdenum (Mo)			99.8		%		80-120	02-JUL-15
Nickel (Ni)			95.5		%		80-120	02-JUL-15
Phosphorus (P)			87.3		%		80-120	02-JUL-15
Potassium (K)			99.1		%		80-120	02-JUL-15
Selenium (Se)			97.4		%		80-120	02-JUL-15
Silver (Ag)			99.0		%		80-120	02-JUL-15
Sodium (Na)			96.6		%		80-120	02-JUL-15
Strontium (Sr)			100.2		%		80-120	02-JUL-15
Sulfur (S)			90.4		%		70-130	02-JUL-15
Thallium (Tl)			97.5		%		80-120	02-JUL-15
Tin (Sn)			98.4		%		80-120	02-JUL-15
Titanium (Ti)			96.8		%		80-120	02-JUL-15
Uranium (U)			97.4		%		80-120	02-JUL-15
Vanadium (V)			98.8		%		80-120	02-JUL-15
Zinc (Zn)			94.5		%		80-120	02-JUL-15
Zirconium (Zr)			96.8		%		80-120	02-JUL-15
WG2120059-1 MB								
Aluminum (Al)			<50		mg/kg		50	02-JUL-15
Antimony (Sb)			<0.10		mg/kg		0.1	02-JUL-15
Arsenic (As)			<0.10		mg/kg		0.1	02-JUL-15
Barium (Ba)			<0.50		mg/kg		0.5	02-JUL-15
Beryllium (Be)			<0.10		mg/kg		0.1	02-JUL-15
Bismuth (Bi)			<0.20		mg/kg		0.2	02-JUL-15
Boron (B)			<5.0		mg/kg		5	02-JUL-15
Cadmium (Cd)			<0.020		mg/kg		0.02	02-JUL-15
Calcium (Ca)			<50		mg/kg		50	02-JUL-15

Client: TERRAPEX ENVIRONMENTAL
90 SCARSDALE ROAD
TORONTO ON M3B 2R7
Contact: STEVEN RUMINSKY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3218897								
WG2120059-1 MB								
Chromium (Cr)			<0.50		mg/kg		0.5	02-JUL-15
Cobalt (Co)			<0.10		mg/kg		0.1	02-JUL-15
Copper (Cu)			<0.50		mg/kg		0.5	02-JUL-15
Iron (Fe)			<50		mg/kg		50	02-JUL-15
Lead (Pb)			<0.50		mg/kg		0.5	02-JUL-15
Lithium (Li)			<2.0		mg/kg		2	02-JUL-15
Magnesium (Mg)			<20		mg/kg		20	02-JUL-15
Manganese (Mn)			<1.0		mg/kg		1	02-JUL-15
Molybdenum (Mo)			<0.10		mg/kg		0.1	02-JUL-15
Nickel (Ni)			<0.50		mg/kg		0.5	02-JUL-15
Phosphorus (P)			<50		mg/kg		50	02-JUL-15
Potassium (K)			<100		mg/kg		100	02-JUL-15
Selenium (Se)			<0.20		mg/kg		0.2	02-JUL-15
Silver (Ag)			<0.10		mg/kg		0.1	02-JUL-15
Sodium (Na)			<50		mg/kg		50	02-JUL-15
Strontium (Sr)			<0.50		mg/kg		0.5	02-JUL-15
Sulfur (S)			<5000		mg/kg		5000	02-JUL-15
Thallium (Tl)			<0.050		mg/kg		0.05	02-JUL-15
Tin (Sn)			<2.0		mg/kg		2	02-JUL-15
Titanium (Ti)			<1.0		mg/kg		1	02-JUL-15
Uranium (U)			<0.050		mg/kg		0.05	02-JUL-15
Vanadium (V)			<0.20		mg/kg		0.2	02-JUL-15
Zinc (Zn)			<2.0		mg/kg		2	02-JUL-15
Zirconium (Zr)			<1.0		mg/kg		1	02-JUL-15
Batch R3218905								
WG2120060-2 CRM		**WT-CANMET-TILL1**						
Aluminum (Al)			100.9		%		70-130	02-JUL-15
Antimony (Sb)			101.2		%		70-130	02-JUL-15
Arsenic (As)			104.9		%		70-130	02-JUL-15
Barium (Ba)			103.7		%		70-130	02-JUL-15
Beryllium (Be)			84.2		%		70-130	02-JUL-15
Bismuth (Bi)			94.0		%		70-130	02-JUL-15
Cadmium (Cd)			98.4		%		70-130	02-JUL-15
Calcium (Ca)			115.9		%		70-130	02-JUL-15

ALS Environmental

Quality Control Report

Client: TERRAPEX ENVIRONMENTAL
90 SCARSDALE ROAD
TORONTO ON M3B 2R7
Contact: STEVEN RUMINSKY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3218905								
WG2120060-2 CRM		**WT-CANMET-TILL1**						
Chromium (Cr)			110.2		%		70-130	02-JUL-15
Cobalt (Co)			102.3		%		70-130	02-JUL-15
Copper (Cu)			97.7		%		70-130	02-JUL-15
Iron (Fe)			100.3		%		70-130	02-JUL-15
Lead (Pb)			88.9		%		70-130	02-JUL-15
Lithium (Li)			89.1		%		70-130	02-JUL-15
Magnesium (Mg)			98.2		%		70-130	02-JUL-15
Manganese (Mn)			102.4		%		70-130	02-JUL-15
Molybdenum (Mo)			94.1		%		70-130	02-JUL-15
Nickel (Ni)			101.3		%		70-130	02-JUL-15
Phosphorus (P)			93.6		%		70-130	02-JUL-15
Potassium (K)			120.8		%		70-130	02-JUL-15
Selenium (Se)			95.0		%		70-130	02-JUL-15
Silver (Ag)			99.8		%		70-130	02-JUL-15
Sodium (Na)			114.4		%		70-130	02-JUL-15
Strontium (Sr)			119.4		%		70-130	02-JUL-15
Thallium (Tl)			104.5		%		70-130	02-JUL-15
Tin (Sn)			99.3		%		70-130	02-JUL-15
Titanium (Ti)			126.3		%		70-130	02-JUL-15
Uranium (U)			110.3		%		70-130	02-JUL-15
Vanadium (V)			112.4		%		70-130	02-JUL-15
Zinc (Zn)			99.9		%		70-130	02-JUL-15
WG2120060-6 DUP		**WG2120060-5**						
Aluminum (Al)		2660	2710		ug/g	1.8	40	02-JUL-15
Antimony (Sb)		<1.0	<0.10	RPD-NA	ug/g	N/A	30	02-JUL-15
Arsenic (As)		<1.0	0.92		ug/g	11	30	02-JUL-15
Barium (Ba)		13.3	13.5		ug/g	1.4	40	02-JUL-15
Beryllium (Be)		<0.50	<0.10	RPD-NA	ug/g	N/A	30	02-JUL-15
Bismuth (Bi)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	02-JUL-15
Boron (B)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	02-JUL-15
Cadmium (Cd)		<0.50	0.054		ug/g	3.4	30	02-JUL-15
Calcium (Ca)		67900	69400		ug/g	2.2	30	02-JUL-15
Chromium (Cr)		7.5	7.78		ug/g	3.9	30	02-JUL-15

Quality Control Report

Client: TERRAPEX ENVIRONMENTAL
90 SCARSDALE ROAD
TORONTO ON M3B 2R7
Contact: STEVEN RUMINSKY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3218905								
WG2120060-6 DUP		**WG2120060-5**						
Cobalt (Co)		1.9	2.02		ug/g	3.7	30	02-JUL-15
Copper (Cu)		4.5	4.73		ug/g	5.7	30	02-JUL-15
Iron (Fe)		9760	10500		ug/g	7.7	30	02-JUL-15
Lead (Pb)		8.1	9.15		ug/g	13	40	02-JUL-15
Lithium (Li)		2.2	<2.0	RPD-NA	ug/g	N/A	30	02-JUL-15
Magnesium (Mg)		2400	2580		ug/g	7.1	30	02-JUL-15
Manganese (Mn)		193	202		ug/g	4.8	30	02-JUL-15
Molybdenum (Mo)		<1.0	0.19		ug/g	38	40	02-JUL-15
Nickel (Ni)		4.0	3.32		ug/g	19	30	02-JUL-15
Phosphorus (P)		562	623		ug/g	10	30	02-JUL-15
Potassium (K)		390	410		ug/g	4.9	40	02-JUL-15
Selenium (Se)		<1.0	<0.20	RPD-NA	ug/g	N/A	30	02-JUL-15
Silver (Ag)		<0.20	<0.10	RPD-NA	ug/g	N/A	40	02-JUL-15
Sodium (Na)		167	176		ug/g	5.3	40	02-JUL-15
Strontium (Sr)		109	114		ug/g	4.4	40	02-JUL-15
Sulfur (S)		<5000	<5000	RPD-NA	ug/g	N/A	25	02-JUL-15
Thallium (Tl)		<0.50	<0.050	RPD-NA	ug/g	N/A	30	02-JUL-15
Tin (Sn)		<2.0	<2.0	RPD-NA	ug/g	N/A	40	02-JUL-15
Titanium (Ti)		331	339		ug/g	2.4	40	02-JUL-15
Uranium (U)		<1.0	0.335		ug/g	17	30	02-JUL-15
Vanadium (V)		21.8	23.4		ug/g	7.5	30	02-JUL-15
Zinc (Zn)		12.4	13.2		ug/g	6.6	30	02-JUL-15
Zirconium (Zr)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	02-JUL-15
WG2120060-3 LCS								
Aluminum (Al)			94.8		%		80-120	02-JUL-15
Antimony (Sb)			105.9		%		80-120	02-JUL-15
Arsenic (As)			97.8		%		80-120	02-JUL-15
Barium (Ba)			99.7		%		80-120	02-JUL-15
Beryllium (Be)			86.7		%		80-120	02-JUL-15
Bismuth (Bi)			94.7		%		80-120	02-JUL-15
Boron (B)			85.5		%		80-120	02-JUL-15
Cadmium (Cd)			99.6		%		80-120	02-JUL-15
Calcium (Ca)			95.9		%		80-120	02-JUL-15

Quality Control Report

Client: TERRAPEX ENVIRONMENTAL
90 SCARSDALE ROAD
TORONTO ON M3B 2R7
Contact: STEVEN RUMINSKY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3218905								
WG2120060-3 LCS								
Chromium (Cr)			99.7		%		80-120	02-JUL-15
Cobalt (Co)			96.0		%		80-120	02-JUL-15
Copper (Cu)			96.4		%		80-120	02-JUL-15
Iron (Fe)			106.3		%		80-120	02-JUL-15
Lead (Pb)			95.5		%		80-120	02-JUL-15
Lithium (Li)			86.8		%		80-120	02-JUL-15
Magnesium (Mg)			88.6		%		80-120	02-JUL-15
Manganese (Mn)			98.9		%		80-120	02-JUL-15
Molybdenum (Mo)			100.3		%		80-120	02-JUL-15
Nickel (Ni)			95.3		%		80-120	02-JUL-15
Phosphorus (P)			85.6		%		80-120	02-JUL-15
Potassium (K)			99.6		%		80-120	02-JUL-15
Selenium (Se)			101.5		%		80-120	02-JUL-15
Silver (Ag)			98.4		%		80-120	02-JUL-15
Sodium (Na)			91.7		%		80-120	02-JUL-15
Strontium (Sr)			99.6		%		80-120	02-JUL-15
Sulfur (S)			92.4		%		70-130	02-JUL-15
Thallium (Tl)			98.4		%		80-120	02-JUL-15
Tin (Sn)			98.1		%		80-120	02-JUL-15
Titanium (Ti)			95.2		%		80-120	02-JUL-15
Uranium (U)			98.2		%		80-120	02-JUL-15
Vanadium (V)			98.1		%		80-120	02-JUL-15
Zinc (Zn)			93.2		%		80-120	02-JUL-15
Zirconium (Zr)			97.7		%		80-120	02-JUL-15
WG2120060-1 MB								
Aluminum (Al)			<50		mg/kg		50	02-JUL-15
Antimony (Sb)			<0.10		mg/kg		0.1	02-JUL-15
Arsenic (As)			<0.10		mg/kg		0.1	02-JUL-15
Barium (Ba)			<0.50		mg/kg		0.5	02-JUL-15
Beryllium (Be)			<0.10		mg/kg		0.1	02-JUL-15
Bismuth (Bi)			<0.20		mg/kg		0.2	02-JUL-15
Boron (B)			<5.0		mg/kg		5	02-JUL-15
Cadmium (Cd)			<0.020		mg/kg		0.02	02-JUL-15
Calcium (Ca)			<50		mg/kg		50	02-JUL-15

Quality Control Report

Client: TERRAPEX ENVIRONMENTAL
90 SCARSDALE ROAD
TORONTO ON M3B 2R7

Contact: STEVEN RUMINSKY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3218905								
WG2120060-1 MB								
Chromium (Cr)			<0.50		mg/kg		0.5	02-JUL-15
Cobalt (Co)			<0.10		mg/kg		0.1	02-JUL-15
Copper (Cu)			<0.50		mg/kg		0.5	02-JUL-15
Iron (Fe)			<50		mg/kg		50	02-JUL-15
Lead (Pb)			<0.50		mg/kg		0.5	02-JUL-15
Lithium (Li)			<2.0		mg/kg		2	02-JUL-15
Magnesium (Mg)			<20		mg/kg		20	02-JUL-15
Manganese (Mn)			<1.0		mg/kg		1	02-JUL-15
Molybdenum (Mo)			<0.10		mg/kg		0.1	02-JUL-15
Nickel (Ni)			<0.50		mg/kg		0.5	02-JUL-15
Phosphorus (P)			<50		mg/kg		50	02-JUL-15
Potassium (K)			<100		mg/kg		100	02-JUL-15
Selenium (Se)			<0.20		mg/kg		0.2	02-JUL-15
Silver (Ag)			<0.10		mg/kg		0.1	02-JUL-15
Sodium (Na)			<50		mg/kg		50	02-JUL-15
Strontium (Sr)			<0.50		mg/kg		0.5	02-JUL-15
Sulfur (S)			<5000		mg/kg		5000	02-JUL-15
Thallium (Tl)			<0.050		mg/kg		0.05	02-JUL-15
Tin (Sn)			<2.0		mg/kg		2	02-JUL-15
Titanium (Ti)			<1.0		mg/kg		1	02-JUL-15
Uranium (U)			<0.050		mg/kg		0.05	02-JUL-15
Vanadium (V)			<0.20		mg/kg		0.2	02-JUL-15
Zinc (Zn)			<2.0		mg/kg		2	02-JUL-15
Zirconium (Zr)			<1.0		mg/kg		1	02-JUL-15

Client: TERRAPEX ENVIRONMENTAL
90 SCARSDALE ROAD
TORONTO ON M3B 2R7

Contact: STEVEN RUMINSKY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1634567-COFC

COC Number: 14 -

Report To		Report Format / Distribution	
Company:	Terrapex Environmental Ltd.	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)
Contact:	Steven Ruminsky	Quality Control (QC) Report with Report	☒ Yes ☐ No
Address:	90 Scarsdale Road	☐ Criteria on Report - provide details below if box checked	
	Toronto, ON, M3B 2R7	Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX
Phone:	416-245-0011 Ext. 256	Email 1 or Fax	s.ruminsky@terrapex.com
	416-245-0012	Email 2	

Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)

- R ☒ Regular (Standard TAT if received by 3 pm - business days)
- P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
- E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
- E2 ☑ Same day or weekend emergency - contact ALS to confirm TAT and surcharge

Specify Date Required for E2,E or P:

Invoice To		Invoice Distribution	
Same as Report To	☒ Yes ☐ No	Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX
Copy of Invoice with Report	☒ Yes ☐ No	Email 1 or Fax	accounts.payable@terrapex.com
Company:	Terrapex Environmental Ltd.	Email 2	s.ruminsky@terrapex.com
Contact:	Steven Ruminsky		

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q50721	Approver ID:	Cost Center:
Job #:	CT2131.98	GL Account:	Routing Code:
PO / AFE:	–	Activity Code:	
LSD:	–	Location:	

ALS Lab Work Order # (lab use only): L1634567

ALS Contact: Mathy G.

Sampler: MD/MC

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	MET-200.2-CCMS-WT (As, Pb, Zn - Only) Lead (Pb)	HG-PAINT-WT Metals includ Hg	Number of Containers
1	2-W-1-1	June 27,15	–	Soil	X		1
2	2-S-1-1	June 27,15	–		X		1
3	2-N-1-1	June 27,15	–			X	1
4	5-NA7-1-1	June 25,15	–			X	1
5	5-SJ3-1-1	June 25,15	–		X		1
6	5-NJ2-1-1	June 25,15	–		X		1
7	5-NJ2-1-11	June 25,15	–		X		1
8	5-SA7-1-1	June 25,15	–		X		1
9	N-E-1-1	June 25,15	–			X	1
10	W-N-1-1	June 25,15	–		X		1
11 12	N-W-1-1	June 25,15	–		X		1
13	N-N-1-1	June 25,15	–		X		1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ Yes ☒ No

Are samples for human drinking water use? ☐ Yes ☒ No

Special Instructions / Specify Criteria to add on report (client Use)

W-N-1-1, N-W-1-1, N-E-1-1, N-W-1-11 low recovery
5-SA7-1-1 low recovery

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ — SIF Observations Yes ☐ No ☐

Ice packs Yes ☑ No ☐ — Custody seal intact Yes ☑ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C | FINAL COOLER TEMPERATURES °C: 5.4°C

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Michelle L	Date: June 29,15	Time: 10:30	Received by:	Date:	Time:	Received by: RM	Date: 30 June 15	Time: 800

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION — WHITE - LABORATORY COPY — YELLOW - CLIENT COPY

NA-FM-0326e v09 Front/04 January 2014

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

MK — Ronklin Gracian 2015/06/29 1400 — MW#288754 — 7/4/6 ON ICE

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1634567-COFC

COC Number: 14 -

Report To		Report Format / Distribution	Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	Terrapex Environmental Ltd.	Select Report Format: [X] PDF [ ] EXCEL [ ] EDD (DIGITAL)	R [X] Regular (Standard TAT if received by 3 pm - business days)
Contact:	Steven Ruminsky	Quality Control (QC) Report with Report [X] Yes [ ] No	P [ ] Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	90 Scarsdale Road Toronto, ON, M3B 2R7	[ ] Criteria on Report - provide details below if box checked Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX	E [ ] Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT E2 [✓] Same day or weekend emergency - contact ALS to confirm TAT and surcharge
Phone:	416-245-0011 Ext. 256 416-245-0012	Email 1 or Fax s.ruminsky@terrapex.com Email 2	Specify Date Required for E2,E or P:

Invoice To		Invoice Distribution
Same as Report To	[X] Yes [ ] No	Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Copy of Invoice with Report	[X] Yes [ ] No	Email 1 or Fax accounts.payable@terrapex.com
Company:	Terrapex Environmental Ltd.	Email 2 s.ruminsky@terrapex.com
Contact:	Steven Ruminsky	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q50721	Approver ID:	Cost Center:
Job #:	CT2131.98	GL Account:	Routing Code:
PO / AFE:	–	Activity Code:	
LSD:	–	Location:	
ALS Lab Work Order # (lab use only)		ALS Contact: Mathy G.	Sampler: MD/ ML

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	MET-200.2-CCMS-WT (As, Pb, Zn - Only)	HG-PAINT-WT Metals includ Hg	Number of Containers
14	N-S-1-1	June 25,15	–	Soil	X		1
15	N-SE-1-1	June 25,15	–	↓	X		1
16	F-S-1-1	June 27,15	–		X		1
17	F-N-1-1	June 27,15	–		X		1
18	F-E-1-1	June 27,15	–		X		1
19	F-W-1-1	June 27,15	–			X	1
20	Y-S-1-1	June 25,15	–		X		1
21	Y-W-1-1	June 25,15	–			X	1
22	Y-E-1-1	June 25,15	–		X		1
23	Y-N-1-1	June 25,15	–		X		1
24	D-E-1-1	June 27,15	–			X	1
25	D-N-1-1	June 27,15	–	↓	X		1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] Yes [X] No

Are samples for human drinking water use? [ ] Yes [X] No

Special Instructions / Specify Criteria to add on report (client Use)

N-SE-1-1 low recovery

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ]		SIF Observations	Yes [ ] No [ ]
Ice packs	Yes [ ] No [ ]	Custody seal intact	Yes [ ] No [ ]
Cooling Initiated [ ]			
INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C	5.4

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Michelle C.	Date: June 29,15	Time: 10:30	Received by:	Date:	Time:	Received by: RU	Date: 30 Jun 15	Time: 800

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION   WHITE - LABORATORY COPY   YELLOW - CLIENT COPY

NA-FM-0326e v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

MK   Ronklin Gracian   2015/06/29 1400   MW# 288754   7/4/6 on ice

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1634567-COFC

COC Number: 14 -

Page 3 of 4

Report To	
Company:	Terrapex Environmental Ltd.
Contact:	Steven Ruminsky
Address:	90 Scarsdale Road Toronto, ON, M3B 2R7
Phone:	416-245-0011 Ext. 256 416-245-0012

Report Format / Distribution

Select Report Format: [X] PDF [ ] EXCEL [ ] EDD (DIGITAL)

Quality Control (QC) Report with Report [X] Yes [ ] No

[ ] Criteria on Report - provide details below if box checked

Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax s.ruminsky@terrapex.com

Email 2

Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)

R [X] Regular (Standard TAT if received by 3 pm - business days)

P [ ] Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT

E [ ] Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT

E2 [✓] Same day or weekend emergency - contact ALS to confirm TAT and surcharge

Specify Date Required for E2,E or P:

Invoice To		
Same as Report To	[X] Yes	[ ] No
Copy of Invoice with Report	[X] Yes	[ ] No
Company:	Terrapex Environmental Ltd.	
Contact:	Steven Ruminsky	

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax accounts.payable@terrapex.com

Email 2 s.ruminsky@terrapex.com

Project Information

ALS Quote #:	Q50721
Job #:	CT2131.98
PO / AFE:	—
LSD:	—

Oil and Gas Required Fields (client use)

Approver ID:	Cost Center:
GL Account:	Routing Code:
Activity Code:	
Location:	

ALS Lab Work Order # (lab use only)

ALS Contact: Mathy G. Sampler: MD/ML

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	MET-200.2-CCMS-WT (As, Pb, Zn Only) Lead (Pb)	HG-PAINT-WT Metals include Hg	Mercury (Hg)	Number of Containers
26	W-S-1-I	June 25/15	–	Soil	X		X	1
27	W-S-1-II		–		X		X	1
28	W-W-1-I		–			X		1
29	W-E-1-I		–		X		X	1
30	W-N-1-I		–		X		X	1
31	L-W-1-I		–			X		1
32	L-W-1-II		–			X		1
33	L-S-1-I		–		X			1
34	L-SE-1-I		–		X			1
35	L-N-1-I		–		X			1
36	G-N-1-I		–		X			1
37	G-E-1-I		–		X			1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] Yes [X] No

Are samples for human drinking water use? [ ] Yes [X] No

Special Instructions / Specify Criteria to add on report (client Use)

W-N-1-I, W-S-1-I, W-W-1-I, low recovery
L-W-1-I, L-W-1-II low recovery.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]

Ice packs Yes [ ] No [ ] Custody seal intact Yes [ ] No [ ]

Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C

FINAL COOLER TEMPERATURES °C 5.4

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Michelle L.	Date: June 29/15	Time: 10:30	Received by:	Date:	Time:	Received by: ML	Date: 30 Jun 15	Time: 800

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0326e v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

MK RONKLIN GRACIAN 2015/06/29 1400 MW#288754 7/4/16 ON ICE

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1634567-COFC

COC Number: 14 -

Report To	
Company:	Terrapex Environmental Ltd.
Contact:	Steven Ruminsky
Address:	90 Scarsdale Road Toronto, ON, M3B 2R7
Phone:	416-245-0011 Ext. 256 416-245-0012

Report Format / Distribution	
Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report	☒ Yes ☐ No
☐ Criteria on Report - provide details below if box checked	
Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	s.ruminsky@terrapex.com
Email 2	

Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests):

- R ☒ Regular (Standard TAT if received by 3 pm - business days)
- P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
- E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
- E2 ☑ Same day or weekend emergency - contact ALS to confirm TAT and surcharge

Specify Date Required for E2,E or P:

Invoice To	
Same as Report To	☒ Yes ☐ No
Copy of Invoice with Report	☒ Yes ☐ No
Company:	Terrapex Environmental Ltd.
Contact:	Steven Ruminsky

Invoice Distribution	
Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	accounts.payable@terrapex.com
Email 2	s.ruminsky@terrapex.com

Project Information	
ALS Quote #:	Q50721
Job #:	CT2131.98
PO / AFE:	—
LSD:	—

Oil and Gas Required Fields (client use)	
Approver ID:	Cost Center:
GL Account:	Routing Code:
Activity Code:	
Location:	

ALS Lab Work Order # (lab use only)

ALS Contact: Mathy G.

Sampler: MD/ML

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	~~MET-200.2-CCMS-WT (As, Pb, Zn Only)~~ Lead (Pb)	~~HG-PAINT-WT~~ Metals includ Hg	Mercury (Hg)	Number of Containers
38	G-S-1-1	June 27,15	–	Soil		X		1
39	NE Cor Garden -1	June 25	–			X		1
40	Garden - 2	June 25	–			X		1
41	X1-W-1-1		–		X			1
42	X1-E-1-1		–		X			1
43	X1-N-1-1		–			X		1
44	K-W-1-1		–			X		1
45	K-S-1-1		–				X	1
46	K-N-1-1		–				X	1
47	K-E-1-1		–				X	1
48	2-N-1-3	June 27,15	–			X		1
49	D-E-1-3	June 27,15	–			X		1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ Yes ☒ No

Are samples for human drinking water use? ☐ Yes ☒ No

Special Instructions / Specify Criteria to add on report (client Use)

Garden-2, K-S-1-1, K-E-1-1, low recovery

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C

FINAL COOLER TEMPERATURES °C: 5.4 °C

SHIPMENT RELEASE (client use)		
Released by: Michelle L.	Date: June 29.15	Time: 10:30

INITIAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (lab use only)		
Received by: RH	Date: 30 Jun 15	Time: 800

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0326e v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

MK

Ronklin Gracian 2015/06/29 1400 MW#288754

7/4/6 on ICE

TERRAPEX ENVIRONMENTAL
ATTN: STEVEN RUMINSKY
49 COLDWATER ROAD
TORONTO ON M3B 1Y8

Date Received: 09-JUL-15
Report Date: 14-JUL-15 10:22 (MT)
Version: FINAL

Client Phone: 416-245-0011

Certificate of Analysis

Lab Work Order #: L1640047

Project P.O. #: NOT SUBMITTED
Job Reference: CT2131.98
C of C Numbers: 14-463591
Legal Site Desc:

Mathy Ganeshakumar, M.Sc.
Account Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1640047-1	2-5-1-2							
Sampled By:	M.D./M.L. on 27-JUN-15							
Matrix:	SOIL							
Metals								
Lead (Pb)		102		1.0	ug/g	13-JUL-15	13-JUL-15	R3225206
L1640047-2	2-5-3-1							
Sampled By:	M.D./M.L. on 27-JUN-15							
Matrix:	SOIL							
Metals								
Lead (Pb)		114		1.0	ug/g	13-JUL-15	13-JUL-15	R3225206
L1640047-3	2-5-3-11							
Sampled By:	M.D./M.L. on 27-JUN-15							
Matrix:	SOIL							
Metals								
Lead (Pb)		39.5		1.0	ug/g	13-JUL-15	13-JUL-15	R3225206

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CRC ICPMS.

Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. This method does not dissolve all silicate materials and may result in a partial extraction. depending on the sample matrix, for some metals, including, but not limited to Al, Ba, Be, Cr, Sr, Ti, Tl, and V.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

14-463591

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: TERRAPEX ENVIRONMENTAL
49 COLDWATER ROAD
TORONTO ON M3B 1Y8
Contact: STEVEN RUMINSKY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3225206								
WG2127277-2 CRM		**WT-CANMET-TILL1**						
Lead (Pb)			92.1		%		70-130	13-JUL-15
WG2127277-6 DUP		**WG2127277-5**						
Lead (Pb)		2.2	2.12		ug/g	3.7	40	13-JUL-15
WG2127277-3 LCS								
Lead (Pb)			99.9		%		80-120	13-JUL-15
WG2127277-1 MB								
Lead (Pb)			<0.50		mg/kg		0.5	13-JUL-15

Quality Control Report

Workorder: L1640047 Report Date: 14-JUL-15

Client: TERRAPEX ENVIRONMENTAL
49 COLDWATER ROAD
TORONTO ON M3B 1Y8

Contact: STEVEN RUMINSKY

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1640047-COFC

COC Number: 14 - 463591

Page 1 of 1

Report To	
Company:	Terrapex Env. Ltd.
Contact:	Steven Ruminsky
Address:	90 Scarsdale Rd Toronto, ON M3B 2R7
Phone:	416-245-0011 ext 256
Fax	416-245-0012

Report Format / Distribution	
Select Report Format:	☒ PDF ☒ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report	☒ Yes ☐ No
☐ Criteria on Report - provide details below if box checked	
Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	s.ruminsky@terrapex.com
Email 2	

Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)

R	☒	Regular (Standard TAT if received by 3pm)
P	☐	Priority (2-4 business days if received by 3pm)
E	☐	Emergency (1-2 business days if received by 3pm)
E2	☐	Same day or weekend emergency if received by 10am – contact ALS for surcharge.

Specify Date Required for E2,E or P:

Invoice To	
Same as Report To	☒ Yes ☐ No
Copy of Invoice with Report	☒ Yes ☐ No
Company:	Terrapex Environmental Ltd.
Contact:	Steven Ruminsky

Invoice Distribution	
Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	accounts.payable@terrapex.com
Email 2	s.ruminsky@terrapex.com

Project Information	
ALS Quote #:	Q50721
Job #:	CT2131.98
PO / AFE:	–
LSD:	–

Oil and Gas Required Fields (client use)			
Approver ID:		Cost Center:	
GL Account:		Routing Code:	
Activity Code:			
Location:			

ALS Lab Work Order # (lab use only): L1640047 — JW9C

ALS Contact: Mathy G.

Sampler: MD/ML

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Lead (Pb)	Number of Containers
1	2-S-1-2	27-Jun-15	–	Soil	X	
2	2-S-3-1	27-June-15	–	↓	X	
3	2-S-3-11	27-Jun-15	–	↓	X	

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ Yes ☒ No

Are samples for human drinking water use? ☐ Yes ☒ No

Special Instructions / Specify Criteria to add on report (client Use)

MDLs to meet CCME Res/Park

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐		SIF Observations	Yes ☐ No ☐
Ice packs	Yes ☐ No ☐	Custody seal intact	Yes ☐ No ☐
Cooling Initiated ☐			

INITIAL COOLER TEMPERATURES °C:

FINAL COOLER TEMPERATURES °C: 2.7

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Katie Moore	Date: July 29/15	Time: 9:30	Received by:	Date:	Time:	Received by: DA	Date: July 29/15	Time: 1715

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0326e v06 Front/03 October 2013

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

APPENDIX E

Photos

Photo 1: Cabins

Photo 2: Cabins

Photo 3: Cabins

Photo 4: Friar Tuck Building

Photo 5: Friar Tuck Building

Photo 6: Will Scarlett Building

Photo 7: Will Scarlett Building

Photo 8: Camp Craft

Photo 9: Program Building

Photo 10: Program Building

Photo 11: Program Building

Photo 12: Program Building

Photo 13: Owners Residence: Heritage Building

Photo 14: Baseball Office: Heritage Building

Photo 15: Baseball Office: Heritage Building

Photo 16: Baseball Office: Heritage Building

Photo 17: Baseball Office: Heritage Building

Photo 18: Owners Residence: Heritage Building

Photo 19: Coaches Corner/Photography Building/Lunch Barn

Photo 20: Coaches Corner/Photography/Lunch Barn

Photo 21: Moms Place (Nooks and Cranny)

Photo 22: Moms Place (Nooks and Cranny)

Photo 23: Moms Place (Nooks and Cranny)

Photo 24: TBS Centre / Washroom

Photo 25: TBS Centre

Photo 26: Maintenance

Photo 27: Maintenance

Photo 28: Maintenance

Photo 29: Moms Place

Photo 30: Nook and Cranny

golder.com