GROUNDWATER INVESTIGATION

FORMER LTV SITE
1205 SOUTH PARK AVENUE
BUFFALO, NEW YORK

Prepared for:

Buffalo Urban Renewal Agency
Department of Community Development
920 City Hall
Buffalo, New York 14202

February 1996

Foit-Albert Associates
Architecture, Engineering and Surveying, P.C.
763 Main Street
Buffalo, New York 14203

GROUNDWATER INVESTIGATION

FORMER LTV SITE
1205 SOUTH PARK AVENUE
BUFFALO, NEW YORK

Prepared for:

Buffalo Urban Renewal Agency
Department of Community Development
920 City Hall
Buffalo, New York 14202

Prepared by:

Foit-Albert Associates, Architecture, Engineering and Surveying, P.C.
763 Main Street
Buffalo, New York

Project No. 96002

February 1996

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

GROUNDWATER INVESTIGATION

FORMER LTV SITE
1205 SOUTH PARK AVENUE
BUFFALO, NEW YORK

I. INTRODUCTION

A. General

The following report summarizes the results of Foit-Albert Associates, Architecture, Engineering and Surveying, P.C.'s (hereinafter Foit-Albert) limited Groundwater Investigation at the Former LTV Site, located at 1205 South Park Avenue, City of Buffalo, County of Erie, New York (hereinafter the site). Four environmental studies have been completed at the site: Real Property Environmental Appraisal Report, Recra Environmental, Inc., October 1990; Phase II Environmental Investigation, Recra Environmental, Inc., August 1991; Limited Environmental Investigation, Enasco, Inc., November 1994; and Continuing Environmental Investigation Report, Enasco, Inc., January 1995. It Foit-Albert's understanding that lease and/or development is proposed for the site.

Prior studies identified and delineated an area of petroleum-contaminated soil beneath a former 5.5 million gallon above-ground fuel oil tank. The source of the contamination was a large fuel oil leak reported at the site in August 1975. The New York State Department of Environmental Conservation (NYSDEC) expressed concern about potential groundwater contamination and its migration toward the Buffalo River.

The NYSDEC expressed additional concerns with potential groundwater contamination north of the Truscon Building and its migration toward the Buffalo River. The basis for this concern was the site's past use as well as records of above-ground and underground storage tanks (ASTs and USTs) north of the Truscon Building. Additionally, prior to the scheduled field investigation, the NYSDEC files revealed aerial photographs depicting two (2) former smaller ASTs, northwest of the former 5.5 million gallon ASTs. The NYSDEC requested that the proposed groundwater investigation be expanded to include these areas.

Incomplete records on USTs at the site, and the potential soil and groundwater contamination from these USTs, were also a concern to the NYSDEC. This investigation will not specifically address the USTs potentially still buried at the site, nor will it indicate potential contamination therefrom.

The Limited Groundwater Investigation was authorized by Mr. Daniel Kreuz, P.E. of the Buffalo Urban Renewal Agency. A site location map is presented in Figure No. 1, in Appendix A.

B. Purpose and Scope

Foit-Albert was contracted to complete a limited Groundwater Investigation to determine if the groundwater at the site had been contaminated and if any of the contamination had migrated from the areas of concern area toward the Buffalo River.

In order to achieve this objective, Foit-Albert completed the following scope of services:

- Met with NYSDEC to discuss their concerns and define the scope of the investigation;
- Planned a limited subsurface investigation and analytical testing program based on the results of previous reports and discussions with the NYSDEC;
- Engaged the services of SJB Services, Inc. to complete drilling at the site;
- Monitored the drilling of eleven (11) boreholes;
- Prepared soil boring logs;
- Completed head-space readings and screened soils;
- Collected four (4) groundwater and four (4) soil samples from selected boreholes;
- Engaged the services of Upstate Laboratories, Inc., a New York State Department of Health (NYSDOH) certified analytical testing laboratory, to analyze the soil and groundwater samples collected at the site; and

- Summarized the information collected in this report.

The observation rendered in this report are based solely on the limited scope of services. Limitations to this report are presented in Appendix E.

II. FIELD INVESTIGATION

A. General

Foit-Albert performed a subsurface investigation at the site on January 30 and 31, 1996. Weather conditions were cold and cloudy, with wind-chill temperatures below 0°F, both days of the field work.

In order to examine potential groundwater contamination at the site, nine (9) boreholes were advanced between the delineated petroleum-contaminated soil and the Buffalo River. Borehole locations were laid out on 100-foot spacings, with borehole B-6 aligned with Test Pit #5 (the center point of the former environmental investigations completed at the site), and extending to area of the two (2) former smaller ASTs. Two (2) boreholes were advanced north of the Truscon Building, along the Buffalo River. Borehole B-10 was located 50 feet form the South Park Avenue lift bridge abutment, with boreholes B-11 and B-12, 150' and 250' northeast of B-10 respectively, along the Buffalo River. Boreholes were staked out the week prior to the field work. Refer to Figure No. 2 for borehole locations. Photographs of borehole locations are shown in Appendix B.

Use of the Goeprobe was proposed to allow groundwater samples to be taken strategically without the permanency or expense of groundwater monitoring wells. Geoprobe advancement was difficult due to the layer of slag beneath the site. The Geoprobe was only used for the first three (3) borehole locations (B-1 through B-3). Conventional auger drilling was used to at borehole locations B-4 through B-12.

Soil was continuously screened at two (2) foot intervals for organic vapors, indicative of petroleum-type contamination. This was accomplished by placing soil into precleaned jars and

taking head-space readings with a Hnu Photoionization Detector (PID). The PID was equipped with a 10.4 Ev light source probe and calibrated prior to field us in accordance with manufacturer's instructions. Sub-zero temperatures and bitter wind-chill prohibited accurate soil head-space readings to be obtained in the field. In this situation, the soil head-space jars were brought inside at the end of the day to warm to room temperature, where head-space readings were obtained. Poor sample recovery using the Geoprobe prohibited complete head-space readings to be obtained from full depths at locations B-1 through B-3. Head-space readings are summarized in Table 1.

The soils were also observed for visual and olfactory evidence of contamination (such as petroleum-type odors) and the for presence of groundwater. The soil screening was used to strategically choose locations for obtaining representative groundwater samples along the Buffalo River. Groundwater samples were obtained, based on the results of the soil screening process. Groundwater samples were obtained above or at the level of the Buffalo River.

Three (3) representative groundwater samples were obtained between the delineated petroleum-contaminated soil and the Buffalo River for analysis. One (1) representative groundwater sample was obtained from the area north of the Truscon Building along the Buffalo River, for analysis. Associated soils samples from the groundwater sampling locations were collected and analyzed as requested by the NYSDEC.

B. Drilling Procedure

SJB Services, Inc. was contracted to complete the drilling at the site. A CME-45C drill rig with a Geoprobe attachment was used. Due to the extensive presence of slag beneath the site, advancement of the Geoprobe was difficult and soil sample recovery was inadequate. The Geoprobe was used, therefore, only the first three (3) borehole locations (B-1 through B-3). Conventional auger drilling was used to at borehole locations B-4 through B-12.

During conventional augering, standard split spoon sampling was used to obtain samples at each 2 foot interval. Blow counts were recorded and soil type was noted. Presence of groundwater was also noted, as recorded in soil boring logs. Complete subsurface logs appear in Appendix C.

It was initially proposed to complete three (3) borings north of the Truscon Building, however only two (2) were drilled. Shortage of daylight and severe weather conditions prevented the drilling of borehole B-11.

C. Subsurface Conditions

Foit-Albert evaluated the subsurface conditions along the Buffalo River at the site, based upon eleven boring locations. Based on observations made during the drilling operations, the site is generally underlain by a thick layer of slag from the surface of the site to approximately 6 feet below ground surface. Generally underlying the slag is a brown sandy silt material, from approximately 6 feet to 10 feet below ground surface. A layer of grey sand was encountered generally from 10 feet to 16 feet below ground surface. Groundwater was generally encountered at 13 to 15 feet below ground surface, approximate at the level of the Buffalo River. The clay layer that is reported to exist beneath the site, was not encountered during the subsurface investigation, except at the location of borehole B-1, B-2 and B-3.

Field screening of soils from boring B-5 indicated no petroleum-type contamination. Petroleum-type odors and visual staining of the soils was observed in boreholes B-7, B-8 and B-9, at depths of 4 feet to 18 feet below ground surface.

TABLE 1
SOIL HEAD-SPACE READINGS[1]
(ppm)

LOCATION	B1	B2	B3	B4	B5	B6	B7	B8[2]	B9	B10	B12
2' - 4'	8	NS	17	16	16	16	20	5	4	13	19
4' - 6'	7	15	17	16	17	6	16	5	4	17	20
6' - 8'	7	17	25	17	16	10	14	17	5	18	18
8' - 10'	10	NS	17	16	17	5	25	15	54	20	18
10' - 12'	NS	NS	16	16	17	17	NS	19	50	18	NS
12' - 14'	NS	NS	NS	16	16	19	NS	18	50	19	19
14' - 16'	NS	NS	NS	16	17	NS	NS	NS	15	NS	NS

Notes:

(1) Head-space readings indicate maximum PID reading from steady range of PID values.

(2) Actual interval sampled: 2'-4', 4'-5', 5'-7', 7'-9', 9'-11', 11'-13', and 13'-15'.

NS No sample recovered from this interval/No head-space reading this interval.

ppm parts per million

III. LABORATORY TESTING AND RESULTS

A. Groundwater Sampling and Results

Four (4) representative groundwater samples were collected and analyzed for the primary gasoline and fuel oil components of concern by United States Environmental Protection Agency (USEPA) Test Method 8021 for volatile organic compounds and USEPA Test Method 8270 for semi-volatile organic compounds, as listed in the NYSDEC "Spill Technology and Remediation Series (STARS) Memo #1, Petroleum Contaminated Soil Guidance Policy", dated August, 1992 (hereinafter the NYSDEC STARS Memo #1), in accordance with our proposal.

Groundwater samples were collected from boreholes B-5, B-8, B-9 and B-10, on January 31, 1996. Refer to Figure No. 2 for sample locations. The samples were collected by lowering a disposal bailer, equipped with a bottom filling check valve, into the open borehole and allowing the bailer to fill. The bailer was carefully removed and the contents were emptied into appropriate precleaned containers. NYSDEC sampling guidelines and protocols were followed. All sampling equipment was decontaminated between sample locations. Groundwater samples were labeled, placed into a cooler and delivered to Upstate Laboratories for testing, under strict chain-of-custody protocol.

The analytical test results indicate that generally groundwater samples have acceptable levels of contaminates of concern for components of gasoline and fuel oil. Table 2 summarizes groundwater analytical results and compares these values to the NYSDEC Extraction Guidance Values. (Refer to Appendix D for complete Analytical Test Results). Groundwater samples GW-8 and GW-9 have concentrations of volatile organic petroleum contaminants slightly above Guidance Values. These contaminants include isopropylbenzene, n-propylbenzene, 1,2,4-trimethylbenzene, and n-butylbenzene.

TABLE 2 GROUNDWATER ANALYTICAL RESULTS (ug/L)					
ANALYTE	GW-5	GW-8	GW-9	GW-10	GUIDANCE VALUE[1] (ppb)
Isopropylbenzene	< DL	7	8	0.5	5
n-Propylbenzene	< DL	< DL	13	1	5
1,2,4-Trimethylbenzene	< DL	< DL	57	5	5
n-Butylbenzene	< DL	< DL	6	1	5
sec-Butylbenzene	< DL	< DL	3	< DL	5
Naphthalene	< DL	< DL	< DL	0.6	10
Fluorene	< DL	< DL	< DL	14	50
Phenanthrene	< DL	< DL	< DL	24	50
Acenaphthene	< DL	< DL	< DL	12	20

Notes:

(1) Groundwater Guidance Values are the TCLP Extraction Guidance Values for the primary components of gasoline and fuel oil. These values are equal to the NYSDEC groundwater quality standards or the NYSDOH drinking water quality standards, whichever is more stringent, as published in NYSDEC STARS Memo #1.

2 ug/L = parts per billion (ppb).

3 < DL = less than detection limit.

4 Shaded result exceed guidance value.

B. Soil Sampling and Results

As part of the Groundwater Investigation, Foit-Albert collected the four (4) associated soil samples from the groundwater sampling locations, as requested by the NYSDEC. The soil samples were analyzed for the primary gasoline and fuel oil components of concern by USEPA Test Method 8021 for volatile organic compounds and USEPA Test Method 8270 for semi-volatile organic compounds as listed in NYSDEC STARS Memo #1, in accordance with our proposal. The four (4) soil samples were collected from boreholes B-5, B-8, B-9 and B-10. Refer to Figure No. 2 for sample locations.

Soil samples were recovered with a split spoon sampler. Soil samples were composited over two to four foot intervals, depending on the amount of sample recovered and results of the soil screening. Soil screening was completed by observing visual and olfactory evidence of petroleum-type contamination (i.e. odor and staining). Head-space readings were unavailable because extremely cold weather prohibited accurate soil head-space readings to be obtained in the field.

Soil samples were collected on January 30 and 31, 1996. NYSDEC sampling guidelines and protocols were followed. All sampling equipment, including split spoons, was decontaminated between sample locations. The soil samples were labeled, placed into a cooler and delivered to Upstate Laboratories for testing, under strict chain-of-custody protocol.

The analytical test results indicate all samples, except B-8, have acceptable soil concentrations for components of gasoline and fuel oil. Table 3 summarizes soil analytical results and compares these values to the NYSDEC Alternative Guidance Values. (Refer to Appendix D for complete Analytical Test Results). Soil sample B-8 has concentrations of volatile organic contaminants slightly above Guidance Values. These contaminants include 1,2,4-trimethylbenzene and n-butylbenzene.

TABLE 3 SOIL ANALYTICAL RESULTS (mg/kg)					
ANALYTE	B-5	B-8 * 11-15	B-9 * 14-18	B-10 * 8-14	GUIDANCE VALUE[1] (ppb)
Ethylbenzene	< DL	< DL	6	< DL	100
n-Propylbenzene	< DL	< DL	6	< DL	100
1,2,4-Trimethylbenzene	< DL	160	4	< DL	100
1,3,5-Trimethylbenzene	< DL	< DL	6 5	< DL	100
n-Butylbenzene	< DL	130	8	< DL	100

Notes:

(1) Soil Guidance Values are the TCLP Alternative Guidance Values for the primary components of gasoline and fuel oil. These values are equal to 20 times the NYSDEC groundwater quality standards or the NYSDOH drinking water quality standards, whichever is more stringent, as published in NYSDEC STARS Memo #1.

2 mg/kg = parts per billion (ppb).

3 < DL = less than detection limit.

4 Shaded result exceed guidance value.

* soil sample interval used for composite sample per 2/2/96 telephone conversation w/ Muffett Mauche George

IV. SUMMARY AND CONCLUSION

A limited Groundwater Investigation was completed for the Buffalo Urban Renewal Agency at the Former LTV Site, located at 1205 South Park Avenue in Buffalo, New York. This investigation was designed to specifically address concerns about potential groundwater contamination at the site expressed by the NYSDEC. The conclusions summarized below are subject to the limitations presented in Appendix E. Based on the limited scope of services and information collected by Foit-Albert, the relevant findings are:

- As part of the Groundwater Investigation, Foit-Albert collected three (3) representative groundwater samples for boreholes adjacent to the delineated petroleum-contaminated soil, along the Buffalo River. Analytical tests completed indicate volatile organic compounds slightly above NYSDEC Guidance Values in GW-8 and GW-9. These compounds include isopropylbenzene, n-propylbenzene, 1,2,4-trimethylbenzene, and n-butylbenzene.

- NYSDEC directed Foit-Albert to collect the three (3) associated soil samples from the borehole locations where groundwater was sampled. Analytical tests completed indicate volatile organic compounds slightly above NYSDEC Alternative Guidance Values in borehole location B-8. These compounds include 1,2,4-trimethylbenzene and n-butylbenzene.

- Analytical results of soil samples indicate petroleum-type contamination in soils along the Buffalo River, outside the delineated contamination area. These results indicate a larger area of soil contamination than previously delineated in the Continuing Environmental Investigation Report, Enasco, Inc., January 1995.

- As part of the Groundwater Investigation, Foit-Albert collected one (1) representative groundwater sample and the associated soil sample from borehole B-10 north of the Truscon Building, along the Buffalo River. Analytical tests completed indicate no contaminants of concern above NYSDEC Guidance Values were detected in the groundwater or soil.

- It is Foit-Albert's understanding that the petroleum-contaminated soils at the site will undergo remediation. Foit-Albert concludes that the past fuel leak at the site is the source of this minor groundwater contamination. Source removal/treatment of the petroleum contaminated soil will effectively relieve further groundwater contamination. Foit-Albert concludes that it is unlikely that groundwater remediation will be required due to the low concentrations of petroleum contaminants found in the groundwater.

- Foit-Albert recommends that the Buffalo Urban Renewal Agency notify the NYSDEC of the findings of this investigation.

- Finally, Foit-Albert recommends proper closure of the USTs at the site in accordance with NYSDEC regulations and City of Buffalo ordinances. Closure will include investigation of potential soil and groundwater contamination surrounding the buried tanks and will eliminate additional sources of contamination at the site.

APPENDIX A

QUADRANGLE LOCATION

BUFFALO SE, N. Y.
SE/4 BUFFALO 15' QUADRANGLE
N4245—W7845/7.5

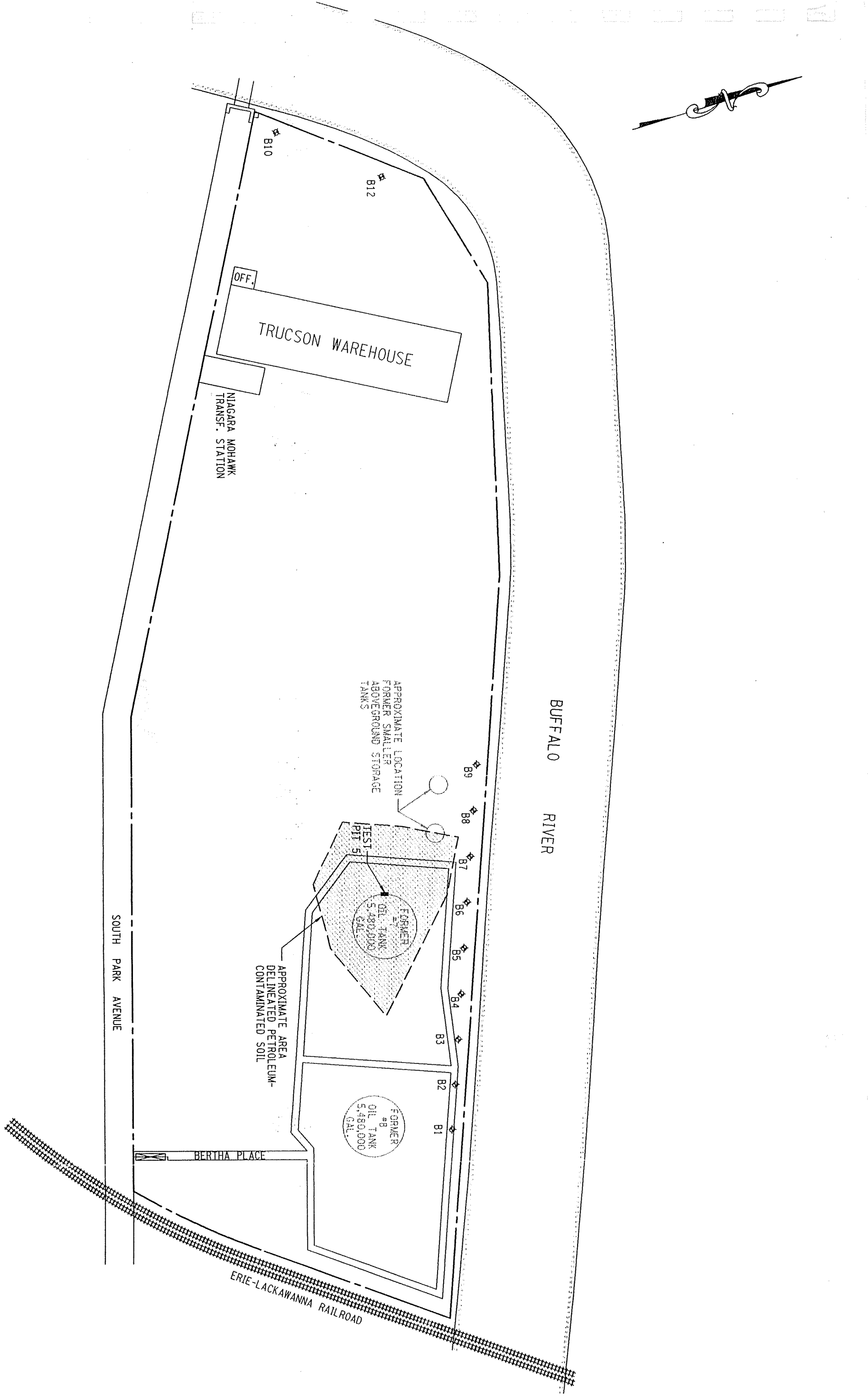
1965

AMS 5269 IV SE—SERIES V821

FIGURE 1

SITE LOCATION MAP
SCALE: 1:24,000

Foit-Albert Associates
Architecture, Engineering and Surveying, P.C.
763 Main Street
Buffalo, New York 14203



SCALE: 1" = 200'

96002

FIGURE 2
SITE PLAN - BOREHOLE LOCATIONS

FORMER LTV SITE GROUNDWATER INVESTIGATION

CITY OF BUFFALO NEW YORK

Foit-Albert Associates
Architecture, Engineering and Surveying, P.C.
763 Main Street
Buffalo, New York 14203

APPENDIX B

PHOTOGRAPH LOG

PROJECT: Former LTV Site

DATE: January 30, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

PROJECT No.: 96002

SHEET No.: 1 of 11

DESCRIPTION: Borehole B-1

PHOTOGRAPH LOG

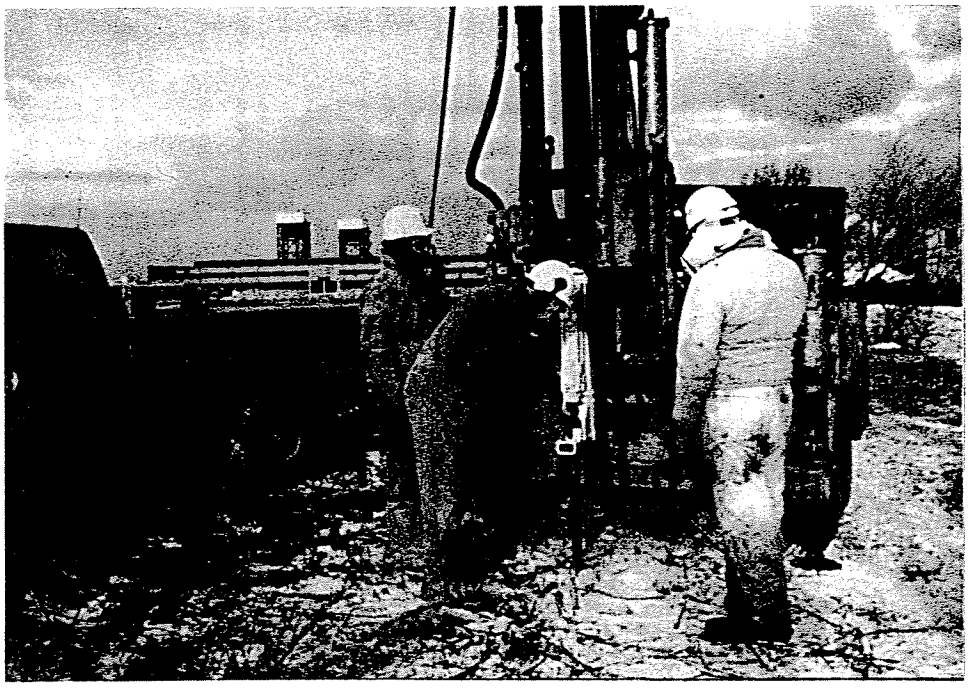
PROJECT: Former LTV Site

DATE: January 30, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

PROJECT No.: 96002

SHEET No.: 2 of 11



DESCRIPTION: Borehole B-2

PHOTOGRAPH LOG

PROJECT: Former LTV Site **DATE:** January 30, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

PROJECT No.: 96002 **SHEET No.:** 3 of 11

DESCRIPTION: Borehole B-3

PHOTOGRAPH LOG

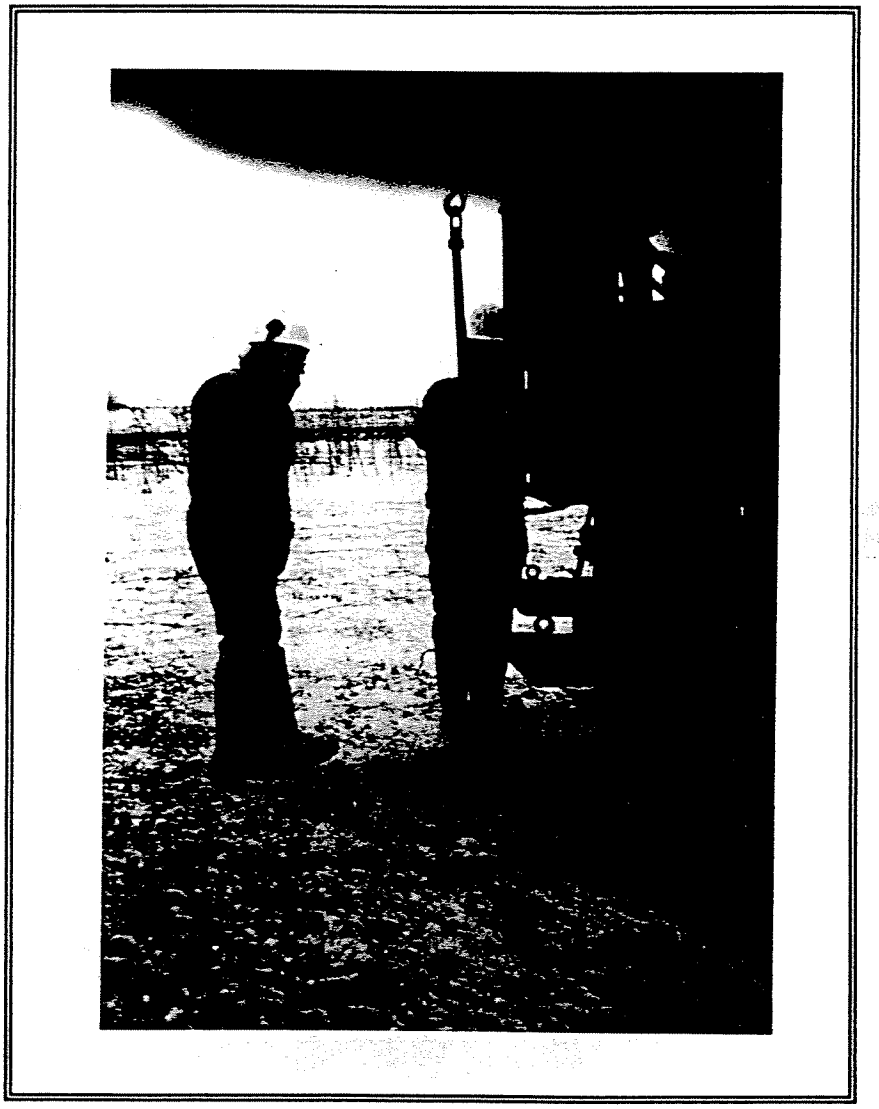
PROJECT: Former LTV Site

DATE: January 30, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

PROJECT No.: 96002

SHEET No.: 4 of 11



DESCRIPTION: Borehole B-4

PHOTOGRAPH LOG

PROJECT: Former LTV Site **DATE:** January 30, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

PROJECT No.: 96002 **SHEET No.:** 5 of 11

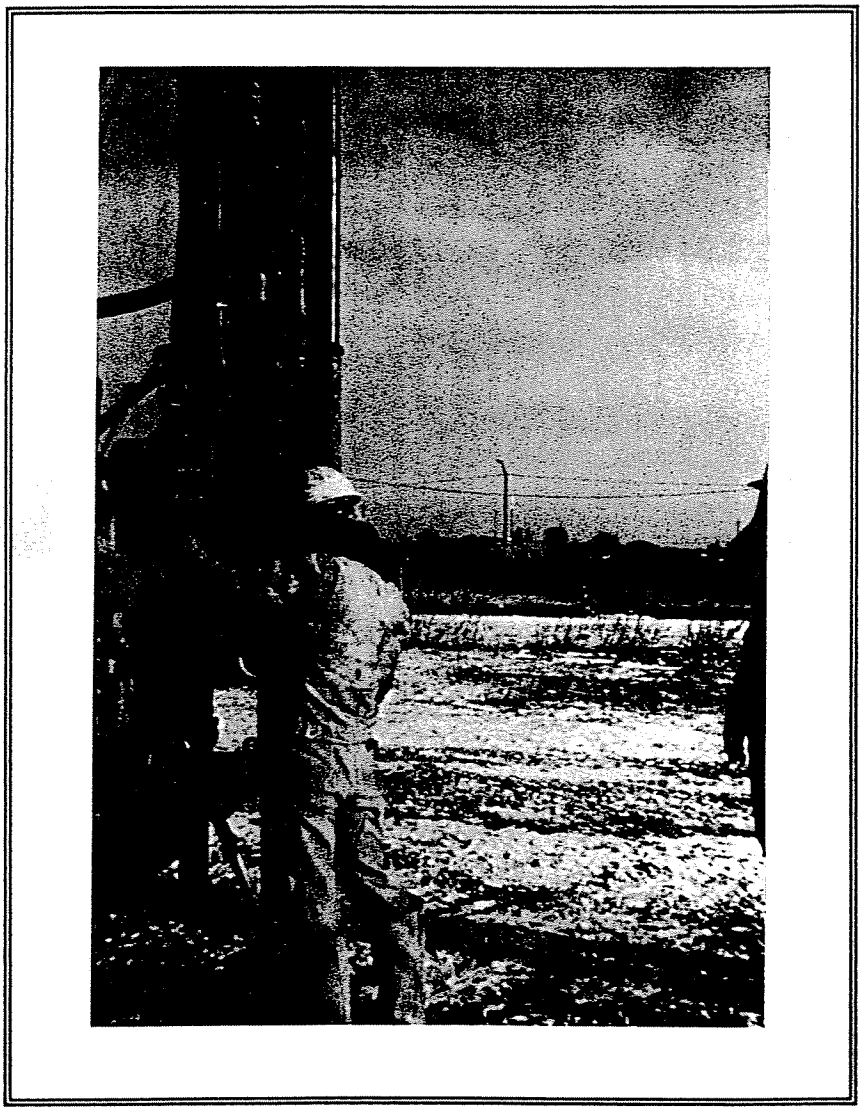
DESCRIPTION: Borehole B-5

PHOTOGRAPH LOG

PROJECT: Former LTV Site **DATE:** January 31, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

PROJECT No.: 96002 **SHEET No.:** 6 of 11



DESCRIPTION: Borehole B-6

PHOTOGRAPH LOG

PROJECT: Former LTV Site **DATE:** January 31, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

PROJECT No.: 96002 **SHEET No.:** 7 of 11

DESCRIPTION: Borehole B-7

PHOTOGRAPH LOG

PROJECT: Former LTV Site

DATE: January 31, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

PROJECT No.: 96002

SHEET No.: 8 of 11

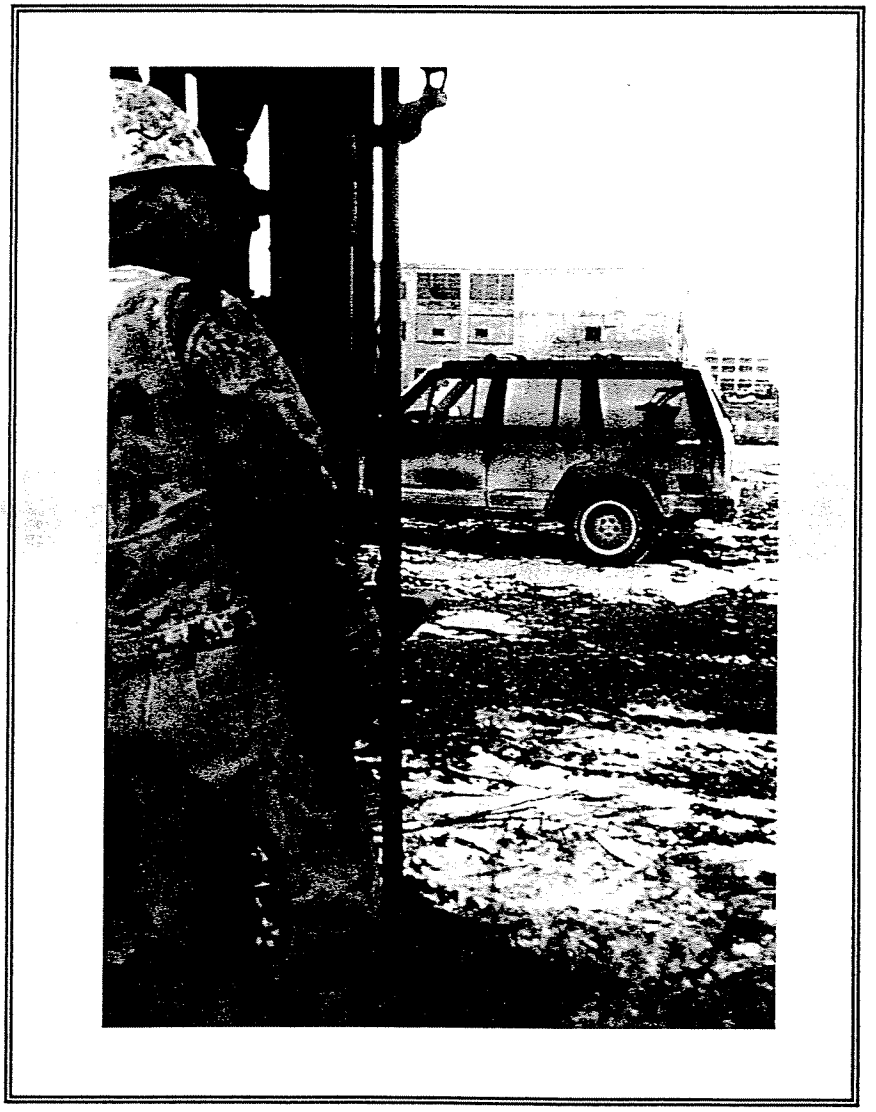
DESCRIPTION: Borehole B-8

PHOTOGRAPH LOG

PROJECT: Former LTV Site **DATE:** January 31, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

PROJECT No.: 96002 **SHEET No.:** 9 of 11



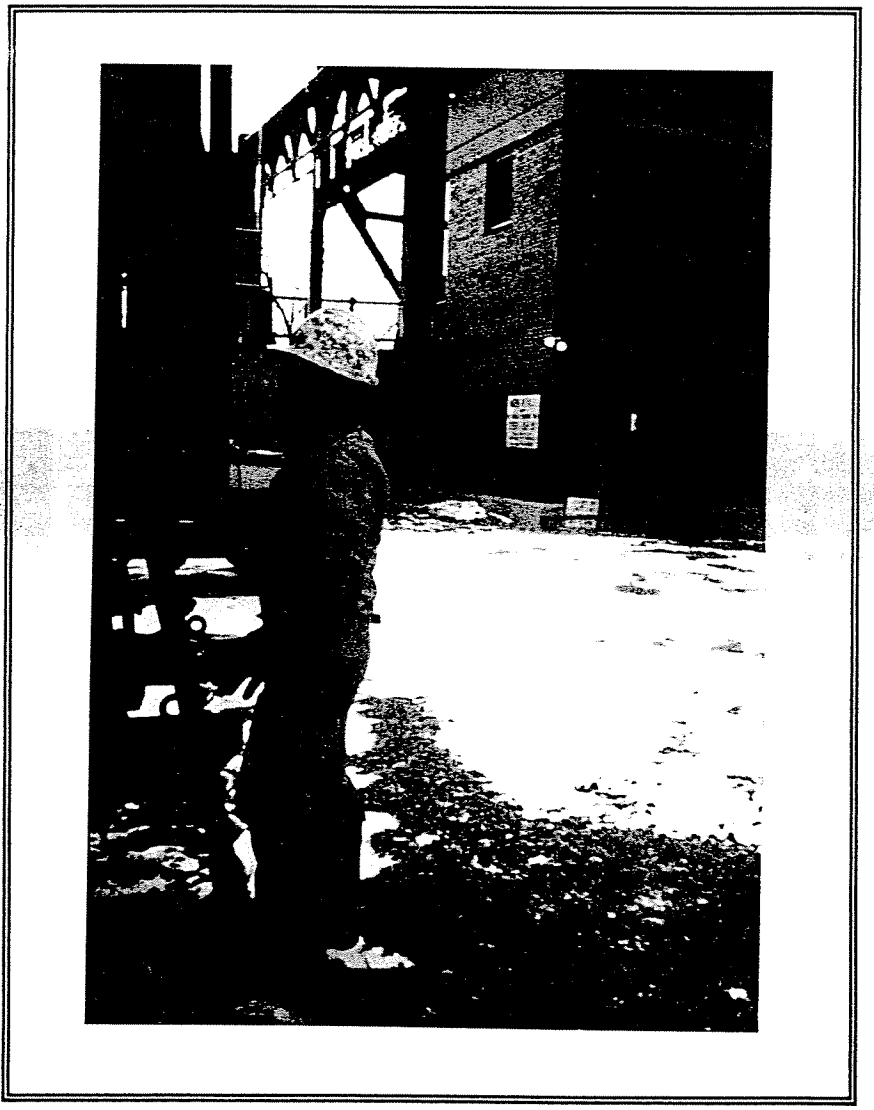
DESCRIPTION: Borehole B-9

PHOTOGRAPH LOG

PROJECT: Former LTV Site **DATE:** January 31, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

PROJECT No.: 96002 **SHEET No.:** 10 of 11



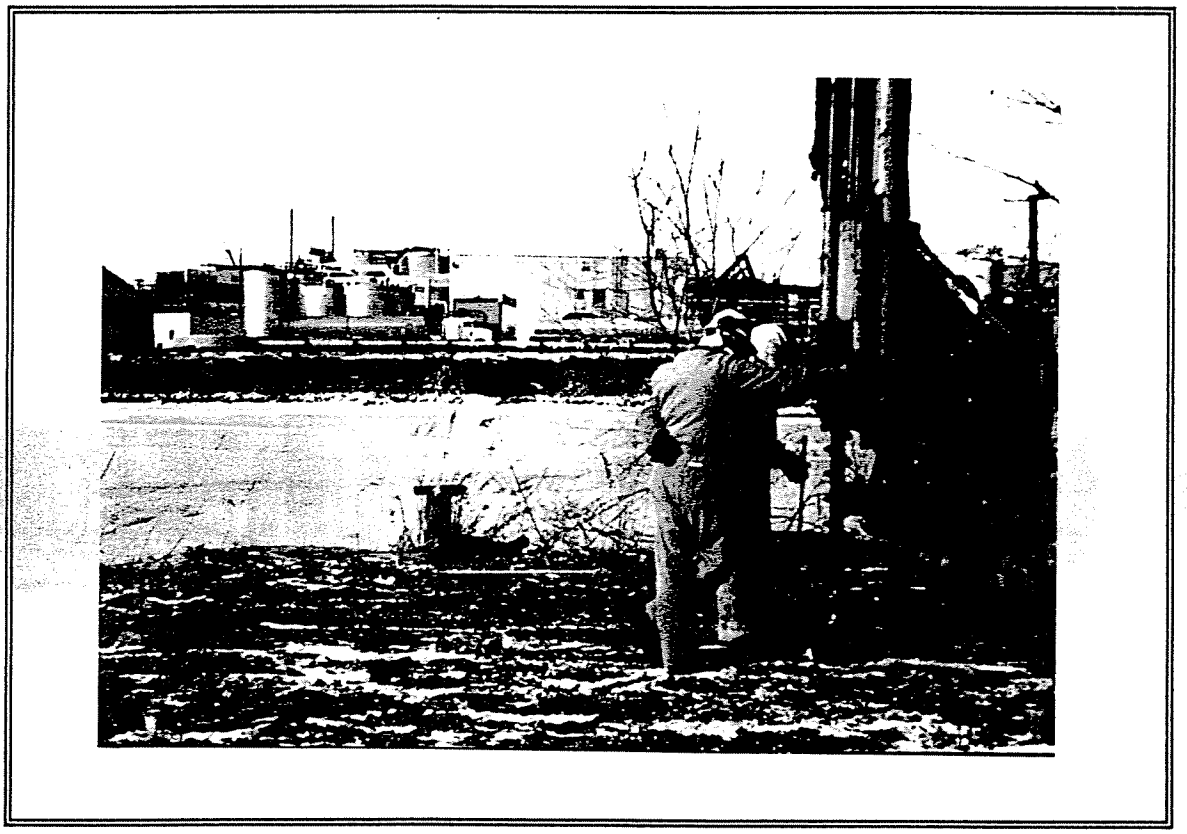
DESCRIPTION: Borehole B-10

PHOTOGRAPH LOG

PROJECT: Former LTV Site **DATE:** January 31, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

PROJECT No.: 96002 **SHEET No.:** 11 of 11



DESCRIPTION: Borehole B-12

APPENDIX C

SUBSURFACE LOG

PROJECT: Former LTV Site

DATE: January 30, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

HOLE No.: B-1

PROJECT No.: 96002

GROUNDWATER DEPTH: Not Enc.

DRILLER: SJB Services, Inc.

SHEET No.: 1 of 11

DEPTH	Blows on Sampler				SOIL CLASSIFICATION	NOTES	PID Reading (ppm)
	0/6	6/12	12/18	18/24			
2'-4'	NA	NA	NA	NA	slag	sulfur odor	8
4'-6'	NA	NA	NA	NA	slag/clay	sulfur odor	7
6'-8'	NA	NA	NA	NA	clay	sulfur odor	7
8'-10'	NA	NA	NA	NA	clay/course sand	wet/no discernable odor	10

Notes:

NA Geoprobe used, blow counts not recorded.

NS No sample recovered from this interval/No head space reading this interval.

Not Enc. Groundwater not encountered.

SUBSURFACE LOG

PROJECT: Former LTV Site

DATE: January 30, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

HOLE No.: B-2

PROJECT No.: 96002

GROUNDWATER DEPTH: Not Enc.

DRILLER: SJB Services, Inc.

SHEET No.: 2 of 11

DEPTH	Blows on Sampler				SOIL CLASSIFICATION	NOTES	PID Reading (ppm)
	0/6	6/12	12/18	18/24			
2'-4'	NA	NA	NA	NA			NS
4'-6'	NA	NA	NA	NA		refusal @ 5'/ no recovery/ moved rig - 2' NW	NS
4'-6'	NA	NA	NA	NA	clay/bricks & fill material	moved rig again 6' NW to obtain sample	15
6'-8'	NA	NA	NA	NA	clay/bricks & fill material	no discernable odor	17

Notes:

NA Geoprobe used, blow counts not recorded.

NS No sample recovered from this interval/No head space reading this interval.

Not Enc. Groundwater not encountered.

SUBSURFACE LOG

PROJECT: Former LTV Site

DATE: January 30, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

HOLE No.: B-3

PROJECT No.: 96002

GROUNDWATER DEPTH: 12'

DRILLER: SJB Services, Inc.

SHEET No.: 3 of 11

DEPTH	Blows on Sampler				SOIL CLASSIFICATION	NOTES	PID Reading (ppm)
	0/6	6/12	12/18	18/24			
2'-4'	NA	NA	NA	NA	slag	sulfur odor	17
4'-6'	NA	NA	NA	NA	slag/clay	slight sulfur odor	17
6'-8'	NA	NA	NA	NA	slag/clay	no discernable odor/small sample recovered	25
8'-10'	NA	NA	NA	NA	slag/stones/fill	slight sulfur odor/small sample recovered	17
10'-12'	NA	NA	NA	NA	stones/fill/grey sand	slight sulfur odor/small sample recovered	16
12'-14'	NA	NA	NA	NA	grey sand/gravel	not sulfur odor/small sample recovered	NS

Notes:

NA Geoprobe used, blow counts not recorded.

NS No sample recovered from this interval/No head space reading this interval.

SUBSURFACE LOG

PROJECT: Former LTV Site

DATE: January 30, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

HOLE No.: B-4

PROJECT No.: 96002

GROUNDWATER DEPTH: 14'

DRILLER: SJB Services, Inc.

SHEET No.: 4 of 11

DEPTH	Blows on Sampler				SOIL CLASSIFICATION	NOTES	PID Reading (ppm)
	0/6	6/12	12/18	18/24			
2'-4'	100/ .3				slag	refusal @ 2.3' moved rig - 2' NE	16
4'-6'	18	5	4	3	slag/sandy silt	sulfur odor	16
6'-8'	3	2	2	3	brown sandy silt	sulfur odor	17
8'-10'	2	1	2	1	brown sandy silt	no discernable odor	16
10'-12'	WOH	1	2	2	brown sandy silt/ grey sand	no discernable odor/layer of leaves & wood in sample	16
12'-14'	2	1	2	2	grey sand	wet	16
14'-16'	2	2	4	5	grey sand/gravel	wet	16

Notes:

WOH Weight of hammer.

SUBSURFACE LOG

PROJECT: Former LTV Site

DATE: January 30, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

HOLE No.: B-5

PROJECT No.: 96002

GROUNDWATER DEPTH: 14'

DRILLER: SJB Services, Inc.

SHEET No.: 5 of 11

DEPTH	Blows on Sampler				SOIL CLASSIFICATION	NOTES	PID Reading (ppm)
	0/6	6/12	12/18	18/24			
2'-4'	33	45	48	20	slag	sulfur odor	16
4'-6'	9	3	2	2	slag/brown clayey silt	no discernable odor/black "coal" type layer	17
6'-8'	3	2	2	50/.1	brown clayey silt/ gravel		16
8'-10'	1	2	2	2	sandy silt		17
10'-12'	1	2	2	2	sandy silt/grey sand	layer leaves & wood in sample	17
12'-14'	1	2	1	2	grey sand	wet	16
14'-16'	3	4	5	4	grey sand	wet	17

Notes:

Groundwater and soil samples collected from B-5. Soil sample composited from 10' to 14'.

SUBSURFACE LOG

PROJECT: Former LTV Site

DATE: January 31, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

HOLE No.: B-6

PROJECT No.: 96002

GROUNDWATER DEPTH: 14'

DRILLER: SJB Services, Inc.

SHEET No.: 6 of 11

DEPTH	Blows on Sampler				SOIL CLASSIFICATION	NOTES	PID Reading (ppm)
	0/6	6/12	12/18	18/24			
2'-4'	22	33	9	4	slag	sulfur odor	16
4'-6'	WOH	1	2	1	brown sandy silt	slight sulfur odor	6
6'-8'	1	3	3	2	brown sandy silt	no discernable odor	10
8'-10'	WOH	3	3	2	brown sandy silt/ grey sand		5
10'-12'	WOH	1	1	1	grey sand	wet/ layer leaves & wood in sample	17
12'-14'	2	1	2	4	grey sand	wet/ layer leaves & wood in sample	19

Notes:

WOH Weight of hammer.

SUBSURFACE LOG

PROJECT: Former LTV Site

DATE: January 31, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

HOLE No.: B-7

PROJECT No.: 96002

GROUNDWATER DEPTH: Not Enc.

DRILLER: SJB Services, Inc.

SHEET No.: 7 of 11

DEPTH	Blows on Sampler				SOIL CLASSIFICATION	NOTES	PID Reading (ppm)
	0/6	6/12	12/18	18/24			
2'-4'	2	2	3	4	slag & fill type material/ brown sandy silt	visible staining	20
4'-6'	1	2	1	1	brown sandy silt	strong petroleum odor/visible staining	16
6'-8'	WOH /2'				saturated sand	wet/strong petroleum odor/visible staining	14
8'-10'	WOH /1'		1	1	saturated sand	wet/strong petroleum odor/sheen on head space sample	25

Notes:

WOH Weight of hammer.

Not Enc. Groundwater not encountered

SUBSURFACE LOG

PROJECT: Former LTV Site

DATE: January 31, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

HOLE No.: B-8

PROJECT No.: 96002

GROUNDWATER DEPTH: 13'

DRILLER: SJB Services, Inc.

SHEET No.: 8 of 11

DEPTH	Blows on Sampler				SOIL CLASSIFICATION	NOTES	PID Reading (ppm)
	0/6	6/12	12/18	18/24			
2'-4'	19	15	10	18	slag	no discernable odor	5
4'-6'	50/ .1					refusal @ 4.6' moved rig- 10' NE	5
5'-7'	11	9	6	6	sandy silt	no visible sheen/slight petroleum odor	17
7'-9'	7	7	7	6	sandy silt	no visible sheen/stronger petroleum odor	15
9'-11'	3	2	4	4	silt/ sand layer	visible staining/strong petroleum odor	19
11'-13'	2	2	3	3	grey sand	wet/visible sheen/strong petroleum odor	18
13'-15'	WOH/ 1'		2	2	grey sand	wet/visible sheen/strong petroleum odor	NS

Notes:

WOH Weight of hammer.

NS No sample recovered from this interval/No head space reading this interval.

Groundwater and soil samples collected from B-8. Soil sample composited from 11' to 15'.

SUBSURFACE LOG

PROJECT: Former LTV Site

DATE: January 31, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

HOLE No.: B-9

PROJECT No.: 96002

GROUNDWATER DEPTH: 15'

DRILLER: SJB Services, Inc.

SHEET No.: 9 of 11

DEPTH	Blows on Sampler				SOIL CLASSIFICATION	NOTES	PID Reading (ppm)
	0/6	6/12	12/18	18/24			
2'-4'	3	2	3	2	slag/sandy silt	no discernable odor	4
4'-6'	1	1	2	1	sandy silt	slight petroleum odor	4
6'-8'	WOH	1	2	1	sandy silt/ sand	slight petroleum odor	5
8'-10'	WOH/ 1.5'			2	sandy silt	petroleum odor/ visible staining	54
10'-12'	WOH/ 1'		2	2	sandy silt	petroleum odor/ visible staining	50
12'-14'	WOH	1	2	1	sandy silt	wet/strong petroleum odor/ visible staining	50
14'-16'	WOH	2	2	2	grey sand	wet/strong petroleum odor/ visible staining	15
16'-18'					grey sand	wet/strong petroleum odor/ visible staining	NS

Notes:

WOH Weight of hammer.
NS No sample recovered from this interval/No head space reading this interval.
Groundwater and soil samples collected from B-9. Soil sample composited from 14' to 18'.

SUBSURFACE LOG

PROJECT: Former LTV Site

DATE: January 31, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

HOLE No.: B-10

PROJECT No.: 96002

GROUNDWATER DEPTH: 14'

DRILLER: SJB Services, Inc.

SHEET No.: 10 of 11

DEPTH	Blows on Sampler				SOIL CLASSIFICATION	NOTES	PID Reading (ppm)
	0/6	6/12	12/18	18/24			
2'-4'	7	12	19	18	slag and stones	strong sulfur odor	13
4'-6'	5	8	10	8	slag	slight sulfur odor	17
6'-8'	34	20	8	9	slag and stones	no discernable odor	18
8'-10'	WOH	2	2	2	black silty peat	organic smell	20
10'-12'	WOH/ 2'				black silty peat/ brown silt sand		18
12'-14'	2	2	1	2	brown silty sand	wet	19

Notes:

WOH Weight of hammer.

Groundwater and soil samples collected from B-10. Soil sample composited from 8' to 14'.

SUBSURFACE LOG

PROJECT: Former LTV Site

DATE: January 30, 1996

LOCATION: 1205 South Park Avenue
Buffalo, NY

HOLE No.: B-12

PROJECT No.: 96002

GROUNDWATER DEPTH: 14'

DRILLER: SJB Services, Inc.

SHEET No.: 11 of 11

DEPTH	Blows on Sampler				SOIL CLASSIFICATION	NOTES	PID Reading (ppm)
	0/6	6/12	12/18	18/24			
2'-4'	7	18	6	7	slag/stones/silt	slight organic smell	19
4'-6'	4	4	4	5	brown clayey silt	no discernable odor	20
6'-8'	4	4	4	3	brown sandy silt	no discernable odor	18
8'-10'	1	1	2	1	brown fine sand	wet/ no discernable odor	18
10'-12'	1/1'		1	1		no recovery	NS
12'-14'	WOH/ 1'		2	2	brown fine sand	wet/ layer leaves & wood in sample	19

Notes:

WOH Weight of hammer.

NS No sample recovered from this interval/No head space reading this interval.

APPENDIX D

Upstate Laboratories inc.

Shipping: 6034 Corporate Dr. • E. Syracuse, NY 13057-1017 • (315) 437-0255 • Fax (315) 437-1209
Mailing: Box 289 • Syracuse, NY 13206
Albany (518) 459-3134
Binghamton (607) 724-0478
Buffalo (716) 662-2118
Rochester (716) 436-9070
New Jersey (201) 703-1324

February 16, 1996

Ms. Muffett Mauche George
Environmental Manager
Foit Albert Associates
763 Main St.
Buffalo, NY 14703

Re: Analysis Report #03396095 - LTV Site

Dear Ms. George:

Please find enclosed the results for your samples which were picked up by ULI personnel on February 1, 1996.

We have included the Chain of Custody Record as part of your report. You may need to reference this form for a more detailed explanation of your sample. Samples will be disposed of approximately one month from final report date.

Should you have any questions, please feel free to give us a call.

Thank you for your patronage.

Sincerely,

UPSTATE LABORATORIES, INC.

Anthony J. Scala
Director

AJS/lw

Enclosures: report, invoice

cc/encs: N. Scala, ULI
file

Note: Faxed results were given to your office on 2/16/96. AJS

Disclaimer: The test results and procedures utilized, and laboratory interpretations of data obtained by ULI as contained in this report are believed by ULI to be accurate and reliable for sample(s) tested. In accepting this report, the customer agrees that the full extent of any and all liability for actual and consequential damages of ULI for the services performed shall be equal to the fee charged to the customer for the services as liquidated damages.

DATE: 02/16/96

Upstate Laboratories, Inc.
Analysis Results
Report Number: 03396095
Client I.D.: FOIT ALBERT ASSOCIATES
Sampled by: Client

APPROVAL: _____
QC: _____
Lab I.D.: 10170
LTV SITE
BORE B5-B5 1615H 01/30/96 C

ULI I.D.: 03396095
Matrix: Soil

PARAMETERS	Guidance Value	RESULTS	DATE ANAL.	KEY	FILE#
Percent Solids		73%	02/05/96		WB1714
Petroleum, EPA Method 8021					
Benzene	14	<2ug/kg dw	02/12/96		VA2008
Ethylbenzene	100	<2ug/kg dw	02/12/96		VA2008
Toluene		<2ug/kg dw	02/12/96		VA2008
m-Xylene and p-Xylene		<2ug/kg dw	02/12/96		VA2008
o-Xylene		<2ug/kg dw	02/12/96		VA2008
Isopropylbenzene		<2ug/kg dw	02/12/96		VA2008
n-Propylbenzene		<2ug/kg dw	02/12/96		VA2008
4-Isopropyltoluene		<2ug/kg dw	02/12/96		VA2008
1,2,4-Trimethylbenzene		<2ug/kg dw	02/12/96		VA2008
1,3,5-Trimethylbenzene		<2ug/kg dw	02/12/96		VA2008
n-Butylbenzene		<2ug/kg dw	02/12/96		VA2008
sec-Butylbenzene		<2ug/kg dw	02/12/96		VA2008
Naphthalene	200	<2ug/kg dw	02/12/96		VA2008
MTBE	1000	<28ug/kg dw	02/12/96		VA2008
Petroleum, EPA Method 8270					
Anthracene	1000	<460ug/kg dw	02/09/96		SA0794
Fluorene		<460ug/kg dw	02/09/96		SA0794
Phenanthrene		<460ug/kg dw	02/09/96		SA0794
Pyrene		<460ug/kg dw	02/09/96		SA0794
Acenaphthene	400	<460ug/kg dw	02/09/96		SA0794
Benzo(a)anthracene	0.09	<460ug/kg dw	02/09/96		SA0794
Fluoranthene	1000	<460ug/kg dw	02/09/96		SA0794
Benzo(b)fluoranthene	0.09	<460ug/kg dw	02/09/96		SA0794
Benzo(k)fluoranthene		<460ug/kg dw	02/09/96		SA0794
Chrysene		<460ug/kg dw	02/09/96		SA0794
Benzo(a)pyrene		<460ug/kg dw	02/09/96		SA0794
Benzo(g,h,i)perylene		<460ug/kg dw	02/09/96		SA0794
Indeno(1,2,3-cd)pyrene		<460ug/kg dw	02/09/96		SA0794
Dibenzo(a,h)anthracene	1000	<460ug/kg dw	02/09/96		SA0794

dw = Dry weight

DATE: 02/16/96

Upstate Laboratories, Inc.
Analysis Results
Report Number: 03396095
Client I.D.: FOIT ALBERT ASSOCIATES
Sampled by: Client

APPROVAL:
QC:
Lab I.D.: 10170

LTV SITE
BORE B5-GW5 0905H 01/31/96 G

ULI I.D.: 03396096 Matrix: Water

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Petroleum, EPA Method 8021				
Benzene	<0.5ug/l	02/09/96		VA2006
Ethylbenzene	<0.5ug/l	02/09/96		VA2006
Toluene	<0.5ug/l	02/09/96		VA2006
m-Xylene and p-Xylene	<0.5ug/l	02/09/96		VA2006
o-Xylene	<0.5ug/l	02/09/96		VA2006
Isopropylbenzene	<0.5ug/l	02/09/96		VA2006
n-Propylbenzene	<0.5ug/l	02/09/96		VA2006
4-Isopropyltoluene	<0.5ug/l	02/09/96		VA2006
1,2,4-Trimethylbenzene	<0.5ug/l	02/09/96		VA2006
1,3,5-Trimethylbenzene	<0.5ug/l	02/09/96		VA2006
n-Butylbenzene	<0.5ug/l	02/09/96		VA2006
sec-Butylbenzene	<0.5ug/l	02/09/96		VA2006
Naphthalene	<0.5ug/l	02/09/96		VA2006
MTBE	<10ug/l	02/09/96		VA2006
Petroleum, EPA Method 8270				
Anthracene	<5ug/l	02/09/96		SA0789
Fluorene	<5ug/l	02/09/96		SA0789
Phenanthrene	<5ug/l	02/09/96		SA0789
Pyrene	<5ug/l	02/09/96		SA0789
Acenaphthene	<5ug/l	02/09/96		SA0789
Benzo(a)anthracene	<5ug/l	02/09/96		SA0789
Fluoranthene	<5ug/l	02/09/96		SA0789
Benzo(b)fluoranthene	<5ug/l	02/09/96		SA0789
Benzo(k)fluoranthene	<5ug/l	02/09/96		SA0789
Chrysene	<5ug/l	02/09/96		SA0789
Benzo(a)pyrene	<5ug/l	02/09/96		SA0789
Benzo(g,h,i)perylene	<5ug/l	02/09/96		SA0789
Indeno(1,2,3-cd)pyrene	<5ug/l	02/09/96		SA0789
Dibenzo(a,h)anthracene	<5ug/l	02/09/96		SA0789

DATE: 02/16/96

Upstate Laboratories, Inc.
Analysis Results
Report Number: 03396095
Client I.D.: FOIT ALBERT ASSOCIATES
Sampled by: Client

APPROVAL:
QC:
Lab I.D.: 10170

LTV SITE
BORE B8-B8 1140H 01/31/96 C

ULI I.D.: 03396097 Matrix: Soil

PARAMETERS		RESULTS	DATE ANAL.	KEY	FILE#
Percent Solids		84%	02/05/96		WB1714
Petroleum, EPA Method 8021					
Benzene	14	<100ug/kg dw	02/12/96	01	VA2008
Ethylbenzene	100	<100ug/kg dw	02/12/96	01	VA2008
Toluene		<100ug/kg dw	02/12/96	01	VA2008
m-Xylene and p-Xylene		<100ug/kg dw	02/12/96	01	VA2008
o-Xylene		<100ug/kg dw	02/12/96	01	VA2008
Isopropylbenzene		<100ug/kg dw	02/12/96	01	VA2008
n-Propylbenzene		<100ug/kg dw	02/12/96	01	VA2008
4-Isopropyltoluene		<100ug/kg dw	02/12/96	01	VA2008
1,2,4-Trimethylbenzene		160ug/kg dw	02/12/96		VA2008
1,3,5-Trimethylbenzene		<100ug/kg dw	02/12/96	01	VA2008
n-Butylbenzene		130ug/kg dw	02/12/96		VA2008
sec-Butylbenzene		<100ug/kg dw	02/12/96	01	VA2008
Naphthalene	200	<100ug/kg dw	02/12/96	01	VA2008
MTBE	1000	<2000ug/kg dw	02/12/96	01	VA2008
Petroleum, EPA Method 8270					
Anthracene	1000	<400ug/kg dw	02/09/96		SA0794
Fluorene		<400ug/kg dw	02/09/96		SA0794
Phenanthrene		<400ug/kg dw	02/09/96		SA0794
Pyrene	400	<400ug/kg dw	02/09/96		SA0794
Acenaphthene		<400ug/kg dw	02/09/96		SA0794
Benzo(a)anthracene	0.04	<400ug/kg dw	02/09/96		SA0794
Fluoranthene	1000	<400ug/kg dw	02/09/96		SA0794
Benzo(b)fluoranthene	0.04	<400ug/kg dw	02/09/96		SA0794
Benzo(k)fluoranthene		<400ug/kg dw	02/09/96		SA0794
Chrysene		<400ug/kg dw	02/09/96		SA0794
Benzo(a)pyrene		<400ug/kg dw	02/09/96		SA0794
Benzo(g,h,i)perylene		<400ug/kg dw	02/09/96		SA0794
Indeno(1,2,3-cd)pyrene		<400ug/kg dw	02/09/96		SA0794
Dibenzo(a,h)anthracene	1000	<400ug/kg dw	02/09/96		SA0794

dw = Dry weight

DATE: 02/16/96

Upstate Laboratories, Inc.
Analysis Results
Report Number: 03396095
Client I.D.: FOIT ALBERT ASSOCIATES
Sampled by: Client

APPROVAL:
QC:
Lab I.D.: 10170

LTV SITE
BORE B8-GW8 1205H 01/31/96 G

ULI I.D.: 03396098 Matrix: Water

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Petroleum, EPA Method 8021				
Benzene	<3ug/l	02/14/96	01	VA2013
Ethylbenzene	<3ug/l	02/14/96	01	VA2013
Toluene	<3ug/l	02/14/96	01	VA2013
m-Xylene and p-Xylene	<3ug/l	02/14/96	01	VA2013
o-Xylene	<3ug/l	02/14/96	01	VA2013
Isopropylbenzene	7ug/l	02/14/96		VA2013
n-Propylbenzene	<3ug/l	02/14/96	01	VA2013
4-Isopropyltoluene	<3ug/l	02/14/96	01	VA2013
1,2,4-Trimethylbenzene	<3ug/l	02/14/96	01	VA2013
1,3,5-Trimethylbenzene	<3ug/l	02/14/96	01	VA2013
n-Butylbenzene	<3ug/l	02/14/96	01	VA2013
sec-Butylbenzene	<3ug/l	02/14/96	01	VA2013
Naphthalene	<3ug/l	02/14/96	01	VA2013
MTBE	<50ug/l	02/14/96	01	VA2013
Petroleum, EPA Method 8270				
Anthracene	<20ug/l	02/09/96	01	SA0789
Fluorene	<20ug/l	02/09/96	01	SA0789
Phenanthrene	<20ug/l	02/09/96	01	SA0789
Pyrene	<20ug/l	02/09/96	01	SA0789
Acenaphthene	<20ug/l	02/09/96	01	SA0789
Benzo(a)anthracene	<20ug/l	02/09/96	01	SA0789
Fluoranthene	<20ug/l	02/09/96	01	SA0789
Benzo(b)fluoranthene	<20ug/l	02/09/96	01	SA0789
Benzo(k)fluoranthene	<20ug/l	02/09/96	01	SA0789
Chrysene	<20ug/l	02/09/96	01	SA0789
Benzo(a)pyrene	<20ug/l	02/09/96	01	SA0789
Benzo(g,h,i)perylene	<20ug/l	02/09/96	01	SA0789
Indeno(1,2,3-cd)pyrene	<20ug/l	02/09/96	01	SA0789
Dibenzo(a,h)anthracene	<20ug/l	02/09/96	01	SA0789

DATE: 02/16/96

Upstate Laboratories, Inc.
Analysis Results
Report Number: 03396095
Client I.D.: FOIT ALBERT ASSOCIATES
Sampled by: Client

APPROVAL:
QC:
Lab I.D.: 10170
LTV SITE
BORE B9-B9 1405H 01/31/96 C

ULI I.D.: 03396099 Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Percent Solids	82%	02/05/96		WB1714
Petroleum, EPA Method 8021				
Benzene	<3ug/kg dw	02/12/96	01	VA2008
Ethylbenzene	6ug/kg dw	02/12/96		VA2008
Toluene	<3ug/kg dw	02/12/96	01	VA2008
m-Xylene and p-Xylene	<3ug/kg dw	02/12/96	01	VA2008
o-Xylene	<3ug/kg dw	02/12/96	01	VA2008
Isopropylbenzene	<3ug/kg dw	02/12/96	01	VA2008
n-Propylbenzene	6ug/kg dw	02/12/96		VA2008
4-Isopropyltoluene	<3ug/kg dw	02/12/96	01	VA2008
1,2,4-Trimethylbenzene	4ug/kg dw	02/12/96		VA2008
1,3,5-Trimethylbenzene	5ug/kg dw	02/12/96		VA2008
n-Butylbenzene	8ug/kg dw	02/12/96		VA2008
sec-Butylbenzene	<3ug/kg dw	02/12/96	01	VA2008
Naphthalene	<3ug/kg dw	02/12/96	01	VA2008
MTBE	<41ug/kg dw	02/12/96	01	VA2008
Petroleum, EPA Method 8270				
Anthracene	<410ug/kg dw	02/09/96		SA0794
Fluorene	<410ug/kg dw	02/09/96		SA0794
Phenanthrene	<410ug/kg dw	02/09/96		SA0794
Pyrene	<410ug/kg dw	02/09/96		SA0794
Acenaphthene	<410ug/kg dw	02/09/96		SA0794
Benzo(a)anthracene	<410ug/kg dw	02/09/96		SA0794
Fluoranthene	<410ug/kg dw	02/09/96		SA0794
Benzo(b)fluoranthene	<410ug/kg dw	02/09/96		SA0794
Benzo(k)fluoranthene	<410ug/kg dw	02/09/96		SA0794
Chrysene	<410ug/kg dw	02/09/96		SA0794
Benzo(a)pyrene	<410ug/kg dw	02/09/96		SA0794
Benzo(g,h,i)perylene	<410ug/kg dw	02/09/96		SA0794
Indeno(1,2,3-cd)pyrene	<410ug/kg dw	02/09/96		SA0794
Dibenzo(a,h)anthracene	<410ug/kg dw	02/09/96		SA0794

dw = Dry weight

DATE: 02/16/96

Upstate Laboratories, Inc.
Analysis Results
Report Number: 03396095
Client I.D.: FOIT ALBERT ASSOCIATES
Sampled by: Client

APPROVAL:
QC:
Lab I.D.: 10170

LTV SITE
BORE B9-GW9 1430H 01/31/96 G

ULI I.D.: 03396100 Matrix: Water

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Petroleum, EPA Method 8021				
Benzene	<3ug/l	02/14/96	05	VA2013
Ethylbenzene	<3ug/l	02/14/96	05	VA2013
Toluene	<3ug/l	02/14/96	05	VA2013
m-Xylene and p-Xylene	<3ug/l	02/14/96	05	VA2013
o-Xylene	<3ug/l	02/14/96	05	VA2013
Isopropylbenzene	8ug/l	02/14/96		VA2013
n-Propylbenzene	13ug/l	02/14/96		VA2013
4-Isopropyltoluene	<3ug/l	02/14/96	05	VA2013
1,2,4-Trimethylbenzene	57ug/l	02/14/96		VA2013
1,3,5-Trimethylbenzene	<3ug/l	02/14/96	05	VA2013
n-Butylbenzene	6ug/l	02/14/96		VA2013
sec-Butylbenzene	3ug/l	02/14/96		VA2013
Naphthalene	<3ug/l	02/14/96	05	VA2013
MTBE	<50ug/l	02/14/96	05	VA2013
Petroleum, EPA Method 8270				
Anthracene	<5ug/l	02/09/96		SA0789
Fluorene	<5ug/l	02/09/96		SA0789
Phenanthrene	<5ug/l	02/09/96		SA0789
Pyrene	<5ug/l	02/09/96		SA0789
Acenaphthene	<5ug/l	02/09/96		SA0789
Benzo(a)anthracene	<5ug/l	02/09/96		SA0789
Fluoranthene	<5ug/l	02/09/96		SA0789
Benzo(b)fluoranthene	<5ug/l	02/09/96		SA0789
Benzo(k)fluoranthene	<5ug/l	02/09/96		SA0789
Chrysene	<5ug/l	02/09/96		SA0789
Benzo(a)pyrene	<5ug/l	02/09/96		SA0789
Benzo(g,h,i)perylene	<5ug/l	02/09/96		SA0789
Indeno(1,2,3-cd)pyrene	<5ug/l	02/09/96		SA0789
Dibenzo(a,h)anthracene	<5ug/l	02/09/96		SA0789

DATE: 02/16/96

Upstate Laboratories, Inc.
Analysis Results
Report Number: 03396095
Client I.D.: FOIT ALBERT ASSOCIATES
Sampled by: Client

APPROVAL: _____
QC: _____
Lab I.D.: 10170
LTV SITE
BORE B10-B10 1455H 01/31/96 C

ULI I.D.: 03396101 Matrix: Soil

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Percent Solids	89%	02/05/96		WB1714
Petroleum, EPA Method 8021				
Benzene	<2ug/kg dw	02/12/96		VA2008
Ethylbenzene	<2ug/kg dw	02/12/96		VA2008
Toluene	<2ug/kg dw	02/12/96		VA2008
m-Xylene and p-Xylene	<2ug/kg dw	02/12/96		VA2008
o-Xylene	<2ug/kg dw	02/12/96		VA2008
Isopropylbenzene	<2ug/kg dw	02/12/96		VA2008
n-Propylbenzene	<2ug/kg dw	02/12/96		VA2008
4-Isopropyltoluene	<2ug/kg dw	02/12/96		VA2008
1,2,4-Trimethylbenzene	<2ug/kg dw	02/12/96		VA2008
1,3,5-Trimethylbenzene	<2ug/kg dw	02/12/96		VA2008
n-Butylbenzene	<2ug/kg dw	02/12/96		VA2008
sec-Butylbenzene	<2ug/kg dw	02/12/96		VA2008
Naphthalene	<2ug/kg dw	02/12/96		VA2008
MTBE	<23ug/kg dw	02/12/96		VA2008
Petroleum, EPA Method 8270				
Anthracene	<370ug/kg dw	02/09/96		SA0794
Fluorene	<370ug/kg dw	02/09/96		SA0794
Phenanthrene	<370ug/kg dw	02/09/96		SA0794
Pyrene	<370ug/kg dw	02/09/96		SA0794
Acenaphthene	<370ug/kg dw	02/09/96		SA0794
Benzo(a)anthracene	<370ug/kg dw	02/09/96		SA0794
Fluoranthene	<370ug/kg dw	02/09/96		SA0794
Benzo(b)fluoranthene	<370ug/kg dw	02/09/96		SA0794
Benzo(k)fluoranthene	<370ug/kg dw	02/09/96		SA0794
Chrysene	<370ug/kg dw	02/09/96		SA0794
Benzo(a)pyrene	<370ug/kg dw	02/09/96		SA0794
Benzo(g,h,i)perylene	<370ug/kg dw	02/09/96		SA0794
Indeno(1,2,3-cd)pyrene	<370ug/kg dw	02/09/96		SA0794
Dibenzo(a,h)anthracene	<370ug/kg dw	02/09/96		SA0794

dw = Dry weight

DATE: 02/16/96

Upstate Laboratories, Inc.
Analysis Results
Report Number: 03396095
Client I.D.: FOIT ALBERT ASSOCIATES
Sampled by: Client

APPROVAL:
QC:
Lab I.D.: 10170

LTV SITE
BORE B10-GW10 1640H 01/31/96 G

ULI I.D.: 03396102 Matrix: Water

PARAMETERS	RESULTS	DATE ANAL.	KEY	FILE#
Petroleum, EPA Method 8021				
Benzene	<0.5ug/l	02/09/96		VA2006
Ethylbenzene	<0.5ug/l	02/09/96		VA2006
Toluene	<0.5ug/l	02/09/96		VA2006
m-Xylene and p-Xylene	<0.5ug/l	02/09/96		VA2006
o-Xylene	<0.5ug/l	02/09/96		VA2006
Isopropylbenzene	0.5ug/l	02/09/96		VA2006
n-Propylbenzene	1ug/l	02/09/96		VA2006
4-Isopropyltoluene	<0.5ug/l	02/09/96		VA2006
1,2,4-Trimethylbenzene	5ug/l	02/09/96		VA2006
1,3,5-Trimethylbenzene	<0.5ug/l	02/09/96		VA2006
n-Butylbenzene	1ug/l	02/09/96		VA2006
sec-Butylbenzene	<0.5ug/l	02/09/96		VA2006
Naphthalene	0.6ug/l	02/09/96		VA2006
MTBE	<10ug/l	02/09/96		VA2006
Petroleum, EPA Method 8270				
Anthracene	<5ug/l	02/14/96		SA0789
Fluorene	14ug/l	02/14/96		SA0789
Phenanthrene	24ug/l	02/14/96		SA0789
Pyrene	<5ug/l	02/14/96		SA0789
Acenaphthene	12ug/l	02/14/96		SA0789
Benzo(a)anthracene	<5ug/l	02/14/96		SA0789
Fluoranthene	<5ug/l	02/14/96		SA0789
Benzo(b)fluoranthene	<5ug/l	02/14/96		SA0789
Benzo(k)fluoranthene	<5ug/l	02/14/96		SA0789
Chrysene	<5ug/l	02/14/96		SA0789
Benzo(a)pyrene	<5ug/l	02/14/96		SA0789
Benzo(g,h,i)perylene	<5ug/l	02/14/96		SA0789
Indeno(1,2,3-cd)pyrene	<5ug/l	02/14/96		SA0789
Dibenzo(a,h)anthracene	<5ug/l	02/14/96		SA0789

KEY PAGE

1 MATRIX INTERFERENCE PRECLUDES LOWER DETECTION LIMITS
2 MATRIX INTERFERENCE
3 PRESENT IN BLANK
4 ANALYSIS NOT PERFORMED BECAUSE OF INSUFFICIENT SAMPLE
5 THE PRESENCE OF OTHER TARGET ANALYTE(S) PRECLUDES LOWER DETECTION LIMITS
6 BLANK CORRECTED
7 HEAD SPACE PRESENT IN SAMPLE
8 BDL(BELOW DETECTION LIMITS)
9 MDL(METHOD DETECTION LIMITS)
10 ADL(AVERAGE DETECTION LIMITS)
11 PQL(PRACTICAL QUANTITATION LIMIT)
12 SAMPLE ANALYZED OVER HOLDING TIME
13 DISSOLVED VALUE MAY BE HIGHER THAN TOTAL DUE TO CONTAMINATION FROM THE FILTERING PROCEDURE
14 SAMPLED BY ULI
15 DISSOLVED VALUE MAY BE HIGHER THAN TOTAL; HOWEVER, THE VALUES ARE WITHIN EXPERIMENTAL ERROR
16 SUBCONTRACTED
17 PARAMETER NOT ANALYZED WITHIN 15 MINUTES OF SAMPLING
18 DEPENDING UPON THE INTENDED USE OF THIS TEST RESULT, CONFIRMATION BY GC/MS OR DUAL COLUMN CHROMATOGRAPHY MAY BE REQUIRED
19 CALCULATION BASED ON DRY WEIGHT
20 INDICATES AN ESTIMATED VALUE, DETECTED BUT BELOW THE PRACTICAL QUANTITATION LIMIT
21 UG/KG AS REC.D / UG/KG DRY WT
22 MG/KG AS REC.D / MG/KG DRY WT
23 INSUFFICIENT SAMPLE PRECLUDES LOWER DETECTION LIMITS
24 SAMPLE DILUTED/BLANK CORRECTED
25 ND(NON-DETECTED)
26 MATRIX INTERFERENCE PRECLUDES LOWER DETECTION LIMITS/BLANK CORRECTED
27 SPIKE RECOVERY ABNORMALLY HIGH/LOW DUE TO MATRIX INTERFERENCE
28 POST-DIGESTION SPIKE FOR FURNACE AA ANALYSIS IS OUTSIDE OF THE CONTROL LIMITS (85-115%); HOWEVER, THE SAMPLE CONCENTRATION IS BELOW THE PQL
29 ANALYZED BY METHOD OF STANDARD ADDITIONS
30 METHOD PERFORMANCE STUDY HAS NOT BEEN COMPLETED/ND(NON-DETECTED)
31 FIELD MEASURED PARAMETER TAKEN BY CLIENT
32 TARGET ANALYTE IS BIODEGRADED AND/OR ENVIRONMENTALLY WEATHERED
33 NON-POTABLE WATER SOURCE
34 INDIVIDUAL AROCLORS DO NOT CARRY A DETECTION LIMIT BUT ARE INCLUSIVE TO THE TOTAL PCB CONTENT
35 THE HYDROCARBONS DETECTED IN THE SAMPLE DID NOT CROSS-MATCH WITH COMMON PETROLEUM DISTILLATES
36 MATRIX INTERFERENCE CAUSING SPIKES TO RESULT IN LESS THAN 50.0% RECOVERY
37 MILLIGRAMS PER LITER (MG/L) / POUNDS (LBS) PER DAY
38 MILLIGRAMS PER LITER (MG/L) OF RESIDUAL CHLORINE (CL2) / POUNDS (LBS) PER DAY OF CL2
39 MICROGRAMS PER LITER (UG/L) / POUNDS (LBS) PER DAY
40 MILLIGRAMS PER LITER (MG/L) LINEAR ALKYL SULFONATE (LAS) / POUNDS (LBS) PER DAY LAS
41 RESULTS ARE REPORTED ON AN AS REC.D BASIS
42 THE SAMPLE WAS ANALYZED ON A TOTAL BASIS; THE TEST RESULT CAN BE COMPARED TO THE TCLP REGULATORY CRITERIA BY DIVIDING THE TEST RESULT BY 20, CREATING A THEORETICAL TCLP VALUE
43 METAL BY CONCENTRATION PROCEDURE
44 POSSIBLE CONTAMINATION FROM FIELD/LABORATORY

Chain of Custody Record

34 Corporate Drive • E. Syracuse, NY 13057-1017
(315) 437 0255 Fax 437 1209

2/16

Client: Foit-Albert Assoc	Client Project # / Project Name: LTV Site																			Special Turnaround Time_____ (Lab Notification required)
Client Contact: Muffett Mauche	Phone #: (716) 856-3933	Site Location (city/state): Buffalo, NY				No. of Containers	8021 STARS 1)	8270 STARS 2)	3)	4)	5)	6)	7)	8)	9)	10)				
Sample Location:	Date	Time	Matrix	Grab or Comp.	ULI Internal Use Only															Remarks
BORE B5 - B5	1/30/96	4:15P	SOIL	COMP	03396095	2	✓	✓				(X)								
" - GW5	1/31/96	9:05A	WATER	GRAB	96	3	✓	✓												
BORE B8 - B8	1/31/96	11:40A	SOIL	COMP	97	2	✓	✓				(X)								
" GW8	1/31/96	12:05P	WATER	GRAB	98	3	✓	✓												
BORE B9 - B9	1/31/96	2:05P	SOIL	COMP	99	2	✓	✓				(X)								
" GW9	1/31/96	2:30P	WATER	GRAB	100	3	✓	✓												
BORE B10 - B10	1/31/96	2:55P	SOIL	COMP	101	2	✓	✓				(X)								
GW10	1/31/96	4:40P	WATER	GRAB	102	3	✓	✓												
BORE B7 - B7	1/31/96	11:10A	SOIL	COMP	103	2			(X) KK		(X) KK	1								HOLD till further notice.

Parameter and method	sample bottle: type	size	pres.
8021 STARS	voa	125ml	Cool
8270 STARS	CWM	16 oz	Cool
8021 STARS	2- voa	40ml	1:1HCL
8270 STARS	Amber	1L	Cool
(Hold) KK			
(% Solids) KK			

Note: The numbered columns above cross-reference with the numbered columns in the upper right-hand corner.

Sampled by: (Please Print) muffett mauche George

Company: FOIT-ALBERT ASSOC.

ULI Internal Use Only

Delivery (check one):
☐ ULI Sampled
☒ Pickup ☐ Dropoff
☐ CC _____

Relinquished by: (Signature)	Date	Time	Received by: (Signature)
muffett mauche George	2/1/96	12:06 PM	
	2/2/96	15:50	
	2/2/96	1550	Rec'd for Lab by: (Signature) K. K

Syracuse Rochester (Buffalo) Albany Binghamton Fair Lawn (NJ)

APPENDIX E

GROUNDWATER INVESTIGATION
FORMER LTV SITE
1205 SOUTH PARK AVENUE
BUFFALO, NEW YORK

APPENDIX E
LIMITATIONS

1. Foit-Albert Associates, Architecture, Engineering and Surveying, P.C. (Foit-Albert) completed this limited Groundwater Investigation in accordance with generally accepted current practices of other consultants undertaking similar studies. Foit-Albert observed that degree of care and skill generally exercised by other consultants under similar circumstances and conditions. Foit-Albert findings and conclusions must be considered not as scientific certainties, but as probabilities based on our professional judgement concerning the significance of the limited data gathered during the course of the investigation. Specifically, Foit-Albert cannot represent that the site contains no hazardous material, petroleum products, or other latent conditions beyond those observed by Foit-Albert during the completion of the limited Groundwater Investigation.

2. The observation described in this report were made under the conditions stated herein. The conclusions presented in the report were based solely on the services described therein and not tasks or procedures beyond the scope of described services or the time or budgetary constraints of the investigation.

3. In preparing this report, Foit-Albert relied on certain information provided by other consultants, the State, County and City officials as well as other parties referenced herein and on information contained in the files of State and local agencies made available to Foit-Albert at the time of the investigation.

4. Foit-Albert did not perform testing or analyses to determine the presence of chemical compounds other than those specifically stated in the report.

5. The general subsurface profiles described on the subsurface logs and illuded to in the report are intended to convey trends in the subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretations of widely spaced borings and samples. Actual soil, fill and groundwater transitions are probably more gradual.

GROUNDWATER INVESTIGATION
FORMER LTV SITE
1205 SOUTH PARK AVENUE
BUFFALO, NEW YORK

APPENDIX E
LIMITATIONS continued

6. Groundwater level readings made in the boreholes were made under conditions stated. It should be noted fluctuations in the level of groundwater may occur due to variations in rainfall, temperature and factors occurring from the time measurements were made.

7. It should be noted that samples collected were composited from materials at various depths and from widely spaced borings. Subsurface conditions should expect to vary in both type and chemical concentration.

8. This report has been prepared for the exclusive use of the Buffalo Urban Renewal Agency and their designated agents for the specific application to the site in accordance with generally accepted engineering practices. No warranty, expressed or implied, is made. The environmental concerns noted in this report, if any, are applicable to the current proposed usage of the site.