FORMER STEEL MANUFACTURING SITE:
AREA I-REPUBLIC STEEL PLANT PARCEL

VOLUNTARY CLEANUP SITE ASSESSMENT REPORT-ADDENDUM 2

Prepared for:

LTV Steel Company & The Hanna Furnace Corporation

January 2000

Project No.: 0002-005-200

Prepared by:

TURN KEY ENVIRONMENTAL RESTORATION, LLC

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AREA II - DONNER-HANNA COKE PLANT PARCEL

Table of Contents

1.0 INTRODUCTION 1-1

2.0 FIELD OBSERVATIONS 2-1

2.1 Background 2-1

2.2 Description of Target Locations 2-1

3.0 REFERENCES 3-1

LIST OF TABLES

	Description
Table 1	Subsurface Soil/Fill Analytical Summary-Elevated Mercury Area
Table 2	Subsurface Soil/Fill Analytical Summary-Elevated Chromium Area
Table 3	Subsurface Soil/Fill Analytical Summary-Elevated Chromium Area
Table 4	Subsurface Soil/Fill Analytical Summary-Elevated Arsenic Area
Table 5	Subsurface Soil/Fill Analytical Summary-Elevated Lead Area
Table 6	Subsurface Soil/Fill Analytical Summary-Elevated Lead Area

VOLUNTARY CLEANUP SITE ASSESSMENT REPORT-
ADDENDUM 2
AREA II – DONNER-HANNA COKE PLANT PARCEL

LIST OF FIGURES

Figure 1	Sampling Locations
Figure 2	Sampling Location Details

LIST OF ATTACHMENTS

Attachment 1	Plan for Additional Investigation For Area I Soil/Fill with Elevated Inorganics
Attachment 2	Field Borehole Logs
Attachment 3	Analytical Data

1.0 INTRODUCTION

This addendum has been prepared to present additional data collected in Area I of the Former Steel Manufacturing Site to supplement the April 1999 Voluntary Cleanup Site Assessment Report and Addendum 1 (References 1 & 2) to that same report. This additional data was collected to delineate the lateral and vertical extent of elevated inorganic concentrations in Subareas S and Q subsurface soil/fill. An investigation plan was approved by the NYSDEC in November 1999. (See Attachment 1). A Data Usability Report, currently being performed by Data Validation Services, will be submitted to the NYSDEC and NYSDOH upon completion.

2.0 FIELD OBSERVATIONS

2.1 Background

Elevated inorganic concentrations (i.e., above SSALs) were previously detected at six locations in Area I including one test pit location in Subarea S and five locations in Subarea Q. Specific inorganic constituents above SSALs included: mercury at one location in Subarea S; chromium at two locations in Subarea Q; lead at two locations in Subarea Q; and arsenic at one location in Subarea Q. Forty five additional borings and three test pits were completed to further investigate the six subareas.

2.2 Description of Target Locations

The locations of each original test pit where elevated inorganics were detected are shown (in orange) on Figure 1 along with investigatory sampling locations (in pink). A minimum of four boreholes were initially completed around each target location. If elevated inorganics were encountered in the first four boreholes, additional boreholes were performed radially outward until soil/fill concentrations were determined to be less than SSALs. Boreholes were completed to native soil, if possible. Field borehole logs are located in Attachment 2.

Up to three discrete analytical samples were collected from each borehole and analyzed for the target inorganic analyte. Analytical results are summarized on Tables 1 through 6 with exceedances of SSALs shaded on the tables. Each subarea is discussed separately below:

Subarea S9- The original soil/fill sample, A1-TP-S9 contained elevated concentrations of mercury with respect to the SSAL. Four borings were performed around the target test pit. Continuous soil samples were inspected for any visible layering and described on field borehole logs. Three samples from each borehole were collected and submitted for analytical testing. Laboratory results were all significantly less than the SSAL for mercury and ranged in values from nondetect to

1.3 mg/kg as shown on Table 1. This indicates that the result from the original test pit location was an anomalous result and that no remediation of soil/fill is necessary in Subarea S9 due to inorganics.

Subarea Q2- At A1-TP-Q2, the chromium concentration in (ie. 1050mg/kg) subsurface soil/fill was slightly elevated with respect to the SSAL (ie. 1000mg/kg). Similar to Subarea S9, four borings were performed around the target location. Discrete samples collected from different layers were submitted to the laboratory for analysis of chromium. Resulting concentrations summarized on Table 2 were all less than or equal to the SSAL for chromium (i.e., 1000 mg/kg). This indicates that no remediation of soil/fill in Subarea Q2 due to inorganics.

Subarea Q5- Previous studies have shown that elevated chromium concentrations in site soils are likely a result of extensive quantities of BOF and blast furnace slag fill accumulated on the site from steel making operations (See Appendix A of Reference 1). Twelve borings and three test pits were performed around the original test location (A1-TP-Q5) to delineate the extent of subsurface soil/fill contamination. Table 3 summarizes chromium concentrations from each sampling location. The lateral extent of the impacted area is shown on Figure 2.

During performance of borehole A1-SB-Q5-6, a slight oil-stained residue was noted in a layer from 5 to 6.5 feet below grade. Soil/fill from this layer was collected and analyzed for SVOCs. The concentration of total SVOCs was 7.29 mg/kg, well below the SSAL for SVOCs of 500 mg/kg. Analytical data is included as Attachment 3.

Subarea Q14- Arsenic concentrations that exceeded the SSAL were previously detected in soil/fill from A1-TP-Q14. Of the four additional boreholes sampled around that location only, one sample, collected from 5 to 8 feet below grade at location A1-SB-Q14-1, was elevated with respect to arsenic. Two additional borings (A1-SB-Q14-5 and A1-SB-Q14-6) were then performed outward from borehole location A1-SB-Q14-1 to better determine the lateral extent of elevated arsenic. Resulting concentrations from those boreholes were less than the SSAL for

arsenic. This subarea with the impacted lateral extent of contamination is shown on Figure 2. Analytical results are shown in Table 4.

Subarea Q18- Test pit location A1-TP-Q18 is within a former building foundation. The foundation was encountered during initial test pit excavation at approximately 17 feet below grade. During plant demolition, miscellaneous building debris was placed into the foundation in and around A1-TP-Q18. Concentrations of lead within the fill were elevated with respect to the SSAL. Twelve additional borings were performed to delineate the lateral and vertical extent of elevated lead concentrations. Table 5 summarizes analytical results from the additional borehole samples. Figure 2 shows the locations of borings and the lateral extent of contamination in excess of SSALs.

Subarea Q19- Six additional boreholes were performed around A1-TP-Q19. One layer from 0.5 to 3 feet below grade within borehole A1-SB-Q19-4 was elevated with respect to SSALs for lead as shown on Table 6. The area was delineated and is shown on Figure 2.

3.0 REFERENCES

1. Former Steel Manufacturing Site: Area I – Republic Steel Plant Parcel, Voluntary Cleanup Site Assessment Report, TurnKey Environmental Restoration, April 1999.

2. Former Steel Manufacturing Site: Area I-Republic Steel Plant Parcel and GasHolder Subarea of Area II, Voluntary Cleanup Site Assessment Report- Addendum 1, TurnKey Environmental Restoration, October 1999.

Tables

Table 1

SUBSURFACE SOIL/FILL ANALYTICAL SUMMARY - ELEVATED MERCURY AREA

Area I Additional Investigation[1]

LTV Steel Company

Inorganic Parameters (mg/kg)	Proposed Site Specific Action Level	Sample Locations											
		A1-SB-S9-1			A1-SB-S9-2			A1-SB-S9-3			A1-SB-S9-4		
		0-2'	2-4'	4-5'	0-2'	2-6'	6-7'	0-2'	2-4.5'	4.5-6'	0.3-2'	2-4'	4-4.5'
		1	2	3	1	2	3	1	2	3	1	2	3
Mercury	10	0.26	0.64	0.23	0.27	0.33	0.27	0.35	0.23	0.006 U	0.630	1.3	0.56

NOTES:
1. Investigation performed in November, 1999
2. U = Indicates compound was analyzed for but not detected.

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Table 2

SUBSURFACE SOIL/FILL ANALYTICAL SUMMARY - ELEVATED CHROMIUM AREA

Area I Additional Investigation[1]

LTV Steel Company

Inorganic Parameters (mg/kg)	Proposed Site Specific Action Level	Sample Locations										
		A1-SB-Q2-1			A1-SB-Q2-2			A1-SB-Q2-3		A1-SB-Q2-4		
		0-4'	4-6'	10-10.5'	0-2'	2-4'	4-9'	2-4'	4-6'	0-2.5'	4-6'	6-11'
		1	2	3	1	2	3	1	2	1	2	3
Chromium	1000	523	571	446	540	330	331	1000	620	880	183	622

NOTES: 1. Investigation performed in November, 1999

Table 3

SUBSURFACE SOIL/FILL ANALYTICAL SUMMARY - ELEVATED CHROMIUM AREA

Area I Additional Investigation[1]

LTV Steel Company

Inorganic Parameters (mg/kg)	Proposed Site Specific Action Level	Sample Locations													
		A1-SB-Q5-1			A1-SB-Q5-2			A1-SB-Q5-3			A1-SB-Q5-4			A1-SB-Q5-5	
		0-2'	2-4'	4-7'	0-2'	2-4'	4-10'	0-4'	4-8'	8-12.2'	2-4'	4-6'	6-8'	4-6'	6-8'
		1	2	3	1	2	3	1	2	3	1	2	3	1	2
Chromium	1000	550	981	1700	808	987	2400	957	1420	597	1140	591	732	575	722

Inorganic Parameters (mg/kg)	Proposed Site Specific Action Level	Sample Locations											
		A1-SB-Q5-6	A1-SB-Q5-7	A1-SB-Q5-8	A1-SB-Q5-9	A1-SB-Q5-10		A1-SB-Q5 11	A1-SB-Q5-12		A1-TP-Q5-13	A1-TP-Q5-14	A1-TP-Q5-15
		2-5'	2-4'	5-8'	3-4.5'	4-6'	6-10'	4-8'	4-6'		2-8'	2-8'	3-8'
		1	1	1	1	1	2	1	1	2	1	1	1
Chromium	1000	222	40.8	23.1	41.3	80.2	1220	1250	619	1390	1140	708	724

NOTES: 1. Investigation performed in November, 1999

2. Shading indicates that the concentration exceeds the Site Specific Action Level.

Table 4

SUBSURFACE SOIL/FILL ANALYTICAL SUMMARY - ELEVATED ARSENIC AREA

Area I Additional Investigation[1]

LTV Steel Company

Inorganic Parameters (mg/kg)	Proposed Site Specific Action Level	Sample Locations																
		A1-SB-Q14-1			A1-SB-Q14-2			A1-SB-Q14-3			A1-SB-Q14-4		A1-SB-Q14-5			A1-SB-Q14-6		
		1-3.5'	3-5'	5-8'	1-4'	4-6'	6-7'	2-4'	4-6'	6-8'	0-4'	4-6'	3-4'	4-7'	7-8.5'	3-5'	5-7'	7-8'
		1	2	3	1	2	3	1	2	3	1	2	1	2	3	1	2	3
Arsenic	75	10 U	31.2	119	10 U	10 U	16.2	30.2	19.7	10 U	18.6	10 U	10.5	10 U	53.2	65.6	13.5	10 U

NOTES:
1. Investigation performed in November, 1999
2. U=Indicates compound was analyzed for but not detected.
3. Shading indicates that the concentration exceeds the Site Specific Action Level.

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Table 5

SUBSURFACE SOIL/FILL ANALYTICAL SUMMARY - ELEVATED LEAD AREA

Area I Additional Investigation[1]

LTV Steel Company

Inorganic Parameter (mg/kg)	Proposed Site-Specific Action Level	Sample Locations													
		A1-SB-Q18-1			A1-SB-Q18-2			A1-SB-Q18-3		A1-SB-Q18-4			A1-SB-Q18-5		
		0-2'	2-8'	8-13'	0-6'	8-10'	10-14'	0-2'	2-3'	0-4'	4-6'	14-16'	0-4'	4-10'	12-14'
		1	2	3	1	2	3	1	2	1	2	3	1	2	3
Lead	1000	173	362	434	2230	1090	1170	120	401	213	12400	2320	307	528	746

Inorganic Parameter (mg/kg)	Proposed Site-Specific Action Level	Sample Locations												
		A1-SB-Q18-6			A1-SB-Q18-7			A1-SB-Q18-8			A1-SB-Q18-9	A1-SB-Q18-10	A1-SB-Q18-11	A1-SB-Q18-12
		0-4'	4-8'	8-14'	4-9'	11-15.5'	16-17'	3-4'	4-8'	12-14'	4-6'	0-4'	4-8'	4-8'
		1	2	3	2	3	4	1	2	3	1	1	1	1
Lead	1000	718	1300	1420	143	278	29.3	271	8420	725	53.4	154	99.1	843

NOTES: 1. Investigation performed in November, 1999

2. Shading indicates that the concentration exceeds the Site Specific Action Level.

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Table 6

SUBSURFACE SOIL/FILL ANALYTICAL SUMMARY - ELEVATED LEAD AREA

Area I Additional Investigation[1]

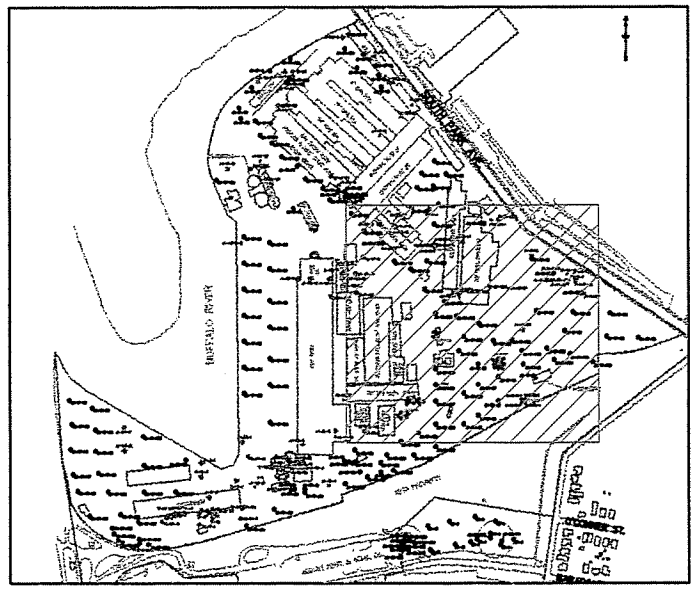
LTV Steel Company

Inorganic Parameters (mg/kg)	Proposed Site Specific Action Level	Sample Locations														
		A1-SB-Q19-1			A1-SB-Q19-2			A1-SB-Q19-3			A1-SB-Q19-4			A1-SB-Q19-5		A1-SB-Q19-6
		0-2'	2-4'	6-10'	2-4'	4-6'	10-10.5'	0-2'	2-4'	6-10'	0.5-3'	3-4'	4-6'	0-2.5'	3.5-6'	0-2.5'
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	1
Chromium	1000	910	194	47.9	268	58.6	30.9	26.4	375	20.6	16700	25	5 U	159	104	90.1

NOTES:
1. Investigation performed in November, 1999
2. U=Indicates compound was analyzed for but not detected.
3. Shading indicates that the concentration exceeds the Site Specific Action Level.

Figures

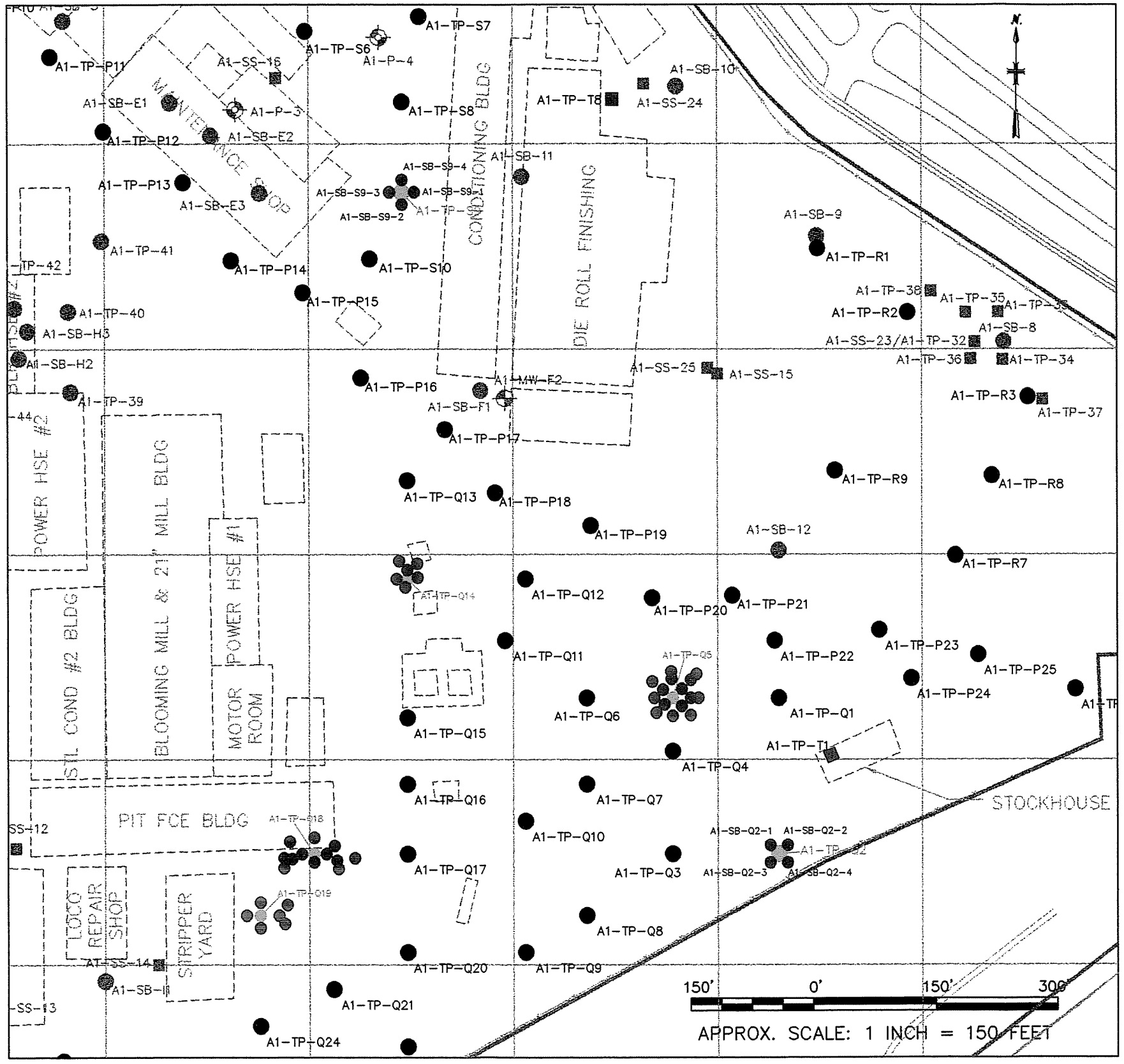
FIGURE 1



KEY PLAN

PLANT SITE AREA I

SCALE: 1" = 1000'



PARTIAL PLAN
AREA I

LEGEND

- NEW BORING LOCATION
- ORIGINAL SAMPLE LOCATION WITH ELEVATED INORGANICS
- FORMER TANK LOCATION
- JULY/AUGUST 1999 SAMPLE LOCATION
- PREVIOUS SAMPLE LOCATION
- EXISTING GROUNDWATER MONITORING WELL
- EXISTING PIEZOMETER

TURNKEY ENVIRONMENTAL RESTORATION, LLC

REVISIONS				
NO.	BY	DATE	REMARKS	
				DES
				DRN
				CKD

LTV STEEL COMPANY / THE HANNA FURNACE CORPORATION

ADDITIONAL INVESTIGATION AT LOCATIONS WITH ELEVATED INORGANICS

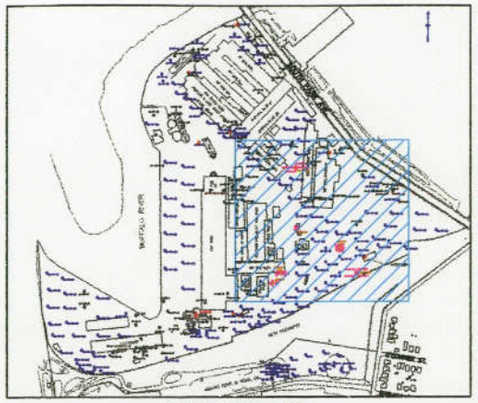
SAMPLING LOCATIONS

DATE DECEMBER 1999

SHEET ___ OF ___

CAD REF. NO. inorgsampleLoc1.DWG

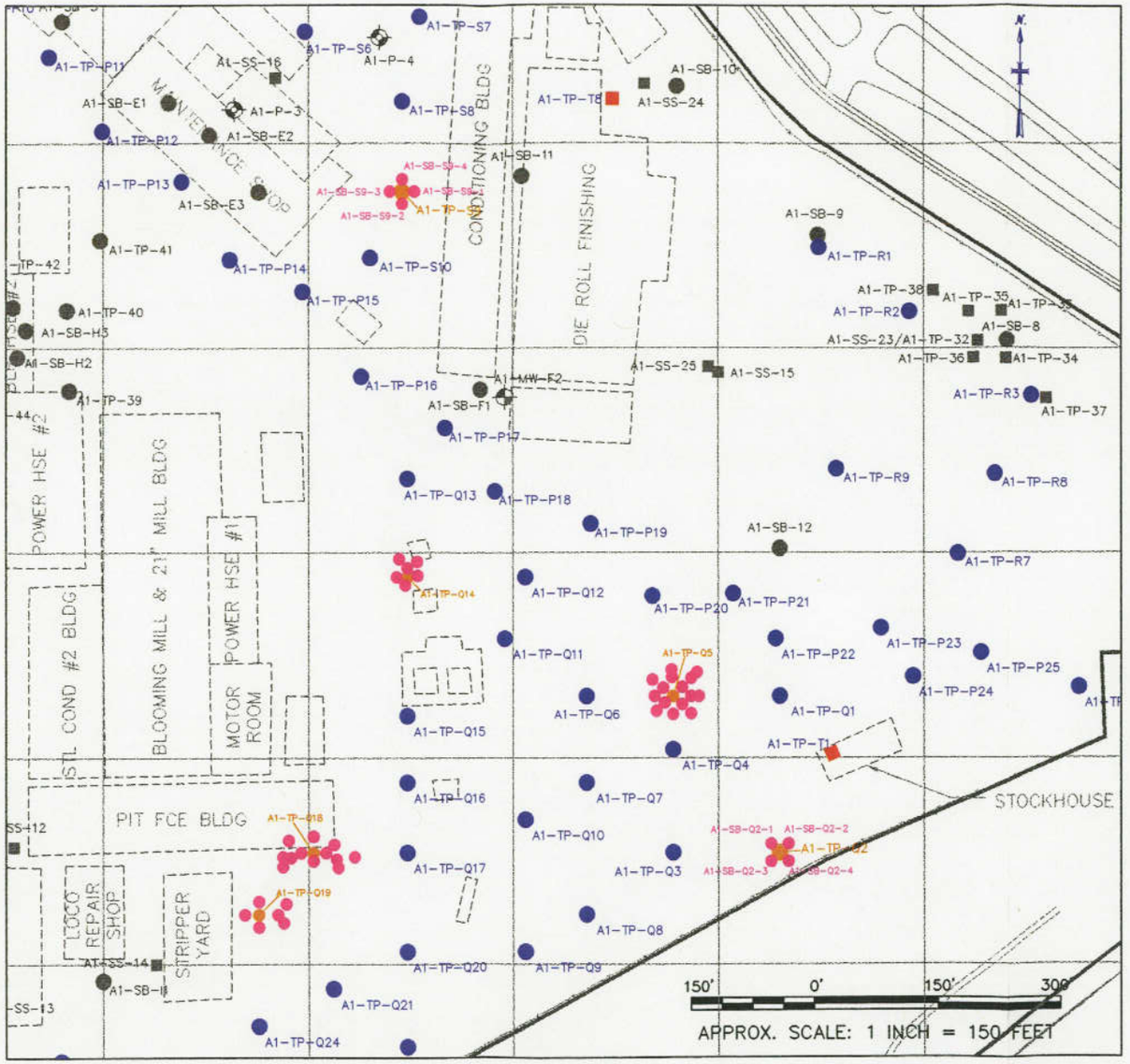
FIGURE 1



KEY PLAN

PLANT SITE AREA I

SCALE: 1" = 1000'



PARTIAL PLAN
AREA I

LEGEND

- NEW BORING LOCATION
- ORIGINAL SAMPLE LOCATION WITH ELEVATED INORGANICS
- FORMER TANK LOCATION
- JULY/AUGUST 1999 SAMPLE LOCATION
- PREVIOUS SAMPLE LOCATION
- EXISTING GROUNDWATER MONITORING WELL
- EXISTING PIEZOMETER

TURNKEY ENVIRONMENTAL RESTORATION, LLC

REVISIONS

NO.	BY	DATE	REMARKS

DES
DWN
CHD

LTV STEEL COMPANY / THE HANNA FURNACE CORPORATION

ADDITIONAL INVESTIGATION AT LOCATIONS WITH ELEVATED INORGANICS

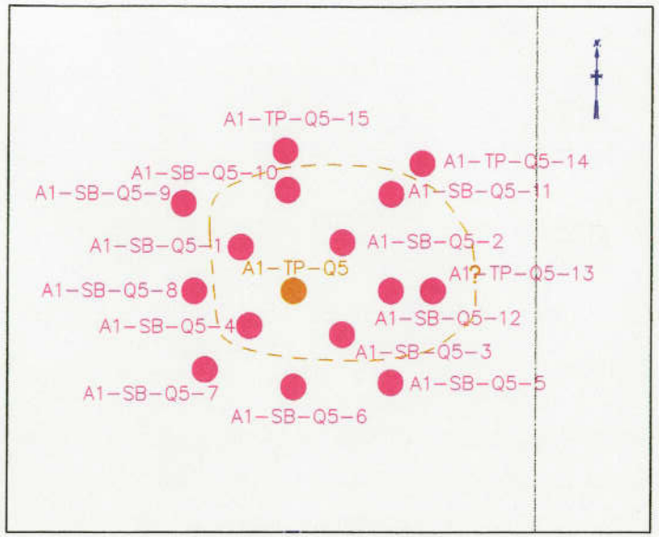
SAMPLING LOCATIONS

DATE DECEMBER 1999

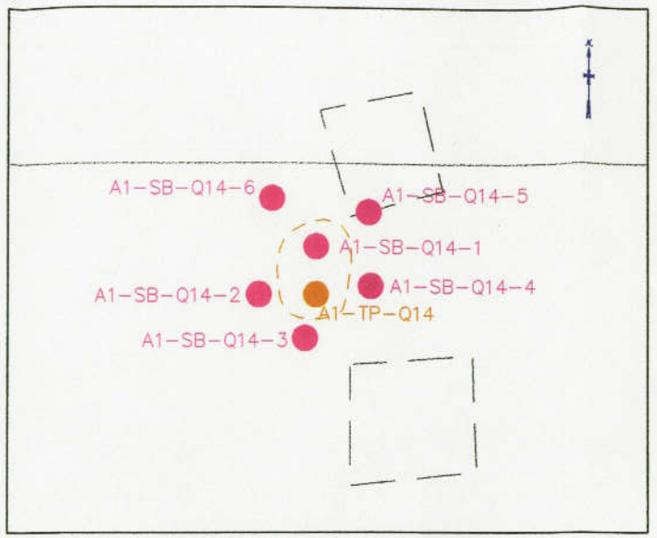
SHEET ___ OF ___

CAD REF. NO. inorgsampleLoc1.DWG

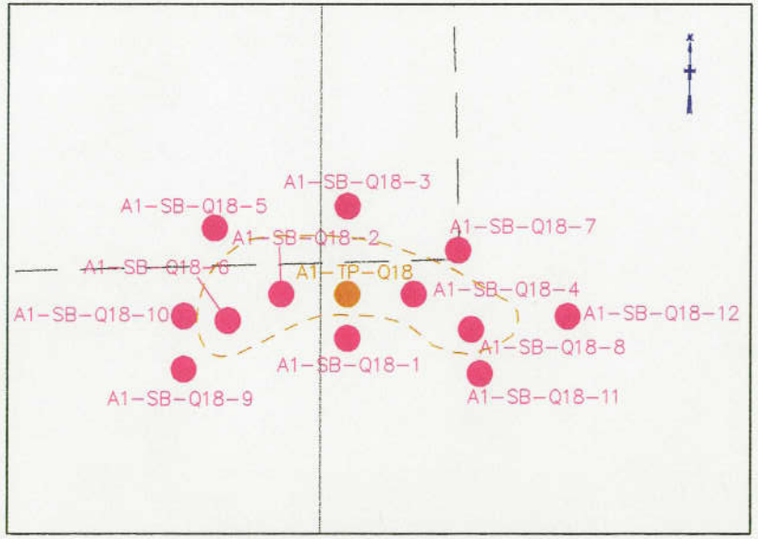
FIGURE 2



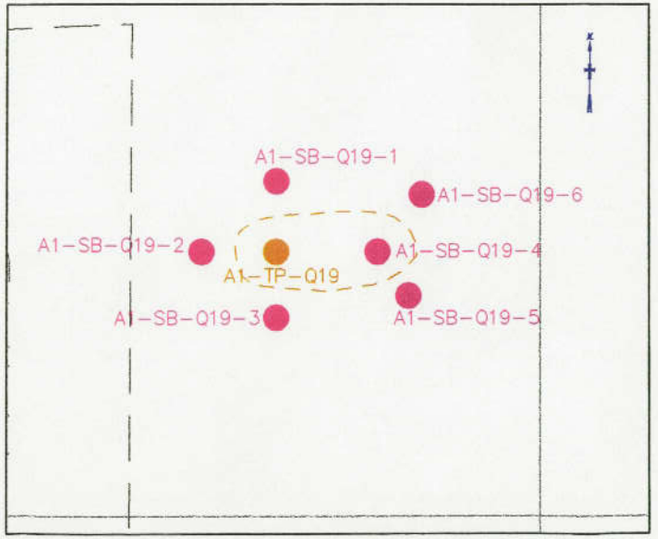
A1-TP-Q5 DETAILED PLAN



A1-TP-Q14 DETAILED PLAN



A1-TP-Q18 DETAILED PLAN



A1-TP-Q19 DETAILED PLAN

LEGEND

- NEW BORING LOCATION
- ORIGINAL SAMPLE LOCATION WITH ELEVATED INORGANICS
- FORMER TANK LOCATION
- JULY/AUGUST 1999 SAMPLE LOCATION
- PREVIOUS SAMPLE LOCATION
- EXISTING GROUNDWATER MONITORING WELL
- EXISTING PIEZOMETER
- EXTENT OF LATERAL INORGANIC CONTAMINATION > SSAL

0' 30' 60'

APPROXIMATE SCALE

TURNKEY ENVIRONMENTAL RESTORATION, LLC

REVISIONS

NO.	BY	DATE	REMARKS

DES ____
DWN ____
CHD ____

LTV STEEL COMPANY / THE HANNA FURNACE CORPORATION

ADDITIONAL INVESTIGATION AT LOCATIONS WITH ELEVATED INORGANICS

SAMPLING LOCATION DETAILS

DATE DECEMBER 1999

SHEET ____ OF ____

CAD REF. NO. Inorgsamplel.oo2.DWG

Attachment 1

LTV STEEL/HANNA FURNACE SITE
VOLUNTARY CLEANUP

Plan for:

ADDITIONAL INVESTIGATION FOR AREA I SOIL/FILL WITH ELEVATED INORGANICS

INTRODUCTION

A total of 146 test pits were performed in Area I to characterize fill for chemical constituents. Analytical results were tabulated and compared to Site Specific Action Levels (SSALs). Inorganic concentrations were elevated (i.e. above SSALs) at six locations including one test pit location in Subarea S and five locations in Subarea Q (see Figure 1). Specific inorganic constituents above SSALs include: mercury at one location in Subarea S; chromium at two locations in Subarea Q; lead at two locations in Subarea Q; and arsenic at one location in Subarea Q (see Table 1). This additional investigation is prepared to delineate the vertical and horizontal extent of the elevated inorganic concentrations in Subareas S and Q. Additional soil/fill samples will be collected in the proximity of the six identified locations for analysis of the elevated inorganic constituent of interest at each location.

INVESTIGATION PLAN

A minimum of four soil borings will be located around each target test pit of concern as shown on the attached figure. Borings were selected as the means of investigation so that the disturbance to the ground is limited, however if there are either poor recoveries or significant refusals, test pits may be used. At location A1-TP-Q18 refusal was encountered on a concrete slab, likely a basement foundation, at 17-feet below grade. Since the elevated lead is present within the brick fill inside the basement foundation; the additional borings will be within the foundation to characterize the material within the basement. At the remaining locations, the boring will be completed approximately 12 inches into the top of native soil, if possible.

Soils and fill will be field-logged and photo documented by a project hydrogeologist. Actual boring locations will be tied to the site grid for mapping purposes. NYSDEC Region 9 will be notified several days in advance of scheduling and will be given the opportunity to observe and split samples.

PROPOSED SAMPLING PLAN

Soil/fill will be field-logged to indicate the condition of the soil/fill and water table, if the water table is encountered. Since compositing of the entire depth of the original test pits was performed, discrete layers will be sampled at each borehole location. Four borings will be performed spaced roughly equidistant away from the original test pit location at a distance of approximately 10 feet away. A maximum of three samples will be collected from each boring to account for any visible layering to characterize the soil/fill to the top of native soil and submitted to the laboratory for analysis. The analytical laboratory will provide 24-hour turnaround so that additional boreholes can be extended radially outward in approximate 10-foot increments from any locations exhibiting elevated concentrations. This procedure will continue until inorganic concentrations do not exceed SSALs or another previous sampling location is encountered.

Samples submitted to the laboratory will be analyzed for the parameter indicated on Table 1 using approved SW-846 methodology (Method number 6010B) and 7471 for mercury. Turnaround of analytical data will be approximately 24-hours. A data usability report will be prepared once analytical data is finalized.

REPORTING

An addendum to the Area I Site Assessment Report will be prepared to summarize the findings of this investigation. The addendum will include analytical soil/fill data in tabular form compared to SSALs, a map showing the location of soil/fill borings, and borehole logs.

TABLE 1

Original Test Pit Location	Parameter of Concern	Original Description of Fill in Test Pit Depth range, ft below grade	Method Number
A1-TP-S9	Mercury	0-2.5' Sand, whole brick, metal building debris 2.5-6.5' Sand with gravel and brick fragments	7471
A1-TP-Q2	Chromium	0-10' Railroad ballast, brick, iron ore, slag, metal, wood	6010B
A1-TP-Q5	Chromium	0-6' Brick, metal, 2-gal metal pail, rail, wood, heavy porous asphalt like material, slag, cable, iron ore, sheen on coarse material	6010B
A1-TP-Q14	Arsenic	0-2' Sand and slag 2-2.5' gray slag, hard 2.5-4.5' Orangish brown cinder-like sand and dark brown cinder-like sandy silt 4.5-9' Dark brown cinder-like sand, silt	6010B
A1-TP-Q18	Lead	0-2' Grayish powdery silt with slag, iron ore, brick 2-17' Whole brick, firebrick, concrete blocks, tile (cast iron pipes), iron pipe (small), large iron pier	6010B
A1-TP-Q19	Lead	0-4' Gray & brown silt, slag, brick, ore and 1' gravel, slag, concrete to 4' 4-9' Dark brown cinder-like sand, brick, concrete, wood	6010B

Attachment 2

FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.:	A1-SB-S9-1	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10' E Toward SP.	Project No:	0002-005	Ref. Elev.	
Date(s):	11/17/99	Logged By:	JMA		
Drilling Method:	Acker Rig	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %	
0		3	13"		6" Dk brn — cinder like gravel, loose, moist		1		9:20
		7			7" Broken brick, light colored sand, pieces blush				
		15			slag, some dk brn sand/cinder material				
		29							
2		20	8"		8" A/a, wet		2		
		17							
		17							
		48							
4		8	19"		10" Black cinders, moist, loose to compact		3		- Soil Fill
		9			9" Green mottled, inst 2", clayey silt, laminated				
		7			moist				
		8							
6									
8									

Benchmark Environmental Engineering & Science, PLLC

TurnKey Environmental Restoration, LLC

FIELD BOREHOLE LOG

Page _____ of _____

Borehole No.:	A1-SB-99-2	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10'S	Project No:	0002-005	Ref. Elev.	
Date(s):	11/17/99	Logged By:	JMA		
Drilling Method:	Auger Rig	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %	
0		8	13"		8" DK brn cinder-like sand, moist		1		9:40
		7			4" rain fire brick, moist				
		10			1" Red brick, moist				
		14							
2		9	3"		3" DK brn cinder-like sand w/ little fire		2		9:42
		4			brick, one chunk porous slag, wet				
		2							
		1							
4		5	1"		wet, A/A				
		4							
		3							
		2							
6		5	11"		3" wet A/A		3		Dust Fill 9:45
		7			3" Ext moist clayey silt, brn mottles, w/				
		8			gray, laminated				
		9							

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FIELD BOREHOLE LOG

Borehole No.:	A1-SB-59-3	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10' W	Project No:	0002-005	Ref. Elev.	
Date(s):	11/17/99	Logged By:	JMA		
Drilling Method:	Acker	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %	
0		12	8"		DK brown to black moist cinder-like sand		1		P2 10:10
		14			little Red brick fragments, little gravel				
		22			loose when dist.				
		15							
2		14	7"		A/A No brick, w/coal/coke fragments, moist,		2		P1 10:15
		15			loose when disturbed				
		12							to 4.5'
		2							
4		3	15"		6" A/A wet				
		4			6" Brn - silt sand & gravel wet, loose		3		10:20
		13			3" Gray weathered cement w/ gravel wet moist				
		50/4"			bx concrete				
6					Refusal w/ augers at 6.5'				

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FIELD BOREHOLE LOG

Page _____ of _____

Borehole No.:	A1-SB-SG-4	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	N of TP-SG, 10'	Project No:	0002-005	Ref. Elev.	
Date(s):	11/17/99	Logged By:	JMA		
Drilling Method:	Acker Drill	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		20	16		3" Dk brown cinder-like sand, gravel, moist			
		25			13" 2nd Brick, fine brick, dark brown silt, sand, glass moist		1	
		15						
		45						
2		40	8"		8" Dk brown w/ fine brick sand/gravel, moist		2	
		11						
		12						
		25						
4		6	18"		6" Dk brown cinder-like sand w/ little red brick		3	
		3						
		3			12" Dk gray-black clayey silt w/ trace peat/organics, ~~wet~~ moist			
		3						
6								

P3

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FIELD BOREHOLE LOG

Borehole No.:	A1-SB-QZ-1	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10'W	Project No:	0002-005	Ref. Elev.	
Date(s):	11/19/99	Logged By:	JMA		
Drilling Method:	Acker 4¼" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		18 50 50/3	15"		Dk brown sand & slag, gravel, loose, moist		1	
2		25 38 40 50/3	15"		Dk brown sand, silt, slag, ore, gravel, slightly compact, moist			
4		50 50 50/2	9"		A/A		2	
6		50/2	0"		Easy drilling		X	
8		50/4	0		Easy drilling, wet		X	
10		10 5 5 5	4		3" Sandy gravel/slag 1" Gray silty clay, laminated, ext mx. wet		3	

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.: A1-SB-Q2-2	Project: LTV -Area 1,Inorgs	Surface Elev.:	
Location: 10' N	Project No: 0002-005	Ref. Elev.	
Date(s): 11/19/99	Logged By: JMA		
Drilling Method: Acker, 4¼" HSA	Drilling Co.: SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		8	13"		DK grayish brown sand, silt, iron, gravel, slag, moist, compact		1	
		13						
		45						
		46						
2		49	17"		A/A W/ increased iron staining		2	
		15						
		16						
		50/6						
4		44	18"		DK brownish gray sand trace silt, slag, gravel loose, wet bottom 3"		3	
		49						
		29						
		20						
6		14	3"		A/A, more tan (trace)			
		6						
		9						
		16						
8		26	16"		10" Reddish sand (little) and slag A/A			
		24			3" Peat layer w/wood			
		4			3" Gray & brn clayey silt			
		3						

PID 14

∇ 9.0'

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.:	A1-SB-QZ-3	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10'S	Project No:	0002-005	Ref. Elev.	
Date(s):	11/19/99	Logged By:	JMA		
Drilling Method:	Acker 4¼" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0	1	50/4	4½		Bro— silt, sand, gravel, slag, slightly moist, loose		X	
2	2	50/2	3"		A/A		1	
4	3	26 23	3"		Slag, sand-size		2	
5	4	50/4	3"		A/A, moist			
6								

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.:	A1-SB-Q2-4	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10' E	Project No:	0002-005	Ref. Elev.	
Date(s):	11/19/99	Logged By:	JMA		
Drilling Method:	Acker 4¼" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		10	17"		Dk brown Sand, gravel, slag, trace silt, loose, moist		1	
		15						
		10						
		50/4						
2		50/3	3"		Brown broke up slag			
4		13	18"		Dk brown w/rust staining iron, sand-to-cemented porous slag		2	2
		8						
		10						
		7						
6		26	12"		wet slag, w/trace silt, trace sand-size.		3	
		37						
		28						
		41						
8		13	10"		wet slag & sand-size			
		11						
		15						
		19						
10		25	15		A/A			
		13						
		47						
		13						
12		8	11"		6" slag			
		5			5" Peat & silty clay			
		4						
		3						

2.5' PID 15 11'

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FIELD BOREHOLE LOG

Page _____ of _____

Borehole No.:	A1-SB-05-1-'	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10' W	Project No:	0002-005	Ref. Elev.	
Date(s):	11/19/99	Logged By:	JMA		
Drilling Method:	Acker, 4¼" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %	
0	1	14	10"		Brown sand, silt, gravel, porous slag, moist		1		8:58
		37							
		37							
		50/4							
2	2	50/4	4"		Brown Gray a/a, slag caught in shoe, ext moist		2		9:00
									PICT 12
4	3	50/4	4"		A/A		3		9:05
5	4	50/4	4"		wet				
6	5	50/3	4"						
7	6	50/0	0		Refusal at 7'				

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.: A1-SB-05-2	Project: LTV -Area 1,Inorgs	Surface Elev.:	
Location: 10' N	Project No: 0002-005	Ref. Elev.	
Date(s): 11/19/99	Logged By: JMA		
Drilling Method: Acker, 4¼" HSA	Drilling Co.: SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		5	14"		7" Dk brn loam w/ gravel & slag, moist		1	
		28			7" Slag & Fire brick, ext moist			
		13						
		20						
2		50/4	4"		4" Gray wet porous slag, some silt & sand size frags		2	
		50			7" Dk Gray silt and sand size mat'l w/ porous slag, moist			
		50/2						
4		28	16"		16" wet, more slag, A/A		3	
		40						
		41						
		30						
6		38	12"		A/A			
		58						
		24						
		20						
8		7	4"		A/A, piece slag stuck in shoe			
		10						
		7						
		7						
					Augers getting jammed in hole. Boring complete at 10'			

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.:	AI-SB-05-3	Project:	LTV -Area 1,Inorgs
Location:	10' E	Project No:	0002-005
Date(s):	11/19/99	Logged By:	JMA
Drilling Method:	Acker, 4 1/4" HSA	Drilling Co.:	SJB
Surface Elev.:			
Ref. Elev.			

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		8 38 46 41	19"		Dk brown Gravelly sand silt, w/ slag & pig iron(?) moist, compact		1	
2		50 50/2	7"		Dk. gray slag & broken sand & silt size pieces, wet moist, loose			
4		50 50/3	7"		Dk Brown silty sand w/ some slag & gravel, wet		2	
6		50/2	2"		A/A, mostly slag			
8		38 49 50/3	14"		A/A		3	12'
10		50 50 19 18	24"		Brown & dk brown mostly chunks of slag, gravel coarse sand			
12		2 5 6 8	14"		2" A/A and gray 12" Brown Clayey silt, laminated, wet little fine sand			
14		4 4 3 3	16"		16" A/A			

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.:	A1-SB-05-4	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10' S	Project No:	0002-005	Ref. Elev.	
Date(s):	11/19/99	Logged By:	JMA		
Drilling Method:	Acker, 4¼" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		8	13"		2" Brn — silt, sand & slag/gravel moist			
		28			11" Gray gravel, slag, sand & silt, moist			
		28						
		27						
2		28	13"		DK grayish brown sand stee slag, silt & slag, wet		1	
		30						
		30						
		26			Auger refused at 3.5'. Move back 3' & another attempt			
4		25	12"				2	
		38			DK Gray very compact silt, sand, slag, gravel, ~~wet~~ ext moist			
		50						
		45						
6		30	16"		A/A, w/chunk of coal		3	
		50						
		50/4						
8		9	17"		Grayish brn clayey silt, ext moist, laminated			
		4						
		5						
		5						

Plot 13

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.: A1-SB-Q5-5	Project: LTV -Area 1,Inorgs	Surface Elev.:	
Location:	Project No: 0002-005	Ref. Elev.	
Date(s): 11/29/99	Logged By: JMA		
Drilling Method: 4¼" HSA, CME 550 ATV	Drilling Co.: SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0	1	4	10"		Dk brown silty sand and gravel/slag, moist, loose			
		11						
		5½						
2	2	8	12"		Dk brownish gray sand-size and gravel size slag, wet.			
		9						
		21						
		20						
4	3	87	1"		Dk gray sand, wet, poor recovery w/little slag (grav.-size)		1	
		114						
5	4	160/5"	5"		A/A			
6	5	10	11"		A/A		2	
		23						
		15						
		15						
8	6	14	9"		Red brick, fire brick, gravel, loose, trace sand wet			
		12						
		5						
		12						
10		25	8"		Red brick, gravel, slag, loose, trace silty sand, wet			
		12						
		17						
		15						

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FIELD BOREHOLE LOG

Borehole No.:	A1-SB-Q5-60	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:		Project No:	0002-005	Ref. Elev.	
Date(s):	11/29/99	Logged By:	JMA		
Drilling Method:	4¼" HSA, CME550	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %	
0		5	13"		Brown - Dk brown ext moist gravelly silty sand, slightly compact				
		12							
		31							
		15							
2		8	14"		7" wet reddish bro — sand & gravel loose,		1		
		19			7" DK bro — w/coal chunk sand & gravel,				
		20			loose, wet				
		18							
4		18	17"		10" Gray sand, gravel, slag, wet		—		
		21			7" A/A, w/ trace oil drops, no odor, ↳ slight residue	0			
		27							
		27							
6		30	15'		6" Gray sand, little - trace gravel trace	0	2		SVOCs
		14			oil drops, no odor, wet, slight residue of oil				
		7			9" Gray native silt w/ trace clay laminated				
		10							

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.: A1-SB-05-7	Project: LTV-Areal Inorgs	Surface Elev.:	
Location:	Project No: 0002-005	Ref. Elev.	
Date(s): 11/29/99	Logged By: JMA		
Drilling Method: 4¼" HSA, CME550	Drilling Co.: SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		3	14"		5" Brown loam w/roots, moist			
		3			9" Olive gray sand, trace silt w/gravel & slag			
		3						
		3						
2		24	10"		Brown sand & gravel, slag, iron ore wet, loose.		1	
		18						
		15						
		14						
4		18	11"		Gray, slightly compact silt, sand, gravel, org., slag, wet			
		40						
		50/3						
6		17	17"		A/A			
		20						
		14						
		11						
8		5	16"		3" A/A			
		4			13" Gray silty clay, ext moist, laminated			
		3						
		4						

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FIELD BOREHOLE LOG

Page _____ of _____

Borehole No.:	A1-SB-05-8	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:		Project No:	0002-005	Ref. Elev.	
Date(s):	11/29/99	Logged By:	JMA		
Drilling Method:	4¼" HSA, CME 550	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		10	14"		5" Bro — silt, sand, little gravel, slag, ore,			
		12			moist, loose			
		12			4" DK Bro — cinder, coarse sand size			
		14			5" Bro — silt w/sand, little gravel, slag, ore, moist			
2		17	18"		Gray sand w/slag, gravel, moist, wet Bottom			
		35			limestone			
		28						
		35						
4		22	16"		8" Bro — silty sand, compact, w/gravel, slag,			
		20			wet			
		23			8" Gray sand & slag gravel, limestone, wet,		1	
		60/3			loose, trace silt			
6		70	11"		11" A/A			
		89						
		11						
		5						
8		7	7"		Brownish gray silty clay, thin layer peat w/			
		2			wood on top, moist Dk clay, laminated,			
		2						
		3						

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.: A-SB-05-9	Project: LTV-Area 1 Inorgs	Surface Elev.:	
Location:	Project No: 0002-005	Ref. Elev.	
Date(s): 11/29/99	Logged By: JMA		
Drilling Method: 4¼" HSA, CME550	Drilling Co.: SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		17	13"		1" Brown silt, sand, little gravel, slag, moist, loose.			
		24			12" Brown & gray sand & gravel, slag, are			
		17			loose, slightly compact, trace-little silt			
		18						
2		14	18"		9" Lightish gray sand & gravel, slag, slightly			
		30			compact, trace-little silt, wet			
		30			9" Gray sand & gravel slag, trace silt,		1	
		25			slightly compact, wet			
4		20	24"		6" A/A grading to			
		18			6" Brownish gray sand & gravel w/ coal		-	
		14			& cinders, wet			
		17			12" DK brown cinders, coal, trace slag, wet			
6		12	19"		15" Brown & gray laminated silty clay &			
		12			Sandy silt, very compact, moist			
		14			4" Red brick with black sand			
		15						
8		7	20"		6" A/A			
		3			14" Olive gray silty clay tending toward			
		4			clayey silt, moist, laminated			
		7						

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.:	A1-SB-05-18	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:		Project No:	0002-005	Ref. Elev.	
Date(s):	11/29/99	Logged By:	JMA		
Drilling Method:	CME 550, 4"4" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		7	18"		8" Brown sand. w/ some gravel, slag, cinders, moist			
		10						
		9			10" Olive brownish gray sand w/ slag, gravel, cinders, wet Bottom 2", ore			
		14						
2		19	9"		7" A/A			
		50/4						
4		57	9"		9" DK gray sand w/ slag, gravel ore, wet, little silt, compact upper 4"		1	
		60/3						
6		14	12"		12" DK gray gravel w/ sand, slag, ore, wet, loose		2	
		4						
		11						
		7						
8		27	13"		13" A/A			
		7						
		7						
		21						
10		14	11"		11" Gray sand w/ gravel, trace silt, slightly compact, wet			
		14						
		27						
		25						
12		30	16"		16" A/A			
		28						
		17						
		12						
14		37	2"		2" A/A			
		49						
		37						
		44						
16		22	13"		13" A/A			
		15			5" Olive gray clayey silt, v. stiff			
		17						
		50						

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FIELD BOREHOLE LOG

Page _____ of _____

Borehole No.:	AL-SB-05-11	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:		Project No:	0002-005	Ref. Elev.	
Date(s):	11/29/99	Logged By:	JMA		
Drilling Method:	CME 550, 4¼" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		12	15"		DK brown silty sand w/ gravel, slag, moist			
		18			cinders, concrete.			
		10						
		21						
2		5	10"		Brown wet gravel, slag, cinders, little			
		7			sand.			
		5						
		7						
4		32	8"		DK Gray gravel, slag, brick, ore, wet		1	
		38			loose.			
		50						
		35						
6		34	9"		N/A			
		12						
		35						
		27					—	
8		31			DK brown cinders, slag, Fire brick, ore, wet			
		41			Slightly compact			
					Auger advancement too hard - rig is			
					chattering - refusal.			

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.:	A1-SB-QS-12	Project:	(IV-Area I Inorgs Surface Elev.:
Location:		Project No:	0002-005 Ref. Elev.
Date(s):	11/29/99	Logged By:	JMA
Drilling Method:	CME 550, 4¼" HSA	Drilling Co.:	SJB

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		11	18"		6" Brown silty sand w/some gravel, slag, cinders			
		19			12" Dk brown sand w/some gravel, trace silt,			
		47			slag, cinders, ore.			
		37						
2		48	14"		14" A/A, w/little-trace silt, slightly compact			
		33						
		15						
		37						
4		15	18"		18" Dark brownish gray silty sand w/		1	
		22			some gravel, slag, cinders, ore,			
		20			wet, compact			
		31						
6		50/3	3"		A/A			
7		40	7"		7" Brown sand, slag, ore, wet			
		50/3						
					Auger & spoon refusal @ 7.7',			

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10 ~4-8 1220
11 ~4-8 1250
12 6-8 1390
of 10

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FIELD TEST PIT LOG

I. Morgs

Test Pit No.:	AI - TP - Q5-13	**Project:**	LTV Steel, Area ~~H Flowable Inv.~~
Location:	10' E of AI-SR-Q5-12	**Project No:**	0002-005-200
Date:	12/7/99	**Logged By:**	JMA S
Excavation Method:	Liebherr 932		

Test Pit Profile

grade .....

Dk grayish brn sand mixed w/ significant quantity of building demo, brick, wire, rebar, concrete

Refusal at 8' bg

not to scale

Test Pit Plan View (North Top of Page)

not to scale

Notes:			

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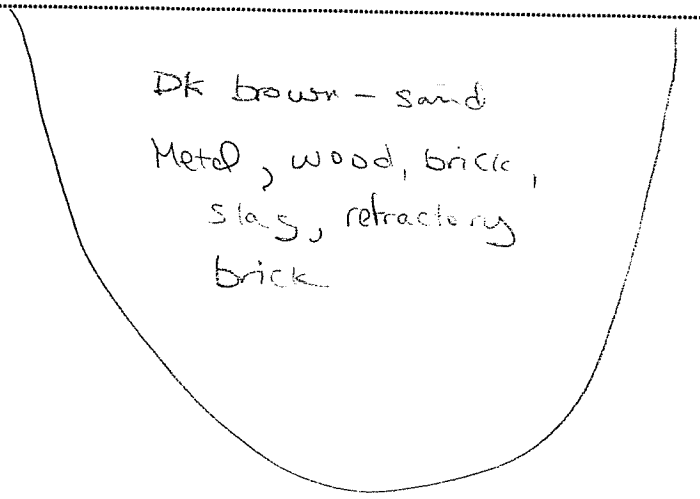
FIELD TEST PIT LOG

I Inorgs

Test Pit No.:	A1-TP-Q5-14	**Project:**	LTV Steel, Area H Flowable Inv.
Location:	10' NE of A1-SB-Q5-11	**Project No:**	0002-008-200
Date:	12/7/99	**Logged By:**	JMA S
Excavation Method:	Liebherr 932		

Test Pit Profile

grade .....



not to scale

Test Pit Plan View (North Top of Page)

not to scale

Notes:			

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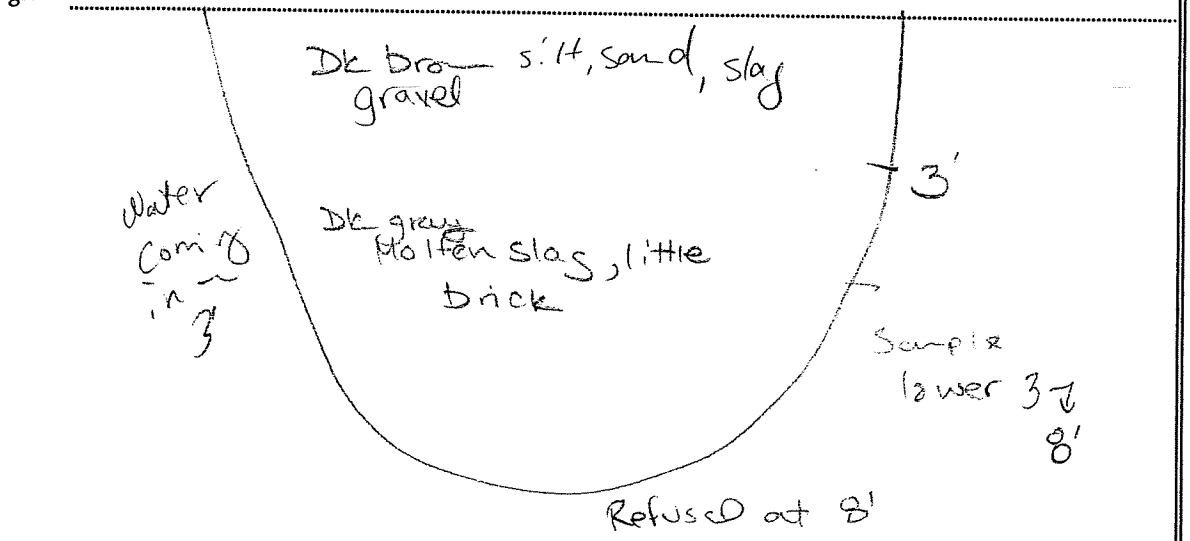
FIELD TEST PIT LOG

I Inorgs

Test Pit No.:	A-TP-05-15	**Project:**	LTV Steel, Area N ~~Flowable Inv.~~
Location:	10' N of A-SB-05-10	**Project No:**	0002-003-200
Date:	12/7/99	**Logged By:**	JMA S
Excavation Method:	Liebherr 932		

Test Pit Profile



not to scale

Test Pit Plan View (North Top of Page)

not to scale

Notes:			

FIELD BOREHOLE LOG

Page _____ of _____

Borehole No.:	A1-SB-Q14-1	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10' N	Project No:	0002-005	Ref. Elev.	
Date(s):	11/17/99	Logged By:	JMA		
Drilling Method:	Hand Drill	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %	
0		4	16"		8" Dk brown cinder like sand w/ gravel, coal				
		8			8" Slag, some pieces porous		1		11:55
		40							
		50/1							
2		32	17"		10" Slag				12:00
		19			7" Reddish brown sand, moist		2		25
		11							
		15							
4		26	16"		13" slag (gray & light brown				
		40			3" DK gray sand & gravel, wet		3		to 8' 12:05
		39							
		15							
6		39	9"		9" A/A				
		50/3							
8		3	5"		5" Ext moist-wet gray clayey Silt, trace peat,				
		3							
		2							
		1							

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FIELD BOREHOLE LOG

Page _____ of _____

Borehole No.:	A1-SB-Q14-2	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10' W	Project No:	0002-005	Ref. Elev.	
Date(s):	11/17/99	Logged By:	JMA		
Drilling Method:	Acker Drill 4"4" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %	
0		3	24"		2" Brn — loam w/ roots				
		6			11" Slag, gravel, dk brn silt, sand, moist				
		10			11" Tan & Gray, Sand, loose when dist. moist		1		to 4.1' 1:00
		15							
2		10	17"		17" A/A, w/ little blue slag within				
		15							
		32							
		50/3"							
4		15	19"		2" A/A				PID 6 1:55
		15			13" Yellow, rust colored & light brn Sand, slightly cemented, can be busted by pressure of hand		2		
		6							
		6			4" Brn over reddish silt, sand, gravel, wet				
6		16	12"		1" A/A, wet				
		10			8" Dk brn — black Sand & gravel, rust colors within		3		1:10
		10			1" Brn sand				
		3			2" Dk gray, trace peat, clayey silt, ext moist				

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FIELD BOREHOLE LOG

Page _____ of _____

Borehole No.:	A1-SB-Q14-3	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10' S of Q14	Project No:	0002-005	Ref. Elev.	
Date(s):	11/17/99	Logged By:	JMA		
Drilling Method:	Acker 4¼" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %	
0		5	0		No recovery				
		7							
		16							
		11							
2		3	10"		Dk brn — sand, gravel, coal, loose, moist		1		13:30
		3							
		3							
		3							
4		7	6"		Dk brn — A/A, wet		2		13:35
		9							
		4							
		21							
6		14	15"		Dk Gray slag pieces, gravel, sand, wet loose		3		13:40
		10							
		18							
		31							
8		2	18"		Gray w/ brn — mottles, ext moist, laminated				
		3							
		3							
		2							

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FIELD BOREHOLE LOG

Page _____ of _____

Borehole No.:	A1-SB-Q14-4	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10' W	Project No:	0002-005	Ref. Elev.	
Date(s):	11/17/99	Logged By:	JMA		
Drilling Method:	Acker 4¼" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		5	24"		3" Dk br ~ Silt, Sand, gravel, coal		1	
		10			17" Slag			
		15						
		15						
2		50/1	0					
4		50/4	4"		light gray Slag		2	
6		43	7"		light gray weathered cent, wet		3	
		50/1						
8		3	1"		Gray w/ trace peat, ext moist			
		3						
		4						
		5						

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FIELD BOREHOLE LOG

Borehole No.: A1-SB-Q14-5	Project: LTV -Area 1,Inorgs	Surface Elev.:	
Location: 10' NE of Q14-1	Project No: 0002-005	Ref. Elev.	
Date(s): 11/22/99	Logged By: JMA		
Drilling Method: Acker, 4¼" HSA	Drilling Co.: SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		10	14"		9" Dk brn sand, slag & gravel, trace silt, ext moist			
		11						
		49			5" Gray sand size slag and slag			
		50/2						
2		17	14"		10" A/A wet bottom 2"			
		27			4" Reddish brn sand size and slag (porous) wet		1	
		26						
		24						
4		30	11"		11" wet gray sand-size & slag, trace, mostly limestone, wet		2	
		29						
		50						
		50/2						
6		33	17"		7" A/A			
		13			4" Gray & brn & tan sand, slag, gravel, wet			
		22			6" Dk brn to black sand, silt, trace, wet		3	
		15						
8		3	10"		4" A/A			
		5			6" Gray silty clay, laminated, ext moist			
		6						
		8						

PID 16

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FIELD BOREHOLE LOG

Page _____ of _____

Borehole No.:	A1-SB-814-Q	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	~10' NW of 814-1	Project No:	0002-005	Ref. Elev.	
Date(s):	11/22/99	Logged By:	JMA		
Drilling Method:	Acker 4¼" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0	1	5	12"		12" Dk brown sand, slag & gravel, trace silt ext moist			
		5						
		50/4						
2	2	~~50/2~~	3"		3" N/A			
3	3	13	12"		Brown & dk brown to black sand, slag, limestone coal, ext moist		1	
		7						
		5						
		6						
5	4	4	4"		Brown sand, slag		2	
		1						
		8						
		17						
7		47	9"		5" ~~Dk~~ reddish tan brown sand, trace slag, wet		3	
		39						
		7			4" Brown sand and gravel			
		6			1" Gray silty clay, ext moist			

PICT 17

8'

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.:	A1-SB-918-1	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10' S	Project No:	0002-005	Ref. Elev.	
Date(s):	11/17/99	Logged By:	JMA		
Drilling Method:	Acker 4'4" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		5	15		10" Pk brown silt, sand, gravel, slag, roots-to moist		1	
		27						
		17			2" Reddish brn - clay			
		34			3" Dk brn - silt, sand, gravel, slag, moist			
2		10	11"		11" Red brick, moist, little brn sand & silt		2	
		13						
		19						
		17						
4		26	10"		A/A, little chunk wood			
		19						
		14						
		17						
6		8	4"		A/A, piece of slag			
		14						
		11						
		10						
8		8	1"		A/A, wet		3	
		3						
		4						
		7						
10		3	4"		A/A, wet			
		8						
		10						
		5						
12		6	2"					
		5						
		50/0			Cannot advance augers past 13'. Attempt Spoon. Spoon refusal begin.			

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.:	A1-SB-018-2-	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10' W	Project No:	0002-005	Ref. Elev.	
Date(s):	11/18/99	Logged By:	JMA		
Drilling Method:	Acker 4¼" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		23	18"		DK brown silt w/ sand and gravel, slag, compact moist		1	9.0
		33						
		38						
		24						
2		28	12"		A/A trace of brick bottom 3"			
		34						
		34						
		44						
4		24	20"		A/A little red brick & fire brick, soil still compact moist			
		23						
		33						
		19						
6		8	5"		Mostly brick, slag, becoming dkt moist		X	
		13						
		15						
		8						
8		14	10		Tan and orangish sand w/ trace silt wet loose when disturbed. Sand is slightly cemented.		2	9.5
		4						
		3						
		2						
10		2	7"		A/A Tan reddish orange sand, wet		3	9.30
		2						
		1						
		3						
12		8	14"		A/A			
		3						
		2						
		50/1						
		50/2			Spoon & auger refusal @ 14' bg. Hole filled w/ water ~ 8' bg			

PIC 8

PIC 9

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FIELD BOREHOLE LOG

Page _____ of _____

Borehole No.:	A1-SB-Q18-3	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10' N	Project No:	0002-005	Ref. Elev.	
Date(s):	11/18/99	Logged By:	JMA		
Drilling Method:	Auger, 4¼" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		14	19"		Dk bro – silt, sand, gravel, slag, moist, compact		1	
		40						
		50						
		50/1						
2		27	17"		Bro – silt, sand, gravel, red brick, slag, moist, compact		2	
		40						
		50/4						
					Auger refusal @ 3.2' bg			

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FIELD BOREHOLE LOG

Page _____ of _____

Borehole No.:	A1-SB-018-4	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10' E	Project No:	0002-005	Ref. Elev.	
Date(s):	11/18/99	Logged By:	JMA		
Drilling Method:	Acker, 4¼" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		8	19"		Dk bro— silt and sand w/slag & gravel,		1	
		20			compact, moist, occ fire brick			
		50						
		37						
2		37	14"		Dk bro— silt and Sand w/slag, brick, trace			
		45			gravel, moist			
		47						
		80						
4		25	10"		Red brick, trace sand, ext moist		2	
		21						
		14						
		13						
6		9	5"		A/A, wet, plastic		X	
		9						
		6						
		7						
8		5	1"		Slag caught in shoe, wet		X	
		6						
		4						
		4						
10		9	3"		Broke-up Sandstone cobble, wet		X	
		17						
		6						
		4						
12		4	4"		Broke-up reddish sandstone, wet		X	
		3						
		2						
		2						
14		1	4"		A/A		3	
		1						
		11						
		50/4						

1312

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.: A1-SB-Q18-5	Project: LTV -Area 1,Inorgs	Surface Elev.:	
Location: 10' NW of Q18-2	Project No: 0002-005	Ref. Elev.	
Date(s): 11/22/99	Logged By: JMA		
Drilling Method: Acker, 4¼" HSA	Drilling Co.: SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		15	13"		Brn- silty sand w/ slag, gravel, moist		1	
		27						
		50/2						
2		15	24"		A/A w/ red brick bottom- 6", moist			
		11						
		49						
		42						
4		22	13"		3" Yello- brick sand size mat'l, moist		—	
		14			4" Olive gray sand, slag, limestone, moist		2	
		17			6" Red brick fragments, sand size, moist			
		18						
6		17	2"		Slag (iron ore) in shoe			
		16						
		11						
		11						
8		6	4"		Red brick sand size & fine brick (yellow) sand size and fine gravel size, wet			
		5						
		4						
		3						
10		6	1"		A/A		—	
		6					X	
		6						
		6						
12		10	13"		8" A/A			
		40			5" Black sand, slight odor		3	
		24						
		50/4						
14		50/5			Auger & spoon refusal at 14'			

PICT 18

PICT 19

PICT 20

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.:	A1-SB-Q18-6	Project:	LTV -Area 1,Inorgs
Location:	10' SW of Q18-2	Project No:	0002-005
Date(s):	11/22/99	Logged By:	JMA
Drilling Method:	Acker, 4¼" HSA	Drilling Co.:	SJB
		Surface Elev.:	
		Ref. Elev.	

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		14	13"		Brn silty sand w/gravel, slag, trace red brick, moist, loose		1	
		48						
		50/2						
2		31	18"		16" A/A, compact			
		30			2" wood & red brick			
		47						
		26						
4		28	11"		11" Red Brick, Slag, gravel, silty sand, moist		2	
		22						
		20						
		11						
6		8	8"		8" A/A, w/ fire brick			
		5						
		8						
		6						
8		13	7"		7" wet A/A		3	
		6						
		2						
		3						
10		2	8"		8" A/A			
		1						
		4						
		3						
12		1	2"		2" A/A			
		1						
		1						
		1						
14		50/4	4"		4" A/A			

Pict 21

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.: A1-SB-Q18-7	Project: LTV -Area 1,Inorgs	Surface Elev.:	
Location: 10' NE of Q18-4	Project No: 0002-005	Ref. Elev.	
Date(s): 11/22/99	Logged By: JMA		
Drilling Method: Acker, 4'¼" HSA	Drilling Co.: SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0	1	10	16"		Brown Sand w/ some gravel, Slag, limestone, moist, loose		1	No Sample
		30						
		28						
		24						
2	2	30	6"		A/A			
		35						
		35						
		37						
4	3	10	21"		Tan & Pinkish tan sand, angular, moist some is cemented together, one chunk 1" has very flat surface like floor		2	Pict 22
		8						
		15						
		50/3						
6	4	50/4	0		Auger & Spoon refused at 6' continue to advance auger, hard drilling, manage to break through			
7	5	19	7"		Pinkish tan, tan, and rust colored sand, A/A, wet			Pict 23
		44						
		30						
		5						
9					VOID to 11"			
11		5	2"		Cement/Concrete, yellow, tan & red brick		3	
		5			wet			
		3						
		2						
13		6	7"		A/A w/ 2" grayish brown sand (trace gravel)			
		5			concrete mat 1 is yellow, wet			
		50/2						
15		50/4	4"		A/A			
16		50/4			Black & grey slag, gravel fill, sand - silt also		4	
17		50/6			Spoon & auger refused at 17'			

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FIELD BOREHOLE LOG

Page _____ of _____

Borehole No.:	A1-SB-Q18-8	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10' SE of Q18-4	Project No:	0002-005	Ref. Elev.	
Date(s):	11/22/99	Logged By:	JMA		
Drilling Method:	Acker 4 1/4" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		10 45 50/3	10"		3" DK bro - gravelly sandy loam, roots, ext moist 7" Slag mixed w/ bro - silty sand, moist Coal			
2		15 25 26 16	15"		4" A/A 11" Tan bro - sand red brick, gray sand, gravel, Slag, moist		1	
4		30 40 20 11	9"		9" Sand size and chunks broken red brick moist		2	
6		13 9 10 5	5"		A/A, wet			
8		7 5 3 6	0		—		X	
10		3 8 4 3	2		Slag, brick, wood, wet		X	
12		2 4 7 50/2	6"		Bro - silty sand w/ coarse sand - tan trace pieces of red brick, wet		3	
14		50/0			Auger and spoon refusal			

Pic 24

Pic 25

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FIELD BOREHOLE LOG

Borehole No.: A1-SB-Q18-9	Project:	LTV-Area 3, ~~under berm~~	Surface Elev.:
Location:	Project No:	0002-005 Inorgs	Ref. Elev.
Date(s): 11/29/99 | 11/30/99	Logged By:	JMA	
Drilling Method: CME 550, 4¼" HSA	Drilling Co.:	SJB	

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
2		10	14"		DK brown sand & silt w/ trace gravel, 1 large piece red brick, moist, compact			
		14						
		50/3						
4		13			Brown sand & gravel, slag, ore, trace-no red brick, moist, loose		1	
		50/3						
11/30								
6		50/0			Auger & Spoon refusal. Cannot advance either.			

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.:	A1-SB-018-10	Project:	LTV-Area ~~1, under berm~~
Location:		Project No:	0002-005
Date(s):	11/30/99	Logged By:	JMA
Drilling Method:	CME 550, 4¼" HSA	Drilling Co.:	SJB
		Surface Elev.:	
		Ref. Elev.	

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		5/3			Dk bro— silty sand and gravel, slag, brick (yellowish), moist		1	
					Advance augers through v. hard material			
2		14	14"		Dk brown sandy silt w/some gravel, slag, trace red brick, limestone, moist			
		10						
		20						
		50/4						
4		50/1			Auger attempt ~ ½ hr only able to go 0.5'. Spoon had concrete in it. Refusal at 4.5'		2	

Scoop of auger cuttings

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.: A1-SB-Q18-11 Project: LTV - ~~Area B, under berm~~ Surface Elev.:
Location: ____ Project No: 0002-1035 Inorgs Ref. Elev.
Date(s): 11/30/99 Logged By: JMA
Drilling Method: CME 550, 4¼" HSA Drilling Co.: SJB

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		20	17"		Dk brown silty sand w/slag, trace brick			
		34			gravel, moist, v. slightly compact			
		17						
		12						
2		17	0		No Recovery			
		18						
		18						
		17						
4		9	9	10"	Brownish gray concrete, silty sand, slag,		1	
		17	17		ext moist, loose when disturbed			
		7						
		4						
6		5	3"		A/A, ext moist			
		22						
		21						
		37						
8		10	5"		Wood, wet			
		5						
		2						
		2						
10		4			Brown wet gravel, slag, wood, trace sand &			
		5			silt, loose			
		5						
		2						
12		5			A/A			
		7						
		12						
		40						
					Auger refusal @ 14.0'			

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.:	A1-SB-Q13-12	Project:	LTV - Area ~~3 under berm~~
Location:		Project No:	0002-0035 Inorgs
Date(s):	11/30/99	Logged By:	JMA
Drilling Method:	CME 550, 4¼" HSA	Drilling Co.:	SJB
		Surface Elev.:	
		Ref. Elev.	

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
					Advanced augers to 2' prior to sampling			
2		20	16"		14" Dk brown sandy silt little gravel & slag brick, moist compact			
		27			2" Tan Sand, moist, loose			
		20						
		24						
4		8	8"		Fire brick, gravel, red brick, wet, loose		1	
		6						
		5						
		9						
6		5			A/A, 1			
		3						
		5						
		5						
					Complete @ 8'			

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.:	A1-SB-Q19-1	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10' N	Project No:	0002-005	Ref. Elev.	
Date(s):	11/18/99	Logged By:	JMA		
Drilling Method:	Acker, 4 1/4" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		25	13"		Dk brown silty sand w/ gravel, slag, moist		1	
		24						
		50/3						
2		3	16"		A/A		2	
		24						
		40						
		50/3						
4		50/3	0				X	
6			5/4	2"	Slag		3	
8		39	2"		Dk brn sand, silt & slag, wet			
		9						
		7						
		6						
10		2	16"		1" A/A			10.1'
		4			15" Gray clayey silt, trace peat/organic, moist, laminated			
		4						
		6						

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FIELD BOREHOLE LOG

Page _____ of _____

Borehole No.:	A1-SB-Q19-7	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10' W	Project No:	0002-005	Ref. Elev.	
Date(s):	11/18/99	Logged By:	JMA		
Drilling Method:	Acker, 4-1/4" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		27	11"		7" Bro — silty sand w/gravel, moist			
		34			7" Slag			
		27						
		31						
2		21	13"		11" Dk bro — silt and sand w/coal, slag, moist, compact		1	
		15			2" Yellowish tan sand, moist			
		13						
		50/1						
4		31	15"		6" Slag mixed w/bro — silty sand, moist		2	
		38			9" Slag, coke, mist colored mat'l, slag			
		24						
		15						
6		7	3"		N/A, wet		~	
		8						
		10						
		12						
8		21	11"		Gravel & slag, wet, loose, no sand or silt		X	
		31			Slag, no sample			
		24						
		15						
10		19	10"		6" A/A		3	
		12			4" Gray silty clay laminated ext moist			
		4						
		5						

field 10

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.:	A1-SB-Q19-3	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10' S	Project No:	0002-005	Ref. Elev.	
Date(s):	11/18/99	Logged By:	JMA		
Drilling Method:	Acker 4¼" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		13 47 5/2	12"		Brown sandy gravelly slag fill, loose, moist		1	
2		12 14 32 17	14"		DK brown sand and silt w/ coal, slag, brick, moist		2	
4		16 47 36 14	11"		A/A, wet			
6		20 17 14 13	10"		Porous slag, wet		3	
8		11 17 5 3	0					
10		7 4 3 3	13"		3" Black and tan sand, wet w/ small pieces brick 10" Gray silty clay, laminated			

10,2'

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FIELD BOREHOLE LOG

Page _____ of _____

Borehole No.:	A1-SB-019-4	Project:	LTV -Area 1,Inorgs	Surface Elev.:	
Location:	10' E	Project No:	0002-005	Ref. Elev.	
Date(s):	11/18/99	Logged By:	JMA		
Drilling Method:	Acker 4 1/4" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		8	17		3" Dk brn moist silt, sand & slag			
		6			14" Slag, silt, sand, wood, compact, moist		1	
		36						
		31						
2		21	18		12" A/A			
		25			6" Tan sand and brn silt and sand		2	
		50			Fill			
		25						
4		7	20		10" A/A		3	
		10			10" Blue sandy slag, ext moist			
		26						
		13						
6		9	6		3" Brn silt, sand slag, ext moist			
		7			3" Brn clayey silt, ext moist			
		5						
		6						

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FIELD BOREHOLE LOG

Page ____ of ____

Borehole No.: A1-SB-Q19-5	Project: LTV - Area I	Surface Elev.:	
Location: 10' SE of Q19-4	Project No: 0002-005	Ref. Elev.	
Date(s): 11/24/99	Logged By: TMA		
Drilling Method: Acker 4 1/4" HSA	Drilling Co.: SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		10	10"		Dark brown silt and Sand w/ gray slag, gravel		1	
		35			moist			
		50/4						
2		50/3	2"		A/A		X	
3		46	12"		5" Dk brown silt, Sand & gravel / slag			
		30			3" Gray Sand-size slag, limestone, moist		2	
		15			4" Dk brown cinder-like sand, trace red brick,			
		16			moist			
5		18	13"		1" A/A			
		19			12" Blue slag (sand-size) & gravel size, mixed w/			
		19			rust colored same			
		38						
7		4	11"		11" Gray Silty clay, ext moist, laminated			
		3						
		7						
		8						

Pic 19

Pic 20

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FIELD BOREHOLE LOG

Page _____ of _____

Borehole No.:	A1-SB-Q19-6	Project:	LTV - Area I	Surface Elev.:	
Location:		Project No:	0002-005	Ref. Elev.	
Date(s):	11/24/99	Logged By:	JMA		
Drilling Method:	Acker, 4¼" HSA	Drilling Co.:	SJB		

Depth (bgs)	Sample No.	Blows (per 6")	Recovery	PID Scan (ppm)	SOIL DESCRIPTION: Color, Moisture Condition, Texture, Soil Type, Plasticity, Fabric, Bedding, Other	PID HDSP (ppm)	Samples	Moisture %
0		11	16"		Dark brown, brown & gray sand & gravel, little		1	
		48			Silt, slag, moist			
		33						
		25						
2		50/4	2"		A/A		X	
3		44	17"		7" Orange brick			
		30			3" Dark brown silty sand cinders, moist			
		30			3" Blue Slag			
		33			4" Tan Slag			
5		25	12"		2" A/A			
		10			8" Blue Slag			
		15			2" Gray clayey silt, ext. moist, laminated			
		13						

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Attachment 3

Sample ID: A1-SB-Q5-6-2
Lab Sample ID: A9810804
Date Collected: 11/29/1999
Time Collected: 10:00

Date Received: 11/30/1999
Project No: NY9A8496
Client No: L11208
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
SOIL-SW8463 8270 - TCL SVOA ORGANICS							
1,2,4-Trichlorobenzene	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
1,2-Dichlorobenzene	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
1,3-Dichlorobenzene	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
1,4-Dichlorobenzene	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
2,2'-Oxybis(1-Chloropropane)	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
2,4,5-Trichlorophenol	ND		800	UG/KG	8270	12/16/1999 05:35	RCS
2,4,6-Trichlorophenol	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
2,4-Dichlorophenol	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
2,4-Dimethylphenol	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
2,4-Dinitrophenol	ND		1600	UG/KG	8270	12/16/1999 05:35	RCS
2,4-Dinitrotoluene	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
2,6-Dinitrotoluene	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
2-Chloronaphthalene	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
2-Chlorophenol	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
2-Methylnaphthalene	150	J	760	UG/KG	8270	12/16/1999 05:35	RCS
2-Methylphenol	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
2-Nitroaniline	ND		1600	UG/KG	8270	12/16/1999 05:35	RCS
2-Nitrophenol	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
3,3'-Dichlorobenzidine	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
3-Nitroaniline	ND		1600	UG/KG	8270	12/16/1999 05:35	RCS
4,6-Dinitro-2-methylphenol	ND		1600	UG/KG	8270	12/16/1999 05:35	RCS
4-Bromophenyl phenyl ether	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
4-Chloro-3-methylphenol	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
4-Chloroaniline	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
4-Chlorophenyl phenyl ether	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
4-Methylphenol	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
4-Nitroaniline	ND		1600	UG/KG	8270	12/16/1999 05:35	RCS
4-Nitrophenol	ND		1600	UG/KG	8270	12/16/1999 05:35	RCS
Acenaphthene	82	J	760	UG/KG	8270	12/16/1999 05:35	RCS
Acenaphthylene	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
Anthracene	130	J	760	UG/KG	8270	12/16/1999 05:35	RCS
Benzo(a)anthracene	530	J	760	UG/KG	8270	12/16/1999 05:35	RCS
Benzo(a)pyrene	510	J	760	UG/KG	8270	12/16/1999 05:35	RCS
Benzo(b)fluoranthene	430	J	760	UG/KG	8270	12/16/1999 05:35	RCS
Benzo(ghi)perylene	300	J	760	UG/KG	8270	12/16/1999 05:35	RCS
Benzo(k)fluoranthene	140	J	760	UG/KG	8270	12/16/1999 05:35	RCS
Benzoic acid	ND		1600	UG/KG	8270	12/16/1999 05:35	RCS
Benzyl alcohol	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
Bis(2-chloroethoxy) methane	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
Bis(2-chloroethyl) ether	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
Bis(2-ethylhexyl) phthalate	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
Butyl benzyl phthalate	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
Chrysene	1100		760	UG/KG	8270	12/16/1999 05:35	RCS
Di-n-butyl phthalate	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
Di-n-octyl phthalate	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
Dibenzo(a,h)anthracene	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
Dibenzofuran	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
Diethyl phthalate	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
Dimethyl phthalate	ND		760	UG/KG	8270	12/16/1999 05:35	RCS

Sample ID: A1-SB-05-6-2
Lab Sample ID: A9810804
Date Collected: 11/29/1999
Time Collected: 10:00

Date Received: 11/30/1999
Project No: NY9A8496
Client No: L11208
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
SOIL-SW8463 8270 - TCL SVOA ORGANICS							
Fluoranthene	300	J	760	UG/KG	8270	12/16/1999 05:35	RCS
Fluorene	87	J	760	UG/KG	8270	12/16/1999 05:35	RCS
Hexachlorobenzene	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
Hexachlorobutadiene	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
Hexachlorocyclopentadiene	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
Hexachloroethane	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
Indeno(1,2,3-cd)pyrene	210	J	760	UG/KG	8270	12/16/1999 05:35	RCS
Isophorone	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
N-Nitroso-Di-n-propylamine	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
N-nitrosodiphenylamine	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
Naphthalene	570	J	760	UG/KG	8270	12/16/1999 05:35	RCS
Nitrobenzene	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
Pentachlorophenol	ND		1600	UG/KG	8270	12/16/1999 05:35	RCS
Phenanthrene	550	J	760	UG/KG	8270	12/16/1999 05:35	RCS
Phenol	ND		760	UG/KG	8270	12/16/1999 05:35	RCS
Pyrene	2200		760	UG/KG	8270	12/16/1999 05:35	RCS