



**CITY OF BUFFALO**  
**DEPARTMENT OF**  
**PUBLIC WORKS, PARKS & STREETS**  
**DIVISION OF PARKS & RECREATION**



BYRON W. BROWN  
 MAYOR

STEVEN J. STEPNIAK  
 COMMISSIONER

October 28, 2010

RECEIVED  
 NYSDEC - REGION 9

ANDREW R. RABB  
 DEPUTY COMMISSIONER

NOV 01 2010

David P. Locey  
 NYSDEC – Region 9  
 270 Michigan Avenue  
 Buffalo, New York 14203-2915

FOR  
 REL UNREL

**RE: Trinidad Park**

Dear Mr. Locey:

This correspondence is in response to your letter dated August 30<sup>th</sup>, 2010, regarding tar seepage on the surface of the basketball court at Trinidad Park in Buffalo, New York, Site No.: B00083.

I've attached the most recent sampling report from Leader Professional Services, Inc. Also, as per our conversation, our estimate for restoring the basketball court is approximately \$18,000.

We look forward to cooperating with the State for successful completion of this remediation.

Please don't hesitate to call me at (716) 851 – 9672 if you have any questions.

Sincerely,

Andrew R. Rabb  
 Deputy Commissioner

CC: Commissioner Steven J. Stepniak

October 5, 2010

Mr. Joseph Schollard – Acting Deputy Director of Buildings  
Buffalo Department of Public Works  
Room 604 Buffalo City Hall  
Buffalo, New York 14202

**RE:        SUBSURFACE ASSESSMENT OF UNIDENTIFIED MATERIAL AT  
TRINIDAD PARK, TRINIDAD PLACE, BUFFALO, NEW YORK**

Dear Mr. Schollard:

Leader Professional Services, Inc. ("Leader") is pleased to present the City of Buffalo Department of Public Works ("DPW") with the results of the subsurface assessment of unidentified material observed at the basketball courts at Trinidad Park on Trinidad Place in Buffalo, New York. This letter report outlines the scope-of-work for the assessment, the methods used, and our findings. This report is subject to the limitations presented in Attachment A.

## **1.0 BACKGROUND AND PURPOSE**

There is currently a tar-like substance seeping from below the basketball court at Trinidad Park. The City of Buffalo requested that Leader evaluate the nature and extent of the tar substance, hazards posed and the origin of the substance. Leader's purpose was also to assess the nature and extent of the tar-like material to estimate the volume of material in the subsurface.

## **2.0 SCOPE-OF-WORK**

The specific scope of work developed to assess the Site was based upon the DPW's Request for Proposal ("RFP"), observations made during a Site visit on July 8, 2010, and Leader's written proposal dated July 12, 2010. The scope-of-work was implemented in general accordance with Leader's July 12, 2010 proposal/contract. Included within this report are the Limitations (Attachment A), Analytical Laboratory Results (Attachment B), Photograph Log (Attachment C) and Figures (Attachment D). Figure 1 includes the approximate borehole locations for the subsurface assessment.

### **2.1 SUBSURFACE ASSESSMENT PROGRAM**

On August 4, 2010, Russo Development Corporation ("Russo") mobilized a Geoprobe unit to the Site to initiate the subsurface assessment program. The Geoprobe boring process begins with the insertion of an acetate liner into a four-foot long micro tip. The micro tip is driven to the desired subsurface depth and then retrieved to the surface. The acetate liner is then removed and opened to recover the subsurface soil sample contained within. The soils are withdrawn from the acetate liner, carefully laid out, classified and either placed into a sample container or staged for replacement in the borehole. The purpose of the geoprobe effort was to observe the cores from each borehole to detect the presence of the tar material in the core. The additional indicators

of odor and photoionization detector ("PID") measurements were to be used to detect the presence of the material within the cores. The tar material was highly visible in the cores, and its presence within each core readily identified.

A total of thirteen (13) separate borings were made in and around the tar material present on the surface of the basketball court. A sample of the material, SS-1, was collected from this material and submitted to the laboratory for total petroleum hydrocarbons ("TPH") and New York State Department of Environmental Conservation ("NYSDEC") Spill Technology and Remediation Services ("STARS") list semi-volatile organic compounds ("SVOCs") analyses.

Soil boring location # 1 ("SB-1") was the focal point upon which the other borehole locations radiated from. It was apparently near the center of the tar deposit that was migrating to the surface through the asphalt basketball court.

All boreholes were extended to a seven (7') to nine and one half (9.5') foot depth. There was a subsurface barrier between 7 and 9.5 feet that was impenetrable to the geoprobe unit. It also may have served as a confining layer, as some of the tar material appeared to have settled at this depth in some of the boreholes.

The tar material was present from approximately six (6") inches below the asphalt basketball court to the bottom of the boreholes in varying concentrations/percentages. Boreholes SB-1, SB-2, SB-3, SB-5, SB-6 and SB-9 exhibited the greatest percentage of tar. In most of the boreholes the quantity of tar increased with depth. Borehole SB-4 exhibited a lesser percentage of tar. Boreholes SB-7 and SB-11 exhibited a slight petroleum odor at a four (4') to eight (8') foot depth, but no visible tar was present. Boreholes SB-8, SB-12 and SB-13 exhibited no odor and no tar.

Figure 1 presents the approximate locations of the boreholes on the basketball court, the estimated extent of contamination, and the observed subsurface conditions at each borehole. Figures 2 and 3 provide cross-sections in north to south and west to east profiles, respectively.

### **3.0 RESULTS OF THE SUBSURFACE PROGRAM**

#### **3.1 GEOLOGY/HYDROGEOLOGIC CONDITIONS**

Based on the subsurface assessment, it appears that the approximate depth to the upper water-bearing zone, when encountered in a boring, was between approximately three (3') feet (SB-10) and four (4') feet (SB-4) feet below the ground surface. Based on the borings completed, the overburden soil was comprised of fill material consisting of gravel with crushed brick, coarse sand with varying amounts of silt and clay.

### **3.2 SAMPLE SS-1 LABORATORY RESULTS**

Sample SS-1, collected from the material at the surface of borehole location SB-1, was analyzed for TPH and STARS SVOCs. The TPH concentration in sample SS-1 was below the detection limit for the sample; however, the detection limit of the instrument for this sample matrix was 2,460,000 micrograms per kilogram ("ug/kg"), typically expressed as parts per billion ("ppb"). This value equates to 2,460 milligrams per kilogram, typically expressed as parts per million ("ppm").

The STARS SVOCs concentration for each SVOC analyte was below the detection limit; however, the detection limit of the instrument for this sample matrix was relatively high, 97,300 ppb or 97.3 ppm. The detection limit for the STARS SVOCs exceed the individual analyte concentrations identified in NYSDEC Remediation and Guidance Policy Technical and Administrative Guidance Values ("TAGM") 4046, Table 2 for Recommended Soil Cleanup Objectives ("SCOs"). In summary, the individual analytes may have exceeded the SCOs, but are unquantifiable below the relatively high matrix detection limit. Therefore, the individual analytes cannot be compared to NYSDEC TAGM 4046 Table 2 SCOs.

NYSDEC Subpart 375-6: Remedial Program Soil Cleanup Objectives provides cleanup values for soil remediation projects based on future land use at individual sites. The values identified in Table 375-6.8 provide Unrestricted Use SCOs for SVOCs. These values are the most appropriate for comparison as the current use of the Site is a public playground. The SCO values in Table 375-6.8 for Acenaphthylene, Anthracene, Benzo (g,h,i,) perylene, Fluoranthene and Pyrene are 100 ppm. The concentrations of these analytes from sample SS-1 did not exceed the SCOs. However, the remaining STARS SVOCs analytes could not be compared to the values in Table 375-6.8 because those SCOs were below the detection limit concentration of sample SS-1.

Due to the sample matrix of SS-1, a tar-like product rather than a tar contaminated soil, the analyses of SS-1 for TPH and STARS SVOCs required extraction (or dissolution in the case of a liquid product matrix) in methylene chloride prior to instrumental analysis. In the case of a standard solid matrix extraction, there is a net concentration step (i.e., 35 grams to 1 milliliter solvent), leading to low reporting (detection) limits. In the case of a product sample such as SS-1, a net dilution is required (1 gram to 10 milliliter solvent) yielding the higher reporting limits. No reportable chromatograph signal was observed for either run. Based on the fact that the product dissolved entirely in methylene chloride, this suggests that the material is a high molecular weight hydrocarbon, with a high enough boiling point that it did not elute from the chromatograph under standard method conditions. The upper temperature limit for both methods is 300 degrees centigrade.

### **3.3 VOLUME ESTIMATES OF UNIDENTIFIED TAR LIKE MATERIAL**

Based on a review of borehole subsurface conditions, it is estimated that up to a 45' by 25' by 8' depth of tar or tar and soil mixture is present in the soils underlying the basketball court. The volume of tar appears to be within a range between 2,400 and 9,000 cubic feet,

which equates to approximately 75 to 280 tons of tar and impacted soils. It is possible that contamination exists below the surface within the playground and beneath the basketball court at locations outside the scope of this assessment.

#### **4.0 CONCLUSIONS AND RECOMMENDATIONS**

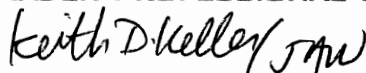
Based on the results of the Phase II ESA, the following conclusions were developed:

- The approximate depth to the upper water-bearing zone, when encountered in a boring, was between approximately three (3) to four (4) feet below the ground surface. Based on the borings completed, the overburden soil was comprised of fill material consisting of gravel with crushed brick, coarse sand, and varying amounts of silt and clay.
- Analyte values are unavailable for comparison to applicable TAGM 4046 SCOs because they were undetectable and unquantifiable below the relatively high matrix detection limit obtained during analysis of the tar product. The SCOs for Acenaphthylene, Anthracene, Benzo (g,h,i,) perylene, Fluoranthene and Pyrene are 100 ppm. The concentrations of these analytes from sample SS-1 did not exceed the SCOs. The remaining STARS SVOCs analytes could not be compared to Subpart 375-6 SCOs because these SCOs are below the detection limit concentration of sample SS-1.
- Although the analysis of the tar material did not result in the exceedance of a specific analyte, telephone conversations with NYSDEC Region 9 personnel indicated that the tar material should be excavated and disposed of at an appropriate disposal facility. It is therefore recommended that additional sampling and analyses be completed to characterize the tar material for removal and disposal purposes.

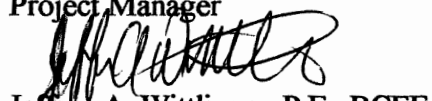
If you need any additional information, please contact the undersigned at (716) 565-0963.

Very truly yours,

**LEADER PROFESSIONAL SERVICES, INC.**



Keith D. Keller  
Project Manager



Jeffrey A. Wittlinger, P.E., BCEE  
Principal

**ATTACHMENT A  
LIMITATIONS**

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## ESA LIMITATIONS

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The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, expressed or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

The purpose of an environmental assessment is to reasonably evaluate the potential for or actual impact of past practices on a given site area. In performing an environmental assessment, it is understood that a balance must be struck between a reasonable inquiry into the environmental issues and an exhaustive analysis of each conceivable issue of potential concern. The following paragraphs discuss the assumptions and parameters under which such an opinion is rendered.

No investigation is thorough enough to exclude the presence of hazardous materials at a given site. If hazardous conditions have not been identified during the assessment, such a finding should not therefore be construed as a guarantee of the absence of such materials on the site, but rather as the result of the services performed within the scope, limitations, and cost of the work performed.

Environmental conditions may exist at the site that cannot be identified by visual observation. Where subsurface work was performed, our professional opinions are based in part on interpretation of data from discrete sampling locations that may not represent actual conditions at unsampled locations.

Except where there is express concern of our client, or where specific environmental contaminants have been previously reported by others, naturally occurring toxic substances, potential environmental contaminants inside buildings, or contaminant concentrations that are not of current environmental concern may not be reflected in this document.

**ATTACHMENT B**  
**ANALYTICAL LABORATORY REPORT**

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**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

## Analytical Report Cover Page

### **Leader Group**

For Lab Project # 10-3192

Issued August 11, 2010

This report contains a total of 4 pages

The reported results relate only to the samples as they have been received by the laboratory.

Any noncompliant QC parameters having impact on the data are flagged or documented on the final report.

All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Each page of this document is part of a multipage report. This document may not be reproduced except in its entirety, without the prior consent of Paradigm Environmental Services, Inc.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of frequently used data flags and their meaning:

**"ND" = analyzed for but not detected.**

**"E" = Result has been estimated, calibration limit exceeded.**

**"Z" = See case narrative.**

**"D" = Duplicate results outside QC limits. May indicate a non-homogenous matrix.**

**"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.**

**"B" = Method blank contained trace levels of analyte. Refer to included method blank report.**

**PHC Analysis Report for Soils/Solids/Sludges**

**Client:** Leader Group

**Client Job Site:** N/A

**Lab Project Number:** 10-3192

**Lab Sample Number:** 10562

**Client Job Number:** N/A

**Field Location:** SS - 1

**Date Sampled:** 08/04/2010

**Field ID Number:** N/A

**Date Received:** 08/05/2010

**Sample Type:** Product

**Date Analyzed:** 08/11/2010

PHC Classification	Results in ug / Kg
Petroleum Hydrocarbon	ND< 2,460,000

ELAP Number 10958

Method: NYSDOH 310.13

Comments: ND denotes Non Detect

ug / Kg = microgram per Kilogram

PHC = Petroleum Hydrocarbon

Elevated detection limits due to sample matrix

Signature:

  
Bruce Hoogesteger: Technical Director



**Semi-Volatile STARS Analysis Report for Soils/Solids/Sludges**

Client: Leader Group

Client Job Site:	N/A	Lab Project Number:	10-3192
Client Job Number:	N/A	Lab Sample Number:	10562
Field Location:	SS-1	Date Sampled:	08/04/2010
Field ID Number:	N/A	Date Received:	08/05/2010
Sample Type:	Product	Date Analyzed:	08/07/2010

Base / Neutrals	Results in ug / Kg
Acenaphthene	ND< 97,300
Acenaphthylene	ND< 97,300
Anthracene	ND< 97,300
Benzo (a) anthracene	ND< 97,300
Benzo (a) pyrene	ND< 97,300
Benzo (b) fluoranthene	ND< 97,300
Benzo (g,h,i) perylene	ND< 97,300
Benzo (k) fluoranthene	ND< 97,300
Chrysene	ND< 97,300
Dibenz (a,h) anthracene	ND< 97,300
Fluoranthene	ND< 97,300
Fluorene	ND< 97,300
Indeno (1,2,3-cd) pyrene	ND< 97,300
Naphthalene	ND< 97,300
Phenanthrene	ND< 97,300
Pyrene	ND< 97,300

ELAP Number 10958

Method: EPA 8270C

Data File: S52358.D

Comments: ND denotes Non Detect  
 ug / Kg = microgram per Kilogram  
 Elevated detection limits due to sample matrix

Signature: *Bruce Hoogesteger*  
 Bruce Hoogesteger: Technical Director



# CHAIN OF CUSTODY

<b>REPORT TO:</b>				<b>INVOICE TO:</b>			
COMPANY: <i>Leader Group</i>			COMPANY: <b>Same</b>			LAB PROJECT #:	CLIENT PROJECT #:
ADDRESS: <i>2813 Nichols Drive</i>			ADDRESS:			10-3192	
CITY: <i>Williamsville</i>		STATE: <i>NY</i>	ZIP:	CITY:		STATE:	ZIP:
PHONE: <i>716 585-0963</i>		FAX:	PHONE:		FAX:		TURNAROUND TIME: (WORKING DAYS)
ATTN: <i>K. Keller</i>			ATTN:			<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input checked="" type="checkbox"/> 5 <input type="checkbox"/> OTHER	
PROJECT NAME/SITE NAME:			COMMENTS:			Quotation #	

## REQUESTED ANALYSIS

DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	CONTAINERS	REMARKS	PARADIGM LAB SAMPLE NUMBER								
1 <i>8/4/10</i>	<i>0745</i>		/	<i>(MK)</i> <del>SS-1</del> <i>SS-1</i>	<i>product</i>	<i>1</i>	<i>total pct hydro</i> <i>STARS 5 VOCs</i>									
2																
3																
4																
5																
6																
7																
8																
9																
10																

Sample Condition: Per NELAC/ELAP 210/241/242/243/244

Receipt Parameter	NELAC Compliance	
Container Type:	Y <input checked="" type="checkbox"/>	N <input type="checkbox"/>
Comments: _____		
Preservation: <i>NIA</i>	Y <input type="checkbox"/>	N <input type="checkbox"/>
Comments: _____		
Holding Time:	Y <input checked="" type="checkbox"/>	N <input type="checkbox"/>
Comments: _____		
Temperature: <i>18°C iced</i>	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>
Comments: _____		

<i>Paul Miller</i>	<i>8/4/10 / 0745</i>	
Sampled By	Date/Time	Total Cost: <input style="width: 80px; height: 30px;" type="text"/>
<i>Paul Miller</i>	<i>8/5/10 / 9:00 AM</i>	
Relinquished By	Date/Time	
<i>[Signature]</i>	<i>8/5/10</i>	
Received By	Date/Time	P.I.F. <input style="width: 80px; height: 30px;" type="text"/>
<i>Elizabeth A. Honch</i>	<i>8/5/10 1400</i>	
Received @ Lab By	Date/Time	

**ATTACHMENT C**  
**PHOTOGRAPH LOG**

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Photo 1: Pooled tar-like material on basketball court near SB-1

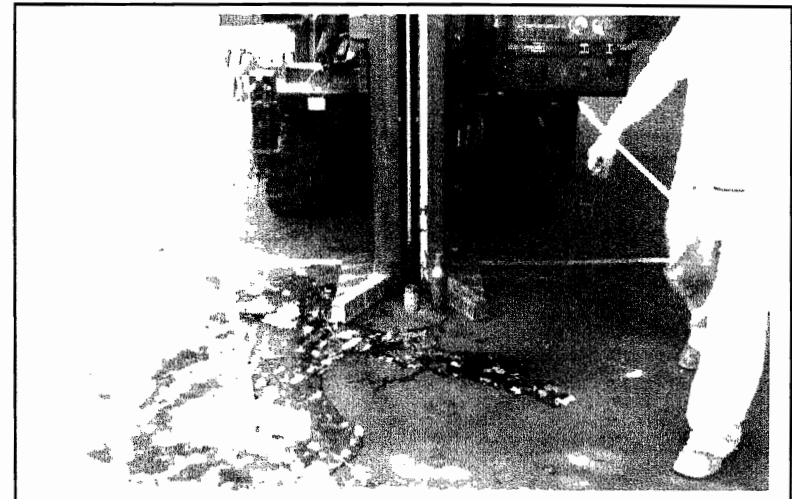


Photo 2: Geoprobng at soil boring location SB-1.

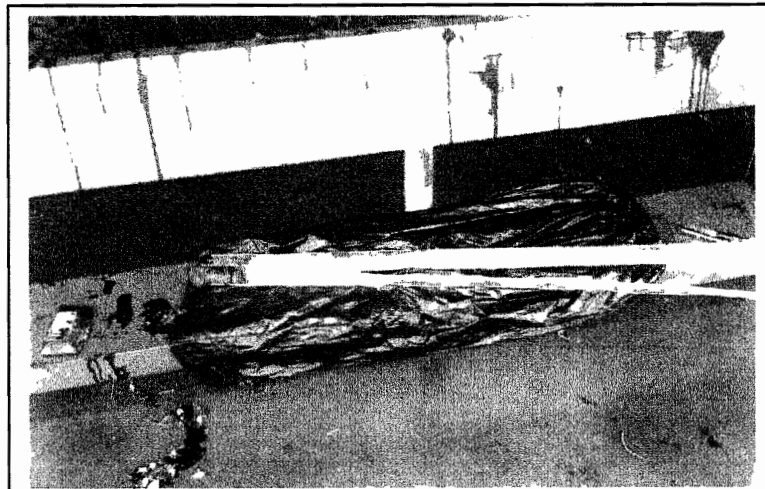


Photo 3: SB-1, 0-4' core sample.

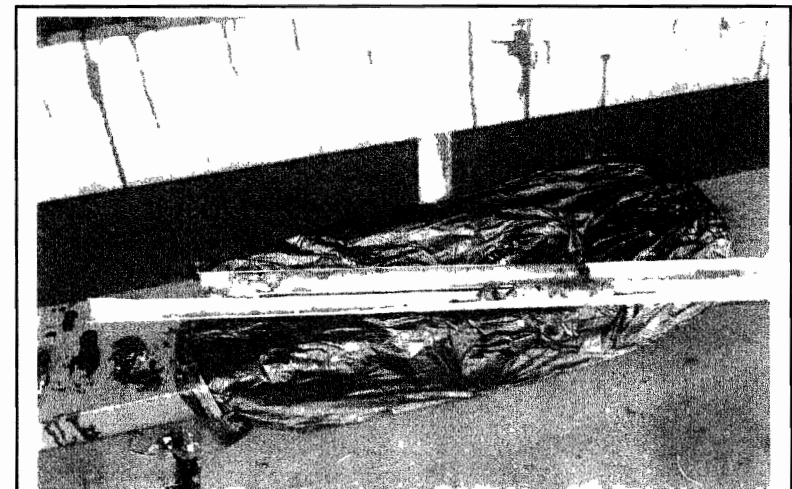


Photo 4: SB-1, 4-8' core sample.



Photo 5: SB-6 location.

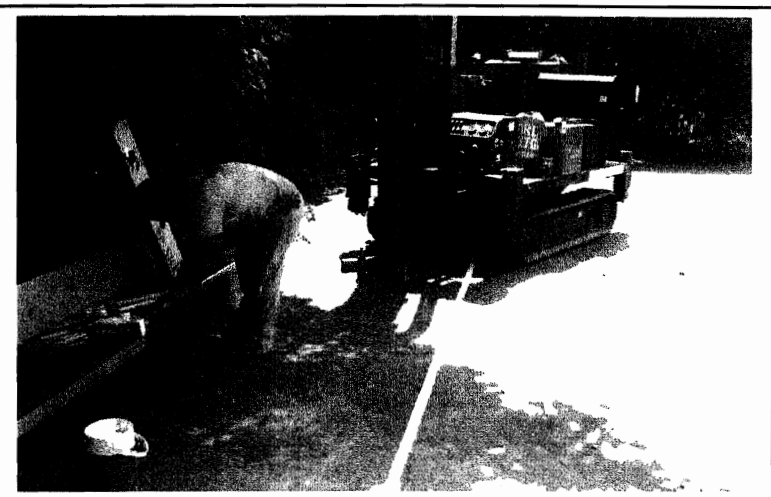


Photo 6: SB-8 location.

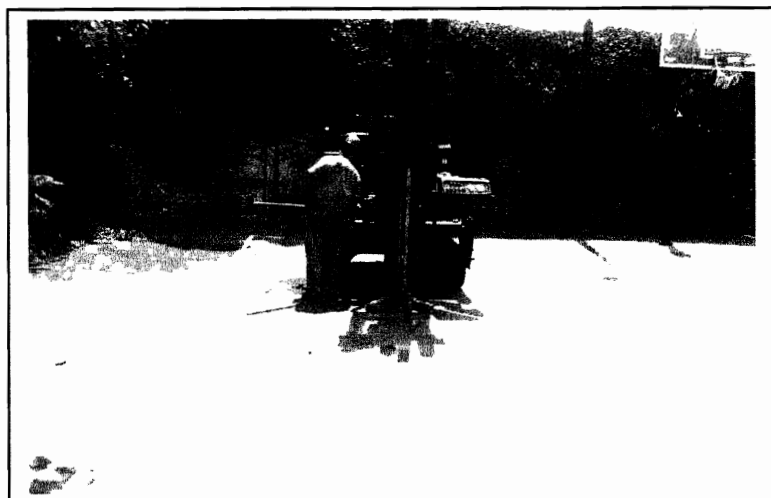


Photo 7: SB-9 location.

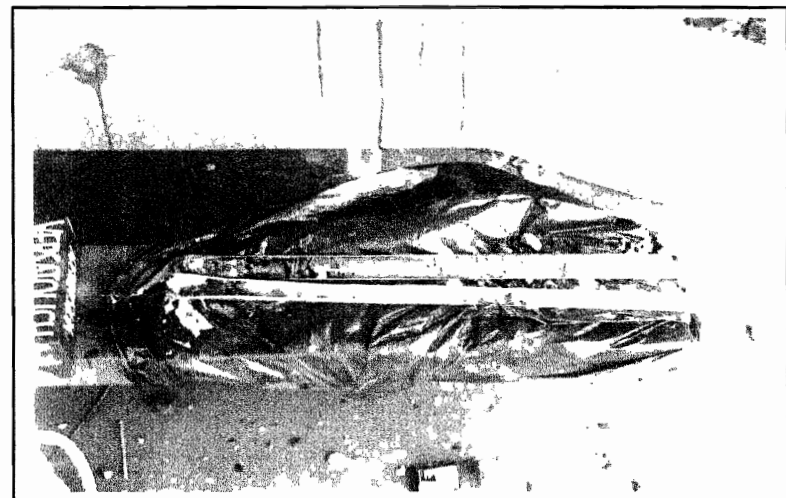


Photo 8: SB-9, 4-8' core sample.

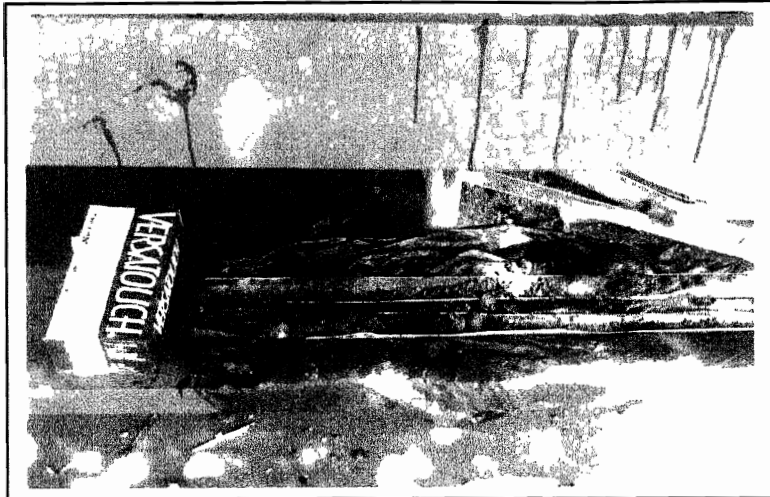


Photo 9: SB-10, 4-8' core sample.

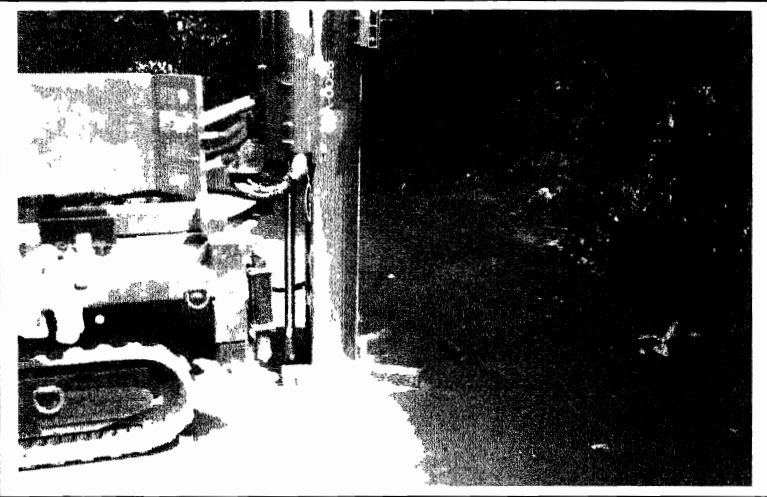


Photo 10: SB-11 location.



Photo 11: SB-12 location.

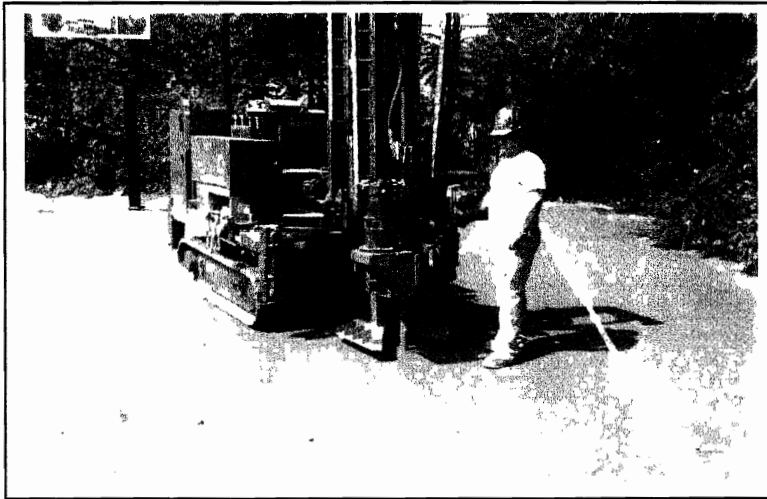


Photo 12: SB-13 location.

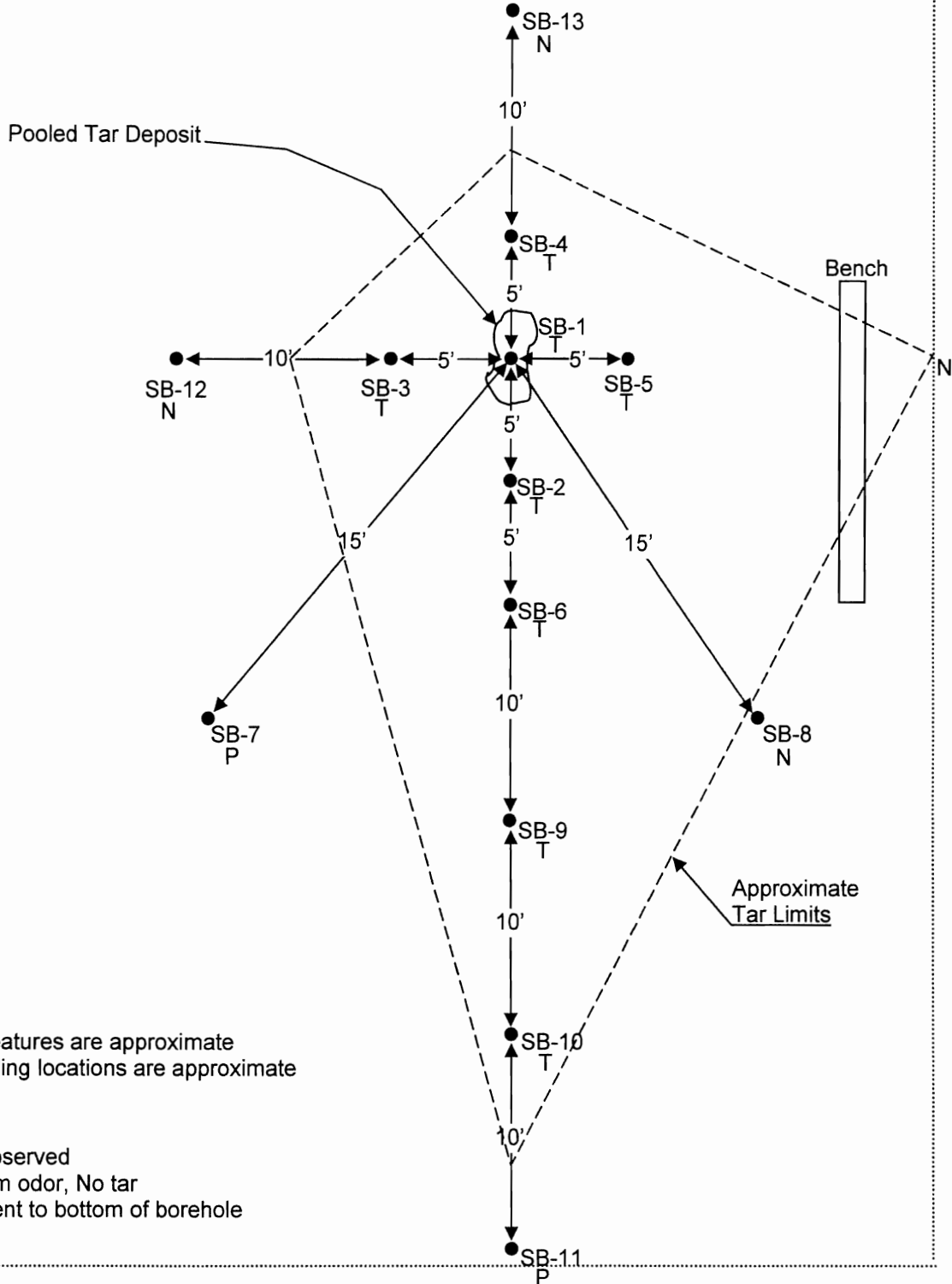


**ATTACHMENT D**  
**FIGURES**

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Chain Link Fence

Railroad Tracks



Notes:

- 1) All site features are approximate
- 2) All sampling locations are approximate

Legend

- N – No tar observed
- P – Petroleum odor, No tar
- T – Tar present to bottom of borehole

Title:

SAMPLE LOCATION MAP  
TRINIDAD PARK  
BUFFALO, NEW YORK



Leader Professional Services, Inc.  
2813 Wehrle Drive, Suite No. 1  
Williamsville, New York 14221  
(716) 565-0963  
(716) 565-0964 (fax)

Project: 696.003

Date: 8/4/10

Scale: N.T.S.

Drawn: HDK

Checked: JAW

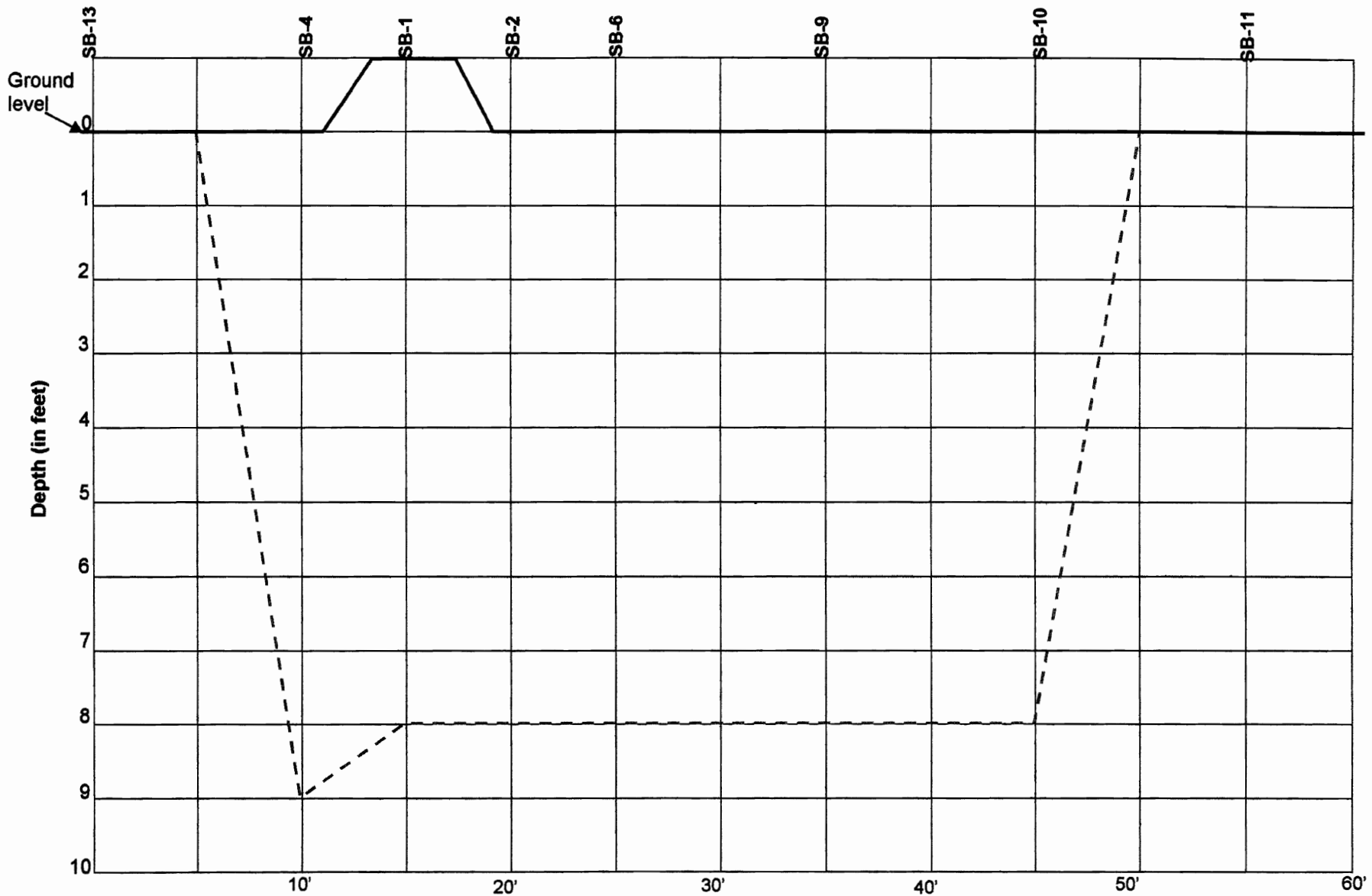
File Name: Fig1.doc

Figure:

1

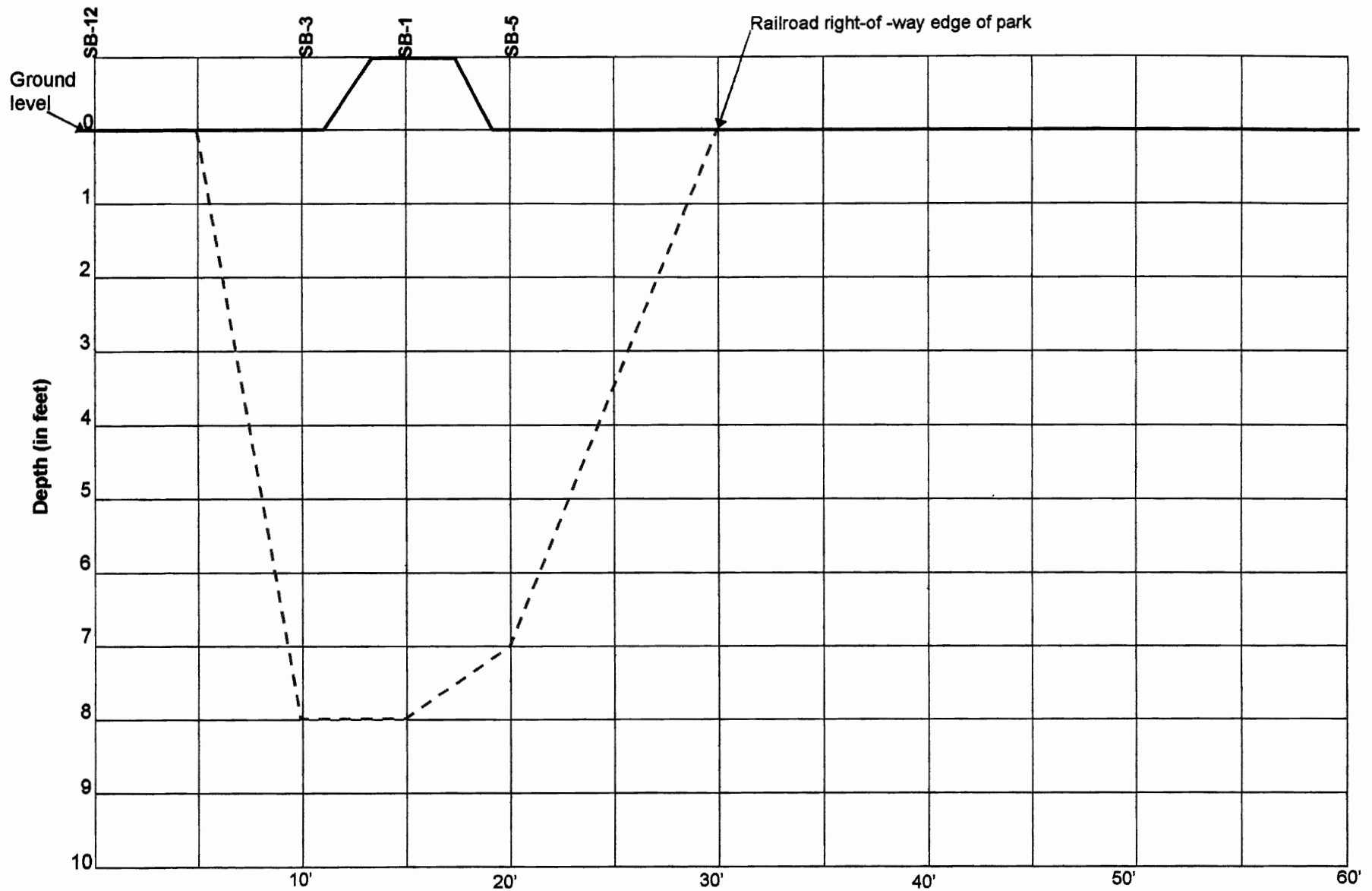
Prepared For:

CITY OF BUFFALO, NY  
DEPARTMENT OF PUBLIC WORKS



Note: SB-1 is raised approximately 1' due to heaving of the surface – vertical extent of contamination assumed to be at 8' depth to point of impenetrable barrier.

<p>Title: North to South Cross Section of Subsurface Conditions Trinidad Park, Buffalo, NY</p>	 <p>Leader Professional Services, Inc. 2813 Wehrle Drive, Suite #1 Williamsville, New York (716) 565-0963 (716) 565-0964 (fax)</p>	<p>Project: 696.003 Date: 8/2010 Scale: N.T.S.</p>	<p>Drawn: HDK Checked: JAW File Name:</p>	<p>Figure:  2</p>
<p>Prepared For: City of Buffalo, NY Department of Public Works</p>				



Note: SB-1 is raised approximately 1' due to heaving of the surface – vertical extent of contamination assumed to be at 8' depth to point of impenetrable barrier.

<p>Title: West to East Cross Section of Subsurface Conditions Trinidad Park, Buffalo, NY</p>	 Leader Professional Services, Inc. 2813 Wehrle Drive, Suite #1 Williamsville, New York (718) 585-0963 (718) 585-0964 (fax)	<p>Project: 696.003          Date: 8/2010          Scale: N.T.S.</p>	<p>Drawn: HDK          Checked: JAW          File Name:</p>	<p>Figure:          3</p>
<p>Prepared For: City of Buffalo, NY          Department of Public Works</p>				