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File: SP3977, SP3977E **December 10, 2002**

Ontario Ministry of Environment
Central Region, Toronto District Office
5775 Yonge Street, 8th Floor
Toronto, ON, M2M 4J1

Attention: Ms. Kim Lendvay

Dear Ms. Lendvay:

Addendum Report
Site-Specific Risk Assessment
Gardiner Expressway Dismantling and Lakeshore Boulevard East Reconstruction
at Leslie Street
Toronto, ON

Under cover of this letter, Shaheen & Peaker Limited (S&P) is please to submit to the Ontario Ministry of Environment (MOE) six (6) copies of an addendum report to S&P's Site-Specific Risk Assessment (SSRA) conducted for a portion of the above-noted area. The SSRA report, dated May 14, 2002, was submitted for MOE review c/o your office under cover of a letter dated May 21, 2002, and related to the following locations:

- North Boulevard between Lakeshore Boulevard East and the northern limit of the right-of-way, between the Toronto Film Studio and Leslie Street; and
- Former Gardiner Expressway off-ramp at the southeast corner of Leslie Street and Lakeshore Boulevard East.

S&P is requesting that the MOE consider the enclosed addendum report as part of the SSRA submitted for MOE review in accordance with the requirements of the MOE "*Guideline for Use at Contaminated Sites in Ontario*" (revised 1997). Please address correspondence to my attention. If you have any questions, please do not hesitate to call me at this office.

Yours very truly,
SHAHEEN & PEAKER LIMITED

Cynthia L. Robins, P.Eng., C.Chem.
Project Manager – Environmental Services

Enclosure: Addendum report (6 copies)
Cc: Mr. David Crichton, City of Toronto (2 copies)
Mr. Keith Hutchinson, URS Cole Sherman (1 copy)

ADDENDUM REPORT
SITE-SPECIFIC RISK ASSESSMENT
GARDINER EXPRESSWAY DISMANTLING AND LAKESHORE BOULEVARD EAST RECONSTRUCTION AT LESLIE STREET TORONTO, ONTARIO

Prepared For:

CITY OF TORONTO
C/O URS COLE SHERMAN

Prepared by:

SHAHEEN & PEAKER LIMITED

Project: SP3977, SP3977E
December 9, 2002

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Project: SP3977, SP3977E **December 9, 2002**

City of Toronto
C/o URS Cole Sherman
75 Commerce Valley Drive East,
Thornhill, Ontario
L3T 7N9

Attention: Keith Hutchinson, P. Eng.
Project Manager

Dear Mr. Hutchinson:

ADDENDUM REPORT
SITE-SPECIFIC RISK ASSESSMENT
GARDINER EXPRESSWAY DISMANTLING AND
LAKESHORE BOULEVARD EAST RECONSTRUCTION
AT LESLIE STREET
TORONTO, ONTARIO

This report is submitted by Shaheen & Peaker (S&P) Limited to the City of Toronto c/o URS Cole Sherman. The report is an addendum to a site-specific risk assessment (SSRA) submitted to the Ontario Ministry of Environment (MOE) for the above-noted site (report SP3977, dated May 14, 2002). The addendum report presents the findings of additional investigations conducted on the site, as well as changes to land use and the grading plan with respect to the Level 2 Risk Management Plan prepared for the site.

In summary, S&P concludes that the revisions to the land use and grading plan do not affect the findings of the original SSRA or the objective of the Level 2 Risk Management Plan.

We trust that the foregoing meets your current requirements. Please contact our office if you have any further questions.

Yours very truly,
SHAHEEN & PEAKER LIMITED

Cynthia L. Robins, P.Eng., C.Chem.
Senior Project Manager

ADDENDUM REPORT
SITE-SPECIFIC RISK ASSESSMENT
GARDINER EXPRESSWAY DISMANTLING AND
LAKESHORE BOULEVARD EAST RECONSTRUCTION
AT LESLIE STREET, TORONTO, ONTARIO

EXECUTIVE SUMMARY

This report is submitted by Shaheen & Peaker (S&P) Limited to the City of Toronto c/o URS Cole Sherman. A Site Specific Risk Assessment (SSRA) was conducted for the above-noted site (report SP3977 dated May 14, 2002), and submitted to the Ontario Ministry of Environment (MOE) for review. The SSRA dealt with exposure of human and ecological receptors to impacted soil present on the site in the vicinity of the dismantling of the Gardiner Expressway and the reconstruction of Lakeshore Boulevard East at Leslie Street, in Toronto, Ontario. The study area identified in the SSRA was a portion of the overall construction project, which included the northern right-of-way adjacent to Lakeshore Boulevard East from the Toronto Film Studio to Leslie Street (Area "A"), as well as the former off-ramp at Leslie Street (Area "B"). A Level 2 Risk Management Plan was developed to mitigate exposure, which included:

- A minimum of 30 cm (0.3 m) of clean fill or topsoil covering the entire site – this fill will meet the MOE criteria for residential/parkland (RP) use.
- Selective excavation and disposal of soil in areas where swales or deep rooted plants and trees may contact impacted soil.
- Lining of excavated and bermed areas with permeable geotextile to prevent root penetration into impacted soil.
- Fill used for berms or backfill was anticipated to meet the MOE criteria for residential/parkland land use.

Subsequent to the submission of the SSRA report, S&P was made aware of changes to the site, including changes to the proposed land use of one of the areas, and the placement of additional fill on the site. In total, approximately 1000 m^3 of fill was brought into Area "A" between September 2001 and July 2002, from material excavated elsewhere within the limits of the overall construction project. The environmental quality of this fill had not been documented in the SSRA report, although the material had been tested in place prior to the start of the construction project and found to meet the applicable criteria for a municipal roadway. The addendum report presents the findings of additional investigations on fill materials placed on the site. The addendum report also includes re-use of excavated material in accordance with the City of Toronto's overall philosophy of maximization of recycling and reuse of materials.

In summary, the addendum report includes the following changes:

- Area "B" of the site is not planned for any specific use at this time, and the bicycle path has been re-routed around Area "B". In addition, grading and landscaping have been re-designed for Area "B".
- Fill placement strategy maximizes re-use of existing surplus fill excavated from elsewhere within the overall construction project limits. The top 0.3m of topsoil covering the entire site will still meet RP criteria. However, due to the fill brought into Areas "A"

and "B", it is not always possible to have the entire bermed areas meet RP criteria. S&P agreed with the City of Toronto's suggestion that fill meeting industrial/commercial (IC) criteria would also be suitable for bermed areas underneath the "clean" fill topsoil layer.

- In Area "B", the northern 80m will have a covering of 0.5m of soil meeting RP criteria, and the covering will taper down to 0.3m in the southern portion of the site. The northern portion of Area "B" will be graded to achieve a maximum berm height of 1m. Portions of soil along the bicycle path will be excavated down to 0.5m and backfilled with fill meeting RP criteria. This is to mitigate exposure to volatile organic compounds (VOCs) in the northern portion of the site, and to maintain the same exposure scenario.
- Additional investigations were conducted in the Study Area in July 2002. The results of these investigations identified the soil which, when excavated, would require disposal as "hazardous waste", and identified impacted soil to be disposed as "non-hazardous waste" at the locations to be excavated in Area "A" and Area "B". The results were also used in the revised grading plans for Area "A" and Area "B".

The conclusions of this addendum report are as follows:

- The applicable MOE criteria for determination of the contaminants of concern are those for industrial/commercial land use, non-potable groundwater, coarse-textured soil, and are unchanged from the SSRA report

- There are no additional parameters which would be added to the list of contaminants of concern due to the placement of fill excavated from other areas of the construction project.

- The fill placement strategy for Area "A" and Area "B" of the Study Area fits with the City of Toronto's policies of recycling and re-use, and the overall objective of preventing direct contact of human and ecological receptors with impacted soil has been maintained.

- Although the intended land use of Area "B" is now unspecified and not considered as part of the landscaping project, the Level 2 Risk Management Plan still includes mitigation measures to prevent direct contact of human and ecological receptors with the impacted soil on the site.

Overall, the exposure assessment and mitigation strategy has remained the same as in the original SSRA report. Thus, the final conclusions of the SSRA – that, with the mitigation and monitoring strategy in place, risks of exposure to humans and ecological receptors are still within acceptable limits as defined in the MOE SSRA process.

TABLE OF CONTENTS

DRAWINGS

FIGURES

APPENDICES

ADDENDUM REPORT
SITE-SPECIFIC RISK ASSESSMENT
GARDINER EXPRESSWAY DISMANTLING AND
LAKESHORE BOULEVARD EAST RECONSTRUCTION
AT LESLIE STREET
TORONTO, ONTARIO

1. INTRODUCTION

This report is submitted by Shaheen & Peaker Limited (S&P) to the City of Toronto c/o URS Cole Sherman, and is an addendum to the Site-Specific Risk Assessment (SSRA) report prepared for the subject site. The SSRA report evaluated risks to human health and the environment for identified environmentally impacted areas within the larger project area involving the dismantling of the Gardiner Expressway and the widening of Lakeshore Boulevard East in the vicinity of Leslie Street (see **Drawing 1**). URS Cole Sherman is the Project Manager overseeing the entire Gardiner dismantling/Lakeshore restoration project and reports directly to the City of Toronto.

The process set out by the Ontario Ministry of Environment (MOE) for SSRA's was followed including a third party peer review, and an SSRA report was submitted to the MOE for review (S&P report SP3977, dated May 14, 2002)

The addendum report includes additional analyses of fill that had been brought to the site subsequent to the submission of the SSRA report to the MOE. The report also documents changes to the land use of a portion of the study area, as well as changes to the grading and capping activities. **Figure 4** of the SSRA report has been revised to show the grading, berming and re-alignment of the sidewalk in Area B, and has been included in this Addendum report.

1.1 STUDY AREA

The study area is a small portion of the overall project to dismantle the eastern portion of the Gardiner Expressway and reconstruct Lakeshore Boulevard East. For the purposes of this report, the study area includes two non-contiguous parcels of land described as follows:

Area "A" The north boulevard of Lakeshore Boulevard East (i.e. from the north curb to the north limit of the road allowance) between the eastern property line of the Toronto Film Studios and the western curb of Leslie Street. This area is a long, narrow strip of land approximately 25 to 30m wide by 500m in length.

The proposed land use within the Area "A" of the study area is a landscaped boulevard for the adjacent arterial surface roads (Lakeshore Boulevard East and Leslie Street), which will be used by the public for walking, cycling and viewing of public art. The landscaped areas will include a bicycle path, a walking path, planting beds (i.e. trees, shrubs, flowers and grass) and public art. The area bordering the road is only slightly elevated above the road grade, but slopes up

to a bermed area at the northern edge of the site. Trees will be planted adjacent to the roadway, and the bermed area will contain extensive shrubs and trees.

Area "B" The road allowance for the former off-ramps from the Gardiner Expressway at the southeast corner of Leslie Street and Lakeshore Boulevard East. This area is roughly shaped like a "D" and has an approximate area of 15,000 m^2 (1.5 hectares).

The original proposed use for Area B, as described in the SSRA report, included bicycle and pedestrian thoroughfares traversing this area. The center of the area had originally been planned to be built up to a minimum of 1.5m above the current grade. Landscaping plans originally showed the area to be grassed with trees following the sidewalks and shrub areas at various interesting points.

The City of Toronto identified that landscape features will play a prominent role in the revitalization of this portion of the Lakeshore Boulevard. The area to the north of Lakeshore Boulevard East is being developed by the City as a publicly-accessible bicycle path and walkway. Extensive beds of shrubs, ground vegetation and trees are planned. The intent was to dramatically improve the aesthetic qualities of this portion of Lakeshore Boulevard, with the purpose of making the area attractive to people and to encourage use by walkers, cyclists, etc.

As documented in **Section 2**, the land use and grading plan of Area "B" has subsequently been changed from the original concept.

1.2 SSRA Process

Environmental studies conducted in 2001 had identified the following findings regarding the study area.

- The criteria established by the MOE for non-sensitive sites industrial/commercial (IC) land use, non-potable groundwater, coarse-textured soil (Table B of the MOE "Guideline for Use at Contaminated Sites in Ontario", revised 1997, hereinafter referred to as the "MOE Guideline") were considered to be appropriate for evaluation of soil and groundwater in the study area. The rationale for this decision was that the roadway and right-of-way was adjacent to a commercial and industrial corridor.

- The impacted soil had exceedances of MOE IC criteria for some heavy metals, hydrocarbons and polycyclic aromatic hydrocarbons (PAHs)

- The groundwater in the study area met the MOE criteria for non-potable groundwater for heavy metals, volatile organic compounds (VOCs) and PAHs

Upon review of different remediation and management options, the City of Toronto authorized S&P to conduct an SSRA for both portions of the study area. The contaminants of concern

were identified, and toxicological data for these parameters were presented. Humans (adults and children) who used the areas for walking, cycling and looking at public art, and maintenance workers who maintained the areas were considered to be significant receptors. Ecological receptors included the landscaping vegetation, pets and small burrowing animals.

Following review and acceptance of the draft SSRA report by an independent third party peer reviewer, the revised SSRA report was submitted to the MOE. The title of the report was as follows, and included data and references from the previous environmental investigations:

"Report For Submission To Ontario Ministry Of Environment & Energy, Site-Specific Risk Assessment, Gardiner Expressway Dismantling And Lakeshore Boulevard East Reconstruction At Leslie Street, Toronto, Ontario", prepared for the City of Toronto c/o URS Cole Sherman by Shaheeh & Peaker Limited, project SP3977, May 14, 2002.

The intent of the overall City of Toronto works project was to leave the majority of the existing soil in place on the site during construction and landscaping of the area. Certain areas of soil must be excavated for tree planting and construction of a swale. In order to achieve this, the SSRA established a Level 2 Risk Management Plan, to protect on-site workers and the public at all times. Although the overall objective of the Level 2 Risk Management Plan has not changed, some of the grading, capping, landscaping and berming details have been revised to meet the City of Toronto's goals and objectives for re-use of existing materials in City projects. These revisions are described in **Section 3**.

Subsequent to submission of the SSRA report to the MOE, S&P was informed that granular fill had been brought to Area "A", which had not been analyzed during the environmental investigations on the study area. This granular fill material had been part of the City's "cut and fill" program for the overall project, and was moved from the adjacent Lakeshore Boulevard roadway ("cut") to the northern portion of the right-of-way ("fill). This fill had not been tested on Area "A" at the time of the investigations for the SSRA, although the fill had been tested in place prior to commencement of construction and the analyses had indicated that the fill met the MOE Table B criteria considered to be applicable for fill in a roadway. Based on the soil characterization requirements of the SSRA, the City of Toronto authorized S&P to conduct additional investigations to characterize this fill, as well as to characterize the waste class of the soil in the areas to be excavated for the swales and trees. The data from the additional investigations are summarized in **Section 4**.

2. CHANGES TO LAND USE – AREA "B"

The City of Toronto is considering various options for long-term use and management of all of the City-owned vacant land east of Leslie Street to Ashbridges Bay, between the Ashbridges Bay Water Pollution Control Plant and Lakeshore Boulevard East. Area "B" of the Study Area falls within this larger land parcel. Consequently, the City made the decision to remove the landscaping and bicycle paths / sidewalk from Area "B", to enable cost-effective management of this land pending a decision on long-term use.

The specific changes to the use of Area "B" are as follows:

- The bicycle path/sidewalk is re-routed to skirt the edges of Area "B". The route will run northward parallel to the east side of Leslie Street up to Lakeshore, then turn eastbound and run eastward parallel to the south side of Lakeshore. The route will run along the western and edges of Area "B", and avoid traversing any part of Area "B". **Figure 4** shows the revised grading and routing plan for Area "B".
- The only landscaping planned for Area "B" is to plant grass (likely through hydroseeding). No trees will be planted, and all of the plans for planting beds within Area "B" have been removed.
- The finished grade in Area "B" is anticipated to be sloped up to 1m higher in elevation than the sidewalk (lower than the 1.5m height originally planned)

Although there are no public facilities (e.g. park benches, flowers, sidewalks) within Area "B", this area will not be fenced or barricaded; thus, it is still a publicly accessible area. In this regard, S&P considers that the risk evaluation for human and ecological receptors as documented in the SSRA, and the Level 2 Risk Management philosophy of capping the site are still valid. The actual grading and berming plans have been revised, and are documented in **Section 3**.

3. CHANGES TO LEVEL 2 RISK MANAGEMENT PLAN

3.1 ORIGINAL SURFACE COVER PLAN

The major change to the Level 2 Risk Management Plan deals with the type of fill used for providing coverage of the site to block the pathway of exposure by direct contact. The original surface cover plan documented in the SSRA report is summarized as follows:

1. No existing surface soil will be exposed.
2. A minimum of 30 cm (0.3m) of "clean" fill or topsoil will cover the entire Study Area. In this scenario, "clean" means aesthetically acceptable soil (no stains, debris, garbage, cinders, odours, hydrocarbons etc.) which meets the MOE Table B criteria for residential/parkland (RP) land use, non-potable groundwater, coarse-textured soil.
3. Areas excavated or graded for planting will be backfilled with clean fill or topsoil.
4. All fill or topsoil used for grading, berming, site cover or backfill was originally intended to be clean fill.
5. The depth of surface cover in the areas between the bicycle path and sidewalk (Area "A") is 50-60 cm.
6. The depth of surface cover in the bermed areas containing planting beds was originally intended to be 1m or greater.
7. Areas for tree planting will be excavated to a depth of 1m

Based on the City of Toronto's fill procurement and re-use policies (**Section 3.2**) and environmental quality of the fill brought into Area "A" from the adjacent roadway between September 2001 and July 2002 (**Section 4**), it was considered impractical for all of the fill used as surface cover to meet the requirements of "clean" fill. **Section 3.3** describes the revised surface cover protocols for both Area "A" and Area "B" to deal with the City's fill management and re-use policies and maintain the overall objective of protection of human health and the environment.

3.2 CITY OF TORONTO FILL PROCUREMENT POLICIES

The City of Toronto follows a policy of Environmentally Responsible procurement. The City's Environmentally Responsible Procurement Statement is included **in Appendix A**. In this regard, the City considers that excavated soils meeting its engineering and environmental criteria can be re-used for fill purposes in a roadway. The City instructs its staff engineers or contract Project Managers to consider suitable available fill from other projects in cut-and-fill calculations when estimating quantities of fill needed for a roadway project.

This decision process was followed in the treatment of Area "A". Fill from other areas within the original project boundaries had been considered suitable from an engineering and environmental point of view for use on the northern boulevard; these decisions were made long before it was deemed necessary to complete an SSRA for the Study Area.

3.3 REVISED SURFACE COVER PLAN

3.3.1 Rationale For Surface Cover

In order to utilize the existing fill on the site in conjunction with the objectives of the Level 2 Risk Management Plan, the following principles were employed:

- All fill that exceeds the MOE Table B IC criteria will be covered.
- Fill that meets the MOE Table B IC criteria will be used for grading and berming, as this material would have originally been allowed to remain on site without mitigative measures.
- Fill that comes in contact with root systems will meet "clean" fill requirements (i.e. MOE Table B RP criteria). This includes all fill used to backfill excavated areas for tree planting, fill or topsoil in the planting beds and topsoil used for sodding and seeding
- Due to the re-grading of Area "B", the northern portion of Area "B" will have a minimum of 0.5 m of "clean" fill or topsoil cover
- The entire Study Area will have a minimum of 0.3 m of "clean" fill or topsoil as a final cover.

3.3.2 Revised Fill Placement Strategy – Area "A"

Based on meetings held with the City of Toronto representatives, landscape architect and URS Cole Sherman (Project Manager), the following revision to the fill placement strategy was adopted for Area "A":

- No additional fill is to be brought onto the site unless it meets the requirements of "clean" fill (i.e. MOE Table B RP criteria)
- Any fill currently in place on the study area and exceeding MOE Table B IC criteria will be allowed to remain on site, provided it is covered.
- Fill exceeding MOE Table B RP criteria but meeting IC criteria will be allowed to be used for grading and berming. This fill will be used to cover impacted fill, and will finally be covered by the 0.3m layer of "clean" fill or topsoil.
- The amount of soil movement should be minimized, to avoid mixing impacted and non-impacted fill.
- S&P will be present full-time to supervise the fill movement and grading.

The requirement of a minimum of 0.3m of "clean" fill or topsoil cover is unchanged.

S&P considers that these revisions in fill placement strategy do not result in increased exposure of human and ecological receptors to the impacted soil on the site.

3.3.3 Revised Fill Placement Strategy – Area "B"

Based on meetings held with the City of Toronto representatives, landscape architect and URS Cole Sherman (Project Manager), the following revision to the fill placement strategy was adopted for Area "B":

- Fill exceeding MOE Table B IC criteria ("impacted" soil) will be allowed to remain on Area "B", provided it is covered.
- Fill exceeding MOE Table B RP criteria but meeting IC criteria will be allowed to be used for grading and berming. This fill will be used to cover impacted soil.
- The northern 80m of Area "B" will be graded to a maximum height of 1m above sidewalk level.
- A minimum 0.5m of "clean" fill or topsoil will be used to cover the northern 80m of Area "B" (see **Figure 4**). This thickness of "clean" fill will be maintained over all of the northern portion of Area "B". If surficial impacted fill exists along the sidewalk portion, the fill will be excavated to a depth of 0.5m and backfilled with "clean" fill.
- The thickness of "clean" fill cover will taper to 0.3m, which will be maintained over the southern portion of Area "B".
- The amount of soil movement should be minimized, to avoid mixing impacted and non-impacted fill.
- S&P will be present full-time to supervise the fill movement and grading.

The requirement of a minimum of 0.3m of "clean" fill or topsoil cover has been changed to 0.5m over the northern part of Area "B", as the most highly impacted soil was encountered in this area.

S&P considers that these revisions in fill placement strategy do not result in increased exposure of human and ecological receptors to the impacted soil on the site.

4. ADDITIONAL INVESTIGATIONS

Three investigations were conducted in July 2002 involving characterization of soil and fill wothin the Study Area. These investigations are discussed in the following sections. The drawings, tables and Certificates of Analyses from the reports are included in **Appendices B, C and D**.

4.1 IMPORTED FILL QUALITY TESTING

The following report was issued to cover this work. Excerpts from the report are included in **Appendix B**.

"Imported Fill Quality Testing, Implementation of Risk Management Plan, Lakeshore Boulevard East at Leslie Street, Toronto, Ontario", report prepared for the City of Toronto c/o URS Cole Sherman by Shaheen & Peaker Limited, Project SP3977B, August 12, 2002

Additional quantities of fill were brought to Area "A" between September 2001 and July 2002. The quantity of fill brought into Area "A" was estimated to be approximately 1000 m^3. The quantity of fill brought into Area "B" was not estimated.

In order to make decisions regarding management of the fill, a program of fill quality assessment was undertaken. Area "A" was divided into 17 grids of approximately equivalent area, and Area "B" was divided into 21 grids. Most of the grids were approximately 30m x 30m in area, except for those irregularly shaped grids at the edges of the areas. Five (5) soil sub-samples were collected from a depth of 0-0.15m in randomly selected locations of each grid and combined into one sample considered to be representative of that grid. Each sample was submitted for analysis of inorganic (decommissioning) parameters. In addition, nine (9) samples from Area "A" and five (5) samples from Area "B" were submitted for analysis of total petroleum hydrocarbons (TPH) in the gasoline, diesel and heavy oil ranges. The grids were categorized as follows:

- Soil meeting the Table B RP criteria
- Soil exceeding RP but meeting IC criteria
- Soil exceeding IC criteria

These results were used to make the decisions in **Sections 3.3.2 and 3.3.3** regarding grading and berming of the fill.

It should be noted that the assessment did not indicate any additional parameters requiring consideration as "Contaminants of Concern" in the SSRA.

4.2 WASTE SOIL CHARACTERIZATION – AREA "A"

The following report was issued to cover this work. Excerpts from the report are included in **Appendix C**.

"Waste Characterization Assessment (Area A), Pre-Construction Soil Testing, Implementation of Risk Management Plan, Lakeshore Boulevard East at Leslie Street, Toronto, Ontario", report prepared for the City of Toronto c/o URS Cole Sherman by Shaheen & Peaker Limited, Project SP3977B, August 12, 2002

The SSRA indicated that some of the soil in Area "A" required excavation of impacted soil in the areas of tree planting and disposal of the soil as a waste. The findings of the report documented the areas of soil that, when excavated, required disposal as a "hazardous waste", "non-hazardous waste" according to O.Reg. 347 (amended by O.Reg. 558/00), and as non-waste soil. The calculated volumes of excavated soil are summarized as follows

Hazardous Waste	210 m^3
Non-Hazardous Waste	1250 m^3
Non-waste	440 m^3
Total	1900 m^3

The original SSRA program of lining these excavated areas with geotextile is unchanged.

4.3 ASSESSMENT OF SOIL IN AREA "B" BICYCLE PATH

The following report was issued to cover this work. Excerpts from the report are included in **Appendix D**.

"Environmental Soil Investigation, Proposed Bicycle Paths (Area B), Pre-Construction Soil Testing, Implementation of Risk Management Plan, Lakeshore Boulevard East at Leslie Street, Toronto, Ontario", report prepared for the City of Toronto c/o URS Cole Sherman by Shaheen & Peaker Limited, Project SP3977B, October 10, 2002

Due to the re-alignment of the bicycle path/sidewalk in Area "B", this investigation was focused on evaluation of the soil in the re-aligned area. The objective was to obtain information on the environmental quality of the soil scheduled for excavation for the construction of the proposed bicycle path and adjacent landscaping (grass).

The findings of the report identified the area of impacted soil which will be excavated, and confirmed that this soil could be disposed as non-hazardous waste. It should be noted that this assessment of Area "B" bicycle path did not indicate any additional parameters requiring consideration as "Contaminants of Concern" in the SSRA.

5. CONCLUSIONS

The conclusions of this addendum report are as follows:

- The applicable MOE criteria for determination of the contaminants of concern are those for industrial/commercial land use, non-potable groundwater, coarse-textured soil, and are unchanged from the SSRA report

- There are no additional parameters which would be added to the list of contaminants of concern due to the placement of imported fill from other roadway projects.

- The fill placement strategy for Area "A" and Area "B" of the Study Area fits with the City of Toronto's policies of recycling and re-use, and the overall objective of preventing direct contact of human and ecological receptors with impacted soil has been maintained.

- Although the intended land use of Area "B" is now unspecified and not considered as part of the landscaping project, the Level 2 Risk Management Plan still includes mitigation measures to prevent direct contact of human and ecological receptors with the impacted soil on the site.

6. MOE REVIEW

This report will be submitted to the Ontario Ministry of Environment for its review, as an addendum to the SSRA report.

7. LIMITATIONS

This assessment was conducted as per the terms of reference described in this report for the account of URS Cole Sherman on behalf of the City of Toronto, using generally accepted practices in Risk Assessment, and structured to fit with guidelines published by the Ontario Ministry of Environment (MOE). The findings of the boreholes and test pits prepared for this SSRA and earlier investigations conducted by S&P and Geo-Canada within the study area are believed to be representative of the area of investigation and are based on facts and information determined by Shaheen & Peaker Limited during the execution of this project. Soil and groundwater conditions at locations other than the boreholes may vary from conditions encountered at the borehole locations. The findings in this report are limited to the

environmental conditions on the site and pertain solely to the subject property defined in this report, located in Toronto, Ontario. The conclusions and recommendations presented in this report are based on the results of a site-specific risk assessment, performed using physical and chemical site data collected during investigations of the site conducted previously or performed specifically for this SSRA. The assessment is limited to those contaminants and exposure pathways specifically referenced in this report.

Site-specific risk assessments involve a number of uncertainties and limitations. As a consequence, the use of the results presented herein to develop site remediation strategies may not necessarily provide complete protection of human health or prevent damage of property in all circumstances, particularly where site-specific factors and circumstances differ from those assumed here.

The services performed in the preparation of this report were conducted in a manner consistent with the level of skill and care ordinarily exercised by professional engineers and practitioners of risk assessment practising under similar conditions. This report was prepared for the exclusive use of URS Cole Sherman, the City of Toronto and their legal council. The designated Independent Peer Reviewer and Ontario Ministry of the Environment may rely on the results of this report for SSRA review purposes. Any use which a Third Party makes of this report, or any reliance on decisions to be made based on it, are the responsibility of such Third Parties. Shaheen & Peaker Limited accepts no responsibility for damages, if any, suffered by any Third Party as a result of decisions made or actions based on this report.

SHAHEEN & PEAKER LIMITED

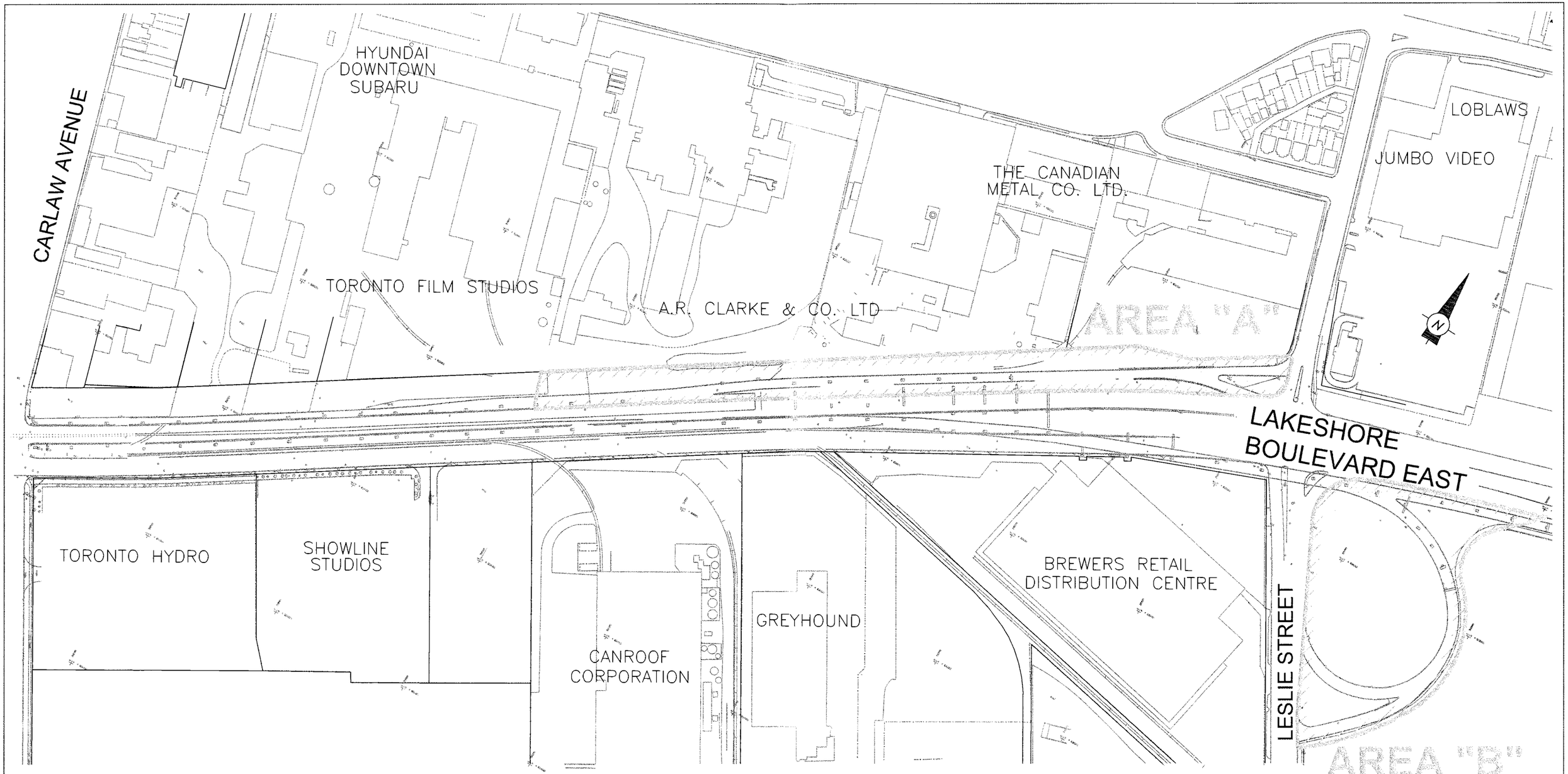
prepared by:

Cynthia L. Robins, P.Eng, C.Chem.
Senior Project Manager

reviewed by:

Mahmood Ghanini, P.Eng.
Vice President

DRAWINGS



LEGEND
Boundary of Study Area

0 50 100 200

Metres
(approximate)

STUDY AREA

Scale: AS SHOWN	ADDENDUM REPORT SITE SPECIFIC RISK ASSESSMENT LAKESHORE BOULEVARD EAST AND LESLIE STREET TORONTO, ONTARIO	Drawn By: MV
Date: NOV 2002		Approved By: CR
Project No.: SP 3977	SHAHEEN & PEAKER LIMITED	Drawing No.: 1

FIGURES

OVERSIZE MAP ON THIS PAGE

APPENDIX A

CITY OF TORONTO ENVIRONMENTALLY RESPONSIBLE PROCUREMENT STATEMENT

Ward 2 Bitolithic 204 - 2002

ENVIRONMENTALLY RESPONSIBLE PROCUREMENT STATEMENT

The City of Toronto Environmentally Responsible Procurement Policy encourages bidders to also offer products/services which are environmentally preferred. Environmentally preferred products/services offered must be competitive in cost, conform to specifications, performance requirements and, be suitable for the intended application as determined by the using department(s).

Environmentally preferred products/services are those such as durable products, reusable products, energy efficient products, low pollution products/services, products (including those used in services) containing maximum levels of post-consumer waste and/or recyclable content, and products which provide minimal impact to the environment.

An environmentally preferred product is one that is less harmful to the environment than the next best alternative having characteristics including, but not limited to the following:

1. Reduce waste and make efficient use of resources: An Environmentally Preferred Product would be a product that is more energy, fuel, or water efficient, or that uses less paper, ink, or other resources. For example, energy-efficient lighting, and photocopiers capable of double-sided photocopying.

2. Are reusable or contain reusable parts: These products such as rechargeable batteries, reusable building partitions, and laser printers with refillable toner cartridges.

3. Are recyclable: A product will be considered to be an Environmentally Preferred Product if local facilities exist capable of recycling the product at the end of its useful life.

4. Contain recycled materials: An Environmentally Preferred Product contains post-consumer recycled content. An example is paper products made from recycled post-consumer fibre.

5. Produce fewer polluting by-products and/or safety hazards during manufacture, use or disposal: An EPP product would be a non-hazardous product that replaces a hazardous product.

6. Have a long service-life and/or can be economically and effectively repaired or upgraded.

Bidders shall if requested, provide written verification of any environmental claims made in their bid/proposal satisfactory to the City of Toronto within five(5) working days of request at no cost to the City. Verification may include, but not be limited to, certification to recognized environmental program (e.g., Environmental Choice Program [ECP]), independent laboratory tests or manufacturer's certified tests. Only proven environmentally preferred products/services shall be offered. Experimental or prototype products/services will not be considered.

For a copy of the City of Toronto Environmentally Responsible Procurement Policy, contact the Finance Department Purchasing and Materials Management Division at (416) 392-7303 or (416) 392-1302.

State if environmentally preferred product/service Is being offered

*Yes*____ *No* ✓

State briefly the environmental benefit of the product/service offered:

_____

_____

APPENDIX B

EXCERPTS FROM IMPORTED FILL QUALITY TESTING REPORT

IMPORTED FILL QUALITY TESTING
IMPLEMENTATION OF RISK MANAGEMENT PLAN
LAKESHORE BOULEVARD EAST AT LESLIE STREET
TORONTO, ONTARIO

Prepared For:

CITY OF TORONTO
C/O URS COLE SHERMAN

Prepared by:

SHAHEEN & PEAKER LIMITED

Project: SP3977B
August 12, 2002

250 Galaxy Boulevard
Etobicoke, Ontario
M9W 5R8
Tel: (416) 213-1255
Fax: (416) 213-1260

TABLE 1: SUMMARY OF INORGANIC PARAMETERS IN SOIL – AREA A (PAGE 1 OF 3)

Parameter	Table B R/P	Table B I/C	MDL	AR A-1 SA-1 (0 – 0.15 m)	AR A-2 SA-1 (0 – 0.15 m)	AR A-3 SA-1 (0 – 0.15 m)	AR A-4 SA-1 (0 – 0.15 m)	AR A-5 SA-1 (0 – 0.15 m)	AR A-6 SA-1 (0 – 0.15 m)
pH (pH units)	5 .0-9.0	5.0-9.0	-	8.3	8.2	8.1	8.1	7.9	8.2
Electrical Conductivity (mS/cm)	0.7	1.4	-	0.077	0.071	0.103	0.129	0.091	0.080
Sodium Adsorption Ratio (no units)	5	12	-	1.55	0.58	1.44	2.95	1.68	1.09
Antimony (Sb)	13	40	1	<1	1.7	3.1	2.0	7.1	1.9
Arsenic(As)	20	40	1	2.5	5.0	5.0	3.6	7.1	3.1
Barium (Ba)	750	1500	1	22.5	21.4	37.0	36.9	39.6	30.5
Beryllium (Be)	1.2	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron (B) (Available)	1.5	2.0	0.02	0.13	0.08	0.14	0.16	0.12	0.13
Cadmium (Cd)	12	12	1	<1	<1	<1	<1	<1	<1
Chromium (Cr) (Total)	750	750	1	10.1	12.6	24.4	21.6	91.9	19.0
Chromium (Cr) (VI)	8.0	8.0	1	<1	<1	<1	<1	<1	<1
Cobalt (Co)	40	80	1	<1	<1	<1	<1	<1	<1
Copper (Cu)	225	225	0.1	<1	11	32.5	21.6	37.4	9.0
Cyanide (CN) (Free)	100	100	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lead (Pb)	200	1000	2	9.5	40.5	120	33.1	**331**	41.2
Mercury (Hg)	10	10	0.05	0.10	<0.05	0.09	0.08	0.09	<0.05
Molybdenum (Mo)	40	40	2	<2	<2	<2	<2	<2	<2
Nickel (Ni)	150	150	2	3.2	3.7	4.4	4.5	5.6	8.0
Selenium (Se)	10	10	1	<1	<1	<1	<1	<1	<1
Silver (Ag)	20	40	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium (V)	200	200	1	<1	<1	6.4	2.7	2.3	<1
Zinc (Zn)	600	600	1	66	124	129	110	148	90

Notes:

1. Units are in µg/g (ppm) unless otherwise indicated
2. Table B R/P and I/C = Surface Soil Criteria for Residential/Parkland and Industrial/Commercial land use, respectively for coarse textured soil in a non-potable groundwater condition, from the Ministry of Environment and Energy (MOEE) document *Guideline for Use at Contaminated Sites in Ontario*, revised February 1997
3. **Bold** = Concentration exceeds Table B R/P criteria
4. **Bold** = Concentration exceeds Table B I/C criteria
5. < = Concentration less than Method Detection Limit (MDL)
6. 1 mS/cm = 1000 umhos/cm

TABLE 1: SUMMARY OF INORGANIC PARAMETERS IN SOIL – AREA A (PAGE 2 OF 3)

Parameter	Table B R/P	Table B I/C	MDL	AR A-7 SA-1 (0 – 0.15 m)	AR A-8 SA-1 (0 – 0.15 m)	AR A-9 SA-1 (0 – 0.15 m)	AR A-10 SA-1 (0 – 0.15 m)	AR A-11 SA-1 (0 – 0.15 m)	AR A-12 SA-1 (0 – 0.15 m)
pH (pH units)	5 .0-9.0	5.0-9.0	-	8.0	8.0	8.0	7.8	8.2	8.2
Electrical Conductivity (mS/cm)	0.7	1.4	-	0.103	0.062	0.107	0.217	0.102	0.091
Sodium Adsorption Ratio (no units)	5	12	-	1.41	0.76	0.89	1.11	1.52	0.91
Antimony (Sb)	13	40	1	9.5	**114**	**16.7**	8.8	5.9	1.2
Arsenic(As)	20	40	1	18.4	**164**	8.3	10.7	6.5	2.9
Barium (Ba)	750	1500	1	45.8	78.7	76.3	84.7	61.5	23.2
Beryllium (Be)	1.2	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron (B) (Available)	1.5	2.0	0.02	0.11	0.12	0.20	0.88	0.33	0.09
Cadmium (Cd)	12	12	1	<1	7.9	<1	<1	<1	<1
Chromium (Cr) (Total)	750	750	1	20.7	32.0	34.8	35.3	22.5	11.1
Chromium (Cr) (VI)	8.0	8.0	1	<1	<1	<1	<1	<1	<1
Cobalt (Co)	40	80	1	<1	<1	<1	<1	1.5	<1
Copper (Cu)	225	225	0.1	58.6	154	73.0	22.4	41.5	12.0
Cyanide) (CN) (Free)	100	100	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lead (Pb)	200	1000	2	**728**	**10219**	**712**	**249**	**224**	48.4
Mercury (Hg)	10	10	0.05	0.08	0.5	0.22	0.33	0.26	<0.05
Molybdenum (Mo)	40	40	2	<2	<2	<2	<2	<2	<2
Nickel (Ni)	150	150	2	12.1	11.9	6.3	6.6	6.2	3.6
Selenium (Se)	10	10	1	<1	<1	<1	<1	<1	<1
Silver (Ag)	20	40	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium (V)	200	200	1	6.4	9.6	<1	<1	1.7	<1
Zinc (Zn)	600	600	1	209	459	312	157	148	82

Notes:

1. Units are in µg/g (ppm) unless otherwise indicated
2. Table B R/P and I/C = Surface Soil Criteria for Residential/Parkland and Industrial/Commercial land use, respectively for coarse textured soil in a non-potable groundwater condition, from the Ministry of Environment and Energy (MOEE) document *Guideline for Use at Contaminated Sites in Ontario*, revised February 1997
3. **Bold** = Concentration exceeds Table B R/P criteria
4. **Bold** = Concentration exceeds Table B I/C criteria
5. < = Concentration less than Method Detection Limit (MDL)
6. 1 mS/cm = 1000 umhos/cm

TABLE 2: SUMMARY OF TPH AND BTEX IN SOIL – AREA A

Parameter	TPH gasoline/diesel (C_6-C_{24})	TPH heavy oil (C_{24}-C_{50})	Benzene	Toluene	Ethylbenzene	Xylenes
Table B R/P	1000	1000	5.3	34	290	34
Table B I/C	1000	5000	5.3	34	290	34
MDL	10	80	0.002	0.002	0.002	0.002
AR A-2 SA-1 (0 – 0.15 m)	<	<	<	<	<	<
AR A-6 SA-1 (0 – 0.15 m)	**2930**	990	<	<	<	<
AR A-11 SA-1 (0 – 0.15 m)	<	<	<	<	<	<
AR A-17 SA-1 (0 – 0.15 m)	<	170	<	<	<	<

NOTES:

1. Units are in µg/g (ppm)
2. Table B R/P and I/C = Surface soil criteria for Residential/Parkland and Industrial/Commercial land use, respectively for coarse textured soil in a non-potable groundwater condition, from the Ministry of the Environment and Energy (MOEE) document *Guideline for Use at Contaminated Sites in Ontario*, Revised February 1997
3. MDL = Method Detection Limit
4. **Bold** = Concentration exceeds Table B R/P criteria
5. **Bold** = Concentration exceeds Table B I/C criteria
6. < = Concentration less than Method Detection Limit (MDL)

TABLE 3: SUMMARY OF INORGANIC PARAMETERS IN SOIL – AREA B (PAGE 1 OF 4)

Parameter	Table B R/P	Table B I/C	MDL	AR B-1 SA-1 (0 – 0.15 m)	AR B-2 SA-1 (0 – 0.15 m)	AR B-3 SA-1 (0 – 0.15 m)	AR B-4 SA-1 (0 – 0.15 m)	AR B-5 SA-1 (0 – 0.15 m)
pH (pH units)	5 .0-9.0	5.0-9.0	-	8.0	7.9	7.3	7.5	8.2
Electrical Conductivity (mS/cm)	0.7	1.4	-	0.066	0.060	0.661	0.281	0.152
Sodium Adsorption Ratio (no units)	5	12	-	1.05	0.68	4.6	**5.96**	3.22
Antimony (Sb)	13	40	1	1.7	3.4	9.2	2.0	2.8
Arsenic(As)	20	40	1	4.5	3.9	8.4	3.6	4.5
Barium (Ba)	750	1500	1	60.2	63.8	287	102	99.4
Beryllium (Be)	1.2	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron (B) (Available)	1.5	2.0	0.02	0.19	0.16	0.68	0.54	0.31
Cadmium (Cd)	12	12	.1	<1	<1	7.0	<1	<1
Chromium (Cr) (Total)	750	750	1	33.7	34.2	43.1	39.1	80.1
Chromium (Cr) (VI)	8.0	8.0	1	<1	<1	<1	<1	<1
Cobalt (Co)	40	80	1	<1	<1	8.4	<1	<1
Copper (Cu)	225	225	0.1	37.9	29.1	223	39.6	59.8
Cyanide (CN) (Free)	100	100	0.1	<0.1	<0.1	0.60	<0.1	<0.1
Lead (Pb)	200	1000	2	89.3	134	**780**	75.7	174
Mercury (Hg)	10	10	0.05	0.23	0.25	1.7	0.65	0.74
Molybdenum (Mo)	40	40	2	<2	<2	4.0	<2	<2
Nickel (Ni)	150	150	2	6.4	4.8	35.5	5.9	10.6
Selenium (Se)	10	10	1	<1	<1	<1	<1	<1
Silver (Ag)	20	40	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium (V)	200	200	1	2.8	<1	<1	<1	<1
Zinc (Zn)	600	600	1	149	286	**654**	202	283

NOTES:

1. Units are in µg/g (ppm) unless otherwise indicated
2. Table B R/P and I/C = Surface Soil Criteria for Residential/Parkland and Industrial/Commercial land use, respectively for coarse textured soil in a non-potable groundwater condition, from the Ministry of the Environment and Energy (MOEE) document *Guideline for Use at Contaminated Sites in Ontario*, Revised February 1997
3. **Bold** = Concentration exceeds Table B R/P criteria
4. **Bold** = Concentration exceeds Table B I/C criteria
5. < = Concentration less than Method Detection Limit (MDL)
6. 1 mS/cm = 1000 umhos/cm

TABLE 3: SUMMARY OF INORGANIC PARAMETERS IN SOIL – AREA B (PAGE 3 OF 4)

Parameter	Table B R/P	Table B I/C	MDL	AR B-11 SA-1 (0 – 0.15 m)	AR B-12 SA-1 (0 – 0.15 m)	AR B-13 SA-1 (0 – 0.15 m)	AR B-14 SA-1 (0 – 0.15 m)	AR B-15 Sa-1 (0 – 0.15 m)
pH (pH units)	5 .0-9.0	5.0-9.0	-	8.0	**9.5**	7.8	7.9	8.0
Electrical Conductivity (mS/cm)	0.7	1.4	-	0.136	0.326	0.411	0.219	0.062
Sodium Adsorption Ratio (no units)	5	12	-	2.51	3.63	**6.76**	**6.54**	0.66
Antimony (Sb)	13	40	1	2.8	<1	1.1	<1	<1
Arsenic(As)	20	40	1	4.8	2.2	3.1	2.9	1.2
Barium (Ba)	750	1500	1	76.4	45.2	75.0	65.6	20.0
Beryllium (Be)	1.2	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron (B) (Available)	1.5	2.0	0.02	0.16	0.15	0.16	0.19	0.09
Cadmium (Cd)	12	12	1	<1	<1	<1	<1	<1
Chromium (Cr) (Total)	750	750	1	23.0	17.3	18.7	15.0	9.4
Chromium (Cr) (VI)	8.0	8.0	1	<1	<1	<1	<1	<1
Cobalt (Co)	40	80	1	<1	<1	<1	<1	<1
Copper	225	225	0.1	45.5	25.2	14.1	16.1	<1
Cyanide (CN) (Free)	100	100	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lead (Pb)	200	1000	2	39.9	34.6	15.3	17.7	3.4
Mercury (Hg)	10	10	0.05	0.17	<0.05	0.14	0.20	<0.05
Molybdenum (Mo)	40	40	2	<2	<2	<2	<2	<2
Nickel (Ni)	150	150	2	6.4	3.9	4.1	4.4	<2
Selenium (Se)	10	10	1	<1	<1	<1	<1	<1
Silver (Ag)	20	40	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium (V)	200	200	1	3.5	11.0	<1	<1	<1
Zinc (Zn)	600	600	1	230	99	131	137	38

NOTES:

1. Units are in µg/g (ppm) unless otherwise indicated
2. Table B R/P and I/C = Surface Soil Criteria for Residential/Parkland and Industrial/Commercial land use, respectively for coarse textured soil in a non-potable groundwater condition, from the Ministry of the Environment and Energy (MOEE) document *Guideline for Use at Contaminated Sites in Ontario*, Revised February 1997
3. **Bold** = Concentration exceeds Table B R/P criteria
4. **Bold** = Concentration exceeds Table B I/C criteria
5. < = Concentration less than Method Detection Limit (MDL)
6. 1 mS/cm = 1000 umhos/cm

TABLE 3: SUMMARY OF INORGANIC PARAMETERS IN SOIL – AREA B (PAGE 4 OF 4)

Parameter	Table B R/P	Table B I/C	MDL	AR B-16 SA-1 (0 – 0.15 m)	AR B-17 SA-1 (0 – 0.15 m)	AR B-18 SA-1 (0 – 0.15 m)	AR B-19 SA-1 (0 – 0.15 m)	AR B-20 SA-1 (0 – 0.15 m)	AR B-21 SA-1 (0 – 0.15 m)
pH (pH units)	5 .0-9.0	5.0-9.0	-	7.8	7.9	**9.2**	7.6	7.7	7.7
Electrical Conductivity (mS/cm)	0.7	1.4	-	0.106	0.166	0.171	0.218	0.079	0.080
Sodium Adsorption Ratio (no units)	5	12	-	1.88	2.99	0.57	1.60	1.12	1.43
Antimony (Sb)	13	40	1	1.6	2.4	<1	2.0	3.9	1.8
Arsenic(As)	20	40	1	3.9	5.2	2.1	4.3	5.6	3.7
Barium (Ba)	750	1500	1	67.3	63.0	29.3	99.4	68.6	54.3
Beryllium (Be)	1.2	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron (B) (Available)	1.5	2.0	0.02	0.26	0.26	0.11	0.26	0.13	0.24
Cadmium (Cd)	12	12	1	<1	<1	<1	<1	<1	<1
Chromium (Cr) (Total)	750	750	1	48.9	22.4	13.1	22.0	21.8	26.5
Chromium (Cr) (VI)	8.0	8.0	1	<1	<1	<1	<1	<1	<1
Cobalt (Co)	40	80	1	<1	<1	<1	<1	<1	<1
Copper (Cu)	225	225	0.1	43.4	19.8	15.1	26.2	23.6	15.3
Cyanide (CN) (Free)	100	100	0.1	<0.1	<0.1	<0.1	0.96	<0.1	<0.1
Lead (Pb)	200	1000	2	**650**	**209**	11.4	67.9	165	76.0
Mercury (Hg)	10	10	0.05	0.30	0.11	<0.05	0.29	0.18	0.09
Molybdenum (Mo)	40	40	2	<2	<2	<2	<2	<2	<2
Nickel (Ni)	150	150	2	5.5	6.0	2.1	5.2	3.9	4.8
Selenium (Se)	10	10	1	<1	<1	<1	<1	<1	<1
Silver (Ag)	20	40	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium (V)	200	200	1	14.2	<1	15.9	<1	<1	<1
Zinc (Zn)	600	600	1	167	164	54	189	175	173

NOTES:

1. Units are in µg/g (ppm) unless otherwise indicated
2. Table B R/P and I/C = Surface Soil Criteria for Residential/Parkland and Industrial/Commercial land use, respectively for coarse textured soil in a non-potable groundwater condition, from the Ministry of the Environment and Energy (MOEE) document *Guideline for Use at Contaminated Sites in Ontario*, Revised February 1997
3. **Bold** = Concentration exceeds Table B R/P criteria
4. **Bold** = Concentration exceeds Table B I/C criteria
5. < = Concentration less than Method Detection Limit (MDL)
6. 1 mS/cm = 1000 umhos/cm

TABLE 4: SUMMARY OF TPH AND BTEX IN SOIL – AREA B

Parameter	TPH gasoline/diesel (C_5-C_{24})	TPH heavy oil (C_{24}-C_{50})	Benzene	Toluene	Ethylbenzene	Xylenes
Table B R/P	1000	1000	5.3	34	290	34
Table B I/C	1000	5000	5.3	34	290	34
MDL	10	80	0.002	0.002	0.002	0.002
AR B-4 SA-1 (0 – 0.15 m)	90	510	<	<	<	<
AR B-7 SA-1 (0 – 0.15 m)	<	<	<	<	<	<
AR B-12 SA-1 (0 – 0.15 m)	60	500	<	<	<	<
AR B-14 SA-1 (0 – 0.15 m)	**1200**	**1500**	<	<	<	<
AR B-19 SA-1 (0 – 0.15 m)	30	<	<	<	<	<

NOTES:

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2. Table B R/P and I/C = Surface soil criteria for Residential/Parkland and Industrial/Commercial land use, respectively for coarse textured soil in a non-potable groundwater condition, from the Ministry of the Environment and Energy (MOEE) document *Guideline for Use at Contaminated Sites in Ontario*, Revised February 1997
3. MDL = Method Detection Limit
4. **Bold** = Concentration exceeds Table B R/P criteria
5. **Bold** = Concentration exceeds Table B I/C criteria
6. < = Concentration less than Method Detection Limit (MDL)

TORONTO FILM STUDIOS

A.R. CLARKE & CO. LTD.

THE CANADIAN METAL CO. LTD.

AREA A

LESLIE STREET

LAKESHORE BOULEVARD EAST

AR A-1 SA-1	AR A-2 SA-1	AR A-3 SA-1	AR A-4 SA-1	AR A-5 SA-1	AR A-6 SA-1	AR A-7 SA-1	AR A-8 SA-1	AR A-9 SA-1	AR A-10 SA-1	AR A-11 SA-1	AR A-12 SA-1	AR A-13 SA-1	AR A-14 SA-1	AR A-15 SA-1	AR A-16 SA-1	AR A-17 SA-1

16 + 496

SHOWLINE STUDIOS

GREYHOUND

CANROOF CORPORATION

BREWERS RETAIL DISTRIBUTION CENTRE

LESLIE STREET

METRO WORKS

AR B-16 SA-1	AR B-10 SA-1	AR B-5 SA-1	AR B-1 SA-1	AR B-2 SA-1	AR B-3 SA-1	AR B-4 SA-1	AR B-9 SA-1	AR B-15 SA-1	AR B-21 SA-1	AR B-20 SA-1	AR B-14 SA-1	AR B-8 SA-1	AR B-19 SA-1	AR B-13 SA-1	AR B-7 SA-1	AR B-18 SA-1	AR B-12 SA-1	AR B-6 SA-1	AR B-17 SA-1	AR B-11 SA-1

AREA B

0 100 200 300

METRES (approximate)

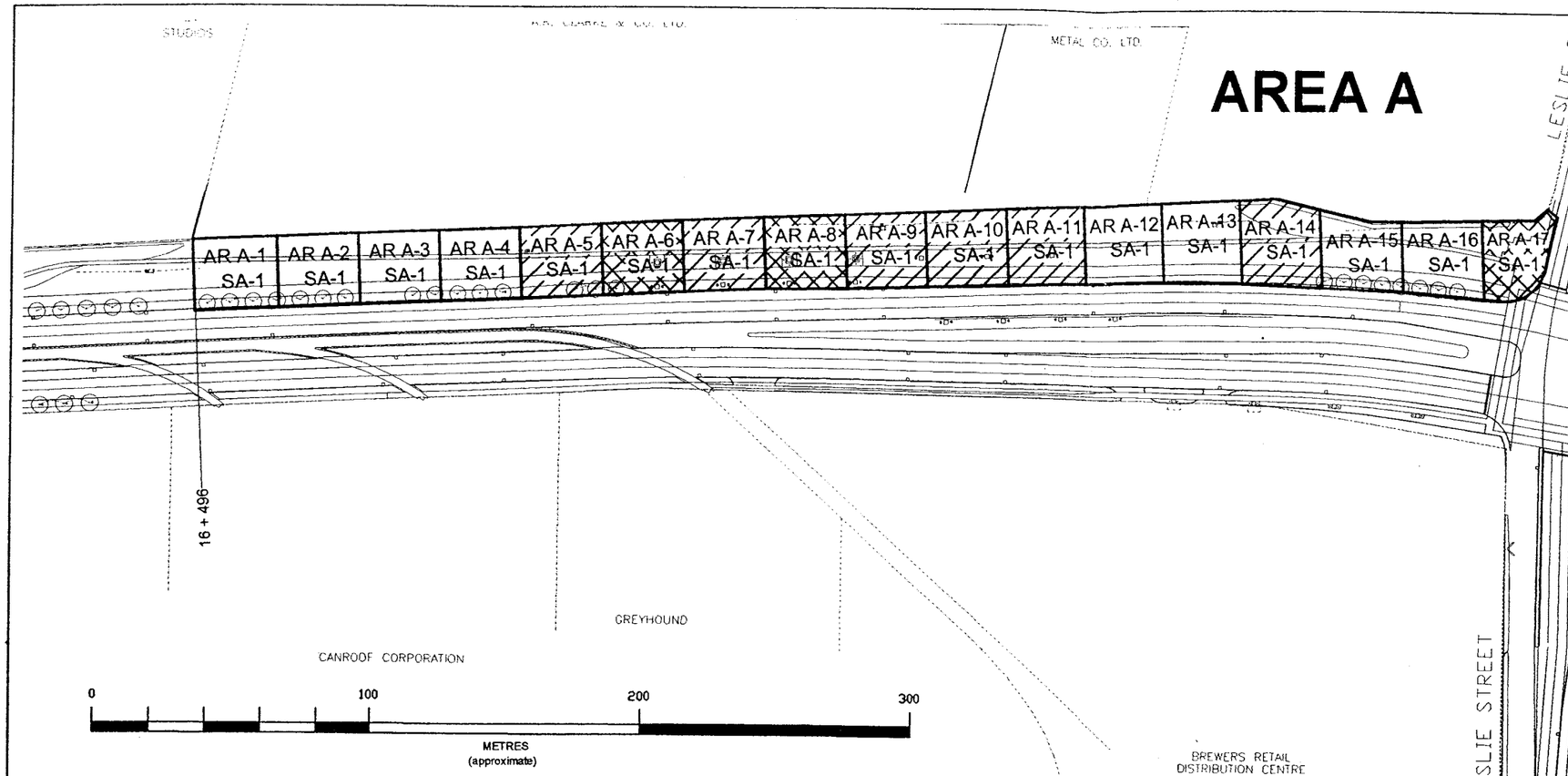
LEGEND

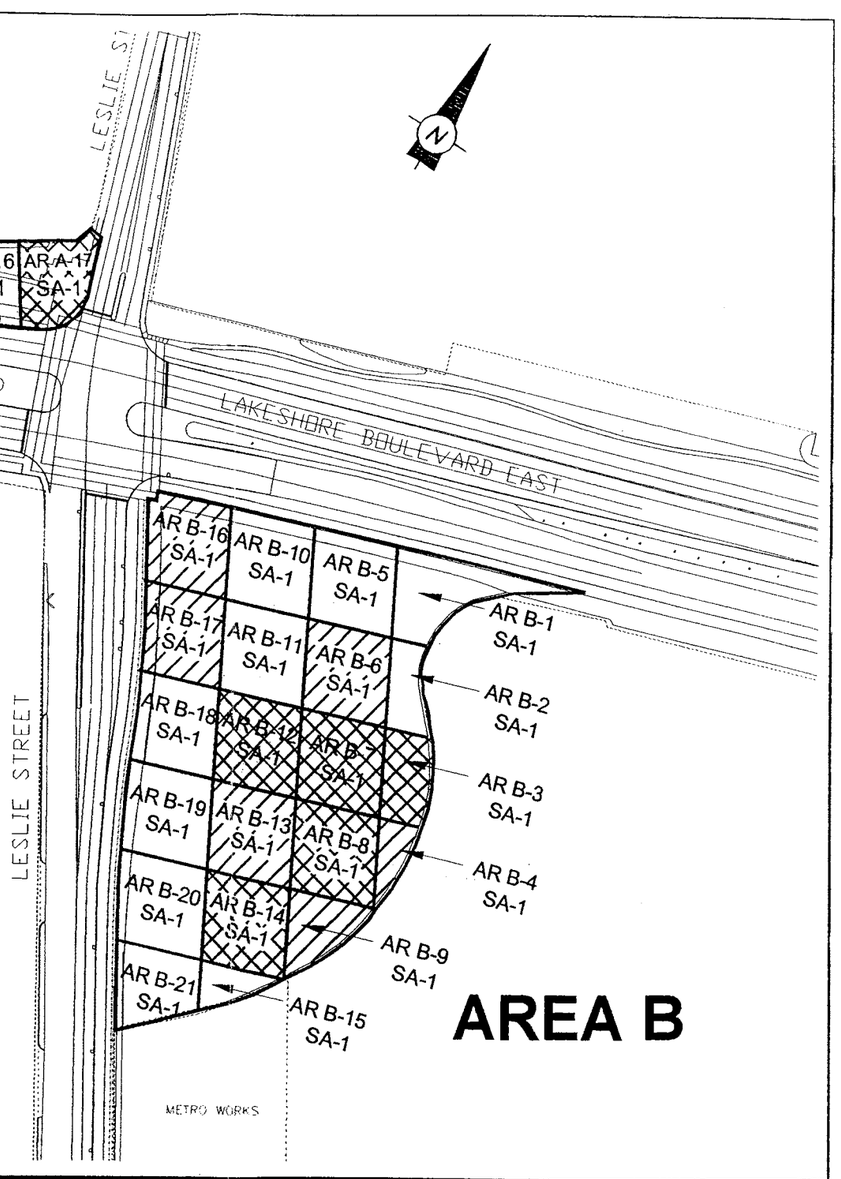
AR A-6 SA-1	Surface Soil Sample Grid Location (Area A) and Sample Identification (Sample Depth 0 to 0.15 m)
AR B-6 SA-1	Surface Soil Sample Grid Location (Area B) and Sample Identification (Sample Depth 0 to 0.15 m)

SURFACE SOIL SAMPLE GRID LOCATIONS

Scale: ~1: 2000	IMPORTED FILL QUALITY TESTING PRE-CONSTRUCTION SOIL TESTING RISK MANAGEMENT PLAN IMPLEMENTATION LAKESHORE BOULEVARD EAST AT LESLIE STREET TORONTO, ONTARIO	Drawn By: MV
Date: AUG.12, 2002		Approved By: DJB
Project No.: SP 3977B	SHAHEEN & PEAKER LIMITED	Drawing No.: 1—1

AREA A





AREA B

LEGEND

AR A-6 SA-1	Surface Soil Sample Grid Location (Area A) and Sample Identification (Sample Depth 0 to 0.15 m)
AR B-6 SA-1	Surface Soil Sample Grid Location (Area B) and Sample Identification (Sample Depth 0 to 0.15 m)
	Surface Soil Sample Grid with Exceedances of MOEE Table B Residential / Parkland (R/P) Land Use Criteria
	Surface Soil Sample Grid with Exceedances of MOEE Table B Industrial / Commercial (I/C) Land Use Criteria

SURFACE SOIL SAMPLE GRIDS WITH EXCEEDANCES

Scale: ~1: 2000	IMPORTED FILL QUALITY TESTING PRE-CONSTRUCTION SOIL TESTING RISK MANAGEMENT PLAN IMPLEMENTATION LAKESHORE BOULEVARD EAST AT LESLIE STREET TORONTO, ONTARIO	Drawn By: RBW
Date: AUG. 12, 2002		Approved By: DJB
Project No.: SP 3977B	SHAHEEN AND PEAKER LIMITED	Drawing No.: 1 – 2

Client:	**Shaheen & Peaker Ltd.**
Attention:	**David Balgent**
Project:	**SP3977B**
P.O. :	**SP3977B**
Sample Type:	**Soil**
Date Received:	**Jul 22/02**
Date Analysed:	**Jul 22 to Jul 25/02**
Date Reported:	**Jul 25/02**

Sam Sanyal, M.Sc., C.Chem.
Manager, Inorganic Analysis.

ENVIRONMENTAL CHEMISTRY
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CERTIFICATE OF CHEMICAL ANALYSIS - MOEE SOIL DECOMM. GUIDELINES FOR CONTAMINATED SITES IN ONTARIO (GENL. & INORGANIC)

PARAMETER	Soil Remediation Criteria (µg/g)		Method Detection Limit (µg/g)	CONTROL SAMPLE			SAMPLE DATA (µg/g)			
	Tables A & B Res./Ind. Comm	Tables C & D Res./Ind. Comm		Expected Concentration (µg/g)	Concentration Found (µg/g)	Recovery %	5794 AR A-1 SA-1	5795 AR A-2 SA-1	5796 AR A-3 SA-1	5797 AR A-4 SA-1
Dry Matter (%)	-	-	-	-	-	-	93.56	94.55	91.81	92.28
pH (units)	5 to 9	5 to 11	-	7.41	7.42	100	8.3	8.2	8.1	8.1
E C (µmhos/cm)	700/1400	N.A./N.A.	-	147.3	143.8	98	77	71	103	129
SAR	5/12	N.A./N.A.	-	-	-	-	1.55	0.58	1.44	2.95
Arsenic	20/40	40/N.V.	1	53.2	51.6	97	2.5	5.0	5.0	3.6
Cadmium	12/12	41/41	1	3.4	3.33	98	<1	<1	<1	<1
Chromium (VI) *	8/8	600/1100	1	0.718	0.703	98	<1	<1	<1	<1
Chromium (total)	750/750	2500/5000	1	6.4	6.15	96	10.1	12.6	24.4	21.6
Cobalt	40/80	2500/3400	1	2.8	2.76	99	<1	<1	<1	<1
Copper	225/225	2500/2500	1	69	67.9	98	<1	11	32.5	21.6
Lead	200/1000	1000/N.V.	2	97.8	91.6	94	9.5	40.5	120	33.1
Mercury	10/10	57/57	0.05	0.19	0.17	89	0.10	<0.05	0.09	0.08
Molybdenum	40/40	550/550	2	5.35	5.26	98	<2	<2	<2	<2
Nickel	150/150	710/710	2	23.1	22.4	97	3.2	3.7	4.4	4.5
Boron(HWE) *	1.5/2.0	2.0/N.V.	0.02	1	1.02	102	0.13	0.08	0.14	0.16
Cyanide Free *	100/100	100/390	0.1	0.20	0.194	97	<0.1	<0.1	<0.1	<0.1
Selenium	10/10	2500/2500	1	72.3	71.7	99	<1	<1	<1	<1
Silver	20/40	240/240	0.5	107	89.6	84	<0.5	<0.5	<0.5	<0.5
Zinc	600/600	2500/5000	1	467	454	97	66	124	129	110
Antimony *	13/40	44/44	1	0.010	0.0099	99	<1	1.7	3.1	2.0
Barium	750/1500	2500/4100	1	10.2	10.7	105	22.5	21.4	37.0	36.9
Beryllium	1.2/1.2	1.2/3.1	0.5	3.42	3.34	98	<0.5	<0.5	<0.5	<0.5
Vanadium	200/200	910/910	1	95.4	82.5	86	<1	<1	6.4	2.7

a) Table A: Surface soil criteria for a potable groundwater condition
b) Table B: Surface soil criteria for a non-potable groundwater condition
c) Table C: Sub-surface soil criteria for a potable groundwater condition
d) Table D: Sub-surface soil criteria for a non-potable groundwater condition

All guideline criteria are for coarse textured soil
HWE - Hot water extractable
Sample data and MDL units are in µg/g unless otherwise specified

Sample Disposal: 30 Days from the Reporting Date.

Analyst(s): NL, SS, OB, JW, AI, AV, MD

**** Control Sample Unit is µg/mL for the specified parameter instead of µg/g unless otherwise specified.***

Method:

pH: Extraction/Electrometric (EPA 9045)
EC: Extraction/Electrometric (EPA 120.1)
As, Se, Sb: Digestion/HGFAAS (EPA 3050A/7062/7742)
Hg: Digestion/CV-AAS (EPA 7471A/245.5)
SAR: Extraction/ICP-AES (EPA 200.7)
Metals: Digestion/ICP-AES (EPA 3050A/200.7)
Cyanide Free: Extraction/Auto-Color (EPA 335.4)
B (HWE): Extraction/ICP-AES
Cr(VI): Alkaline Digestion/Colorimetry (EPA 3060A/7196)

Clie... Si...on & F...er Ltd.
Attention: David Balgent
Project: SP3977B
P.O. : SP3977B
Sample Type: Soil
Date Received: Jul 22/02
Date Analysed: Jul 22 to Jul 25/02
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CERTIFICATE OF CHEMICAL ANALYSIS - MOEE SOIL DECOMM. GUIDELINES FOR CONTAMINATED SITES IN ONTARIO (GENL. & INORGANIC)

PARAMETER	Soil Remediation Criteria (µg/g)		Method Detection Limit (µg/g)	CONTROL SAMPLE			SAMPLE DATA (µg/g)			
	Tables A & B Res./Ind. Comm	Tables C & D Res./Ind. Comm		Expected Concentration (µg/g)	Concentration Found (µg/g)	Recovery %	5798 AR A-5 SA-1	5799 AR A-6 SA-1	5800 AR A-7 SA-1	5801 AR A-8 SA-1
Dry Matter (%)	-	-	-	-	-	-	91.88	90.44	92.72	94.17
pH (units)	5 to 9	5 to 11	-	7.41	7.42	100	7.9	8.2	8.0	8.0
E C (µmhos/cm)	700/1400	N.A./N.A.	-	147.3	143.8	98	91	80	103	62
SAR	5/12	N.A./N.A.	-	-	-	-	1.66	1.09	1.41	0.76
Arsenic	20/40	40/N.V.	1	53.2	51.6	97	7.1	3.1	18.4	164
Cadmium	12/12	41/41	1	3.4	3.33	98	<1	<1	<1	7.9
Chromium (VI) *	8/8	600/1100	1	0.718	0.703	98	<1	<1	<1	<1
Chromium (total)	750/750	2500/5000	1	6.4	6.15	96	91.9	19.0	20.7	32.0
Cobalt	40/80	2500/3400	1	2.8	2.76	99	<1	<1	<1	<1
Copper	225/225	2500/2500	1	69	67.9	98	37.4	9.0	58.6	154
Lead	200/1000	1000/N.V.	2	97.8	91.6	94	331	41.2	728	10219
Mercury	10/10	57/57	0.05	0.19	0.17	89	0.09	<0.05	0.08	0.50
Molybdenum	40/40	550/550	2	5.35	5.26	98	<2	<2	<2	<2
Nickel	150/150	710/710	2	23.1	22.4	97	5.6	8.0	12.1	11.9
Boron(HWE) *	1.5/2.0	2.0/N.V.	0.02	1	1.02	102	0.12	0.13	0.11	0.12
Cyanide Free *	100/100	100/390	0.1	0.20	0.194	97	<0.1	<0.1	<0.1	<0.1
Selenium	10/10	2500/2500	1	72.3	71.7	99	<1	<1	<1	<1
Silver	20/40	240/240	0.5	107	89.6	84	<0.5	<0.5	<0.5	<0.5
Zinc	600/600	2500/5000	1	467	454	97	148	90	209	459
Antimony *	13/40	44/44	1	0.010	0.0099	99	7.1	1.9	9.5	114
Barium	750/1500	2500/4100	1	10.2	10.7	105	39.6	30.5	45.8	78.7
Beryllium	1.2/1.2	1.2/3.1	0.5	3.42	3.34	98	<0.5	<0.5	<0.5	<0.5
Vanadium	200/200	910/910	1	95.4	82.5	86	2.3	<1	6.4	9.6

a) Table A: Surface soil criteria for a potable groundwater condition
b) Table B: Surface soil criteria for a non-potable groundwater condition
c) Table C: Sub-surface soil criteria for a potable groundwater condition
d) Table D: Sub-surface soil criteria for a non-potable groundwater condition
Sample Disposal: 30 Days from the Reporting Date.

All guideline criteria are for coarse textured soil
HWE - Hot water extractable
Sample data and MDL units are in µg/g unless otherwise specified

Analyst(s): NL, SS, OB, JW, AI, AV, MD

**** Control Sample Unit is µg/mL for the specified parameter instead of µg/g unless otherwise specified.***

Method:

pH: Extraction/Electrometric (EPA 9045)
EC: Extraction/Electrometric (EPA 120.1)
As, Se, Sb: Digestion/HGFAAS (EPA 3050A/7062/7742)
Hg: Digestion/CV-AAS (EPA 7471A/245.5)
SAR: Extraction/ICP-AES (EPA 200.7)
Metals: Digestion/ICP-AES (EPA 3050A/200.7)
Cyanide Free: Extraction/Auto-Color (EPA 335.4)
B (HWE): Extraction/ICP-AES
Cr(VI): Alkaline Digestion/Colorimetry (EPA 3060A/7196)

Client:	**Shaheen & Peaker Ltd.**
Attention:	**David Balgent**
Project:	**SP3977B**
P.O. :	**SP3977B**
Sample Type:	**Soil**
Date Received:	**Jul 22/02**
Date Analysed:	**Jul 22 to Jul 26/02**
Date Reported:	**Jul 25/02**
Date Revised:	**Jul 29/02**

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PARAMETER	Soil Remediation Criteria (µg/g)		Method Detection Limit (µg/g)	CONTROL SAMPLE			SAMPLE DATA (µg/g)			
				Expected Concentration (µg/g)	Concentration Found (µg/g)	Recovery %	5802 AR A-9 SA-1	5803 AR A-10 SA-1	5804 AR A-11 SA-1	5805 AR A-12 SA-1
	Tables A & B Res./Ind. Comm	Tables C & D Res./Ind. Comm								
Dry Matter (%)	-	-	-	-	-	-	89.86	91.56	92.37	94.02
pH (units)	5 to 9	5 to 11	-	7.41	7.42	100	8.0	7.8	8.2	8.2
E.C (µmhos/cm)	700/1400	N.A./N.A.	-	147.3	143.8	98	107	217	102	91
SAR	5/12	N.A./N.A.	-	-	-	-	0.89	1.11	1.52	0.91
Arsenic	20/40	40/N.V.	1	53.2	51.6	97	8.3	10.7	6.5	2.9
Cadmium	12/12	41/41	1	3.4	3.33	98	<1	<1	<1	<1
Chromium (VI) *	8/8	600/1100	1	0.718	0.703	98	<1	<1	<1	<1
Chromium (total)	750/750	2500/5000	1	6.4	6.15	96	34.8	35.3	22.5	11.1
Cobalt	40/80	2500/3400	1	2.8	2.76	99	<1	<1	1.5	<1
Copper	225/225	2500/2500	1	69	67.9	98	73.0	56.3	41.5	12.0
Lead	200/1000	1000/N.V.	2	97.8	91.6	94	712	249	224	48.4
Mercury	10/10	57/57	0.05	0.19	0.17	89	0.22	0.33	0.26	<0.05
Molybdenum	40/40	550/550	2	5.35	5.26	98	<2	<2	<2	<2
Nickel	150/150	710/710	2	23.1	22.4	97	6.3	6.6	6.2	3.6
Boron(HWE) *	1.5/2.0	2.0/N.V.	0.02	1	1.02	102	0.20	0.88	0.33	0.09
Cyanide Free *	100/100	100/390	0.1	0.20	0.194	97	<0.1	<0.1	<0.1	<0.1
Selenium	10/10	2500/2500	1	72.3	71.7	99	<1	<1	<1	<1
Silver	20/40	240/240	0.5	107	89.6	84	<0.5	<0.5	<0.5	<0.5
Zinc	600/600	2500/5000	1	467	454	97	312	157	148	82
Antimony *	13/40	44/44	1	0.010	0.0099	99	16.7	8.8	5.9	1.2
Barium	750/1500	2500/4100	1	10.2	10.7	105	76.3	84.7	61.5	23.2
Beryllium	1.2/1.2	1.2/3.1	0.5	3.42	3.34	98	<0.5	<0.5	<0.5	<0.5
Vanadium	200/200	910/910	1	95.4	82.5	86	<1	4.5	1.7	<1

a) Table A: Surface soil criteria for a potable groundwater condition
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Sample Disposal: 30 Days from the Reporting Date.

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Client:	Shureen & Peaker Ltd.
Attention:	David Baigent
Project:	SP3977B
P.O. :	SP3977B
Sample Type:	Soil
Date Received:	Jul 22/02
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PARAMETER	Soil Remediation Criteria (µg/g)		Method Detection Limit (µg/g)	CONTROL SAMPLE			SAMPLE DATA (µg/g)			
				Expected Concentration (µg/g)	Concentration Found (µg/g)	Recovery %	5806 AR A-13 SA-1	5807 AR A-14 SA-1	5808 AR A-15 SA-1	5809 AR A-16 SA-1
	Tables A & B Res./Ind. Comm	Tables C & D Res./Ind. Comm								
Dry Matter (%)	-	-	-	-	-	-	95.23	94.47	94.09	94.03
pH (units)	5 to 9	5 to 11	-	7.41	7.42	100	8.3	8.0	8.1	8.3
E C (µmhos/cm)	700/1400	N.A./N.A.	-	147.3	143.8	98	90	86	82	76
SAR	5/12	N.A./N.A.	-	-	-	-	1.21	1.07	0.79	0.52
Arsenic	20/40	40/N.V.	1	53.2	51.6	97	2.8	4.0	5.1	4.2
Cadmium	12/12	41/41	1	3.4	3.33	98	<1	<1	<1	<1
Chromium (VI) *	8/8	600/1100	1	0.718	0.703	98	<1	<1	<1	<1
Chromium (total)	750/750	2500/5000	1	6.4	6.15	96	14.0	29.3	25.7	31.7
Cobalt	40/80	2500/3400	1	2.8	2.76	99	1.3	<1	<1	<1
Copper	225/225	2500/2500	1	69	67.9	98	31.2	55.4	67.5	65.9
Lead	200/1000	1000/N.V.	2	97.8	91.6	94	82.3	203	67.3	47.1
Mercury	10/10	57/57	0.05	0.19	0.17	89	<0.05	0.09	0.12	0.09
Molybdenum	40/40	550/550	2	5.35	5.26	98	<2	<2	<2	<2
Nickel	150/150	710/710	2	23.1	22.4	97	4.2	10.6	35.9	14.2
Boron(HWE) *	1.5/2.0	2.0/N.V.	0.02	1	1.02	102	0.10	0.14	0.15	0.15
Cyanide Free *	100/100	100/390	0.1	0.20	0.194	97	<0.1	<0.1	<0.1	<0.1
Selenium	10/10	2500/2500	1	72.3	71.7	99	<1	<1	<1	<1
Silver	20/40	240/240	0.5	107	89.6	84	<0.5	<0.5	<0.5	<0.5
Zinc	600/600	2500/5000	1	467	454	97	88	173	187	197
Antimony *	13/40	44/44	1	0.010	0.0099	99	1.8	5.6	1.5	<1
Barium	750/1500	2500/4100	1	10.2	10.7	105	26.0	36.8	41.3	50.2
Beryllium	1.2/1.2	1.2/3.1	0.5	3.42	3.34	98	<0.5	<0.5	<0.5	<0.5
Vanadium	200/200	910/910	1	95.4	82.5	86	5.5	1.4	<1	3.1

a) Table A: Surface soil criteria for a potable groundwater condition
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Sample data and MDL units are in µg/g unless otherwise specified

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Method:

pH: Extraction/Electrometric (EPA 9045)
EC: Extraction/Electrometric (EPA 120.1)
As, Se, Sb: Digestion/HGFAAS (EPA 3050A/7062/7742)
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Client:	**Shaneen & Peaker Ltd.**
Attention:	**David Balgent**
Project:	**SP3977B**
P.O. :	**SP3977B**
Sample Type:	**Soil**
Date Received:	**Jul 22/02**
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PARAMETER	Soil Remediation Criteria (µg/g)		Method Detection Limit (µg/g)	CONTROL SAMPLE			SAMPLE DATA (µg/g)			
				Expected Concentration (µg/g)	Concentration Found (µg/g)	Recovery %	Blank	5810 AR A-17 SA-1	5798 AR A-5 SA-1 Duplicate	5803 AR A-10 SA-1 Duplicate
	Tables A & B Res./Ind. Comm	Tables C & D Res./Ind. Comm								
Dry Matter (%)	-	-	-	-	-	-	-	92.50	91.88	91.56
pH (units)	5 to 9	5 to 11	-	7.41	7.42	100	-	8.0	8.1	7.9
E C (µmhos/cm)	700/1400	N.A./N.A.	-	147.3	143.8	98	-	104	90	214
SAR	5/12	N.A./N.A.	-	-	-	-	-	0.47	1.66	1.15
Arsenic	20/40	40/N.V.	1	53.2	51.6	97	<1	13.9	7.5	9.5
Cadmium	12/12	41/41	1	3.4	3.33	98	<1	2.9	<1	<1
Chromium (VI) *	8/8	600/1100	1	0.718	0.703	98	<1	<1	<1	<1
Chromium (total)	750/750	2500/5000	1	6.4	6.15	96	<1	26.5	89.4	33.4
Cobalt	40/80	2500/3400	1	2.8	2.76	99	<1	5.3	<1	<1
Copper	225/225	2500/2500	1	69	67.9	98	<1	111	36.2	49.7
Lead	200/1000	1000/N.V.	2	97.8	91.6	94	<2	633	316	272
Mercury	10/10	57/57	0.05	0.19	0.17	89	<0.05	0.65	0.10	0.37
Molybdenum	40/40	550/550	2	5.35	5.26	98	<2	<2	<2	<2
Nickel	150/150	710/710	2	23.1	22.4	97	<2	12.8	4.8	7.6
Boron(HWE) *	1.5/2.0	2.0/N.V.	0.02	1	1.02	102	<0.02	0.15	0.17	0.93
Cyanide Free *	100/100	100/390	0.1	0.20	0.194	97	<0.1	<0.1	<0.1	<0.1
Selenium	10/10	2500/2500	1	72.3	71.7	99	<1	<1	<1	<1
Silver	20/40	240/240	0.5	107	89.6	84	<0.5	<0.5	<0.5	<0.5
Zinc	600/600	2500/5000	1	467	454	97	<1	639	145	153
Antimony *	13/40	44/44	1	0.010	0.0099	99	<1	5.5	7.9	6.4
Barium	750/1500	2500/4100	1	10.2	10.7	105	<1	271	37.9	80.0
Beryllium	1.2/1.2	1.2/3.1	0.5	3.42	3.34	98	<0.5	<0.5	<0.5	<0.5
Vanadium	200/200	910/910	1	95.4	82.5	86	<1	8.5	2.4	4.4

a) Table A: Surface soil criteria for a potable groundwater condition
b) Table B: Surface soil criteria for a non-potable groundwater condition
c) Table C: Sub-surface soil criteria for a potable groundwater condition
d) Table D: Sub-surface soil criteria for a non-potable groundwater condition
Sample Disposal: 30 Days from the Reporting Date.

All guideline criteria are for coarse textured soil
HWE - Hot water extractable
Sample data and MDL units are in µg/g unless otherwise specified

Analyst(s): NL, SS, OB, JW, AI, AV, MD

**** Control Sample Unit is µg/mL for the specified parameter instead of µg/g unless otherwise specified.***

Method:

pH: Extraction/Electrometric (EPA 9045)
EC: Extraction/Electrometric (EPA 120.1)
As, Se, Sb: Digestion/HGFAAS (EPA 3050A/7062/7742)
Hg: Digestion/CV-AAS (EPA 7471A/245.5)
SAR: Extraction/ICP-AES (EPA 200.7)
Metals: Digestion/ICP-AES (EPA 3050A/200.7)
Cyanide Free: Extraction/Auto-Color (EPA 335.4)
B (HWE): Extraction/ICP-AES
Cr(VI): Alkaline Digestion/Colorimetry (EPA 3060A/7196)

Client:	Shaheen & Peaker Ltd.
Attention:	David Balgent
Project:	SP3977B
P.O. :	SP3977B
Sample Type:	Soil
Date Received:	Jul 22/02
Date Analysed:	Jul 22 to Jul 25/02
Date Reported:	Jul 25/02

Sam Sanyal, M.Sc., C.Chem.
Manager, Inorganic Analysis.

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CERTIFICATE OF CHEMICAL ANALYSIS - MOEE SOIL DECOMM. GUIDELINES FOR CONTAMINATED SITES IN ONTARIO (GENL. & INORGANIC)

PARAMETER	Soil Remediation Criteria (µg/g)		Method Detection Limit (µg/g)	CONTROL SAMPLE			SAMPLE DATA (µg/g)			
	Tables A & B Res./Ind. Comm	Tables C & D Res./Ind. Comm		Expected Concentration (µg/g)	Concentration Found (µg/g)	Recovery %	5773 AR B-1 SA-1	5774 AR B-2 SA-1	5775 AR B-3 SA-1	5776 AR B-4 SA-1
Dry Matter (%)	-	-	-	-	-	-	97.59	98.16	96.20	94.04
pH (units)	5 to 9	5 to 11	-	7.41	7.41	100	8.0	7.9	7.3	7.5
E C (µmhos/cm)	700/1400	N.A./N.A.	-	147.3	146.4	99	86	60	661	281
SAR	5/12	N.A./N.A.	-	-	-	-	1.05	0.68	4.60	5.96
Arsenic	20/40	40/N.V.	1	53.2	51.6	97	4.5	3.9	8.4	3.6
Cadmium	12/12	41/41	1	3.4	3.33	98	<1	<1	7.0	<1
Chromium (VI) *	8/8	600/1100	1	0.71	0.70	99	<1	<1	<1	<1
Chromium (total)	750/750	2500/5000	1	6.4	6.15	96	33.7	34.2	43.1	39.1
Cobalt	40/80	2500/3400	1	2.8	2.76	99	<1	<1	8.4	<1
Copper	225/225	2500/2500	1	69	67.9	98	37.9	29.1	223	39.6
Lead	200/1000	1000/N.V.	2	97.8	91.6	94	89.3	134	780	75.7
Mercury	10/10	57/57	0.05	0.19	0.17	89	0.23	0.25	1.7	0.65
Molybdenum	40/40	550/550	2	5.35	5.26	98	<2	<2	4	<2
Nickel	150/150	710/710	2	23.1	22.4	97	6.4	4.8	35.5	5.9
Boron(HWE) *	1.5/2.0	2.0/N.V.	0.02	1	1.04	104	0.19	0.16	0.68	0.54
Cyanide Free *	100/100	100/390	0.1	0.20	0.190	95	<0.1	<0.1	0.60	<0.1
Selenium	10/10	2500/2500	1	72.3	71.7	99	<1	<1	<1	<1
Silver	20/40	240/240	0.5	107	89.6	84	<0.5	<0.5	<0.5	<0.5
Zinc	600/600	2500/5000	1	467	454	97	149	286	654	202
Antimony *	13/40	44/44	1	0.010	0.0099	99	1.7	3.4	9.2	2.0
Barium	750/1500	2500/4100	1	10.2	10.7	105	60.2	63.8	287	102
Beryllium	1.2/1.2	1.2/3.1	0.5	3.42	3.34	98	<0.5	<0.5	<0.5	<0.5
Vanadium	200/200	910/910	1	95.4	82.5	86	2.8	<1	<1	<1

a) Table A: Surface soil criteria for a potable groundwater condition
b) Table B: Surface soil criteria for a non-potable groundwater condition
c) Table C: Sub-surface soil criteria for a potable groundwater condition
d) Table D: Sub-surface soil criteria for a non-potable groundwater condition

Sample Disposal: 30 Days from the Reporting Date.

All guideline criteria are for coarse textured soil
HWE - Hot water extractable
Sample data and MDL units are in µg/g unless otherwise specified

Analyst(s): NL, SS, OB, JW, AI, AV, MD

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Method:

pH: Extraction/Electrometric (EPA 9045)
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As, Se, Sb: Digestion/HGFAAS (EPA 3050A/7062/7742)
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Cyanide Free: Extraction/Auto-Color (EPA 335.4)
B (HWE): Extraction/ICP-AES
Cr(VI): Alkaline Digestion/Colorimetry (EPA 3060A/7196)

Client:	Shareen & Peaker Ltd.
Attention:	David Balgent
Project:	SP3977B
P.O. :	SP3977B
Sample Type:	Soil
Date Received:	Jul 22/02
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PARAMETER	Soil Remediation Criteria (µg/g)		Method Detection Limit (µg/g)	CONTROL SAMPLE			SAMPLE DATA (µg/g)			
				Expected Concentration (µg/g)	Concentration Found (µg/g)	Recovery %	5781 AR B-9 SA-1	5782 AR B-10 SA-1	5783 AR B-11 SA-1	5784 AR B-12 SA-1
	Tables A & B Res./Ind. Comm	Tables C & D Res./Ind. Comm								
Dry Matter (%)	-	-	-	-	-	-	95.71	98.06	96.49	94.80
pH (units)	5 to 9	5 to 11	-	7.41	7.41	100	7.8	8.0	8.0	9.5
E C (µmhos/cm)	700/1400	N.A./N.A.	-	147.3	146.4	99	418	81	136	326
SAR	5/12	N.A./N.A.	-	-	-	-	5.19	1.35	2.51	3.63
Arsenic	20/40	40/N.V.	1	53.2	51.6	97	4.3	4.3	4.8	2.2
Cadmium	12/12	41/41	1	3.4	3.33	98	<1	<1	<1	<1
Chromium (VI) *	8/8	600/1100	1	0.71	0.70	99	<1	<1	<1	<1
Chromium (total)	750/750	2500/5000	1	6.4	6.15	96	21.0	24.0	23.0	17.3
Cobalt	40/80	2500/3400	1	2.8	2.76	99	<1	<1	<1	<1
Copper	225/225	2500/2500	1	69	67.9	98	53.3	32.2	45.5	25.2
Lead	200/1000	1000/N.V.	2	97.8	91.6	94	50.4	113	39.9	34.6
Mercury	10/10	57/57	0.05	0.19	0.17	89	0.29	0.17	0.17	<0.05
Molybdenum	40/40	550/550	2	5.35	5.26	98	<2	<2	<2	<2
Nickel	150/150	710/710	2	23.1	22.4	97	6.7	6.6	6.4	3.9
Boron(HWE) *	1.5/2.0	2.0/N.V.	0.02	1	1.04	104	0.34	0.24	0.16	0.15
Cyanide Free *	100/100	100/390	0.1	0.20	0.190	95	<0.1	<0.1	<0.1	<0.1
Selenium	10/10	2500/2500	1	72.3	71.7	99	<1	<1	<1	<1
Silver	20/40	240/240	0.5	107	89.6	84	<0.5	<0.5	<0.5	<0.5
Zinc	600/600	2500/5000	1	467	454	97	189	174	230	99
Antimony *	13/40	44/44	1	0.010	0.0099	99	2.5	1.7	2.8	<1
Barium	750/1500	2500/4100	1	10.2	10.7	105	142	47.8	76.4	45.2
Beryllium	1.2/1.2	1.2/3.1	0.5	3.42	3.34	98	<0.5	<0.5	<0.5	<0.5
Vanadium	200/200	910/910	1	95.4	82.5	86	<1	<1	3.5	11.0

a) Table A: Surface soil criteria for a potable groundwater condition
b) Table B: Surface soil criteria for a non-potable groundwater condition
c) Table C: Sub-surface soil criteria for a potable groundwater condition
d) Table D: Sub-surface soil criteria for a non-potable groundwater condition

All guideline criteria are for coarse textured soil
HWE - Hot water extractable
Sample data and MDL units are in µg/g unless otherwise specified

Sample Disposal: 30 Days from the Reporting Date.

Analyst(s): NL, SS, OB, JW, AI, AV, MD

**** Control Sample Unit is µg/mL for the specified parameter instead of µg/g unless otherwise specified.***

Method:

pH: Extraction/Electrometric (EPA 9045)
EC: Extraction/Electrometric (EPA 120.1)
As, Se, Sb: Digestion/HGFAAS (EPA 3050A/7062/7742)
Hg: Digestion/CV-AAS (EPA 7471A/245.5)
SAR: Extraction/ICP-AES (EPA 200.7)
Metals: Digestion/ICP-AES (EPA 3050A/200.7)
Cyanide Free: Extraction/Auto-Color (EPA 335.4)
B (HWE): Extraction/ICP-AES
Cr(VI): Alkaline Digestion/Colorimetry (EPA 3060A/7196)

Client:	**Shaheen & Peaker Ltd.**
Attention:	**David Baigent**
Project:	**SP3977B**
P.O. :	**SP3977B**
Sample Type:	**Soil**
Date Received:	**Jul 22/02**
Date Analysed:	**Jul 22 to Jul 25/02**
Date Reported:	**Jul 25/02**

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Manager, Inorganic Analysis.

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CERTIFICATE OF CHEMICAL ANALYSIS - MOEE SOIL DECOMM. GUIDELINES FOR CONTAMINATED SITES IN ONTARIO (GENL. & INORGANIC)

PARAMETER	Soil Remediation Criteria (µg/g)		Method Detection Limit (µg/g)	CONTROL SAMPLE			SAMPLE DATA (µg/g)			
				Expected Concentration (µg/g)	Concentration Found (µg/g)	Recovery %	5785 AR B-13 SA-1	5786 AR B-14 SA-1	5787 AR B-15 SA-1	5788 AR B-16 SA-1
	Tables A & B Res./Ind. Comm	Tables C & D Res./Ind. Comm								
Dry Matter (%)	-	-	-	-	-	-	96.28	96.63	97.99	97.76
pH (units)	5 to 9	5 to 11	-	7.41	7.41	100	7.8	7.9	8.0	7.8
E.C (µmhos/cm)	700/1400	N.A./N.A.	-	147.3	146.4	99	411	219	62	106
SAR	5/12	N.A./N.A.	-	-	-	-	6.76	6.54	0.66	1.88
Arsenic	20/40	40/N.V.	1	53.2	51.6	97	3.1	2.9	1.2	3.9
Cadmium	12/12	41/41	1	3.4	3.33	98	<1	<1	<1	<1
Chromium (VI) *	8/8	600/1100	1	0.71	0.70	99	<1	<1	<1	<1
Chromium (total)	750/750	2500/5000	1	6.4	6.15	96	18.7	15.0	9.4	48.9
Cobalt	40/80	2500/3400	1	2.8	2.76	99	<1	<1	<1	<1
Copper	225/225	2500/2500	1	69	67.9	98	14.1	16.1	<1	43.4
Lead	200/1000	1000/N.V.	2	97.8	91.6	94	15.3	17.7	3.4	650
Mercury	10/10	57/57	0.05	0.19	0.17	89	0.14	0.20	<0.05	0.30
Molybdenum	40/40	550/550	2	5.35	5.26	98	<2	<2	<2	<2
Nickel	150/150	710/710	2	23.1	22.4	97	4.1	4.4	<2	5.5
Boron(HWE) *	1.5/2.0	2.0/N.V.	0.02	1	1.04	104	0.16	0.19	0.09	0.26
Cyanide Free *	100/100	100/390	0.1	0.20	0.190	95	<0.1	<0.1	<0.1	<0.1
Selenium	10/10	2500/2500	1	72.3	71.7	99	<1	<1	<1	<1
Silver	20/40	240/240	0.5	107	89.6	84	<0.5	<0.5	<0.5	<0.5
Zinc	600/600	2500/5000	1	467	454	97	131	137	38	167
Antimony *	13/40	44/44	1	0.010	0.0099	99	1.1	<1	<1	1.6
Barium	750/1500	2500/4100	1	10.2	10.7	105	75.0	65.6	20.0	67.3
Beryllium	1.2/1.2	1.2/3.1	0.5	3.42	3.34	98	<0.5	<0.5	<0.5	<0.5
Vanadium	200/200	910/910	1	95.4	82.5	86	<1	<1	<1	14.2

a) Table A: Surface soil criteria for a potable groundwater condition
b) Table B: Surface soil criteria for a non-potable groundwater condition
c) Table C: Sub-surface soil criteria for a potable groundwater condition
d) Table D: Sub-surface soil criteria for a non-potable groundwater condition
Sample Disposal: 30 Days from the Reporting Date.

All guideline criteria are for coarse textured soil
HWE - Hot water extractable
Sample data and MDL units are in µg/g unless otherwise specified

Analyst(s): NL, SS, OB, JW, AI, AV, MD

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Method:

pH: Extraction/Electrometric (EPA 9045)
EC: Extraction/Electrometric (EPA 120.1)
As, Se, Sb: Digestion/HGFAAS (EPA 3050A/7062/7742)
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Client: Sh...on & P...r Ltd.
Attention: David Baigent
Project: SP3977B
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Sample Type: Soil
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PARAMETER	Soil Remediation Criteria (µg/g)		Method Detection Limit (µg/g)	CONTROL SAMPLE			SAMPLE DATA (µg/g)			
	Tables A & B Res./Ind. Comm	Tables C & D Res./Ind. Comm		Expected Concentration (µg/g)	Concentration Found (µg/g)	Recovery %	5789 AR B-17 SA-1	5790 AR B-18 SA-1	5791 AR B-19 SA-1	5792 AR B-20 SA-1
Dry Matter (%)	-	-	-	-	-	-	97.13	96.25	94.46	97.48
pH (units)	5 to 9	5 to 11	-	7.41	7.41	100	7.9	9.2	7.6	7.7
E C (µmhos/cm)	700/1400	N.A./N.A.	-	147.3	146.4	99	166	171	218	79
SAR	5/12	N.A./N.A.	-	-	-	-	2.99	0.57	1.60	1.12
Arsenic	20/40	40/N.V.	1	53.2	51.6	97	5.2	2.1	4.3	5.6
Cadmium	12/12	41/41	1	3.4	3.33	98	<1	<1	<1	<1
Chromium (VI) *	8/8	600/1100	1	0.71	0.70	99	<1	<1	<1	<1
Chromium (total)	750/750	2500/5000	1	6.4	6.15	96	22.4	13.1	22.0	21.8
Cobalt	40/80	2500/3400	1	2.8	2.76	99	<1	<1	<1	<1
Copper	225/225	2500/2500	1	69	67.9	98	19.8	15.1	28.2	23.6
Lead	200/1000	1000/N.V.	2	97.8	91.6	94	209	11.4	67.9	165
Mercury	10/10	57/57	0.05	0.19	0.17	89	0.11	<0.05	0.29	0.18
Molybdenum	40/40	550/550	2	5.35	5.26	98	<2	<2	<2	<2
Nickel	150/150	710/710	2	23.1	22.4	97	6.0	2.1	5.2	3.9
Boron(HWE) *	1.5/2.0	2.0/N.V.	0.02	1	1.04	104	0.26	0.11	0.26	0.13
Cyanide Free *	100/100	100/390	0.1	0.20	0.190	95	<0.1	<0.1	0.96	<0.1
Selenium	10/10	2500/2500	1	72.3	71.7	99	<1	<1	<1	<1
Silver	20/40	240/240	0.5	107	89.6	84	<0.5	<0.5	<0.5	<0.5
Zinc	600/600	2500/5000	1	467	454	97	164	54	189	175
Antimony *	13/40	44/44	1	0.010	0.0099	99	2.4	<1	2.0	3.9
Barium	750/1500	2500/4100	1	10.2	10.7	105	63.0	29.3	99.4	68.6
Beryllium	1.2/1.2	1.2/3.1	0.5	3.42	3.34	98	<0.5	<0.5	<0.5	<0.5
Vanadium	200/200	910/910	1	95.4	82.5	86	<1	15.9	<1	<1

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Attention:	David Balgent
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Sample Type:	Soil
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PARAMETER	Soil Remediation Criteria (µg/g)		Method Detection	CONTROL SAMPLE			SAMPLE DATA (µg/g)			
	Tables A & B Res./Ind. Comm	Tables C & D Res./Ind. Comm	Limit (µg/g)	Expected Concentration (µg/g)	Concentration Found (µg/g)	Recovery %	Blank	5793 AR B-21 SA-1	5782 AR B-10 SA-1 Duplicate	5792 AR B-20 SA-1 Duplicate
Dry Matter (%)	-	-	-	-	-	-	-	97.85	98.06	97.48
pH (units)	5 to 9	5 to 11	-	7.41	7.41	100	-	7.7	8.0	7.7
E C (µmhos/cm)	700/1400	N.A./N.A.	-	147.3	146.4	99	-	80	81	82
SAR	5/12	N.A./N.A.	-	-	-	-	-	1.43	1.38	1.15
Arsenic	20/40	40/N.V.	1	53.2	51.6	97	<1	3.7	4.6	6.3
Cadmium	12/12	41/41	1	3.4	3.33	98	<1	<1	<1	<1
Chromium (VI) *	8/8	600/1100	1	0.71	0.70	99	<1	<1	<1	<1
Chromium (total)	750/750	2500/5000	1	6.4	6.15	96	<1	26.5	25.2	21.8
Cobalt	40/80	2500/3400	1	2.8	2.76	99	<1	<1	<1	<1
Copper	225/225	2500/2500	1	69	67.9	98	<1	15.3	32.3	25.3
Lead	200/1000	1000/N.V.	2	97.8	91.6	94	<2	76.0	132	167
Mercury	10/10	57/57	0.05	0.19	0.17	89	<0.05	0.09	0.17	0.17
Molybdenum	40/40	550/550	2	5.35	5.26	98	<2	<2	<2	<2
Nickel	150/150	710/710	2	23.1	22.4	97	<2	4.8	7.1	3.8
Boron(HWE) *	1.5/2.0	2.0/N.V.	0.02	1	1.04	104	<0.02	0.24	0.29	0.11
Cyanide Free *	100/100	100/390	0.1	0.20	0.190	95	<0.1	<0.1	<0.1	<0.1
Selenium	10/10	2500/2500	1	72.3	71.7	99	<1	<1	<1	<1
Silver	20/40	240/240	0.5	107	89.6	84	<0.5	<0.5	<0.5	<0.5
Zinc	600/600	2500/5000	1	467	454	97	<1	173	191	175
Antimony *	13/40	44/44	1	0.010	0.0099	99	<1	1.8	1.2	4.2
Barium	750/1500	2500/4100	1	10.2	10.7	105	<1	54.3	53.8	70.1
Beryllium	1.2/1.2	1.2/3.1	0.5	3.42	3.34	98	<0.5	<0.5	<0.5	<0.5
Vanadium	200/200	910/910	1	95.4	82.5	86	<1	<1	<1	<1

a) Table A: Surface soil criteria for a potable groundwater condition
b) Table B: Surface soil criteria for a non-potable groundwater condition
c) Table C: Sub-surface soil criteria for a potable groundwater condition
d) Table D: Sub-surface soil criteria for a non-potable groundwater condition
Sample Disposal: 30 Days from the Reporting Date.

All guideline criteria are for coarse textured soil
HWE - Hot water extractable
Sample data and MDL units are in µg/g unless otherwise specified

Analyst(s): NL, SS, OB, JW, AI, AV, MD

**** Control Sample Unit is µg/mL for the specified parameter instead of µg/g unless otherwise specified.***

Method:

pH: Extraction/Electrometric (EPA 9045)
EC: Extraction/Electrometric (EPA 120.1)
As, Se, Sb: Digestion/HGFAAS (EPA 3050A/7062/7742)
Hg: Digestion/CV-AAS (EPA 7471A/245.5)
SAR: Extraction/ICP-AES (EPA 200.7)
Metals: Digestion/ICP-AES (EPA 3050A/200.7)
Cyanide Free: Extraction/Auto-Color (EPA 335.4)
B (HWE): Extraction/ICP-AES
Cr(VI): Alkaline Digestion/Colorimetry (EPA 3060A/7196)

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Laboratory Inc.

Professional
Analytical
Services

6820 Kitimat Rd., Unit 4
Mississauga, Ontario
L5N 5M3

Tel: 905-821-1112

Fax: 905-821-2095

Client: Shaheen & Peaker Limited
Attention: David Baigent
Client Reference: Proj: SP3977B
Date Received: July 22, 2002
Date Analyzed: July 23, 2002
Date Reported: July 26, 2002
Sample Type: Soil

CERTIFICATE OF ANALYSIS

Total Petroleum Hydrocarbons

ENTECH # Sample #	Concentration (ug/g)			Surrogate Recovery (%)	
	gasoline range (C5-C10)	diesel range (>C10-C24)	heavy oil range (>C24-C50)	SS1	SS2
MDL	10	10	80	-	-
Lab Blank	<	<	<	70	114
5795 AR A-2 SA-1	<	<	<	82	125
5799 AR A-6 SA-1	30	2,900	990	83	130
5804 AR A-11 SA-1	<	<	<	80	126
CRM spiked (ug/g)	1,103	1,428	1,749		
CRM recovered (ug/g)	1335(121%)	1501(105%)	1901(109%)		

Comments:
MDL = Method Detection Limit; < = Not detected (less than MDL); ug/g = ppm.
Method: Entech # OSA-4, OSA-5, OSA-7- Solvent Extraction GC/FID & HT-GC/FID
CRM (Certified Reference Material) & Surrogate Spike recovery control limits: 70%-130%.
SS1 for gas/diesel; SS2 for heavy oils

Dr. Asit Raksit, Ph.D., C. Chem.
Manager, Organics

Analyst: Agnes Tworek, B. Sc.

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Date Analyzed: July 23, 2002
Date Reported: July 26, 2002
Sample Type: Soil

CERTIFICATE OF ANALYSIS

Total Petroleum Hydrocarbons

ENTECH # Sample #	Concentration (ug/g)			Surrogate Recovery (%)	
	gasoline range (C5-C10)	diesel range (>C10-C24)	heavy oil range (>C24-C50)	SS1	SS2
MDL	10	10	80	-	-
Lab Blank	<	<	<	70	114
5810 AR A-17 SA-1	<	<	170	90	125
CRM spiked (ug/g)	1,103	1,428	1,749		
CRM recovered (ug/g)	1335(121%)	1501(105%)	1901(109%)		

Comments:
MDL = Method Detection Limit; < = Not detected (less than MDL); ug/g = ppm.
Method: Entech# OSA-4, OSA-5, OSA-7, Solvent Extraction GC/FID & HT-GC/FID
CRM (Certified Reference Material) & Surrogate Spike recovery control limits: 70%-130%.
SS1 for gas/diesel; SS2 for heavy oils

Dr. Asit Raksit, Ph.D., C. Chem.
Manager, Organics

Analyst: Agnes Tworek, B. Sc.

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Client: Shaheen & Peaker Limited
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Client Reference: Proj: SP3977B
Date Received: July 22, 2002
Date Analyzed: July 23, 2002
Date Reported: July 26, 2002
Sample Type: Soil

CERTIFICATE OF ANALYSIS

Total Petroleum Hydrocarbons

ENTECH # / Sample #	Concentration (ug/g)			Surrogate Recovery (%)	
	gasoline range (C5-C10)	diesel range (>C10-C24)	heavy oil range (>C24-C50)	SS1	SS2
MDL	10	10	80	-	-
Lab Blank	<	<	<	70	114
5776 AR B-4 SA-1	<	90	510	77	126
5779 AR B-7 SA-1	<	<	<	93	109
5784 AR B-12 SA-1	<	60	500	78	125
CRM spiked (ug/g)	1,103	1,428	1,749		
CRM recovered (ug/g)	1335(121%)	1501(105%)	1901(109%)		

Comments:
MDL = Method Detection Limit; < = Not detected (less than MDL); ug/g = ppm.
Method: Entech # OSA-4, OSA-5, OSA-7- Solvent Extraction GC/FID & HT-GC/FID
CRM (Certified Reference Material) & Surrogate Spike recovery control limits: 70%-130%.
SS1 for gas/diesel; SS2 for heavy oils

Dr. Asit Raksit, Ph.D., C. Chem.
Manager, Organics

Analyst: Agnes Tworek, B. Sc.

It: S ...en ... aker ... ted
Attention: S. Tchernikov
Client Reference: Proj/P.O: SP3977B
Date Received: Jul. 22, 2002.
Date Analyzed: Jul. 23, 2002.
Date Reported: Jul. 26, 2002.
Sample Type: Soil

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Professional Analytical Services
6820 Kitimat Rd., Unit 4
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L5N 5M3
Tel: 905-821-1112
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CERTIFICATE OF ANALYSIS

BTEX Units are ppm (ug/g)	MDL	Lab Blank	5810 AR A-17 SA-1	Lab Spike Amount (ug/g)	Lab Spike Recovery (%)
Benzene	0.002	<	<	0.73	70
Toluene	0.002	<	<	0.73	105
Ethylbenzene	0.002	<	<	0.73	111
m&p-Xylenes	0.002	<	<	1.5	107
o-Xylene	0.002	<	<	0.73	103
Surrogate Recoveries					
Toluene-d8	%	100	98	100	123
1,3-Dichlorobutane	%	85	94	100	130
4-Bromofluorobenzene	%	80	70	100	130

MDL = Method Detection Limit; < = Not Detected (less than MDL).
Ref. Method: Entech#OSA-1.
Spike and surrogate recovery control limits = 70% - 130%.

Dr. Asit Raksit, Ph. D., C. Chem.
Manager, Organics

Analysts: Saima Johri, B .Sc.
Shiyamini Jeevaretnam, Chem. Tech.

Client: Shaheen & Peaker Limited
Attention: S. Tchernikov
Client Reference: Proj/P.O: SP3977B
Date Received: Jul. 22, 2002.
Date Analyzed: Jul. 23, 2002.
Date Reported: Jul. 26, 2002.
Sample Type: Soil

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CERTIFICATE OF ANALYSIS

BTEX Units are ppm (ug/g)	MDL	Lab Blank	5776 AR B-4 SA-1	5779 AR B-7 SA-1	5784 AR B-12 SA-1	Lab Spike Amount (ug/g)	Lab Spike Recovery (%)
Benzene	0.002	<	<	<	<	0.73	70
Toluene	0.002	<	<	<	<	0.73	105
Ethylbenzene	0.002	<	<	<	<	0.73	111
m&p-Xylenes	0.002	<	<	<	<	1.5	107
o-Xylene	0.002	<	<	<	<	0.73	103
Surrogate Recoveries							
Toluene-d8	%	100	96	97	100	100	123
1,3-Dichlorobutane	%	85	90	86	88	100	130
4-Bromofluorobenzene	%	80	70	72	71	100	130

MDL = Method Detection Limit; < = Not Detected (less than MDL).
Ref. Method: Entech#OSA-1.
Spike and surrogate recovery control limits = 70% - 130%.

Dr. Asit Raksit, Ph. D., C. Chem.
Manager, Organics

Analysts: Saima Johri, B .Sc.
Shiyamini Jeevaretnam, Chem. Tech.

Client: Shaheen & Peaker Limited
Attention: S. Tchernikov
Client Reference: Proj/P.O: SP3977B
Date Received: Jul. 22, 2002.
Date Analyzed: Jul. 23, 2002.
Date Reported: Jul. 26, 2002.
Sample Type: Soil

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CERTIFICATE OF ANALYSIS

BTEX Units are ppm (ug/g)	MDL	Lab Blank	5786 AR B-14 SA-1	5791 AR B-19 SA-1	Lab Spike Amount (ug/g)	Lab Spike Recovery (%)
Benzene	0.002	<	<	<	0.73	70
Toluene	0.002	<	<	<	0.73	105
Ethylbenzene	0.002	<	<	<	0.73	111
m&p-Xylenes	0.002	<	<	<	1.5	107
o-Xylene	0.002	<	<	<	0.73	103

Surrogate Recoveries

Toluene-d8	%	100	99	94	100	123
1,3-Dichlorobutane	%	85	92	92	100	130
4-Bromofluorobenzene	%	80	72	70	100	130

MDL = Method Detection Limit; < = Not Detected (less than MDL).
Ref. Method: Entech#OSA-1.
Spike and surrogate recovery control limits = 70% - 130%.

Dr. Asit Raksit, Ph. D., C. Chem.
Manager, Organics

Analysts: Saima Johri, B .Sc.
Shiyamini Jeevaretnam, Chem. Tech.

APPENDIX C

EXCERPTS FROM WASTE SOIL CHARACTERIZATION – AREA "A" REPORT

WASTE CHARACTERIZATION ASSESSMENT (AREA A)
PRE-CONSTRUCTION SOIL TESTING
RISK MANAGEMENT PLAN IMPLEMENTATION
LAKESHORE BOULEVARD EAST AT LESLIE STREET
TORONTO, ONTARIO

Prepared For:

CITY OF TORONTO
C/O URS COLE SHERMAN

Prepared by:

SHAHEEN & PEAKER LIMITED

Project: SP3977B
August 12, 2002

250 Galaxy Boulevard
Etobicoke, Ontario
M9W 5R8
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Table 1: Summary of Regulation 347/558 Analysis of Soil (Page 2 of 4)

Parameter	Reg. 347 Schedule 4 Limits	BT1 SA1 (0-1.0 m)	BT2 SA1 (0-1.0 m)	BT3 SA1 (0-1.0 m)	BT4 SA1 (0-1.0 m)
Arsenic	2.5	<0.001	0.002	0.002	<0.001
Barium	100	0.16	0.18	0.24	0.08
Boron	500	<0.01	<0.01	<0.01	<0.01
Cadmium	0.5	<0.005	<0.005	0.011	0.081
Chromium	5	<0.01	<0.01	<0.01	<0.01
Cyanide free	20	<0.005	<0.005	<0.005	<0.005
Fluoride	150	0.36	0.27	0.25	0.21
Lead	5	0.05	0.24	0.78	0.10
Mercury	0.1	<0.0001	<0.0001	<0.0001	<0.0001
Nitrate+Nitrite-N	1000	0.17	0.15	0.16	0.19
Selenium	1	<0.002	<0.002	<0.002	<0.002
Silver	5	<0.005	<0.005	<0.005	<0.005
Benzene	0.5	-	<0.004	-	-
Benzo(a)pyrene	0.001	-	<0.001	-	-
Carbon tetrachloride	0.5	-	<0.005	-	-
Chlorobenzene	8	-	<0.008	-	-
Chloroform	10	-	<0.004	-	-
1,2-dichlorobenzene	20	-	<0.008	-	-
1,4-dichlorobenzene	0.5	-	<0.005	-	-
1,2-dichloroethane	0.5	-	<0.008	-	-
1,1-dichloroethylene	1.4	-	<0.01	-	-
Methyl ethyl ketone	200	-	<0.1	-	-
Methylene chloride	5	-	<0.004	-	-
PCBs	0.3	-	<0.001	-	-
Tetrachloroethylene	3	-	<0.008	-	-
Trichloroethylene	5	-	<0.008	-	-
Vinyl chloride	0.2	-	<0.002	-	-

Notes:

1. Regulation 347 Schedule 4 (as amended by Reg. 558/00) leachate quality analyses for inorganics, PCBs, Benzo(a)pyrene and VOCs
2. Units are mg/L (ppm) in soil leachate
3. Approximate sample depth in metres shown in parentheses following sample identification
4. - = parameter not analyzed
5. If all values are less than the Schedule 4 Limits, the material can be classified as non-hazardous waste
6. Bold and underlined value (e.g. **21.2**) indicates equal to or greater than the Schedule 4 Limits, which requires classification as **hazardous waste**

Table 1: Summary of Regulation 347/558 Analysis of Soil (Page 3 of 4)

Notes:

Parameter	**Reg. 347 Schedule 4 Limits**	**NC1** (0-0.3 m)	**NC2** (0-0.3 m)	**NC3** (0-0.3 m)	**NC4** (0-0.3 m)
Arsenic	2.5	<0.001	<0.001	0.002	<0.001
Barium	100	0.07	0.23	0.17	0.24
Boron	500	<0.01	<0.01	<0.01	<0.01
Cadmium	0.5	<0.005	0.006	<0.005	0.005
Chromium	5	<0.01	<0.01	<0.01	<0.01
Cyanide free	20	<0.005	<0.005	<0.005	<0.005
Fluoride	150	0.12	0.22	0.25	0.44
Lead	5	0.04	0.22	0.13	0.11
Mercury	0.1	<0.0001	<0.0001	<0.0001	<0.0001
Nitrate+Nitrite-N	1000	0.05	0.04	0.03	0.07
Selenium	1	<0.002	<0.002	<0.002	<0.002
Silver	5	<0.005	<0.005	<0.005	<0.005
Benzene	0.5	-	-	-	-
Benzo(a)pyrene	0.001	-	-	-	-
Carbon tetrachloride	0.5	-	-	-	-
Chlorobenzene	8	-	-	-	-
Chloroform	10	-	-	-	-
1,2-dichlorobenzene	20	-	-	-	-
1,4-dichlorobenzene	0.5	-	-	-	-
1,2-dichloroethane	0.5	-	-	-	-
1,1-dichloroethylene	1.4	-	-	-	-
Methyl ethyl ketone	200	-	-	-	-
Methylene chloride	5	-	-	-	-
PCBs	0.3	-	-	-	-
Tetrachloroethylene	3	-	-	-	-
Trichloroethylene	5	-	-	-	-
Vinyl chloride	0.2	-	-	-	-

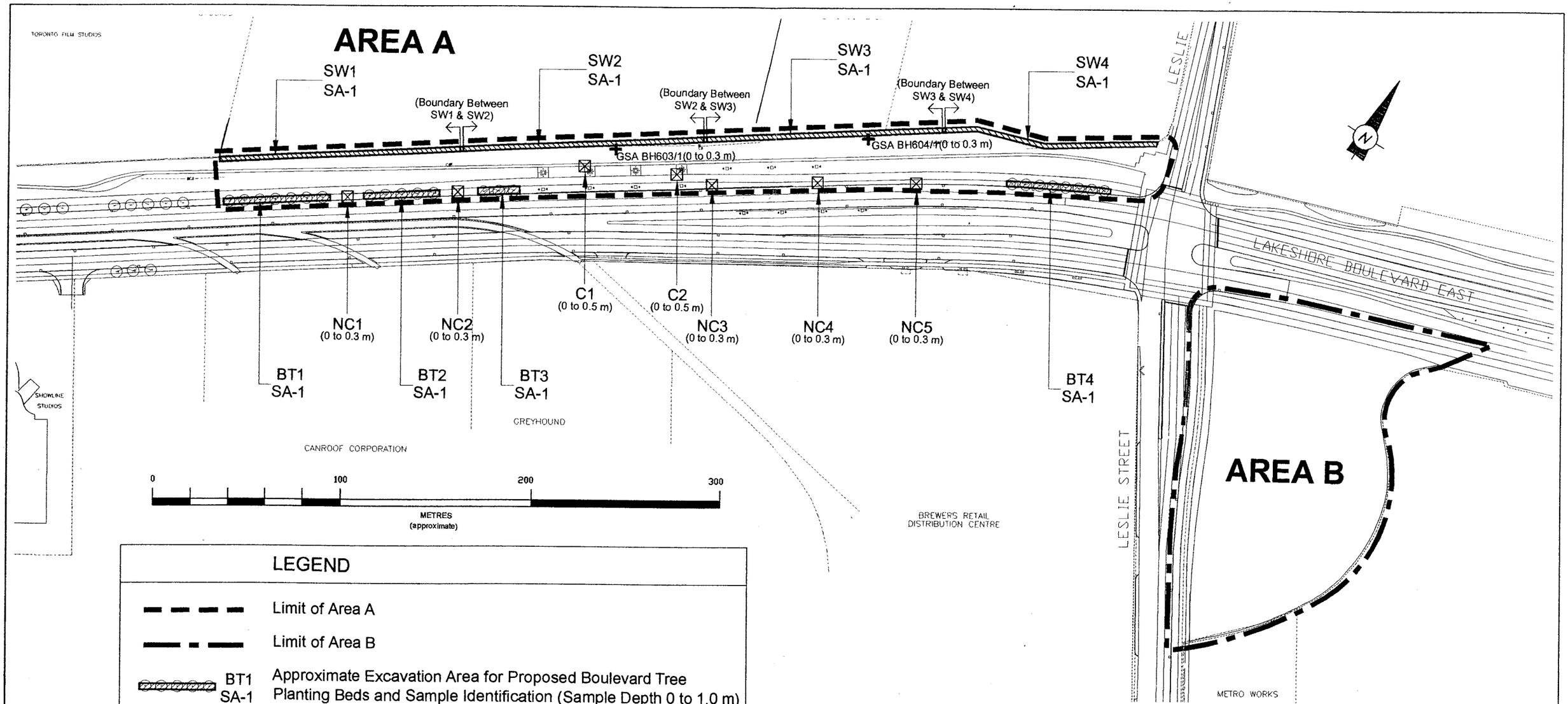
1. Regulation 347 Schedule 4 (as amended by Reg. 558/00) leachate quality analyses for inorganics, PCBs, Benzo(a)pyrene and VOCs
2. Units are mg/L (ppm) in soil leachate
3. Approximate sample depth in metres shown in parentheses following sample identification
4. - = parameter not analyzed
5. If all values are less than the Schedule 4 Limits, the material can be classified as non-hazardous waste
6. Bold and underlined value (e.g. **21.2**) indicates equal to or greater than the Schedule 4 Limits, which requires classification as **hazardous waste**

Table 1: Summary of Regulation 347/558 Analysis of Soil (Page 4 of 4)

Parameter	Reg. 347 Schedule 4 Limits	NC5 (0-0.3 m)	C1 (0-0.5 m)	C2 (0-0.5 m)	GSA BH603/1 (0-0.3m)	GSA BH604/1 (0-0.3m)
Arsenic	2.5	0.002	<0.001	0.005	<0.2	<0.2
Barium	100	0.26	0.39	0.13	0.5	0.7
Boron	500	<0.01	<0.01	<0.01	<0.1	0.1
Cadmium	0.5	0.011	<0.005	0.023	0.27	0.09
Chromium	5	<0.01	<0.01	<0.01	<0.1	<0.1
Cyanide free	20	<0.005	<0.005	<0.005	<0.01	<0.01
Fluoride	150	0.24	0.28	0.24	<0.1	<0.2
Lead	5	0.57	0.13	1.10	**135**	**5.0**
Mercury	0.1	<0.0001	<0.0001	<0.0001	<0.01	<0.01
Nitrate+Nitrite-N	1000	0.05	0.09	0.40	<0.2	1.4
Selenium	1	<0.002	<0.002	<0.002	<0.1	<0.1
Silver	5	<0.005	<0.005	<0.005	<0.1	<0.1
Benzene	0.5	-	-	-	-	-
Benzo(a)pyrene	0.001	-	-	-	-	-
Carbon tetrachloride	0.5	-	-	-	-	-
Chlorobenzene	8	-	-	-	-	-
Chloroform	10	-	-	-	-	-
1,2-dichlorobenzene	20	-	-	-	-	-
1,4-dichlorobenzene	0.5	-	-	-	-	-
1,2-dichloroethane	0.5	-	-	-	-	-
1,1-dichloroethylene	1.4	-	-	-	-	-
Methyl ethyl ketone	200	-	-	-	-	-
Methylene chloride	5	-	-	-	-	-
PCBs	0.3	-	-	-	-	-
Tetrachloroethylene	3	-	-	-	-	-
Trichloroethylene	5	-	-	-	-	-
Vinyl chloride	0.2	-	-	-	-	-

Notes:

1. Regulation 347 Schedule 4 (as amended by Reg. 558/00) leachate quality analyses for inorganics, PCBs, Benzo(a)pyrene and VOCs
2. Units are mg/L (ppm) in soil leachate
3. Approximate sample depth in metres shown in parentheses following sample identification
4. - = parameter not analyzed
5. If all values are less than the Schedule 4 Limits, the material can be classified as non-hazardous waste
6. Bold and underlined value (e.g. **21.2**) indicates equal to or greater than the Schedule 4 Limits, which requires classification as **hazardous waste**



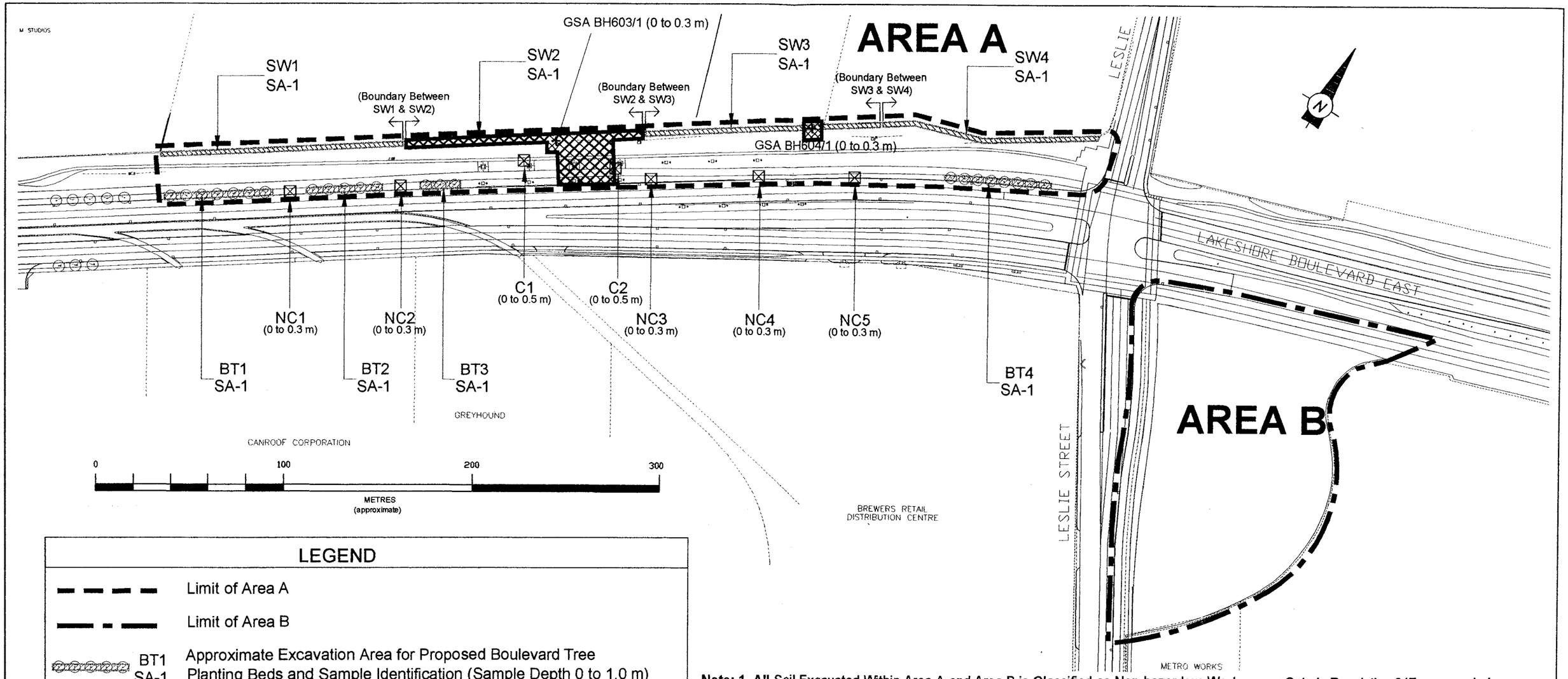
LEGEND

▬ ▬ ▬ ▬	Limit of Area A
▬ ▪ ▬	Limit of Area B
BT1 SA-1	Approximate Excavation Area for Proposed Boulevard Tree Planting Beds and Sample Identification (Sample Depth 0 to 1.0 m)
SW1 SA-1	Approximate Excavation Area for Proposed Swale and Sample Identification (Sample Depth 0 to 0.5 m)
☒ NC1 (0 to 0.3 m)	Sample Location and Sample Identification (Sample Depth)
✚ GSA BH604/1 (0 to 0.3 m)	Sample Location and Sample Identification (Sample Depth)

Note: Sample depth shown for GSA BH603/1 and GSA BH604/1 are refrenced from site grades September 2001, all remaining sample depths are referenced to site grades from July 2002

WASTE CHARACTERIZATION SAMPLE LOCATIONS

Scale: ~1:2000	IMPORTED FILL QUALITY TESTING PRE-CONSTRUCTION SOIL TESTING RISK MANAGEMENT PLAN IMPLEMENTATION LAKESHORE BOULEVARD EAST AT LESLIE STREET TORONTO, ONTARIO	Drawn By: RBW
Date: AUG. 12, 2002		Approved By: DJB
Project No.: SP3977B	SHAHEEN AND PEAKER LIMITED	Drawing No.: 2-1



LEGEND

Limit of Area A	
Limit of Area B	
BT1 SA-1	Approximate Excavation Area for Proposed Boulevard Tree Planting Beds and Sample Identification (Sample Depth 0 to 1.0 m)
SW1 SA-1	Approximate Excavation Area for Proposed Swale and Sample Identification (Sample Depth 0 to 0.5 m)
☒ NC1 (0 to 0.3 m)	Sample Location and Sample Identification (Sample Depth)
+ GSA BH603/1 (0 to 0.3 m)	Sample Location and Sample Identification (Sample Depth)
	Approximate Extent of Hazardous Solid Waste

Note: 1- All Soil Excavated Within Area A and Area B is Classified as Non-hazardous Waste as per Ontario Regulation 347 as amended by Regulation 558 / 00 Except Soil Excavated from Areas of Hazardous Solid Waste as Indicated on this Drawing.

2- Sample depth shown for GSA BH603/1 and GSA BH604/1 are refrenced from site grades September 2001, all remaining sample depths are referenced to site grades from July 2002

APPROXIMATE EXTENT OF HAZARDOUS SOLID WASTE

Scale: ~1: 2000	WASTE CHARACTERIZATION ASSESSMENT PRE-CONSTRUCTION SOIL TESTING RISK MANAGEMENT PLAN IMPLEMENTATION LAKESHORE BOULEVARD EAST AT LESLIE STREET TORONTO, ONTARIO	Drawn By: RBW
Date: AUG. 12, 2002		Approved By: DJB
Project No.: SP 3977B	SHAHEEN AND PEAKER LIMITED	Drawing No.: 2–2

Client:	**Shaheen & Peaker Ltd.**
Attention:	**David Balgent/Sergiv Tchernikov**
Project:	**SP3977B**
P.O.:	
Sample Type:	**Soil**
Date Received:	**Jul 23/02**
Date Analysed:	**Jul 24 to Jul 26/02**
Date Reported:	**Jul 29/02**

Sam Sanyal, M.Sc. C. Chem.
Manager, Inorganic Analysis.

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A Division of Agri-Service Lab Inc.
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Mississauga, ONT L5N 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

CERTIFICATE OF ANALYSIS FOR ONTARIO REGULATION 558/00
TCLP - LEACHATE QUALITY CRITERIA (INORGANICS)

Data Pertains To Specific Sample(s) Mentioned

CONTAMINANT	SCHEDULE 4 Concentration (mg/L)	Method Detection Limit (mg/L)	CONTROL SAMPLE			SAMPLE DATA (mg/L)			
			Expected Conc. (mg/L)	Found Conc. (mg/L)	Recovery %	Blank	5882 SW1 SA1		
Arsenic	2.5	0.001	0.258	0.238	92	<0.001	0.003		
Barium	100	0.01	1.30	1.21	93	<0.01	0.41		
Boron	500	0.01	1.20	1.18	98	<0.01	<0.01		
Cadmium	0.5	0.005	0.140	0.140	100	<0.005	<0.005		
Chromium	5.0	0.01	0.260	0.252	97	<0.01	<0.01		
Cyanide Free	20.0	0.005	0.20	0.194	97	<0.005	<0.005		
Fluoride	150	0.05	3.8	3.86	102	<0.05	0.19		
Lead	5.0	0.02	0.630	0.641	102	<0.02	0.06		
Mercury	0.1	0.0001	0.00524	0.00568	108	<0.0001	<0.0001		
(Nitrate+Nitrite)-N	1000	0.01	5.39	5.84	108	<0.01	0.10		
Selenium	1.0	0.002	0.019	0.0178	94	<0.002	<0.002		
Silver	5.0	0.005	0.210	0.202	96	<0.005	<0.005		
Initial pH (units)	-	-	-	-	-	5.0	9.0		
Fluid No.	-	-	-	-	-	1	1		
Fluid pH (units)	-	-	-	-	-	5.0	5.0		
Final pH (units)	-	-	-	-	-	4.9	6.3		

Sample Disposal: 30 Days from the Reporting Date.
All Results except pH are expressed in mg/L (parts per million).
Note: "+" means the result exceeds the Schedule 4 concentration.

Analyst(s): MD, SS, JW, AI, AV, NL

Method:

As, Se: HG-FAAS (EPA 3005/7062/7742)
Hg: CV-AAS (EPA 245.1)
Metals: ICP-AES (EPA 3005/200.7)
pH: Electrometric/pH-Meter (EPA 150.1)
Cyanide Free: Auto-Color (EPA 365.1)
Fluoride: ISE (EPA 340.2)
(NO3 + NO2)-N: Auto-Color (EPA 353.2)

Client:	**Shaheen & Peaker Ltd.**
Attention:	**David Balgent/Sergiv Tchernikov**
Project:	**SP3977B**
P.O.:	
Sample Type:	**Soil**
Date Received:	**Jul 23/02**
Date Analysed:	**Jul 24 to Jul 26/02**
Date Reported:	**Jul 29/02**

Sam Sanyal, M.Sc. C. Chem.
Manager, Inorganic Analysis.

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CERTIFICATE OF ANALYSIS FOR ONTARIO REGULATION 558/00
TCLP - LEACHATE QUALITY CRITERIA (INORGANICS)

Data Pertains To Specific Sample(s) Mentioned

CONTAMINANT	SCHEDULE 4 Concentration (mg/L)	Method Detection Limit (mg/L)	CONTROL SAMPLE			SAMPLE DATA (mg/L)			
			Expected Conc. (mg/L)	Found Conc. (mg/L)	Recovery %	Blank	5883 SW2 SA1	5884 SW3 SA1	5885 SW4 SA1
Arsenic	2.5	0.001	0.258	0.238	92	<0.001	0.013	0.002	0.002
Barium	100	0.01	1.30	1.21	93	<0.01	0.61	0.80	0.52
Boron	500	0.01	1.20	1.18	98	<0.01	<0.01	<0.01	<0.01
Cadmium	0.5	0.005	0.140	0.140	100	<0.005	0.062	0.025	0.009
Chromium	5.0	0.01	0.260	0.252	97	<0.01	<0.01	<0.01	<0.01
Cyanide Free	20.0	0.005	0.20	0.194	97	<0.005	<0.005	<0.005	<0.005
Fluoride	150	0.05	3.8	3.86	102	<0.05	0.22	0.32	0.24
Lead	5.0	0.02	0.630	0.641	102	<0.02	21.2+	1.58	1.24
Mercury	0.1	0.0001	0.00524	0.00568	108	<0.0001	<0.0001	<0.0001	<0.0001
(Nitrate+Nitrite)-N	1000	0.01	5.39	5.84	108	<0.01	0.07	0.05	0.12
Selenium	1.0	0.002	0.019	0.0178	94	<0.002	<0.002	<0.002	<0.002
Silver	5.0	0.005	0.210	0.202	96	<0.005	<0.005	<0.005	<0.005
Initial pH (units)	-	-	-	-	-	2.9	8.9	9.3	9.5
Fluid No.	-	-	-	-	-	2	2	2	2
Fluid pH (units)	-	-	-	-	-	2.9	2.9	2.9	2.9
Final pH (units)	-	-	-	-	-	2.9	5.5	5.8	5.8

Sample Disposal: 30 Days from the Reporting Date.
All Results except pH are expressed in mg/L (parts per million).
Note: "+" means the result exceeds the Schedule 4 concentration.

Analyst(s): MD, SS, JW, AI, AV, NL

Method:

As, Se: HG-FAAS (EPA 3005/7062/7742)
Hg: CV-AAS (EPA 245.1)
Metals: ICP-AES (EPA 3005/200.7)
pH: Electrometric/pH-Meter (EPA 150.1)
Cyanide Free: Auto-Color (EPA 365.1)
Fluoride: ISE (EPA 340.2)
(NO3 + NO2)-N: Auto-Color (EPA 353.2)

Client:	**Shaheen & Peaker Ltd.**
Attention:	**David Baigent/Sergiy Tchernikov**
Project:	**SP3977B**
P.O.:	
Sample Type:	**Soil**
Date Received:	**Jul 23/02**
Date Analysed:	**Jul 24 to Jul 26/02**
Date Reported:	**Jul 29/02**

Sam Sanyal, M.Sc. C. Chem.
Manager, Inorganic Analysis.

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CERTIFICATE OF ANALYSIS FOR ONTARIO REGULATION 558/00
TCLP - LEACHATE QUALITY CRITERIA (INORGANICS)

Data Pertains To Specific Sample(s) Mentioned

CONTAMINANT	SCHEDULE 4 Concentration (mg/L)	Method Detection Limit (mg/L)	CONTROL SAMPLE			SAMPLE DATA (mg/L)			
			Expected Conc. (mg/L)	Found Conc. (mg/L)	Recovery %	5886 BT1 SA1	5887 BT2 SA1	5888 BT3 SA1	5889 BT4 SA1
Arsenic	2.5	0.001	0.258	0.238	92	<0.001	0.002	0.002	<0.001
Barium	100	0.01	1.30	1.21	93	0.16	0.18	0.24	0.08
Boron	500	0.01	1.20	1.18	98	<0.01	<0.01	<0.01	<0.01
Cadmium	0.5	0.005	0.140	0.140	100	<0.005	<0.005	0.011	0.081
Chromium	5.0	0.01	0.260	0.252	97	<0.01	<0.01	<0.01	<0.01
Cyanide Free	20.0	0.005	0.20	0.194	97	<0.005	<0.005	<0.005	<0.005
Fluoride	150	0.05	3.8	3.86	102	0.36	0.27	0.25	0.21
Lead	5.0	0.02	0.630	0.641	102	0.05	0.24	0.78	0.10
Mercury	0.1	0.0001	0.00524	0.00568	108	<0.0001	<0.0001	<0.0001	<0.0001
(Nitrate+Nitrite)-N	1000	0.01	5.39	5.84	108	0.17	0.15	0.16	0.19
Selenium	1.0	0.002	0.019	0.0178	94	<0.002	<0.002	<0.002	<0.002
Silver	5.0	0.005	0.210	0.202	96	<0.005	<0.005	<0.005	<0.005
Initial pH (units)	-	-	-	-	-	9.6	9.6	9.7	9.3
Fluid No.	-	-	-	-	-	2	2	2	2
Fluid pH (units)	-	-	-	-	-	2.9	2.9	2.9	2.9
Final pH (units)	-	-	-	-	-	5.9	5.9	5.8	5.9

Sample Disposal: 30 Days from the Reporting Date.
All Results except pH are expressed in mg/L (parts per million).
Note: "+" means the result exceeds the Schedule 4 concentration.

Analyst(s): MD, SS, JW, AI, AV, NL

Method:

As, Se: HG-FAAS (EPA 3005/7062/7742)
Hg: CV-AAS (EPA 245.1)
Metals: ICP-AES (EPA 3005/200.7)
pH: Electrometric/pH-Meter (EPA 150.1)
Cyanide Free: Auto-Color (EPA 365.1)
Fluoride: ISE (EPA 340.2)
(NO3 + NO2)-N: Auto-Color (EPA 353.2)

Client:	**Shaheen & Peaker Ltd.**
Attention:	**David Baigent/Sergiv Tchernikov**
Project:	**SP3977B**
P.O.:	
Sample Type:	**Soil**
Date Received:	**Jul 23/02**
Date Analysed:	**Jul 24 to Jul 26/02**
Date Reported:	**Jul 29/02**

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CERTIFICATE OF ANALYSIS FOR ONTARIO REGULATION 558/00
TCLP - LEACHATE QUALITY CRITERIA (INORGANICS)

Data Pertains To Specific Sample(s) Mentioned

CONTAMINANT	SCHEDULE 4 Concentration (mg/L)	Method Detection Limit (mg/L)	CONTROL SAMPLE Expected Conc. (mg/L)	Found Conc. (mg/L)	Recovery %	SAMPLE DATA (mg/L) 5886 BT1 SA1 Duplicate			
Arsenic	2.5	0.001	0.258	0.238	92	<0.001			
Barium	100	0.01	1.30	1.21	93	0.16			
Boron	500	0.01	1.20	1.18	98	<0.01			
Cadmium	0.5	0.005	0.140	0.140	100	<0.005			
Chromium	5.0	0.01	0.260	0.252	97	<0.01			
Cyanide Free	20.0	0.005	0.20	0.194	97	<0.005			
Fluoride	150	0.05	3.8	3.86	102	0.37			
Lead	5.0	0.02	0.630	0.641	102	0.06			
Mercury	0.1	0.0001	0.00524	0.00568	108	<0.0001			
(Nitrate+Nitrite)-N	1000	0.01	5.39	5.84	108	0.18			
Selenium	1.0	0.002	0.019	0.0178	94	<0.002			
Silver	5.0	0.005	0.210	0.202	96	<0.005			
Initial pH (units)	-	-	-	-	-	9.3			
Fluid No.	-	-	-	-	-	2			
Fluid pH (units)	-	-	-	-	-	2.9			
Final pH (units)	-	-	-	-	-	5.9			

Sample Disposal: 30 Days from the Reporting Date.
All Results except pH are expressed in mg/L (parts per million).
Note: "+" means the result exceeds the Schedule 4 concentration.

Analyst(s): MD, SS, JW, AI, AV, NL

Method:

As, Se: HG-FAAS (EPA 3005/7062/7742)
Hg: CV-AAS (EPA 245.1)
Metals: ICP-AES (EPA 3005/200.7)
pH: Electrometric/pH-Meter (EPA 150.1)
Cyanide Free: Auto-Color (EPA 365.1)
Fluoride: ISE (EPA 340.2)
(NO3 + NO2)-N: Auto-Color (EPA 353.2)

Client:	**Shaheen & Peaker Ltd.**
Attention:	**David Baigent**
Project:	**SP3977B**
P.O.:	
Sample Type:	**Soil**
Date Received:	**Jul 26/02**
Date Analysed:	**Jul 26, 29 to Jul 31/02**
Date Reported:	**Jul 31/02**

Sam Sanyal, M.Sc. C. Chem.
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(A. Vilanova, BSc)

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CERTIFICATE OF ANALYSIS FOR ONTARIO REGULATION 558/00
TCLP - LEACHATE QUALITY CRITERIA (INORGANICS)

Data Pertains To Specific Sample(s) Reported

CONTAMINANT	SCHEDULE 4 Concentration (mg/L)	Method Detection Limit (mg/L)	CONTROL SAMPLE			SAMPLE DATA (mg/L)			
			Expected Conc. (mg/L)	Found Conc. (mg/L)	Recovery %	Blank	6124 NC1	6126 NC3	6130 C2
Arsenic	2.5	0.001	0.258	0.233	90	<0.001	<0.001	0.002	0.005
Barium	100	0.01	1.30	1.27	98	<0.01	0.07	0.17	0.13
Boron	500	0.01	1.20	1.21	101	<0.01	<0.01	<0.01	<0.01
Cadmium	0.5	0.005	0.140	0.139	99	<0.005	<0.005	<0.005	0.023
Chromium	5.0	0.01	0.260	0.257	99	<0.01	<0.01	<0.01	<0.01
Cyanide Free	20.0	0.005	0.10	0.098	98	<0.005	<0.005	<0.005	<0.005
Fluoride	150	0.05	3.8	3.86	102	<0.05	0.12	0.25	0.24
Lead	5.0	0.02	0.080	0.083	104	<0.02	0.04	0.13	1.10
Mercury	0.1	0.0001	0.00524	0.00576	110	<0.0001	<0.0001	<0.0001	<0.0001
(Nitrate+Nitrite)-N	1000	0.01	5.39	5.67	105	<0.01	0.05	0.03	0.40
Selenium	1.0	0.002	0.019	0.017	89	<0.002	<0.002	<0.002	<0.002
Silver	5.0	0.005	0.210	0.200	95	<0.005	<0.005	<0.005	<0.005
Initial pH (units)	-	-	-	-	-	4.9	9.2	9.2	9.2
Fluid No.	-	-	-	-	-	1	1	1	1
Fluid pH (units)	-	-	-	-	-	4.9	4.9	4.9	4.9
Final pH (units)	-	-	-	-	-	5.1	6.4	6.5	6.4

Sample Disposal: 30 Days from the Reporting Date.
All Results except pH are expressed in mg/L (parts per million).
Note: "+" means the result exceeds the Schedule 4 concentration.

Analyst(s): MD, SS, JW, AI, AV, NL

Method:

As, Se: HG-FAAS (EPA 3005/7062/7742)
Hg: CV-AAS (EPA 245.1)
Metals: ICP-AES (EPA 3005/200.7)
pH: Electrometric/pH-Meter (EPA 150.1)
Cyanide Free: Auto-Color (EPA 365.1)
Fluoride: ISE (EPA 340.2)
(NO3 + NO2)-N: Auto-Color (EPA 353.2)

Client:	**Shaheen & Peaker Ltd.**
Attention:	**David Baigent**
Project:	**SP3977B**
P.O.:	
Sample Type:	**Soil**
Date Received:	**Jul 26/02**
Date Analysed:	**Jul 26, 29 to Jul 31/02**
Date Reported:	**Jul 31/02**

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TCLP - LEACHATE QUALITY CRITERIA (INORGANICS)

Data Pertains To Specific Sample(s) Reported

CONTAMINANT	SCHEDULE 4 Concentration (mg/L)	Method Detection Limit (mg/L)	CONTROL SAMPLE			SAMPLE DATA (mg/L)			
			Expected Conc. (mg/L)	Found Conc. (mg/L)	Recovery %	Blank	6125 NC2	6127 NC4	6128 NC5
Arsenic	2.5	0.001	0.258	0.233	90	<0.001	<0.001	<0.001	0.002
Barium	100	0.01	1.30	1.27	98	<0.01	0.23	0.24	0.26
Boron	500	0.01	1.20	1.21	101	<0.01	<0.01	<0.01	<0.01
Cadmium	0.5	0.005	0.140	0.139	99	<0.005	0.006	0.005	0.011
Chromium	5.0	0.01	0.260	0.257	99	<0.01	<0.01	<0.01	<0.01
Cyanide Free	20.0	0.005	0.10	0.098	98	<0.005	<0.005	<0.005	<0.005
Fluoride	150	0.05	3.8	3.86	102	<0.05	0.22	0.44	0.24
Lead	5.0	0.02	0.080	0.083	104	<0.02	0.22	0.11	0.57
Mercury	0.1	0.0001	0.00524	0.00576	110	<0.0001	<0.0001	<0.0001	<0.0001
(Nitrate+Nitrite)-N	1000	0.01	5.39	5.67	105	<0.01	0.04	0.07	0.05
Selenium	1.0	0.002	0.019	0.017	89	<0.002	<0.002	<0.002	<0.002
Silver	5.0	0.005	0.210	0.200	95	<0.005	<0.005	<0.005	<0.005
Initial pH (units)	-	-	-	-	-	2.9	9.3	9.4	9.2
Fluid No.	-	-	-	-	-	2	2	2	2
Fluid pH (units)	-	-	-	-	-	2.9	2.9	2.9	2.9
Final pH (units)	-	-	-	-	-	3.2	5.8	5.9	5.8

Sample Disposal: 30 Days from the Reporting Date.
All Results except pH are expressed in mg/L (parts per million).
Note: "+" means the result exceeds the Schedule 4 concentration.

Analyst(s): MD, SS, JW, AI, AV, NL

Method:

As, Se: HG-FAAS (EPA 3005/7062/7742)
Hg: CV-AAS (EPA 245.1)
Metals: ICP-AES (EPA 3005/200.7)
pH: Electrometric/pH-Meter (EPA 150.1)
Cyanide Free: Auto-Color (EPA 365.1)
Fluoride: ISE (EPA 340.2)
(NO3 + NO2)-N: Auto-Color (EPA 353.2)

Client: Shaheen & Peaker Ltd.
Attention: S. Tchernikov
Client Reference: Proj: SP3977B
Date Received: Jul. 23, 2002.
Date Analyzed: Jul. 26, 2002.
Date Reported: Jul. 30, 2002.
Sample Type: Leachate.

ENTECH

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CERTIFICATE OF ANALYSIS

TCLP-Volatile Organic Compounds	ENTECH # >> Sample I.D. >>	Maximum** allowable	Lab Blank	5882 SW1 SA1	5887 BT2 SA1	Lab Spike Amount	Lab Spike Recovery
Units: mg/L (ppm) -->	**MDL**					(ug/L)	(%)
Vinyl chloride	0.002	0.2	<	<	<	10	70
1,1-Dichloroethene	0.01	1.4	<	<	<	5	70
Methylene Chloride	0.004	5	<	<	<	5	77
MEK	0.1	200	<	<	<	15	70
Chloroform	0.004	10	<	<	<	5	70
Carbon Tetrachloride	0.005	0.5	<	<	<	5	81
Benzene	0.004	0.5	<	<	<	5	70
1,2-Dichloroethane	0.008	0.5	<	<	<	5	70
Trichloroethene	0.008	5	<	<	<	5	84
Tetrachloroethene	0.008	3	<	<	<	5	97
Chlorobenzene	0.008	8	<	<	<	5	76
1,4-Dichlorobenzene	0.005	0.5	<	<	<	5	80
1,2-Dichlorobenzene	0.005	20	<	<	<	5	80
Spike Surrogate Recovery: Toluene-d8 (%)			88	86	86	100	99
1,3-Dichlorobutane (%)			97	103	107	100	82
4-Bromofluorobenzene (%)			83	87	90	100	102

Ref. Method: Entech#OWA-15

Surrogate and spike recovery control limits = 70% to 130%; < = Not Detected (less than Method Detection Limit (MDL)).

**TCLP list according to MOEE, Ontario, 2001.

Dr. Asit Raksit, Ph.D., C. Chem.
Manager, Organics

Analysts: Saima Johri, B. Sc.
Agnes Tworek, B. Sc.

- lent ...anee ...Peake... Ltd.

Attention: S. Tchernikov
Client Reference: Proj: SP3977B
Date Received: Jul. 23, 2002.
Date Analyzed: Jul. 25, 2002.
Date Reported: Jul. 30, 2002.
Sample Type: TCLP (Leachate)

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Certificate of Analysis

Benzo(a)pyrene

ENTECH #	Sample Identification	Conc. (mg/L)	Surrogate Phenanthrene-d10	Surrogate Chysene-d12	Surrogate Perylene-d12
5882	SW1 SA1	ND	80	128	114
5887	BT2 SA1	ND	84	130	118
Lab Blank		ND	78	129	120

MDL 0.001 mg/L; ND = <0.001 ppm; mg/L = ppm

Comment:

MDL = Method Detection Limit; < = Not Detected (less than the MDL).
Method: EPA 3510C/8270C - Solvent Extraction/GC/MSD
Surrogate recovery control limits = 70% - 130%
QC spike amount = 0.90 ppm; spike recovery = 1.1 ppm (122%).

Dr. Asit Raksit, Ph.D., C. Chem.
Manager, Organics

Analysts: Saima Johri, B. Sc.
Benita Cortez, B. Sc.

Client : Shaheen & Peaker Ltd.
Attention: Tchernikov
Client Reference: Proj: SP3977B
Date Received: July 23, 2002.
Date Analyzed: July 29, 2002.
Date Reported: July 30, 2002.
Sample Type: TCLP (leachate)

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Certificate of Analysis

Total PCB's

ENTECH #	Sample Identification	Conc. (ug/L)	Surrogate #1 Recovery (%)	Surrogate #2 Recovery (%)
5882	SW1 SA1	ND	100	130
5887	BT2 SA1	ND	90	130
Lab Blank		ND	89	130

MDL 1.0 ug/L; ND = <1.0 ppb; ug/L = ppb

Comments:

Ref. Method: Entech #: OWA-8, Solvent Extraction/ GC/ECD.
Total PCB quantification based on a mixture of Aroclors 1254 and 1260.
Surrogate and spike recovery control limits = 70%-130%.
Surrogates used are 2,4,5,6-Tetrachloro-m-xylene and Decachlorobiphenyl.
QC spike = 2.04ppm, QC recovery = 2.45ppm (120%)

Dr. Asit Raksit, Ph.D., C. Chem.
Manager, Organics

Analysts: Lynn Uyen Luyen, B. Sc.
Benita Cortez, B. Sc.

APPENDIX D

EXCERPTS FROM ASSESSMENT OF SOIL IN AREA "B" BICYCLE PATH REPORT

ENVIRONMENTAL SOIL INVESTIGATION
PROPOSED BICYCLE PATHS (AREA B)
PRE-CONSTRUCTION SOIL TESTING
RISK MANAGEMENT PLAN IMPLEMENTATION
LAKESHORE BOULEVARD EAST AT LESLIE STREET
TORONTO, ONTARIO

Prepared For:

CITY OF TORONTO
C/O URS COLE SHERMAN

Prepared by:

SHAHEEN & PEAKER LIMITED

Project: SP3977B
October 10, 2002

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TABLE 1: SUMMARY OF INORGANIC PARAMETERS IN SOIL

Parameter	Table B I/C	AR B-P SA-2 (0 – 0.3 m)	AR B-P SA-6 (0 – 0.3 m)	AR B-P SA-7 (0 – 0.3 m)	AR B-P SA-8 (0 – 0.3 m)
pH (pH units)	5.0-9.0	7.8	**9.8**	7.9	8.0
EC (mS/cm)	1.4	0.105	0.264	0.167	0.085
SAR (no units)	12	0.84	4.06	1.52	0.66
Antimony (Sb)	40	5.5	2.4	2.3	<1
Arsenic(As)	40	7.8	4.1	3.7	2.3
Barium (Ba)	1500	260	85.3	52.1	20.3
Beryllium (Be)	1.2	<0.5	<0.5	<0.5	<0.5
Boron (B) (Available)	2.0	0.14	0.20	0.21	0.11
Cadmium (Cd)	12	<1	<1	<1	<1
Chromium (Cr) (Total)	750	46.3	30.4	19.1	13.2
Chromium (Cr) (VI)	8.0	<1	<1	<1	<1
Cobalt (Co)	80	<1	<1	<1	<1
Copper (Cu)	225	148	36.9	34.6	8.8
Cyanide (CN) (Free)	100	<0.1	<0.1	0.36	<0.1
Lead (Pb)	1000	361	138	66.6	54.7
Mercury (Hg)	10	0.43	0.17	0.15	<0.05
Molybdenum (Mo)	40	<2	<2	<2	<2
Nickel (Ni)	150	29.4	8.5	4.9	2.8
Selenium (Se)	10	<1	<1	<1	<1
Silver (Ag)	40	<0.5	<0.5	<0.5	<0.5
Vanadium (V)	200	13.9	7.4	2.8	<1
Zinc (Zn)	600	307	191	143	85

Notes:

1. Units are in µg/g (ppm) unless otherwise indicated
2. Table B I/C = Surface soil criteria for Industrial/Commercial land use for coarse textured soil in a non-potable groundwater condition, from the Ministry of Environment and Energy (MOEE) document *Guideline for Use at Contaminated Sites in Ontario*, revised February 1997
3. Approximate sample depth in metres shown in parentheses following sample identification
4. EC = Electrical Conductivity (1mS/cm = 1000 umhos/cm)
5. SAR = Sodium adsorption ratio
6. **Bold** value (e.g. **9.8**) indicates concentration or value exceeds Table B I/C criteria

TABLE 2: SUMMARY OF TPH AND BTEX IN SOIL

Parameter	**Table B I/C**	**AR B-P SA-2** (0.0-0.3m)
TPH gasoline/diesel (C_5-C_{24})	1000	270
TPH heavy oil (>C_{24}-C_{50})	5000	1300
Benzene	5.3	<0.002
Toluene	34	<0.002
Ethylbenzene	290	<0.002
Xylenes	34	<0.002

Notes:

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2. Table B I/C = Surface soil criteria for Industrial/Commercial land use for coarse textured soil in a non-potable groundwater condition, from the Ministry of Environment and Energy (MOEE) document *Guideline for Use at Contaminated Sites in Ontario*, revised February 1997
3. Approximate sample depth in metres shown in parentheses following sample identification
4. **Bold** value (i.e. **5300**) indicates concentration exceed Table B I/C criterion.

TABLE 3: SUMMARY OF PAHS IN SOIL

Parameter	Table B I/C	AR B-P SA-1A (0 – 0.3 m)	AR B-P SA-2 (0 – 0.3 m)	AR B-P SA-3A (0 – 0.3 m)	AR B-P SA-4A (0 – 0.3 m)	AR B-P SA-5A (0 – 0.3 m)	AR B-P SA-6 (0 – 0.3 m)	AR B-P SA-7 (0 – 0.3 m)	AR B-P SA-8 (0 – 0.3 m)
Acenaphthene	1300	<	0.38	<	0.14	<	0.07	<0.05	<0.05
Acenaphthylene	840	<	0.78	<	0.24	<	0.09	0.14	<0.05
Anthracene	28	<	2.4	0.25	0.52	<	0.40	1.0	0.08
Benzo (a) anthracene	40	<	4.4	0.21	1.1	<	0.38	0.53	0.08
Benzo (a) pyrene	1.9	<	**2.0**	0.65	1.3	<	0.50	0.58	0.17
Benzo (b) fluoranthene	19	<	0.51	0.30	0.78	<	0.32	0.45	0.05
Benzo (g,h,i) perylene	40	<	9.4	0.31	1.5	<	0.70	0.80	0.23
Benzo (k) fluoranthene	19	<	0.51	0.30	0.89	<	0.32	0.45	0.05
Chrysene	19	<	0.62	0.21	1.1	<	0.11	0.15	<0.05
Dibenzo (a,h) anthracene	1.9	<	**11**	0.20	0.34	<	0.86	0.94	<0.02
Fluoranthene	40	<	12	1.1	3.3	<	1.1	1.5	0.23
Fluorene	350	<	0.99	<	0.14	<	<0.04	<0.04	<0.04
Indeno (1,2,3-cd) pyrene	19	<	12	0.36	1.7	<	0.84	0.99	0.35
Naphthalene	40	<	0.34	<	<	<	0.14	0.10	<0.05
Phenanthrene	40	<	4.4	0.27	0.79	<	0.61	0.95	0.10
Pyrene	250	<	11	1.0	2.9	<	0.95	1.3	0.18

Notes:

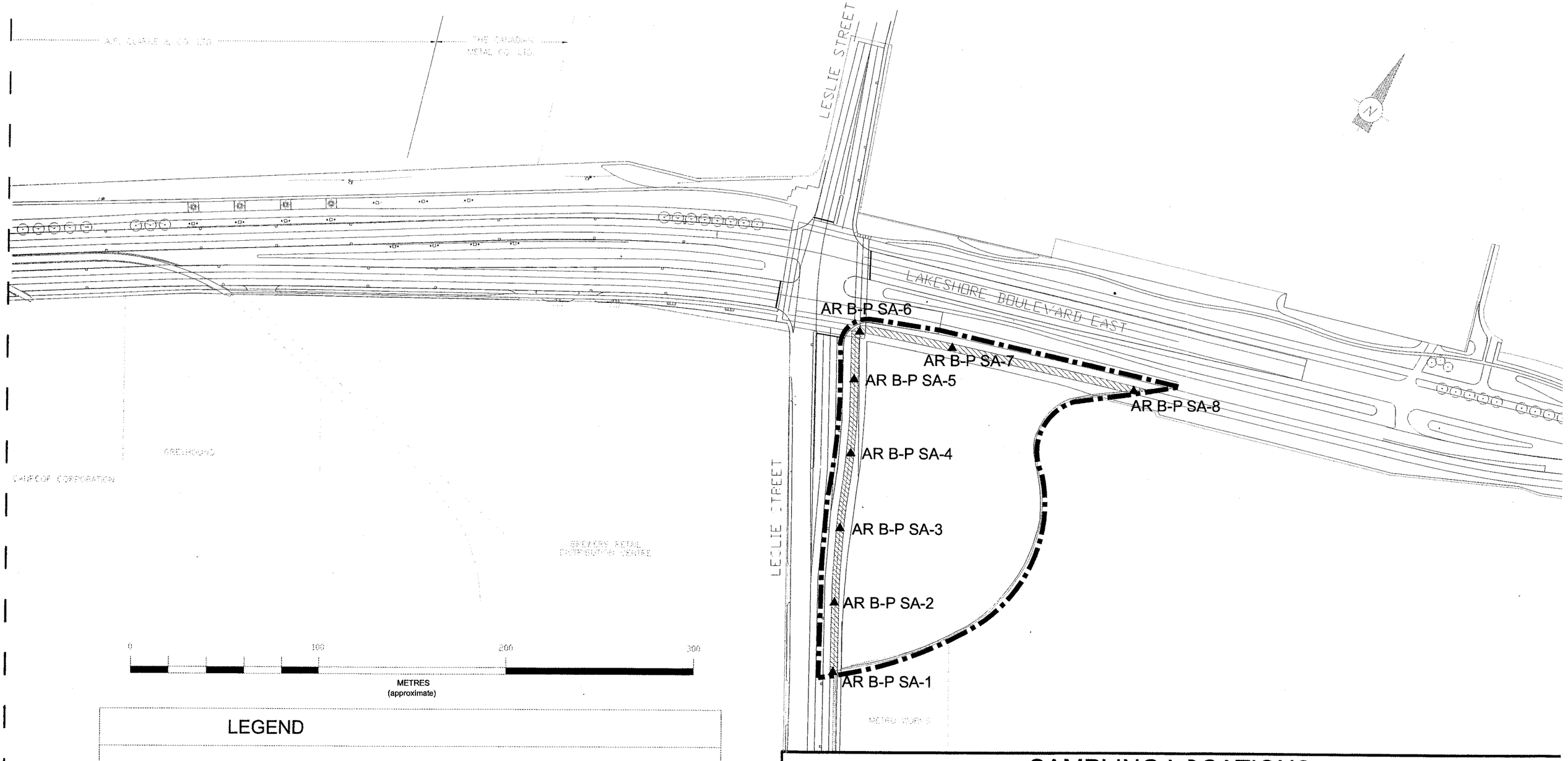
1. Units are μg/g (ppm) unless otherwise indicated.
2. Table B I/C = Surface soil criteria for Industrial/Commercial land use for coarse textured soil in a non-potable groundwater condition, from the Ministry of Environment and Energy (MOEE) document *Guideline for Use at Contaminated Sites in Ontario*", revised February 1997
3. **Bold** value (i.e. **2.0**) indicates concentration exceeds Table B I/C criteria

Table 4: Summary of Regulation 347/558 Analysis of Soil

Parameter	Reg. 347 Schedule 4 Limits	AR B-P SA-2 (0.0-0.3m)
Arsenic	2.5	<0.001
Barium	100	0.67
Boron	500	<0.01
Cadmium	0.5	0.01
Chromium	5	<0.01
Cyanide free	20	<0.005
Fluoride	150	0.21
Lead	5	0.05
Mercury	0.1	0.0003
Nitrate+Nitrite-N	1000	0.09
Selenium	1	<0.002
Silver	5	<0.005
Benzene	0.5	<0.004
Benzo(a)pyrene	0.001	<0.001
Carbon tetrachloride	0.5	<0.005
Chlorobenzene	8	<0.008
Chloroform	10	<0.004
1,2-dichlorobenzene	20	<0.005
1,4-dichlorobenzene	0.5	<0.005
1,2-dichloroethane	0.5	<0.008
1,1-dichloroethylene	1.4	<0.01
Methyl ethyl ketone	200	<0.1
Methylene chloride	5	<0.004
PCBs	0.3	<0.001
Tetrachloroethylene	3	<0.008
Trichloroethylene	5	<0.008
Vinyl chloride	0.2	<0.002

Notes:

1. Regulation 347 Schedule 4 (as amended by Reg.558/00) leachate quality analyses for inorganics, benzo(a)pyrene, PCBs and VOCs
2. Units are mg/L (ppm) in soil leachate
3. Sample depth in metres shown in parentheses following sample identification
4. If all values less than the Schedule 4 Limits, the material can be classified as non-hazardous waste
5. Bold and underlined value exceedance of Schedule 4 Limits, which requires classification as **hazardous waste**

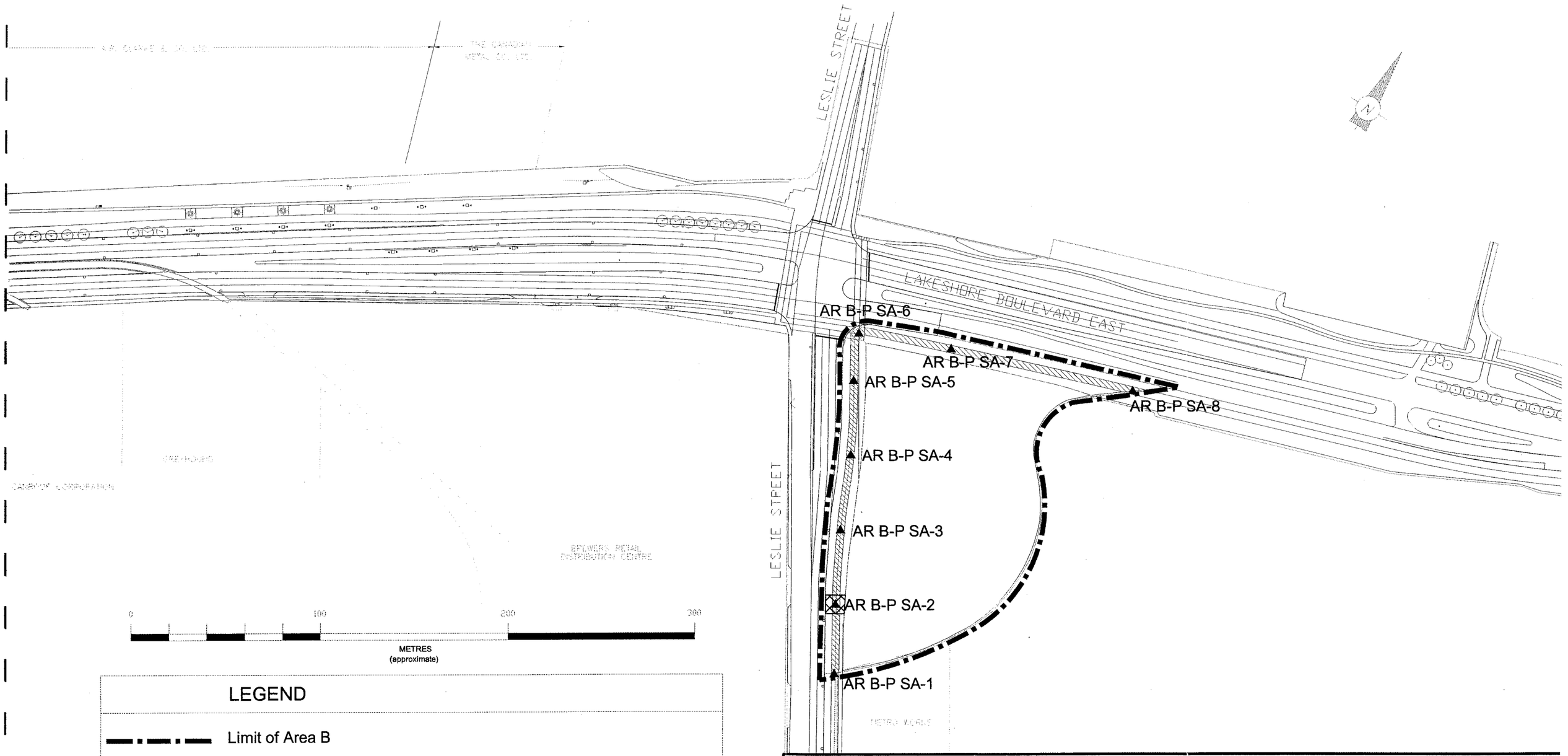


LEGEND

▬·▬·▬	Limit of Area B
▨	Approximate Location for Proposed Bicycle Paths (Area B)
▲ AR B-P SA-1	Sample Location and Sample Identification (Sample Depth 0 to 0.3 m)

SAMPLING LOCATIONS

Scale: ~1:2000	ENVIRONMENTAL SOIL INVESTIGATION PROPOSED BICYCLE PATHS (AREA B) PRE-CONSTRUCTION SOIL TESTING RISK MANAGEMENT PLAN IMPLEMENTATION LAKESHORE BOULEVARD EAST AT LESLIE STREET TORONTO, ONTARIO	Drawn By: MV
Date: OCT.10, 2002		Approved By: DJB
Project No.: SP 3977B	SHAHEEN & PEAKER LIMITED	Drawing No.: 3-1



LEGEND

- Limit of Area B
- Approximate Location for Proposed Bicycle Paths (Area B)
- ▲ AR B-P SA-1 Sample Location and Sample Identification (Sample Depth 0 to 0.3 m)
- Approximate Extent of Environmentally Impacted Soil (Non-hazardous Solid Waste)

APPROXIMATE EXTENT OF ENVIRONMENTALLY IMPACTED SOIL

Scale: ~1: 2000	ENVIRONMENTAL SOIL INVESTIGATION PROPOSED BICYCLE PATHS (AREA B) PRE-CONSTRUCTION SOIL TESTING RISK MANAGEMENT PLAN IMPLEMENTATION LAKESHORE BOULEVARD EAST AT LESLIE STREET TORONTO, ONTARIO	Drawn By: MV
Date: OCT.10, 2002		Approved By: DJB
Project No.: SP 3977B	SHAHEEN & PEAKER LIMITED	Drawing No.: 3-2

Client:	**Shaheen & Peaker Ltd.**
Attention:	**David Balgent**
Project:	**SP3977B**
P.O. :	**SP3977B**
Sample Type:	**Soil**
Date Received:	**Jul 22/02**
Date Analysed:	**Jul 22 to Jul 25/02**
Date Reported:	**Jul 25/02**

Sam Sanyal, M.Sc., C.Chem.
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CERTIFICATE OF CHEMICAL ANALYSIS - MOEE SOIL DECOMM. GUIDELINES FOR CONTAMINATED SITES IN ONTARIO (GENL. & INORGANIC)

PARAMETER	Soil Remediation Criteria (µg/g)		Method Detection Limit (µg/g)	CONTROL SAMPLE			SAMPLE DATA (µg/g)			
	Tables A & B Res./Ind. Comm	Tables C & D Res./Ind. Comm		Expected Concentration (µg/g)	Concentration Found (µg/g)	Recovery %	Blank	5811 AR B-P SA-2	5812 AR B-P SA-6	5813 AR B-P SA-7
Dry Matter (%)	-	-	-	-	-	-	-	91.13	94.49	96.59
pH (units)	5 to 9	5 to 11	-	7.41	7.42	100	-	7.8	9.8	7.9
E C (µmhos/cm)	700/1400	N.A./N.A.	-	147.3	143.8	98	-	105	264	167
SAR	5/12	N.A./N.A.	-	-	-	-	-	0.84	4.06	1.52
Arsenic	20/40	40/N.V.	1	53.2	51.6	97	<1	7.8	4.1	3.7
Cadmium	12/12	41/41	1	3.4	3.33	98	<1	<1	<1	<1
Chromium (VI) *	8/8	600/1100	1	0.718	0.703	98	<1	<1	<1	<1
Chromium (total)	750/750	2500/5000	1	6.4	6.15	96	<1	48.3	30.4	19.1
Cobalt	40/80	2500/3400	1	2.8	2.76	99	<1	<1	<1	<1
Copper	225/225	2500/2500	1	69	67.9	98	<1	148	36.9	34.6
Lead	200/1000	1000/N.V.	2	97.8	91.6	94	<2	361	138	66.6
Mercury	10/10	57/57	0.05	0.19	0.17	89	<0.05	0.43	0.17	0.15
Molybdenum	40/40	550/550	2	5.35	5.26	98	<2	<2	<2	<2
Nickel	150/150	710/710	2	23.1	22.4	97	<2	29.4	8.5	4.9
Boron(HWE) *	1.5/2.0	2.0/N.V.	0.02	1	0.988	99	<0.02	0.14	0.20	0.21
Cyanide Free *	100/100	100/390	0.1	0.20	0.194	97	<0.1	<0.1	<0.1	0.36
Selenium	10/10	2500/2500	1	72.3	71.7	99	<1	<1	<1	<1
Silver	20/40	240/240	0.5	107	89.6	84	<0.5	<0.5	<0.5	<0.5
Zinc	600/600	2500/5000	1	467	454	97	<1	307	191	143
Antimony *	13/40	44/44	1	0.010	0.0099	99	<1	5.5	2.4	2.3
Barium	750/1500	2500/4100	1	10.2	10.7	105	<1	260	85.3	52.1
Beryllium	1.2/1.2	1.2/3.1	0.5	3.42	3.34	98	<0.5	<0.5	<0.5	<0.5
Vanadium	200/200	910/910	1	95.4	82.5	86	<1	13.9	7.4	2.8

a) Table A: Surface soil criteria for a potable groundwater condition
b) Table B: Surface soil criteria for a non-potable groundwater condition
c) Table C: Sub-surface soil criteria for a potable groundwater condition
d) Table D: Sub-surface soil criteria for a non-potable groundwater condition
Sample Disposal: 30 Days from the Reporting Date.

All guideline criteria are for coarse textured soil
HWE - Hot water extractable
Sample data and MDL units are in µg/g unless otherwise specified

Analyst(s): NL, SS, OB, JW, AI, AV, MD

**** Control Sample Unit is µg/mL for the specified parameter instead of µg/g unless otherwise specified.***

Method:

pH: Extraction/Electrometric (EPA 9045)
EC: Extraction/Electrometric (EPA 120.1)
As, Se, Sb: Digestion/HGFAAS (EPA 3050A/7062/7742)
Hg: Digestion/CV-AAS (EPA 7471A/245.5)
SAR: Extraction/ICP-AES (EPA 200.7)
Metals: Digestion/ICP-AES (EPA 3050A/200.7)
Cyanide Free: Extraction/Auto-Color (EPA 335.4)
B (HWE): Extraction/ICP-AES
Cr(VI): Alkaline Digestion/Colorimetry (EPA 3060A/7196)

Client:	**Shaneen & Peaker Ltd.**
Attention:	**David Balgent**
Project:	**SP3977B**
P.O. :	**SP3977B**
Sample Type:	**Soil**
Date Received:	**Jul 22/02**
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PARAMETER	Soil Remediation Criteria (µg/g)		Method Detection Limit (µg/g)	CONTROL SAMPLE			SAMPLE DATA (µg/g)			
	Tables A & B Res./Ind. Comm	Tables C & D Res./Ind. Comm		Expected Concentration (µg/g)	Concentration Found (µg/g)	Recovery %	5814 AR B-P SA-8	5814 AR B-P SA-8 Duplicate		
Dry Matter (%)	-	-	-	-	-	-	96.81	96.81		
pH (units)	5 to 9	5 to 11	-	7.41	7.42	100	8.0	8.0		
E C (µmhos/cm)	700/1400	N.A./N.A.	-	147.3	143.8	98	85	85		
SAR	5/12	N.A./N.A.	-	-	-	-	0.66	0.61		
Arsenic	20/40	40/N.V.	1	53.2	51.6	97	2.3	2.7		
Cadmium	12/12	41/41	1	3.4	3.33	98	<1	<1		
Chromium (VI) *	8/8	600/1100	1	0.718	0.703	98	<1	<1		
Chromium (total)	750/750	2500/5000	1	6.4	6.15	96	13.2	13.7		
Cobalt	40/80	2500/3400	1	2.8	2.76	99	<1	<1		
Copper	225/225	2500/2500	1	69	67.9	98	8.8	9.0		
Lead	200/1000	1000/N.V.	2	97.8	91.6	94	54.7	61.1		
Mercury	10/10	57/57	0.05	0.19	0.17	89	<0.05	<0.05		
Molybdenum	40/40	550/550	2	5.35	5.26	98	<2	<2		
Nickel	150/150	710/710	2	23.1	22.4	97	2.8	3.0		
Boron(HWE) *	1.5/2.0	2.0/N.V.	0.02	1	0.988	99	0.11	0.12		
Cyanide Free *	100/100	100/390	0.1	0.20	0.194	97	<0.1	<0.1		
Selenium	10/10	2500/2500	1	72.3	71.7	99	<1	<1		
Silver	20/40	240/240	0.5	107	89.6	84	<0.5	<0.5		
Zinc	600/600	2500/5000	1	467	454	97	85	92		
Antimony *	13/40	44/44	1	0.010	0.0099	99	<1	<1		
Barium	750/1500	2500/4100	1	10.2	10.7	105	20.3	22.5		
Beryllium	1.2/1.2	1.2/3.1	0.5	3.42	3.34	98	<0.5	<0.5		
Vanadium	200/200	910/910	1	95.4	82.5	86	<1	<1		

a) Table A: Surface soil criteria for a potable groundwater condition
b) Table B: Surface soil criteria for a non-potable groundwater condition
c) Table C: Sub-surface soil criteria for a potable groundwater condition
d) Table D: Sub-surface soil criteria for a non-potable groundwater condition
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HWE - Hot water extractable
Sample data and MDL units are in µg/g unless otherwise specified

Analyst(s): NL, SS, OB, JW, AI, AV, MD

**** Control Sample Unit is µg/mL for the specified parameter instead of µg/g unless otherwise specified.***

Method:

pH: Extraction/Electrometric (EPA 9045)
EC: Extraction/Electrometric (EPA 120.1)
As, Se, Sb: Digestion/HGFAAS (EPA 3050A/7062/7742)
Hg: Digestion/CV-AAS (EPA 7471A/245.5)
SAR: Extraction/ICP-AES (EPA 200.7)
Metals: Digestion/ICP-AES (EPA 3050A/200.7)
Cyanide Free: Extraction/Auto-Color (EPA 335.4)
B (HWE): Extraction/ICP-AES
Cr(VI): Alkaline Digestion/Colorimetry (EPA 3060A/7196)

ENTECH

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Client: Shaheen & Peaker Limited
Attention: David Baigent
Client Reference: Proj: SP3977B
Date Received: July 22, 2002
Date Analyzed: July 23, 2002
Date Reported: July 26, 2002
Sample Type: Soil

CERTIFICATE OF ANALYSIS

Total Petroleum Hydrocarbons

ENTECH # / Sample #	Concentration (ug/g)			Surrogate Recovery (%)	
	gasoline range (C5-C10)	diesel range (>C10-C24)	heavy oil range (>C24-C50)	SS1	SS2
MDL	10	10	80	-	-
Lab Blank	<	<	<	70	114
5811 AR B-P SA-2	<	270	1,300	82	130
CRM spiked (ug/g)	1,103	1,428	1,749		
CRM recovered (ug/g)	1335(121%)	1501(105%)	1901(109%)		

Comments:
MDL = Method Detection Limit; < = Not detected (less than MDL); ug/g = ppm.
Method: Entech# OSA-4, OSA-5, OSA-7, Solvent Extraction GC/FID & HT-GC/FID
CRM (Certified Reference Material) & Surrogate Spike recovery control limits: 70%-130%.
SS1 for gas/diesel; SS2 for heavy oils

Dr. Asit Raksit, Ph.D., C. Chem.
Manager, Organics

Analyst: Agnes Tworek, B. Sc.

ent: hee eak nitec
Attention: S. Tchernikov
Client Reference: Proj/P.O: SP3977B
Date Received: Jul. 22, 2002.
Date Analyzed: Jul. 25, 2002.
Date Reported: Jul. 26, 2002.
Sample Type: Soil

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CERTIFICATE OF ANALYSIS

BTEX Units are ppm (ug/g)	MDL	Lab Blank	5811 AR B-P SA-2	Lab Spike Amount (ug/g)	Lab Spike Recovery (%)
Benzene	0.002	<	<	0.73	70
Toluene	0.002	<	<	0.73	105
Ethylbenzene	0.002	<	<	0.73	111
m&p-Xylenes	0.002	<	<	1.5	107
o-Xylene	0.002	<	<	0.73	103

Surrogate Recoveries

Toluene-d8	%	111	96	100	123
1,3-Dichlorobutane	%	122	117	100	130
4-Bromofluorobenzene	%	108	70	100	130

MDL = Method Detection Limit; < = Not Detected (less than MDL).
Ref. Method: Entech#OSA-1.
Spike and surrogate recovery control limits = 70% - 130%.

Dr. Asit Raksit, Ph. D., C. Chem.
Manager, Organics

Analysts: Saima Johri, B .Sc.
Shiyamini Jeevaretnam, Chem. Tech.

Client: Snaheen & Peaker Limited
Attention: David Baigent
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Certificate of Analysis

Polycyclic Aromatic Hydrocarbons (PAH's)

ENTECH # >>		Lab	5811*	5812	5813	5814	HS-5	HS-5
Sample # >>		Blank	AR B-P SA-2	AR B-P SA-6	AR B-P SA-7	AR B-P SA-8	Spike Amount	Recovery
Units are ug/g (ppm)	MDL						(ppm)	(%)
Naphthalene	0.05	<	0.34	0.14	0.10	<	0.18	89
Acenaphthylene	0.05	<	0.78	0.09	0.14	<	0.15	130
Acenaphthene	0.05	<	0.38	0.07	<	<	0.13	77
Fluorene	0.04	<	0.99	<	<	<	0.40	98
Phenanthrene	0.04	<	4.4	0.61	0.95	0.10	4.2	86
Anthracene	0.04	<	2.4	0.40	1.0	0.08	0.53	128
Fluoranthene	0.03	<	12	1.1	1.5	0.23	5.8	72
Pyrene	0.03	<	11	0.95	1.3	0.18	4.0	70
Benzo (a) anthracene	0.05	<	4.4	0.38	0.53	0.08	1.7	94
Chrysene	0.05	<	0.62	0.11	0.15	<	1.9	84
Benzo (b) fluoranthene	0.04	<	0.51	0.32	0.45	0.05	1.0	95
Benzo (k) fluoranthene	0.03	<	0.51	0.32	0.45	0.05	1.0	95
Benzo (a) pyrene	0.04	<	2.0	0.50	0.58	0.17	0.90	122
Indeno (1,2,3-cd) pyrene	0.01	<	12	0.84	0.99	0.35	1.3	92
Dibenzo (a,h) anthracene	0.02	<	11	0.86	0.94	<	0.20	85
Benzo (g,h,i) perylene	0.02	<	9.4	0.70	0.80	0.23	1.0	100
TOTAL PAH	**0.59**		**73**	**7.4**	**9.9**	**1.5**	**25**	-
Surrogate Recoveries (%)								
Naphthalene-d8		84	100	98	80	70	100	84
Phenanthrene-d10		122	130	130	130	78	100	112
Perylene-d12		88	130	130	114	104	100	96

Comments:
MDL = Method Detection Limit; < = Not Detected (less than the MDL).
Ref. Method: Entech#OSA-3. *Sample dilution: 10X.
Surrogate and Spike recovery control limits = 70% - 130%.
HS-5 = Certified Reference Material.

Dr. Asit Raksit, Ph.D., C. Chem.
Manager, Organics

Analysts: Saima Johri, B. Sc.
Benita Cortez, B. Sc.

Client: Shaheen & Peaker
Attention: David Baigent
Client Reference: Proj: SP 3977F
Date Received: Oct. 03, 2002.
Date Analyzed: Oct. 08, 2002.
Date Reported: Oct. 09, 2002.
Sample Type: Soil

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Certificate of Analysis

Polycyclic Aromatic Hydrocarbons (PAH's)

Units are ug/g (ppm)	ENTECH # >> Sample # >> MDL	Lab Blank	9643 ARB-P SA-3A	9644* ARB-P SA-4A	9645 ARB-P SA-5A	9646 ARB-P SA-1A	HS-5 Spike Amount (ppm)	HS-5 Recovery (%)
Naphthalene	0.05	<	<	<	<	<	0.18	94
Acenaphthylene	0.04	<	<	0.24	<	<	0.15	107
Acenaphthene	0.03	<	<	0.14	<	<	0.13	77
Fluorene	0.05	<	<	0.14	<	<	0.40	98
Phenanthrene	0.12	<	0.27	0.79	<	<	5.2	98
Anthracene	0.05	<	0.25	0.52	<	<	0.53	128
Fluoranthene	0.20	<	1.1	3.3	<	<	5.8	72
Pyrene	0.15	<	1.0	2.9	<	<	4.0	70
Benzo (a) anthracene	0.10	<	0.21	1.1	<	<	1.7	94
Chrysene	0.12	<	0.21	1.1	<	<	1.9	95
Benzo (b) fluoranthene	0.15	<	0.30	0.78	<	<	1.0	96
Benzo (k) fluoranthene	0.05	<	0.30	0.89	<	<	0.60	98
Benzo (a) pyrene	0.10	<	0.65	1.3	<	<	0.90	122
Indeno (1,2,3-cd) pyrene	0.10	<	0.36	1.7	<	<	1.3	92
Dibenzo (a,h) anthracene	0.04	<	0.20	0.34	<	<	0.20	85
Benzo (g,h,i) perylene	0.10	<	0.31	1.5	<	<	1.0	100
TOTAL PAH	**1.5**		**5.2**	17	-	-	**25**	-
Surrogate Recoveries (%)								
Phenanthrene-d10		84	110	128	108	96	100	106
Chrysene-d12		82	104	120	114	94	100	88
Perylene-d12		82	114	124	120	104	100	108

Comments:
MDL = Method Detection Limit; < = Not Detected (less than the MDL).
Ref. Method: Entech#OSA-3. *Sample dilution: 10X.
Surrogate and Spike recovery control limits = 70% - 130%.
HS-5 = Certified Reference Material.
Reported results only for specified samples tested.

Dr. Asit Raksit, Ph.D., C. Chem.
Manager, Organics

Analysts: Saima Johri, B. Sc.
Benita Cortez, B. Sc.

Client:	S...en & ... Ltd.
Attention:	David Baigent
Project:	SP3977B
P.O.:	SP3977B
Sample Type:	Soil
Date Received:	Jul 22/02
Date Analysed:	Jul 22 to Jul 24/02
Date Reported:	Jul 25/02

Sam Sanyal, M.Sc. C. Chem.
Manager, Inorganic Analysis.

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CERTIFICATE OF ANALYSIS
FOR ONTARIO REGULATION 558/00

TCLP - LEACHATE QUALITY CRITERIA (INORGANICS)

CONTAMINANT	SCHEDULE 4 Concentration (mg/L)	Method Detection Limit (mg/L)	CONTROL SAMPLE			SAMPLE DATA (mg/L)			
			Expected Conc. (mg/L)	Found Conc. (mg/L)	Recovery %	Blank	5811 AR B-P SA-2	5811 AR B-P SA-2 Duplicate	
Arsenic	2.5	0.001	0.258	0.240	93	<0.001	<0.001	<0.001	
Barium	100	0.01	1.30	1.28	98	<0.01	0.67	0.67	
Boron	500	0.01	1.20	1.24	103	<0.01	<0.01	<0.01	
Cadmium	0.5	0.005	0.140	0.138	99	<0.005	0.010	0.010	
Chromium	5.0	0.01	0.260	0.255	98	<0.01	<0.01	<0.01	
Cyanide Free	20.0	0.005	0.10	0.094	94	<0.005	<0.005	<0.005	
Fluoride	150	0.05	3.8	3.99	105	<0.05	0.21	0.21	
Lead	5.0	0.02	0.165	0.173	105	<0.02	0.05	0.05	
Mercury	0.1	0.0001	0.00524	0.00580	111	<0.0001	0.0003	0.0004	
(Nitrate+Nitrite)-N	1000	0.01	5.39	5.42	101	<0.01	0.09	0.09	
Selenium	1.0	0.002	0.019	0.0194	102	<0.002	<0.002	<0.002	
Silver	5.0	0.005	0.210	0.191	91	<0.005	<0.005	<0.005	
Initial pH (units)	-	-	-	-	-	2.9	9.1	9.1	
Fluid No.	-	-	-	-	-	2	2	2	
Fluid pH (units)	-	-	-	-	-	2.9	2.9	2.9	
Final pH (units)	-	-	-	-	-	2.9	5.8	5.8	

Sample Disposal: 30 Days from the Reporting Date.
All Results except pH are expressed in mg/L (parts per million).
Note: "+" means the result exceeds the Schedule 4 concentration.

Analyst(s): MD, SS, JW, AI, AV, NL

Method:

As, Se: HG-FAAS (EPA 3005/7062/7742)
Hg: CV-AAS (EPA 245.1)
Metals: ICP-AES (EPA 3005/200.7)
pH: Electrometric/pH-Meter (EPA 150.1)
Cyanide Free: Auto-Color (EPA 365.1)
Fluoride: ISE (EPA 340.2)
(NO3 + NO2)-N: Auto-Color (EPA 353.2)

nt: S[illegible]en [illegible]ker [illegible]ed
Attention: David Baigent
Client Reference: Proj/P.O: SP3977B
Date Received: Jul. 22, 2002.
Date Analyzed: Jul. 26, 2002.
Date Reported: Jul. 26, 2002.
Sample Type: TCLP(Leachate).

ENTECH

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CERTIFICATE OF ANALYSIS

TCLP-Volatile Organic Compounds	ENTECH # >> Sample I.D. >>	Maximum** allowable	Lab Blank	5811 AR B-P SA-2	Lab Spike Amount	Lab Spike Recovery
Units: mg/L (ppm) -->	**MDL**				(ug/L)	(%)
Vinyl chloride	0.002	0.2	<	<	10	70
1,1-Dichloroethene	0.01	1.4	<	<	5	70
Methylene Chloride	0.004	5	<	<	5	77
MEK	0.1	200	<	<	15	70
Chloroform	0.004	10	<	<	5	70
Carbon Tetrachloride	0.005	0.5	<	<	5	81
Benzene	0.004	0.5	<	<	5	70
1,2-Dichloroethane	0.008	0.5	<	<	5	70
Trichloroethene	0.008	5	<	<	5	84
Tetrachloroethene	0.008	3	<	<	5	97
Chlorobenzene	0.008	8	<	<	5	76
1,4-Dichlorobenzene	0.005	0.5	<	<	5	80
1,2-Dichlorobenzene	0.005	20	<	<	5	80
Spike Surrogate Recovery:	Toluene-d8 (%)		88	87	100	99
	1,3-Dichlorobutane (%)		97	109	100	82
	4-Bromofluorobenzene (%)		83	92	100	102

Ref. Method: Entech#OWA-15

Surrogate and spike recovery control limits = 70% to 130%; < = Not Detected (less than Method Detection Limit (MDL)).

**TCLP list according to MOEE, Ontario, 2001.

Dr. Asit Raksit, Ph.D., C. Chem.
Manager, Organics

Analysts: Saima Johri, B. Sc.
Agnes Tworek, B. Sc.

Client : Shaheen & Peaker Ltd.

Attention: David Baigent

Client Reference: Proj: SP3977B

Date Received: Jul. 30, 2002.

Date Analyzed: Aug. 01, 2002.

Date Reported: Aug. 06, 2002.

Sample Type: TCLP (Leachate)

ENTECH

Professional Analytical Services

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Certificate of Analysis

Benzo(a)pyrene

ENTECH #	Sample Identification	Conc. (mg/L)	Surrogate Phenanthrene-d10	Surrogate Chysene-d12	Surrogate Perylene-d12
6240	ARB-P SA-2	ND	86	90	106
Lab Blank		ND	86	90	108

MDL 0.001 mg/L; ND = <0.001 ppm; mg/L = ppm

Comment:

MDL = Method Detection Limit; < = Not Detected (less than the MDL).

Method: EPA 3510C/8270C - Solvent Extraction/GC/MSD

Surrogate recovery control limits = 70% - 130%

QC spike amount = 0.90 ppm; spike recovery = 1.1 ppm (122%).

Dr. Asit Raksit, Ph.D., C. Chem.
Manager, Organics

Analysts: Saima Johri, B. Sc.
Benita Cortez, B. Sc.

Client : Shaheen & Peaker Limited
Attention: David Baigent
Client Reference: Proj: SP3977B
Date Received: July 22, 2002.
Date Analyzed: July 25, 2002.
Date Reported: July 26, 2002.
Sample Type: TCLP (leachate)

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Certificate of Analysis

Total PCB's

ENTECH #	Sample Identification	Conc. (ug/L)	Surrogate #1 Recovery (%)	Surrogate #2 Recovery (%)
5811	AR B-P SA-2	ND	74	108
Lab Blank		ND	92	122

MDL 1.0 ug/L; ND = <1.0 ppb; ug/L = ppb

Comments:

Ref. Method: Entech #: OWA-8, Solvent Extraction/ GC/ECD.
Total PCB quantification based on a mixture of Aroclors 1254 and 1260.
Surrogate and spike recovery control limits = 70%-130%.
Surrogates used are 2,4,5,6-Tetrachloro-m-xylene and Decachlorobiphenyl.
QC spike = 2.04ppm, QC recovery = 2.45ppm (120%)

Dr. Asit Raksit, Ph.D., C. Chem.
Manager, Organics

Analysts: Lynn Uyen Luyen, B. Sc.
Benita Cortez, B. Sc.