152418

PHASE II
SITE CHARACTERIZATION
SUMMARY REPORT
LCP CHEMICALS SUPERFUND SITE
LINDEN, NEW JERSEY

VOLUME II OF II
APPENDICES A THROUGH I

Prepared for:

ISP Environmental Services Inc.
1361 Alps Road
Wayne, New Jersey 07470

September 2007

BROWN AND CALDWELL

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Project Number: 131369.301.002

BROWN AND CALDWELL

110 Commerce Drive

Allendale, New Jersey 07401

APPENDIX A

Well Construction and Soil Boring Logs

A-1 – Phase I Logs

A-2 – Phase II Logs

BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: MW-10

Project: *LCP Superfund Site, Linden, NJ*
Client: *ISP - ESI*
Project No.: *21405.102*
Start Date: *11/15/01*
Finish Date: *11/15/01*

DRILLING DATA

Inspector: *JLP*
Contractor: *ADT Diamond*
Equipment: *Auger rig (CME 75)*
Method: *Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split spoon*	*NA*	*NA*
Diameter:	*2"*	*NA*	*NA*
Other:	*NA*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*PVC*
Diameter (ID):	*2"*	*2"*
Coupling:	*Flush*	*Flush*

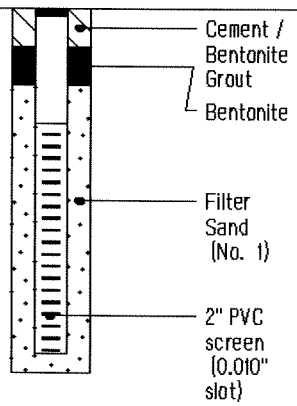
WELL DEVELOPMENT

Method: *Whale Super Purger*
Duration: *68 min.*
Gals. Purged: *75*
Slug Test: *0.01826* (cm/sec)

SURVEY DATA DATUM:

Grade: *8.22*
TWC: *Na*
TPC: *7.81*
North: *646536.58*
East: *57258.53*

Geophysical Log: ☐ yes ☒ no
Comments:

Depth (feet)	WELL CONSTRUCTION	soil / rock	Samp. No. / Run No.	Blows/ 6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	HNU (ppm)	VISUAL CLASSIFICATION	REMARKS
0								FILL	Notes: 1. Well construction depths and grade measured from ground surface at time of drilling. Grades may have been changed subsequent to well installation 2. Well Installed immediately adjacent to boring LP-4
5									
10								TIDAL MARSH DEPOSIT @ 9' Peat	
15									
20									
25									
30									

BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: MW-11

Project: *LCP Superfund Site, Linden, NJ*
Client: *ISP - ESI*
Project No.: *21405.102*
Start Date: *11/16/01*
Finish Date: *11/16/01*

DRILLING DATA

Inspector: *JLP*
Contractor: *ADT Diamond*
Equipment: *Auger Rig (CME 75)*
Method: *Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split spoon*	*NA*	*NA*
Diameter:	*2"*	*NA*	*NA*
Other:	*NA*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*PVC*
Diameter (ID):	*2"*	*2"*
Coupling:	*Flush*	*Flush*

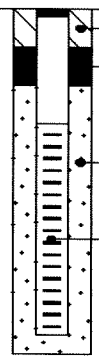
WELL DEVELOPMENT

Method: *Whale Super Purger*
Duration: *42 min.*
Gals. Purged: *37.5*
Slug Test: *0.003843* (cm/sec)

SURVEY DATA DATUM:

Grade: *7.99*
TWC: *NA*
TPC: *10.70*
North: *646451.79*
East: *572441.08*

Geophysical Log: ☐ yes ☒ no
Comments:

Depth (feet)	WELL CONSTRUCTION	soil / rock	Samp. No. / Run No.	Blows/ 6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	HNU (ppm)	VISUAL CLASSIFICATION	REMARKS
0	 Cement / Bentonite Grout; Bentonite; Filter Sand (No. 1); 2" PVC screen (0.010" slot)							FILL	Notes: 1. Well construction depths and grade were measured from ground surface at the time of drilling. Grades may bave been changed subsequent to well installation.
5									
								TIDAL MARSH DEPOSIT @ 7.5' Peat	
10									Well installed immediately adjacent to boring 231-B8.
15									
20									
25									
30									

BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: MW-12

Project: *LCP Superfund Site, Linden, NJ*
Client: *ISP - ESI*
Project No.: *21405.102*
Start Date: *11/20/01*
Finish Date: *11/20/01*

DRILLING DATA

Inspector: *JLP*
Contractor: *ADT Diamond*
Equipment: *Auger Rig (CME 75)*
Method: *Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split spoon*	*NA*	*NA*
Diameter:	*2"*	*NA*	*NA*
Other:	*NA*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*PVC*
Diameter (ID):	*2"*	*2"*
Coupling:	*Flush*	*Flush*

WELL DEVELOPMENT

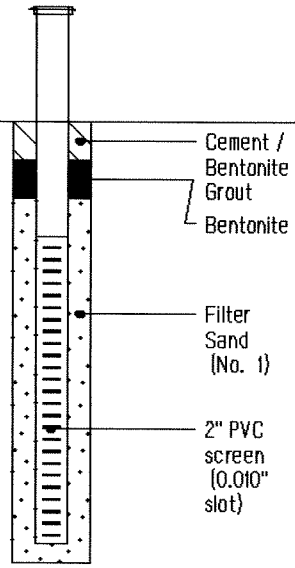
Method: *Whale Super Purger*
Duration: *34 min.*
Gals. Purged: *80*
Slug Test: *0.007658* (cm/sec)

SURVEY DATA DATUM:

Grade: *8.36*
TWC: *NA*
TPC: *11.21*
North: *646332.10*
East: *572454.67*

Geophysical Log: ☐ yes ☒ no
Comments:

WELL CONSTRUCTION



SAMPLE DATA

Depth (feet)	soil / rock	Samp. No. / Run No.	Blows/ 6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	HNU (ppm)	VISUAL CLASSIFICATION	REMARKS
0							FILL	Notes: 1. Well construction depths and grade were measured from ground surface at the time of drilling. Grades may have been changed subsequent to well installation. 2. Well installed immediately adjacent to boring 5K-B2.
10							TIDAL MARSH DEPOSIT @ 10.7' Peat	
15								
20								
25								
30								

BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: MW-13

Project: *LCP Superfund Site, Linden, NJ*
Client: *ISP - ESI*
Project No.: *21405.102*
Start Date: *11/15/01*
Finish Date: *11/15/01*

DRILLING DATA

Inspector: *JLP*
Contractor: *ADT Diamond*
Equipment: *Auger Rig (CME 75)*
Method: *Hollow Stem augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split spoon*	*NA*	*NA*
Diameter:	*2"*	*NA*	*NA*
Other:	*NA*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*PVC*
Diameter (ID):	*2"*	*2"*
Coupling:	*Flush*	*Flush*

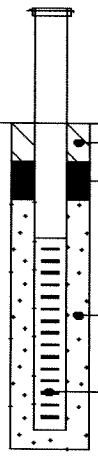
WELL DEVELOPMENT

Method: *Whale Super Purger*
Duration: *40 min.*
Gals. Purged: *90*
Slug Test: *0.007962* (cm/sec)

SURVEY DATA DATUM:

Grade: *7.61*
TWC: *NA*
TPC: *10.17*
North: *646301.84*
East: *572342.84*

Geophysical Log: ☐ yes ☒ no
Comments:

Depth (feet)	WELL CONSTRUCTION	soil / rock	Samp. No. / Run No.	Blows/ 6 in.	Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	HNU (ppm)	VISUAL CLASSIFICATION	REMARKS
0	 Cement / Bentonite Grout; Bentonite								FILL	Notes: 1. Well construction depths and grade measured from ground surface at time of drilling. Grades may have been changes subsequent to well installation. 2. Well installed immediately adjacent to boring LP-4.
5	Filter Sand (No. 1); 2" PVC screen (0.010" slot)									
									TIDAL MARSH DEPOSIT @ 7.5' Peat	
10										
15										
20										
25										
30										

BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: MW-14

Project: *LCP Superfund Site, Linden, NJ*
Client: *ISP - ESI*
Project No.: *21405.102*
Start Date: *11/19/01*
Finish Date: *11/19/01*

DRILLING DATA

Inspector: *JLP*
Contractor: *ADT Drilling*
Equipment: *Auger Rig (CME 75)*
Method: *Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split Spoon*	*NA*	*NA*
Diameter:	*2"*	*NA*	*NA*
Other:	*NA*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*PVC*
Diameter (ID):	*2"*	*2"*
Coupling:	*Flush*	*Flush*

WELL DEVELOPMENT

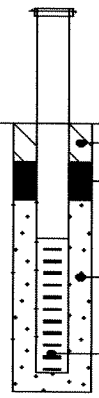
Method: *Whale Super Purger*
Duration: *35 min.*
Gals. Purged: *37.5*
Slug Test: *0.006717* (cm/sec)

SURVEY DATA DATUM:

Grade: *7.93*
TWC: *NA*
TPC: *10.79*
North: *646404.19*
East: *571992.79*

Geophysical Log: ☐ yes ☒ no
Comments:

WELL CONSTRUCTION



SAMPLE DATA

soil / rock

Samp. No. / Run No.	Blows/ 6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	HNU (ppm)

Depth (feet): 0, 5, 10, 15, 20, 25, 30

VISUAL CLASSIFICATION

FILL

TIDAL MARSH DEPOSIT
@ 6.5' Peat

REMARKS

Notes

1. Well construction depths and grade measured from ground surface at time of drilling. Grades may have been changed subsequent to well installation.

2. Well installed immediately adjacent to boring DSP-4.

BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: MW-15

Project: *LCP Superfund Site, Linden, NJ*
Client: *ISP - ESI*
Project No.: *21405.102*
Start Date: *11/14/01*
Finish Date: *11/14/01*

DRILLING DATA

Inspector: *JLP*
Contractor: *ADT Diamond*
Equipment: *Auger Rig (CME 75)*
Method: *Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split Spoon*	*NA*	*NA*
Diameter:	*2"*	*NA*	*NA*
Other:	*NA*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*PVC*
Diameter (ID):	*2"*	*2"*
Coupling:	*Flush*	*Flush*

WELL DEVELOPMENT

Method: *Bailer*
Duration: *6 hours*
Gals. Purged: *4.3*
Slug Test: *5.602 E-07* (cm/sec)

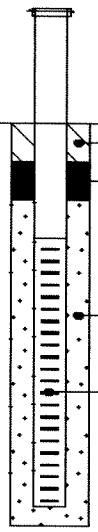
SURVEY DATA DATUM:

Grade: *7.99*
TWC: *NA*
TPC: *11.10*
North: *646617.04*
East: *572121.23*

Geophysical Log: ☐ yes ☒ no
Comments:

WELL CONSTRUCTION / SAMPLE DATA

Depth (feet)



soil / rock	Samp. No. / Run No.	Blows/ 6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	HNU (ppm)

VISUAL CLASSIFICATION

FILL

TIDAL MARSH DEPOSIT
@ 9.5' Peat

REMARKS

Notes:

1. Well construction depths and grade measured from ground surface at time of drilling. Grades may have been changes subsequent to well installation.

BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: MW-16

Project: *LCP Superfund Site*
Client: *ISP - ESI*
Project No.: *21405.102*
Start Date: *11/12/01*
Finish Date: *11/12/01*

DRILLING DATA

Inspector: *JLP*
Contractor: *ADT Diamond*
Equipment: *Auger Rig (CME 75)*
Method: *Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split spoon*	*NA*	*NA*
Diameter:	*2"*	*NA*	*NA*
Other:	*NA*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*PVC*
Diameter (ID):	*2"*	*2"*
Coupling:	*Flush*	*Flush*

WELL DEVELOPMENT

Method: *Whale Super Purger*
Duration: *56 min.*
Gals. Purged: *92*
Slug Test: *0.0467* (cm/sec)

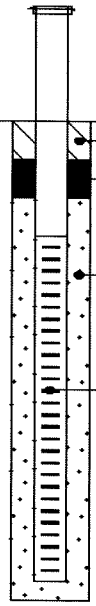
SURVEY DATA DATUM:

Grade: *6.24*
TWC: *NA*
TPC: *9.24*
North: *647005.13*
East: *572288.20*

Geophysical Log: ☐ yes ☒ no
Comments:

WELL CONSTRUCTION / SAMPLE DATA

Depth (feet)



soil / rock	Samp. No. / Run No.	Blows/ 6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	HNU (ppm)

VISUAL CLASSIFICATION

FILL

TIDAL MARSH DEPOSIT
@ 12' Peat

REMARKS

Notes

1. Well construction depths and grade measured from ground surface at time of drilling. Grades may have been changed subsequent to well installation.

2. Well installed immediately adjacent to boring MW-B16.

BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: **MW-17**

Project: *LCP Superfund Site*
Client: *ISP - ESI*
Project No.: *21405.102*
Start Date: *11/13/01*
Finish Date: *11/13/01*

DRILLING DATA

Inspector: *JLP*
Contractor: *ADT Diamond*
Equipment: *Auger rig (CME 75)*
Method: *Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split spoon*	*NA*	*NA*
Diameter:	*2"*	*NA*	*NA*
Other:	*NA*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*PVC*
Diameter (ID):	*2"*	*2"*
Coupling:	*Flush*	*Flush*

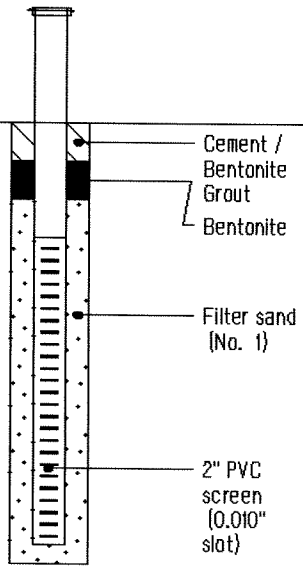
WELL DEVELOPMENT

Method: *Whale Super Purger*
Duration: *55 min.*
Gals. Purged: *26*
Slug Test: *0.0007374* (cm/sec)

SURVEY DATA DATUM:

Grade: *6.90*
TWC: *NA*
TPC: *9.87*
North: *646964.47*
East: *571464.30*

Geophysical Log: ☐ yes ☒ no
Comments:

Depth (feet)	WELL CONSTRUCTION	soil / rock	Samp. No. / Run No.	Blows/ 6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	HNU (ppm)	VISUAL CLASSIFICATION	REMARKS
0								FILL	Notes 1. Well construction depths and grade measured from ground surface at time of drilling. Grades may have been changes subsequent to well installation.
5									
10								TIDAL MARSH DEPOSIT @ 11' Peat	
15									
20									
25									
30									

BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: MW-18

Project: *LCP Superfund Site, Linden, NJ*
Client: *ISP - ESI*
Project No.: *21405.102*
Start Date: *11/14/01*
Finish Date: *11/14/01*

DRILLING DATA

Inspector: *JLP*
Contractor: *ADT Diamond*
Equipment: *Auger Rig (CME 75)*
Method: *Hollow stem augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split spoon*	*NA*	*NA*
Diameter:	*2"*	*NA*	*NA*
Other:	*NA*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*PVC*
Diameter (ID):	*2"*	*2"*
Coupling:	*Flush*	*Flush*

WELL DEVELOPMENT

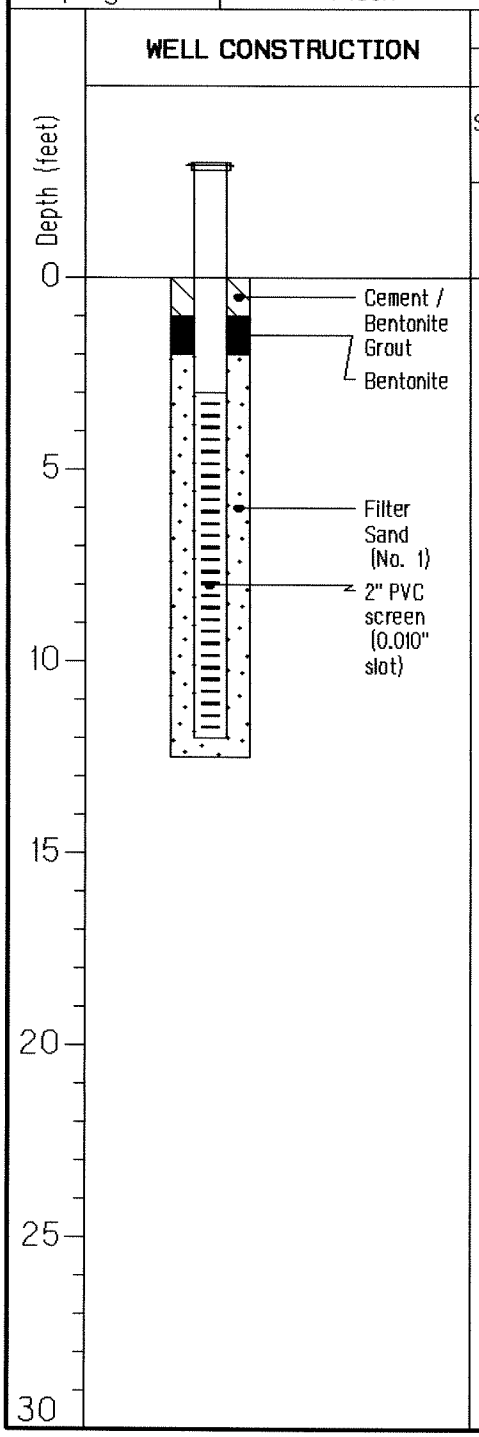
Method: *Whale Super Purger*
Duration: *72 min.*
Gals. Purged: *70*
Slug Test: *0.0003399* (cm/sec)

SURVEY DATA DATUM:

Grade: *7.66*
TWC: *NA*
TPC: *7.57*
North: *646928.20*
East: *571888.05*

Geophysical Log: ☐ yes ☒ no
Comments:

Samp. No. / Run No.	Blows/ 6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	HNU (ppm)	VISUAL CLASSIFICATION	REMARKS
					FILL	Notes 1. Well construction depths and grade measured from ground surface at time of drilling. Grades may have been changes subsequent to well installation.
					TIDAL MARSH DEPOSIT @ 12' Peat	



BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: **MW-19**

Project: *LCP Superfund Site, Linden, NJ*
Client: *ISP - ESI*
Project No.: *21405.102*
Start Date: *11/14/01*
Finish Date: *11/14/01*

DRILLING DATA

Inspector: *JLP*
Contractor: *ADT Diamond*
Equipment: *Auger Rig (CME 75)*
Method: *Hollow stem augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split spoon*	*NA*	*NA*
Diameter:	*2"*	*NA*	*NA*
Other:	*NA*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*PVC*
Diameter (ID):	*2"*	*2"*
Coupling:	*Flush*	*Flush*

WELL DEVELOPMENT

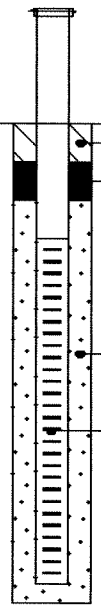
Method: *Whale Super Purger*
Duration: *24 min.*
Gals. Purged: *52.5*
Slug Test: *6.404 E-05* (cm/sec)

SURVEY DATA DATUM:

Grade: *7.56*
TWC: *NA*
TPC: *10.21*
North: *646803.74*
East: *572323.19*

Geophysical Log: ☐ yes ☒ no
Comments:

WELL CONSTRUCTION



SAMPLE DATA

Depth (feet)	soil / rock	Samp. No. / Run No.	Blows/ 6 in.	Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	HNU (ppm)	VISUAL CLASSIFICATION	REMARKS
0								FILL	Notes 1. Well construction depths and grade measured from ground surface at time of drilling. Grades may have been changed subsequent to well installation.
5									
10								TIDAL MARSH DEPOSIT @ 12' Peat	
15									
20									
25									
30									

BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: **MW-20**

Project: *LCP Superfund Site, Linden NJ*
Client: *ISP - ESI*
Project No.: *21405.102*
Start Date: *11/15/01*
Finish Date: *11/15/01*

DRILLING DATA

Inspector: *JLP*
Contractor: *ADT Diamond*
Equipment: *Auger Rig (CME 75)*
Method: *Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split spoon*	*NA*	*NA*
Diameter:	*2"*	*NA*	*NA*
Other:	*NA*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*PVC*
Diameter (ID):	*2"*	*2"*
Coupling:	*Flush*	*Flush*

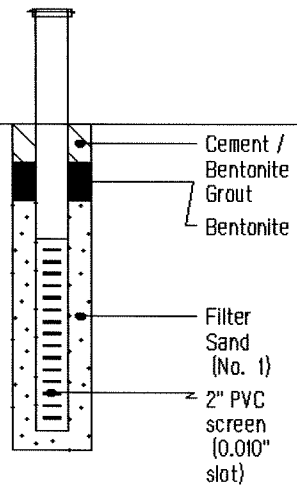
WELL DEVELOPMENT

Method: *Whale Super Purger*
Duration: *31 min.*
Gals. Purged: *67.52*
Slug Test: *.456* (cm/sec)

SURVEY DATA DATUM:

Grade: *7.94*
TWC: *NA*
TPC: *10.02*
North: *646597.08*
East: *571678.42*

Geophysical Log: ☐ yes ☒ no
Comments:

Depth (feet)	WELL CONSTRUCTION	soil / rock	SAMPLE DATA: Samp. No. / Run No.	Blows/ 6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	HNU (ppm)	VISUAL CLASSIFICATION	REMARKS
0								FILL	Notes 1. Well construction depths and grade measured from ground surface at time of drilling. Grades may have been changed subsequent to well installation.
5									
								TIDAL MARSH DEPOSIT @ 8' Peat	
10									
15									
20									
25									
30									

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
12K-B1	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/6/2001	646,344.0	572,091.8			7.5						
12K-B1-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0	>250	SW	Med brown cmf SAND, some mf Gravel	
12K-B1-0.5-2	0.5 - 2.0	1.5	DP	Fill	N	N	0	>250	CL	Red CLAY, little f gravel, dense	
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR	
--	4.0 - 6.0	2.0	DP	Fill	N	N	0	45	CL	Red CLAY, some mf Gravel, dense	
--	6.0 - 8.0	1.0	DP	Fill	N	N	0	8	CL	Red CLAY, some mf Gravel, dense @ 6.5 ft becoming Black mf GRAVEL, saturated	
--	8.0 - 10.0	1.0	DP	Fill/TMD	N	N	0	23	GW/PT	Black mf GRAVEL, saturated @ 8.8 ft becoming PEAT.	
--	10.0 - 12.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR	
12K-B2	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/6/2001	646,332.2	572,102.7			7.5						
12K-B2-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0	>250	GW	Med brown mf GRAVEL, some cmf Sand	
12K-B2-0.5-2	0.5 - 2.0	1.5	DP	Fill	N	N	0	134	GW	Med brown mf GRAVEL, some cmf Sand @ 1 ft becoming Red CLAY, little f gravel	
--	2.0 - 4.0	1.5	DP	Fill	N	N	0	69	CL	Red CLAY, little f gravel	

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	4.0 - 6.0	2.0	DP	Fill	N	N	0	34	CL	Red CLAY, little to some f gravel
--	6.0 - 8.0	1.0	DP	Fill	N	N	0	8	CL	Red CLAY, some mf Gravel @ 6.5 ft becoming Black mf GRAVEL, saturated
--	8.0 - 10.0	2.0	DP	Fill/TMD	N	N	0	15	GW/PT	Black mf GRAVEL, saturated @ 9 ft becoming PEAT.
--	10.0 - 12.0	2.0	DP	TMD	N	N	--	--	PT	Peat

150K-1

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/10/2001	646,285.0	572,462.9	6.52

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
150K-1-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	>0.999	0.6	SM	Brown to brownish red f SAND, some Silt & Clay, little mf gravel
150K-1-0.5-2	0.5 - 2.0	1.5	DP	Fill	N	N	0.134	3.5	SM	Brown to brownish red f SAND, some Silt & Clay, little mf gravel @ 1 ft becoming CLAY, little mf gravel, little f sand
--	2.0 - 4.0	1.0	DP	Fill	N	N	0.163	0.6	CL	Reddish brown CLAY, little f gravel, little f sand
--	4.0 - 6.0	2.0	DP	Fill	N	Y	0.027	9.1	CL	CLAY, little f sand @ 4.5 ft Blk cmf SAND, trace mf gravel @ 5 ft CLAY, blk stain @ 5.5 ft cmf SAND, tr mf grav, oily, sat
--	6.0 - 8.0	0.0	DP	Fill	--	--	--	--		NR
--	8.0 - 10.0	1.2	DP	Fill	N	Y	0.026	6	CL/SM	Reddish brown Clay, little mf gravel @ 8.3 ft becoming Black mf SAND, little silt, little mf gravel
--	10.0 - 12.0	0.0	DP	Fill?	--	--	--	--		NR
--	12.0 - 14.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR
--	14.0 - 16.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	16.0 - 18.0	2.0	DP	TMD	N	N	--	--	OL	Organic Silt
--	18.0 - 20.0	2.0	DP	TMD	N	N	--	--	OL	Organic Silt

230-B1

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
10/2/2001	646,620.1	572,149.4	7.637

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
230-B1-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0	38	SC	Med brown f SAND and CLAY, little organics
--	0.5 - 2.0	0.0	DP	Fill	--	--	--	--		NR
--	2.0 - 4.0	0.5	DP	Fill	N	N	0.011	12	SW	Med brown mf SAND, little organics
230-B1-4-6	4.0 - 6.0	0.8	2-5-2-5	Fill	N	N	0.015	1200	SC	Med brown mf SAND and CLAY
--	6.0 - 8.0	1.5	1-1-2-2	TMD	N	N	--	--	PT	PEAT
--	8.0 - 10.0	2.0	WOR-1-1-1	TMD	N	N	0.014	133	PT	PEAT
--	10.0 - 12.0	1.0	WOR-1-1-1	TMD	N	N	0.012	150	PT	PEAT @ 10.9 ft becoming Gray CLAY & SILT
--	12.0 - 14.0	1.0	1-2-3-2	GF	N	N	0.003	9	SM	Gray fm SAND, little silt
--	14.0 - 16.0	1.0	2-4-8-8	GF/GT	N	N	0.011	125	SM	Gray fm SAND, little silt @ 14.5 ft becoming Red brown CLAY & SILT, little f gravel, trace fm sand
--	19.0 - 21.0	1.5	5-8-12-9	GT	N	N	0.005	219	CL	Red brown CLAY & SILT, little fm gravel, trace m sand
--	24.0 - 26.0	1.5	4-4-8-9	GT	N	N	0.003	224	CL	Red brown CLAY & SILT, little fm gravel, trace m sand

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	29.0 - 31.0	1.5	5-6-7-8	GT	N	N	0.003	29	CL	Red brown Silty CLAY
--	34.0 - 36.0	1.5	4-5-50/3	GT/TOWR	N	N	0	1	CL	Red brown Silty CLAY @ 35 ft becoming Weathered SHALE
230-B10	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
8/30/2001	646,484.6	572,190.2			8.3					
230-B10-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.071	6	GW	Dk brown m GRAVEL
--	0.5 - 1.5	1.0	DP	Fill	N	N	0.322	6	GC	Dk brown cmf GRAVEL and CLAY, little mf sand
230-B10-1.5-2	1.5 - 2.0	0.5	DP	Fill	N	N	0.273	8	GC	Dk brown cmf GRAVEL and CLAY, little mf sand
230-B11	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
8/30/2001	646,488.6	572,156.9			8.3					
230-B11-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.067	9	GC	Med to dk brown mc GRAVEL, some Clay
--	0.5 - 1.5	1.0	DP	Fill	N	N	0.075	7	GC	Med to dk brown mc GRAVEL, some Clay
230-B11-1.5-2	1.5 - 2.0	0.5	DP	Fill	N	N	0.03	6	GC	Med to dk brown mc GRAVEL, some Clay
230-B2	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
8/30/2001	646,665.4	572,150.6			8.7					

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids		MVA (mg/m3)	OVA (ppm)	Soil Description	
					Mercury	Organics			USCS	Burmister
230-B2-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.006	3	CL	Med brown CLAY, little c gravel
--	0.5 - 1.5	1.0	DP	Fill	N	N	0	1	CL	Med brown CLAY, little c gravel
230-B2-1.5-2	1.5 - 2.0	0.5	DP	Fill	N	N	0	2.7	CL	Med brown CLAY, little c gravel
230-B3	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
8/30/2001	646,647.0	572,199.9			8.5					
230-B3-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.005	2	SW	Med brown m GRAVEL and c SAND
--	0.5 - 1.5	1.0	DP	Fill	N	N	0.007	4	CL	Med brown CLAY, little mf gravel, trace mf sand, moist
230-B3-1.5-2	1.5 - 2.0	0.5	DP	Fill	N	N	0.025	6	CL	Med brown CLAY, little mf gravel, trace mf sand, moist
230-B4	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
8/30/2001	646,616.2	572,179.1			8.6					
230-B4-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.004	2	GC	Med brown c GRAVEL, little clay
--	0.5 - 1.5	1.0	DP	Fill	N	N	0.006	2	CL	Reddish brown CLAY, little mf gravel
230-B4-1.5-2	1.5 - 2.0	0.5	DP	Fill	N	N	0.016	5	CL	Reddish brown CLAY, little mf gravel

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
230-B5	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/13/2001	646,591.0	572,187.3			7.166						
230-B5-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.013	5.6	SC	Med brown cmf SAND, some Clay, trace organics
--	0.5 - 1.5	1.0	DP	Fill	N	N		0	31	SC	Med brown cmf SAND, some Clay, trace organics
230-B5-1.5-2	1.5 - 2.0	0.5	DP	Fill	N	N		0	125	SC	Med brown cmf SAND, some Clay, trace organics
230-B6	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/22/2001	646,600.1	572,140.3			8.7						
230-B6 0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.177	>250	CL	Red CLAY, some mc Gravel, trace organics
--	0.5 - 1.5	1.0	DP	Fill	N	N		0.043	160.4	GW	Med brown cmf GRAVEL, some cmf Sand @ 1 ft becoming Red CLAY, little mc gravel
230-B6 1.5-2	1.5 - 2.0	0.5	DP	Fill	N	N		0.006	143	CL	Red CLAY, little mc gravel
230-B7	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/22/2001	646,590.2	572,149.1			8.7						
230-B7 0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.023	153.8	SW	Med brown cmf SAND, some mf Gravel
--	0.5 - 1.5	1.0	DP	Fill	N	N		0.007	130.2	CL	Red CLAY, some mc Gravel

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
230-B7 1.5-2	1.5 - 2.0	0.5	DP	Fill	N	N		0.012	143.2	CL	Red CLAY, some mc Gravel
230-B8	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/22/2001	646,533.0	572,166.9			8.5						
--	0.0 - 0.5	0.5	DP	Fill	N	N		0.062	71	GP	Gray c GRAVEL
--	0.5 - 1.5	1.0	DP	Fill	N	N		0.19	164	GP	Gray c GRAVEL
230-B8 1.5-2	1.5 - 2.0	0.5	DP	Fill	N	N		0.06	138	CL	Reddish brown CLAY, some mf Sand
230-B9	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/22/2001	646,531.7	572,135.7			8.5						
230-B9 0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.13	128	GW	Med brown cmf GRAVEL, some mc Sand, trace organics
--	0.5 - 1.5	1.0	DP	Fill	N	N		0.738	>250	CL	Red CLAY, little mf gravel @ 1 ft becoming Orange/brown mc SAND
230-B9 1.5-2	1.5 - 2.0	0.5	DP	Fill	N	N		0.253	>250	SP	Orange/brown mc SAND
231-B1	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
11/19/2001	646,437.0	572,458.3			8.137						
--	0.0 - 2.0	0.3	4-4-5-5	Fill	N	N		0.04	10	SW	M brown fmc SAND, trace organics

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
231-B1-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	>0.999	3.4	SW	Med brown cmf SAND and mc GRAVEL, trace organics
--	2.0 - 4.0	0.5	4-2-1-2	Fill	N	N	0.098	23	CL	M brown CLAY, little fmc sand, little m gravel, saturated
--	4.0 - 6.0	1.0	1-1-1-2	Fill	N	N	0.077	65	CL	M brown CLAY and mfc SAND, little m gravel, saturated
--	6.0 - 8.0	1.5	3-5-2-1	Fill	N	Y	0.054	112	CL/PT	CLAY, some fmc Sand, saturated @ 6.9 ft Wood pieces coated with black petrol substance @ 7.2 ft PEAT
--	8.5 - 10.5	0.5	4-4-11-13	TMD	N	N	0.049	16.9	PT	PEAT
--	10.5 - 12.5	1.0	1-1-1-1	TMD	N	N	0.058	7.6	OL/PT	Dk Gray organic rich CLAY, occasional Peat
--	12.5 - 14.5	0.3	1-1-1-2	TMD	N	N	0.004	2.3	ML	Dk Brown SILT, some f Sand, spongy texture
--	14.5 - 16.5	1.5	1-2-3-2	TMD	N	N	0.014	115	SM	M Brown f SAND, some Silt, traces of organics @ 15.5 ft becoming Lt Gray fm SAND
--	16.5 - 18.5	1.5	9-11-12-15	TMD/GF	N	N	0.041	66	PT	PEAT @ 16.6 ft fm SAND, s. Silt @ 17 ft f SAND and SILT, slightly mottled, strat? @ 17.7 ft SILT, s. mf Sand, tr. f gravel
--	18.5 - 20.5	1.0	5-6-7-7	GF	N	N	0.057	100	SM	Red brown f SAND, some Silt, little fm gravel
--	23.0 - 25.0	0.2	4-5-11-15	GT	N	N	0.017	14	GC	Red brown c GRAVEL, some Clay
--	25.0 - 27.0	1.5	13-10-11-10	GT	N	N	0.015	57	ML	Red brown SILT & CLAY, little fm gravel

231-B10

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/18/2001	646,601.8	572,490.3	8

231-B10-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.287	6.3	GW	Med brown cmf GRAVEL, little cmf sand

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	0.5 - 2.0	0.0	DP	Fill	--	--	--	--		NR
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
--	4.0 - 6.0	1.0	DP	TMD	N	N	--	--	PT	Peat
--	6.0 - 8.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR

231-B11

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/19/2001	646,572.2	572,477.7	8.1

231-B11-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.007	0.6	CL	Red CLAY, little mf gravel, dense
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.006	8	CL	Red to Reddish brown CLAY, little to no mf gravel, moist
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
--	4.0 - 6.0	1.5	DP	Fill	N	N	0.01	11	GW	Med brown cmf GRAVEL, some Clay
--	6.0 - 8.0	0.0	DP	Fill	--	--	--	--		NR
231-B11-8-10	8.0 - 10.0	2.0	DP	Fill/TMD	N	N	0.012	1	OH/PT	Gray CLAY @ 8.5 ft becoming PEAT
--	10.0 - 12.0	2.0	DP	TMD	N	N	--	--	PT	Peat

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
231-B12	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/18/2001	646,600.1		572,476.5		8.1						
231-B12-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.025	2	GW	Med brown mf GRAVEL and cmf SAND, trace organics
--	0.5 - 2.0	1.5	DP	Fill	N	N		0.007	0.3	CL	Reddish brown CLAY, little cmf sand, moist
--	2.0 - 4.0	0.0	DP	Fill	--	--		--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	N	N		0.006	2	CL	Dk brown CLAY, some Organics
--	6.0 - 8.0	2.0	DP	Fill	N	N		0.034	8.2	CL	Dk brown CLAY, some Organics
--	8.0 - 10.0	0.0	DP	Fill	--	--		--	--		NR
--	10.0 - 12.0	0.0	DP	Fill	--	--		--	--		NR
--	12.0 - 14.0	2.0	DP	Fill/TMD	N	N		0.015	7	OH/PT	Red CLAY @ 13 ft PEAT.
--	14.0 - 16.0	0.0	DP	TMD?	--	--		--	--	PT	Peat?, NR
231-B13	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/19/2001	646,618.1		572,456.5		8.1						
231-B13-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		>0.999	1.5	SW	Med brown cmf SAND, some mf Gravel, moist

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids		MVA (mg/m3)	OVA (ppm)	Soil Description	
					Mercury	Organics			USCS	Burmister
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.111	5.6	SC	Brown cmf SAND @ 0.8 ft becoming cmf SAND and CLAY, some mc Gravel
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
--	4.0 - 6.0	0.0	DP	Fill	--	--	--	--		NR
--	6.0 - 8.0	0.0	DP	Fill	--	--	--	--		NR
231-B13-8-10	8.0 - 10.0	2.0	DP	Fill/TMD	Y	N	>0.999	85	OH/PT	Red CLAY, little mf gravel @ 9 ft becoming PEAT.
--	10.0 - 12.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR

231-B14

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/19/2001	646,611.9	572,476.9	8

231-B14-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.003	0.6	CL	Red CLAY, some mf Gravel
--	0.5 - 2.0	0.0	DP	Fill?	--	--	--	--		NR
--	2.0 - 4.0	0.0	DP	Fill?	--	--	--	--		NR

231-B2

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/22/2001	646,434.8	572,472.9	8.1

231-B2-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	>0.999	158	CL	Med brown CLAY and cmf GRAVEL, little f sand

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
231-B2-0.5-2	0.5 - 2.0	1.5	DP	Fill	N	N		>0.999	>250	CL	Med brown CLAY and cmf GRAVEL, little f sand @ 1 ft becoming Red CLAY, some mf Gravel.
--	2.0 - 4.0	2.0	DP	Fill	N	N		0.074	>250	CL	Red CLAY, some mf Gravel
--	4.0 - 6.0	2.0	DP	Fill	N	N		0.08	>250	CL	Red CLAY, some mf Gravel @ 4 ft becoming Gray CLAY some cmf Sand, trace mf gravel.
--	6.0 - 8.0	1.5	DP	Fill	N	N		0.075	>250	CL	Red CLAY and mc GRAVEL
--	8.0 - 10.0	2.0	DP	Fill/TMD	N	N		0.127	>250	OH/PT	Red SILT & CLAY, little cmf gravel @ 9 ft becoming PEAT.
--	10.0 - 12.0	2.0	DP	TMD	N	N		--	--	PT	Peat

231-B3

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/22/2001	646,431.0	572,443.0	8.1

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
231-B3-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.597	97.2	ML	Med brown CLAY & SILT, some mf Gravel
--	0.5 - 2.0	1.5	DP	Fill	N	N		0.06	>250	ML	Med brown CLAY & SILT, some mf Gravel
--	2.0 - 4.0	1.5	DP	Fill	N	N		0.047	184.4	ML	Med brown CLAY & SILT, some mf Gravel
--	4.0 - 6.0	1.0	DP	Fill	N	N		0.977	>250	CL	Black CLAY, some Organics, saturated
--	6.0 - 8.0	0.0	DP	Fill	--	--		--	--		NR
--	8.0 - 10.0	1.0	DP	Fill	N	N		>0.999	>250	CL	Black CLAY, some Organics @ 8.5 ft becoming Red CLAY and mf GRAVEL, saturated.
--	10.0 - 12.0	0.0	DP	TMD?	--	--		--	--	PT	Peat?, NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
231-B4	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/30/2001	646,442.9	572,431.4			8.3						
231-B4-0-0.5	0.0 - 0.5	0.5	DP	Fill	Y	N	>0.999	5.7		GP	cmf GRAVEL
--	0.5 - 2.0	0.5	DP	Fill	Y	N	>0.999	38		GP	cmf GRAVEL
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--			NR
--	4.0 - 6.0	2.0	DP	Fill	Y	N	>0.999	53		SP	cmf SAND
231-B4-6-8	6.0 - 8.0	2.0	DP	Fill	Y	N	>0.999	0.7		SC	Dk brown f SAND and CLAY, saturated
--	8.0 - 10.0	0.0	DP	TMD?	--	--	--	--		PT	Peat in shoe @ 8 ft, NR
231-B5	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/19/2001	646,453.5	572,415.1			8.3						
--	0.0 - 0.5	0.5	DP	Fill	Y	N	>0.999	4.3		CL	Dk brown CLAY, some cmf Sand
231-B5-0.5-2	0.5 - 2.0	1.5	DP	Fill	N	N	0.192	1.3		CL	Med brown CLAY
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--			NR
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.024	0.8		CL	Med brown to red CLAY, no to little cmf sand, little to trace f gravel

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	6.0 - 8.0	1.5	DP	Fill	N	N	0.01	2.8	CL	Red to brown CLAY, little cmf sand, trace m gravel
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.04	5	CL	Med brown CLAY, some cmf Sand, little organics
--	10.0 - 12.0	2.0	DP	TMD	N	N	--	--	PT	Peat

231-B6

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/27/2001	646,469.1	572,419.7	8.3

231-B6-0-0.5	0.0 - 0.5	0.5	DP	Fill	Y	N	>0.999	0.7	SW	Med brown cmf SAND, some m Gravel, little organics
--	0.5 - 2.0	1.0	DP	Fill	Y	N	>0.999	20.6	SW	Med brown cmf SAND, little mf gravel, trace clay
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
231-B6-4-6	4.0 - 6.0	2.0	DP	Fill	Y	N	>0.999	11	SC	Med brown f SAND and CLAY, little mf gravel, saturated
--	6.0 - 8.0	0.0	DP	Fill	--	--	--	--		NR
--	8.0 - 10.0	0.5	DP	Fill	Y	Y	>0.999	7.5	GW	Med brown mf GRAVEL
--	10.0 - 12.0	0.0	DP	Fill?	--	--	--	--		NR

231-B7

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/13/2001	646,493.4	572,412.1	8.2

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
231-B7-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.075	1.5		GW	Black cmf GRAVEL, little cmf sand
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.07	2		GW	Black cmf GRAVEL, little cmf sand @ 1.5 ft becoming Reddish brown CLAY, some mc Gravel, little f sand
--	2.0 - 4.0	1.0	DP	Fill	N	N	0.047	2		CL	Reddish brown CLAY, some mc Gravel, little f sand
--	4.0 - 6.0	0.0	DP	Fill	--	--	--	--			NR
--	6.0 - 8.0	0.0	DP	Fill	--	--	--	--			NR
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.035	0.9		ML	Lt brown Silty CLAY, soft
--	10.0 - 12.0	2.0	DP	Fill	N	N	0.054	49		ML	Lt Brown to Black Silty CLAY, soft

231-B8

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/27/2001	646,456.6	572,445.5	8.2

231-B8-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	>0.999	21		GW	Dk brown cmf GRAVEL, little organics, little cmf sand
--	0.5 - 2.0	0.5	DP	Fill	Y	N	>0.999	3		SW	Med to dk brown cmf SAND, some mc Gravel
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--			NR
--	4.0 - 6.0	1.0	DP	Fill	Y	N	>0.999	59		SW	Med to dk brown cmf SAND, some mc Gravel @ 4.3 ft becoming Red CLAY
--	6.0 - 8.0	0.0	DP	Fill	--	--	--	--			NR
231-B8-8-10	8.0 - 10.0	2.0	DP	Fill	N	Y	0.153	235		SW	Black cmf SAND, some cmf Gravel, little organics

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	10.0 - 12.0	1.0	DP	TMD	N	N	--	--	PT	Peat
231-B9	State Plane Coordinates (ft. NAD83)			G.S. Elev. (ft. NGVD29)						
9/27/2001	646,608.3	572,490.5		8						
231-B9-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.726	1.4	GW	Med brown mc GRAVEL, little cmf sand, trace organics
231-B9-0.5-2	0.5 - 2.0	1.0	DP	Fill/TMD	N	N	0.039	1.2	GC/PT	Brown CLAY and mf GRAVEL @ 1 ft becoming PEAT
--	2.0 - 4.0	0.0	DP	TMD	--	--	--	--	PT	PEAT, NR
--	4.0 - 6.0	2.0	DP	TMD	N	N	--	--	PT	PEAT @ 4 ft becoming Red CLAY, pieces of shale
--	6.0 - 8.0	0.0	DP	TMD?	--	--	--	--		NR
240-1	State Plane Coordinates (ft. NAD83)			G.S. Elev. (ft. NGVD29)						
9/26/2001	646,356.5	572,351.3		8.6						
240-1-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.015	7	SC	Med brown cmf SAND, some mf Gravel, little clay
--	0.5 - 2.0	0.5	DP	Fill	N	N	0	3.8	SC	Med brown cmf SAND, some mf Gravel, little clay
--	2.0 - 4.0	0.0	DP	Fill?	--	--	--	--		NR
--	4.0 - 6.0	1.0	DP	Fill	N	N	0	1.3	ML	Reddish brown Silty CLAY, little f sand

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids		MVA (mg/m3)	OVA (ppm)	Soil Description	
					Mercury	Organics			USCS	Burmister
--	6.0 - 8.0	1.0	DP	Fill	N	N	0	1.8	CL	Reddish brown Silty CLAY, little f sand
240-1-8-10	8.0 - 10.0	1.5	DP	Fill/TMD	N	N	0	16.6	CL	Reddish brown Silty CLAY, little f sand @ 9 ft becoming PEAT

5K-B1

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
10/1/2001	646,366.1	572,478.2	9

5K-B1-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.008	0.8	CL	Red CLAY, little cmf sand
--	0.5 - 2.0	0.0	DP	Fill	--	--	--	--		NR
--	2.0 - 4.0	0.8	DP	Fill	N	N	0	1.6	CL	Red CLAY, little cmf sand @ 2.5 ft becoming Black CLAY, some Organics
--	4.0 - 6.0	5.0	DP	TMD	N	N	--	--	PT	Peat

5K-B2

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/31/2001	646,335.7	572,455.9	9.1

5K-B2-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.195	20	SW	Dk brown cmf SAND, little f gravel
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.026	220	GC	Med brown mf GRAVEL and CLAY @ 1 ft becoming Reddish brown CLAY, little mf gravel
--	2.0 - 4.0	1.0	DP	Fill	N	N	0.017	445	CL	Reddish brown CLAY, little f gravel
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.042	300	CL	Reddish brown CLAY, little f gravel, little f sand

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
--	6.0 - 8.0	1.5	DP	Fill	N		N	0.013	>250	CL	Orange CLAY, little f sand, dense
5K-B2-8-10	8.0 - 10.0	2.0	DP	Fill	N		N	0.023	>250	CL	Med brown CLAY, little mc gravel @ 9 ft becoming mc GRAVEL, some Clay
--	10.0 - 12.0	2.0	DP	Fill/TMD	N		N	0	160	GC/PT	Med brown mc GRAVEL, some Clay @ 10.7 ft becoming PEAT.

5K-B3

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/26/2001	646,365.3	572,426.1	9

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
5K-B3-0-0.5	0.0 - 0.5	0.5	DP	Fill	Y		N	>0.999	1.2	SP	Med brown mf SAND
--	0.5 - 2.0	1.5	DP	Fill	Y		N	>0.999	439	CL	Red CLAY, little mf gravel, little c sand
--	2.0 - 4.0	2.0	DP	Fill	Y		N	>0.999	263	CL	Red CLAY, little mf gravel, little c sand @ 3 ft becoming Gray CLAY
--	4.0 - 6.0	2.0	DP	Fill/TMD?	Y		N	>0.999	311	CL	Red CLAY @ 4.2 ft becoming Lt gray to dk brown CLAY, little cmf sand @ 5.4 becoming Black ORGANICS
--	6.0 - 8.0	0.0	DP	TMD?	--		--	--	--		Black organics?, NR

5K-B4

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
10/1/2001	646,391.0	572,449.9	8.9

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
5K-B4-0-0.5	0.0 - 0.5	0.5	DP	Fill	Y		N	0.027	1.8	MISC	Black ORGANIC MATERIAL @ 0.3 ft becoming Lt brown mf SAND @ 0.4 ft becoming Red CLAY, little mf gravel
--	0.5 - 2.0	0.0	DP	Fill	--		--	--	--		NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	2.0 - 4.0	1.3	DP	Fill	N	Y	0	17	CL	Red CLAY, little mf gravel @ 2.9 ft becoming Black ORGANICS and COBBLES
5K-B4-4-6	4.0 - 6.0	1.0	DP	Fill	N	Y	0	69	MISC	Black ORGANIC MATERIAL coated in petrol, little cmf sand
--	6.0 - 8.0	1.0	DP	TMD	N	N	--	--	PT	Peat

5K-B5

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/31/2001	646,382.9	572,411.4	8.8

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
5K-B5-0-0.5	0.0 - 0.5	0.5	DP	Fill	Y	N	0.022	120	MISC	Black organic material @ 0.2 ft becoming Reddish brown CLAY, little mf gravel, little glass, little organics
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.01	176	CL	Reddish brown CLAY, little mf gravel, little glass
--	2.0 - 4.0	1.0	DP	Fill	N	N	--	--	CL	Grayish brown CLAY, trace organics
5K-B5-4-6	4.0 - 6.0	2.0	DP	Fill	N	N	0.004	8.7	GW	Brown mf GRAVEL, some cmf Sand, saturated @ 5 ft becoming CLAY, little mf gravel, dense
--	6.0 - 8.0	1.7	DP	Fill	N	N	0.015	210	GW	Black mf GRAVEL, little clay, saturated

AB-1

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/4/2001	646,701.1	572,550.1	7.5

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
AB-1-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.119	2	SC	Med brown mf SAND, some mc Gravel, little clay
--	0.5 - 2.0	1.0	DP	Fill	N	N	0.811	2.7	SC	Med brown mf SAND, some mc Gravel, little clay

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids		MVA (mg/m3)	OVA (ppm)	Soil Description	
					Mercury	Organics			USCS	Burmister
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	Y	N	>0.999	2.7	SC	Med brown mf SAND, little clay
--	6.0 - 8.0	0.0	DP	Fill	--	--	--	--		NR
--	8.0 - 10.0	2.0	DP	Fill	Y	N	>0.999	4.2	CL	Dk brown Silty CLAY, little cmf sand
--	10.0 - 12.0	2.0	DP	TMD	N	N	>0.999	14.3	CL	Black Silty CLAY, little organics @ 11.8 ft becoming Peat.

AB-2

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/4/2001	646,643.2	572,556.8	8.2

AB-2-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	>0.999	2.3	SC	Med brown cmf SAND, little clay, trace m gravel, trace organics
AB-2-0.5-2	0.5 - 2.0	1.5	DP	Fill	N	N	>0.999	4	SC	Med brown cmf SAND, little clay, trace m gravel, trace organics @ 1 ft becoming Gray CLAY, trace f gravel
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.922	3.6	OL	Gray CLAY, trace f gravel, moist
--	6.0 - 8.0	2.0	DP	Fill	N	N	0.015	11	OL	Gray to Black CLAY, some mf Gravel
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.013	29	ML	Med brown Silty CLAY @ 8.5 ft becoming Med brown and gray CLAY & SILT, saturated
--	10.0 - 12.0	1.5	DP	Fill/TMD	N	N	0.011	12	ML/PT	Med brown and gray CLAY & SILT, saturated, @ 11 ft becoming PEAT.

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
ADN-1	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/5/2001	647,036.3	572,061.5			7.4						
ADN-1-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.012	11	CL	Med brown CLAY and cmf SAND, little organics
--	0.5 - 2.0	1.5	DP	Fill	N	N		0.006	9	CL	Med brown CLAY and cmf SAND, little organics @ 1.2 ft becoming Red CLAY, little mf gravel, little cmf sand
--	2.0 - 4.0	2.0	DP	Fill	N	N		0.016	58	CL	Red CLAY, little mf gravel, little cmf sand
--	4.0 - 6.0	2.0	DP	Fill	N	N		0.011	39	CL	Red CLAY, little mf gravel, little cmf sand
--	6.0 - 8.0	1.0	DP	Fill	N	N		0.017	>250	CL	Red CLAY, little mf gravel, little cmf sand @ 6.5 ft becoming Black CLAY and ORGANIC MATERIAL
ADN-1-8-10	8.0 - 10.0	2.0	DP	Fill	N	N		0.048	>250	CL	Red CLAY, little f gravel @ 9 ft becoming Black CLAY and ORGANIC MATERIAL @ 9.2 ft becoming Red CLAY, moist
--	10.0 - 12.0	0.0	DP	Fill	--	--		--	--		NR
--	12.0 - 14.0	2.0	DP	Fill	N	N		0.04	295	CL	Red and black CLAY, moist
--	14.0 - 16.0	2.0	DP	TMD	N	N		--	--	PT	Peat
ADN-2	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/5/2001	646,983.0	572,063.3			7.6						
ADN-2-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0	10	CL	Brown CLAY and f SAND, little mf gravel

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	0.5 - 2.0	1.5	DP	Fill	N	N	0	8	CL	Reddish brown CLAY, some cmf Sand, little f gravel
--	2.0 - 4.0	1.5	DP	Fill	N	N	0.003	6	CL	Red-brwn CLAY, some cmf Sand, little f gravel @ 2.5 ft Blk f GRAVEL, s. c Sand @ 3 ft Red CLAY, l. m grav
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.003	5	CL	Red CLAY, trace f gravel
--	6.0 - 8.0	2.0	DP	Fill	N	N	0	17	CL	Red to lt. brown to red CLAY, trace f gravel
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.008	99	CL	Red CLAY, trace f gravel
ADN-2-10-11	10.0 - 11.0	1.0	DP	Fill	N	N	0.025	4	CL	Red CLAY
--	11.0 - 12.0	1.0	DP	TMD	N	N	--	--	OL/PT	Black ORGANICS and CLAY - Peat
--	12.0 - 14.0	2.0	DP	TMD	N	N	0.03	>250	OL	Black CLAY and ORGANIC MATERIAL, trace f gravel
--	14.0 - 16.0	2.0	DP	TMD?	N	N	0.096	>250	CL	Red CLAY, little mf gravel

ADS-1

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
7/17/2001	646,923.2	571,494.5	8.1

ADS-1-0-.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.02	0	SW	mf SAND, little cmf gravel
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.02	0	SW	mf SAND, little cmf gravel
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.016	0	GW	Dk brown cmf GRAVEL

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids		MVA (mg/m3)	OVA (ppm)	Soil Description	
					Mercury	Organics			USCS	Burmister
--	6.0 - 8.0	1.0	DP	Fill	N	N	0.02	120	GW	Dk brown cmf GRAVEL
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.019	0	GW	Dk brown cmf GRAVEL, little f sand, saturated
--	10.0 - 11.0	1.0	DP	Fill	N	N	0.015	0	GW	Dk brown cmf GRAVEL, little f sand, saturated
--	11.0 - 13.0	2.0	DP	Fill/TMD	N	N	0.018	0	GW/PT	Dk brown cmf GRAVEL, little f sand, saturated. PEAT @ 12.8 ft.

ADS-10

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
7/18/2001	646,657.8	571,899.2	8.2

ADS-10-0-0.5	0.0 - 2.0	2.0	DP	Fill	N	N	0	0	GW	Dk brown to black cmf GRAVEL, little c sand
--	2.0 - 4.0	0.5	DP	Fill	N	N	0	0	GW	Dk brown to black cmf GRAVEL, little c sand
ADS-10-4-6	4.0 - 6.0	2.0	DP	Fill	N	N	0	0	GW	Dk brown to black cmf GRAVEL, little c sand
--	6.0 - 8.0	0.3	DP	TMD	N	N	--	--	PT	Peat

ADS-11

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
7/18/2001	646,703.6	571,837.5	8.1

ADS-11-0-0.5	0.0 - 2.0	2.0	DP	Fill	N	N	0.004	0	GW	Dk brown mf GRAVEL, little c sand
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	4.0 - 6.0	2.0	DP	Fill/TMD	N	N	0	0	GP/PT	Dk brown cmf GRAVEL @ 5.5 ft becoming PEAT
--	6.0 - 8.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR

ADS-12

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
7/18/2001	646,767.7	571,814.2	8.1

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
ADS-12-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.011	0	ML	Red CLAY & SILT, little mc gravel, trace organics
ADS-12-0.5-2	0.5 - 2.0	1.5	DP	Fill	N	N	0.009	0	GM	Black cmf GRAVEL, little silt @ 1.5 ft becoming Red SILT & CLAY.
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	N	N	0	0	GW	Black cmf GRAVEL
--	6.0 - 8.0	1.0	DP	TMD	N	N	0	0	PT	Peat

ADS-2

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
7/18/2001	646,914.6	571,834.1	8.1

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
ADS-2-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0	0	GW	Med brown mc GRAVEL, some cmf Sand
--	0.5 - 2.0	1.5	DP	Fill	N	N	0	0	GW	Med brown mc GRAVEL, some cmf Sand @ 1 ft becoming Black c SAND.
--	2.0 - 4.0	1.0	DP	Fill	N	N	0	0	ML	Red SILT & CLAY, little mc sand, trace cmf gravel.

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
ADS-2-4-6	4.0 - 6.0	2.0	DP	Fill	N	N	0	0	ML	Red SILT & CLAY, little sand, trace cmf gravel.
--	6.0 - 8.0	2.0	DP	Fill/TMD	N	N	0	0	ML/PT	Red SILT & CLAY @ 7.5 ft becoming PEAT

ADS-3

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
7/18/2001	646,874.5	571,980.2	7.9

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
ADS-3-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0	0.5	SW	Med brown mc SAND, some cmf Gravel
--	0.5 - 2.0	1.5	DP	Fill	N	N	0	0.3	SM	Med brown mc SAND, some cmf Gravel @ 1 ft becoming Red brown SILT & CLAY, little mf sand, little cmf gravel.
--	2.0 - 4.0	2.0	DP	Fill	N	N	0	0.2	ML	Red brown SILT & CLAY, little mf sand, little cmf gravel
--	4.0 - 6.0	2.0	DP	Fill	N	N	0	4	SM	Red brown f SAND and SILT, some Clay, trace mc gravel
--	6.0 - 8.0	2.0	DP	Fill	N	N	0	1	GM	Black cmf GRAVEL, little silt
--	8.0 - 10.0	2.0	DP	Fill	N	N	0	4	GM	Black cmf GRAVEL, little silt
--	10.0 - 12.0	2.0	DP	TMD	N	N	0.005	4	PT	Peat

ADS-4

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
7/18/2001	646,850.1	572,029.2	8.5

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
ADS-4-0-0.5	0.0 - 2.0	2.0	DP	Fill	N	N	0.008	0	GM	Med brown cmf GRAVEL, some cmf Sand, little silt @ 1 ft becoming Med brown to gray SILT & CLAY.

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids		MVA (mg/m3)	OVA (ppm)	Soil Description	
					Mercury	Organics			USCS	Burmister
--	2.0 - 4.0	0.8	DP	Fill	N	N	0.005	0	ML	Med brown to gray SILT & CLAY @ 2.3 ft becoming Black cmf GRAVEL.
--	4.0 - 6.0	2.0	DP	Fill	N	N	0	0	GW	Black cmf GRAVEL, saturated
--	6.0 - 8.0	2.0	DP	Fill	N	N	0	0	GW	Black cmf GRAVEL, saturated
--	8.0 - 10.0	2.0	DP	Fill	N	N	0	0	GW	Black cmf GRAVEL, saturated
--	10.0 - 12.0	2.0	DP	Fill	N	N	0.003	0	GW	Black cmf GRAVEL, saturated
ADS-4-12-14	12.0 - 14.0	2.0	DP	Fill	N	N	0.027	0	GP	Black cmf GRAVEL, saturated
--	14.0 - 16.0	2.0	DP	Fill/TMD	N	N	0.011	0	GP/PT	Black cmf GRAVEL, saturated. Peat on tip @ 16 ft.

ADS-5

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
7/18/2001	646,709.4	572,072.4	9.2

ADS-5-0-0.5	0.0 - 2.5	2.5	DP	Fill	N	N	0.006	1.9	GW	Med brown cmf GRAVEL, some cmf Sand @ 1.5 ft becoming Med brown to red f SAND and SILT, little clay.
--	2.5 - 4.0	0.0	DP	Fill	--	--	--	--		NR
ADS-5-4-6	4.0 - 6.0	2.0	DP	Fill	N	N	0.017	15	SW	Lt brown cmf SAND
--	6.0 - 8.0	1.0	DP	Fill	N	N	0	2.9	SP	Orange f SAND
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.06	--	SP	Med brown mf SAND
--	10.0 - 12.0	2.0	DP	Fill/TMD	N	N	0.054	--	SW/PT	Orange f SAND. PEAT in shoe @ 12 ft.

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
ADS-6	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
7/18/2001	646,692.6	572,032.2			9.2						
ADS-6-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.042	1.3	GW	Med brown cmf GRAVEL
ADS-6-0.5-2	0.5 - 2.0	1.5	DP	Fill	N	N		0.204	1.7	ML	Med brown SILT & CLAY, little mf gravel, trace organics.
--	2.0 - 4.0	0.0	DP	Fill	--	--		--	--		NR
--	4.0 - 6.0	1.0	DP	Fill	N	N		0.014	0.6	SM	Dk Gray f SAND and SILT, some c Gravel, saturated
--	6.0 - 8.0	0.0	DP	Fill	--	--		--	--		NR
--	8.0 - 10.0	2.0	DP	Fill	N	N		0.006	1.7	SM	Reddish brown f SAND and SILT, trace c gravel
--	10.0 - 12.0	0.0	DP	Fill?	--	--		--	--		NR
ADS-7	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
7/17/2001	646,583.6	572,040.1			8.8						
ADS-7-0-.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.013	767	GW	Med brown cmf GRAVEL, little cmf sand
--	0.5 - 2.0	1.5	DP	Fill	N	N		0.018	767	GW	Med brown mf GRAVEL, little mf sand, trace silt @ 1.8 ft becoming Med brown f SAND, little silt, moist.
--	2.0 - 4.0	1.0	DP	Fill	N	N		0.031	2142	SM	Reddish brown f SAND and SILT, little clay, moist

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.018	0	SM	Med brown cmf SAND, little silt @ 5 ft becoming mc SAND, little f gravel, moist to saturated
--	6.0 - 8.0	2.0	DP	Fill	N	N	0.016	180	SM	Reddish brown f SAND and SILT, trace mc gravel, saturated
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.02	0	SM	Med brown cmf SAND, little f gravel, little silt @ 9 ft becoming f SAND and SILT, little clay.
--	10.0 - 12.0	1.0	DP	TMD	N	N	0.285	2142	PT	Peat

ADS-8

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
7/18/2001	646,613.7	571,986.2	8.7

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
ADS-8-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0	0	GW	Med brown c GRAVEL, some mf Sand
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.003	0	GW	Med brown c GRAVEL, some mf Sand @ 1.0 ft becoming Black cmf GRAVEL, some Clay.
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
ADS-8-4-6	4.0 - 6.0	2.0	DP	Fill	N	N	0.007	0	GW	Med brown to black mc GRAVEL, some cmf SAND, moist
--	6.0 - 8.0	1.0	DP	Fill	N	N	0	0	GW	Black mc GRAVEL, little c sand, moist
--	8.0 - 10.0	2.0	DP	TMD	N	N	--	--	PT	Peat
--	10.0 - 12.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
ADS-9	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
7/18/2001	646,636.1	571,950.1			8.5						
ADS-9-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0	0	GW	Dk brown to black cmf GRAVEL
--	0.5 - 2.0	1.5	DP	Fill	N	N		0.004	0	GW	Dk brown to black cmf GRAVEL
--	2.0 - 4.0	0.0	DP	Fill	--	--		--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	N	N		0	0	GW	Dk brown cmf GRAVEL
--	6.0 - 8.0	0.3	DP	TMD	N	N		--	--	PT	Peat
BSL-1	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/20/2001	646,565.7	572,759.0			4						
BSL-1-0-1	0.0 - 1.0	1.0	DP	Fill	N	N		0	0.7	SP	Med brown cmf SAND
--	1.0 - 2.0	0.5	DP	Fill	N	N		0	0.7	GW	Gray CLAY @ 0.7 ft becoming Dk brown mf GRAVEL, some cmf Sand
--	2.0 - 4.0	0.0	DP	Fill	--	--		--	--		NR
BSL-1-4-6	4.0 - 6.0	2.0	DP	Fill/TMD	N	N		0.005	0.5	GP/PT	Dk brown mf GRAVEL, some cmf Sand @ 4.5 ft becoming Gray CLAY, saturated @ 5.5 ft becoming PEAT
--	6.0 - 7.0	0.0	DP	TMD?	--	--		--	--	PT	Peat?, NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
BSL-10	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/21/2001	646,259.5	572,902.5			2						
BSL-10-0-1	0.0 - 1.0	1.0	DP	Fill	N	N		0.03	2	SC	Brown mf SAND, some Clay, little organics @ 0.5 ft becoming mf GRAVEL, some cmf Sand
--	1.0 - 2.0	0.0	DP	Fill?	--	--		--	--		NR
--	2.0 - 4.0	0.0	DP	Fill?	--	--		--	--		NR
--	4.0 - 6.0	2.0	DP	TMD	N	N		--	--	PT	Peat
--	6.0 - 8.0	2.0	DP	TMD	N	N		--	--	PT	Peat
BSL-11	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/26/2001	646,256.0	572,881.2			6.4						
BSL-11-0-1	0.0 - 1.0	0.5	DP	Fill	N	N		0.016	10	SC	Lt brown f SAND @ 0.5 ft becoming Gray CLAY and mf GRAVEL, little organics
--	1.0 - 2.0	0.0	DP	Fill	--	--		--	--		NR
--	2.0 - 4.0	0.0	DP	Fill	--	--		--	--		NR
--	4.0 - 6.0	2.0	DP	Fill/TMD	N	N		0.008	21.5	GP/PT	Black mf GRAVEL @ 5 ft becoming PEAT.
--	6.0 - 8.0	1.0	DP	TMD	N	N		--	--	PT	Peat

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
BSL-12	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/26/2001	646,230.2	572,888.8			6.5						
BSL-12-0-1	0.0 - 1.0	1.0	DP	Fill	N	N		0.065	0.8	SC	Med brown to gray mf SAND, some Clay, little cmf gravel, little organics
--	1.0 - 2.0	0.0	DP	Fill?	--	--		--	--		NR. Refusal @ 2 ft.
BSL-2	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/21/2001	646,514.7	572,787.1			3.5						
BSL-2-0-1	0.0 - 1.0	1.0	DP	Fill	N	N		0.003	7.6	SW	Med brown cmf SAND, little organics
--	1.0 - 2.0	0.5	DP	Fill	N	N		0.016	0	GW	Dk brown cmf GRAVEL, some cmf Sand, moist
--	2.0 - 4.0	0.0	DP	Fill	--	--		--	--		NR
--	4.0 - 6.0	2.0	DP	Fill/TMD	N	N		0	0	GP/PT	Dk brown cmf GRAVEL, some cmf Sand, moist @ 5 ft becoming PEAT.
--	6.0 - 8.0	2.0	DP	TMD	N	N		--	--	PT	Peat
BSL-3	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/20/2001	646,513.6	572,772.5			6						
BSL-3-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.004	0.9	SP	Med brown cmf SAND

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids		MVA (mg/m3)	OVA (ppm)	Soil Description	
					Mercury	Organics			USCS	Burmister
--	0.5 - 2.0	1.5	DP	Fill	N	N	0	0.7	SW	Brown cmf SAND @ 1 ft becoming CLAY, some mf Gravel, moist
--	2.0 - 4.0	0.0	DP	Fill?	--	--	--	--		NR
--	4.0 - 6.0	0.0	DP	Fill?	--	--	--	--		NR
--	6.0 - 7.0	0.0	DP	Fill?	--	--	--	--		NR
--	7.0 - 9.0	0.0	DP	Fill?	--	--	--	--		NR
--	9.0 - 10.0	0.0	DP	Fill?	--	--	--	--		NR. Refusal @ 10 ft.

BSL-4

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/21/2001	646,459.6	572,812.2	3.5

BSL-4-0-1	0.0 - 0.5	0.3	DP	Fill	N	N	0	0	SW	Med brown cmf SAND, some Organics
--	0.5 - 2.0	0.0	DP	Fill	--	--	--	--		NR
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
BSL-4-4-6	4.0 - 6.0	0.5	DP	Fill/TMD?	N	N	0	0	SW/PT	Med brown cmf SAND, some f Gravel @ 4.5 ft probably becoming PEAT, very soft.
--	6.0 - 8.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR
--	8.0 - 10.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
BSL-5	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/21/2001	646,455.3	572,797.4			6						
BSL-5-0-.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.005	0.9	SW	Med brown cmf SAND, some mf Gravel, moist
--	0.5 - 2.0	1.5	DP	Fill	N	N		0	0	SW	Med brown cmf SAND, some mf Gravel @ 1.5 ft becoming Orange to black CLAY, trace organics, moist
--	2.0 - 4.0	0.0	DP	TMD?	--	--		--	--	PT	Peat?, NR
--	4.0 - 6.0	0.0	DP	TMD?	--	--		--	--	PT	Peat?, NR
--	6.0 - 8.0	0.0	DP	TMD?	--	--		--	--	PT	Peat?, NR
BSL-6	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/26/2001	646,392.2	572,846.6			2						
BSL-6-0-1	0.0 - 1.0	1.0	DP	Fill	N	N		0.046	3.5	SW	Med brown cmf SAND, little organics, saturated
BSL-6-1-2	1.0 - 2.0	1.0	DP	Fill/TMD	N	N		0.021	10.4	GC/PT	Med brown CLAY and mf GRAVEL, little cmf sand @ 1.7 ft becoming PEAT.
--	2.0 - 4.0	0.0	DP	TMD?	--	--		--	--	PT	Peat?, NR
BSL-7	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/21/2001	646,383.7	572,834.6			4.5						

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
BSL-7-0-.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.015	0	SW	Med brown cmf SAND, little organics
--	0.5 - 2.0	0.5	DP	Fill	N	N		0.028	1.9	GW	Med brown mf GRAVEL, little cmf sand, moist
--	2.0 - 4.0	0.0	DP	TMD?	--	--		--	--	PT	Peat?, NR
--	4.0 - 6.0	2.0	DP	TMD	N	N		0.008	0	PT	Peat
--	6.0 - 8.0	0.0	DP	TMD?	--	--		--	--	PT	Peat?, NR

BSL-8

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/26/2001	646,332.4	572,874.1	1.5

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
BSL-8-0-1	0.0 - 1.0	1.0	DP	Fill	N	N		0.013	1.5	SW	Med brown mf SAND, some Organics
--	1.0 - 2.0	0.0	DP	TMD?	--	--		--	--	PT	Peat?, NR
--	2.0 - 4.0	0.0	DP	TMD?	--	--		--	--	PT	Peat?, NR

BSL-9

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/21/2001	646,327.9	572,851.3	6

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
BSL-9-0-.5	0.0 - 0.5	0.5	DP	Fill	N	N		0	0	SW	Lt brown cmf SAND, some Organics
BSL-9-.5-2	0.5 - 2.0	1.5	DP	Fill	N	N		0.017	0	SW	Brown cmf SAND, some Organics @ 1 ft becoming mf GRAVEL, some cmf Sand, saturated

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.006	0	CL	Lt gray CLAY @ 5.5 ft becoming Med brown mf Gravel, some cmf Sand, saturated
--	6.0 - 8.0	0.0	DP	TMD?	--	--	--	--	PT	Peat expected in this interval based on BSL-7, NR.
--	8.0 - 10.0	0.0	DP	TMD?	--	--	--	--	PT	Peat expected in this interval based on BSL-7, NR.

BT-B1

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/18/2001	646,639.2	572,496.5	8

BT-B1-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.026	1.1	CL	Reddish brown CLAY, some mf Gravel, little cmf sand, trace organics
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.011	0.5	CL	Reddish brown CLAY, some mf Gravel, little cmf sand, trace organics
--	2.0 - 4.0	0.5	DP	Fill	N	N	0.007	0.9	CL	Reddish brown CLAY, some mf Gravel, little cmf sand, trace organics
--	4.0 - 6.0	2.0	DP	Fill	N	N	0	0.9	CL	Reddish brown CLAY, some mf Gravel, little cmf sand, trace organics
--	6.0 - 8.0	1.0	DP	Fill	N	Y	0.003	1	CL	Red-brwn CLAY, some mf Gravel, little cmf sand, tr. organics @ 6.5 ft become blk mf GRAVEL, s. cmf Sand, sat.
--	8.0 - 10.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR
--	10.0 - 12.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
BT-B2	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/18/2001	646,643.4	572,480.4			8.1						
BT-B2-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.071	1.4	SW	Black c SAND and f GRAVEL
BT-B2-0.5-2	0.5 - 2.0	1.5	DP	Fill	N	N		0.043	1.1	CL	Red CLAY, little mf gravel, trace organics
--	2.0 - 4.0	0.0	DP	Fill	--	--		--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	N	N		0.017	13	CL	Red CLAY, little mf gravel, trace organics
--	6.0 - 8.0	0.0	DP	TMD?	--	--		--	--	PT	Peat?, NR
--	8.0 - 10.0	2.0	DP	TMD	N	N		--	--	PT	Peat
--	10.0 - 12.0	2.0	DP	TMD	N	N		--	--	PT	Peat
BT-B3	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/18/2001	646,643.2	572,464.2			8.1						
BT-B3-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.098	1.6	GW	Black cmf GRAVEL
--	0.5 - 2.0	1.5	DP	Fill	N	N		0.057	1.8	GW	Black cmf GRAVEL @ 1 ft becoming Reddish brown CLAY, trace f gravel
--	2.0 - 4.0	0.0	DP	Fill	--	--		--	--		NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	4.0 - 6.0	0.0	DP	Fill	--	--	--	--		NR
--	6.0 - 8.0	0.0	DP	Fill	--	--	--	--		NR
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.009	2	CL	Reddish brown CLAY, trace f gravel
--	10.0 - 12.0	2.0	DP	TMD	N	N	0.014	1.1	CL/PT	Reddish brown CLAY, trace f gravel @ 11 ft becoming Peat.

BT-B4

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/30/2001	646,667.7	572,431.5	8.2

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
BT-B4-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.043	2.5	GW	ASPHALT and mf GRAVEL, little cmf sand
BT-B4-0.5-2	0.5 - 2.0	1.5	DP	Fill	N	N	>0.999	5.9	GW	ASPHALT and mf GRAVEL, little cmf sand @ 1 ft becoming Dk brown cmf GRAVEL, some mc Sand
--	2.0 - 4.0	2.0	DP	Fill	N	N	0.009	6	CL	Red CLAY, little c gravel @ 3 ft becoming Dk brown CLAY and mc GRAVEL, little f sand
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.033	6.6	CL	Med brown to red CLAY, some to no mf Gravel
--	6.0 - 8.0	2.0	DP	Fill/TMD	N	N	0.011	15.4	OL/PT	Dk brown to black Clay @ 7.3 ft becoming PEAT.

BT-B5

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
10/2/2001	646,700.8	572,430.7	7.8

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
BT-B5-0-.5	0.0 - 0.5	0.5	8	Fill	N	N	0.276	1.3	GC	Dk brown mf GRAVEL and CLAY, little cmf sand, trace organics

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	0.5 - 2.0	0.5	9-5-3	Fill	N	N	0.851	2.2	GC	Dk brown mf GRAVEL and CLAY, little cmf sand, trace organics
--	2.0 - 4.0	1.5	5-7-7-12	Fill	N	N	0.035	1.9	CL	Red CLAY, little f gravel, very dense
--	4.0 - 6.0	2.0	1-2-5-3	Fill/TMD	N	N	0.044	1	CL/PT	Red CLAY, little f gravel, very dense @ 5.5 ft becoming PEAT
--	7.0 - 9.0	1.0	WOH	TMD	N	N	>0.999	2.5	PT	PEAT
--	9.0 - 11.0	2.0	WOH	TMD	N	N	>0.999	2.3	PT	PEAT
--	11.0 - 13.0	0.5	WOH	TMD	N	N	>0.999	1.1	CL	Gray CLAY, some Peat
--	13.0 - 15.0	1.5	WOH	TMD	N	N	>0.999	0.8	OL/PT	Dk Gray CLAY, some Peat, little mc Gravel
--	15.0 - 17.0	2.0	2-6-3-3	TMD/GF	N	N	>0.999	1.7	CL	Dk Gray CLAY, little organics @ 16.2 ft becoming Med Gray fm SAND, little silt
--	17.0 - 19.0	1.5	4-4-5-6	GF	N	N	0.175	3	SM	Med Gray and Brown fm SAND, little silt, mottled
--	19.0 - 21.0	1.0	3-8-8-10	GT	N	N	0	3	SW	Reddish brown f SAND, little f gravel, trace silt
--	21.0 - 23.0	1.0	6-10-10-10	GT	N	N	0	7	ML	Red brown SILT & CLAY, little (+) fm gravel, little f sand
--	23.0 - 25.0	1.0	5-9-10-10	GT	N	N	0	5	ML	Red brown SILT and f SAND, little fm gravel

BT-B6

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/18/2001	646,713.8	572,450.7	8.1

BT-B6-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.835	1	SW	Dk brown cmf SAND, some mf Gravel

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
BT-B6-0.5-2	0.5 - 2.0	1.5	DP	Fill	N	N	>0.999	1	SW	Dk brown cmf SAND, some mf Gravel @ 1 ft becoming Reddish brown CLAY, some cmf Gravel, some cmf Sand
--	2.0 - 4.0	1.0	DP	Fill	N	N	0.016	1.1	CL	Reddish brown CLAY, some cmf Gravel, some cmf Sand
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.013	1.1	CL	Reddish brown CLAY, some cmf Gravel, some cmf Sand @ 5.5 ft Black cmf GRAVEL, some cmf SAND, sat.
--	6.0 - 8.0	0.5	DP	Fill	N	N	0.022	5.3	GW	Black cmf GRAVEL, some cmf Sand, saturated
--	8.0 - 10.0	1.0	DP	TMD	N	N	--	--	PT	Peat
--	10.0 - 12.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR

CF-1

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/31/2001	646,706.7	572,613.0	8.1

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
CF-1-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.025	65	SW	Med brown cmf SAND, little mc gravel, little clay
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.004	48	SW	Med brown cmf SAND, little mc gravel, little clay
CF-1-2-4	2.0 - 4.0	2.0	DP	Fill	N	N	0.009	148	CL	Red CLAY, little c gravel, dense
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.003	50	GW	Brown to black mf GRAVEL, some c Sand, moist @ 5.8 ft becoming Dk Gray CLAY, some f Gravel
--	6.0 - 8.0	1.0	DP	Fill	N	N	0	58	CL	Dk Gray CLAY, some f Gravel @ 6.2 ft becoming Black mf GRAVEL
--	8.0 - 10.0	2.0	DP	TMD	N	N	--	--	PT	Peat
--	10.0 - 12.0	1.0	DP	TMD	N	N	--	--	PT	Peat

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
CF-2											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/28/2001		646,703.9	572,645.3			4.5					
CF-2-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.033	1	CL	Med brown CLAY, little mf gravel, trace organics	
--	0.5 - 2.0	2.0	DP	Fill	N	N	0	0.5	CL	Med brown CLAY, little mf gravel, trace organics @ 1.3 ft becoming Dk brown mf GRAVEL, some cmf Sand, moist	
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR	
--	4.0 - 6.0	2.0	DP	TMD	N	N	--	--	PT	Peat	
--	6.0 - 8.0	1.0	DP	TMD	N	N	--	--	PT	Peat	
CF-3											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/28/2001		646,685.2	572,668.2			4					
CF-3-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0	1	CL	Med brown CLAY, trace c gravel, trace organics	
CF-3-0.5-2	0.5 - 2.0	1.5	DP	Fill	N	N	0	2	CL	Brown CLAY, trace c gravel, trace organics @ 1 ft becoming mf GRAVEL, little mf sand, moist	
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR	
--	4.0 - 6.0	1.5	DP	TMD	N	N	--	--	PT	Peat	
--	6.0 - 8.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR	

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
CF-4											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/28/2001		646,662.3	572,689.8			3.5					
CF-4-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.056	3.4	CL	Med brown CLAY, little mf gravel, little organics	
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.036	1.7	CL	Med brown CLAY, little mf gravel, little organics	
--	2.0 - 4.0	0.2	DP	Fill	N	N	--	--	GW	Med brown mf GRAVEL, little f sand, trace organics	
--	4.0 - 6.0	1.0	DP	Fill/TMD	N	N	0.036	2.6	GP/PT	M. brown mf GRAVEL, little f sand, trace organics @ 4.2 ft ft. Gray CLAY and SILT, mst to sat @ 4.9 ft PEAT.	
--	6.0 - 8.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR	
CF-5											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/28/2001		646,617.1	572,693.1			10.4					
CF-5-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0	1	SW	Med brown cmf SAND, little c gravel	
--	0.5 - 2.0	1.5	DP	Fill	N	N	0	1.3	SC	Lt gray f SAND and CLAY @ 0.7 ft becoming Orange f SAND	
--	2.0 - 4.0	1.5	DP	Fill	N	N	0	2.6	SP	Orange f SAND	
CF-5-4-6	4.0 - 6.0	2.0	DP	Fill	N	N	0.006	3	SW	Brick @ 4.4 ft becoming Orange f SAND @ 5.9 ft becoming Black mf GRAVEL	
--	6.0 - 8.0	1.0	DP	Fill	N	N	0.003	1.7	GW	Black mf GRAVEL @ 6.2 ft Lt Gray CLAY @ 6.6 ft Blk cmf GRAVEL @ 6.6 ft Lt. Gray CLAY, hard.	

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.005	1	CL	Orange CLAY, little f gravel
--	10.0 - 12.0	1.0	DP	TMD	N	N	--	--	PT	Peat

CF-6

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/28/2001	646,622.0	572,666.7	10.2

CF-6-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0	5	SC	Med brown f SAND, trace clay, trace organics
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.211	9.2	SW	Med brown to orange f SAND, no to little mf gravel, trace clay, trace organics
--	2.0 - 4.0	1.0	DP	Fill	N	N	0.03	2.6	SP	Orange f SAND
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.137	4	SP	Orange f SAND
--	6.0 - 8.0	2.0	DP	Fill	N	N	0	8	GW	Dk brown mf GRAVEL @ 7 ft becoming Orange CLAY
--	8.0 - 10.0	0.0	DP	Fill	--	--	--	--		NR
--	10.0 - 12.0	0.0	DP	Fill	--	--	--	--		NR
--	12.0 - 14.0	2.0	DP	Fill	N	N	0	3	GW	Black cmf GRAVEL, little silt, saturated
--	14.0 - 16.0	2.0	DP	TMD	N	N	--	--	PT	Peat

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
CF-7											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/28/2001		646,623.4	572,633.0			10.3					
CF-7-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.016	15	SC	Med brown f SAND, some Clay, trace c gravel, trace organics	
--	0.5 - 2.0	1.5	DP	Fill	N	N	0	7.1	SC	Med brown f SAND, some Clay, trace c gravel, trace organics @ 1 ft becoming Orange f SAND	
--	2.0 - 4.0	1.0	DP	Fill	N	N	0.526	5	SW	Dk brown mf SAND, some f Gravel, trace organics	
CF-7-4-6	4.0 - 6.0	1.0	DP	Fill	N	N	>0.999	16	SW	Med brown f SAND, some f Gravel, trace silt, trace organics	
--	6.0 - 8.0	0.0	DP	Fill	--	--	--	--		NR	
--	8.0 - 10.0	1.0	DP	Fill/TMD	N	N	0.031	4	GC/PT	Dk brown mf GRAVEL @ 8.6 ft becoming Lt. Gray CLAY, saturated @ 8.8 ft becoming PEAT.	
--	10.0 - 12.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR	
CF-8											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/28/2001		646,640.1	572,605.0			8.8					
CF-8-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.003	0.9	SC	Med brown mf SAND, little c clay, trace mf gravel	
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.006	3	GW	Med brown to orange mf SAND, trace clay, trace gravel	
--	2.0 - 4.0	1.2	DP	Fill	N	N	0.005	3.8	CL	Red CLAY, little mf gravel @ 3 ft becoming Black mf GRAVEL	

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.006	3	GC	Gray mf GRAVEL, little clay, saturated
--	6.0 - 8.0	0.0	DP	Fill	--	--	--	--		NR
--	8.0 - 10.0	2.0	DP	TMD	N	N	0.087	13	GW/PT	cmf GRAVEL, saturated @ 9 ft becoming Peat.
--	10.0 - 12.0	2.0	DP	TMD	N	N	--	--	PT	Peat

CF-9

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/31/2001	646,679.8	572,609.8	8.5

CF-9-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.135	14	SC	Med brown mf SAND, some Clay, some mc Gravel
CF-9-0.5-2	0.5 - 2.0	1.5	DP	Fill	N	N	0.013	9	SC	Med brown mf SAND, some Clay, some mc Gravel
--	2.0 - 4.0	2.0	DP	Fill	N	N	0.003	7.5	CL	Red CLAY, little mc gravel, dense
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.005	7	CL	Red CLAY, little mc gravel, dense @ 5 ft Gray SILT & CLAY @ 5.2 ft Dk brown mf GRAVEL, s. mc Sand, sat.
--	6.0 - 8.0	1.0	DP	Fill	N	N	0.005	8.8	GM	Dk brown mf GRAVEL, some mc Sand, saturated @ 6.2 ft becoming Gray SILT & CLAY
--	8.0 - 10.0	2.0	DP	TMD	N	N	--	--	PT	Peat
--	10.0 - 12.0	2.0	DP	TMD	N	N	--	--	PT	Peat

DC-B12

State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
646,152.1	572,422.1	7.211

10/3/2001

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
DC-B12-0-0.5	0.0 - 0.5	0.5	32	Fill	N	N	0.014	17	GW	Med brown cmf GRAVEL, some Clay
--	0.5 - 2.0	0.0	28	Fill	--	--	--	--		NR
DC-B12-2-4	2.0 - 4.0	0.2	6-34-30	Fill	N	N	0.028	66	GW	Med brown cmf GRAVEL, little cmf sand, moist
--	4.0 - 6.0	0.0	2-5-4-37	Fill	--	--	--	--		NR
--	6.0 - 8.0	1.0	10-7-2-1	Fill/TMD	N	N	--	--	GW/PT	Med brown c GRAVEL @ ~ 7 ft becoming PEAT.
--	9.2 - 11.0	0.8	9-8-2-1	TMD	N	N	0.014	26	GW/PT	Black fmc GRAVEL, coated in a petroleum product @ 9.7 ft becoming PEAT
--	11.0 - 13.0	1.7	1-1-1-1	TMD	N	N	0.032	1.3	OL	Dk Gray CLAY, some Peat
--	13.0 - 15.0	2.0	WOH-H-H-3	TMD	N	N	0.014	2.9	OL	Dk Gray CLAY, some f Sand, little peat
--	15.0 - 17.0	2.0	4-8-8-13	TMD/GT	N	N	0.014	0.2	OL	Dk Gray CLAY, some f Sand, little peat @ 16 ft becoming Red brown f SAND, some (-) Silt
--	17.0 - 19.0	1.0	10-8-12-13	GT	N	N	0.005	0	SC	Red brown fm SAND and CLAY, little f gravel
--	20.5 - 22.5	0.8	15-6-6-6	GT	N	N	0.008	0.1	CL	Red brown CLAY, trace f sand
--	22.5 - 24.5	1.5	8-8-5-11	GT	N	N	0.005	0	CL	Red brown Silty CLAY, little f sand, trace fm gravel

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
DC-SED1	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/20/2001	646,622.5	572,437.0			--						
SED-DC-1	0.0 - 0.5	0.5	DP	DC Sed	N	N		0.044	0.2	SW	Dk brown cmf SAND, some Organics, saturated
DC-SED2	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/20/2001	646,168.1	572,448.7			--						
SED-DC-2	0.0 - 0.5	0.5	DP	DC Sed	N	N		0.058	0	SW	Dk brown cmf SAND, some Organics, saturated
DC-SED3	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/20/2001	646,363.9	572,244.7			--						
SED-DC-3	0.0 - 0.5	0.5	DP	DC Sed	N	N		0.746	0.5	ML	Med brown SILT, saturated
DC-SS1	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/18/2001	646,620.2	572,440.7			8.1						
DC-SS1-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		>0.999	1	SW	Dk brown cmf SAND, some Organics
DC-SS10	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/17/2001	646,207.7	572,484.1			8.2						

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
--	0.0 - 0.5	0.5	DP	Fill	N		N	0.013	3.5	SW	Med to dk brown cmf SAND, little clay
DC-SS11	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/17/2001	646,167.8	572,448.9			8.2						
DC-SS11-0-0.5	0.0 - 0.5	0.5	DP	Fill	N		N	0.138	16	SW	Dk brown cmf SAND, little mf gravel
DC-SS13	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/17/2001	646,181.1	572,394.9			8.3						
DC-SS13-0-0.5	0.0 - 0.5	0.5	DP	Fill	N		N	0.139	1.2	GM	Med brown mf GRAVEL, little cmf sand, little silt
DC-SS14	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/17/2001	646,216.5	572,365.2			8.4						
--	0.0 - 0.5	0.5	DP	Fill	N		N	0.03	1.2	GW	Med brown cmf GRAVEL, some mc Sand, trace clay
DC-SS15	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/17/2001	646,244.8	572,341.7			8.4						
DC-SS15-0-0.5	0.0 - 0.5	0.5	DP	Fill	N		N	0.992	2.3	SM	Med brown mf SAND, little mf gravel, little silt

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
DC-SS16	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/17/2001	646,302.9	572,294.5			8.4						
--	0.0 - 0.5	0.5	DP	Fill	N	N		0.018	5.7	SW	Dk brown mc SAND, some mf Gravel
DC-SS17	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/17/2001	646,297.8	572,259.8			8.3						
DC-SS17-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.252	2.3	GW	Med brown mf GRAVEL, some cmf Sand, little clay, trace organics
DC-SS18	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/17/2001	646,370.4	572,233.7			8.3						
--	0.0 - 0.5	0.5	DP	Fill	N	N		0.027	1.6	GW	Med brown cmf GRAVEL, some cmf Sand @ 0.2 ft becoming Red CLAY, little f gravel
DC-SS19	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/17/2001	646,415.2	572,215.8			8.2						
--	0.0 - 0.5	0.5	DP	Fill	Y	N		>0.999	1.6	SC	Reddish brown mf SAND and CLAY, little mf gravel
DC-SS2	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/17/2001	646,618.8	572,494.6			8						

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
DC-SS2-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	>0.999	0.4	SW	Dk brown cmf SAND, little mf gravel, little organics
DC-SS20	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
9/17/2001	646,452.9	572,191.5			8.2					
--	0.0 - 0.5	0.5	DP	Fill	N	N	0.047	0.6	CL	Reddish brown CLAY, some cmf Sand, little mc gravel
DC-SS3	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
9/17/2001	646,563.7	572,489.7			8					
DC-SS3-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	>0.999	0.4	SW	Dk brown cmf SAND, some m Gravel, some Organics
DC-SS4	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
9/18/2001	646,515.3	572,491.9			8					
--	0.0 - 0.5	0.5	DP	Fill	N	N	0.061	0.7	SW	Dk brown cmf SAND, little f gravel, trace organics
DC-SS5	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
9/18/2001	646,459.4	572,477.3			8.1					
--	0.0 - 0.5	0.5	DP	Fill	N	N	0.014	1.4	SW	Dk brown cmf SAND, some mc Gravel, little organics

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
DC-SS6											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/17/2001	646,345.3	572,495.5			7.641						
DC-SS6-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.261	0	SW	Med brown cmf SAND, little mf gravel, trace organics
DC-SS7											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/17/2001	646,288.5	572,502.2			8.2						
DC-SS7-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.137	7	SW	Med brown cmf SAND, little mf gravel, little organics
DC-SS8											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/18/2001	646,240.6	572,496.6			6.662						
--	0.0 - 0.5	0.5	DP	Fill	N	N		0.003	1.4	CL	Reddish brown CLAY, little f gravel
DC-SS9											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/17/2001	646,210.5	572,495.0			7.566						
DC-SS9-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.123	1	SW	Med brown mf SAND @ 0.2 ft becoming CLAY and cmf SAND, little mf gravel
DSP-1											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
10/3/2001	646,406.9	571,995.0			8.053						

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
DSP-1-0-0.5	0.0 - 0.5	0.5	5	Fill	N	N	0.023	0.8	CL	Med brown to red CLAY, some mf Gravel, little cmf sand
--	0.5 - 2.0	1.0	6-4-5	Fill	N	N	0.003	0.3	CL	Med brown to red CLAY, some mf Gravel, little cmf sand
--	2.0 - 4.0	0.8	4-4-5	Fill	N	N	0.003	0	CL	Red CLAY, little f gravel
DSP-1-4-6	4.0 - 6.0		6-5-4-7	Fill	N	N	0.005	34	CL	Red CLAY, mf chunks of shale
--	6.0 - 8.0	1.0	4-2-1-1	Fill	N	N	0	1.6	GP/PT	Black fm GRAVEL, saturated @ 6.5 ft becoming PEAT
--	7.7 - 8.0	0.3	10-10-3-3	TMD	N	N	0	3.8	PT	PEAT
--	9.0 - 11.0	1.5	1-1-1-2	TMD	N	N	0	0.8	PT	PEAT @ 10 ft becoming M brown CLAY and PEAT
--	11.0 - 13.0	0.3	1-1-2-3	GT	N	N	0	0.8	CL	Red brown CLAY, some f Sand, little fm gravel
--	13.0 - 15.0	1.0	4-5-9-12	GT	N	N	0	0.7	ML	Red brown CLAY & SILT, some (-) fm Gravel
--	18.0 - 20.0	1.5	11-17-19-50/5GT/TOWR		N	N	0	0.6	ML	Red brown CLAY & SILT, little (+) fm gravel @ 19.4 ft becoming Weathered SHALE

DSP-2

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/4/2001	646,408.7	571,992.7	7.4

DSP-2-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	>0.999	5.6	GC	Dk brown mf GRAVEL, some Clay, little mf sand
--	0.5 - 2.0	1.5	DP	Fill	N	N	>0.999	9	CL	Red with trace purple CLAY, little mf gravel, dense
--	2.0 - 4.0	1.5	DP	Fill	N	N	0.184	2.1	CL	Red with trace purple CLAY, little mf gravel, dense @ 3.2 ft becoming Black mf GRAVEL, cinders

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.06	3	CL	Red CLAY, little mf gravel, dense @ 5.5 ft becoming Black mf GRAVEL, cinders
--	6.0 - 8.0	0.5	DP	Fill	N	N	0.041	1.4	GW	Black mf GRAVEL, cinders

DSP-3

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/4/2001	646,424.3	571,961.2	7.6

DSP-3-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.011	5	CL	Dk brown CLAY, some cmf Gravel, little mf sand, saturated
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.026	2	CL	Reddish brown CLAY, little mf gravel
DSP-3-2-4	2.0 - 4.0	1.5	DP	Fill	N	N	0.035	1.6	CL	Reddish brown CLAY, little mf gravel
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.013	2	CL	Reddish brown CLAY, little mf gravel @ 4.3 ft becoming Lt brown f SAND @ 5.3 ft becoming Red CLAY, dense
--	6.0 - 8.0	1.8	DP	Fill/TMD	N	N	0.011	2.6	GM/PT	Red CLAY, dense @ 6.5 ft becoming Black mf GRAVEL, some c Sand, cinders @ 7.6 ft becoming PEAT.

DSP-4

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/4/2001	646,417.8	571,980.7	7.5

DSP-4-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.004	26	CL	Reddish brown CLAY, little mf gravel, little cmf sand, trace organics
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.022	4	CL	Reddish brown CLAY, little mf gravel, little cmf sand, trace organics
--	2.0 - 4.0	1.5	DP	Fill	N	N	0.009	4	CL	Reddish brown CLAY, little mf gravel, little cmf sand, trace organics

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
DSP-4-4-6	4.0 - 6.0	2.0	DP	Fill	N	N	0.008	0.8	CL	Red CLAY, some mf Gravel @ 5 ft becoming Black mf GRAVEL, moist to saturated
--	6.0 - 8.0	1.2	DP	Fill/TMD	N	N	0	28	CL/PT	Red-brwn CLAY, little mf gravel, little cmf sand, trace organics @ 6.5 ft Blk mf GRAVEL, l. c sand, @ 7 ft PEAT.
EC-1	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
8/21/2001	646,749.9	572,682.6			--					
EC-1	0.0 - 1.0		DP	Fill	--	--	--	--	CL	Red CLAY and SAND
EC-2	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
8/21/2001	646,673.6	572,730.5			--					
EC-2	0.0 - 1.0		DP	Fill	--	--	--	--	CL	Red CLAY and SAND
EC-3	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
8/21/2001	646,592.3	572,789.5			--					
EC-3	0.0 - 1.0		DP	Fill	--	--	--	--	CL	Red CLAY and SAND
EC-4	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
8/21/2001	646,489.2	572,839.8			--					
EC-4	0.0 - 1.0		DP	Fill	--	--	--	--	SM	Sandy, Topsoil

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
EC-5											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/21/2001		646,346.5	572,904.5				--				
EC-5	0.0 - 1.0		DP	Fill	--	--	--	--	--	SM	SAND, some Silt
EC-6											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/21/2001		646,205.8	573,005.4				--				
EC-6	0.0 - 1.0		DP	Fill	--	--	--	--	--	SM	SAND, some Silt
EC-7											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/21/2001		646,171.2	573,134.9				--				
EC-7	0.0 - 1.0		DP	Fill	--	--	--	--	--	SM	SAND, some Silt
EC-8											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/21/2001		646,137.7	573,256.1				--				
EC-8	0.0 - 1.0		DP	Fill	--	--	--	--	--	SP	Sand
EC-9											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/21/2001		646,101.0	573,375.6				--				

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
EC-9	0.0 - 1.0		DP	Fill	--	--	--	--	SP	Sand
ESR-1	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
9/4/2001	646,208.8		572,749.2		8.9					
ESR-1-0-1	0.0 - 0.5	1.0	DP	Fill	N	N	0.056	3.4	GW	Gray c GRAVEL
--	0.5 - 2.0	0.5	DP	Fill	N	N	--	--	SP	Lt brown f SAND
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
ESR-1-4-6	4.0 - 6.0	2.0	DP	Fill	N	N	0.018	77	SP	Lt brown f SAND
--	6.0 - 8.0	1.0	DP	Fill/TMD	N	N	0.004	27	SP/PT	Lt brown f SAND @ 6.5 becoming PEAT
HB-1A	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
4/18/2002	646,648.9		572,212.4		--					
HB-1A	6.8 - 6.8	1.0	DP	Natural Soil	Y	N	0.026	3.6	OL	Black CLAY
HB-3A	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
4/17/2002	646,565.8		572,228.1		--					
HB-3A	5.3 - 5.3	0.5	DP	Fill?	N	N	0.043	5	SC	Dk Brown f SAND, little clay, trace organics

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
HB-3B	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
4/17/2002	646,563.5	572,251.4				--					
HB-3B	4.5 - 4.5	1.0	DP	Natural Soil	Y		N	--	0	CL	Red brown CLAY, dense
HB-3C	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
4/18/2002	646,561.7	572,271.5				--					
HB-3C	4.5 - 4.5	1.0	DP	Natural Soil	Y		N	--	0.2	CL	Red brown CLAY, dense
HB-3D	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
4/18/2002	646,559.3	572,296.3				--					
HB-3D	4.5 - 4.5	1.0	DP	Natural Soil	Y		N	--	0	CL	Red brown CLAY, dense
HB-4A	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
4/19/2002	646,531.2	572,212.0				--					
HB-4A	5.3 - 5.3	1.0	DP		N		N	0.017	1.5	SW	Dk Gray fm SAND, saturated
HB-5A	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
4/22/2002	646,490.9	572,207.8				--					

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
HB-5A	3.0 - 3.0	1.0	DP		N	N	0.008	1.4	CL	M brown CLAY, some mc SAND, little f gravel
HB-7A	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
4/19/2002	646,549.4	572,201.1			--					
HB-7A	5.0 - 5.0	0.5	DP		Y	N	--	0.4	CL	M brown CLAY, some mc Gravel, little organic material (wood)
HB-8A	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
4/23/2002	646,477.9	572,362.6			--					
HB-8A	3.0 - 3.0	1.0	DP		N	N	0.006	0.3	SW	Dk brown mc SAND, some fm Gravel, piece of wood, saturated
HB-8B	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
4/23/2002	646,482.0	572,313.3			--					
HB-8B	4.8 - 4.8	1.0	DP		Y	N	0.012	2.3	CL	Silty CLAY, trace fm gravel
HB-8C	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
4/23/2002	646,485.2	572,278.3			--					
HB-8C	5.5 - 5.5	1.0	DP		N	N	0.003	20	OL	Black and brown CLAY, some fm Gravel

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
HB-9A											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
4/24/2002		646,436.5	572,363.9			--					
HB-9A	4.8 - 4.8	1.0	DP		N		N	0.007	1.7	SW	M Brown mc SAND, little f gravel
HF-B1											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/10/2001		645,983.3	572,547.2			7.8					
HF-B1-0-0.5	0.0 - 0.5	0.5	DP	Fill	N		N	0	2.8	GW	Brown mf GRAVEL, little mf sand
--	0.5 - 2.0	0.5	DP	Fill	N		N	0.012	194.3	ML	Reddish brown SILT & CLAY, trace coal
--	2.0 - 4.0	0.0	DP	Fill	--		--	--	--		NR
--	4.0 - 6.0	1.5	DP	Fill	N		Y	0.004	6.4	ML	Red-brwn SILT & CLAY, little mf gravel @ 4.3 ft Black SAND @ 4.6 ft clayey SILT @ 5 ft cmf SAND and mf GRAVEL, sat.
--	6.0 - 8.0	0.0	DP	Fill	--		--	--	--		NR
HF-B1-8-10	8.0 - 10.0	2.0	DP	Fill/TMD	N		Y	0.049	185	GW/PT	Black cmf SAND and mf GRAVEL, saturated, @ 9.5 ft becoming PEAT @ 9.7 ft Gray f SAND, little silt
--	10.0 - 12.0	0.0	DP	TMD?	--		--	--	--		NR
HF-B2											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/4/2001		646,817.9	572,662.4			8.2					

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
HF-B2-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.023	2.5	SW		Med brown cmf SAND, little mc gravel
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.003	3.2	SW		Med brown cmf SAND, little mc gravel
--	2.0 - 4.0	2.0	DP	Fill	N	N	0.008	2	SP		Lt brown f SAND
HF-B2-4-6	4.0 - 6.0	2.0	DP	Fill	N	N	0.01	2.1	SC		Lt brown f SAND @ 4.3 ft Red CLAY, little f gravel, little cmf sand @ 4.9 ft Blk GRAVEL @ 5.2 ft $ CLAY
--	6.0 - 8.0	2.0	DP	Fill	N	N	0.006	2	ML		Gray Silty CLAY @ 6.7 ft Dk brown mf GRAVEL, some c Sand @ 7.2 ft Lt Orangy brown CLAY, soft
--	8.0 - 10.0	1.5	DP	TMD	N	N	--	--	PT		Peat
--	10.0 - 12.0	0.0	DP	TMD?	--	--	--	--	PT		Peat?, NR

HF-B3

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
10/2/2001	646,916.8	571,629.2	7.593

HF-B3-0-.5	0.0 - 0.5	0.5	4	Fill	N	N	0.117	18	CL		Med brown CLAY, some cmf Sand, little mc gravel
--	0.5 - 2.0	0.5	6-2-8	Fill	N	N	0.005	12	CL		Med brown CLAY, some cmf Sand, little mc gravel
--	2.0 - 4.0	1.5	11-9-10-10	Fill	N	N	0.048	6	CL		Red CLAY, some m Gravel, very dense
--	4.0 - 6.0	1.0	10-6-4-5	Fill	N	N	0.02	3.4	CL		Reddish brown CLAY, little mf sand, moist
--	6.0 - 8.0	1.0	5-2-2-2	Fill	N	N	0.041	1	CL		Reddish brown CLAY, moist
HF-B3-8-10	8.0 - 10.0	2.0	2-1-1-1	Fill/TMD	N	N	0.07	32	CL/PT		Reddish brown CLAY, moist @ 8.5 ft becoming PEAT

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	10.0 - 12.0	2.0	1-1-1-1	TMD	N	N	0.044	0.6	PT	PEAT, some Clay
--	12.0 - 14.0	2.0	1-2-1-1	TMD/GF	N	N	0.026	0.4	PT	PEAT (clay rich) @ 13.5 ft becoming Dk Gray to brown CLAY, mottled
--	14.0 - 16.0	1.0	1-1-2-5	GF/GT	N	N	0.006	0.4	CL	Dk Gray to brown CLAY, little fm gravel @ 14.5 ft becoming Red brown CLAY & SILT, some fm Gravel
--	16.0 - 18.0	1.0	3-5-7-8	GT	N	N	0.003	0.2	ML	Red brown CLAY & SILT, some fm Gravel
--	21.0 - 23.0	1.5	3-5-8-10	GT	N	N	0.003	0.2	ML	Red brown CLAY & SILT, little (+) fm gravel, little f sand
--	26.0 - 27.0	1.0	3-5-7-8	GT	N	N	0.003	0.3	ML	Red brown CLAY & SILT, some fm Gravel
--	31.0 - 33.0	1.0	6-9-15-44	GT	N	N	0.059	10.2	GC	Red brown fm GRAVEL and CLAY
--	36.0 - 38.0	0.3	50/2.5	BR	N	N	0.003	3	GC	Red brown fm GRAVEL and CLAY, trace shale

IB-1

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
4/8/2002	646,648.1	572,369.9	8.2

IB-1-0-2	0.0 - 2.0	2.0	DP	Fill	N	N	0.106	0	SW	CONCRETE @ 0.5 ft becoming Lt brown fmc SAND, some mc Gravel
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
IB-1-4-6	4.0 - 6.0	2.0	DP	Fill	N	N	0.02	0	SC	M brown to yellow brown fm SAND, little clay, saturated
--	6.0 - 8.0	2.0	DP	Fill	N	N	0.014	0	SC	M brown to yellow brown fm SAND, little clay, saturated
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.029	0	SW	M brown fm SAND, saturated

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	10.0 - 12.0	2.0	DP	Fill/TMD	N	N	0.032	0	SW/PT	M brown fm SAND, saturated @ 11.5 ft becoming PEAT

IB-2

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
4/8/2002	646,559.3	572,400.3	8.2

--	0.0 - 2.0	1.0	DP	Fill	N	N	0.015	0	GW	Black fm GRAVEL, some fm Sand @ 0.2 ft becoming Red brown mc GRAVEL @ 0.5 ft becoming Yellow mfc GRAVEL
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
IB-2-4-6	4.0 - 6.0	2.0	DP	Fill	N	N	0.048	0	GC	Yellow mfc GRAVEL @ 4.5 ft becoming M brown CLAY, some fm Sand
--	6.0 - 8.0	2.0	DP	Fill	N	N	0.006	1	CL	Black CLAY and fm SAND, some f Gravel
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.004	2.5	OL	Black CLAY, some Organics, little fm gravel
--	10.0 - 12.0	0.0	DP	Fill	--	--	--	--		NR
IB-2-12-14	12.0 - 14.0	2.0	DP	Fill	N	N	0.004	3.7	CL	Black CLAY, some Organics, little fm gravel
--	14.0 - 16.0	0.0	DP	Fill	--	--	--	--		NR
--	16.0 - 18.0	2.0	DP	Fill	N	N	0.031	4	SC	Dk Brown fm SAND and CLAY, some organics @ 16.5 ft becoming Gray f SAND and CLAY @ 17.5 ft become CLAY.
--	18.0 - 20.0	0.0	DP		--	--	--	--		NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
IB-3	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
4/8/2002	646,437.8	572,388.1			8.1						
--	0.0 - 2.0	2.0	DP	Fill	N	N		0.045	1	GW	Black fm GRAVEL, some mc Sand
--	2.0 - 4.0	0.0	DP	Fill	--	--		--	--		NR
IB-3-4-6	4.0 - 6.0	1.0	DP	Fill	--	--		0.034	2.6	SW	Black fmc SAND, some mc Gravel, saturated
--	6.0 - 8.0	0.0	DP	Fill	--	--		--	--		NR
IB-3-8-10	8.0 - 10.0	2.0	DP	Fill/TMD	--	--		0.026	1	GM/PT	Black cmf GRAVEL @ 8.4 ft becoming Black CLAY, some fmc Gravel @ 9.5 ft becoming PEAT
--	10.0 - 12.0	0.0	DP	TMD	--	--		--	--		NR
LP-1	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/27/2001	646,561.5	572,590.7			8.31						
LP-1-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.028	10.3	SW	Lt brown mf SAND, trace organics
--	0.5 - 2.0	1.5	DP	Fill	N	N		0.355	2.1	CL	Gray CLAY, little mf gravel
--	2.0 - 4.0	1.0	DP	Fill	N	N		0.157	2.4	SP	Orange mf SAND
--	4.0 - 6.0	1.5	DP	Fill	N	N		0.026	9	CL	Gray CLAY, little mf gravel @ 4.2 ft becoming Orange mf SAND @ 4.5 ft becoming SILT & CLAY, some c Gravel, sat.

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	6.0 - 8.0	0.0	DP	Fill	--	--	--	--		NR
--	8.0 - 10.0	0.0	DP	Fill	--	--	--	--		NR
--	10.0 - 12.0	0.0	DP	Fill	--	--	--	--		NR
--	12.0 - 14.0	0.5	DP	Fill/TMD	N	N	0.029	3.7	SW/PT	Med brown mf SAND, saturated @ 12.4 becoming PEAT.

LP-10

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/27/2001	646,482.1	572,532.0	8.2

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
LP-10-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	>0.999	4.9	CL	Reddish brown CLAY and f SAND, little m gravel, trace organics
LP-10-0.5-2	0.5 - 2.0	1.5	DP	Fill	N	N	>0.999	3.1	CL	Reddish brown CLAY and f SAND, little m gravel, trace organics
--	2.0 - 4.0	1.5	DP	Fill	N	N	>0.999	0	OL	Gray CLAY @ 2.5 ft becoming Red CLAY and f SAND @ 3 ft becoming Gray CLAY
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.017	0.8	CL	Gray CLAY, little cmf gravel, soft, saturated
--	6.0 - 8.0	2.0	DP	Fill	N	N	0.011	0	CL	Gray CLAY, little cmf gravel, soft, saturated @ 6.5 ft becoming Med brown mf GRAVEL, some c Sand, sat.
--	8.0 - 10.0	2.0	DP	Fill/TMD	N	N	0.01	0.3	CL/PT	Med grown to gray CLAY, little mf gravel, saturated @ 9 ft becoming PEAT.
--	10.0 - 12.0	2.0	DP	TMD	N	N	--	--	PT	Peat

LP-11

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/27/2001	646,435.9	572,540.1	8.4

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
LP-11-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.06	11	SC	Med brown f SAND, little clay, little mc gravel
--	0.5 - 2.0	1.5	DP	Fill	N	N	>0.999	13.6	OL	Gray CLAY, little mf gravel
--	2.0 - 4.0	1.0	DP	Fill	N	N	0.574	5	OL	Gray CLAY, little mf gravel @ 2.6 ft becoming Lt brown f SAND @ 2.8 ft becoming Gray CLAY, little mf gravel
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.003	10.5	OL	Gray CLAY, little f sand @ 5.2 ft becoming mf GRAVEL, little silt, moist to saturated
--	6.0 - 8.0	1.0	DP	Fill	N	N	0	4.2	GM	Gray mf GRAVEL, little silt, saturated
--	8.0 - 10.0	0.0	DP	Fill?	--	--	--	--		NR
--	10.0 - 12.0	0.0	DP	Fill?	--	--	--	--		NR
--	12.0 - 14.0	0.0	DP	Fill?	--	--	--	--		NR
--	14.0 - 16.0	0.0	DP	Fill?	--	--	--	--		NR
--	16.0 - 18.0	2.0	DP	TMD	N	N	--	--	OL	Gray CLAY
--	18.0 - 20.0	0.0	DP	TMD?	--	--	--	--		NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
LP-12											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/27/2001	646,287.8	572,609.8			12						
LP-12-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.025	0	SW	Med brown cmf SAND, little f gravel
--	0.5 - 2.0	1.5	DP	Fill	N	N		0	0	SP	Orange f SAND
--	2.0 - 4.0	1.0	DP	Fill	N	N		0	0.3	SP	Orange f SAND
LP-12-4-6	4.0 - 6.0	2.0	DP	Fill	N	N		0.012	0	SC	Orange to brown mf SAND, little c gravel @ 5.5 ft becoming Gray Silty CLAY
--	6.0 - 8.0	1.0	DP	Fill	N	N		0.003	0	CL	Gray Silty CLAY @ 6 ft becoming Orange f Sand
--	8.0 - 10.0	2.0	DP	Fill	N	N		0	0	GM	Dk brown mf GRAVEL, little silt, trace mf sand, saturated
--	10.0 - 12.0	1.0	DP	Fill	N	N		0	0	GM	Dk brown mf GRAVEL, little silt, trace mf sand, saturated
--	12.0 - 14.0	2.0	DP	Fill	N	N		0	0	GM	Dk brown mf GRAVEL, little silt, trace mf sand @ 13.2 ft become CLAY, very hard @ 13.5 ft become mf GRAVEL, sat.
--	14.0 - 16.0	2.0	DP	TMD	N	N		--	--	PT	Peat
LP-13											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/24/2001	646,386.1	572,542.4			9						
LP-13-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.066	9	CL	Med brown CLAY, little c gravel, little f sand, trace organics

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	0.5 - 2.0	1.5	DP	Fill	N	N	>0.999	7	CL	Med brown CLAY, little c gravel, little f sand, trace organics
--	2.0 - 4.0	1.0	DP	Fill	N	N	0.567	9	SP	Orange f SAND
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.181	15	SC	Orange f SAND @ 4.2 ft becoming Gray CLAY, moist
--	6.0 - 8.0	0.5	DP	Fill	N	N	0	12	GC	Gray cmf GRAVEL and CLAY, trace organics
--	8.0 - 10.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR
--	10.0 - 12.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR
--	12.0 - 14.0	0.0	DP	TMD	N	N	--	--	PT	Peat

LP-14

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/24/2001	646,361.3	572,565.4	9.9

LP-14-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.003	0.5	SC	Med brown cmf SAND, little mc gravel, trace clay
LP-14-0.5-2	0.5 - 2.0	1.5	DP	Fill	N	N	0.782	0	SC	Med brown cmf SAND, little mc gravel, trace clay
--	2.0 - 4.0	2.0	DP	Fill	N	N	0.032	0	SW	Gray cmf GRAVEL and mc SAND @ 3 ft becoming Orange f SAND
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.007	0	SC	Orange f SAND @ 5 ft becoming Red cmf SAND, little f gravel @ 5.3 ft Lt Gray CLAY, saturated.
--	6.0 - 8.0	2.0	DP	Fill	N	N	0.007	0	OL	Lt gray CLAY @ 7 ft becoming Dk brown mf GRAVEL, some cmf Sand, saturated
--	8.0 - 10.0	2.0	DP	Fill	N	N	0	0	ML	Gray SILT & CLAY, little m gravel

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	10.0 - 12.0	2.0	DP	Fill/TMD	N	N	0.007	0	OL/PT	Gray SILT & CLAY, little m gravel @ 11 ft becoming PEAT.

LP-15

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/24/2001	646,318.1	572,556.6	9.5

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
LP-15-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.045	1	SC	Med brown mf SAND, little clay, little m gravel
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.64	1	SC	Med brown cmf SAND, some mc Gravel, little clay
--	2.0 - 4.0	1.0	DP	Fill	N	N	0.069	1	SC	Med brown cmf SAND, some mc Gravel, trace clay @ 2.2 ft becoming Orange f SAND
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.011	0.5	SC	Orange f SAND @ 4.7 ft becoming Red c GRAVEL @ 5.0 ft becoming Gray CLAY, moist
--	6.0 - 8.0	1.0	DP	Fill	N	N	0.005	1	CL	Gray CLAY, moist @ 6.3 ft becoming Med brown cmf SAND, little mc gravel
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.006	0	ML	Orange to Lt Gray CLAY @ 9 ft becoming Med brown SILT & CLAY, little mf gravel, saturated
--	10.0 - 12.0	1.0	DP	TMD	N	N	--	--	PT	Peat

LP-16

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/27/2001	646,349.6	572,541.4	8.6

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
LP-16-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.049	1.8	CL	Med brown CLAY and mf SAND, some mf Gravel
LP-16-0.5-2	0.5 - 2.0	1.5	DP	Fill	N	N	0.061	0	CL	Med brown CLAY and mf SAND, some mf Gravel

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids		MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
					Mercury	Organics				
--	2.0 - 4.0	1.0	DP	Fill	N	N	0.058	1	CL	Med brown CLAY and mf SAND, some mf Gravel @ 2.5 ft becoming Med brown Silty CLAY
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.011	0	CL	Gray CLAY, soft, saturated
--	6.0 - 8.0	1.5	DP	Fill	N	N	0.016	0	CL	Gray CLAY, soft @ 5.3 ft becoming Gray CLAY & SILT, saturated
--	8.0 - 10.0	2.0	DP	Fill/TMD	N	N	0.018	0	OH/PT	Gray CLAY & SILT, saturated @ 9 ft becoming PEAT.
--	10.0 - 12.0	0.5	DP	TMD	N	N	--	--	PT	Peat

LP-2

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/28/2001	646,575.3	572,561.6	8.4

LP-2-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.7	1	SM	Med brown f SAND, trace f gravel, trace silt
LP-2-0.5-2	0.5 - 2.0	1.5	DP	Fill	N	N	>0.999	4	CL	Reddish gray CLAY, little mc gravel
--	2.0 - 4.0	2.0	DP	Fill	N	N	0.083	4	CL	Red to gray CLAY, trace cmf gravel
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.031	0	SM	Red to gray CLAY, trace f gravel @ 4.7 fmc GRAVEL @ 5.5 ft Reddish brown mf GRAVEL, little c sand
--	6.0 - 8.0	1.0	DP	Fill	N	N	0.015	0.5	CL	White CLAY, dense @ 6.5 ft becoming Black mf GRAVEL @ 6.8 ft becoming Gray CLAY
--	8.0 - 10.0	2.0	DP	Fill/TMD	N	N	0.047	1.1	GM/PT	Med brown cmf GRAVEL @ 8.5 ft becoming Lt. Gray CLAY, little f gravel @ 8.9 becoming PEAT.
--	10.0 - 12.0	1.0	DP	TMD	N	N	--	--	PT	Peat

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
LP-3											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/27/2001	646,567.5	572,593.5			9.5						
LP-3-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.013	1.9	SW	Gray mf SAND, little mf gravel
--	0.5 - 2.0	1.0	DP	Fill	N	N		0	1	SP	Orange f SAND
--	2.0 - 4.0	0.0	DP	Fill	--	--		--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	N	N		0.005	1.2	SW	Orange f SAND @4.8 becoming Black mf GRAVEL @ 5.5 ft becoming Lt gray Silty CLAY, shards of glass, moist
--	6.0 - 8.0	2.0	DP	Fill	N	N		0	0	ML	Lt Gray Silty CLAY, shards of glass, moist @ 6.5 becoming Orange CLAY, some f Sand
--	8.0 - 10.0	2.0	DP	Fill	N	N		0.007	1	ML	Brownish orange Clayey SILT, trace f Gravel, saturated
--	10.0 - 12.0	2.0	DP	Fill/TMD	N	N		0.011	0.3	ML/PT	Lt Gray SILT @ 11 ft becoming PEAT.
LP-4											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/21/2001	646,549.1	572,575.4			8.9						
LP-4 0-.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.029	13.8	SW	Med brown cmf SAND, some mc Gravel
LP-4 .5-2	0.5 - 2.0	1.5	DP	Fill	N	N		>0.999	32.7	SW	Med brown cmf SAND, some mc Gravel
--	2.0 - 4.0	1.0	DP	Fill	N	N		>0.999	5.1	SM	Med brown cmf SAND, some mc Gravel @ 2.5 ft becoming Red mc SAND, little silt

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
--	4.0 - 6.0	2.0	DP	Fill	N		N	>0.999	2.1	SC	Med brown to black cmf SAND @ 5.2 ft White CLAY @ 5.3 ft Med brown mc SAND little cmf gravel, sat.
--	6.0 - 8.0	1.0	DP	Fill	N		N	>0.999	0.4	SC	Med brown mc SAND little cmf gravel, saturated @ 6.2 ft becoming White CLAY, saturated.
--	8.0 - 10.0	2.0	DP	Fill/TMD	N		N	>0.999	9.1	OH/PT	Gray CLAY & SILT, saturated @ 9.5 ft becoming PEAT.
--	10.0 - 12.0	2.0	DP	TMD	N		N	--	--	PT	Peat

LP-5

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/27/2001	646,541.9	572,558.1	--

LP-5-0-0.5	0.0 - 0.5	0.5	DP	Fill	N		N	>0.999	1	SC	Med brown cmf SAND, little clay, little mf gravel, trace organics
--	0.5 - 2.0	1.3	DP	Fill	N		N	>0.999	1.2	SC	Med brown cmf SAND, little clay, little mf gravel, trace organics @ 1 ft becoming Silty CLAY, little f sand, trace mf gravel
--	2.0 - 4.0	0.0	DP	Fill	--		--	--	--		NR
--	4.0 - 6.0	1.8	DP	Fill	N		N	0.186	0	SM	Med brown mf SAND and SILT, little f gravel @ 5 ft becoming Black mc GRAVEL, little silt
--	6.0 - 8.0	0.0	DP	Fill	--		--	--	--		NR
--	8.0 - 10.0	2.0	DP	Fill	N		N	0.213	9	CL	Dk brwn CLAY, some mf Gravel @ 8.2 ft Lt gray Silty CLAY trace f gravel @ 9.5 ft c SAND and f GRAVEL, moist
--	10.0 - 12.0	2.0	DP	TMD	N		N	--	--	PT	Peat

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
LP-6											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/27/2001		646,242.9	572,708.0			12					
LP-6-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.037	0.6	SW	Med brown to orange f SAND, trace c gravel
--	0.5 - 2.0	1.5	DP	Fill	N	N		0	0	SP	Orange f SAND
--	2.0 - 4.0	1.0	DP	Fill	N	N		0.058	0	SP	Orange f SAND
LP-6-4-6	4.0 - 6.0	2.0	DP	Fill	N	N		0.477	0	SP	Orange f SAND
--	6.0 - 8.0	2.0	DP	Fill	N	N		0.049	0	SW	Orange to dk brown mf SAND
--	8.0 - 10.0	0.0	DP	Fill	--	--		--	--		NR
--	10.0 - 12.0	0.0	DP	Fill	--	--		--	--		NR
--	12.0 - 14.0	2.0	DP	TMD	N	N		--	--	PT	Peat
--	14.0 - 16.0	2.0	DP	TMD	N	N		--	--	PT	Peat
LP-7											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/24/2001		646,518.6	572,550.9			8.5					
LP-7-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		>0.999	7	SC	Brown mf SAND, some Clay, little mf gravel

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids		MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
					Mercury	Organics				
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.871	1	CL	Gray CLAY @ 1 ft becoming Gray CLAY and c GRAVEL @ 1.2 ft becoming Red CLAY, little mf gravel
--	2.0 - 4.0	1.5	DP	Fill	N	N	0.139	1.5	CL	Lt Gray to red CLAY, little to no mf gravel, moist
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.027	0.9	CL	Red CLAY, little mf gravel @ 5 ft Med brown f SAND, some mc Gravel @ 5.6 ft Med Gray CLAY, moist
--	6.0 - 8.0	1.0	DP	Fill	N	N	0.015	1.1	CL	Med Gray CLAY @ 6.2 ft becoming Med brown mf GRAVEL, some mc Sand, moist
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.011	1.7	ML	Med brown SILT and mf GRAVEL @ 9 ft becoming Lt gray SILT & CLAY, saturated
--	10.0 - 12.0	1.0	DP	Fill	N	N	0.008	1.7	ML	Lt gray SILT & CLAY, saturated
--	12.0 - 14.0	2.0	DP	TMD	N	N	--	--	PT	Peat
--	14.0 - 16.0	1.0	DP	TMD	N	N	--	--	PT	Peat

LP-8

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/24/2001	646,501.8	572,582.8	9.8

LP-8-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0	2.9	SP	Med brown mf SAND
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.023	7	SW	Med brown to gray cmf SAND, some to no c Gravel
--	2.0 - 4.0	1.0	DP	Fill	N	N	0.013	1.7	SC	Orange mf Sand @ 2.8 ft becoming Red CLAY, little mf gravel
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.017	4	GC	Orange f SAND @ 5.5 ft becoming Black mf Gravel, little clay, moist
--	6.0 - 8.0	1.0	DP	Fill	N	N	0.005	0	CL	Gray to white CLAY @ 6.5 ft becoming Med brown to black cmf GRAVEL, little f sand, saturated

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	8.0 - 10.0	2.0	DP	Fill	N	N	0	2.8	CL	Lt gray CLAY, saturated
LP-8-10-12	10.0 - 12.0	2.0	DP	Fill/TMD	N	N	0.037	5	CL/PT	Lt gray CLAY, saturated @ 11 ft becoming PEAT.

LP-9

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/24/2001	646,424.5	572,565.5	9.4

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
LP-9-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.005	0.4	SC	Med brown cmf SAND, some cmf Gravel, trace clay
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.128	0	SC	Med brown cmf SAND, some cmf Gravel, trace clay
--	2.0 - 4.0	2.0	DP	Fill	N	N	0.009	0	SC	Med brown cmf SAND, some cmf Gravel, trace clay @ 3 ft becoming Orange f SAND @ 3.9 ft becoming Gray CLAY
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.009	0.2	SC	Orange f SAND @ 5 ft becoming Lt Gray CLAY, dry to moist
--	6.0 - 8.0	1.0	DP	Fill	N	N	0.051	0	GC	Dk gray mf GRAVEL, some Clay, saturated
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.006	0	SW	Med brown mf SAND @ 9 ft becoming Black mf GRAVEL, little cmf sand, saturated
--	10.0 - 12.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR
--	12.0 - 14.0	0.0	DP	TMD	N	N	--	--	PT	Peat

MW-B16

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
10/3/2001	647,001.3	572,297.6	6.349

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	0.0 - 0.5	0.3	50/5	Fill	N	N	0.02	0.8	SW	Brown cmf SAND, little f gravel
--	0.5 - 2.0	0.0	DP	Fill	--	--	--	--		NR
--	2.0 - 4.0	0.0	26-38-50	Fill	--	--	--	--		NR
--	4.0 - 6.0	1.0	5-7-7-6	Fill	N	N	0.105	8.8	GW	Black f GRAVEL, some cmf Sand, saturated
--	6.0 - 8.0	1.2	2-3-4-4	Fill	N	N	0.121	20	GW	Black f GRAVEL, some cmf Sand, saturated
--	8.0 - 10.0	1.0	2-4-4-3	Fill	N	N	0.048	27	GW	Black f GRAVEL, some cmf Sand, saturated
--	10.0 - 12.0	0.7	2-2-1-1	Fill	N	N	0.108	61	GW	Black f GRAVEL, some cmf Sand, saturated
--	13.0 - 15.0	1.5	1-1-1-2	TMD	N	N	0.003	297	OL	Lt. Gray/brown Clayey SILT, some f Sand, occasional peat, saturated
--	15.0 - 17.0	2.0	10-10-11-4	TMD	N	N	0.003	234	OL/PT	Clayey SILT, some f Sand, occ. peat, sat. @ 16 ft SILT and f SAND, tr. f gravel @ 16.5 ft fm SAND, tr silt, sat.
--	17.0 - 19.0	2.0	9-9-10-12	TMD/GF	N	N	0.006	279	SW	Lt. Gray fm SAND, trace silt, saturated @ 18 ft becoming Red brown SILT, trace f sand, slightly stratified
--	19.0 - 21.0	2.0	14-15-14-50/4	GF/GT	N	N	0	1475	SM	Dk Gray fm SAND, trace Silt @ 20.5 ft becoming Red brown f SAND and SILT, little f gravel, little cm sand
--	24.0 - 26.0	1.5	2-4-6-9	GT	N	N	0	188	ML	Red brown CLAY & SILT, little f gravel, trace fmc sand, saturated
--	29.0 - 31.0	1.5	3-5-7-9	GT	N	N	0.006	34	ML	Red brown SILT & CLAY, trace fmc sand, saturated
--	34.0 - 36.0	1.5	3-5-7-8	GT	N	N	0	88	ML	Red brown CLAY & SILT, little fm gravel, trace fm sand, saturated
--	39.0 - 41.0	0.3	50/3	BR	N	N	0.015	79	GW	Red brown weathered shale

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
PCA-1	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
7/17/2001	646,826.8	571,391.6			7.5						
PCA-1-0-.5	0.0 - 2.0	2.0	DP	Fill	N	N		0.005	0	SM	Dk browm mc SAND, some cmf Gravel @ 0.5 ft becoming Red SILT & CLAY, some cmf Gravel, trace f sand.
--	2.0 - 4.0	1.4	DP	Fill	N	N		0.004	0	ML	Red SILT & CLAY, some cmf Gravel, trace f sand
PCA-1-4-6	4.0 - 6.0	2.0	DP	Fill	N	N		0.005	20	ML	Red SILT & CLAY, some cmf Gravel, trace f sand
--	6.0 - 8.0	2.0	DP	Fill	N	N		0	0	ML	Red SILT & CLAY, some cmf Gravel, trace f sand @ 7 ft becoming Black cmf GRAVEL, saturated.
--	8.0 - 10.0	2.0	DP	Fill	N	N		0.007	0	ML	Red brown SILT & CLAY, little f gravel @ 8.5 ft. becoming Black cmf GRAVEL.
--	10.0 - 12.0	0.4	DP	TMD	N	N		0.005	0	PT	Peat
PCA-2	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
7/17/2001	646,944.0	571,703.6			8.1						
PCA-2-0-.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.493	0	SW	Med brown cmf SAND, some mc Gravel
--	0.5 - 2.0	1.5	DP	Fill	N	N		0.149	--	SM	Red brown f SAND and SILT, trace organics
--	2.0 - 4.0	2.0	DP	Fill	N	N		0.157	--	SM	Red brown f SAND and SILT, trace organics
--	4.0 - 6.0	2.0	DP	Fill	N	N		0.007	0	ML	Red brown SILT & CLAY

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
--	6.0 - 8.0	2.0	DP	Fill	N		N	0.006	0	SM	Orange mf SAND, little silt
--	8.0 - 10.0	2.0	DP	Fill	N		N	0.054	0	ML	Red SILT & CLAY @ 8.5 ft becoming Orange mf SAND, little silt, saturated
--	10.0 - 12.0	2.0	DP	Fill/TMD	N		N	0.05	0	SM	Orange mf SAND, little silt, saturated @ 10.5 ft becoming Red f SAND and SILT, little clay @ 11.5 ft becoming PEAT.

PCA-3

State Plane Coordinates (ft. NAD83) G.S. Elev. (ft. NGVD29)

9/13/2001 646,473.7 572,050.6 8.1

PCA-3-0-0.5	0.0 - 0.5	0.5	DP	Fill	N		N	0.024	4.5	SW	Lt brown f SAND, little f gravel, trace organics
--	0.5 - 2.0	1.5	DP	Fill	N		N	0.009	7	SW	Black cmf SAND, little f gravel, cinders
--	2.0 - 4.0	1.0	DP	Fill	N		N	0.008	7.6	SW	Black cmf SAND, little f gravel
PCA-3-4-6	4.0 - 6.0	2.0	DP	Fill	N		N	0.015	11	GW	Black mf GRAVEL, some c Sand, saturated @ 5.5 ft
--	6.0 - 8.0	1.0	DP	Fill	N		N	--	--	GW	Black mf GRAVEL, some c Sand, saturated

PCA-4

State Plane Coordinates (ft. NAD83) G.S. Elev. (ft. NGVD29)

9/13/2001 646,258.3 572,204.8 8.1

PCA-4-0-0.5	0.0 - 0.5	0.5	DP	Fill	N		N	0.006	>250	SW	Med brown cmf SAND, little mf gravel
--	0.5 - 2.0	1.5	DP	Fill	N		N	0	1.7	ML	Reddish brown SILT & CLAY, little f sand, little mf gravel, dry

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	2.0 - 4.0	1.5	DP	Fill	N	N	0	1.7	ML	Reddish brown SILT & CLAY, little f sand, little mf gravel, dry
PCA-4-4-6	4.0 - 6.0	2.0	DP	Fill	N	Y	0.006	365	CL/GW	Red CLAY @ 5 ft Black mf GRAVEL, little cmf sand, moist
--	6.0 - 8.0	0.0	DP	Fill?	--	--	--	--		NR

PCA-5

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/7/2001	646,665.9	572,391.6	8.2

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
PCA-5-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.003	8	SC	Med brown cmf SAND, some Clay, moist
PCA-5-0.5-2	0.5 - 2.0	1.5	DP	Fill	N	N	0	5.6	SC	Med brown cmf SAND, some Clay, moist @ 0.7 ft becoming Red CLAY, some mf Gravel, dense
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
--	4.0 - 6.0	1.5	DP	Fill	N	N	0	4.8	CL	Med brown CLAY, little f sand
--	6.0 - 8.0	0.0	DP	Fill?	--	--	--	--		NR

PCA-6

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/7/2001	646,793.7	572,287.1	8

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
PCA-6-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0	7	CL	Red CLAY, some cmf Sand, little mf gravel
--	0.5 - 2.0	1.5	DP	Fill	N	N	0	7	CL	Red CLAY, some cmf Sand, little mf gravel @ 1 ft becoming Black mf GRAVEL, little clay, moist

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	N	N	0	4	CL	Med brown CLAY, some mf Gravel, saturated
--	6.0 - 8.0	2.0	DP	Fill	N	N	0	7	GW	Black mf GRAVEL

RR-1

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/22/2001	646,555.1	572,102.1	8.7

RR-1 0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0	123	GW	Med brown mc GRAVEL and cmf SAND, trace organics
--	0.5 - 2.0	1.5	DP	Fill	N	N	0	164	GW	Med brown mc GRAVEL and cmf SAND, trace organics @ 1.5 ft becoming Gray CLAY, little m gravel.
--	2.0 - 4.0	1.0	DP	Fill	N	N	0	71.7	CL	Gray CLAY, little m gravel @ 2.5 ft becoming Red CLAY, trace m gravel.
--	4.0 - 6.0	2.0	DP	Fill	N	N	0	164	CL	Red CLAY, some c Gravel
--	6.0 - 8.0	2.0	DP	Fill	N	N	0	148	CL	Red CLAY, some c Gravel, moist
--	8.0 - 10.0	2.0	DP	Fill	N	N	0	>250	CL	Med brown CLAY, some c Gravel, little mf sand @ 9 ft becoming Black CLAY, moist.
--	10.0 - 12.0	1.0	DP	Fill	N	N	0	145	CL	Red Clay, moist
--	12.0 - 14.0	2.0	DP	Fill	N	N	0.007	>250	SC	Med brown cmf SAND some Clay, saturated
RR-1 14-16	14.0 - 16.0	2.0	DP	Fill	N	N	0.047	>250	SC	Med brown cmf SAND, some Clay @ 14.5 ft becoming Dk gray to red CLAY, some mf GRAVEL
--	16.0 - 18.0	2.0	DP	Fill	N	N	0.085	>250	CL	Red CLAY, little mf GRAVEL. Refusal @ 18 ft.

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
RR-10											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
10/12/2001		645,686.8	572,775.3				--				
RR-10 0-.5	0.0 - 0.5	0.5	DP	Fill	N	N		0	13.7		
RR-11											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
10/12/2001		645,586.1	572,862.7				--				
RR-11 0-.5	0.0 - 0.5	0.5	DP	Fill	N	N		0	4.2		
RR-12											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
10/12/2001		645,479.9	572,946.3				--				
RR-12 0-.5	0.0 - 0.5	0.5	DP	Fill	N	N		0	4.2		
RR-2											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/13/2001		646,433.1	572,150.1				8.1				
RR-2-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.006	4	GW	Dk brown cmf GRAVEL, little c sand, moist
--	0.5 - 2.0	1.5	DP	Fill	N	N		0.003	2.6	GW	Med brown c GRAVEL, little clay @ 1.7 ft becoming Reddish brown CLAY little mf gravel, dense, moist
--	2.0 - 4.0	0.0	DP	Fill	--	--		--	--		NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.005	6	ML	Wood pieces @ 4.2 Lt gray SILT & CLAY @ 4.5 ft Dk brown f GRAVEL, some cmf Sand, moist to sat.
--	6.0 - 8.0	0.0	DP	Fill	--	--	--	--		NR
RR-2-8-10	8.0 - 10.0	2.0	DP	Fill	N	N	0	16	SW	Reddish brown to black c SAND and f GRAVEL, saturated
--	10.0 - 12.0	1.5	DP	TMD	N	N	--	--	PT/PT	Peat

RR-3

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/13/2001	646,319.2	572,120.1	7.7

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
RR-3-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.015	99	SC	Med brown cmf SAND and mf GRAVEL, trace clay, trace glass fragments
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.009	245	SC	Dk brown mc SAND, little f gravel @ 1 ft becoming Red CLAY, little mf gravel, very dense
--	2.0 - 4.0	1.5	DP	Fill	N	N	0.008	143	CL	Red CLAY, little mf gravel, very dense
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.007	172	CL	Red CLAY, little mf gravel, very dense
--	6.0 - 8.0	2.0	DP	Fill	N	N	0.008	60	CL	Red CLAY, little to some mf gravel @ 7.5 ft becoming Black mf GRAVEL, little cmf sand, dry to saturated
--	8.0 - 10.0	2.0	DP	Fill/TMD	N	N	0.008	54	GW/PT	Black mf GRAVEL, little cmf sand, saturated @ 9 ft becoming PEAT.
--	10.0 - 12.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
RR-4	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/10/2001	646,314.6	572,216.0			8.2						
RR-4-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.018	6.2	SW	Brown mf SAND, some cm Gravel
--	0.5 - 2.0	1.0	DP	Fill	N	N		0.019	0.6	SW	Dk brown cmf SAND, some mf Gravel
--	2.0 - 4.0	0.0	DP	Fill	--	--		--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	N	N		0.019	3.7	SW	Dk brown to black cmf SAND, little mf gravel, wet,
RR-4-6-8	6.0 - 8.0	2.0	DP	Fill	N	Y		0.026	27	SW	Dk brown mc SAND, some mf Gravel
--	8.0 - 10.0	1.2	DP	Fill/TMD	N	Y		0.024	180.1	SW/PT	Black cmf SAND, little mf gravel, wet, @ 9 ft becoming PEAT.
--	10.0 - 12.0	0.0	DP	TMD?	--	--		--	--	PT	Peat?, NR
RR-5	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/10/2001	646,192.8	572,330.4			8.2						
RR-5-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.03	2.8	SW	Brown mf SAND, some cmf Gravel, dry
--	0.5 - 2.0	1.5	DP	Fill	N	N		0	1.7	SW	Black to brown cmf SAND, little mf gravel, coal fragments?, dry
--	2.0 - 4.0	0.0	DP	Fill	--	--		--	--		NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
--	4.0 - 6.0	2.0	DP	Fill	N	N		0.004	91	SW	Black to brown cmf SAND, some mf Gravel, wet @ 5 ft.
--	6.0 - 8.0	0.0	DP	Fill	--	--		--	--		NR
--	8.0 - 10.0	1.5	DP	Fill	N	N		0.006	126	SW	Black cmf SAND, some mf Gravel, wet
--	10.0 - 12.0	0.0	DP	Fill?	--	--		--	--		NR
--	12.0 - 14.0	0.0	DP	TMD?	--	--		--	--	PT	Peat?, NR
--	14.0 - 16.0	0.0	DP	TMD?	--	--		--	--	PT	Peat?, NR

RR-6

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/10/2001	646,082.8	572,475.9	7.9

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
RR-6-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.005	1	SW	Brown mf SAND, some Gravel, trace organics
--	0.5 - 2.0	1.5	DP	Fill	N	N		0	1.5	ML	SILT & CLAY, trace cmf gravel @ 1.5 ft becoming cmf SAND, little mf gravel, little silt
--	2.0 - 4.0	1.0	DP	Fill	N	N		0	2.4	SM	Brown cmf SAND, little mf gravel, little silt, little clay
--	4.0 - 6.0	2.0	DP	Fill	N	N		0.003	3.3	ML	Red-brn SILT & CLAY, trace mf gravel @ 4.5 ft mf SAND and mf GRAVEL @ 5.5 Black mf SAND tr, gravel, organics,
RR-6-6-8	6.0 - 8.0	0.0	DP	Fill	--	--		--	--		NR
--	8.0 - 10.0	1.5	DP	Fill	N	Y		0.006	44.1	ML	Reddish brown Clayey SILT, trace gravel @ 8.5 ft become cmf SAND @ 9.5 ft Olive cmf SAND, some Gravel
--	10.0 - 12.0	0.0	DP	Fill	--	--		--	--		NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	12.0 - 14.0	2.0	DP	TMD	N	N	--	--	PT	Peat
--	14.0 - 16.0	2.0	DP	TMD	N	N	--	--	PT	Peat

RR-7

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/10/2001	646,058.1	572,549.0	7.5

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
RR-7-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.021	29.2	GM	Reddish brown mf GRAVEL, little mf sand @ 0.2 ft becoming SILT & CLAY, little mf gravel
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.668	12.5	ML	Reddish brown SILT & CLAY, little mf gravel
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.118	6.5	SM	Reddish brown f SAND, some Silt & Clay, little mf gravel
--	6.0 - 8.0	1.0	DP	Fill	N	N	--	--	SM	Reddish brown f SAND, some Silt & Clay, little mf gravel
--	8.0 - 10.0	2.0	DP	Fill/TMD	N	Y	0.03	8.7	SM/PT	Reddish brown f SAND some Silt & Clay, little mf gravel @ 8.3 ft mf GRAVEL and cm SAND, @ 8.5 ft PEAT.
--	10.0 - 12.0	2.0	DP	TMD	N	N	--	--	PT	Peat

RR-8

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/26/2001	645,899.5	572,595.2	7.8

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
RR-8-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.017	1	GW	Dk brown mf GRAVEL, some mc Sand, little c gravel

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.012	1.2	GW	Dk brown mf GRAVEL, some mc Sand, little c gravel
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.008	65	GW	Black cmf Gravel, saturated
RR-8-6-8	6.0 - 8.0	1.2	DP	Fill/TMD	N	N	0.007	175	GW/PT	Black cmf Gravel, saturated @ 7 ft becoming PEAT.

RR-9

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
10/12/2001	645,805.3	572,665.0	--

RR-9 0-.5	0.0 - 0.5	0.5	DP	Fill	N	N	0	12		

SC-1

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/21/2001	646,140.4	573,027.1	--

SC-1	0.0 - 1.0		DP	Fill	--	--	--	--	SW	Sandy loam

SC-2

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/22/2001	646,117.4	573,142.4	--

SC-2	0.0 - 1.0		DP	Fill	--	--	--	--	SM	Sandy, Topsoil

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
SC-3	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/22/2001		646,087.2	573,242.7				--				
SC-3	0.0 - 1.0			DP	Fill	--	--	--	--	SM	Sandy, Topsoil
SED-1	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/22/2001		646,736.8	572,545.7				--				
SED-1 (0.0-0.5FT)	0.0 - 0.5	0.5		DP	SBC Sed	--	--	--	--	GP	Dark GRAVEL, loose sediment
SED-1 (0.5-1.0FT)	0.5 - 1.0	0.5		DP	SBC Sed	--	--	--	--	GW	Dark GRAVEL, loose sediment
SED-1 (1.0-1.5FT)	1.0 - 1.5	0.5		DP	SBC Sed	--	--	--	--	GW	Dark GRAVEL, loose sediment
SED-2	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/22/2001		646,746.3	572,665.0				--				
SED-2 (0.0-0.5FT)	0.0 - 0.5	0.4		DP	SBC Sed	--	--	--	--	ML	Silt, loose sediment
SED-2 (0.5-1.0FT)	0.5 - 1.0	0.4		DP	SBC Sed	--	--	--	--	GP	Dark GRAVEL
SED-2 (1.0-1.5FT)	1.0 - 1.5	0.4		DP	SBC Sed	--	--	--	--	GP	Dark GRAVEL

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
SED-3	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/22/2001		646,498.2	572,819.0				--				
SED-3 (0.0-0.5FT)	0.0 - 0.5	0.6	DP	SBC Sed	--	--	--	--	--	SM	SAND, some Silt
SED-3 (0.5-1.0FT)	0.5 - 1.0	0.6	DP	SBC Sed	--	--	--	--	--	GW/ML	Sandy GRAVEL (top), silty clay (bottom)
SED-3 (1.0-1.5FT)	1.0 - 1.5	0.6	DP	SBC Sed	--	--	--	--	--	ML	Silty CLAY, heavy vegetation
SED-4	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/22/2001		646,188.8	572,991.4				--				
SED-4 (0.0-0.5FT)	0.0 - 0.5	0.6	DP	SBC Sed	--	--	--	--	--	SW	SAND and GRAVEL
SED-4 (0.5-1.0FT)	0.5 - 1.0	0.6	DP	SBC Sed	--	--	--	--	--	CL	CLAY and GRAVEL
SED-5	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/22/2001		646,101.7	573,275.0				--				
SED-5 (0.0-0.5FT)	0.0 - 0.5	0.7	DP	SBC Sed	--	--	--	--	--	ML	SILT & CLAY, vegetation
SED-5 (0.5-1.0FT)	0.5 - 1.0	0.7	DP	SBC Sed	--	--	--	--	--	ML	SILT & CLAY, vegetation
SED-5 (1.0-1.5FT)	1.0 - 1.5	0.7	DP	SBC Sed	--	--	--	--	--	ML	SILT & CLAY, vegetation

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
SED-6	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
11/20/2001	646,020.8	573,557.6			--						
SED-6 (0.0-0.5FT)	0.0 - 0.5		DP		--	--	--	--	--		
SED-6 (0.5-1.0FT)	0.5 - 1.0		DP		--	--	--	--	--		
SED-6 (1.0-1.5FT)	1.0 - 1.5		DP		--	--	--	--	--		
SILO-B1	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/6/2001	646,304.7	572,345.4			8.5						
SILO-B1-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0	11		GM	Black mf GRAVEL, some f Sand, little clay
--	0.5 - 2.0	1.5	DP	Fill	N	N	0	9		CL	Reddish brown CLAY, trace f sand
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--			NR
--	4.0 - 6.0	2.0	DP	Fill	N	N	0	81		CL	Reddish brown CLAY, some f Sand
SILO-B1-6-8	6.0 - 8.0	2.0	DP	Fill	N	N	0	166		CL	Black CLAY, some Organics
--	8.0 - 10.0	0.0	DP	Fill	--	--	--	--			NR
--	10.0 - 12.0	0.0	DP	Fill	--	--	--	--			NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	12.0 - 14.0	2.0	DP	TMD	N	N	--	--	PT	Peat
--	14.0 - 16.0	1.0	DP	TMD	N	N	--	--	PT	Peat
SILO-B2	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
9/6/2001	646,280.4	572,323.8			8.4					
SILO-B2-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0	10	SW	Dk brown cmf SAND, some mf Gravel
--	0.5 - 2.0	1.5	DP	Fill	N	N	0	7.9	SW	Dk brown cmf SAND, some mf Gravel @ 1 ft c. GRAVEL, some cmf Sand @ 1.3 ft red CLAY, little gravel, little mf sand
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
--	4.0 - 6.0	1.0	DP	Fill	N	N	0	26	CL	Dk brown CLAY, some mc Gravel, saturated
--	6.0 - 8.0	0.0	DP	Fill	--	--	--	--		NR
--	8.0 - 10.0	1.2	DP	Fill/TMD	N	N	0	>250	GW/PT	Black mf Gravel, some c Sand, saturated @ 9 ft becoming PEAT.
--	10.0 - 12.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR
SILO-B3	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)					
9/6/2001	646,306.2	572,297.2			8.4					
SILO-B3-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0	14	GW	Black mf GRAVEL

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	0.5 - 2.0	1.5	DP	Fill	N	N	0	0.8	CL	Red CLAY, trace f gravel, dense
--	2.0 - 4.0	1.0	DP	Fill	N	N	0	9	CL	Red CLAY, trace f gravel, dense
--	4.0 - 6.0	2.0	DP	Fill	N	N	0	7	CL	Med brown to red CLAY, some to little mf Gravel, moist to saturated
SILO-B3-6-8	6.0 - 8.0	1.5	DP	Fill/TMD	N	N	0	15	CL/PT	Red CLAY, trace f gravel, saturated @ 7 ft becoming PEAT.

SILO-B4

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/6/2001	646,330.8	572,321.0	8.5

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
SILO-B4-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.005	8	GC	Med brown cmf GRAVEL and CLAY, some cmf Sand
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.004	16	GC	Med brown cmf GRAVEL and CLAY, some cmf Sand @ 0.7 ft becoming Black f GRAVEL and mf SAND, little clay, moist
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.003	14	CL	Reddish brown CLAY, some mc Gravel, saturated
--	6.0 - 8.0	0.0	DP	Fill	--	--	--	--		NR
--	8.0 - 10.0	2.0	DP	TMD	N	N	0	27	CL	Reddish brown CLAY, some mc Gravel, saturated
--	10.0 - 12.0	2.0	DP	TMD	N	N	0.003	37	PT	Peat @ 10.5 ft becoming Reddish brown CLAY, trace mf gravel

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
SPR-1	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/5/2001	647,007.5	572,500.3			6.5						
SPR-1-0-0.5	0.0 - 2.0	0.7	DP	Fill	N	N		0.396	63	GW	c GRAVEL, little mf sand, chunks of wood
--	2.0 - 4.0	0.0	DP	Fill	--	--		--	--		NR
--	4.0 - 6.0	0.0	DP	Fill	--	--		--	--		NR
--	6.0 - 8.0	0.0	DP	Fill	--	--		--	--		NR
SPR-1-8-10	8.0 - 10.0	2.0	DP	Fill	N	N		0.011	24	GW	Black f GRAVEL, some c Sand, cinders
--	10.0 - 12.0	0.0	DP	TMD	--	--		--	--	PT	Peat in shoe, NR
SPR-2A	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
7/19/2001	647,032.0	572,302.5			6.5						
SPR-2A-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.029	18	SW	Med brown c GRAVEL and cmf SAND
--	0.5 - 2.0	1.5	DP	Fill	N	N		0.024	12.3	GW	Black mf GRAVEL
--	2.0 - 4.0	0.0	DP	Fill	--	--		--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	N	N		0.022	25.1	GC	Black cmf GRAVEL, little red clay

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	6.0 - 8.0	1.0	DP	Fill	N	N	0.025	14.4	GC	Black cmf GRAVEL, little red clay
SPR-2A-8-10	8.0 - 10.0	2.0	DP	Fill	N	N	0.024	28	GW	Black mc GRAVEL, moist
--	10.0 - 12.0	0.0	DP	TMD?	--	--	--	--	PT	Soft probably Peat, NR.

SPR-2B

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
7/19/2001	646,993.1	572,305.4	6.7

SPR-2B-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.037	1	GW	Gray cmf GRAVEL, some cmf Sand, little asphalt
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.024	7	GW	Gray cmf GRAVEL, some cmf Sand, little asphalt
--	2.0 - 4.0	1.5	DP	Fill	N	N	0.036	42	GM	Gray cmf GRAVEL, some cmf Sand, little asphalt @ 3 ft becoming Red SILT & CLAY, little mc gravel.
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.035	42	GW	Black cmf GRAVEL, moist
--	6.0 - 8.0	2.0	DP	Fill	N	N	0.029	42	GW	Black cmf GRAVEL, moist
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.041	14	GW	Black mf GRAVEL, little c sand, trace silt, moist
SPR-2B-10-12	10.0 - 12.0	1.8	DP	Fill/TMD	N	N	0.059	14	GW/PT	Black mf GRAVEL, little c sand, trace silt, moist @ 11.6 ft becoming PEAT.

SPR-3

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/21/2001	646,828.7	572,210.7	8.2

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
SPR-3 0-.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.023	2.5	SM	Med reddish brown cmf SAND, little c gravel, trace silt & clay.
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.048	2.1	SM	Med reddish brown cmf SAND, little c gravel, trace silt & clay @ 1 ft becoming Silty CLAY.
--	2.0 - 4.0	0.5	DP	Fill	N	N	0.333	1.7	ML	Reddish brown Silty CLAY
SPR-3 4-6	4.0 - 6.0	2.0	DP	Fill	N	N	0.851	1.5	SW	Medium brown cmf SAND, trace c gravel, trace silt @ 5 ft becoming Black mc SAND, some f Gravel, moist.
--	6.0 - 8.0	1.1	DP	Fill	N	N	0.048	3.8	SW	Black mc SAND, some f Gravel, moist
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.045	13.8	SW	Black mc SAND and f GRAVEL, moist
--	10.0 - 12.0	1.0	DP	Fill	N	N	0.051	93.2	SW	Black mc SAND and f GRAVEL, moist
--	12.0 - 14.0	2.0	DP	Fill	N	N	0.107	8	SW	Black mc SAND, some f Gravel, saturated

SPR-4A

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
7/19/2001	647,024.9	572,323.1	6.5

SPR-4A-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.01	4.2	GW	Gray c GRAVEL, some mf Sand
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.018	13.3	ML	Med brown SILT & CLAY, little cmf gravel
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.031	28.7	GM	Black cmf GRAVEL, little silt @ 5.5 ft becoming Dk Gray SILT & CLAY.
--	6.0 - 8.0	0.0	DP	Fill	--	--	--	--		NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
SPR-4A-8-10	8.0 - 10.0	2.0	DP	Fill/TMD	N	N	0.483	27.2	GP/PT	Black f GRAVEL, trace silt @ 9.5 ft becoming PEAT.
--	10.0 - 12.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR

SPR-4B

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/22/2001	647,009.4	572,370.5	6.7

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
SPR-4B-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.23	189.6	SW	Gray c Gravel @ 0.2 ft becoming Med brown cmf SAND, little mf gravel
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.084	76.4	SW	Med brown cmf SAND, little mf gravel @ 1.5 ft becoming Gray mf Gravel, some cmf Sand.
--	2.0 - 4.0	0.8	DP	Fill	N	N	0.084	>250	GW	Gray mf GRAVEL, some cmf Sand
SPR-4B-4-6	4.0 - 6.0	2.0	DP	Fill	N	N	0.036	132	SW	Med brown mfc Sand, trace mf gravel @ 5 ft becoming Black mf GRAVEL and c SAND (cinders)
--	6.0 - 8.0	0.0	DP	Fill	--	--	--	--		NR
--	8.0 - 10.0	1.0	DP	Fill	N	N	0.049	>250	GW	Black mf GRAVEL, some c Sand, moist
--	10.0 - 12.0	0.0	DP	Fill/TMD	--	--	--	--	PT	PEAT @ 11.5'?, NR

SPR-4C

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/23/2001	647,006.5	572,426.0	6.6

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
SPR-4C-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.108	1.4	CL	Dk brown CLAY, some c Gravel

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.093	23.6	CL	Dk brown CLAY, some c Gravel @ 1 ft becoming Black mc SAND and f GRAVEL
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
SPR-4C-4-6	4.0 - 6.0	2.0	DP	Fill	N	N	0.094	46	SW	Black mc SAND and f GRAVEL, saturated
--	6.0 - 8.0	0.0	DP	Fill	--	--	--	--		NR
--	8.0 - 10.0	1.0	DP	Fill/TMD	N	N	0.052	24.9	SW/PT	Black mc SAND and f GRAVEL, saturated @ 9 ft becoming PEAT.
--	10.0 - 12.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR

SPR-5

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/5/2001	647,058.1	572,121.1	7.3

SPR-5-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.01	3	SW	Dk brown cmf SAND, little mc gravel
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.003	77	SW	Brown cmf SAND, little mc gravel @ 1 ft becoming cmf GRAVEL, little cmf sand
SPR-5-2-4	2.0 - 4.0	1.0	DP	Fill	N	N	0.004	128	SW	Black f GRAVEL and c SAND, cinders, moist
--	4.0 - 6.0	1.2	DP	Fill/TMD	N	N	0.006	46	SW/PT	Black f GRAVEL and c SAND, cinders, moist @ 5 ft becoming PEAT.
--	6.0 - 8.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
SPR-6	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/13/2001	646,824.1	571,826.8			8.1						
SPR-6-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.011	2	SW	Med brown cmf SAND and m GRAVEL
SPR-6-0.5-2	0.5 - 2.0	1.5	DP	Fill	N	N		0.006	1.3	SW	Med brown cmf SAND and m GRAVEL
--	2.0 - 4.0	2.0	DP	Fill	N	N		0.005	0	SW	Med brown cmf SAND and m GRAVEL @ 2.5 ft becoming Red CLAY, little mf gravel
--	4.0 - 6.0	2.0	DP	Fill	N	N		0.006	0	CL	Red CLAY, little mf gravel
--	6.0 - 8.0	2.0	DP	Fill	N	N		0.004	0	CL	Red CLAY, little to none mf gravel, no to little f sand
--	8.0 - 10.0	2.0	DP	Fill	N	N		0.004	1.1	CL	Red CLAY, little f sand
--	10.0 - 12.0	2.0	DP	Fill/TMD	N	N		0.006	0.6	CL/PT	Red CLAY, little f sand @ 11 ft becoming PEAT
SR-1	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
7/17/2001	646,195.5	572,718.6			--						
SR-1-0-.5	0.0 - 0.5	0.5	DP	Fill	N	N		--	--	SP	cmf SAND
SR-2	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
7/17/2001	646,169.3	572,721.7			--						

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
SR-2-0-.5	0.0 - 0.5	0.5	DP	Fill	N	N	--	--	SP	cmf SAND
ST-1	State Plane Coordinates (ft. NAD83)			G.S. Elev. (ft. NGVD29)						
9/5/2001	646,909.6	572,468.1		7.4						
ST-1-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.037	3	SC	Dk brown cmf SAND, some Clay, little mc gravel
--	0.5 - 2.0	1.5	DP	Fill	N	N	0	2	SC	Dk brown cmf SAND, some Clay, little mc gravel
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	N	N	0	2.9	SC	Black cmf SAND, some f Gravel, some Clay @ 5.5 ft becoming Red CLAY
--	6.0 - 8.0	1.0	DP	Fill	N	N	0.003	9	SW	Brown mf SAND @ 6.5 ft becoming Black f GRAVEL, some c Sand
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.04	12	GW	Black f GRAVEL, some c Sand
--	10.0 - 12.0	0.0	DP	TMD	--	--	--	--	PT	Peat in shoe, NR
ST-2	State Plane Coordinates (ft. NAD83)			G.S. Elev. (ft. NGVD29)						
9/5/2001	646,851.6	572,445.8		8						
ST-2-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.198	3	SC	Black cmf SAND, some Clay, little mf gravel
--	0.5 - 2.0	1.5	DP	Fill	N	N	>0.999	2.9	SC	Black cmf SAND, some Clay, little mf gravel

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
--	4.0 - 6.0	0.7	DP	Fill	N	N	0.019	6.5	GW	c GRAVEL and ORGANIC MATERIAL, saturated
--	6.0 - 8.0	0.0	DP	Fill	--	--	--	--		NR
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.039	42	SW	Med brown mf SAND, little mf gravel, little organics, saturated
--	10.0 - 12.0	0.0	DP	Fill	--	--	--	--		NR
--	12.0 - 14.0	2.0	DP	Fill/TMD	N	N	0.035	6.2	SC	Med brown mf SAND, little mf gravel, little organics, saturated @ 13 ft becoming Gray Clay, some Organics
--	14.0 - 16.0	2.0	DP	TMD	N	N	0.726	22	CL	Gray CLAY, some Organics

ST-3

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/4/2001	646,809.0	572,580.2	7.4

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
ST-3-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.035	2.6	SP	Lt brown f SAND
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.003	2.4	SP/GW	Brown f SAND @ 1.5 ft becoming mf GRAVEL some cmf Sand
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
ST-3-4-6	4.0 - 6.0	2.0	DP	Fill/TMD	N	N	0	5.3	SW/PT	Med brown cmf SAND, trace organics @ 5 ft becoming PEAT.
--	6.0 - 8.0	1.0	DP	TMD	N	N	--	--	PT	Peat

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
TLN-1											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/20/2001	647,008.0	572,179.0			6.8						
TLN-1 0-.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.562	0.9	GW	Med brown mc GRAVEL, some mc Sand
TLN-1 .5-2	0.5 - 2.0	1.5	DP	Fill	N	N		0.057	24.3	SW	Reddish brown c SAND and cmf Gravel
--	2.0 - 4.0	1.0	DP	Fill	N	N		0.025	8	SW	Reddish brown c SAND and cmf Gravel @ 2.5 ft becoming CLAY, little f sand.
--	4.0 - 6.0	2.0	DP	Fill	N	N		0.025	1.6	GW	Black cmf GRAVEL, moist
--	6.0 - 8.0	1.2	DP	Fill	N	N		0.035	6.5	GM	Black cmf GRAVEL @ 7 ft becoming Med brown f SAND and SILT, moist to saturated
--	8.0 - 10.0	2.0	DP	Fill/TMD	N	N		0.029	1.9	GW/PT	Med brown cmf GRAVEL, some mf Sand @ 9.5 ft becoming PEAT.
--	10.0 - 12.0	1.0	DP	TMD	N	N		--	--	PT	Peat
TLN-2											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
7/19/2001	647,001.4	572,252.4			6.7						
TLN-2-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.026	10.6	GW	Gray cmf GRAVEL, trace c sand
--	0.5 - 2.0	2.0	DP	Fill	N	N		>0.999	132	GW	Gray cmf GRAVEL, trace c sand
--	2.0 - 4.0	1.0	DP	Fill	N	N		0.06	192.3	GW	Gray cmf GRAVEL, trace c sand @ 3 ft becoming Red CLAY, some mc Gravel

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.028	13	GW	Black cmf GRAVEL, saturated
--	6.0 - 8.0	2.0	DP	Fill	N	N	0.024	7.2	GW	Black cmf GRAVEL, saturated
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.041	59.7	GW	Black cmf GRAVEL, saturated
--	10.0 - 12.0	1.5	DP	TMD	N	N	0.032	9.4	GW	Black cmf GRAVEL, saturated

TLN-3

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
7/17/2001	646,965.2	572,381.1	6.8

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
TLN-3-0-.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.02	--	GW	Med brown cmf GRAVEL, some c Sand
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.011	--	GW	Brown cmf GRAVEL, some cmf Sand
TLN-3-2-4	2.0 - 4.0	2.0	DP	Fill	N	N	0.033	--	CL	Red CLAY, little f gravel @ 3.5 ft becoming Black f GRAVEL and c SAND.
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.018	--	GW	Black mf GRAVEL, little c sand, saturated
--	6.0 - 8.0	2.0	DP	Fill	N	N	0.016	--	GW	Black mf GRAVEL, little c sand, saturated
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.019	--	GW	Black mf GRAVEL, little c sand, saturated
--	10.0 - 12.0	1.0	DP	TMD	N	N	0.022	--	CL	Black CLAY, little organics

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
TLN-4	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/20/2001	646,947.8	572,320.3			6.8						
TLN-4 0-.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.023	0.7	GW	Gray to med brown cmf GRAVEL, some cmf Sand
--	0.5 - 2.0	1.5	DP	Fill	N	N		0.111	0.3	GW	Gray to med brown cmf GRAVEL, some cmf Sand @ 1.5 ft becoming Black f SAND.
--	2.0 - 4.0	1.0	DP	Fill	N	N		0.028	1.3	SW	Reddish brown mf SAND, little f gravel
--	4.0 - 6.0	2.0	DP	Fill	N	N		0.055	0.1	SW	Lt brown cmf SAND some c Gravel @ 4.5 ft becoming mf SAND, some Clay.
--	6.0 - 8.0	2.0	DP	Fill	N	N		0.044	1.1	SC	Lt brown mf SAND, some Clay @ 7 ft becoming Black mf GRAVEL, cinders, saturated
--	8.0 - 10.0	2.0	DP	Fill	N	N		0.056	3	SC	Med brown cmf SAND, some Clay, saturated
--	10.0 - 12.0	2.0	DP	Fill	N	N		0.036	11	SW	Black mf GRAVEL and c SAND, saturated
--	12.0 - 14.0	2.0	DP	Fill	N	N		0.037	3.4	SW	Med brown cmf SAND, little f gravel
--	14.0 - 16.0	2.0	DP	Fill/TMD	N	N		0.035	6.4	SW	Med brown cmf SAND, little f gravel @ 15.8 ft becoming PEAT.
TLN-5	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/20/2001	646,943.1	572,240.9			7						
TLN-5 0-.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.004	3	SW	Med brown mf SAND, some c Gravel

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
TLN-5 .5-2	0.5 - 2.0	1.5	DP	Fill	N	N	0.004	2	SW	Med brown mf SAND, some c Gravel @ 1 ft becoming Gray cmf GRAVEL, little cmf sand
--	2.0 - 4.0	2.0	DP	Fill	N	N	0.014	0.6	CL	Med brown CLAY and f SAND, very dense @ 2.7 ft Black f GRAVEL @ 3.2 ft Red CLAY, little f sand
TLN-5-4-6	4.0 - 6.0	2.0	DP	Fill	N	N	0.11	2	CL	Red CLAY, some mf c Gravel, very dense @ 5.5 ft becoming Red CLAY, soft
--	6.0 - 8.0	1.5	DP	Fill	N	N	0.007	2	CL	Red CLAY, soft @ 7 ft becoming Black mf GRAVEL, cinders
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.015	2	SW	Med brown cmf SAND , some f Gravel @ 9.5 ft becoming Black c SAND and f GRAVEL
--	10.0 - 12.0	2.0	DP	Fill	N	N	0.016	13.2	SW	Black c SAND and f GRAVEL
--	12.0 - 14.0	0.0	DP	TMD	N	N	--	--	PT/PT	Peat
--	14.0 - 16.0	0.0	DP	TMD	N	N	--	--	PT	Peat

TLN-6

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/20/2001	646,963.3	572,176.2	7.1

TLN-6 0-.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.028	9	SW	Med brown cmf SAND, some c Gravel, trace organics
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.004	5.2	SW	Med brown cmf SAND, some c Gravel, trace organics @ 1 ft becoming Gray mc GRAVEL, some mc Sand.
--	2.0 - 4.0	1.0	DP	Fill	N	N	0.003	11	GW	Gray mc GRAVEL, some mc Sand @ 2.2 ft becoming Black mc SAND, some c Gravel.
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.011	2.1	SW	Black cmf SAND, little mc gravel @ 4 ft Orange CLAY, trace f gravel @ 5.8 ft Black cmf GRAVEL, moist.
--	6.0 - 8.0	2.0	DP	Fill	N	N	0	0	GW	Black cmf GRAVEL, moist

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	8.0 - 10.0	2.0	DP	Fill	N	N	0	0	GW	Black cmf GRAVEL
--	10.0 - 12.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR

TLS-1

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/5/2001	646,892.8	572,182.3	8.9

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
TLS-1-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0	3.8	GW	Med brown c GRAVEL, some cmf Sand
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.009	4	GW	Med brown mf GRAVEL, some cmf Sand @ 1 ft becoming Reddish brown CLAY
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	N	N	0	3.6	CL	Reddish brown CLAY, little f gravel
--	6.0 - 8.0	1.0	DP	Fill	N	N	0.004	2.3	GP	Black f GRAVEL and c SAND
--	8.0 - 10.0	2.0	DP	Fill	N	N	0	2.5	CL	Med brown CLAY, some mf Gravel @ 9 ft becoming Black f GRAVEL and c SAND, cinders?
--	10.0 - 12.0	2.0	DP	Fill	N	N	0.005	3.4	GP	Black f GRAVEL and c SAND, cinders?
--	12.0 - 14.0	2.0	DP	Fill	N	N	0.04	2.9	GW	Black mf GRAVEL, some c Sand, cinders?
--	14.0 - 16.0	2.0	DP	Fill/TMD	N	N	0.15	8	CL/PT	Black CLAY, dense @ 15 ft becoming PEAT.

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
TLS-10											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/21/2001		646,799.7	572,211.5			8.3					
TLS-10 0-.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.075	1.5	GW	Med brown cmf GRAVEL, little cmf sand
--	0.5 - 2.0	1.5	DP	Fill	N	N		0.16	1.7	SW	Med brown cmf SAND, some mf Gravel @ 1.5 ft becoming Med reddish brown CLAY, trace organics.
--	2.0 - 4.0	1.0	DP	Fill	N	N		0.018	12	CL	Med reddish brown CLAY, trace organics
--	4.0 - 6.0	2.0	DP	Fill	N	N		0.017	2.1	CL	Red CLAY, trace mc gravel
--	6.0 - 8.0	2.0	DP	Fill	N	N		0.028	11.5	GW	Black mf GRAVEL, moist
TLS-10 8-10	8.0 - 10.0	2.0	DP	Fill	N	N		0.091	321	GW	Black mf GRAVEL, saturated
--	10.0 - 12.0	2.0	DP	Fill/TMD	N	N		0.16	175	GW/PT	Black mf GRAVEL, saturated @ 11 ft becoming PEAT.
TLS-11											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/7/2001		646,780.3	572,151.3			8.6					
TLS-11-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.003	6.7	SC	Med brown cmf SAND, little mf gravel, little clay
--	0.5 - 2.0	1.5	DP	Fill	N	N		0	20.6	SC	Med brown cmf SAND, little mf gravel, little clay @ 1 ft becoming CLAY, little cmf sand, little f gravel
--	2.0 - 4.0	0.0	DP	Fill	--	--		--	--		NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	4.0 - 6.0	0.3	DP	Fill	N	N	0	7	GW	Med brown mc GRAVEL, saturated
--	6.0 - 8.0	0.0	DP	Fill	--	--	--	--		NR
--	8.0 - 10.0	0.5	DP	Fill	N	N	0	8	SW	Med brown cmf SAND, some f Gravel, saturated
--	10.0 - 12.0	0.0	DP	Fill	--	--	--	--		NR

TLS-2

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
9/7/2001	646,895.3	572,219.2	7.8

TLS-2-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.061	7	SW	Dk brown cmf SAND, some mc Gravel
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.026	8	SW	Dk brown cmf SAND, some mc Gravel @ 1 ft becoming Reddish to dk brown CLAY, some cmf Sand, little cmf gravel
--	2.0 - 4.0	1.5	DP	Fill	N	N	0.023	5.6	CL	Reddish to dk brown CLAY, some cmf Sand, little f gravel
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.024	4.2	GW	Black mf GRAVEL, cinders, moist
TLS-2-6-8	6.0 - 8.0	1.5	DP	Fill	N	N	0.028	5.9	GW	Black mf GRAVEL, cinders, moist
--	8.0 - 10.0	2.0	DP	Fill	N	N	0.013	12.3	GW	Black f GRAVEL, cinders, saturated
--	10.0 - 12.0	0.5	DP	Fill/TMD?	N	N	0.007	12	GM/PT	Black f GRAVEL, cinders, saturated @ 11ft? becoming PEAT.
--	12.0 - 14.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR
--	14.0 - 16.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
TLS-3											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/21/2001	646,907.7	572,440.8			7.5						
TLS-3 0-.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.024	1.7	GW	Med brown mc GRAVEL, trace mc sand
--	0.5 - 2.0	1.5	DP	Fill	N	N		0.071	25	GW	Med brown cmf GRAVEL, some mc Sand @ 1.8 ft becoming cmf SAND.
--	2.0 - 4.0	0.0	DP	Fill	--	--		--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	N	N		0.058	1.7	GW	Black mf GRAVEL and c SAND, moist
--	6.0 - 8.0	2.0	DP	Fill	N	N		0.112	2.6	GW	Black mf GRAVEL and c SAND, moist
--	8.0 - 10.0	2.0	DP	Fill	N	N		0.142	11.2	GW	Black mf GRAVEL and c SAND, moist
--	10.0 - 12.0	1.0	DP	TMD	N	N		--	--	PT	Peat
TLS-4											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/7/2001	646,867.4	572,412.7			7.9						
TLS-4-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0	10	SW	Med brown cmf SAND and mf GRAVEL
--	0.5 - 2.0	1.5	DP	Fill	N	N		0	0	SW	Med brown cmf SAND and mf GRAVEL
--	2.0 - 4.0	1.0	DP	Fill	N	N		0	0	GW	Black c GRAVEL, little cmf sand

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	4.0 - 6.0	2.0	DP	Fill	N	N	0	2	CL	Red CLAY, some Organics, some mc Sand @ 4.5 ft becoming Black mf GRAVEL, saturated
--	6.0 - 8.0	1.0	DP	Fill	N	N	0	9	GW	Black mf GRAVEL, saturated
TLS-4-8-10	8.0 - 10.0	2.0	DP	Fill	N	N	0	16	GW	Black mf GRAVEL, saturated
--	10.0 - 12.0	0.4	DP	TMD	N	N	--	--	PT	Peat

TLS-5

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/21/2001	646,787.4	572,403.4	8.2

TLS-5 0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.267	1.3	GW	Med brown cmf GRAVEL, some cmf Sand
--	0.5 - 2.0	1.5	DP	Fill	N	N	>0.999	1.3	CL	Red brown CLAY, some cmf Gravel
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.009	0.2	GW	mf GRAVEL, some cmf SAND, trace silt @ 4.5 ft red-brn CLAY @ 5.5 ft cmf SAND and f GRAVEL, sat.
--	6.0 - 8.0	1.2	DP	Fill	N	N	0.03	0	SW	Black cmf SAND and f GRAVEL, saturated
TLS-5-8-10	8.0 - 10.0	2.0	DP	Fill	N	N	0.017	1	GW	Black cmf GRAVEL, some cmf Sand
--	10.0 - 12.0	1.2	DP	Fill/TMD	N	N	--	--	SW/PT	Black cmf SAND and f GRAVEL, saturated, @ 10.2 ft becoming PEAT.

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
TLS-6											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/21/2001		646,780.6	572,365.0			8.2					
TLS-6 0-.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.007	0.4	GW	Med brown c GRAVEL and cmf SAND
--	0.5 - 2.0	0.0	DP	Fill	--	--		--	--		NR
--	2.0 - 3.0	0.0	DP	Fill	--	--		--	--		NR
TLS-6-3-5	3.0 - 5.0	2.0	DP	Fill	N	N		0.008	10.4	SC	Black cmf SAND and CLAY, some f Gravel
--	5.0 - 7.0	0.0	DP	Fill	--	--		--	--		Refusal @ 7 ft, NR.
TLS-7											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/21/2001		646,832.8	572,358.9			7.9					
TLS-7 0-.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.037	0	GW	Med brown cmf GRAVEL, some mc Sand
--	0.5 - 2.0	1.5	DP	Fill	N	N		0.714	0.4	GW	Med brown cmf GRAVEL, some mc Sand @ 1 ft becoming Reddish brown CLAY and mf SAND, little c gravel
--	2.0 - 4.0	0.0	DP	Fill	--	--		--	--		NR
TLS-8											
	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
9/7/2001		646,827.7	572,279.6			7.9					

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids		MVA (mg/m3)	OVA (ppm)	Soil Description	
					Mercury	Organics			USCS	Burmister
TLS-8-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.003	6.2	SC	Dk brown cmf SAND, some c Gravel, little clay
--	0.5 - 2.0	0.5	DP	Fill	N	N	0	5	SC	Dk brown cmf SAND, some c Gravel, little clay
--	2.0 - 4.0	0.0	DP	Fill	--	--	--	--		NR
--	4.0 - 6.0	2.0	DP	Fill	N	N	0	13	CL	Med brown CLAY, little mf gravel, saturated
TLS-8-6-8	6.0 - 8.0	0.8	DP	Fill	N	N	0.004	8.2	GP	Black f GRAVEL
--	8.0 - 10.0	2.0	DP	Fill	N	N	0	10	GP	Black f GRAVEL
--	10.0 - 12.0	0.0	DP	Fill	--	--	--	--		NR
--	12.0 - 14.0	1.5	DP	Fill/TMD?	N	N	0	5	CL/PT	Med brown CLAY, little f gravel, saturated @ 13.5 ft probably PEAT - very soft.
--	14.0 - 16.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR

TLS-9

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/21/2001	646,786.0	572,271.9	8.1

TLS-9 0-.5	0.0 - 0.5	0.5	DP	Fill	N	N	0.05	1.9	GW	Dk brown cmf GRAVEL, some c Sand
--	0.5 - 2.0	1.5	DP	Fill	N	N	0.053	1.9	GW	Dk brown cmf GRAVEL, some c Sand @ 1 ft becoming Black f GRAVEL and c SAND
--	2.0 - 4.0	0.5	DP	Fill	N	N	0.018	0	CL	Orange CLAY, little f gravel
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.02	16.1	CL	Reddish brown CLAY, some c Sand @ 5.8 ft becoming Black mc SAND and f GRAVEL, moist.

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	6.0 - 8.0	1.0	DP	Fill	N	N	0.022	4	SW	Black mc SAND and f GRAVEL, moist
--	8.0 - 10.0	2.0	DP	Fill/TMD	N	N	0.043	43.2	SW/PT	Black cmf SAND and f GRAVEL, saturated, @ 9.2 ft becoming PEAT.
--	10.0 - 12.0	0.5	DP	TMD	N	N	--	--	PT	Peat

WWT-1

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/23/2001	646,780.0	572,044.8	9.1

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
--	0.0 - 0.5	0.5	DP	Fill	N	N	>0.999	1.6	CL	Red CLAY, some mc Gravel, trace organics
--	0.5 - 2.0	1.5	DP	Fill	N	N	>0.999	1.6	SC	Med Brown cmf SAND, some mc Gravel, little red clay
--	2.0 - 4.0	1.5	DP	Fill	N	N	>0.999	5	SW	Med brown cmf SAND, some mc Gravel, dry to moist
--	4.0 - 6.0	2.0	DP	Fill	N	N	>0.999	1.8	GW	Med brown cmf GRAVEL, some f Sand, little silt
--	6.0 - 8.0	0.0	DP	Fill	--	--	--	--		NR
--	8.0 - 10.0	2.0	DP	Fill	N	N	>0.999	19	ML	Brown SILT, some mc Gravel, little cmf sand, saturated.
--	10.0 - 12.0	1.5	DP	Fill	N	Y	>0.999	133	ML	Brown SILT, some mc Gravel, little cmf sand @ 10.5 ft cmf SAND trace silt @ 11.2 ft Black mc SAND, sat.
WWT-1-12-14	12.0 - 14.0	1.0	DP	Fill	N	N	>0.999	194	GW	Med brown cmf GRAVEL, some mc Sand, little silt, saturated
--	14.0 - 16.0	0.0	DP	Fill?	--	--	--	--		NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids	Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
WWT-1A	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
7/19/2001	646,780.0	572,044.8			--						
WWT-1-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		0.62	5.1	SM	Red brown mf SAND, little silt, little cmf gravel
--	0.5 - 2.0	1.5	DP	Fill	N	N		0.68	4.2	SM	Red brown mf SAND, little silt, little cmf gravel @ 1 ft cement @ 1.3 ft becoming Black mc GRAVEL, some Silt & Clay
--	2.0 - 4.0	1.0	DP	Fill	N	N		>0.999	12.2	SM	Red brown mf SAND, some Silt, little mc gravel
--	4.0 - 6.0	2.0	DP	Fill	N	N		>0.999	--	GW	Brown to black cmf GRAVEL, some Silt
--	6.0 - 8.0	0.0	DP	Fill	--	--		--	--		NR
--	8.0 - 10.0	2.0	DP	Fill	N	N		>0.999	--	ML	Med brown SILT and c GRAVEL, saturated
--	10.0 - 12.0	1.5	DP	Fill	Y	N		>0.999	--	GW	Gray mc GRAVEL, some cmf Sand, saturated @ 11 ft becoming Black c SAND size particles, lustrous.
WWT-2	State Plane Coordinates (ft. NAD83)				G.S. Elev. (ft. NGVD29)						
8/23/2001	646,718.5	572,046.7			9.3						
WWT-2-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N		>0.999	1.4	GC	Med brown mc GRAVEL, some mc Sand, little clay
--	0.5 - 2.0	1.5	DP	Fill	N	N		>0.999	1	GC	Med brown mc GRAVEL, some mc Sand, little clay
--	2.0 - 4.0	1.0	DP	Fill	N	N		>0.999	4	GC	Med brown mc GRAVEL, some mc Sand, little clay

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids		MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
					Mercury	Organics				
--	4.0 - 6.0	2.0	DP	Fill	N	N	>0.999	3.3	GC	mc GRAVEL, some mc Sand, little clay @ 4.7 ft become concrete @ 5.5 ft become mc GRAVEL, little cmf sand, moist
--	6.0 - 8.0	1.5	DP	Fill	N	N	>0.999	19	ML	SILT & CLAY @ 7.5 ft becoming Dk brown c GRAVEL and SILT, saturated
--	8.0 - 10.0	2.0	DP	Fill	N	N	>0.999	10.8	ML	Dk brown Clayey SILT, saturated
--	10.0 - 12.0	2.0	DP	Fill	N	N	>0.999	154	GW	c GRAVEL, little silt, @ 11.5 ft becoming Black mc SAND, some cmf Gravel
WWT-2-12-14	12.0 - 14.0	2.0	DP	Fill	N	N	>0.999	178	GM	Black c GRAVEL, some Silt @ 13 ft Dk brown mf SAND @ 13.9 ft Red CLAY, little mf gravel, saturated
--	14.0 - 16.0	0.0	DP	Fill?	--	--	--	--		NR

WWT-3

	State Plane Coordinates (ft. NAD83)		G.S. Elev. (ft. NGVD29)
8/23/2001	646,638.6	572,035.4	9.1

WWT-3-0-0.5	0.0 - 0.5	0.5	DP	Fill	N	N	>0.999	3	GC	Dk brown mc GRAVEL and mc SAND, little clay
--	0.5 - 2.0	1.5	DP	Fill	N	N	>0.999	7	GC	Dk brown mc GRAVEL and mc SAND, little clay
--	2.0 - 4.0	1.0	DP	Fill	N	N	0.358	1.6	GC	Dk brown mc GRAVEL and mc SAND, little clay
--	4.0 - 6.0	2.0	DP	Fill	N	N	0.317	15	GW	Dk brown mf GRAVEL and cmf SAND, moist
--	6.0 - 8.0	2.0	DP	Fill	N	N	0.468	110	CL	Orange CLAY, some mf Sand, trace m gravel
--	8.0 - 10.0	1.0	DP	Fill	N	N	0.618	121	CL	Orange CLAY, some mf Sand, trace m gravel
--	10.0 - 12.0	0.0	DP	Fill	--	--	--	--		NR

Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6")	Unit	Free Liquids Mercury	Free Liquids Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Soil Description Burmister
WWT-3-12-14	12.0 - 14.0	1.0	DP	Fill/TMD	N	N	0.243	--	GW/PT	Dk brown mc GRAVEL, some cmf Sand, trace silt @ 12.5 ft becoming PEAT.
--	14.0 - 16.0	0.0	DP	TMD?	--	--	--	--	PT	Peat?, NR

Abbreviations:

Blows: DP - Direct Push drilling method, blow counts are not applicable, WOH - weight of hammer, WOR - weight of rods
Unit: TMD - tidal marsh deposits, GF - glacial fluvial, GT - glacial till, BR - bedrock, DC Sed - drainage channel sediment, SBC Sed - South Branch Creek sedimer
Soil Description: NR - indicates no recovery of soil sample, no soil description provided.

BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: DSP-1

Project: *LCP Superfund Site*
Client: *ISP - ESI*
Project No.: *21405.102*
Start Date: *11/19/01*
Finish Date: *11/29/01*

DRILLING DATA

Inspector: *JLP*
Contractor: *ADT Diamond*
Equipment: *Auger rig (CME 75)*
Method: *HSA (casing) / Mud rotary (boring)*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split spoon*	*NA*	*NA*
Diameter:	*2"*	*NA*	*NA*
Other:	*NA*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*NA*
Diameter (ID):	*4"*	*NA*
Coupling:	*NA*	*NA*

WELL DEVELOPMENT

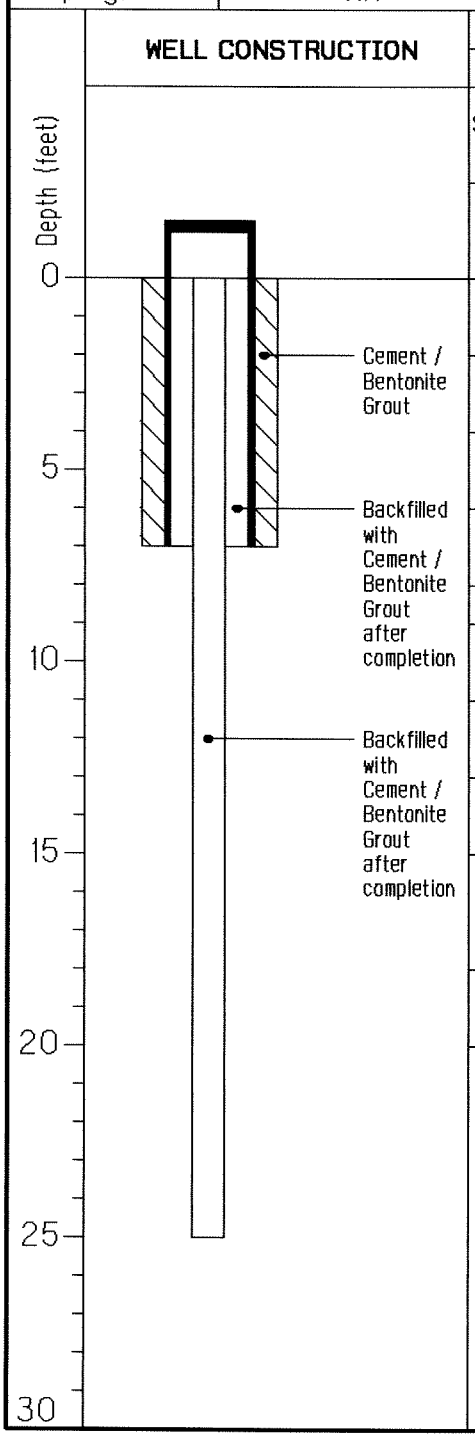
Method: *NA*
Duration: *NA*
Gals. Purged: *NA*
Slug Test: *NA* (cm/sec)

SURVEY DATA

DATUM: NA
Grade: *8.05*
TWC: *NA*
TPC: *NA*
North: *646406.86*
East: *571994.96*

Geophysical Log: ☐ yes ☒ no
Comments:

WELL CONSTRUCTION



SAMPLE DATA

soil / rock

Samp. No. / Run No.	Blows/ 6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	HNU (ppm)
S-1	5-5-8-9	1.5	CL	NA
S-2	9-5-6-7	1	CL	NA
S-3	6-5-4-7	1	CL	NA
S-4	4-2-1-1	1	GP/PT	NA
S-5	10-10-3-3	1	NA	NA
S-6	1-1-1-2	1.5	PT	NA
S-7	1-1-2-3	.3	CL	NA
S-8	4-5-9-12	1	ML	NA
S-9	11-17-19-50/5	1.5	ML	NA

VISUAL CLASSIFICATION

FILL
@ 0' Black fmc SAND, little f Gravel
@ 1.5' Red CLAY, some to no shale fragments

Black fm GRAVEL — 6.5

TIDAL MARSH DEPOSIT (Peat)
@ 6.5 PEAT

(Organic silt) — 11
@ 10' Medium brown CLAY AND PEAT

GLACIAL TILL
Reddish brown CLAY, some f Sand, little fm Gravel
Reddish brown CLAY & SILT, some minus to little plus fm Gravel

19.4

PASSAIC FORMATION
Weathered Shale
End of boring @ 20'

REMARKS

BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: **DC-B12**

Project: *LCP Superfund Site*
Client: *ISP - ESI*
Project No.: *21405.102*
Start Date: *10/3/01*
Finish Date: *11/30/01*

DRILLING DATA

Inspector: *JLP*
Contractor: *Handex / ADT Diamond*
Equipment: *Auger rig (CME 75)*
Method: *HSA (casing) / Mud rotary (boring)*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split spoon*	*NA*	*NA*
Diameter:	*2"*	*NA*	*NA*
Other:	*NA*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*NA*
Diameter (ID):	*2"*	*NA*
Coupling:	*NA*	*NA*

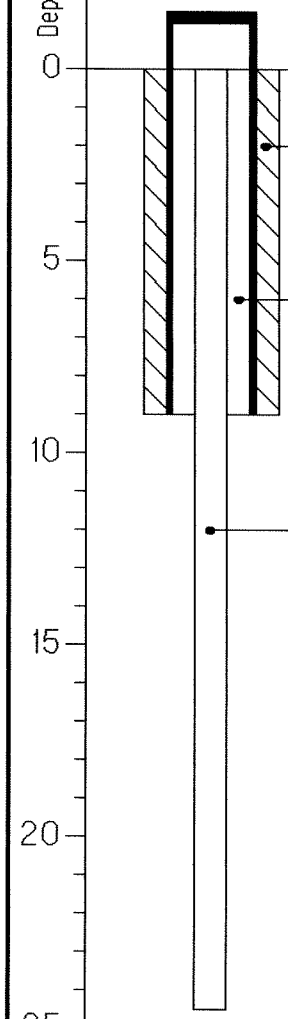
WELL DEVELOPMENT

Method: *NA*
Duration: *NA*
Gals. Purged: *NA*
Slug Test: *NA* (cm/sec)

SURVEY DATA

DATUM: NA
Grade: *7.21*
TWC: *NA*
TPC: *NA*
North: *646152.05*
East: *572422.12*

Geophysical Log: ☐ yes ☒ no
Comments:



SAMPLE DATA

Samp. No. / Run No.	Blows/ 6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	HNU (ppm)
S-1	32-28	.5	GW	NA
S-2	6-34-30	.2	GW	NA
S-3	2-5-4-37	0	NA	NA
S-4	10-7-2-1	1	GW/PT	NA
S-5	9-8-2-1	1	GW/PT	NA
S-6	1-1-1-1	1.7	OL	NA
S-7	wt. of h.	2	OL	NA
S-8	4-8-8-13	2	OL	NA
S-9	10-8-12-13	1	SC	NA
S-10	15-6-6-6	.8	CL	NA
S-11	8-8-5-11	1.5	CL	NA

VISUAL CLASSIFICATION

FILL
@ 0' Medium brown fmc GRAVEL, some to no Clay, little to no mfc Sand

7

TIDAL MARSH DEPOSIT (Peat)
@ 7' PEAT

(Organic silt)
@ 11' Dk gray CLAY, some to little Peat, some to no f Sand

16

GLACIAL TILL
@ 16' Reddish brown f SAND, some- Silt
@ 17' Reddish brown fm SAND AND CLAY, little f Gravel
@ 20.5' Reddish brown CLAY to Silty CLAY, trace to little f Sand, trace to no fm Gravel

End boring @ 24.5'

REMARKS

BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: **230-B1**

Project: *LCP Superfund Site*
Client: *LCP*
Project No.: *21405.102*
Start Date: *10/2/01*
Finish Date: *11/29/01*

DRILLING DATA

Inspector: *JLP*
Contractor: *Handex / ADT Diamond*
Equipment: *Auger rig (CME 75)*
Method: *HSA (casing) / Mud rotary (boring)*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split spoon*	*NA*	*NA*
Diameter:	*2"*	*NA*	*NA*
Other:	*NA*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*NA*
Diameter (ID):	*4"*	*NA*
Coupling:	*NA*	*NA*

WELL DEVELOPMENT

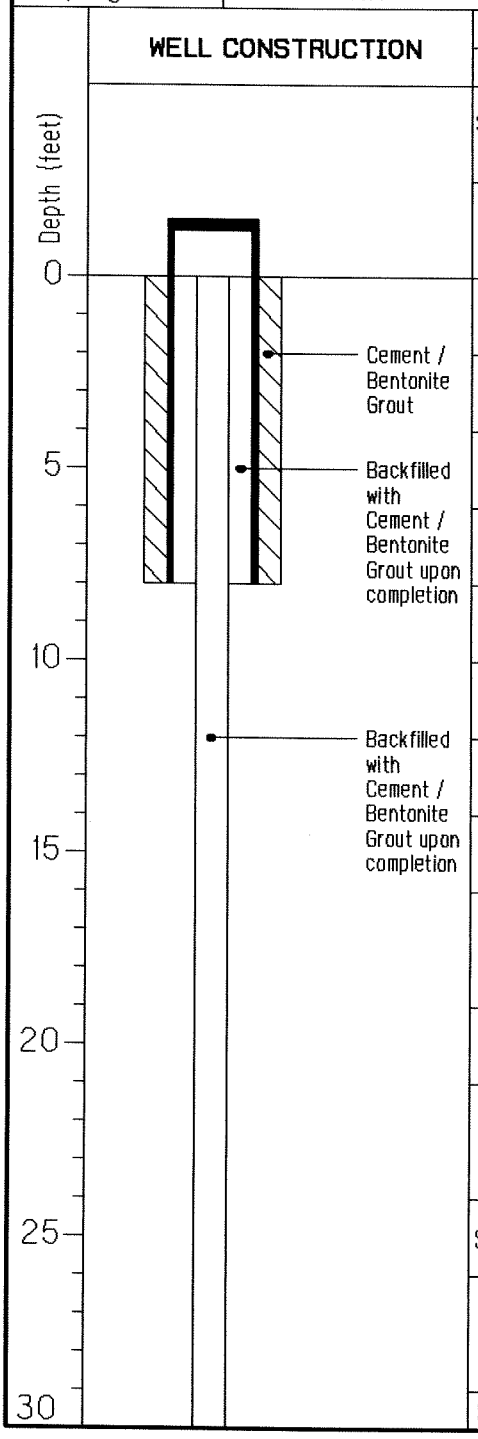
Method: *NA*
Duration: *NA*
Gals. Purged: *NA*
Slug Test: *NA* (cm/sec)

SURVEY DATA

DATUM: NA
Grade: *7.64*
TWC: *NA*
TPC: *NA*
North: *646620.13*
East: *572149.43*

Geophysical Log: ☐ yes ☒ no
Comments:

WELL CONSTRUCTION



SAMPLE DATA

soil / rock

Samp. No.	Blows/ 6 in.	Rec. (ft.)	USCS	HNU (ppm)
S-1	NA	.5	SC	NA
S-2	NA	.5	SW	NA
S-3	2-5-2-5	.8	SC	NA
S-4	1-1-2-2	1.5	PT	NA
S-5	wt-1-1-1	2	PT	NA
S-6	wt-1-1-1	1	PT	NA
S-7	1-2-3-2	1	SM	NA
S-8	2-4-8-8	1	SM	NA
S-9	5-8-12-9	1.5	CL	NA
S-10	4-4-8-9	1.5	CL	NA
S-11	5-6-7-8	1.5	CL	NA

Run No. | Hydraul. Cond. cm/sec | Rec. (ft.) | RQD

VISUAL CLASSIFICATION

FILL
@ 0' Medium brown fm SAND, no to AND CLay, little to no Organics

6

TIDAL MARSH DEPOSIT (Peat)
@ 6' PEAT

12

(organic silt)
@ 10.9' Gray CLAY & SILT

GLACIAL FLUVIAL DEPOSIT
@ 12' Gray fm SAND, little Silt

14.5

GLACIAL TILL
@ 14.5' Reddish brown CLAY & SILT, little fm Gravel, trace m Sand

@ 29' Reddish brown Silty CLAY

REMARKS

Samples from 0 - 4' were collected using direct-push rig.

BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: 230-B1

Project: *LCP Superfund Site*

Client: *LCP*

Project No.: *21405.102*

Start Date: *10/2/01*

Finish Date: *11/29/01*

Depth (feet)	WELL CONSTRUCTION	soil / rock	SAMPLE DATA				(CONTINUATION)	
		Samp. No.	Blows/ 6 in.	Rec. (ft.)	USCS	HNU (ppm)		
		Run No.	Hydraul. Cond. cm/sec	Rec. (ft.)	RQD		VISUAL CLASSIFICATION	REMARKS
30		S-11	5-6-7-8	1.5	CL	NA		
35		S-12	4-5-50/3	1.5	CL	NA	35 38	
40								
45								
50								
55								
60								
65								
70								

BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: **231-B1**

Project: *LCP Superfund Site*
Client: *ISP - ESI*
Project No.: *21405.102*
Start Date: *11/19/01*
Finish Date: *11/27/01*

DRILLING DATA

Inspector: *JLP*
Contractor: *ADT Diamond*
Equipment: *Auger Rig (CME 75)*
Method: *HSA (casing) / Mud Rotary (boring)*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split spoon*	*NA*	*NA*
Diameter:	*2"*	*NA*	*NA*
Other:	*NA*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*NA*
Diameter (ID):	*4"*	*NA*
Coupling:	*NA*	*NA*

WELL DEVELOPMENT

Method: *NA*
Duration: *NA*
Gals. Purged: *NA*
Slug Test: *NA* (cm/sec)

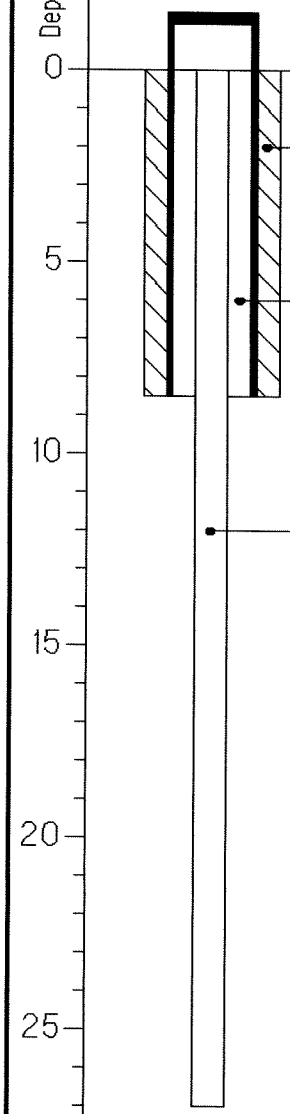
SURVEY DATA

DATUM: NA

Grade: *8.14*
TWC: *NA*
TPC: *NA*
North: *646437.01*
East: *572458.32*

Geophysical Log: ☐ yes ☒ no
Comments:

WELL CONSTRUCTION



SAMPLE DATA

soil / rock

Samp. No. / Run No.	Blows/ 6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	HNU (ppm)
S-1	4-4-5-5	.3	SW	NA
S-2	4-2-1-2	.5	CL	NA
S-3	1-1-1-2	1	CL	NA
S-4	3-5-2-1	1.5	CL/PT	NA
S-5	4-4-11-13	1	PT	NA
S-6	1-1-1-1	1	OL/PT	NA
S-7	1-1-1-2	.3	ML	NA
S-8	1-2-3-2	1.5	SM	NA
S-9	9-11-12-15	1.5	PT	NA
S-10	5-6-7-7	1	SM	NA
S-12	4-5-11-15	.2	GC	NA
S-13	13-10-11-10	1.5	ML	NA

VISUAL CLASSIFICATION

FILL
@ 0' Medium brown fmc SAND, trace Organics
@ 2' Medium brown CLAY, little to AND mc Sand, little to no m Gravel
@ 6.9' Black wood debris coated in a petroleum product — 7
TIDAL MARSH DEPOSIT (Peat)
@ 7' PEAT
(Organic silt)
@ 10.5' Dk Gray organic rich CLAY, occasional peat, H2S odor
@ 12.5' Dk. Brown SILT, spongy texture, some f Sand, H2S odor
@ 14.5' Medium brown f SAND, some Silt, traces of Organic material
@ 15.5' Dk. Gray fm SAND — 16.5
GLACIAL FLUVIAL DEPOSIT
@ 16.5' Gray to grayish brown fm SAND, some to AND Silt, uniform to mottled
GLACIAL TILL
@ 17.7' Reddish brown some to AND Silt, some to AND fm Sand, trace to little fm Gravel
@ 23' Reddish brown c Gravel, some Clay
@ 25' Reddish brown SILT & CLAY, little fm Gravel — 27
End boring @ 27'

REMARKS

BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: **BT-B5**

Project: *LCP Superfund Site, Linden, NJ*
Client: *ISP - ESI*
Project No.: *21405.102*
Start Date: *10/2/01*
Finish Date: *11/28/01*

DRILLING DATA

Inspector: *JLP*
Contractor: *Handex / ADT Diamond*
Equipment: *Auger rig (CME 75)*
Method: *HSA (casing) Mud rotary (boring)*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split spoon*	*NA*	*NA*
Diameter:	*2"*	*NA*	*NA*
Other:	*NA*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*NA*
Diameter (ID):	*4"*	*NA*
Coupling:	*NA*	*NA*

WELL DEVELOPMENT

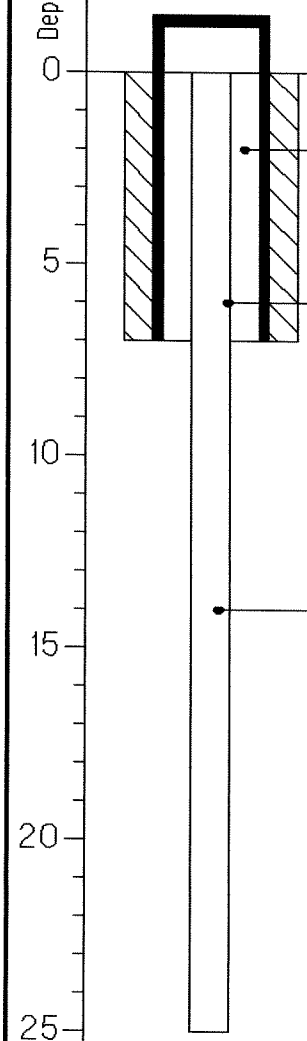
Method: *NA*
Duration: *NA*
Gals. Purged: *NA*
Slug Test: *NA* (cm/sec)

SURVEY DATA

DATUM: NA
Grade: *7.80*
TWC: *NA*
TPC: *NA*
North: *646700.81*
East: *572430.73*

Geophysical Log: ☐ yes ☒ no
Comments:

WELL CONSTRUCTION



SAMPLE DATA

soil / rock

Samp. No. / Run No.	Blows/ 6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	HNU (ppm)
S-1	8-9-5-3	1	GC	NA
S-2	5-7-7-12	1.5	CL	NA
S-3	1-2-5-3	2	CL/PT	NA
S-4	wt. of h.	1	PT	NA
S-5	wt. of h.	2	PT	NA
S-6	wt. of h.	.5	CL	NA
S-7	wt. of h.	1.5	OL/PT	NA
S-8	2-6-3-3	2	CL	NA
S-9	4-4-5-6	1.5	SM	NA
S-10	3-8-8-10	1	SW	NA
S-11	6-10-10-10	1	ML	NA
S-12	5-9-10-10	1	ML	NA

VISUAL CLASSIFICATION

FILL
@ 0' Dk brown fm GRAVEL AND CLAY, little fmc Sand, trace organics
@ 2.5' Red CLAY, little f Gravel
5.5

TIDAL MARSH DEPOSIT (Peat)
@ 5.5' PEAT, H2S odor

(Organic silt)
@ 10.5' Gray to brown CLAY, some organics, H2S odor
@ 13' Dk Gray CLAY, some organics, little to no mc Gravel, H2S odor
18

GLACIAL FLUVIAL DEPOSIT
@ 18' Medium Gray to brown fm SAND, little Silt, homogenous to mottled
19

GLACIAL TILL
@ 19' Reddish brown f SAND, little f Gravel, trace Silt
@ 21' Reddish brown SILT & CLAY, little plus fm Gravel, little f Sand
@ 23' Reddish brown SILT and f SAND, little fm Gravel
25

End of boring @ 25'

REMARKS

BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: HF-B3

Project: *LCP Superfund Site*
Client: *ISP - ESI*

Project No.: *21405.102*

Start Date: *10/02/01*
Finish Date: *11/28/01*

DRILLING DATA

Inspector: *JLP*
Contractor: *Handex / ADT Diamond*
Equipment: *Auger rig (CME 75)*
Method: *HSA (casing) / Mud rotary (boring)*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split spoon*	*NA*	*NA*
Diameter:	*2"*	*NA*	*NA*
Other:	*NA*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*NA*
Diameter (ID):	*4"*	*NA*
Coupling:	*NA*	*NA*

WELL DEVELOPMENT

Method: *NA*
Duration: *NA*
Gals. Purged: *NA*
Slug Test: *NA* (cm/sec)

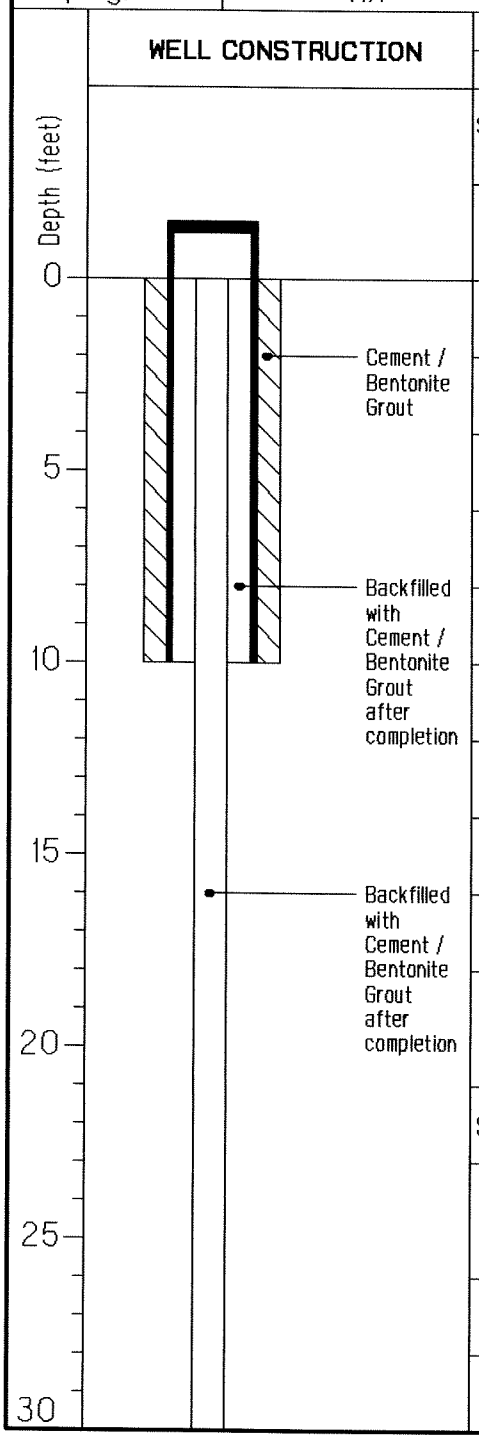
SURVEY DATA

DATUM: NA

Grade: *7.59*
TWC: *NA*
TPC: *NA*
North: *646916.76*
East: *571629.19*

Geophysical Log: ☐ yes ☒ no
Comments:

WELL CONSTRUCTION



SAMPLE DATA

Samp. No. (soil) / Run No. (rock)	Blows/ 6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	HNU (ppm)
S-1	4-6-2-8	1	CL	NA
S-2	11-9-10-10	1.5	CL	NA
S-3	10-6-4-5	1	CL	NA
S-4	5-2-2-2	1	CL	NA
S-5	2-1-1-1	2	CL/PT	NA
S-6	1-1-1-1	2	PT	NA
S-7	1-2-1-1	2	PT	NA
S-8	1-1-2-5	1	CL	NA
S-9	3-5-7-8	1	ML	NA
S-10	3-5-8-10	1.5	ML	NA
S-11	3-5-7-8	1	ML	NA

VISUAL CLASSIFICATION

FILL
@ 0' Medium brown CLAY, some fmc Sand, little mc Gravel
@ 2' Red to reddish brown CLAY some to no m Gravel, little to no fm Sand

8.5

TIDAL MARSH DEPOSIT (Peat)
@ 8.5' PEAT
(Organic silt)
@ 10.5' Dk. Gray CLAY AND PEAT

13.5

GLACIAL FLUVIAL DEPOSIT
@ 13.5' Dk gray to brown CLAY, little to no Gravel, uniform to mottled

14.5

GLACIAL TILL
@ 14.5' Red brown CLAY & SILT, some to little plus fm Gravel, little to no f Sand

REMARKS

BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: HF-B3

Project: *LCP Superfund Site*

Client: *ISP - ESI*

Project No.: *21405.102*

Start Date: *10/02/01*

Finish Date: *11/28/01*

(CONTINUATION)

Depth (feet)	WELL CONSTRUCTION	soil / rock	Samp. No. / Run No.	Blows/ 6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	HNU (ppm)	VISUAL CLASSIFICATION	REMARKS
30								@ 31' Reddish brown fm GRAVEL AND CLAY	
			S-12	6-9-15-44	1	GC	NA		
								33 PASSAIC FORMATION (Weathered Rock)	Top of Weathered rock based on driller
35									
			S-13	50/2.5	.3	GC	NA	@ 38' Red brown fm GRAVEL AND CLAY, some pieces of shale 38.2	
								End boring @ 38.2	
40									
45									
50									
55									
60									
65									
70									

BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: **MW-B16**

Project: *LCP Superfund Site, Linden, NJ*
Client: *ISP - ESI*

Project No.: *21405.102*

Start Date: *10/03/01*
Finish Date: *11/26/01*

DRILLING DATA

Inspector: *JLP*
Contractor: *Handex / ADT Diamond*
Equipment: *Auger rig (CME 75)*
Method: *HSA (casing) / Mud rotary (boring)*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split Spoon*	*NA*	*NA*
Diameter:	*2"*	*NA*	*NA*
Other:	*NA*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*NA*
Diameter (ID):	*4"*	*NA*
Coupling:	*NA*	*NA*

WELL DEVELOPMENT

Method: *NA*
Duration: *NA*
Gals. Purged: *NA*
Slug Test: *NA* (cm/sec)

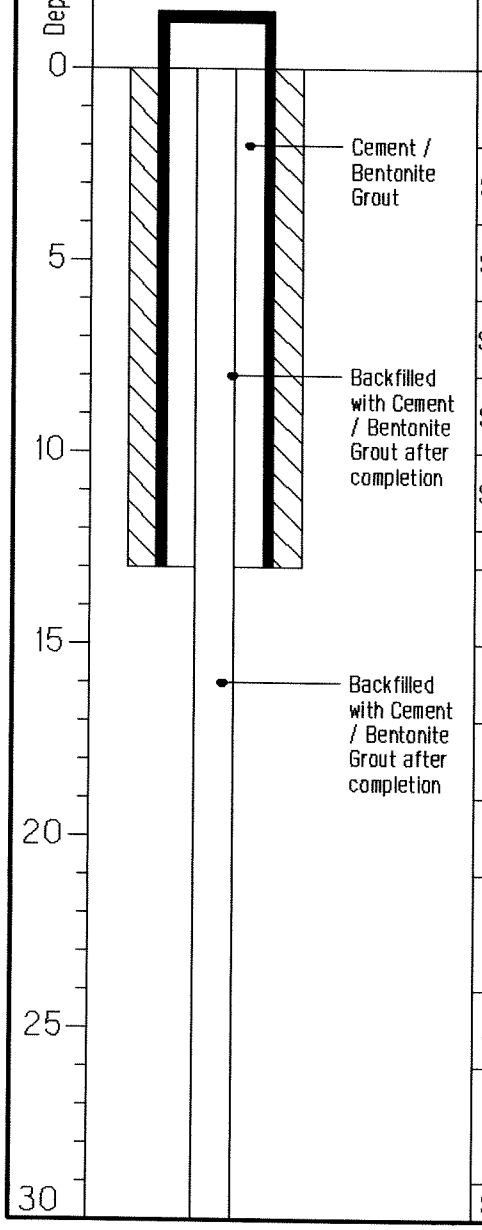
SURVEY DATA

DATUM: NA

Grade: *6.35*
TWC: *NA*
TPC: *NA*
North: *647001.29*
East: *572297.59*

Geophysical Log: ☐ yes ☒ no
Comments:

WELL CONSTRUCTION



SAMPLE DATA

Samp. No. / Run No.	Blows/ 6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	HNU (ppm)
S-1A	50/5	.3	SW	
S-2A	26-38-50	0	NA	
S-3A	5-7-7-6	1	GW	
S-4A	2-3-4-4	1.2	GW	
S-5A	2-4-4-3	1	GW	
S-6A	2-2-1-1	.7	GW	
S-1	1-1-1-2	1.5	OL	
S-2	10-10-11-14	2	OL/PT	
S-3	9-9-10-12	2	SW	
S-4	14-15-14-50/4	2	SM	
S-5	2-4-6-9	1.5	ML	
S-6	3-5-7-9	1.5	ML	

VISUAL CLASSIFICATION

FILL
@ 0' Brown fmc SAND, little f Gravel

@ 4' Black f GRAVEL, some fmc Sand, saturated

11

TIDAL MARSH DEPOSIT (Peat)
@ 11' PEAT

(Organic silt)
Lt grayish brown Clayey SILT, strong H2S odor, saturated

@ 18' Lt gray fm SAND, trace to AND Silt, trace to no f Gravel, H2S odor

18

GLACIAL FLUVIAL DEPOSIT
@ 18' Reddish brown SILT, trace f Sand, slightly stratified
@ 19 ft Dk Gray fm SAND, trace Silt

20.5

GLACIAL TILL
@ 20.5' Reddish brown f SAND AND SILT, little f Gravel, little mc Sand
@24' Red brown CLAY & SILT, little to no f Gravel, trace fmc Sand

REMARKS

BROWN AND CALDWELL

Subsurface Boring Log

Well Name/Location: MW-B16

Project: *LCP Superfund Site, Linden, NJ*

Client: *ISP - ESI*

Project No.: *21405.102*

Start Date: *10/03/01*

Finish Date: *11/26/01*

(CONTINUATION)

Depth (feet)	WELL CONSTRUCTION	soil / rock	Samp. No. / Run No.	Blows/ 6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	HNU (ppm)	VISUAL CLASSIFICATION	REMARKS
30			S-6	3-5-7-9	1.5	ML			
35			S-7	3-5-7-8	1.5	ML		@34' Red brown SILT & CLAY, trace fm Sand, little fm Gravel	
								38 PASSAIC FORMAITON	Top of Weathered rock according to the driller
40			S-8	50/3	.3	NA		@39' Red brown weathered shale 39.5 End of boring @ 39.5	
45									
50									
55									
60									
65									
70									

Phase II Surficial Borings
LCP Chemicals, Inc. Superfund Site, Linden, New Jersey

230-B101

	State Plane Coordinates (ft. NAD83)				G.S. Elev (ft. NGVD29)					
12/4/2006										
Lab Sample ID	Depth (ft)	Recovery (ft)	Blows (per 6 ")	Unit	Free Liquids Mercury	Organics	MVA (mg/m3)	OVA (ppm)	Soil Description USCS	Burmister
230-B101-0-1	1	1	NA	FILL	N	N	NR	NR	ML CL	Wet, Gray brwn SILT & CLAY, some (+) organics, little (+) cmf gravel

231-102

	State Plane Coordinates (ft. NAD83)				G.S. Elev (ft. NGVD29)					
12/4/2006										
231-102-0-1	1	1	NA	FILL	N	N	NR	NR	ML CL	Dry, Brwn red SILT & CLAY, some (-) cmf Sand, trace (+) fmc gravel

DEP-101

	State Plane Coordinates (ft. NAD83)				G.S. Elev (ft. NGVD29)					
12/4/2006	646396.8		572002.8		8.2					
DEP-101-0-1	1	1	NA	FILL	N	N	NR	NR	SP	Dry, Blk gray cmf SAND, little (-) fm gravel

LHP-110

	State Plane Coordinates (ft. NAD83)				G.S. Elev (ft. NGVD29)					
12/4/2006	646916.5		571545.6		7.6					
LHP-110-0-1	1	1	NA	FILL	N	N	0	0	SP	Dry, Brwn blk cmf SAND, little (+) Silt & Clay, trace (+) fmc gravel

Phase II Surficial Borings
LCP Chemicals, Inc. Superfund Site, Linden, New Jersey

LHP-111

	State Plane Coordinates (ft. NAD83)		G.S. Elev (ft. NGVD29)
12/4/2006	646951.3	571644.6	8

LHP-111-0-1	1	1	NA	FILL	N	N	0	0	SP SM	Dry, cmf SAND, some (-) Silt & Clay, little (-) fmc gravel. Glass fragments

LHP-112

	State Plane Coordinates (ft. NAD83)		G.S. Elev (ft. NGVD29)
12/4/2006	646896.9	571632.8	7.7

LHP-112-0-1	1	1	NA	FILL	N	N	0	0.3	SP GP	Dry Blk cmf SAND, little (+/-) fmc gravel. @ 0.2' Red brwn SILT & CLAY, some (-) cmf Sand, little (-) Organics. Glass fragments

LHP-113

	State Plane Coordinates (ft. NAD83)		G.S. Elev (ft. NGVD29)
12/4/2006	646932.3	571767.9	8.3

LHP-113-0-1	1	1	NA	FILL	N	N	0	0	SP SM	Dry, Gray brwn cmf SAND, little (+) silt & clay, trace (+) fmc gravel. Glass fragments

LHP-114

	State Plane Coordinates (ft. NAD83)		G.S. Elev (ft. NGVD29)
12/4/2006	646822.9	571751.2	8.2

LhP-114-0-1	1	1	NA	FILL	N	N	0	0.4	SP GP	Dry, Gray brwn cmf SAND, some (-) fmc Gravel, little (+) silt & clay. Glass fragments

Phase II Surficial Borings
LCP Chemicals, Inc. Superfund Site, Linden, New Jersey

LHP-115

	State Plane Coordinates (ft. NAD83)		G.S. Elev (ft. NGVD29)
12/4/2006	646885.8	571816.3	8.2

LHP-115-0-1	1	1	NA	FILL	N	N	0	0	SP GP	Dry Gray cmf SAND, little (+) Gravel, trace (+) silt & clay. Glass fragments

LHP-116

	State Plane Coordinates (ft. NAD83)		G.S. Elev (ft. NGVD29)
12/4/2006	646767.8	571837.7	7.8

LHP-116-0-1	1	1	NA	FILL	N	N	0.015	0	ML CL	Dry Clayey SILT, some (-) cmf Sand, little (-) fmc Gravel. Glass fragments

LHP-117

	State Plane Coordinates (ft. NAD83)		G.S. Elev (ft. NGVD29)
12/4/2006	646751.5	571928.6	8

LHP-117-0-1	1	1	NA	FILL	N	N	0	0	ML CL	Dry-moist, Red brwn Clayey SILT, some (-) cmf Sand, little (-) fm gravel.

LHP-118

	State Plane Coordinates (ft. NAD83)		G.S. Elev (ft. NGVD29)
12/4/2006	646863.4	571475	7.5

LHP-118-0-1	1	1	NA	FILL	N	N	0	0	SM SC	Dry, cmf SAND, some (-) Silt & Clay, little (-) fmc gravel. Glass, cinders fragments.

Phase II Surficial Borings
LCP Chemicals, Inc. Superfund Site, Linden, New Jersey

LHP-119										
	State Plane Coordinates (ft. NAD83)				G.S. Elev (ft. NGVD29)					
12/4/2006	646765.8		571520.7		8.4					
LHP-119-0-1	1	1	NA	FILL	N	N	0	0	SP SM	Moist, Brwn blk cmf SAND, some (-) Silt & Clay, little (-) fmc gravel. Brick, glass fragments.
LHP-120										
	State Plane Coordinates (ft. NAD83)				G.S. Elev (ft. NGVD29)					
12/4/2006	646709.6		571474.7		8.1					
LHP-120-0-1	1	1	NA		N	N	0	0.1	SP	Moist, Black brwn cmf SAND, some (-) Silt & Clay, little (-) fm gravel. Brick fragments
LHP-121										
	State Plane Coordinates (ft. NAD83)				G.S. Elev (ft. NGVD29)					
12/6/2006	646671.7		571572.3		8.5					
LHP-121-0-1	1	1	NA		N	N	NR	NR	SP	Moist, cmf SAND, little (-) Silt & Clay, trace (+) fmc gravel
LHP-122										
	State Plane Coordinates (ft. NAD83)				G.S. Elev (ft. NGVD29)					
12/6/2006	646633.2		571702.8		8.8					
LHP-122-0-1	1	1	NA	FILL	N	N	NR	NR	SP	Blk gray cmf SAND, little (+) fm gravel.

Phase II Surficial Borings
LCP Chemicals, Inc. Superfund Site, Linden, New Jersey

LHP-123										
	State Plane Coordinates (ft. NAD83)				G.S. Elev (ft. NGVD29)					
12/6/2006	646537.1		571844.5		8.4					
LHP-123-0-1	1	1	NA	FILL	N	N	NR	NR	SP SM	Dry, Blk gray, red brwn, cmf SAND, some (+) Silt & Clay, little (-) gravel.
TES-2										
	State Plane Coordinates (ft. NAD83)				G.S. Elev (ft. NGVD29)					
12/4/2006	646312.8		572438		7.4					
TES-2-0-1	1	1	NA	FILL	N	N	NR	NR	ML CL	Wet Blk gray Clayey SILT, some (+) organics, little (+) cmf gravel.
TES-3										
	State Plane Coordinates (ft. NAD83)				G.S. Elev (ft. NGVD29)					
12/4/2006					9					
TES-3-0-1	1	1	NA	FILL	N	N	NR	NR	ML CL	Dry, Brwn SILT & CLAY, little (+/-) cmf Sand, trace (+) fmc gravel
TES-4										
	State Plane Coordinates (ft. NAD83)				G.S. Elev (ft. NGVD29)					
12/5/2006	646749		571723.9							
TES-4-0-1	1	1	NA	FILL	N	N	NR	NR	SP	Dry, cmf SAND, trace (+) gravel.

BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **ADS-101** Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	2"		NA"	8.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Continuous Core	Development Method:
12/4/06 - 12/4/06	TPI	Hammer Type: NA	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 8.1 ft.	Easting: 571720.5 ft. Northing: 646904.2 ft. TOC Elev: NA ft.
TPI	Geoprobe	Geoprobe		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Recovery	Lithology	Backfill	PID/MVA Readings (ppm)	Remarks
		ML CL	**FILL** Moist, Blk-brwn SILT & CLAY, some (-) cmf Sand. @ 0.3 Brwn-gray SILT & CLAY, little (+) cmf Sand, trace (-) cmf Gravel.	NA	1					.3- .032	Collected ADS-101-0-1 Collected ADS-101-1-3
5		ML CL	Wet, Red-brown. Same as above.	NA	2					0.1- .028	
		SW	Tan-orange cmf SAND.								
		ML	**TIDAL MARSH DEPOSITS** Black Clayey SILT, little (+) Organics, wet.								End of Boring @ 8.0'

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BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **ADS-102** Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	2"		NA"	8.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Continuous Core	Development Method:
12/4/06 - 12/4/06	TPI	Hammer Type: NA	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 7.9 ft.	Easting: 571702.8 ft. Northing: 646879.3 ft. TOC Elev: NA ft.
TPI	Geoprobe	Geoprobe		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Recovery	Lithology	Backfill	PID/MVA Readings (ppm)	Remarks
		CL ML	**FILL** Blk Silty CLAY, some (-) cmf Sand, Dry. @ 0.4 Red-brwn SILT & CLAY, little (-) cmf Sand, trace (+) fmc Gravel.		1					0.0- .007	Collected ADS-102-0-1.5
5		CL ML	Wet, as above.		2					1.4- .013	
		ML	**TIDAL MARSH DEPOSITS** Black Clayey SILT, some (-) Organics.								Collected ADS-102-7-8

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BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **LB-101** Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	2"		NA"	11.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Continuous Core	Development Method:
12/6/06 - 12/6/06	TPI	Hammer Type: NA	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: --	Easting: -- Northing: -- TOC Elev: NA ft.
TPI	Geoprobe	Geoprobe		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Recovery	Lithology	Backfill	PID/MVA Readings (ppm)	Remarks
		SP	**FILL** Moist, Tan-brwn cmf SAND.		1					NR	Sampled LB-101-0-1
		SW	Blk cmf SAND.								
		SP	Moist, as above.		2					NR	
5											
		SP	Wet, Blk cmf SAND.		3					NR	
		SW	Blk cmf SAND, little (-) Gravel.								
10		CL	**TIDAL MARSH DEPOSITS** Gray cm CLAY, some (-) Organics.								End of boring @ 11.0'

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BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **LB-102** Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	2"		NA"	11.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Continuous Core	Development Method:
12/6/06 - 12/6/06	TPI	Hammer Type: NA	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: --	Easting: -- Northing: -- TOC Elev: NA ft.
TPI	Geoprobe	Geoprobe		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Recovery	Lithology	Backfill	PID/MVA Readings (ppm)	Remarks
		SP	**FILL** Brwn cmf Sand, moist. Concrete fragments.		1					NR	Sampled LB-102-0-1
		SP	Blk cmf SAND, Wet.		2					NR	Sampled LB-102-1-3
5											
					3					NR	
10		CL	**TIDAL MARSH DEPOSITS** Gray Silty CLAY, some (-) Organics.								End of boring @ 11.0'

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BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **LB-103** Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	2"		NA"	11.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Continuous Core	Development Method:
12/6/06 - 12/6/06	TPI	Hammer Type: NA	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: --	Easting: -- Northing: -- TOC Elev: NA ft.
TPI	Geoprobe	Geoprobe		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Recovery	Lithology	Backfill	PID/MVA Readings (ppm)	Remarks
		SP	**FILL** Concrete. Tan-Brwn cmf SAND, moist @ 1.1 Blk cmf SAND.	NA	1					NR	Sampled LB-103-0-1
		SP	Wet, same as above.	NA	2					NR	
5		ML CL SP	Red-brwn SILT & CLAY, some (-) fmc Gravel. Wet, Blk cmf SAND.								
		SP	Wet, same as above.	NA	3					NR	
10		CL	**TIDAL MARSH DEPOSITS** Blk Silty CLAY, some (-) Organics.								End of boring @ 11.0'

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BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **LHP-101** Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	2"		NA"	12.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Continuous Core	Development Method:
12/4/06 - 12/4/06	TPI	Hammer Type: NA	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 8.1 ft.	Easting: 571462.2 ft. Northing: 646731.4 ft. TOC Elev: NA ft.
TPI	Geoprobe	Geoprobe		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Recovery	Lithology	Backfill	PID/MVA Readings (ppm)	Remarks
		GP	**FILL** Moist, Blk brwn cmf GRAVEL, some (-) cmf Sand, little (+) Silt & Clay. @ 1.1' Red cmf SAND, some (-) Silt & Clay, little (-) fm Gravel.		1					0.1-.000	
5					2					NR	
		SP GP	Blk cmf SAND, little (-) fm Gravel, Wet @ 6.7'.								Sample LHP-101-5-8
					3					0.0-.000	
10		CL ML	**TIDAL MARSH DEPOSITS** Brwn SILT & CLAY, some (+) Organics.								

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BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **LHP-102** Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	2"		NA"	8.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Continuous Core	Development Method:
12/4/06 - 12/4/06	TPI	Hammer Type: NA	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 8.3 ft.	Easting: 571555.9 ft. Northing: 646797.2 ft. TOC Elev: NA ft.
TPI	Geoprobe	Geoprobe		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Recovery	Lithology	Backfill	PID/MVA Readings (ppm)	Remarks
		SP GP	**FILL** Moist, cmf GRAVEL, little (+) Silty Clay. @ 0.3 Blk cmf SAND, trace (+) f Gravel. @ 1.4 Red brwn Silty CLAY, some (-) cmf Sand.		1					0.0-.007	Sampled LHP-102-0-1
5					2					0.0-.008	
		SP	Blk cmf SAND, little (-) Silty Clay.								Sampled LHP-102-7-9
					3					1.4-.013	
		CL	**TIDAL MARSH DEPOSITS** Gray-blk Silty CLAY, some (-) Organics.								
											End of boring @ 12.0'

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BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **LHP-103** Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	2"		NA"	12.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Continuous Core	Development Method:
12/4/06 - 12/4/06	TPI	Hammer Type: NA	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 9.4 ft.	Easting: 571700.9 ft. Northing: 646725.9 ft. TOC Elev: NA ft.
TPI	Geoprobe	Geoprobe		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Recovery	Lithology	Backfill	PID/MVA Readings (ppm)	Remarks
		SP	**FILL**		1					0.5-	Sampled LHP-103-0-1
		GP	Black cmf GRAVEL and to some (-) cmf							.012	Sampled LHP-103-1-3
		SP	Sand AND to no Silt & Clay, dry.								
		GP	White cmf SAND, some (-) mf Gravel. @								
		SP	1.7 Black cmf SAND. @ 2.1 Red-brown								
		GP	Clayey SILT, some (-) cmf Sand. Concrete, brick and wood.								
			Same as above, wet at 4.0.		2					NR	
5											
		SP	Black cmf SAND, little (+) Silt & Clay.		3					NR	
		CL	**TIDAL MARSH DEPOSITS**								
10			Gray black Silty CLAY, some (-) Organics.								
											End of boring @ 12.0'

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BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **LHP-104** Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	2"		NA"	12.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Continuous Core	Development Method:
12/4/06 - 12/4/06	TPI	Hammer Type: NA	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 8.8 ft.	Easting: 571804.7 ft. Northing: 646690.7 ft. TOC Elev: NA ft.
TPI	Geoprobe	Geoprobe		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Recovery	Lithology	Backfill	PID/MVA Readings (ppm)	Remarks
		GP	**FILL** Blk cmf GRAVEL, asphalt. @ 0.4 Tan cmf SAND.		1					0.0-.013	Sampled LHP-104-0-1
5		GP SP	Blk cmf SAND, little (-) Gravel.		2					0.0-.579	Sampled LHP-104-7-9
		GP SP	Same as above, wet.		3					0.0-.009	
10		CL	**TIDAL MARSH DEPOSITS** Gray Silty CLAY, some (-) Organics. @ 11.0 Blk fmc SAND, some (-) Silty Clay, little (-) organics.								End of boring @ 12.0'

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BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **LHP-105** Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	2"		NA"	8.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Continuous Core	Development Method:
12/4/06 - 12/4/06	TPI	Hammer Type: NA	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 8.2 ft.	Easting: 571851.9 ft. Northing: 646670.0 ft. TOC Elev: NA ft.
TPI	Geoprobe	Geoprobe		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Recovery	Lithology	Backfill	PID/MVA Readings (ppm)	Remarks
		SP	**FILL** Brwn cmf SAND, little (+) cmf Gravel, dry.		1					NR	Sampled LHP-105-0-1 Sampled LHP-105-1-3
5		SP	Blk cmf SAND, wet.		2					0.2/.012	
		CL	**TIDAL MARSH DEPOSITS** Gray-blk Silty CLAY, some (-) Organics.								End of boring @ 8.0'

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BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **LHP-106** Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	2"		NA"	12.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Continuous Core	Development Method:
12/4/06 - 12/4/06	TPI	Hammer Type: NA	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 8.5 ft.	Easting: 571869.1 ft. Northing: 646636.1 ft. TOC Elev: NA ft.
TPI	Geoprobe	Geoprobe		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log (Sample Int, Recovery, Lithology, Backfill)	PID/MVA Readings (ppm)	Remarks
		ML CL SP	**FILL** Blk-brwn SILT & CLAY, some (-) cmf Sand, little (-) fm Gravel. Blk cmf SAND.	NA	1		0.7- .000	Sampled LHP-106-0-1
5				NA	2		0.0- .000	Sampled LHP-106-1-3
				NA	3		0.0- .000	
10		CL ML	**TIDAL MARSH DEPOSITS** Gray-blk Silty CLAY, some (-) Organics. @ 11.2' Gray Silty CLAY.					

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BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **LHP-107** Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	2"		NA"	8.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Continuous Core	Development Method:
12/4/06 - 12/4/06	TPI	Hammer Type: NA	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 8.8 ft.	Easting: 571897.3 ft. Northing: 646614.1 ft. TOC Elev: NA ft.
TPI	Geoprobe	Geoprobe		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Recovery	Lithology	Backfill	PID/MVA Readings (ppm)	Remarks
		SP	**FILL** Blk-gray cmf SAND, trace (+) Silt & Clay, dry. Cinders.	NA	1					NR	Sampled LHP-107-0-1
5		SP	Same as above, wet.	NA	2					0.1-.007	Sampled LHP-107-5-7
		CL	**TIDAL MARSH DEPOSITS** Blk-gray Silty CLAY, some Organics.								End of boring @ 8.0'

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BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **LHP-108** Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	2"		NA"	12.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Continuous Core	Development Method:
12/4/06 - 12/4/06	TPI	Hammer Type: NA	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 9.0 ft.	Easting: 571689.7 ft. Northing: 646649.7 ft. TOC Elev: NA ft.
TPI	Geoprobe	Geoprobe		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Recovery	Lithology	Backfill	PID/MVA Readings (ppm)	Remarks
		SP GP SW	**FILL** Blk cmf GRAVEL, asphalt. @ 0.5 Brwn cmf SAND, some (-) cmf Gravel. Wet, Blk cmf SAND. @ 2.2 Red-brwn Silty CLAY, some (+) fmc Sand.	NA	1					NR	Sampled LHP-108-0-1
5		SP	Blk cmf SAND, little (+) Silt & Clay.	NA	2					NR	
10		ML CL	**TIDAL MARSH DEPOSITS** Gray SILT & CLAY, some (+) Organics.	NA	3					NR	
											End of boring @ 12.0'

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BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **LHP-109** Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	2"		NA"	12.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Continuous Core	Development Method:
12/4/06 - 12/4/06	TPI	Hammer Type: NA	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 8.6 ft.	Easting: 571810.0 ft. Northing: 646593.0 ft. TOC Elev: NA ft.
TPI	Geoprobe	Geoprobe		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Recovery	Lithology	Backfill	PID/MVA Readings (ppm)	Remarks
		SW SM	**FILL** cmf SAND, some (-) Silt & Clay, little (-) fm Gravel. @ 0.4 Blk-gray cmf GRAVEL,		1					NR	Sampled LHP-109-0-1
		SM ML	some (-) cmf Sand. Red-brwn Silty CLAY, little (+) fm Sand. Wet at 6.2.								
5					2					NR	
		SW SM	Blk, wet, cmf SAND, some (-) Silt & Clay.								
					3					NR	
		CL ML	**TIDAL MARSH DEPOSITS** Gray Silty CLAY, some (-) Organics.								Sampled LHP-109-7-9
10											End of boring @ 12.0'

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BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **LHP-124** Page 1 of 2

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
JMB/Allendale	SDM	8"		NA"	38.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
10/27/06 - 10/31/06	Advanced Drilling	Hammer Type: Manual	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 9.4 ft.	Easting: 571706.3 ft. Northing: 646701.2 ft. TOC Elev: NA ft.
C. Corner	HSA	Failing 45		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log (Sample Int, Recovery, Lithology, Backfill)	PID/MVA Readings (ppm)	Remarks
		ASP	**ASPHALT**					
		ML CL	**FILL** Red SILT & CLAY, some (+) cfm Gravel and Sand. @ .7' Gray-tan cfm GRAVEL and cfm SAND, wet.	8-100/5	1		.4-0	Sampled LHP-124-.5-2
		ML CL	Red SILT & CLAY,some (-) to little (-) cfm Sand, dry. wet at 6'.	8-8-6-8	2		.4-.005	Sampled LHP-124-2-4
5				5-10-7-5	3		.5-0	
		FILL	Red SILT & CLAY, some (-) cfm Gravel and cfm Sand, wet.	10-1-5-2	4		.5-0	
		CL ML	**TIDAL MARSH DEPOSITS** Blk-green Silty CLAY, some (+) gray-yellow Organic material, trace (-) f Sand, wet.	1-1-1-1	5		0	
10				1/18-1	6		0-.011	4-inch casing grouted in place. Sampled LHP-124-10-12.
				1-2-1-4	7		0-0	
		CL ML	**GLACIAL TILL** Red-brwn-blk Silty CLAY, some (+) fm Sand, wet.	3-6-7-8	8		0-0	
15		ML CL	Red-brwn-black SILT & CLAY, some (+) mf Sand, some to little cfm Gravel, wet.	2-4-5-6	9		0-0	
				5-6-6-6	10		0-0	
20				6-6-9-13	11		0-0	
		ML CL	Red-brwn SILT & CLAY, some (+) cmf Gravel, some (-) mf Sand, wet.	7-12-8-12	12		0-0	
25		ML CL	Red-brwn SILT & CLAY, little (-) cmf Sand, trace (-) mf Gravel, wet.	13-15-16-22	13		0-0	
		CL	Red-brwn Silty CLAY, little (+) mf Sand, trace (-) mf Gravel. Displays relic bedding.	8-10-12-13	14		0-0	
		ML CL	Red-Brwn Silty CLAY, trace (-) mf Sand, wet. @ 28.7' Red brwn Silty CLAY, little (-) mf Sand, trace (-) mf Gravel, compacted, displaying relic bedding.	7-10-1-13	15		0-0	Sampled LHP-124-28-30
30		CL	Red-brwn-gray Silty CLAY, some (-) to little	14-27-16-15	16		0-0	

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BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. LHP-124 Page 2 of 2

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Graphic Log: Recovery	Graphic Log: Lithology	Graphic Log: Backfill	PID/MVA Readings (ppm)	Remarks
			(+) mf Gravel, trace (-) cmf Sand, wet.								
				14-52-27-17	17					0-0	
		CL	Red-brwn Silty CLAY, some (+) mf Gravel, trace (-) mf Sand, wet.	15-16-38-55	18					0-0	
35											
		ML CL	Red-Brwn SILT & CLAY, some (+) cmf Gravel, little (+) Sand, wet.	25-100/4	19					0-0	
			PAISSIC FORMATION Red-brwn Siltstone.								End of Boring @ 38.0'

BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **LHP-125** Page 1 of 2

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
JMB/Allendale	SDM	8"		NA"	36.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
10/27/06 - 11/1/06	Advanced Drilling	Hammer Type: Manual	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 9.0 ft.	Easting: 571751.9 ft. Northing: 646629.1 ft. TOC Elev: NA ft.
C. Corner	HSA	Failing 45		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Sample Int	Recovery	Lithology	Backfill	PID/MVA Readings (ppm)	Remarks
		ASP	**ASPHALT**								
		GW SW	**FILL** Brwn-Orange cfm GRAVEL and cfm SAND, some (+) Silt & Clay, wet.	18-32-20	1					.4-.021	Sampled LHP-125-.5-2
		GW SW ML CL	Brwn cfm GRAVEL and cfm SAND, some (+) Silt & Clay. Grading to Red SILT & CLAY, wet.	12-4-8-1	2					.4-.005	
5				6-5-4-3	3					.5-.041	Sampled LHP-125-4-6
		GW SW	Blk cfm GRAVEL and cfm SAND, some (+) Silt & Clay.	6-5-5-3	4					0-.031	
				2-1-1-1	5					.5-0	
		CL	**TIDAL MARSH DEPOSITS** Blk green Silty CLAY, Some (+) Organics, wet.								
10		CL ML	Blk Silty CLAY, some (+) Organics. Peat. @ 11.6 Blk gray Silty CLAY, wet.	3-2-2-5	6					0-.014	Sampled LHP-10.5-12
		ML CL	**GLACIAL TILL** Red-brwn SILT & CLAY, little (+) fmc Sand, trace (+) fm Gravel, wet.	8-13-15-22	7					0-.006	Sampled LHP-12-14 4-inch casing grouted in place.
15		ML	Red-brwn Clayey SILT, little (+) to some (-) fmc Sand, trace (+) to little (-) fmc Gravel, wet.	13-16-18-21	8					.7-.005	
				8-12-26-22	9					.1-0	
				18-22-21-23	10					0-0	
20		CL ML	Red-brwn CLAY & SILT, little (+) fmc Sand, trace (+) fmc Gravel, wet.	8-12-17-35	11					.6-0	
				26-22-24-35	12					1.7-0	
25		CL	Red-brwn Silty CLAY, little (+/-) fm Sand, trace (-) c Gravel, wet.	26-34-25-33	13					NR	
				12-16-18-17	14					.6-0	
		CL ML	Red-brwn Clayey SILT. Apparent relic bedding, wet.	8-10-12-10	15					NR	
30		ML CL	Red brwn blk cmf SAND. @ 29.55' Red-brwn SILT & CLAY, little (+) fmc	7-14-21-27	16					NR	

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BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. LHP-125 Page 2 of 2

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Graphic Log: Recovery	Graphic Log: Lithology	Graphic Log: Backfill	PID/MVA Readings (ppm)	Remarks
		ML CL	Sand, trace (+) fm Gravel, wet. Red-brwn, SILT & CLAY, some (-) cmf Sand, little fmc Gravel, wet.	20-23-30-38	17					NR	
				100/.5	18					NR	
35		BR	**PASSAIC FORMATION** Red-brwn Siltstone, weathered BR, bedding evident.								End of boring @ 36.0'

BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **LHP-126** Page 1 of 2

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	8"		NA"	38.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
10/26/06 - 11/1/06	Advanced Drilling	Hammer Type: Manual	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83	Easting: 571856.9 ft.
R. Empson	HSA	Failing 45	Vert Datum: NGVD88	Northing: 646622.4 ft.
			Ground Surface Elev: 8.5 ft.	TOC Elev: NA ft.

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Sample Int	Recovery	Lithology	Backfill	PID/MVA Readings (ppm)	Remarks
			CONCRETE								
		GP GP	**FILL** Gray cmf GRAVEL and cmf SAND, little (-) Silt, wet. Brwn blk mf GRAVEL and cmf SAND, some (-) Silt & Clay. Chunks of brick, wet.	2-2-2-4	1					0-.001	Sampled LHP-126-2-4
				2-5-4-3	2					0-0	
5				4-4-3-4	3					0-0	
				2-2-2-2	4					0-0	Sampled LHP-126-8-10
10		CL GP GC CL ML CL	**TIDAL MARSH DEPOSIT** Blk-green Silty CLAY, some (+) Organics, wet. Blk cmf GRAVEL and cmf SAND, some (+) Silt & Clay, little (+) Organics, wet. Blk-gray-green Silty CLAY, some (+) mf Sand, little (+) Organics, wet.	1-1-1-4	5					.3-.061	Odor
				1-4-5-6	6					1.1-.013	Odor
			GLACIAL TILL								
15		ML CL	Red-gray Silty CLAY, some (+) mf Sand, wet. Red-brwn Silty CLAY, little (-) cmf Gravel, trace (+) mf Sand, wet.	4-3-8-7	7					2.1-.005	
				13-18-24-22	8					.3-0	
		ML CL	Red-brwn SILT & CLAY, little (+) cmf Gravel, trace (+) mf Sand, wet.	13-12-18-13	9					0-0	
20				16-16-14-13	10					0-0	Evidence of basalt
				17-14-18-18	11					.1-0	
25				18-22-48-16	12					2.2-0	
				6-5-7-11	13					2.1-0	
				11-22-15-17	14					.4-0	
30		ML	Red-brwn Silty CLAY, trace (+) mf Gravel,	7-6-6-9	15					3.0-0	

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BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. LHP-126 Page 2 of 2

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Graphic Log: Recovery	Graphic Log: Lithology	Graphic Log: Backfill	PID/MVA Readings (ppm)	Remarks
		CL	wet.	7-7-6-8	16					.2-0	
		ML CL	Red-brwn SILT & CLAY, little (+) cmf Gravel. Weathered rock in shoe, evidence of bedding.	5-11-13-14	17					.1-0	
35		BR	**BEDROCK** Red-brwn Siltstone, bedding evident, (weathered bedrock).	27-34-84-100/5	18					0-0	
											End of boring @ 38.0'

BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **LHP-127** Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	8"		NA"	12.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
12/6/06 - 12/6/06	TPI	Hammer Type: NA	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 7.5 ft.	Easting: 571843.0 ft. Northing: 646699.0 ft. TOC Elev: NA ft.
TPI	Geoprobe	Geoprobe		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Backfill	PID/MVA Readings (ppm)	Remarks
		SP	**FILL** Moist, Blk fmc SAND, little (+) fmc Gravel, trace (+) Silt & Clay, wet @ 3.0.	NA	1		NR	Sampled LHP-127-0-1
								Sampled LHP-127-3-5
5				NA	2		NR	
		SP	Blk cmf SAND, some (-) fm Gravel, trace (+) Clayey Silt, wet.					
				NA	3		NR	
10		CL	**TIDAL MARSH DEPOSITS** Gray-blk Silty CLAY, some (-) Organics.					
								End of boring @ 12.0'

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BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **LHP-128** Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	8"		NA"	8.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
12/6/06 - 12/6/06	TPI	Hammer Type: NA	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 7.5 ft.	Easting: 571815.0 ft. Northing: 646716.0 ft. TOC Elev: NA ft.
TPI	Geoprobe	Geoprobe		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Recovery	Lithology	Backfill	PID/MVA Readings (ppm)	Remarks
		SP	**FILL** Damp, Blk cmf SAND, some (-) Clayey Silt, wet @ 2.6'	NA	1					NR	Sampled LHP-128-0-1
5				NA	2					NR	
		CL	**TIDAL MARSH DEPOSIT** Gray-blk Silty CLAY, some (-) Organics.								Sampled LHP-128-7-8 End of boring @ 8.0'

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BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **LP-101** Page 1 of 2

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
JMB/Allendale	SDM	8"		NA"	52.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
10/27/06 - 11/2/06	Advanced Drilling	Hammer Type: Manual	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 8.3 ft.	Easting: 572560.4 ft. Northing: 646544.2 ft. TOC Elev: NA ft.
C. Corner	HSA	Failing 45		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log (Sample Int, Recovery, Lithology, Backfill)	PID/MVA Readings (ppm)	Remarks
		SP GP	**FILL** Brwn mfc SAND, some (+) Silt & Clay, little mfc Gravel. Brick. @ 0.7 dry, Gray cfm GRAVEL, some (+) Sand, little (+) Silt & Clay.	15-19-22-28	1		.4- .008	
		SP SM	Red-brwn-tan mf SAND and SILT, some (+) Clay, little mfc Black Gravel, dry.	23-18-8-8	2		.4- .030	
5		SW SM CL ML	Brwn-blk-green mfc SAND and SILT, some (+) Clay, trace (-) mf Gravel, wet. Brwn-gray CLAY & SILT, wet. Fly ash.	1-1-1-1	3		.4- .030	
				1-1/12-1	4		.4- .012	
				1/12-1-1	5		.4- .707	Sampled LP-101-8-10
10		CL ML	**TIDAL MARSH DEPOSIT** Brwn-green Silty CLAY, some (+) Organics, wet.					
		CL ML	No sample collected. Blk-gray-green Silty CLAY, some (+) Organics, trace (+) cm Sand.	1-1	6		112- sat.	Odor, Sampled LP-101-11-13
		CL ML	Blk-gray green Silty CLAY, trace (+) mf Sand.	1-1	7		53.8- .914	Odor
15				2-2-4-3	8		35.1- sat.	Odor, Sampled LP-101-14-16
		SP	Gray-blk, mf SAND, trace (-) Silt, wet	1-1/12-1	9		3.0- .005	
		ML CL	Gray-Blk SILT & CLAY, some (+) mf Sand, wet.	2-4-2-11	10		0- .030	Odor
20		SP SM ML CL	**GLACIAL TILL** Red-gray cmf SAND, some (+) Silt, wet. Red-Brwn SILT & CLAY, some (+) cmf Gravel and cmf Sand, wet.	5-5-6-10	11		0- .003	
				5-2-7-8	12		0- .005	
25				5-10-11-8	13		0- .004	
				7-9-11-14	14		0- .013	Sampled LP-101-26-28
		ML CL	Red-brwn SILT & CLAY, little (+) mf Sand, trace (+) Gravel, wet.	6-9-13-11	15		0- .010	
30		ML	Red-brwn SILT & CLAY, some (+) cmf	4-4-5-9	16		0- .004	

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BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. LP-101 Page 2 of 2

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Backfill	PID/MVA Readings (ppm)	Remarks
		CL	Gravel and cmf Sand, wet.					
				6-9-9-4	17		0-.011	
				14-14-9-15	18		0-.010	
35				5-9-11-13	19		0-0	
		ML CL	Evidence of weathered rock, relic bedding evident.					
		ML CL	Red-brwn SILT & CLAY, little (+) mf Sand, trace (+) mf Gravel, wet. Relic bedding evident.	7-14-17-29	20		0-0	
40		ML CL	Red brwn SILT & CLAY some (+/-) cfm Gravel, some (-) to trace (+) cmf Sand, wet. Evidence of Basalt @ 42 ft.	9-9-10-14	21		.2-0	
				14-17-19-22	22		4.3-0	
		ML CL	Red-brwn SILT & CLAY, some (+) cfm Gravel and some (-) cfm Sand, wet.	27-38-43-41	23		.3-0	
45				34-34-37-35	24		0-0	
				14-14-15-21	25		1.1-0	
50		BR	**BEDROCK** Red-brwn Siltstone, weathered bedrock with bedding evident.	45-100/5.5	26		1.2-.040	Sampled LP-101-50-52 End of boring @ 52.0'

MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600080999	Well No. MW-11D Page 1 of 2

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
THC/Allendale	SDM	14"	2" PVC	.010"	62.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
11/9/06 - 12/20/06	Advanced Drilling	Hammer Type: Manual	Submersible pump.

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83	Easting: 572447.2 ft.
C. Conner	HSA	Failing 45	Vert Datum: NGVD88	Northing: 646438.2 ft.
			Ground Surface Elev: 8.0 ft.	TOC Elev: 10.5 ft.

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts RQD (%)	Sample No.	Sample Int	Recovery	Lithology	Well (Stick Up)	PID/MVA Readings (ppm)	Remarks
			CONCRETE								
		CL ML	**FILL** Wet, Blk Clayey SILT, little (+) cmf Sand, trace (+) Organics. Glass fragments.	6-7-10-14	1					.022-73.4	Cement / Bentonite grout
5		CL ML	Wet, Red-Blk Silty CLAY, some (-) cmf Sand.	10-6-5-4	2					.004-18.7	Strong petroleum odor
				4-5-6-7	3					.230-123.4	PID maxed out. Collect MW-11D-6-8. strong petroleum "oilly " odor w/ visible sheen on water and NAPL blebs are abundant
				5-2-2-2	4					.100-91.5	
10		OH	Wet, Blk, ORGANICS, some (-) Silt & Clay, wood in tip of sampler.	1-1-1-1	5					.893-MAX	PID rose to 215 Collect MW-6D-10-12 @ 10.8' Large wad of newspaper/shipping manifest 10" Steel casing to 12.0'
		CL	**TIDAL MARSH DEPOSITS** Blk-gray SILT & CLAY, little (-) fm Gravel. Decomposing organics, wet	4-5-5-4	6					0.000-0.0	
15		SW	Gray to Black fm SAND, little (-) Silt, wet.	3-2-1-2	7					.204-1.6	
		SW	**GLACIAL TILL** Red-brwn fm SAND, some (-) Silt, little (-) mf Gravel.	7-9-12-10	8					.064-1.0	
		CL ML	Red-brwn SILT & CLAY, little (-) f Sand, trace (-) mf Gravel, wet.	10-16-9-5	9					.024-0.6	
20		SW SP	Red-brwn mf SAND, little (-) Silt, trace (-) mf Gravel, wet.	4-7-7-10	10					.016-.6	
		CL ML	Red-brwn SILT & CLAY, little (-) f Sand, trace (-) cm Gravel, wet.	7-5-5-7	11					.011-.6	
25				7-9-8-7	12					.060-1.6	
		CL ML	Red-brwn SILT & CLAY, trace (-) mf Gravel, wet.	7-6-7-9	13					.029-1.0	Sheen, NAPL with moderate odor from 26.0'-28.0' interval
		CL ML	Red-brwn SILT & CLAY, trace (-) f Sand, moist.	6-7-6-6	14					.009-0.0	
30				6-9-7-7	15					.008-1.0	

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MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600080999	Well No. MW-11D Page 2 of 2

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts RQD (%)	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well	PID/MVA Readings (ppm)	Remarks
		ML	Red-brwn Clayey SILT, little (-) f Sand, wet.	7-9-9-8	16		.000-0.0	
				7-7-9-9	17		.000-0.0	
35		SP CL ML	Red-brwn f SAND, little (-) Clay & Silt, wet. Red-brwn SILT & CLAY, little (-) f Sand.	9-8-9-9	18		.000-0.0	
		CH	Red-brwn CLAY, little (-) Silt, trace (+) mf Gravel, wet.	10-9-7-9	19		.000-0.0	
40		CL ML BR	Pulverized piece of Red-brwn Siltstone. @ 39.1' Red brwn CLAY & SILT, little (-) f Sand, trace (+) f Gravel. Pieces of Red brwn siltstone in shoe, wet. Pulverized pieces of Red-brown thin bedded Siltstone.	10-13-15-100/3	20		.000-0.0	
								6" Steel casing to 44.0'
45		BR	**PASSAIC FORMATION** Red-brwn very fine grain thin bedded Siltstone, intensely fractured, with moderately weathered joints. @ 45' Transition into a moderately hard thin bedded Siltstone containing calcite nodules.	30.6%	21		.000-0.0	
		BR	@ 45.5' Horizontal fracture. 47.0' - 47.5' Same as above. @ 47.5' Transition into a fine grain sandstone w/ horizontal fractures filled in by calcite and an abundance of mica flakes. @ 47.8' Transition back into siltstone, intensely fractured w/ joints being fairly weathered.	75%	22		.000-0.0	# 00 Sand to 48.0' # 1 Sand to 50.0'
50		BR	Red-brwn very fine grain, moderately hard Siltstone, fairly fracured. @ 55.5' Transition into a fine to medium grain, fairly weathered Sandstone. Mica flakes present throughout core.	83.3%	23		.000-0.0	
55								0.010" Slot screen
		BR	Red-brwn very fine grain Siltstone, moderately hard and fairly fractured. @ 57.7' Diagonal fracture, fairly weathered w/ Fe staining. @ 58' Transition into a Red-brwn fine to medium grain soft Sandstone w/ moderately weathered fractures. @ 59.5' Red-brwn Siltstone w/ horizontal clay filled fractures. Vertical clay filled fracture extending from 60.9' - 62.0'.	53.3%	24		.000-0.0	
60								End of borehole @ 62.0'

MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600080991	Well No. MW-14D Page 1 of 2

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
THC/Allendale	SDM	14"	2" PVC	.010"	53.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
10/30/06 - 12/1/06	Advanced Drilling	Hammer Type: Manual	Submersible pump.

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83	Easting: 572006.1 ft.
C. Conner	HSA	Failing 45	Vert Datum: NGVD88	Northing: 646397.7 ft.
			Ground Surface Elev: 8.1 ft.	TOC Elev: 10.7 ft.

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts RQD (%)	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well (Stick Up)	PID/MVA Readings (ppm)	Remarks
			No samples collected.					
5								
		GP SP	**FILL** Red cfm GRAVEL, some (+) Sand, trace (+) Silt. @ 6.4' Blk cfm GRAVEL and SAND, some (+) Silt, wet.	7-4-3-2	1		0-0	Cement / Bentonite grout
		CL ML	**TIDAL MARSH DEPOSITS** Blk-green Silty CLAY, some (+) Sand, little (+) Organics, wet. No sample collected.	2-1-1-1	2		0-.010	
10								
		CL ML	Gray Clayey SILT, trace (+) cmf Gravel, decomposing organics.	3-4-4-4	1		.7-.007	10" Steel casing to 11.0'
		ML CL ML CL CL ML ML CL	**GLACIAL TILL** Red-brwn Clayey SILT, little (-) Sand, little (+) cmf Gravel, wet. Red-brown, Clayey SILT, little (-) Sand, little (+) cmf Gravel. Gray Clayey SILT, decomposing organics (roots) wet. Red-brwn Clayey SILT, trace (-) cm Gravel, wet.	3-7-9-8	2		1.3-.009	
15				12-14-16-16	3		0-0	
				17-16-30-33	4		1.1-.007	
20		ML CL	Red-brwn SILT & CLAY, trace (-) f Sand, wet.	19-20-20-24	5		1.8-.004	
		ML CL	Red-brwn SILT & CLAY, trace (-) mf Gravel, moist.	18-25-29-30	6		2.3-.004	
				9-12-15-21	7		1.9-.003	
25		ML CL	Red-brwn SILT & CLAY, trace (-) mf Gravel, moist. @ 25.3 Red brwn Clayey SILT, little (+) f Sand, moist.	16-27-28-30	8		2.8-.004	
		ML CL	Red-brown Clayey SILT, little (+) f Sand.	16-22-22-27	9		3.1-.005	
30				27-30-30-42	10		2.6-.004	

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MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600080991	Well No. MW-14D Page 2 of 2

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts / RQD (%)	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well	PID/MVA Readings (ppm)	Remarks
		ML CL	Red-brwn CLAY & SILT, trace (+) f Sand. In shoe red brwn Clayey SILT, little (-) f Sand, trace (+) cmf Gravel, wet.	NR	11		0-0	
				NR	12		0-0	
35		ML	Red-brwn Clayey SILT, trace (+) f Sand, little (+) cmf Gravel, wet. In shoe broken piece of Red brwn siltstone showing bedding (weathered bedrock-Passaic formation)	NR	13		0-0	
								# 00 Sand to 37.0' 6" Steel casing to 39.0'
40		BR	**PASSAIC FORMATION** Red-Brwn very fine grain Siltstone. @ 39.17' Fe staining. Horizontal fractures filled in by clay. Siltstone is slightly weathered. Moderately hard, thin bedded. @ 40.0' to 41.5' silstone is highly fractured with joints being slightly weathered.	11.5%	16		NR	@ 42' Shiny silver color deposits. No MVA detection; not mercury. # 1 Sand to 39.0'
45		BR	Red-Brwn very fine grain Siltstone, moderately hard and thin bedded. @ 43.3' Fe staining. @ 43.3' to 44.5' Highly fractured with joints being slightly weathered. @ 46.67'-47.58' Highly fractured with joints being filled in by clay.	17.5%	17		NR	0.010" Slot screen
50		BR	48.0-51.58 Lithology same as above. 48.0-49.17, Highly fractured with joints filled in by clay. @ 51.58 transition into a Red Brown Sandstone. @ 52.0 transition back into a Red Brown Siltstone.	61.7%	18		NR	Bentonite slurry from 51.0' - 53.0'

MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600080993	Well No. MW-16D Page 1 of 2

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
THC/Allendale	SDM	14"	2" PVC	.010"	62.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
11/3/06 - 12/7/06	Advanced Drilling	Hammer Type: Manual	Submersible pump.

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83	Easting: 572308.0 ft.
C. Conner	HSA	Failing 45	Vert Datum: NGVD88	Northing: 647004.9 ft.
			Ground Surface Elev: 6.2 ft.	TOC Elev: 8.7 ft.

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts RQD (%)	Sample No.	Graphic Log (Sample Int, Recovery, Lithology, Well)	PID/MVA Readings (ppm)	Remarks
			No samples taken.					
5								Cement / Bentonite grout
		SM	**FILL** Blk cmf SAND, little (-) Silt & Clay, trace (-) f Gravel, wet.	1-3-4-3	1		.000-0.0	
10				5-4-2-2	2		.000-0.0	slight chlorinated odor 10" Steel casing to 10.0'
		ML	**TIDAL MARSH DEPOSITS** Blk Clayey SILT, some (+) Organics, wet.	1-1-2-1	3		.000-0.0	light rotten egg smell
		SW SM	Gray mf SAND, little (-) Silt, trace (+) Clay, wet. Decompsing organics.	1-2-2-3	4		8.8-.049	
15				6-9-10-17	5		2.9-.035	
		SW SC	Gray mc SAND, little (-) Silt, wet.	7-7-9-10	6		0.0-.028	
		CL ML SM ML CL ML CL	**GLACIAL TILL** Red-brwn SILT, some (+) fm Sand, little (+) cmf Gravel. Red-brwn f SAND, little (-) Silt. Red-brwn Clayey SILT, little (-) Sand, wet. Red-brwn Clayey SILT, little (-) fm Sand, trace (+) cmf Gravel, wet.	10-17-12-10	7		0.0-.022	
20				9-6-10-9	8		0.0-.018	
				9-10-10-8	9		0.0-.000	
25				12-11-11-12	10		0.0-.005	
		ML CL	Red-brwn CLAY & SILT, little (-) cm Gravel, wet.	NR	11		0.0-.000	
30		ML CL	Red-brwn SILT & CLAY, trace (-) f Sand and mf Gravel. wet.	4-4-5-5	12		0.0-.000	

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MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600080993	Well No. MW-16D Page 2 of 2

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts RQD (%)	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well	PID/MVA Readings (ppm)	Remarks
		ML CL	Red-brwn CLAY & SILT, trace (-) f Sand. wet.	5-7-9-8	13		0.0-.000	
				4-5-6-6	14		0.0-.000	
35		ML CL	Red-brwn Clayey SILT, little (+) cmf Gravel, little (-) fm Sand.	6-9-10-10	15		0.0-.000	
				7-41-12-12	16		0.0-.004	
		BR	**PASSAIC FORMATION**					
		BR	Red-brwn pulverized Siltstone (weathered bedrock)	12-22-100/5	17		0.0-.000	
40			39.0-39.6 Pulverized Red-brwn Siltstone (weathered bedrock). @ 39.6 Red-brwn Siltstone					
		BR	Red-brwn fine grained Siltstone, intensely fractured, moderately hard and weathered. @ 44.5 Red-brown clay deposits w/ weathered bedrock.	0.0%	18		NR	6" Steel casing to 42.0'
		BR	44.0' - 44.75' Red brwn very fine grained intensely fractured Siltstone, moderately hard, fairly weathered, Fe staining. @ 45.5' horizontal fractures filled in by clay. @ 45.67" Same lithology, more indurated Siltstone, containing pyrite mineralization	57.3%	19		NR	
45								
		BR	throughout. @ 46.92' Horizontal fracture filled in by calacite. 48.0 - 48.25' Lithology same as above. @ 48.25 Horizontal fractures that are filled in by calcite. @ 50.1 horizontal fractures filled in by calcite from 50.1-50.6, Red-brwn Siltstone, moderately weathered, soft, and hightly fractured. @ 50.6 Red-brwn moderatly hard Siltstone, unweathered,	85.8%	20		NR	# 00 Sand to 48.0'
50								# 1 Sand to 50.0'
		BR	contains pyrite mineralization throughout. Red-brwn very fine grain Sandstone, moderately hard and slightly weathered. SS highly fractured (horizontal). Fractured zones, highly weathered, soft. @ 54.4 transitions into a Red-brwn fine grained Siltstone, moderately hard. @ 54.75 horizontal fractures filled in by clay. Interfingering of Siltstone and SS for	60%	21		NR	
55								0.010" Slot screen
		BR	remainder of core, pyrite mineralogy present throught the core. Red brown SS, soft, vertically fractured, moderatly weathered, with calcite and clay deposits in the joints. @ 58.83' Red brwn moderately hard siltstone, presence of Fe staining, highly fractured. From 59.92' to 61.67' Red brwn moderetly hard siltstone, intesly fractured w/ wavy bedding. Numerous horizontal fractures filled in by clay.	17.7%	22		NR	
60								End of borehole @ 62.0'

MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600080986	Well No. MW-17D Page 1 of 2

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
THC/Allendale	SDM	14"	2" PVC	.010"	57.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
10/30/06 - 11/27/06	Advanced Drilling	Hammer Type: Manual	Submersible pump.

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83	Easting: 571478.0 ft.
C. Conner	HSA	Failing 45	Vert Datum: NGVD88	Northing: 646952.8 ft.
			Ground Surface Elev: 7.8 ft.	TOC Elev: 10.1 ft.

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts RQD (%)	Sample No.	Sample Int	Recovery	Lithology	Well (Stick Up)	PID/MVA Readings (ppm)	Remarks
			No samples collected.								
											Cement / Bentonite grout
5		GW SW	**FILL** Brwn-blk-gray cfm GRAVEL and cfm SAND, little (+) Silt & Clay, trace (+) Organics, wet.	5-2-4-2	1					0-0	
		GW SW	Blk coated cfm GRAVEL and SAND, some (-) Silt, little (+) Clay, organic material on bottom.	3-3-2-3	2					0-0	Small gray NAPL blebs, ranibow sheen in black liquid odor.
10		GW SW	Blk coated cfm GRAVEL and SAND, trace (-) Silt, trace (+) Organics.	3-2-1-1	3					0-0	Black liquid, gray to rainbow NAPL blebs, odor.
		CL ML	**TIDAL MARSH DEPOSITS** Blk-green-gray Silty CLAY, some (+) Organics, trace (-) fm Sand, wet.	1-1-1-1	4					0-0	
		CL ML	Blk-gray Silty CLAY, some (-) organics, wet.	2-1-1-1	5					0-0	10" Steel casing to 13.0'
15		CL ML	**GLACIAL TILL** Gray fmc SAND. @ 16.0' Red-brwn SILT & CLAY, little (-) fmc Sand.	1-2-3-4	6					9.8-MAX	
		CL ML	Wet, Red-brwn Clayey SILT, some (-) fmc Sand, trace (+) f Gravel	4-7-7-7	7					1.3-.046	
20				7-9-10-10	8					14.7-.018	
		CL ML	Wet, Red-brwn Clayey SILT, some (-) fm Sand.	7-8-9-10	9					3.7-.012	
		CL ML	Wet, Red-brwn SILT & CLAY, little (+) fm Sand.	4-7-8-2	10					5.3-.023	
25		CL ML	Wet, Red-brwn Silty CLAY, little (+) fmc Sand, trace (+) f Gravel.	7-7-7-9	11					4.9-.007	
		CL ML	Red-brwn Clayey SILT, little (-) fm Sand.	7-8-9-8	12					3.9-.007	
30				4-5-6-6	13					8.4-.004	

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MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600080986	Well No. MW-17D Page 2 of 2

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts RQD (%)	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well	PID/MVA Readings (ppm)	Remarks
		CL ML	Red-brwn SILT & CLAY, trace (+) Sand, wet. @ 32.0' small lens w/ relic bedding. No bedding apparent beyond. Red-brwn SILT & CLAY, little (+) fmc Sand w/ Shale (Bedrock) Fragments.	4-6-6-5	14		4.4- .007	
		BR	**PASSAIC FORMATION** Wet, Red-brwn weathered bedrock Shale fragments	10-13-17-100/6	15		18.4- .155	
35								# 00 Sand to 36.0'
		BR	Red-Brwn mudstone, thin laminations. @ 37.3' fracture with possible calcite deposits.	0.0%	16		NR	6" Steel casing to 37.0' # 1 Sand to 38.0'
40		BR	Red-Brwn Siltstone, contains vertical fractures with secondary mineralization. @ 43.6' Transition into a Red-brwn friable Sandstone, containing feldspar (possible arkose).	55.9%	17		NR	
45		BR	44.0' - 46.17' Red-brwn fine grain friable Sandstone, containing numerous horizontal fractures. @ 46.0' Horizontal fractures filled in by secondary mineralization. @ 47.0' Transition back into a Red-brwn Siltstone. @ 47.92' Horizontal fracture filled in by calcite.	50.0%	18		NR	0.010" Slot screen
50		BR	Red-Brwn Siltstone. @ 50.1' Horizontal fracture filled in by clay. @ 51.75' Horizontal fracture filled in by clay. @ 53.25' Numerous hairline fractures.	85%	19		NR	
55		BR	54.0' - 54.6' Same as above. @ 55.3' Fracture filled in by clay.	88%	20		NR	Bentonite slurry from 52.0' - 57.0' End of borehole @ 57.0'

MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600080987	Well No. MW-18D Page 1 of 2

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
THC/Allendale	SDM	14"	2" PVC	.010"	58.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
11/3/06 - 11/29/06	Advanced Drilling	Hammer Type: Manual	Submersible pump.

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 7.7 ft.	Easting: 571908.7 ft. Northing: 646922.2 ft. TOC Elev: 10.0 ft.
C. Conner	HSA	Failing 45		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts RQD (%)	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well (Stick Up)	PID/MVA Readings (ppm)	Remarks
			No samples collected.					
5								Cement / Bentonite grout
			No Recovery	1-2-2-3	1		.001-0.0	
				5-4-4-2	2		.000-0.0	
10		CL ML	**TIDAL MARSH DEPOSITS** Blk-gray-green Silty CLAY, some (+) Organics, trace (+) fm Sand, wet.	1-2-1-1	3		.009-0.0	10" Steel casing to 11.0'
		CL ML	Blk-brwn Clayey SILT, decomposing plant roots. @ 13.4 3" piece of wood.	1-2-2-1	4		0.1-.009	
15		CL ML	Gray Clayey SILT, some (-) fm Sand, wet.	2-3-7-10	5		0.0-.009	
		SW	**GLACIAL TILL** Red-brwn well sorted f SAND, little (-) Silt.					
		CL ML	Red-brwn Clayey SILT, little (+) cmf Gravel, wet.	4-5-5-6	6		2.6-.037	
20				7-7-9-10	7		2.0-.008	
				9-10-11-8	8		0.1-.009	
				9-10-10-10	9		0.1-.009	
25		CL ML	Red-brwn SILT & CLAY, little (+) fm Sand, wet.	7-9-10-10	10		0.3-.007	
				12-11-15-20	11		2.6-.004	
30		CL ML	Red-Brwn SILT & CLAY, wet. Pulverized pieces of C Gravel found @ 33 ft. in shoe of split spoon, wet.	7-9-12-15	12		3.0-.007	

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MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600080987	Well No. MW-18D Page 2 of 2

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts RQD (%)	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well	PID/MVA Readings (ppm)	Remarks
				10-11-12-10	13		2.9-.006	
		CL ML	Red-Brown Clayey SILT, some(-) cmf Gravel. @ 34.4' Same as above with Red brown Siltstone (showing bedding).	7-9-13-10	14		5.5-.001	
35		BR	**PASSAIC FORMATION** Red-brwn weathered Siltstone (weathered bedrock)	13-16-18-10	15		1.9-.004	
		BR	Pulverized Siltstone found in shoe (Siltstone showing bedding).	25-100/5	16		8.0-.006	# 00 Sand to 38.0' 6" Steel casing to 40.0'
40		BR	Red-Brwn very fine grain Siltstone. Thin bedding. @ 44.25' Horizontal hairline fracture, moderately hard.	0.0%	17		NR	# 1 Sand to 40.0'
45		BR	Red-brwn very fine grained, thin bedded Siltstone, numerous hairline horizontal fractures throughtout core. @ 44.25' core is pulverized. @ 46.0' signs of crossbedding (fractures filled in by calcite). @ 46.5', 47.0', and 47.67' Siltstone is noticably softer than rest of the core.	36.5%	18		NR	0.010" Slot screen
				59.2%	19		NR	
50		BR	Red-Brwn very fine grained Sandstone, very friable. @ 51.2' Transition back into a red-brown fine grain Siltstone. @ 52.0' Siltstone is much harder than previous cores.					
		BR	Red-Brwn fine grain, thin bedded Siltstone. @ 56.0' Horizontal fractures filled in by clay.	90%	20		NR	
55								Bentonite slurry from 52.0' - 58.0'
								End of borehole @ 58.0'

MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600080992	Well No. **MW-20D** Page 1 of 2

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
THC/Allendale	SDM	14"	2" PVC	.010"	53.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
10/30/06 - 12/4/06	Advanced Drilling	Hammer Type: Manual	Submersible pump.

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83	Easting: 571692.8 ft.
C. Conner	HSA	Failing 45	Vert Datum: NGVD88	Northing: 646589.9 ft.
			Ground Surface Elev: 8.1 ft.	TOC Elev: 10.5 ft.

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts RQD (%)	Sample No.	Graphic Log (Sample Int, Recovery, Lithology, Well)	PID/MVA Readings (ppm)	Remarks
			No samples collected.					
5								Cement / Bentonite grout
		GP	**FILL** Blk GRAVEL and SAND, some (+) Silt. @ 6.2' Blk-gray-brwn Silty CLAY, little fm Sand, some (+) Organics, wet.	1-1-1-1	1		0-0	
10		GW	Blk cmf GRAVEL, wet.	3-2-2	2		0-0	6" Steel casing to 10.5'
		CL ML	**TIDAL MARSH DEPOSITS** Blk-gray Silty CLAY, little (+) fm Sand and Organics, wet.	12-2-2-2	3		3.3- .004	Sample-MW-20D-12-14
15		CL ML	**GLACIAL TILL** Red-brwn SILT & CLAY, little (-) fmc Sand, wet.	4-5-4-5	4		5.1- 0	
				4-5-4-4	5		.3-0	
		NR	No recovery.	8-6-7-9	6		0-0	
20		ML	Red-brwn Clayey SILT, little (+) fmc Sand, trace (+) cmf Gravel, wet.	6-7-9-9	7		1.7- .003	
		ML CL	Red-brwn SILT & CLAY, some (-) cmf Sand, little (-) fm Gravel, wet.	6-8-10-12	8		1.2- 0	
25		ML CL	Red-brwn SILT & CLAY, little (-) fmc Sand, wet. @ 29.3'Relic bedding, weathered bedrock.	9-9-9-10	9		5.1- 0	
			@ 29.5' competent Siltstone in tip of ss-sampler, wet.	9-12-12-16	10		5.2- 0	
				13-12-15-16	11		5.9- 0	
30		CL	Red-brwn Silty CLAY, some (-) cmf Sand,	8-8-9-11	12		5.1- 0	Cobble in tip of 28.0' - 30.0'

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MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600080992	Well No. MW-20D Page 2 of 2

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts RQD (%)	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well	PID/MVA Readings (ppm)	Remarks
		ML	wet. @ 32.9 have weathered bedrock, bedding evident. Red-brwn Shale, wet.	14-21-20-18	13		5.5-0	interval ss-sample Sample MW-20D-32-34
35		BR	**PASSAIC FORMATION** Weathered Siltstone, bedrock	10-23-60-60	14		7.8-.027	Sample MW-20D-36-38
				100/6	15		18.2-.059	
		BR	Red-Brwn Siltstone, fairly fractured, moderately hard. @ 39.92 Horizontal fracture filled in by clay.	43.3%	16		0.0-.000	10" Steel casing to 38.0' # 00 Sand to 39.0' # 1 Sand to 41.0'
40								
45		BR	Red-Brwn very fine grain Siltstone, moderately weathered. Siltstone in this interval is intensely fractured with clay deposits in fracture @ 44.50' - 46.58' very fine grain moderatly hard, unweathered Siltstone. @ 46.42' Grading back into a sandy Siltstone. @ 46.67' Red-Brwn fine grained Sandstone.	64.2%	17		0.0-.000	0.010" Slot screen
50		BR	@ 47.17' Transition into a fine grained highly weathered Siltstone. Between 47.17' - 48.0' Siltstone contains shiny silver to gold metallic particles (checking for Hg) Red-Brwn fine grain Siltstone. @ 48.17' Diagonal fracture that is filled w/clay. Entire run is moderately fractured w/ mica flakes. @ 50.25' Red-brwn fine grain Sandstone. @ 50.33 transition back into Red-brwn Siltstone. @ 51.83 Red-brwn Sandstone w/ m Gravel. @ 52.0 Grading back into Red-Brwn fine grain Siltstone.	23.3%	18		0.0-.000	End of borehole @ 53.0'

MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600081002	Well No. MW-21D Page 1 of 2

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
THC/Allendale	SDM	14"	2" PVC	.010"	60.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
11/3/07 - 12/5/06	Advanced Drilling	Hammer Type: Manual	Submersible pump.

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83	Easting: 572532.2 ft.
C. Conner	HSA	Failing 45	Vert Datum: NGVD88	Northing: 646048.6 ft.
			Ground Surface Elev: 7.5 ft.	TOC Elev: 9.5 ft.

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts RQD (%)	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well (Stick Up)	PID/MVA Readings (ppm)	Remarks
			No samples collected.					
5								Cement / Bentonite grout
		SW SC	**FILL** Wet, Blk cmf SAND, some (-) Silt & Clay. Wood chunks in the tip of sampler.	10-7-4-4	1		NR	
10				5-4-4-5	2		NR	
		PT	**TIDAL MARSH DEPOSITS** Wet, Blk, ORGANICS, some (-) Silt & Clay, Peat.	1-1-1-1	3		NR	
		CL ML	Gray-blk Silty CLAY, little (-) f Sand.	2-3-4-4	4		0.6-.004	6" Steel casing to 13.0'
		CL ML	Gray Silty CLAY, little (-) f Sand. Decomposing organics.					
15		SW	**GLACIAL TILL** Red-brwn mf Sand, little (-) Silt, trace (-) cmf Gravel, wet.	5-6-6-6	5		3.0-.010	
		ML	Red-brwn Clayey SILT, some (-) fm Sand, trace f Gravel, wet.	6-7-6-7	6		3.4-.005	
20		ML CL	Red-brwn SILT & CLAY, trace (-) f Sand, wet.	4-4-4-4	7		0.0-.005	
				4-5-5-6	8		0.0-.005	
		CL ML	Red-brwn CLAY & SILT, trace (+) cmf Gravel, trace (-) mf Sand, wet.	4-5-5-6	9		0.0-.004	
25				16-30-65-24	10		0.8-.000	
		SP	Red-brwn fm SAND, some (+) Silt, wet.					
		ML	Red-brwn Clayey SILT, trace (+) cmf Gravel, wet.	7-9-9-8	11		0.8-.000	
30		ML	Red-brwn Clayey SILT, little (+) fm Sand. @ 29.8' Red brwn Clayey SILT, little (+) fm Sand, trace (+) cmf Gravel, wet.	5-5-9-15	12		0.4-.000	

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MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600081002	Well No. MW-21D Page 2 of 2

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts RQD (%)	Sample No.	Graphic Log: Sample Int	Graphic Log: Recovery	Graphic Log: Lithology	Graphic Log: Well	PID/MVA Readings (ppm)	Remarks
		SM SC	Red-Brwn fm SAND, little (-) Silt & Clay, wet.	9-10-10-11	13					1.9-.000	
		CL ML	Red-Brwn CLAY & SILT, trace (+) mf Gravel, wet.	6-6-6-9	14					1.0-.000	
35		CL ML	Red-Brwn CLAY & SILT, little (+) f Sand, little (-) cmf Gravel, wet. @ 36.2' Same as above w/ fragments of Red-Brwn Siltstone.	8-8-10-12	15					1.8-.000	
		CL ML	Red-Brwn CLAY & SILT, little (+) f Sand and cmf Gravel. @ 37.1' Pulverized pieces of Red-brwn Siltstone	16-30-28-15	16					2.3-.000	
40		ML	Red-brwn Clayey SILT, little (+) fm Sand. Fragments of Red-brwn Siltstone. Siltstone showing bedding (weathered bedrock).	19-18-15-100/4	17					1.6-.003	
45		BR	**PASSAIC FORMATION** Red-brwn very fine grained moderately hard Siltstone. @ 46.0' Horizontal fracture filled in by clay, pyrite deposits in joints. @ 47.25' Transition into a fine grained, moderately hard Sandstone.	70%	18					NR	10" Steel casing to 43.0' # 00 Sand to 44.0' # 1 Sand to 46.0'
50		BR	Red-brwn very fine grained, moderately hard Sandstone. @48.5' Horizontal fracture with pyrite deposits. @ 49.5' Horizontal fracture filled in by calcite, Sandstone softer. @ 56.5' Sandstone intensely fractured.	57%	19					NR	
55		BR	Red-brwn very fine grain Siltstone, moderately hard containing relic bedding. @ 53.25' Transition into a fine grain Red-brwn Sandstone, soft, with interbeds of Siltstone. @ 53.83' Grading into a Red-brwn Siltstone containing pyrite. @ 55.16' Transition back into a red-brwn fine grain Sandstone. 26" to 42" three diagonal open fractures (about 4" each). Sandstone very soft. @ 56.75'	40%	20					NR	0.010" Slot screen
60		BR	Transition back into a Red-brwn Siltstone. @ 57.58' intensely fractured zone, soft. Red-brwn very fine grain Sandstone containing interbeds and lenses of Red-brwn Mudstone. Sandstone moderatly hard with pyrite mineralization scattered throughout core. @ 59.67' Grading into a Red-brwn very fine grain Siltstone containing horizontal fractures filled in by clay. Siltstone moderately hard containing pyrite.	95.8%	21					NR	Bentonite slurry from 58.0' - 60.0' End of borehole @ 60.0'

MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600081001	Well No. **MW-21S** Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	6"	2" PVC	.010"	10.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
10/25/06 - 10/25/06	Advanced Drilling	Hammer Type: Manual	Submersible pump.

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 7.4 ft.	Easting: 572519.4 ft. Northing: 646068.0 ft. TOC Elev: 10.2 ft.
C. Conner	HSA	Failing 45		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Sample Int	Recovery	Lithology	Well (Stick Up)	PID/MVA Readings (ppm)	Remarks
			Concrete								
		CL	**FILL**	6-9	1					0.9-0	Cement / Bentonite grout
		ML	Brwn, Silty CLAY, little (+) cmf Sand, moist.	7-6-7-8	2					NR	# 00 Sand to 2.0'
		NR	No recovery								# 1 Sand to 3.0'
		SP	Brwn-tan cmf SAND, little (+) Silt & Clay, trace (+) fm Gravel, @ 4.3' Large wood frag.	5-6-6-7	3					1.8-0	0.010" Slot screen
5		SP	Wet, cmf SAND, little (+) Silt & Clay, trace (+) fm Gravel.	11-6-5-3	4					16.8-0	
		CL	**TIDAL MARSH DEPOSITS** Tan-brwn Silty CLAY, some (-) organics, wet.	5-2-2-2	5					.9-0	Odor, rainbow sheen w/minor amounts of NAPL on water in spoon in 8.0' -10.0' interval
10											End of borehole @ 10.0'

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MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600080990	Well No. MW-22S Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	6"	2" PVC	.010"	12.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
10/25/06 - 10/25/06	Advanced Drilling	Hammer Type: Manual	Submersible pump.

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 8.5 ft.	Easting: 572216.6 ft. Northing: 646279.8 ft. TOC Elev: 10.9 ft.
C. Conner	HSA	Failing 45		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log (Sample Int, Recovery, Lithology, Well)	PID/MVA Readings (ppm)	Remarks
		NR	No Recovery.	12-58-32-34	1		0.1-0	
		SW SM	**FILL** Moist-dry, Brwn cmf SAND, little (+) Clayey Silt, little (-) cmf Gravel. Brick fragments.	13-12-24-13	2		32.8-0	Cement / Bentonite grout
5		ML CL	Moist, Red brwn SILT & CLAY, little (+) fmc Sand, @ 4.9' Wet, Blk fm SAND, little (-) fmc Gravel, trace (-) Silt & Clay.	2-5-4-8	3		16.8-0	# 00 Sand to 4.0' # 1 Sand to 5.0'
		SW GW	Wet, Blk cmf SAND, little (-) fmc Gravel, trace (-) Silt & Clay.	5-6-6-5	4		1.3-0	Slight sheen with odor in 6.0' - 8.0' interval
		NR	No Recovery.	8-8-4-3	5		0-0	0.010" Slot screen
10		ML CL	**TIDAL MARSH DEPOSITS** Wet, Brwn Clayey SILT, some (-) Organics, @ 11.2' Gray SILT & CLAY, little (+) fmc Sand.	1-1-2-2	6		NR	End fo borehole @ 12.0'

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MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600080989	Well No. MW-23D Page 1 of 2

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
THC/Allendale	SDM	14"	2" PVC	.010"	53.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
11/15/06 - 11/30/06	Advanced Drilling	Hammer Type: Manual	Submersible pump.

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 8.2 ft.	Easting: 572133.4 ft. Northing: 646560.0 ft. TOC Elev: 10.7 ft.
C. Conner	HSA	Failing 45		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts RQD (%)	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well (Stick Up)	PID/MVA Readings (ppm)	Remarks
			No samples Collected. See MW-23S log for shallow descriptions.					
5								Cement / Bentonite grout
10								
			No Recovery	1-2-1-1	1		0.0-.000	
		CL ML	**TIDAL MARSH DEPOSITS** Blk Clayey SILT. Decomposing organics, wet.	1-3-3-3	2		0.0-0.043	6" Steel casing to 13.0' Sulfer Odor
15				3-7-6-7	3		0.0-0.076	
		CL ML CL ML	**GLACIAL TILL** Red-brwn Clayey SILT, little (+) fmc Sand, trace (-) cmf Gravel, wet. Red-brwn SILT & CLAY, little (-) cmf Gravel, trace (+) f Sand, wet.	7-9-10-12	4		0.0-0.004	
20				12-13-10-11	5		0.8-0.007	
		CL ML	Red-Brwn Silty CLAY, trace (-) cmf Gravel, moist.	11-13-15-12	6		TOL-0.005	
				10-9-10-10	7		0.0-0.000	
25				10-13-13-14	8		0.0-0.000	
				9-12-12-16	9		0.0-0.004	
30		CL ML	Red-brwn Clayey SILT, some (+) f Sand, wet.	12-8-9-8	10		0.0-0.000	

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MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600080989	Well No. MW-23D Page 2 of 2

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts RQD (%)	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well	PID/MVA Readings (ppm)	Remarks
		CL ML	Red-brwn CLAY & SILT, wet.	9-8-10-11	11		0.0-0.004	
				5-7-7-7	12		0.0-0.000	
35		CL ML	Red-brwn Clayey SILT, little (-) mf Gravel.	7-6-7-2	13		0.0-0.008	
				7-7-9-11	14		0.0-0.015	
		BR	**PASSAIC FORMATION** (Weathered bedrock) Red-brwn Siltstone w/ bedding.	15-100/5	15		0.0-0.000	# 00 Sand to 39.0'
40		BR	Red-brwn very fine grain Siltstone. 41.0' - 41.5' diagonal fractures filled in by clay, moderately hard. @ 41.5' Pulverized pieces of Red-brwn Siltstone, soft. @ 42.67' Horizontal fracture that splits core. Fracture filled in by clay.	18.8%	16		NR	10" Steel casing to 39.0' # 1 Sand to 41.0'
		BR	Red-brwn Siltstone, moderately hard, moderatley fractured. @ 44.67' Fe staining, shiny gold/silver minerals scattered throughout inner core (possible pyrite). @ Clay deposits in fractures.	16.7%	17		NR	
45		BR	Red-brwn very fine grain Siltstone, fairly hard. @ From 48.83' - 49.2', Horizontal fractures are filled in by calcite. @ From 49.2' - 51.83', highly fractured zone. @ 51.83' Horizontal fracture filled in by clay. @ 52.5' Horizontal fracture filled in by calcite.	28.3%	18		NR	0.010" Slot screen
50								End of borehole @ 53.0'

MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600080988	Well No. **MW-23S** Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	6"	2" PVC	.010"	12.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
10/26/06 - 10/26/06	Advanced Drilling	Hammer Type: Manual	Submersible pump.

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83	Easting: 572131.4 ft.
C. Conner	HSA	Failing 45	Vert Datum: NGVD88	Northing: 646552.5 ft.
			Ground Surface Elev: 8.2 ft.	TOC Elev: 10.5 ft.

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log (Sample Int, Recovery, Lithology, Well)	PID/MVA Readings (ppm)	Remarks
		GW SW	**FILL** Brwn red cmf GRAVEL and mfc SAND, little (+) Clay & Silt. Grass, topsoil, organic material. @ 0.25' Red-brwn SILT & CLAY.	4-1-2-3	1		.2/0	Cement / Bentonite grout
		CL ML	Red CLAY & SILT, trace (-) mf Sand. Brick fragments, wet.	3-2-2-2	2		.2/0	# 00 Sand to 2.0' # 1 Sand to 3.0'
5		CL ML	Red CLAY & SILT, little (-) m Gravel, trace (+) mf Sand, wet	1-3-3-2	3		.3/0	
		CL ML	Red CLAY & SILT, some mf Sand, trace (-) mf Gravel, wet.	4-3-3-4	4		.3/0	0.010" Slot screen
		CL ML	Red Silty CLAY, trace (-) Gravel and Sand, wet.	4-3-5-4	5		.3/0	
10		CL ML	**TIDAL MARSH DEPOSITS** Blk CLAY & SILT, some greenish blk-orange Organics, wet.	1-2-1-1	6		.3/0	End of borehole @ 12.0'

Stick Up

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MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600080994	Well No. **MW-24S** Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	6"	2" PVC	.010"	12.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
10/26/06 - 10/26/06	Advanced Drilling	Hammer Type: Manual	Submersible pump.

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83	Easting: 572051.8 ft.
C. Conner	HSA	Failing 45	Vert Datum: NGVD88	Northing: 646780.2 ft.
			Ground Surface Elev: 9.8 ft.	TOC Elev: 12.6 ft.

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Sample Int	Recovery	Lithology	Well	PID/MVA Readings (ppm)	Remarks
		GW	**FILL** Gray-Red-Brwn mf GRAVEL, some (+) Silt & Clay, little (+) Sand.	7-7-13-13	1				Stick Up	.2-0	Cement / Bentonite grout # 00 Sand to 1.5' # 1 Sand to 2.0'
		GW	Blk cm GRAVEL, wet	8-10-11-10	2					.3-0	
5				2-6-2-2	3					.3-0	Black liquid coating sediment, sheen
		GW SW	Blk cfm GRAVEL and cmf SAND, little (+) Clayey Silt. @ 6 .2' Blk Clayey SILT, little (+) cm Gravel, trace (+) f Sand. @ 7.3' Gray GRAVEL, some (+) Clay & Silt, wet.	2-8-7-8	4					.3-.005	NAPL visible 0.010" Slot screen
		CL ML	**TIDAL MARSH DEPOSITS** Brwn-gray CLAY & SILT, little (+) cm Sand and cm Gravel. @ 9.5' Blck-gray-brwn silty CLAY, some (-) cm Sand, little (+) cm Gravel, wet.	5-7-10-7	5					.3-.035	Odor
10		ML	Gray to blk mf SAND, little (+) Silt, trace (+) mf Gravel. @ 11.0' Clayey SILT. Decomposing organics.	1-1-2	6					0.0-.035	Sheen, Black blebs throughout saturated material. Saturated liquid with Rainbow sheen. Hg beads visible with magnifying glass.

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MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600080997	Well No. MW-25D Page 1 of 2

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
THC/Allendale	SDM	14"	2" PVC	.010"	54.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
11/7/06 - 12/21/06	Advanced Drilling	Hammer Type: Manual	Submersible pump.

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83	Easting: 572549.8 ft.
R. Empson	HSA	Failing 45	Vert Datum: NGVD88	Northing: 646665.1 ft.
			Ground Surface Elev: 7.5 ft.	TOC Elev: 10.3 ft.

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts RQD (%)	Sample No.	Sample Int	Recovery	Lithology	Well (Stick Up)	PID/MVA Readings (ppm)	Remarks
			No samples collected.								
5											Cement / Bentonite grout
		CL ML	**TIDAL MARSH DEPOSITS** Gray blk Silty CLAY, some (-) organics.	1-1/12-1	1					NR	
10		ML	Gray-blk Clayey SILT. Decomposing Organics.	NR	2					MAX	Beads of metallic mercury
				NR	3					MAX	Beads of metallic mercury were visable on gloves and sample
15		SW	**GLACIAL TILL** Red-brwn fm SAND, little (+) Silt. @ 17.3' Red-brwn cmf SAND, trace (+) Silt.								10" Steel casing to 15.0' through TMD. Deviation from FOP approved by USEPA.
				7-8-9-9	4					.004-0.0	
		CL ML	Red-brwn Clayey SILT, trace (+) fm Sand, trace (-) cmf Gravel, wet	9-10-12-10	5					.010-0.0	
20		CL ML	Red-Brwn SILT & CLAY, trace (+) f Sand, trace (-) mf Gravel, moist.	10-9-10-9	6					.018-1.0	
				7-9-7-7	7					.010-0.0	
		CL ML	Red-brwn Clay & Silt, trace (-) mf Gravel, wet.								
25				6-7-7-8	8					.013-0.0	
		CL ML	Red-brwn Clayey SILT. @ 27.3 Pulverized pieces of blk and Red-brwn Shale.	10-9-6-9	9					.016-0.0	
30		CL ML	Red-brwn CLAY & SILT, trace (+) mf Gravel, wet.	17-14-16-13	10					.023-0.0	

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MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600080997	Well No. MW-25D Page 2 of 2

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts RQD (%)	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well	PID/MVA Readings (ppm)	Remarks
		CL ML CL ML	Red-brwn Clayey SILT, little (+) fm Sand. @ 32.4 Red-brwn fm SAND, some (-) Silt, wet. Red-brwn SILT & CLAY, little (-) f Sand, trace (+) mf Gravel.	16-20-29-33	11		.026-0.0	
				10-6-9-6	12		.034-0.0	MW-25D-33-35
35				10-10-10-11	13		.010-0.0	
		CL ML	Red-brwn Clayey SILT, trace (-) f Gravel. moist.	4-5-6-5	14		.005-0.0	
		CL ML	Red-brwn SILT & CLAY, little (-) f Sand, trace(+) to no cmf Gravel, wet.	9-10-10-9	15		.016-0.0	
40		BR	**PASSAIC FORMATION** Red-brwn Siltstone w/ thin bedding (bedrock), dry.	13-26-100/5	16		.010-0.0	# 00 Sand to 40.0' 6" Steel casing to 42.0' # 1 Sand to 42.0'
		BR	Red-brwn very fine grained, intensely fractured and weathered Siltstone. @ 44.42' Fe staining.	0.0%	17		NR	
45		BR	46.0' - 46.17' Same as above. @ 46.17' Red-brwn very fine grained moderately hard Siltstone. @ 47.42' Horizontal fractures filled in by clay. @ 47.67' abrupt change into a Red-brwn, fine to medium grained soft Sandstone, intensely fractured and weathered. From 48.17' - 50.0' Interfingering of Siltstone and Sandstone, w/ Sandstone containing fractures.	48.3%	18		NR	
50		BR	51.0'-52.08' Red-brwn moderately hard, very fine grained Siltstones w/ deposits of feldspar within its matrix. @ 52.08' Horizontal fracture filled in by clay. @ 52.08-53.50 Highly fractured and moderately weathered joints. @ 53.50 Diagonal hairline fractures filled in by clay.	63.9%	19		NR	0.010" Slot screen End of borehole @ 54.0'

MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600080998	Well No. **MW-26S** Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	6"	2" PVC	.010"	10.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
10/26/06 - 10/26/06	Advanced Drilling	Hammer Type: Manual	Submersible pump.

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83 Vert Datum: NGVD88 Ground Surface Elev: 9.3 ft.	Easting: 572484.2 ft. Northing: 646630.6 ft. TOC Elev: 12.0 ft.
C. Conner	HSA	Failing 45		

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Sample Int	Recovery	Lithology	Well (Stick Up)	PID/MVA Readings (ppm)	Remarks
		CL ML	**FILL** Brwn CLAY & SILT, some (-) mf Sand.	5-2-2-3	1					0-0	
											Cement / Bentonite grout
		GW SW CL	Mf GRAVEL, some fm Sand. Red-Brwn CLAY & SILT, some f Sand, wet.	7-5-3-2	2					0-0	# 00 Sand to 2.0' # 1 Sand to 3.0'
5		ML CL	Red-Brwn Silty CLAY, some mf Sand, wet.	2-1-2-2	3					.2-0	0.010" Slot screen
				6-7-7-8	4					.2-0	
		CL ML	**TIDAL MARSH DEPOSITS** Blk-green Silty Clay, some Organics.								
10		CL ML	Blk-green Silty CLAY, some Organics. @ 8.6' to Red-brwn CLAY & SILT, trace mf Sand and Gravel.	2-2-2-2	5					.2-0	Sample MW-26S-8-10 End of borehole @ 10.0'

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MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600081000	Well No. MW-6D Page 1 of 2

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
THC/Allendale	SDM	14"	2" PVC	.010"	60.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
11/8/06 - 12/11/06	Advanced Drilling	Hammer Type: Manual	Submersible pump.

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83	Easting: 572848.3 ft.
C. Conner	HSA	Failing 45	Vert Datum: NGVD88	Northing: 646237.5 ft.
			Ground Surface Elev: 11.3 ft.	TOC Elev: 13.5 ft.

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts RQD (%)	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well (Stick Up)	PID/MVA Readings (ppm)	Remarks
		GC SC	**FILL** Blk-Gray SILT & CLAY. @ .2 Blk cmf GRAVEL, little (+) cmf Sand.	8-12-23-26	1		NR	
		GW	Blk cmf GRAVEL.	NR	2		3.7-.000	
5		SW	Gray cmf SAND.	NR	3		2.6-.000	Cement / Bentonite grout
			No Recovery, large cobble in the tip of the sampler	NR	4		NR	
		SW SC	Brwn blk fmc SAND, some (-) Silt & Clay. @ 8.4' Wood.	NR	5		NR	
10		SC	@ 8.5' Blk cmf SAND, little (-) Silt & Clay, wet. Blk cmf SAND, little (-) f Gravel trace (-) Silt & Clay. Wood, Pyrite and rock fragments, wet.	NR	6		NR	
		CL ML	Silty CLAY, little (+) f Sand. @ 12.5' Blk gray cmf SAND, little (-) f Gravel.	NR	7		NR	10" Steel casing to 13.0'
		PT	**TIDAL MARSH DEPOSITS** Blk-brwn ORGANICS, some (-) Silt & Clay, wet. No Recovery	1-2-3-2	8		NR	
15		SW SC	Blk-gray SILT, some (-) fm Sand. Decomposing organics, wood, wet.	2-2-3-3	9		NR	
		SW SC	Gray mf SAND, little (-) Silt, wet.	1-1-2-2	10		NR	
20		CL	**GLACIAL TILL** Gray CLAY & SILT, little (-) fm Sand. @ 20.8' Red-brwn CLAY & SILT, little (-) fm Sand.	2-2-4-4	11		NR	
		CL ML	Red-brwn Clayey SILT, little (+) mf Sand, trace (+) cmf Gravel.	4-5-6-7	12		0.0-.017	
25				6-9-10-11	13		0.0-.016	
				9-11-13-15	14		0.0-.013	
		CL ML	Red-brwn CLAY & SILT, trace (+) c Gravel. @ 29.5' Red-brwn Clayey SILT, little (-) c Gravel.	5-6-9-11	15		0.0-.012	
30		CL	Red-brwn Clayey SILT, little (-) cmf Gravel,	5-9-10-10	16		0.0-.016	

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MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: 2600081000	Well No. MW-6D Page 2 of 2

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts RQD (%)	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well	PID/MVA Readings (ppm)	Remarks
		ML	trace (-) fm Sand.					
				7-10-11-10	17		0.0-.010	
		CL ML	Red-brwn Clayey SILT, trace (-) cm Gravel.	5-7-7-8	18		0.0-.010	
35								
				9-10-10-14	19		0.0-.012	
		CL ML	Red-brwn Clayey SILT, little (+) fm Sand, wet.	4-4-3-4	20		0.0-.019	
40				4-4-6-2	21		0.0-.013	
		CL ML SW	Red-brwn SILT, little (+) mc Sand and fm Gravel. Pulverized cobble. @ 43.4' Red-brwn fm SAND, some (-) Silt, little cmf Gravel.	4-6-8-9	22		0.0-.013	
				7-8-8-8	23		0.0-.012	
45			**PASSAIC FORMATION** Red-brwn Siltstone, containing bedding (weathered BR)	100/2	24		0.0-.010	# 00 Sand to 46.0' 6" Steel casing to 46.0'
			Red-brwn Siltstone, moderately hard, intensely fractured. @ 48.0' - 48.67' Horizontal fractures filled in by calcite. @ 50.67' Transition into Red-brwn Sandstone, moderately hard. @ 51.58' Horizontal fractures filled in by clay. @ From 51.67' - 53.0' Interfingering of Siltstone and Sandstone. Sandstone being fairly weathered. Pyrite deposits throughout the core.	30%	25		NR	# 1 Sand to 48.0'
50				70%	26		NR	
55			53.0' - 53.38' Red brwn fine grained sandstone, soft, highly fractured, w/ fractures fairly weathered. @ 53.79' Transition into a Red-brwn very fine grained Siltstone, moderately hard. @ 55.0' horizontal fractures filled by clay. @ 56.25 Transitions back into a Red-brwn Sandstone, moderately hard. @ 56.67' Grading into a coarse grained Sandstone.	54.2%	27		NR	0.010" Slot screen
60			@ 57.08' Sandstone contains pieces of quartz gravel in matrix). @ 57.5' back into Red-brwn siltstone. Red-brwn very fine grained siltstone, moderately hard, highly fractured. @ 58.25' Horizontal fractures. @ 58.58' horizontal fractures, moderately weathered, Fe staining. @ 59.5' Red-brwn very fine grain Sandstone, moderately hard.					End of borehole @ 60.0'

BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **WWT-101** Page 1 of 2

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
MPC/Allendale	SDM	8"		NA"	47.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
10/27/06 - 11/6/06	Advanced Drilling	Hammer Type: Manual	NA

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD83	Easting: 572035.5 ft.
R. Empson	HSA	Failing 45	Vert Datum: NGVD88	Northing: 646780.6 ft.
			Ground Surface Elev: 9.4 ft.	TOC Elev: NA ft.

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Sample Int	Recovery	Lithology	Backfill	PID/MVA Readings (ppm)	Remarks
		SW	**FILL** Brown cmf SAND and SILT, some (+) Clay and cmf Gravel, dry.	5-4-5-6	1					.2-.001	
		GW SW	Brown cmf GRAVEL and mf SAND, some (+) Silt, some (+) Clay, wet. Grading @ 2.7 Red-brwn SILT & CLAY, some (+) cmf Sand, little cfm Gravel, wet. Chunks of brick	5-5-5-5	2						
5			No recovery.	1-1-1-2	3						
		CL ML	Red-Brown SILT & CLAY, some (+) cmf Sand, little (+) mf Gravel, wet. @ 6.7 Brown-Black-Red cm SAND & SILT, some (+) Clay wet.	3-2-2-5	4						
		SM	Red-Brown-Black cmf SAND and SILT, some (+) Clay, wet.	3-2-2-6	5					.4-0	Little Black NAPL droplets, rainbow sheen.
10		CL ML	Black Silty CLAY, some (+) cmf Sand, wet.	1-2-3-5	6					.3-0	
		SC	**TIDAL MARSH DEPOSITS** Black cmf SAND, some (-) Silt & Clay, trace (-) f Gravel, @ 13.3' Black Silty CLAY, wet.	2-2-5-3	7					.3-.730	NAPL, sheen on soil and liquid. Sample WWT-101-12-14. Blebs determined to be mercury beads with magnifying glass.
15		CL ML	Gray Silty CLAY, little (+) fm Sand,	3-3-4-6	8					5.2-.092	Sample WWT-15-17
		CL ML	**GLACIAL TILL DEPOSITS** Red-brown SILT & CLAY, little cmf to fmc Sand, wet.	7-7-8-12	9					5.6-.019	
20		ML CL	Red-brown Clayey SILT, little (+) fm Sand, wet.	12-11-10-9	10					6.1-.012	
		ML CL	Red-Brown SILT & CLAY, little (+) fmc Sand, wet.	6-4-7-10	11					4.7-.020	Sample WWT-21-23
		ML CL	Red-brwn Silty CLAY, little (+) fmc Sand, wet.	7-7-9-12	12					5.5-.011	
25				7-7-7-8	13					3.3-0	
				7-9-8-9	14					5.3-.005	
30		ML CL	Red-brown SILT & CLAY, little (-) fmc Sand, trace (-) fm Gravel, wet.	9-9-10-10	15					4.9-0	

P:\Clients\lcp\hydro_data\logs\131369_lcp-ri.gpj

BORING LOG

BROWN AND CALDWELL	Project Name: LCP-RI_131369 Project Number: 131369 Project Location: Linden, NJ	Permit Number: NA	Boring No. **WWT-101** Page 2 of 2

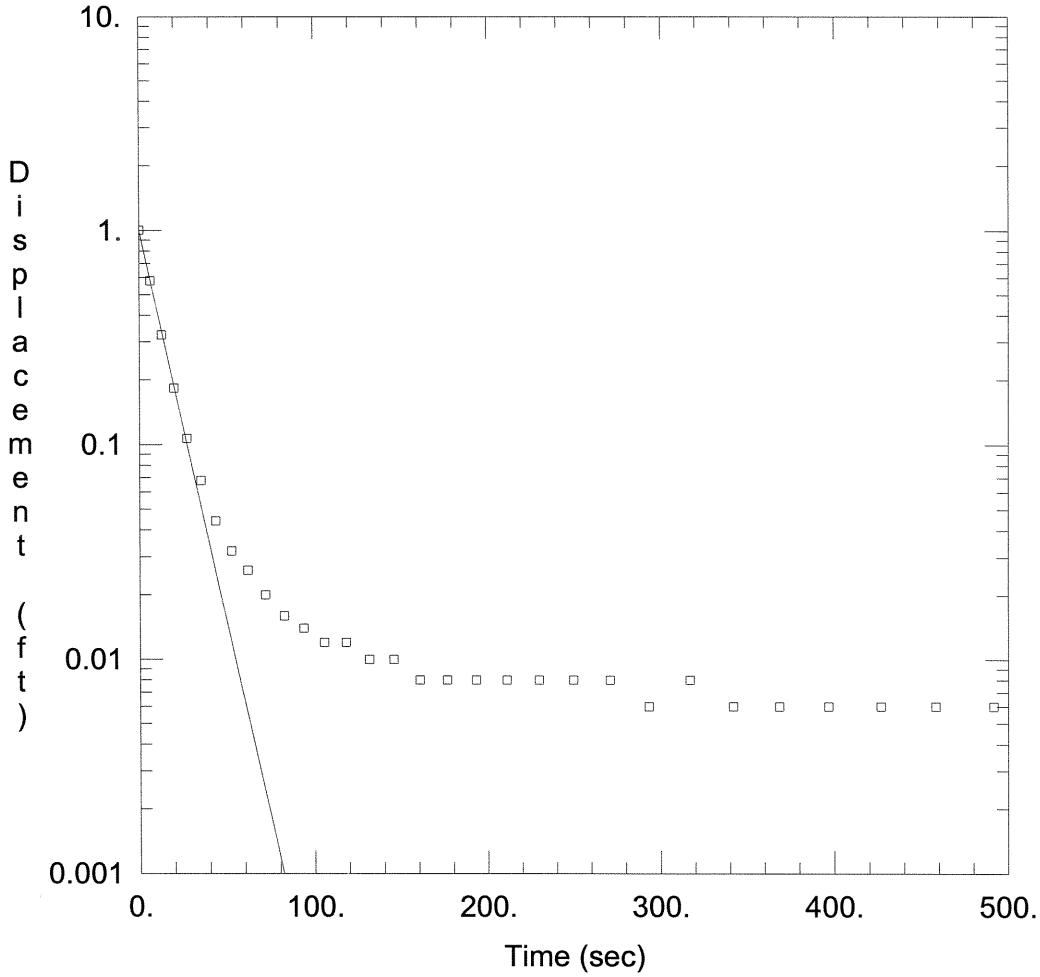
Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Backfill	PID/MVA Readings (ppm)	Remarks
		ML CL	Red-brown Clayey SILT, little (+) fm Sand, wet.	7-9-10-10	16		1.3-.006	
				10-10-18-21	17		2.7-.003	
35		ML CL	Rounded cmf SAND. @ 34.4 returns to Red-brown Clayey SILT, little (-) fm Sand, wet.	11-12-12-19	18		2.4-.004	
		ML CL	Red-brown cmf SAND, little (+) Silt & Clay, trace (+) fmc Gravel, wet.					
		ML CL	Red-brown SILT & CLAY, some (-) fmc Sand, little fmc Gravel, wet.	14-18-19-41	19		2.9-.006	
40		ML CL	Red-brown cmf SAND, some (+) Silt & Clay, little (-) fmc Gravel. Gravel chunk of bedrock, wet.	27-18-14-18	20		3.7-.003	
		ML CL	Red-brown Clayey SILT, little (+) fmc Sand, wet,	8-9-14-15	21		3.1-.003	
		ML CL	Red-brown Clayey SILT, some (-) fmc Sand, little (-) fm Gravel, wet.	15-10-27-38	22		1.3-.003	
45		BR	**BEDROCK** Red-brown weathered Siltstone-Sandstone, cmf SAND, some (-) fmc Gravel, little (-) Silt & Clay, wet.	100/2	23		1.9-.003	

APPENDIX B

Hydrogeologic Data

B-1 - Hydraulic Conductivity Reports

B-2 - Hydrographs



MW-6

Data Set: P:\LCP\21405\Data\Slug_Test_Data\mw-6.aqt
Date: 08/20/02 Time: 12:43:31

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP Environmental Services Inc
Project: LCP Superfund Site
Test Location: Linden, NJ
Test Well: MW-6
Test Date: 12/5/01

AQUIFER DATA

Saturated Thickness: 5.07 ft
Anisotropy Ratio (Kz/Kr): 1.

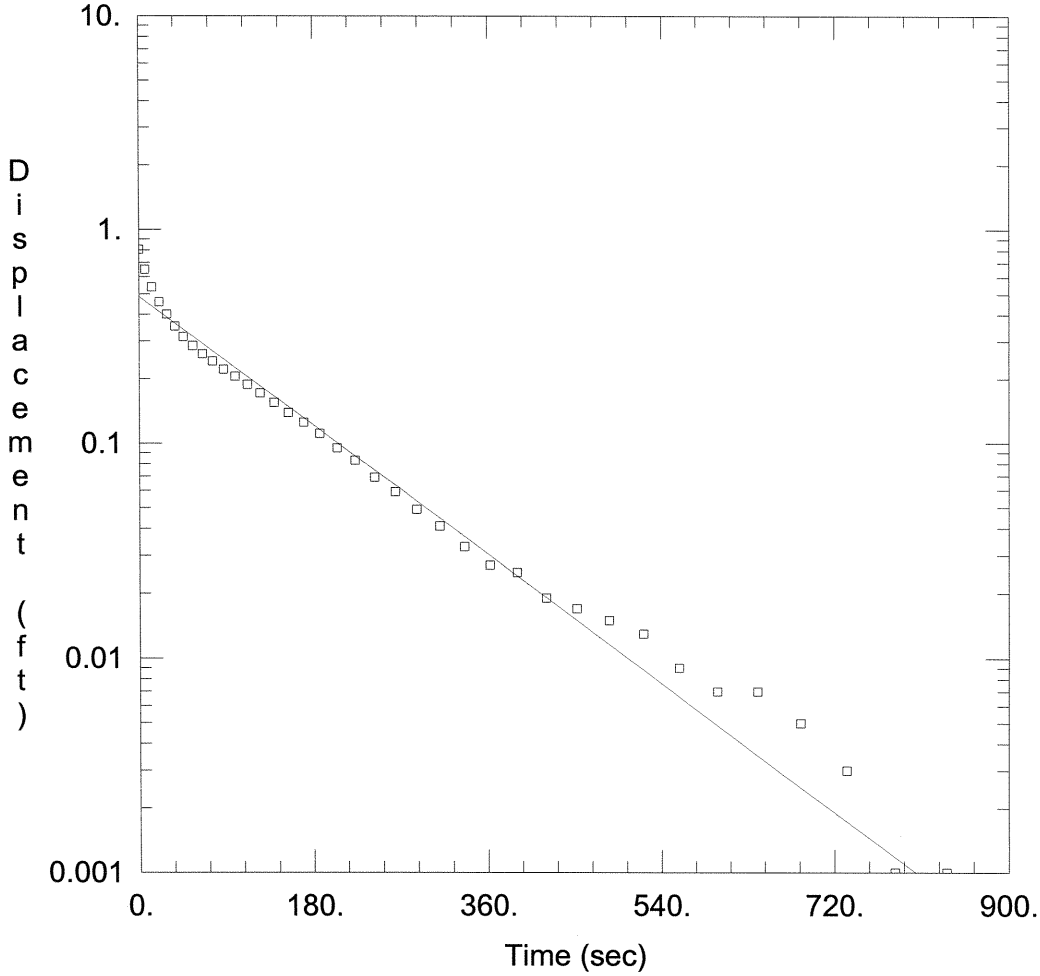
WELL DATA (MW-6)

Initial Displacement: 1.003 ft
Casing Radius: 0.083 ft
Screen Length: 5. ft
Water Column Height: 5.07 ft
Wellbore Radius: 0.177 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

K = 0.01218 cm/sec
y0 = 0.9965 ft



MW-7

Data Set: P:\LCP\21405\Data\Slug_Test_Data\mw-7.aqt
Date: 08/20/02 Time: 12:43:36

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP Environmental Services Inc
Project: LCP Superfund Site
Test Location: Linden, NJ
Test Well: MW-7
Test Date: 12/5/01

AQUIFER DATA

Saturated Thickness: 5.46 ft
Anisotropy Ratio (Kz/Kr): 1.

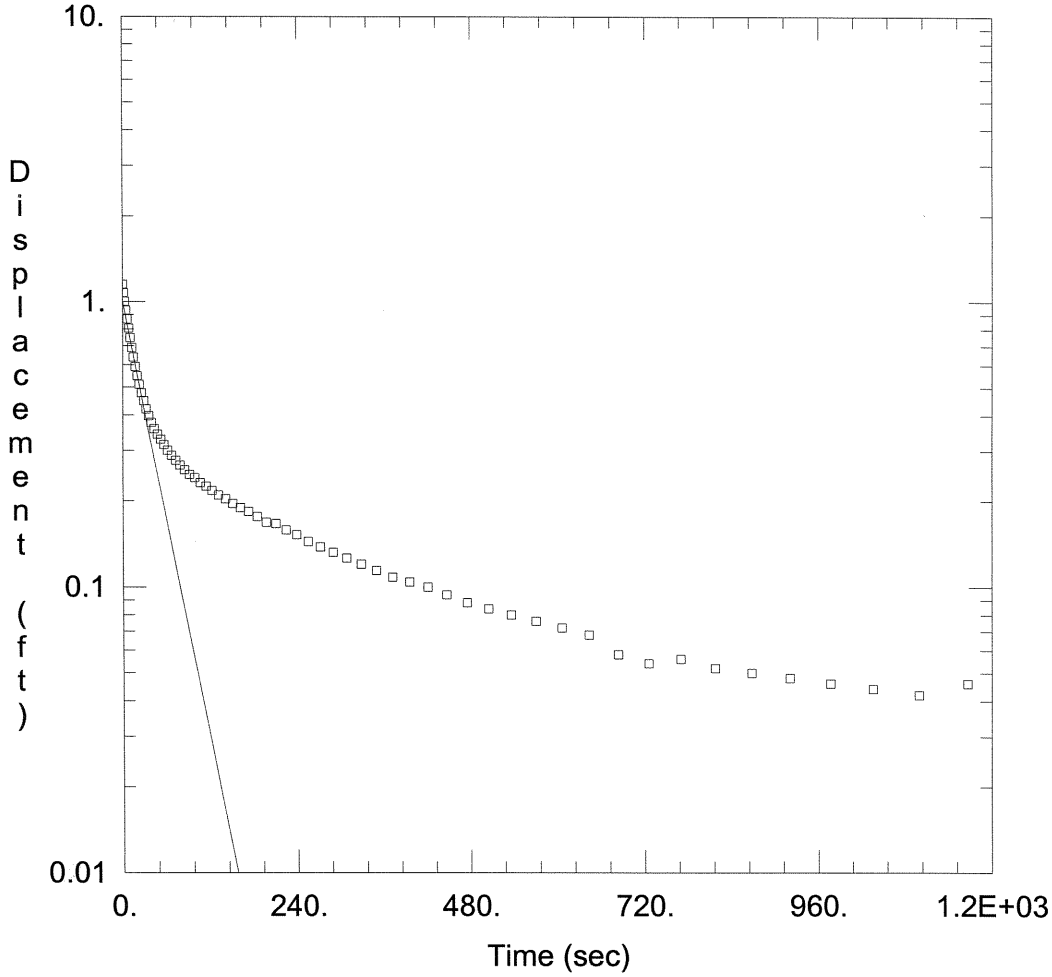
WELL DATA (MW-7)

Initial Displacement: 0.804 ft
Casing Radius: 0.083 ft
Screen Length: 5. ft
Water Column Height: 5.46 ft
Wellbore Radius: 0.177 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

K = 0.001115 cm/sec
y0 = 0.4856 ft



MW-8

Data Set: P:\LCP\21405\Data\Slug_Test_Data\mw-8.aqt
Date: 08/20/02 Time: 12:43:40

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP Environmental Services Inc
Project: LCP Superfund Site
Test Location: Linden, NJ
Test Well: MW-8
Test Date: 12/5/01

AQUIFER DATA

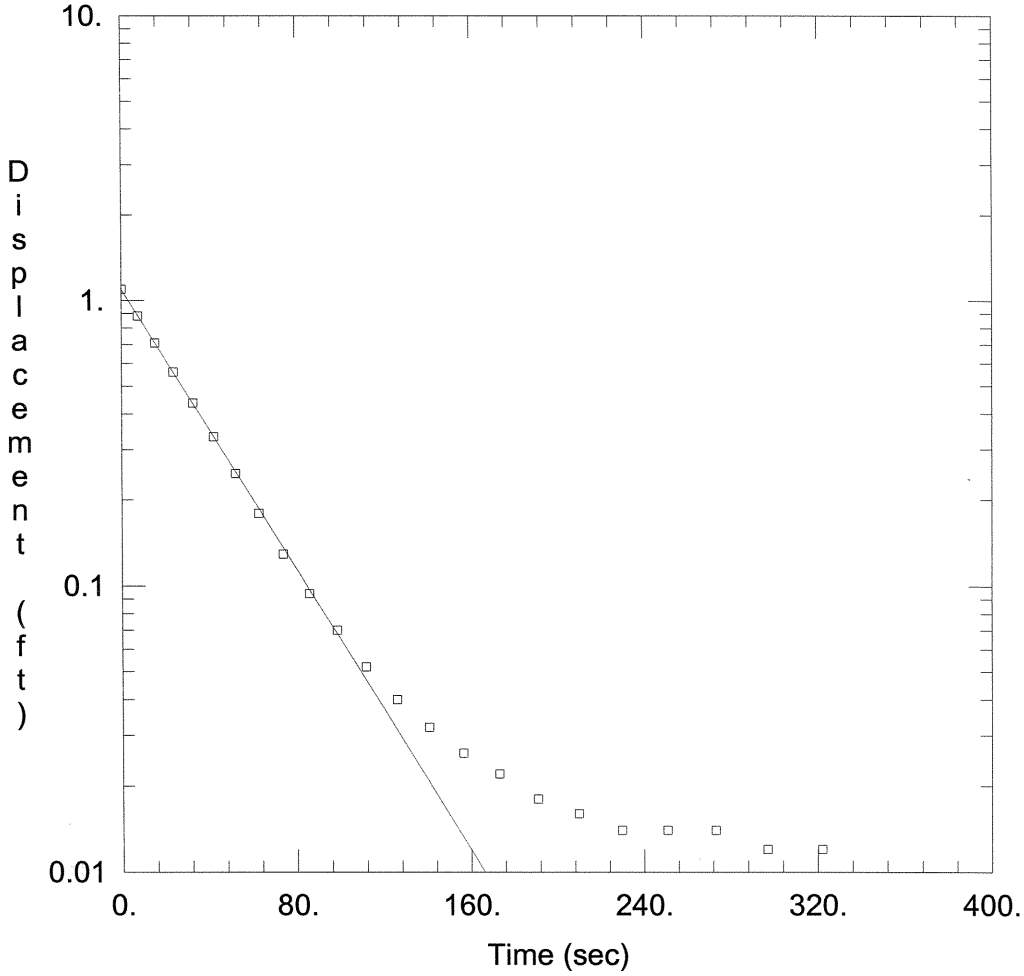
Saturated Thickness: 6.41 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-8)

Initial Displacement: 1.149 ft
Casing Radius: 0.083 ft
Screen Length: 5. ft
Water Column Height: 6.41 ft
Wellbore Radius: 0.177 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.004275 cm/sec
y0 = 1.002 ft



MW-9

Data Set: P:\LCP\21405\Data\Slug_Test_Data\mw-9.aqt
Date: 08/20/02 Time: 12:43:46

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP Environmental Services Inc
Project: LCP Superfund Site
Test Location: Linden, NJ
Test Well: MW-9
Test Date: 12/5/01

AQUIFER DATA

Saturated Thickness: 4.59 ft
Anisotropy Ratio (Kz/Kr): 1.

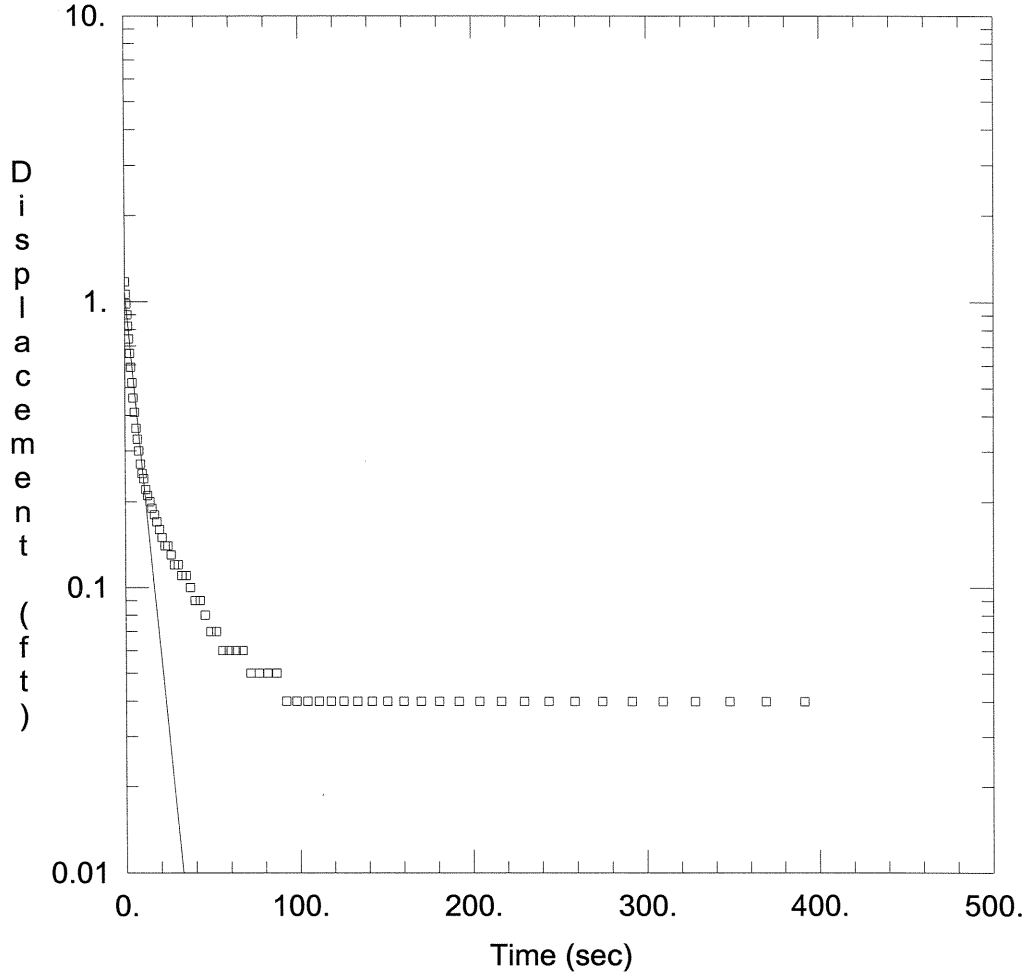
WELL DATA (MW-9)

Initial Displacement: 1.095 ft
Casing Radius: 0.083 ft
Screen Length: 5. ft
Water Column Height: 4.59 ft
Wellbore Radius: 0.177 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

K = 0.004089 cm/sec
y0 = 1.093 ft



MW-10

Data Set: P:\LCP\21405\Data\Slug_Test_Data\mw-10.aqt
Date: 08/20/02 Time: 12:42:17

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP Environmental Services Inc
Project: LCP Superfund Site
Test Location: Linden, NJ
Test Well: MW-10
Test Date: 12/5/01

AQUIFER DATA

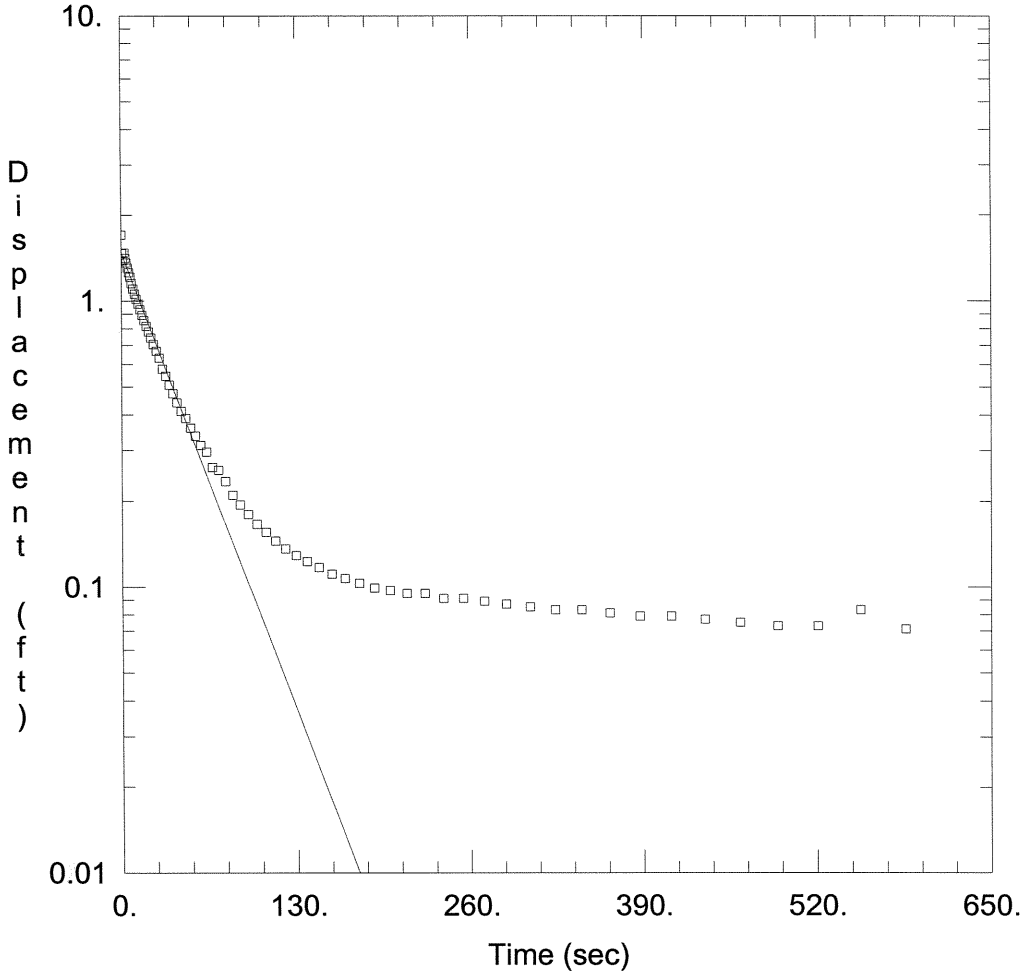
Saturated Thickness: 3.79 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-10)

Initial Displacement: 1.17 ft
Casing Radius: 0.083 ft
Screen Length: 6. ft
Water Column Height: 3.79 ft
Wellbore Radius: 0.177 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.01826 cm/sec
y0 = 1.068 ft



MW-11

Data Set: P:\LCP\21405\Data\Slug_Test_Data\mw-11.aqt
Date: 08/20/02 Time: 12:42:27

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP Environmental Services Inc
Project: LCP Superfund Site
Test Location: Linden, NJ
Test Well: MW-11
Test Date: 12/4/01

AQUIFER DATA

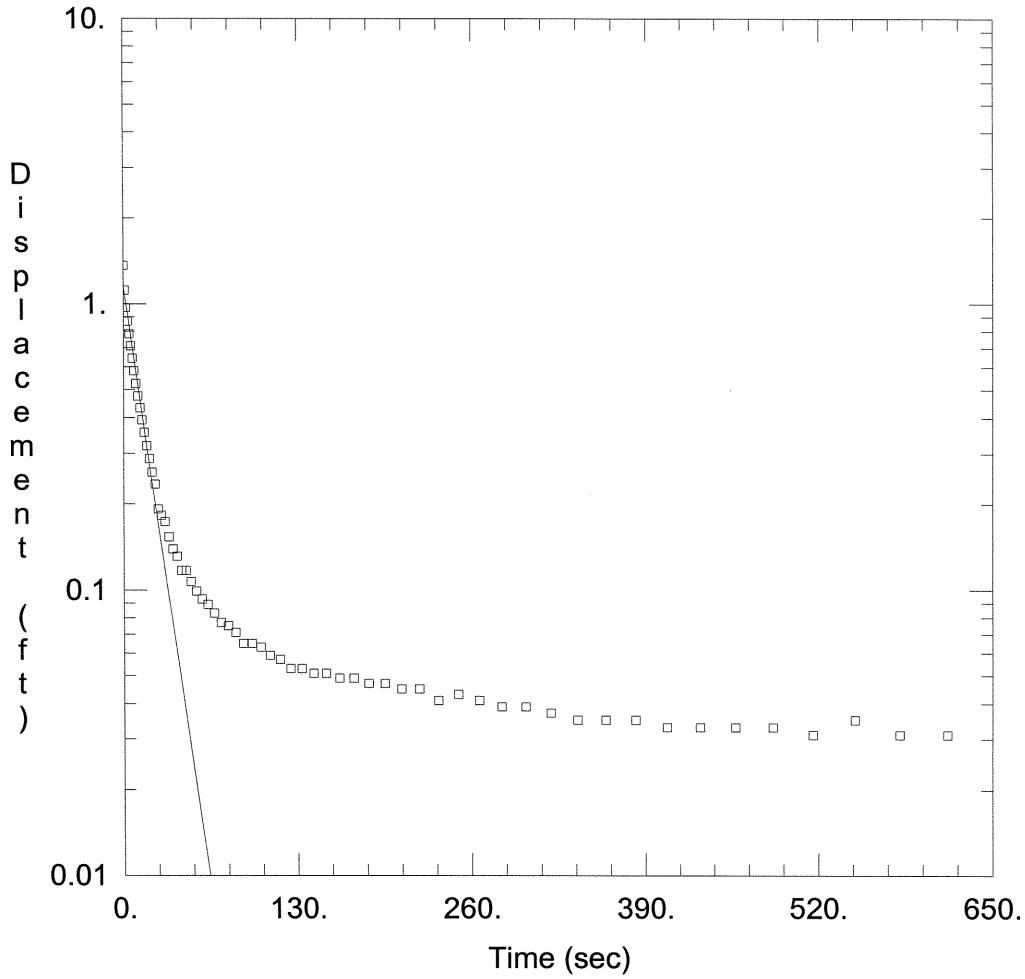
Saturated Thickness: 7.66 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-11)

Initial Displacement: 1.702 ft
Casing Radius: 0.083 ft
Screen Length: 5.5 ft
Water Column Height: 8.66 ft
Wellbore Radius: 0.177 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.003843 cm/sec
y0 = 1.472 ft



MW-12

Data Set: P:\LCP\21405\Data\Slug_Test_Data\mw-12.aqt
Date: 08/20/02 Time: 12:42:34

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP Environmental Services Inc
Project: LCP Superfund Site
Test Location: Linden, NJ
Test Well: MW-12
Test Date: 12/4/01

AQUIFER DATA

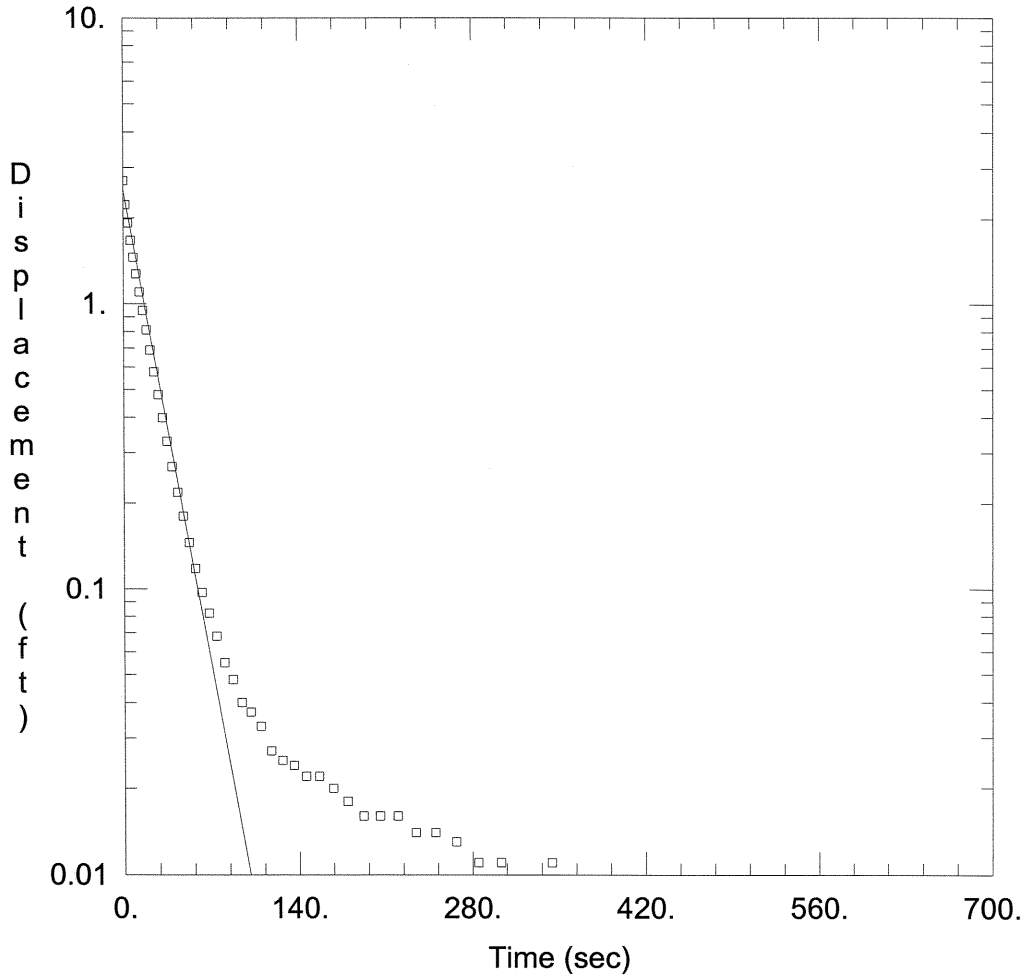
Saturated Thickness: 8.52 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-12)

Initial Displacement: 1.36 ft
Casing Radius: 0.083 ft
Screen Length: 8. ft
Water Column Height: 8.82 ft
Wellbore Radius: 0.177 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.007658 cm/sec
y0 = 1.151 ft



MW-13

Data Set: P:\LCP\21405\Data\Slug_Test_Data\mw-13.aqt
Date: 08/20/02 Time: 12:42:45

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP Environmental Services Inc
Project: LCP Superfund Site
Test Location: Linden, NJ
Test Well: MW-13
Test Date: 12/4/01

AQUIFER DATA

Saturated Thickness: 6.77 ft
Anisotropy Ratio (Kz/Kr): 1.

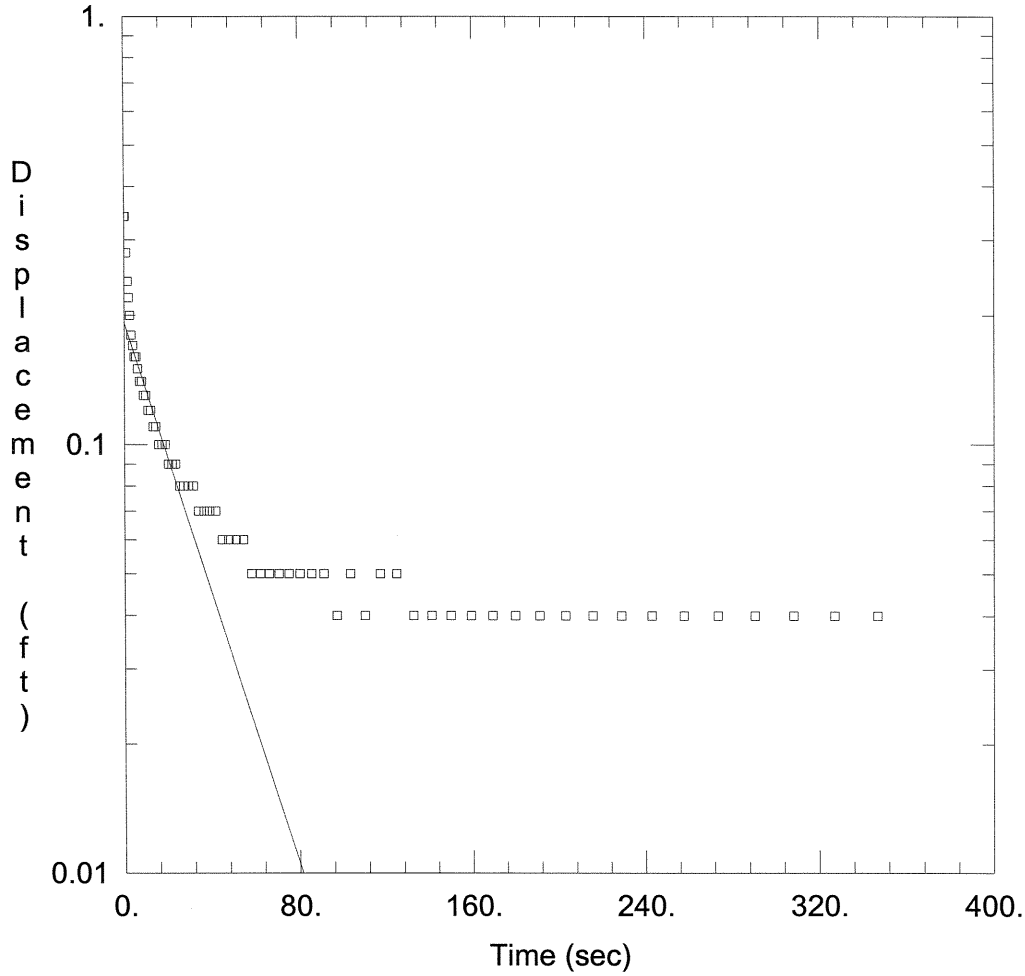
WELL DATA (MW-13)

Initial Displacement: 2.699 ft
Casing Radius: 0.083 ft
Screen Length: 5. ft
Water Column Height: 6.77 ft
Wellbore Radius: 0.177 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

K = 0.007962 cm/sec
y0 = 2.504 ft



MW-14

Data Set: P:\LCP\21405\Data\Slug_Test_Data\mw-14.aqt
Date: 08/20/02 Time: 12:42:51

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP Environmental Services Inc
Project: LCP Superfund Site
Test Location: Linden, NJ
Test Well: MW-14
Test Date: 12/4/01

AQUIFER DATA

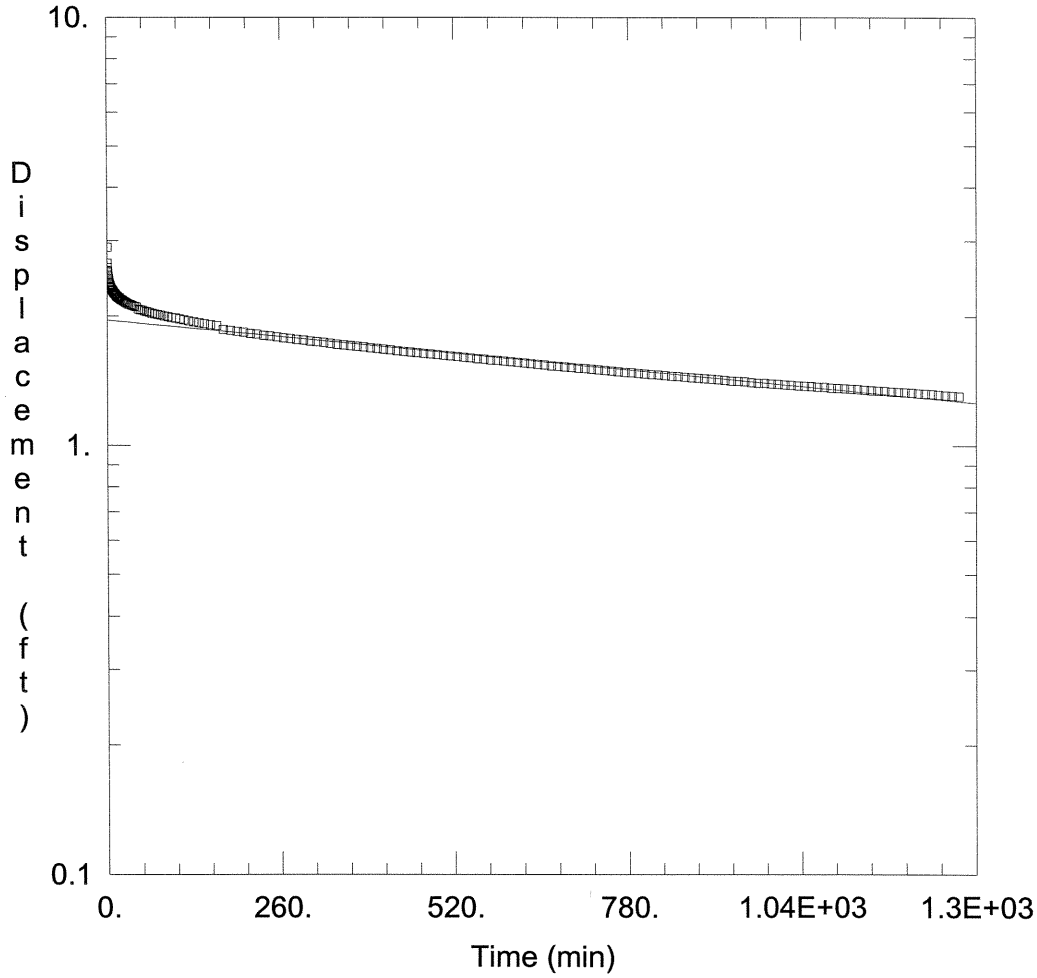
Saturated Thickness: 1.61 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-14)

Initial Displacement: 0.34 ft
Casing Radius: 0.083 ft
Screen Length: 3.5 ft
Water Column Height: 1.61 ft
Wellbore Radius: 0.177 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.006717 cm/sec
y0 = 0.192 ft



MW-15

Data Set: P:\LCP\21405\Data\Slug_Test_Data\mw-15.aqt
Date: 08/20/02 Time: 12:42:56

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP Environmental Services Inc
Project: LCP Superfund Site
Test Location: Linden, NJ
Test Well: MW-15
Test Date: 12/5/01

AQUIFER DATA

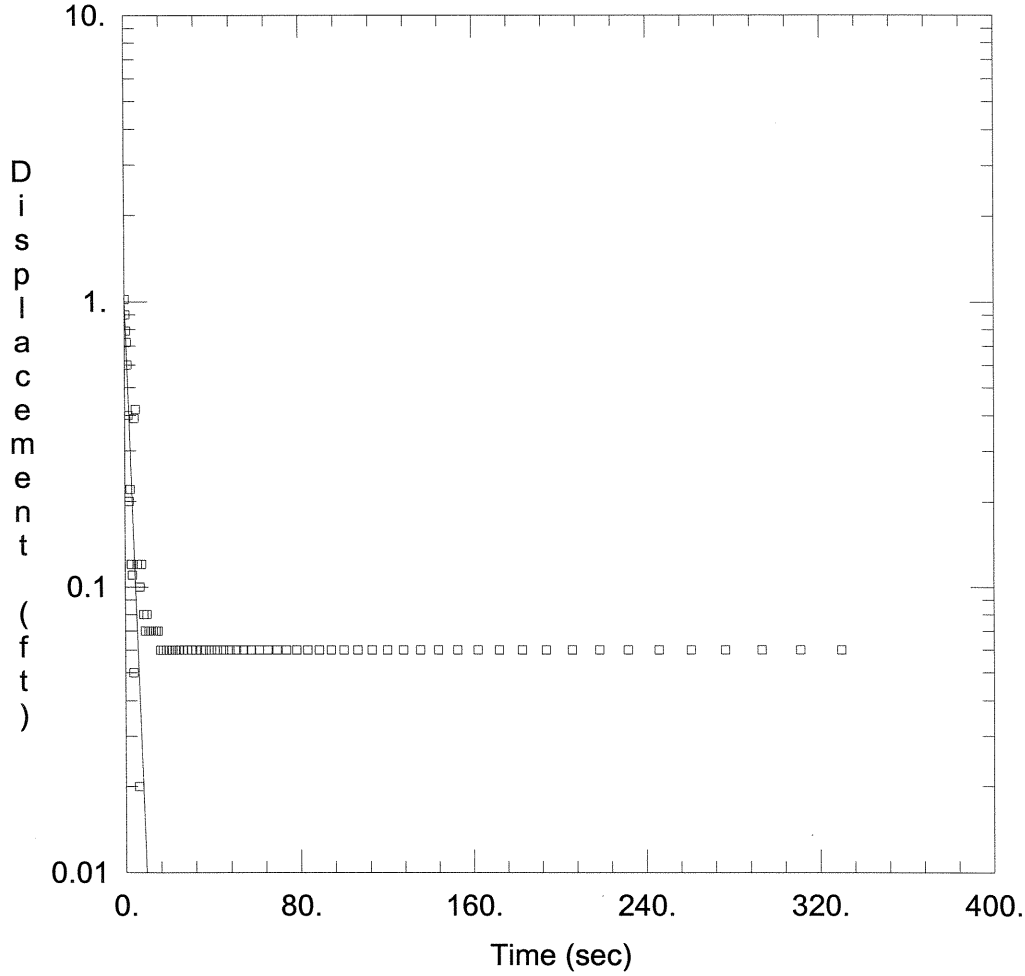
Saturated Thickness: 3.42 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-15)

Initial Displacement: 2.895 ft
Casing Radius: 0.083 ft
Screen Length: 8.5 ft
Water Column Height: 3.92 ft
Wellbore Radius: 0.177 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 5.602E-07 cm/sec
y0 = 1.957 ft



MW-16

Data Set: P:\LCP\21405\Data\Slug_Test_Data\mw-16.aqt
Date: 08/20/02 Time: 12:43:01

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP Environmental Services Inc
Project: LCP Superfund Site
Test Location: Linden, NJ
Test Well: MW-16
Test Date: 12/4/01

AQUIFER DATA

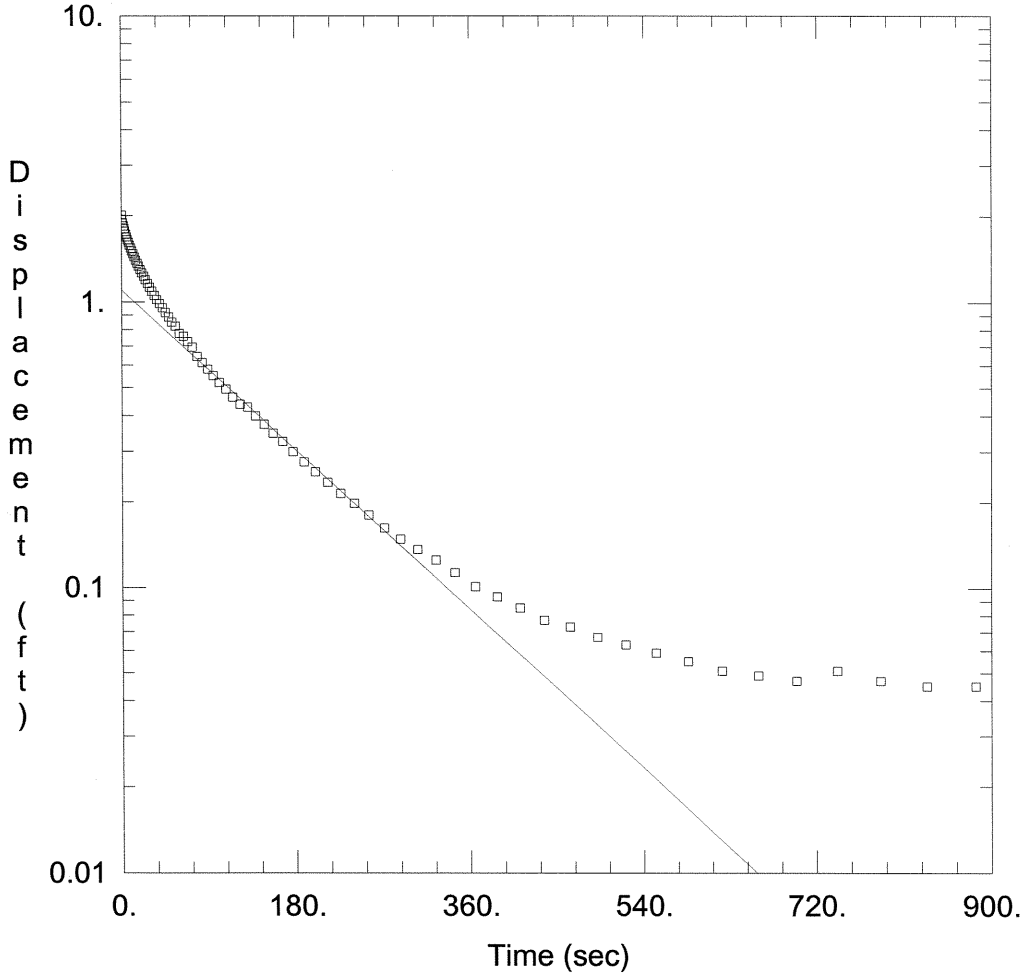
Saturated Thickness: 10.39 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-16)

Initial Displacement: 1.019 ft
Casing Radius: 0.083 ft
Screen Length: 9. ft
Water Column Height: 10.39 ft
Wellbore Radius: 0.177 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.0467 cm/sec
y0 = 1.019 ft



MW-17

Data Set: P:\LCP\21405\Data\Slug_Test_Data\mw-17.aqt
Date: 08/20/02 Time: 12:43:08

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP Environmental Services Inc
Project: LCP Superfund Site
Test Location: Linden, NJ
Test Well: MW-17
Test Date: 12/4/01

AQUIFER DATA

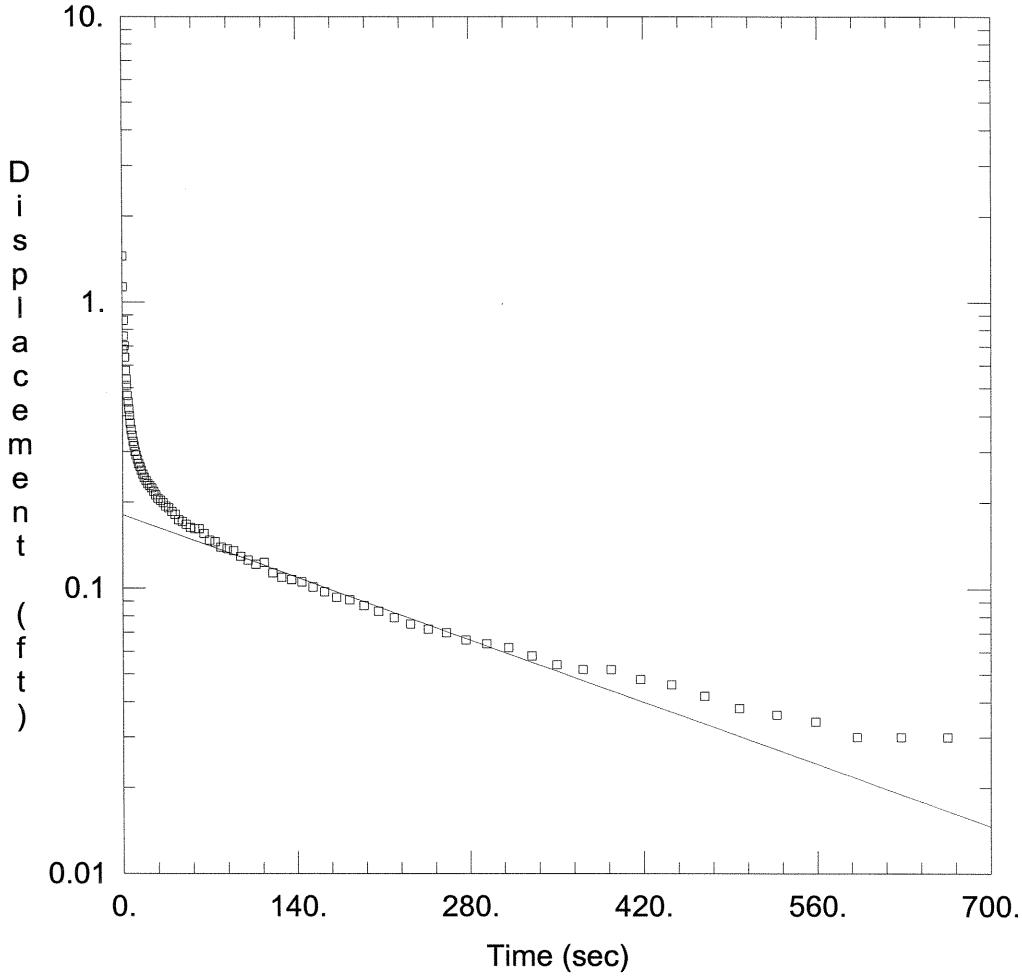
Saturated Thickness: 9.1 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-17)

Initial Displacement: 2.008 ft
Casing Radius: 0.083 ft
Screen Length: 8. ft
Water Column Height: 9.1 ft
Wellbore Radius: 0.177 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.0007374 cm/sec
y0 = 1.097 ft



MW-18

Data Set: P:\LCP\21405\Data\Slug_Test_Data\mw-18.aqt
Date: 08/20/02 Time: 12:43:13

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP Environmental Services Inc
Project: LCP Superfund Site
Test Location: Linden, NJ
Test Well: MW-18
Test Date: 12/4/01

AQUIFER DATA

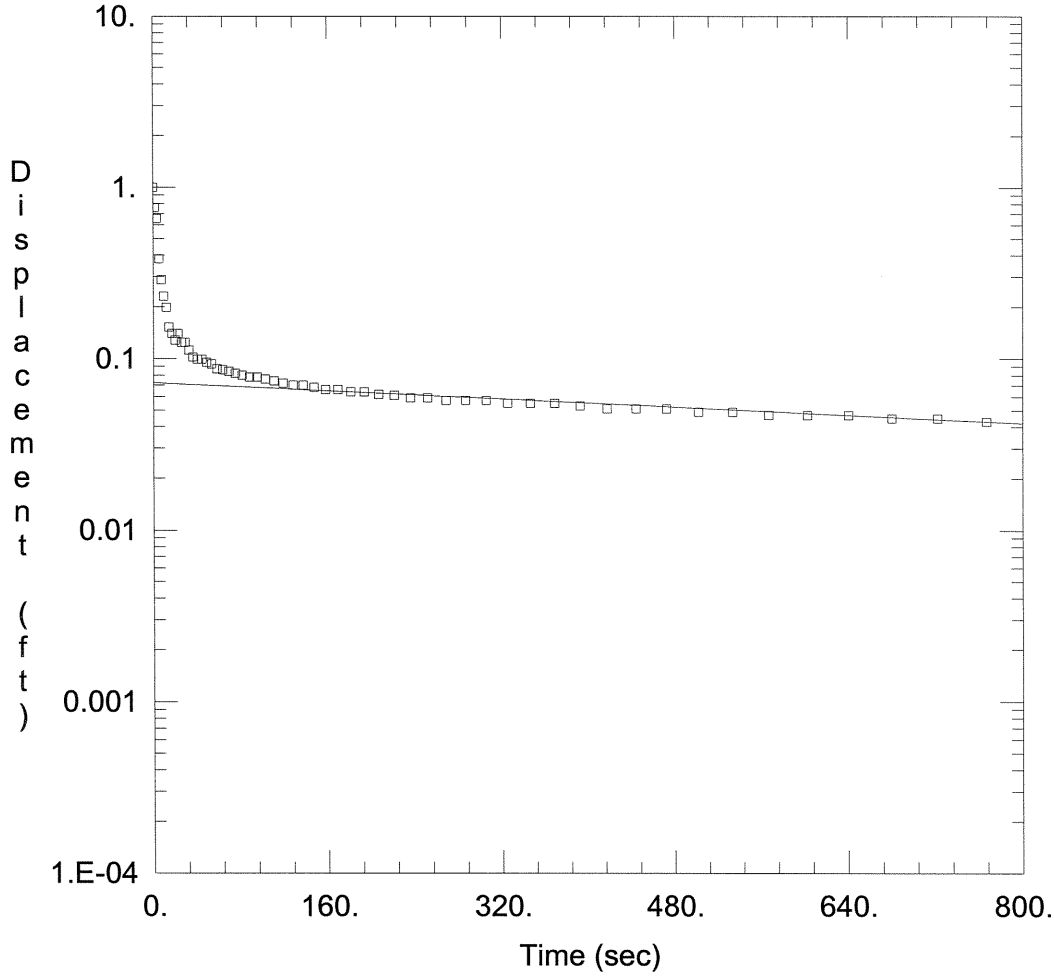
Saturated Thickness: 8.51 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-18)

Initial Displacement: 1.447 ft
Casing Radius: 0.083 ft
Screen Length: 9. ft
Water Column Height: 8.51 ft
Wellbore Radius: 0.177 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.0003399 cm/sec
y0 = 0.1803 ft



MW-19

Data Set: P:\LCP\21405\Data\Slug_Test_Data\mw-19.aqt
Date: 08/20/02 Time: 12:43:20

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP Environmental Services Inc
Project: LCP Superfund Site
Test Location: Linden, NJ
Test Well: MW-19
Test Date: 12/4/01

AQUIFER DATA

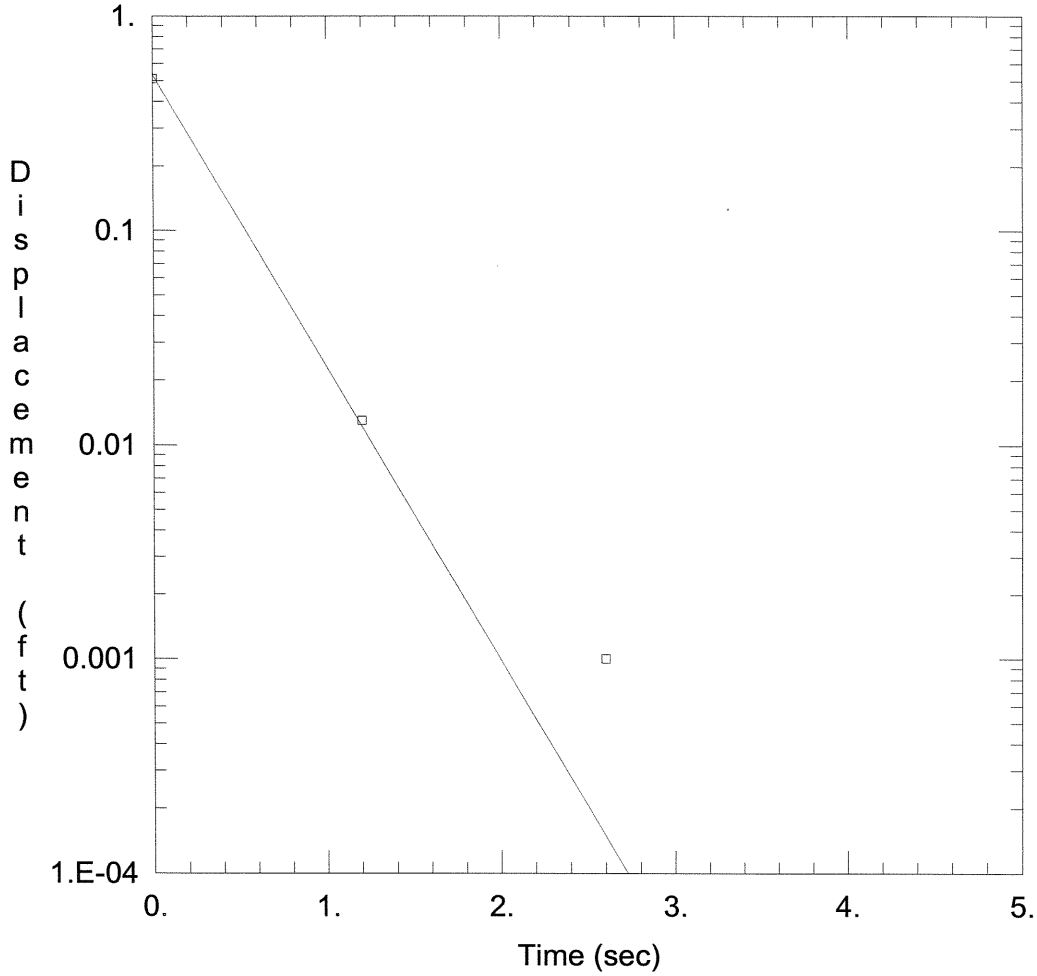
Saturated Thickness: 9.1 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-19)

Initial Displacement: 0.998 ft
Casing Radius: 0.083 ft
Screen Length: 9. ft
Water Column Height: 9.1 ft
Wellbore Radius: 0.177 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 6.404E-05 cm/sec
y0 = 0.07235 ft



MW-20

Data Set: P:\LCP\21405\Data\Slug_Test_Data\mw-20.aqt
Date: 08/20/02 Time: 12:43:26

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP Environmental Services Inc
Project: LCP Superfund Site
Test Location: Linden, NJ
Test Well: MW-20
Test Date: 12/4/01

AQUIFER DATA

Saturated Thickness: 2.88 ft
Anisotropy Ratio (Kz/Kr): 1.

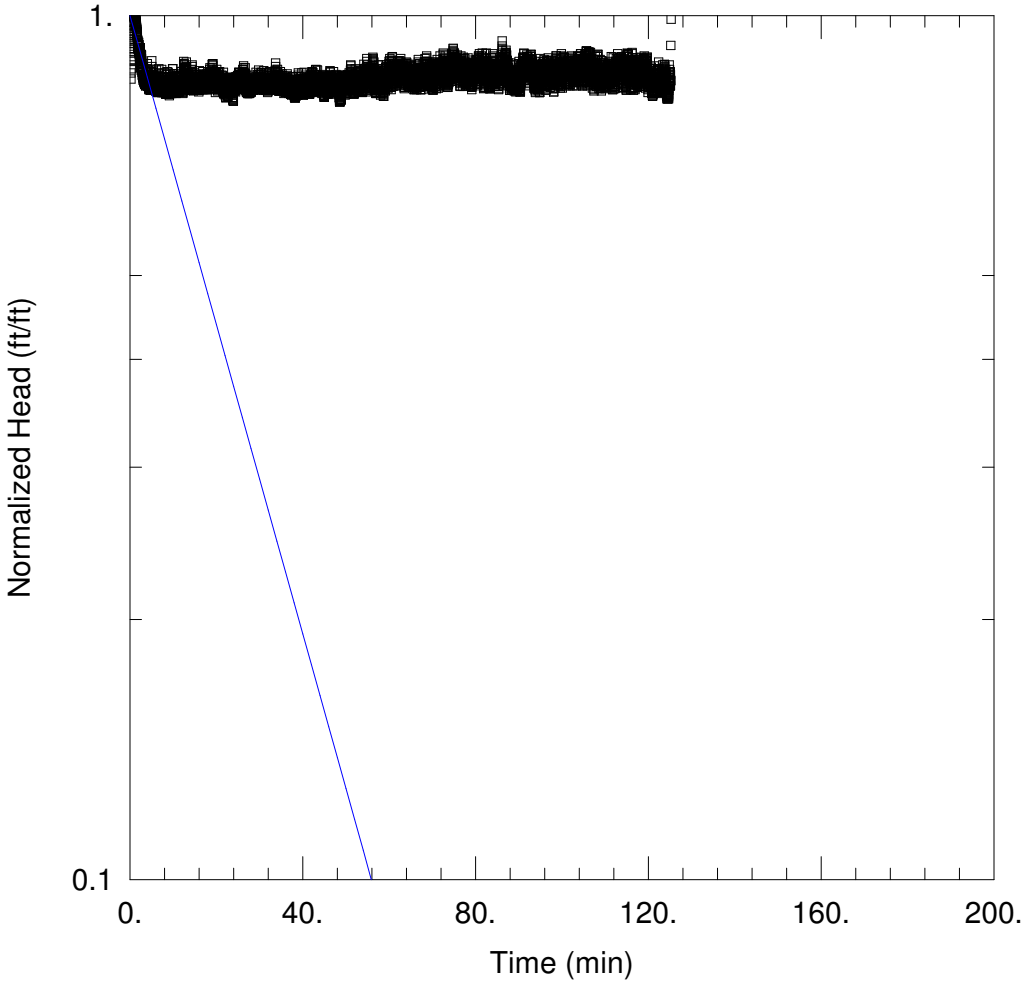
WELL DATA (MW-20)

Initial Displacement: 0.509 ft
Casing Radius: 0.083 ft
Screen Length: 5. ft
Water Column Height: 2.88 ft
Wellbore Radius: 0.177 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

K = 0.456 cm/sec
y0 = 0.5337 ft



RISING

Data Set: P:\...\MW-6D-RISING.aqt
Date: 07/25/07 Time: 07:47:29

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP-ESI
Project: 131369.107
Location: LCP Superfund
Test Well: MW-6D
Test Date: 2/20/07

AQUIFER DATA

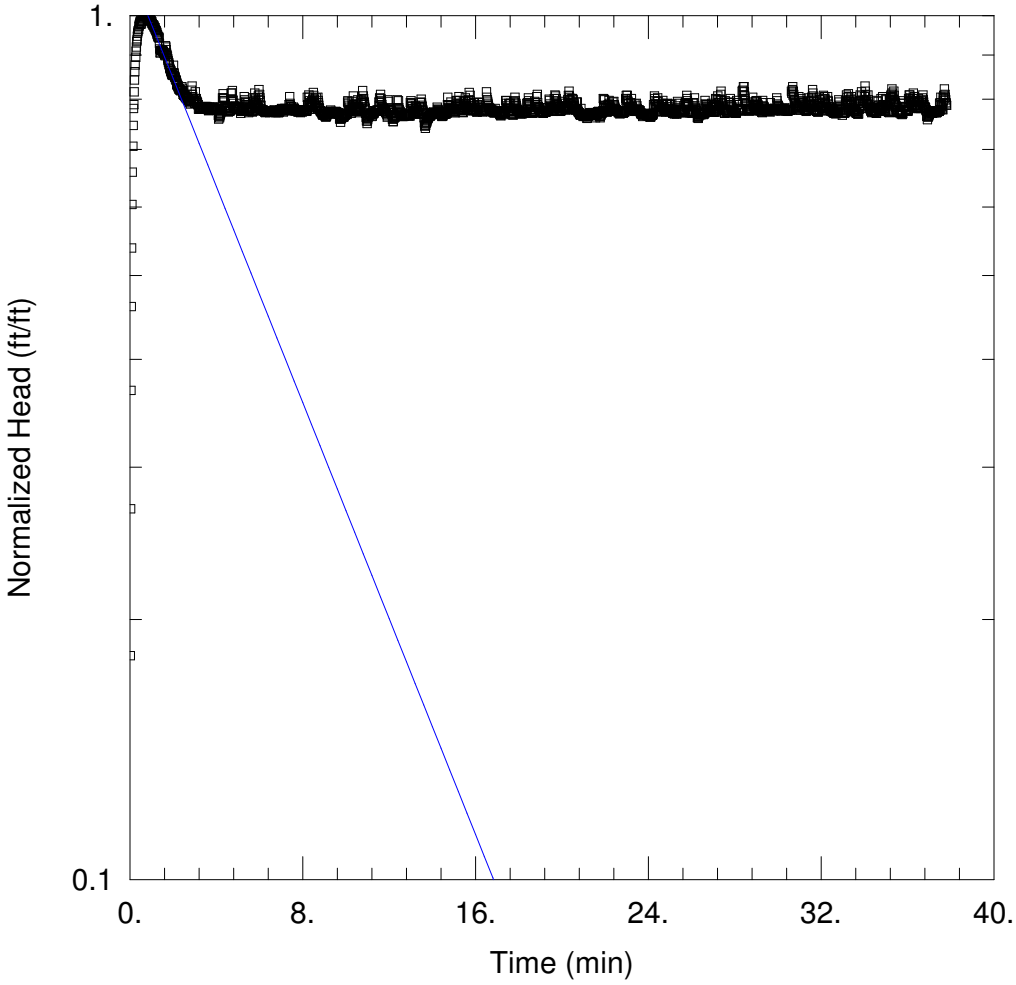
Saturated Thickness: 12. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-6D)

Initial Displacement: -0.598 ft
Total Well Penetration Depth: 12. ft
Casing Radius: 0.083 ft
Static Water Column Height: 13.05 ft
Screen Length: 10. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 3.955E-5 cm/sec
y0 = -0.5984 ft



RISING

Data Set: P:\...\MW-11D-RISING.aqt
Date: 07/25/07 Time: 07:52:00

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP-ESI
Project: 131369.107
Location: LCP Superfund
Test Well: MW-11D
Test Date: 2/20/07

AQUIFER DATA

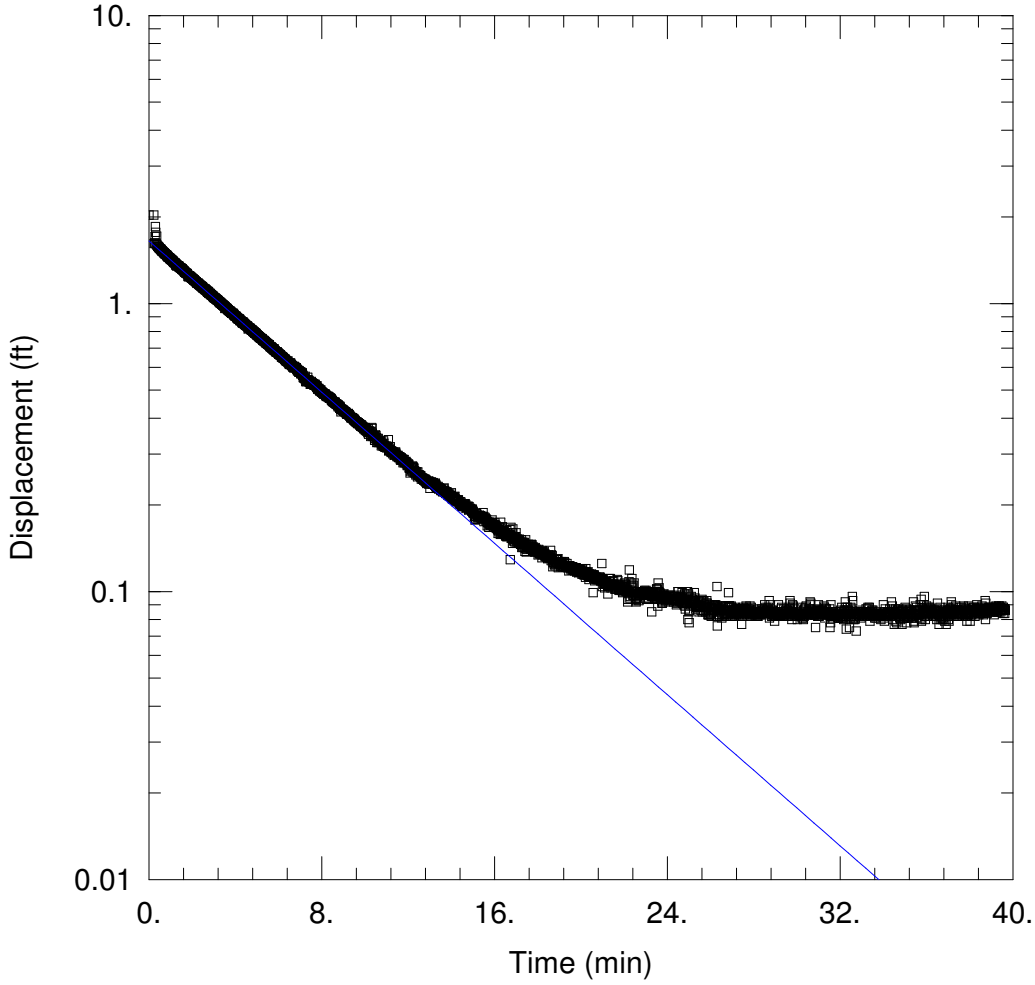
Saturated Thickness: 21. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-11D)

Initial Displacement: -0.771 ft
Total Well Penetration Depth: 21. ft
Casing Radius: 0.083 ft
Static Water Column Height: 11.17 ft
Screen Length: 10. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 0.0001381 cm/sec
y0 = -0.8692 ft



RISING

Data Set: P:\...\MW-14D-RISING.aqt
Date: 07/25/07 Time: 07:53:27

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP-ESI
Project: 131369.107
Location: LCP Superfund
Test Well: MW-14D
Test Date: 1/22/07

AQUIFER DATA

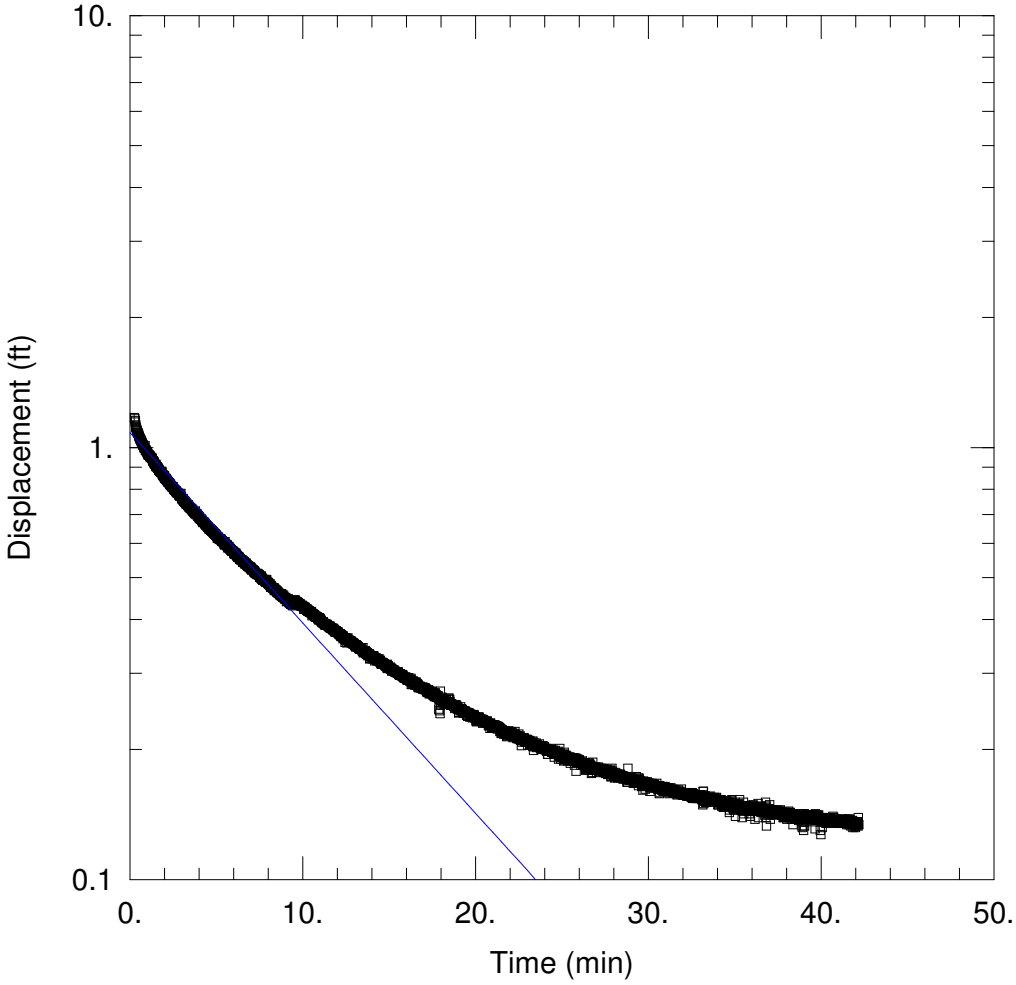
Saturated Thickness: 16. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-14D)

Initial Displacement: 2.028 ft
Total Well Penetration Depth: 16. ft
Casing Radius: 0.083 ft
Static Water Column Height: 43.34 ft
Screen Length: 10. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 0.000145 cm/sec
y0 = 1.648 ft



RISING

Data Set: P:\...\MW-16D-RISING.aqt
Date: 07/25/07 Time: 08:37:13

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP-ESI
Project: 131369.107
Location: LCP Superfund
Test Well: MW-16D
Test Date: 1/22/07

AQUIFER DATA

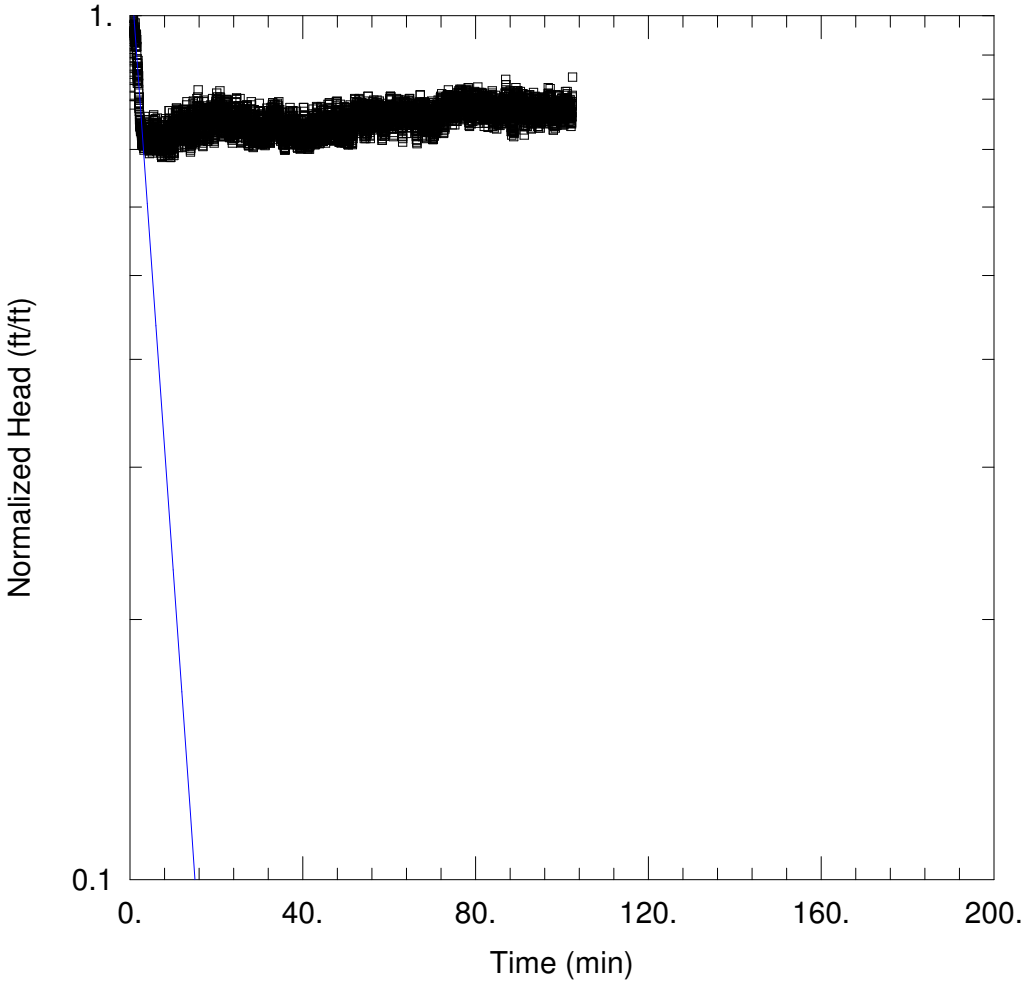
Saturated Thickness: 23. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-16D)

Initial Displacement: 1.172 ft
Total Well Penetration Depth: 23. ft
Casing Radius: 0.083 ft
Static Water Column Height: 50.26 ft
Screen Length: 10. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 9.734E-5 cm/sec
y0 = 1.082 ft



RISING

Data Set: P:\...\MW-17D-RISING.aqt
Date: 07/25/07 Time: 07:58:42

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP-ESI
Project: 131369.107
Location: LCP Superfund
Test Well: MW-17D

AQUIFER DATA

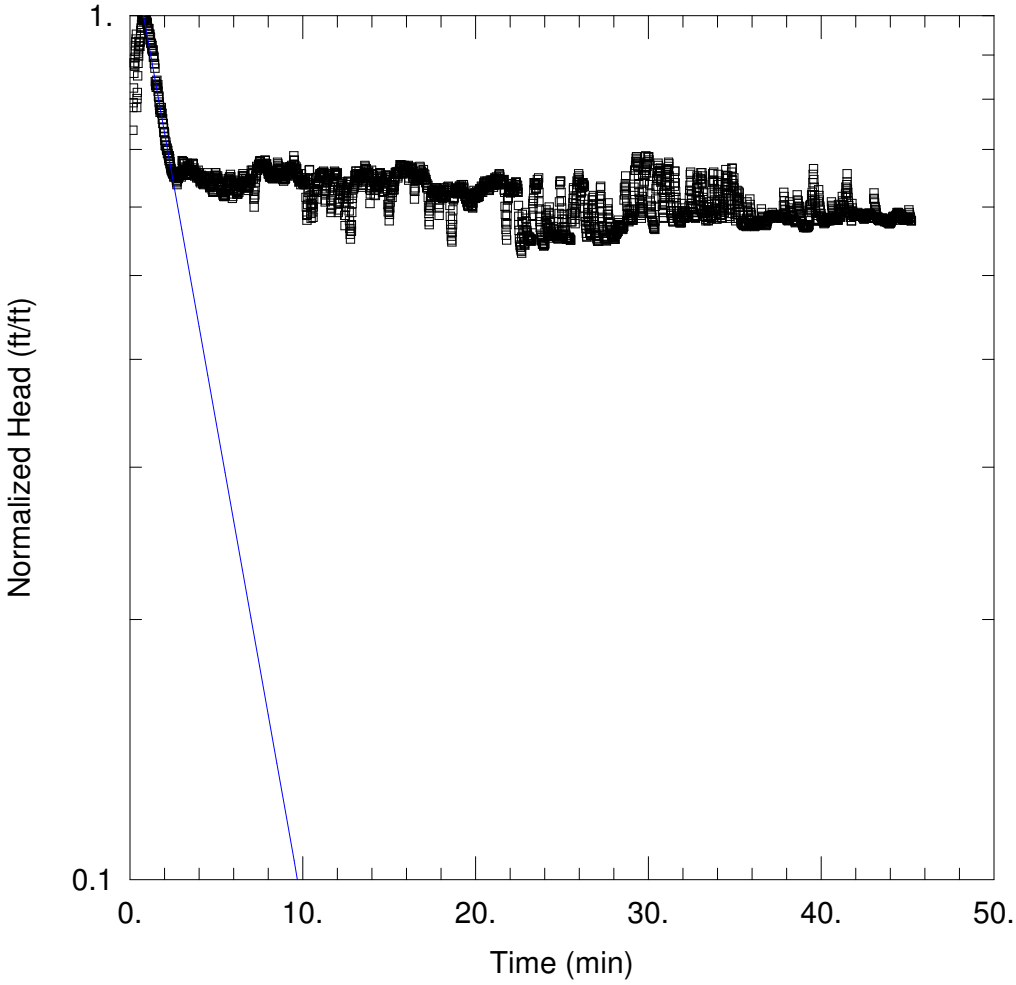
Saturated Thickness: 12. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-17D)

Initial Displacement: -0.594 ft
Total Well Penetration Depth: 12. ft
Casing Radius: 0.083 ft
Static Water Column Height: 12.01 ft
Screen Length: 10. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 0.0001561 cm/sec
y0 = -0.6897 ft



RISING

Data Set: P:\...\MW-18D-RISING.aqt
Date: 07/25/07 Time: 08:00:38

PROJECT INFORMATION

Company: Brown and Caldwell
Client: LCP
Project: 131369.003
Location: Linden. NJ
Test Date: 2/8/07

AQUIFER DATA

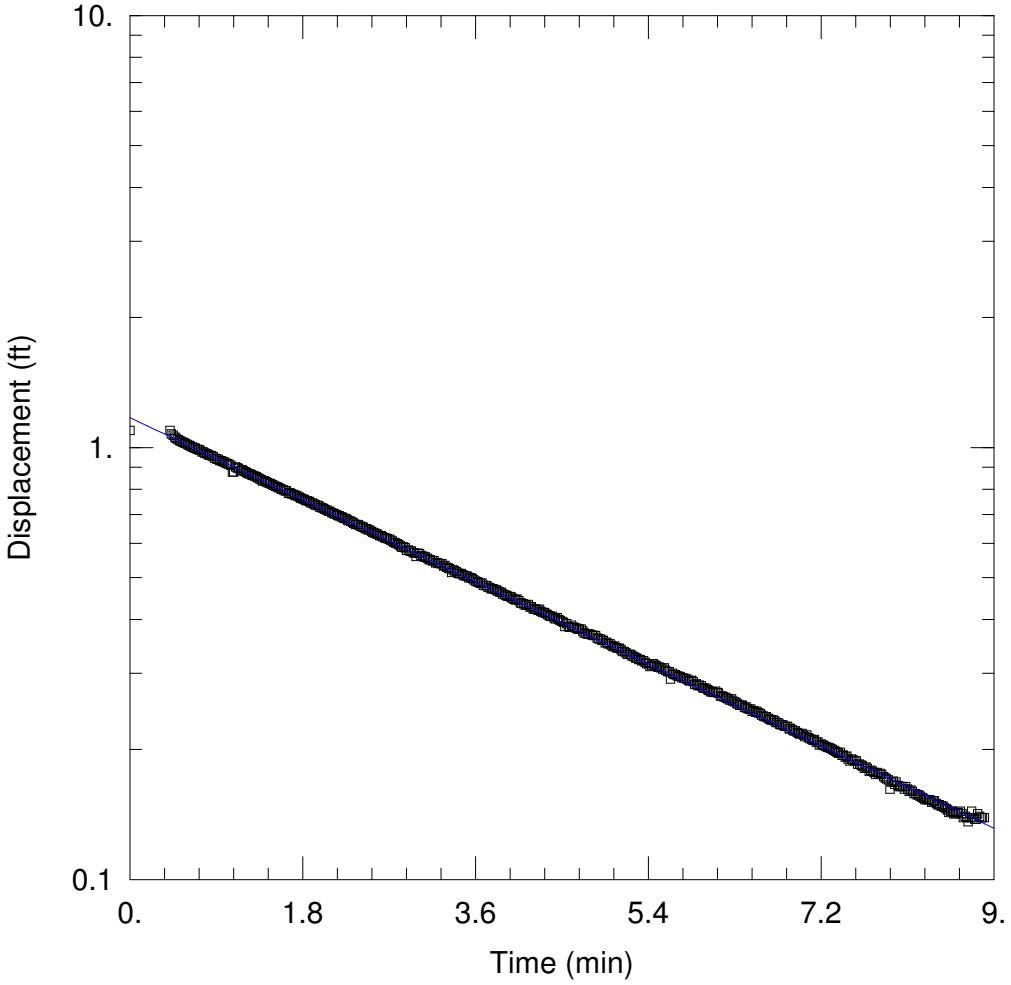
Saturated Thickness: 14. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-18D)

Initial Displacement: -0.695 ft
Total Well Penetration Depth: 5. ft
Casing Radius: 0.083 ft
Static Water Column Height: 13.25 ft
Screen Length: 1. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 0.001129 cm/sec
y0 = -0.8526 ft



RISING

Data Set: P:\...\MW-20D-RISING.aqt
Date: 07/25/07 Time: 08:03:00

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP-ESI
Project: 131369.107
Location: LCP Superfund
Test Well: MW-20D
Test Date: 1/22/07

AQUIFER DATA

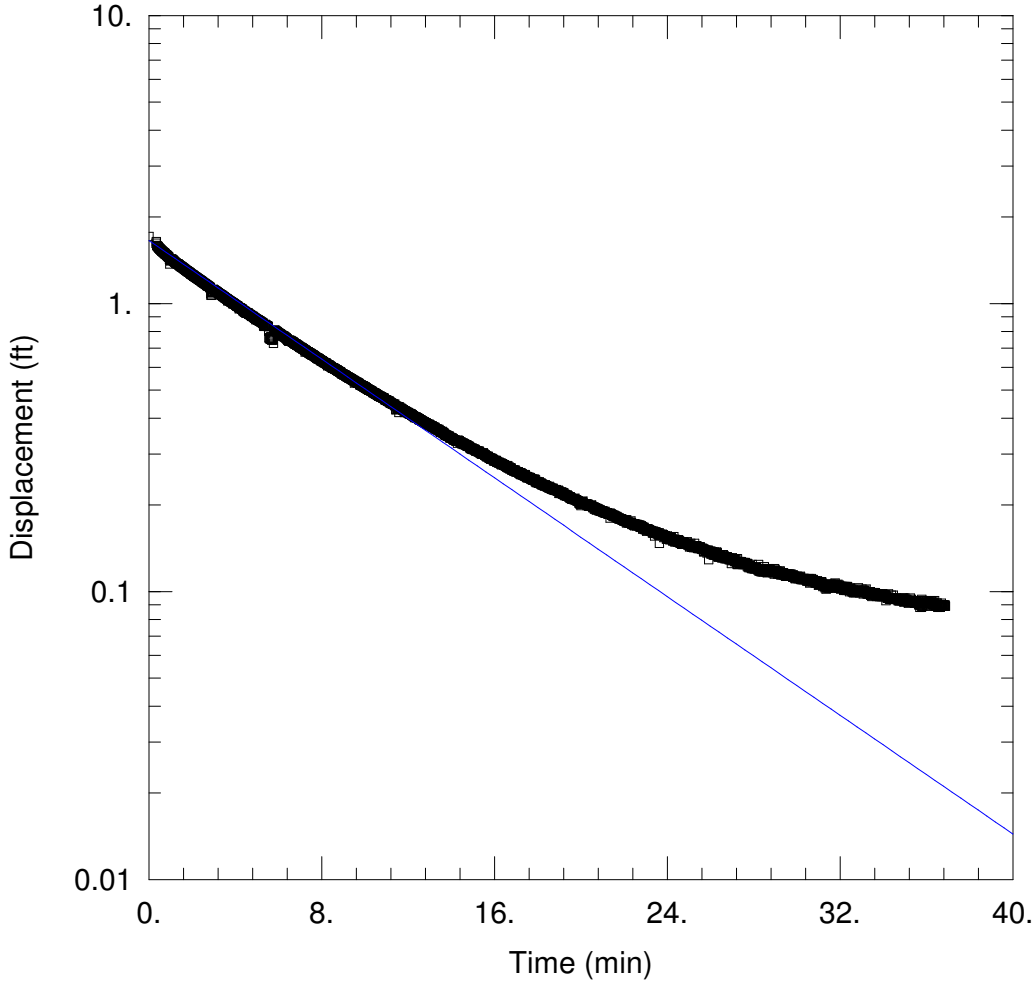
Saturated Thickness: 20. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-20D)

Initial Displacement: 1.095 ft
Total Well Penetration Depth: 20. ft
Casing Radius: 0.083 ft
Static Water Column Height: 41.44 ft
Screen Length: 10. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 0.0002333 cm/sec
y0 = 1.173 ft



RISING

Data Set: P:\...\MW-21D-RISING.aqt
Date: 07/25/07 Time: 08:04:48

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP-ESI
Project: 131369.107
Location: LCP Superfund
Test Well: MW-21D
Test Date: 1/22/07

AQUIFER DATA

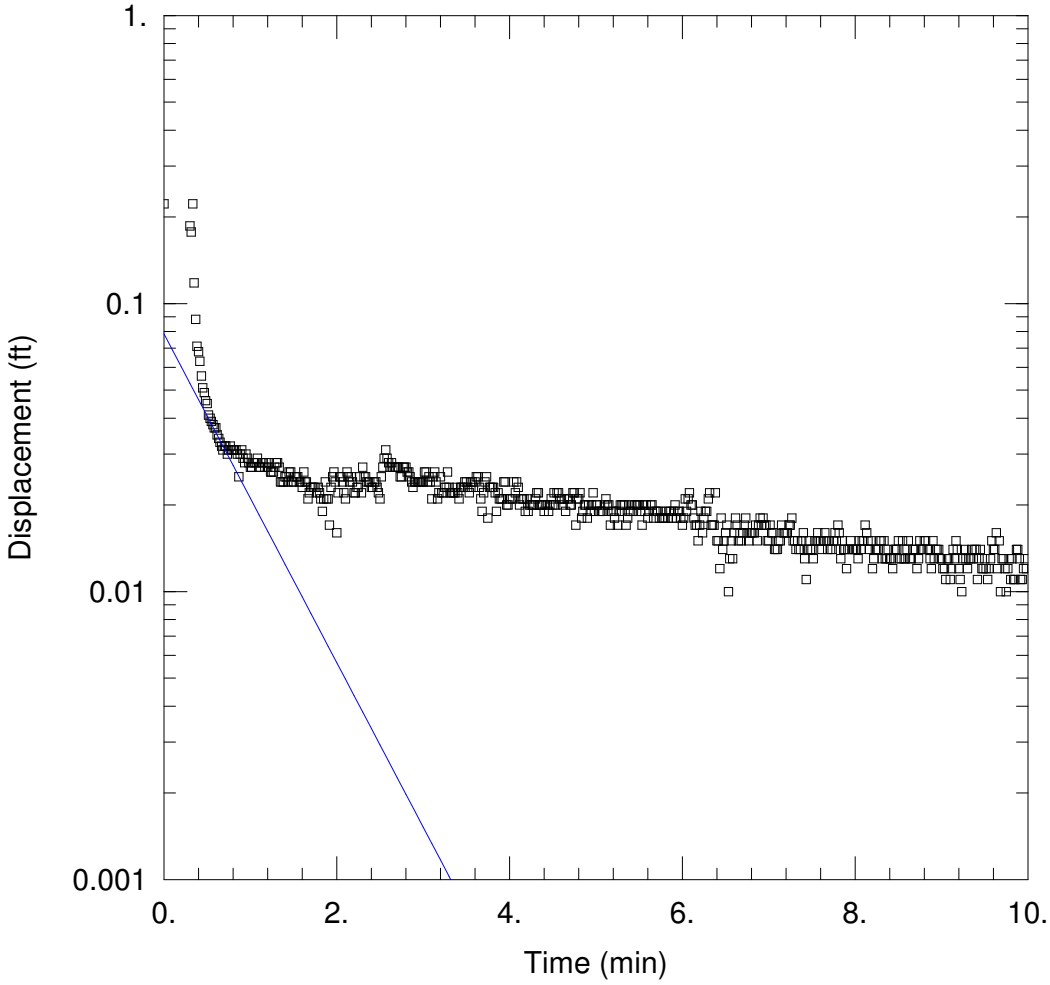
Saturated Thickness: 19. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-21D)

Initial Displacement: 1.711 ft
Total Well Penetration Depth: 19. ft
Casing Radius: 0.083 ft
Static Water Column Height: 53.03 ft
Screen Length: 10. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 0.0001138 cm/sec
y0 = 1.655 ft



RISING

Data Set: P:\...\MW-21S-RISING.aqt
Date: 07/25/07 Time: 08:08:32

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP-ESI
Project: 131369.107
Location: LCP Superfund
Test Well: MW-21S
Test Date: 1/29/07

AQUIFER DATA

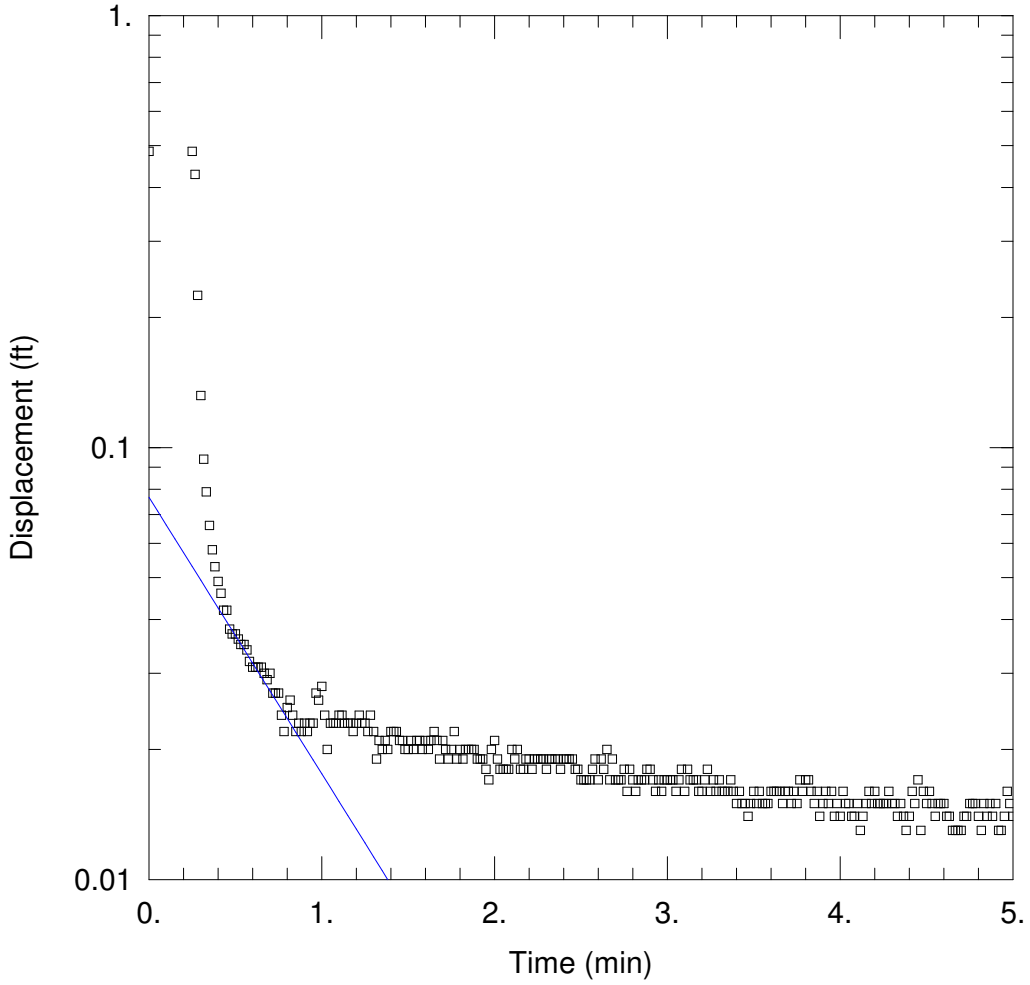
Saturated Thickness: 1.63 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-21S)

Initial Displacement: 0.222 ft
Total Well Penetration Depth: 5. ft
Casing Radius: 0.083 ft
Static Water Column Height: 1.63 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.002437 cm/sec
y0 = 0.07844 ft



RISING

Data Set: P:\...\MW-22S-RISING.aqt
Date: 07/25/07 Time: 08:11:06

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP-ESI
Project: 131369.107
Location: LCP Superfund
Test Well: MW-22S
Test Date: 1/29/07

AQUIFER DATA

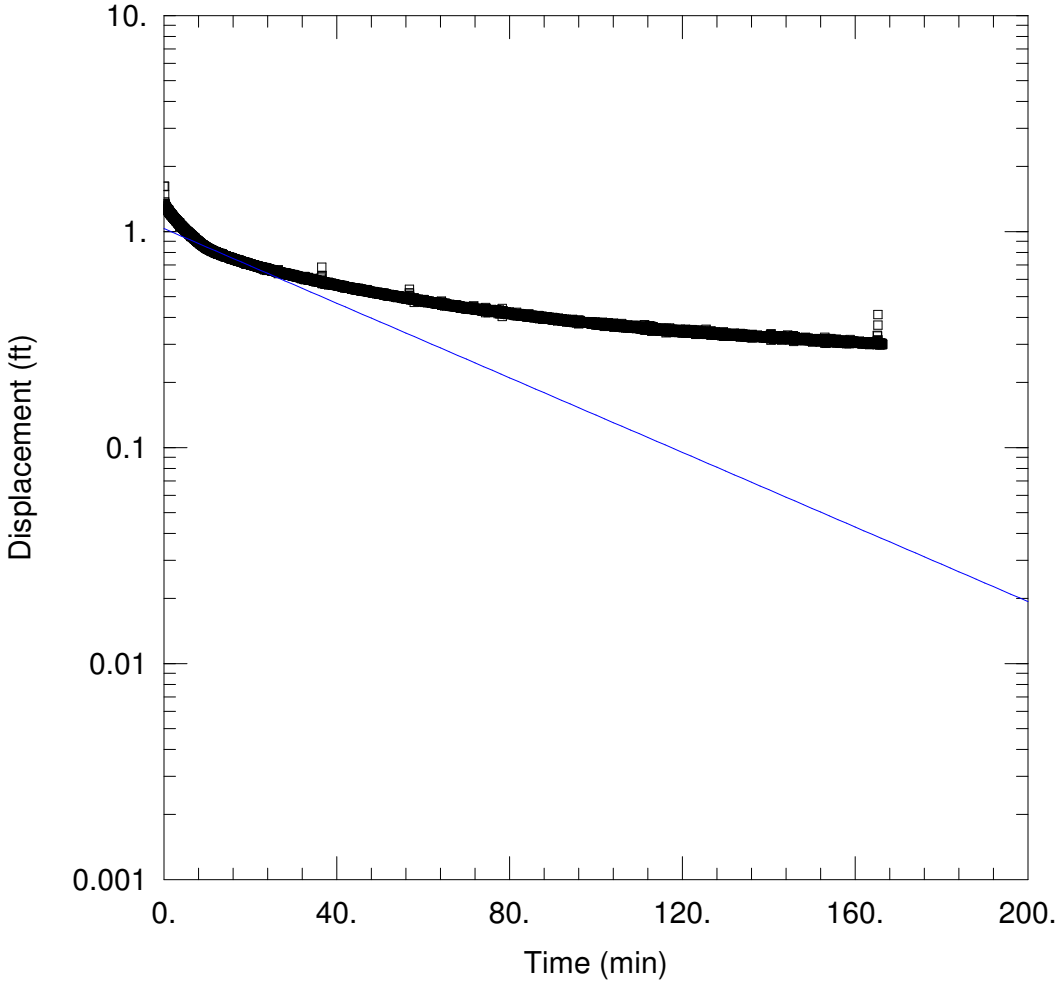
Saturated Thickness: 2.4 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-22S)

Initial Displacement: 0.485 ft
Total Well Penetration Depth: 5. ft
Casing Radius: 0.083 ft
Static Water Column Height: 2.4 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.002733 cm/sec
y0 = 0.07669 ft



RISING

Data Set: P:\...\MW-23S-RISING.aqt
Date: 07/25/07 Time: 08:12:12

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP-ESI
Project: 131369.107
Location: LCP Superfund
Test Well: MW-23S
Test Date: 1/29/07

AQUIFER DATA

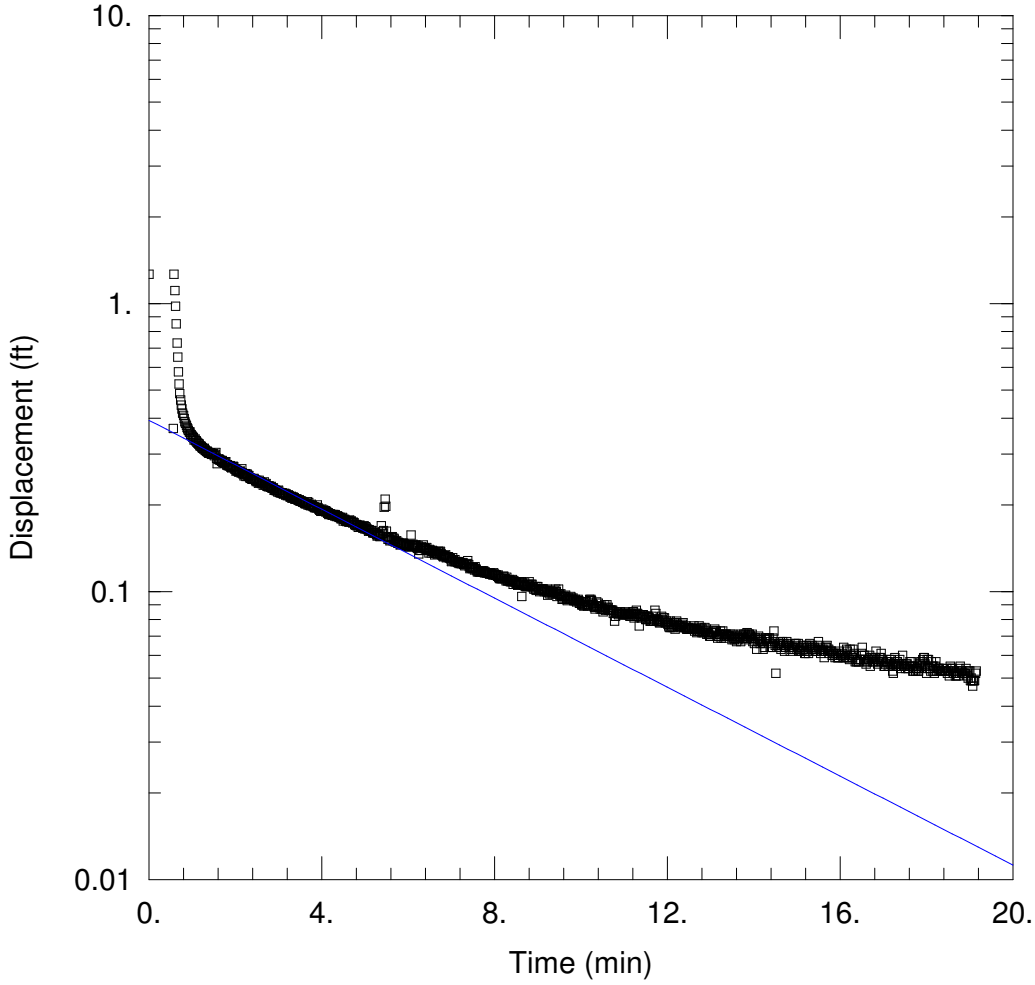
Saturated Thickness: 6.38 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-23S)

Initial Displacement: 1.623 ft
Total Well Penetration Depth: 7. ft
Casing Radius: 0.083 ft
Static Water Column Height: 6.38 ft
Screen Length: 7. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 2.633E-5 cm/sec
y0 = 1.031 ft



RISING

Data Set: P:\...\MW-24S-RISING.aqt
Date: 07/25/07 Time: 08:13:33

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP-ESI
Project: 131369.107
Location: LCP Superfund
Test Well: MW-24S
Test Date: 1/29/07

AQUIFER DATA

Saturated Thickness: 7.94 ft
Anisotropy Ratio (Kz/Kr): 1.

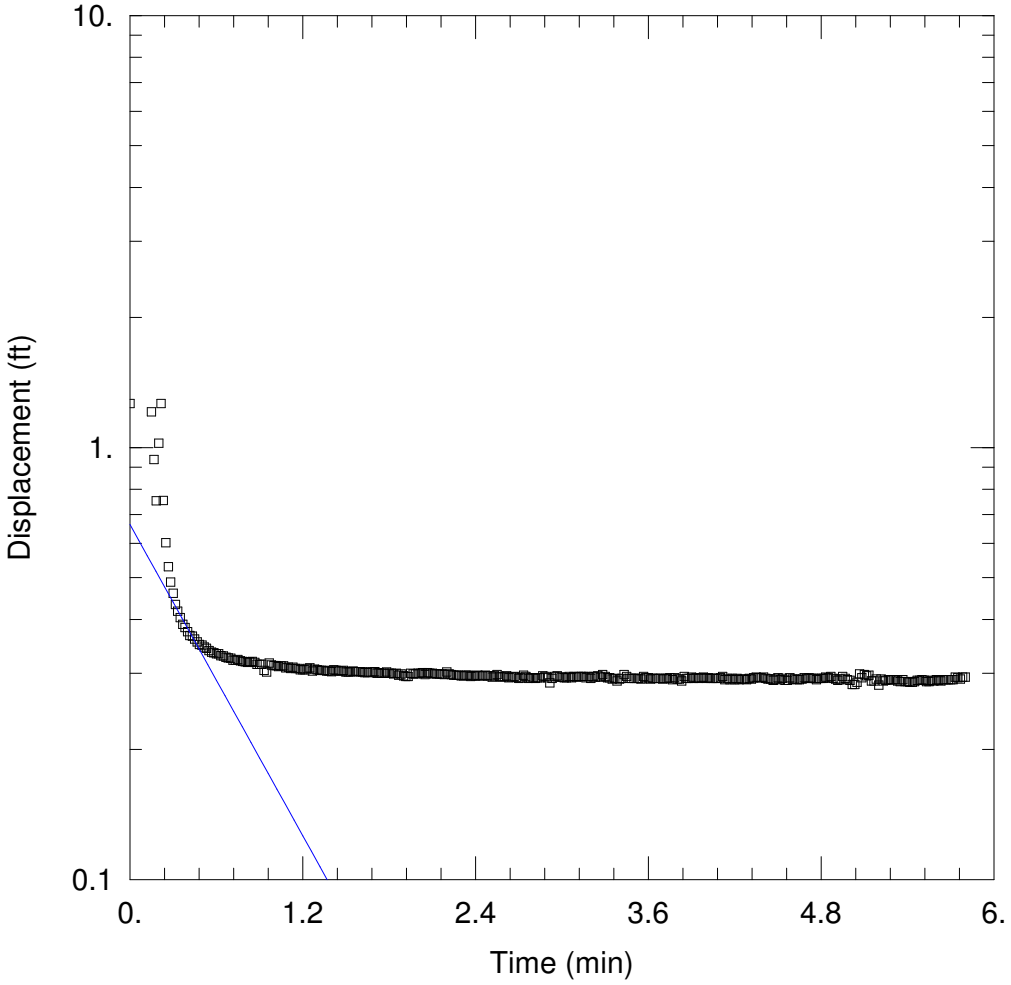
WELL DATA (MW-24S)

Initial Displacement: 1.263 ft
Total Well Penetration Depth: 10. ft
Casing Radius: 0.083 ft
Static Water Column Height: 7.94 ft
Screen Length: 10. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

K = 0.0001648 cm/sec
y0 = 0.393 ft



RISING

Data Set: P:\...\MW-25D-RISING.aqt
Date: 07/25/07 Time: 08:06:03

PROJECT INFORMATION

Company: Brown and Caldwell
Client: ISP-ESI
Project: 131369.107
Location: LCP Superfund
Test Well: MW-25D
Test Date: 1/22/07

AQUIFER DATA

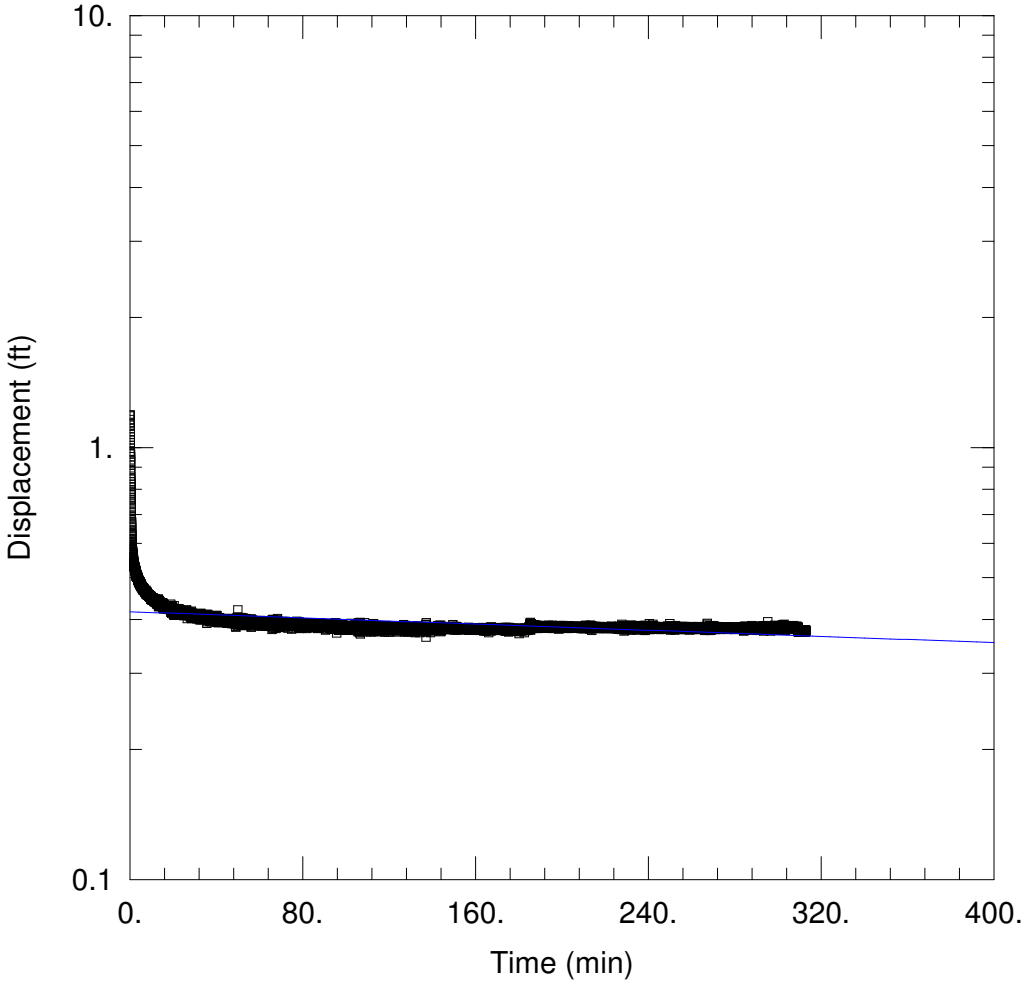
Saturated Thickness: 16. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-25D)

Initial Displacement: 1.265 ft
Total Well Penetration Depth: 16. ft
Casing Radius: 0.083 ft
Static Water Column Height: 47.2 ft
Screen Length: 10. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 0.001326 cm/sec
y0 = 0.663 ft



RISING

Data Set: P:\...\MW-26S-RISING.aqt
Date: 07/19/07 Time: 15:18:58

PROJECT INFORMATION

Company: Brown and Caldwell
Client: LCP
Project: 131369
Location: Linden, NJ

AQUIFER DATA

Saturated Thickness: 0.75 ft
Anisotropy Ratio (Kz/Kr): 1.

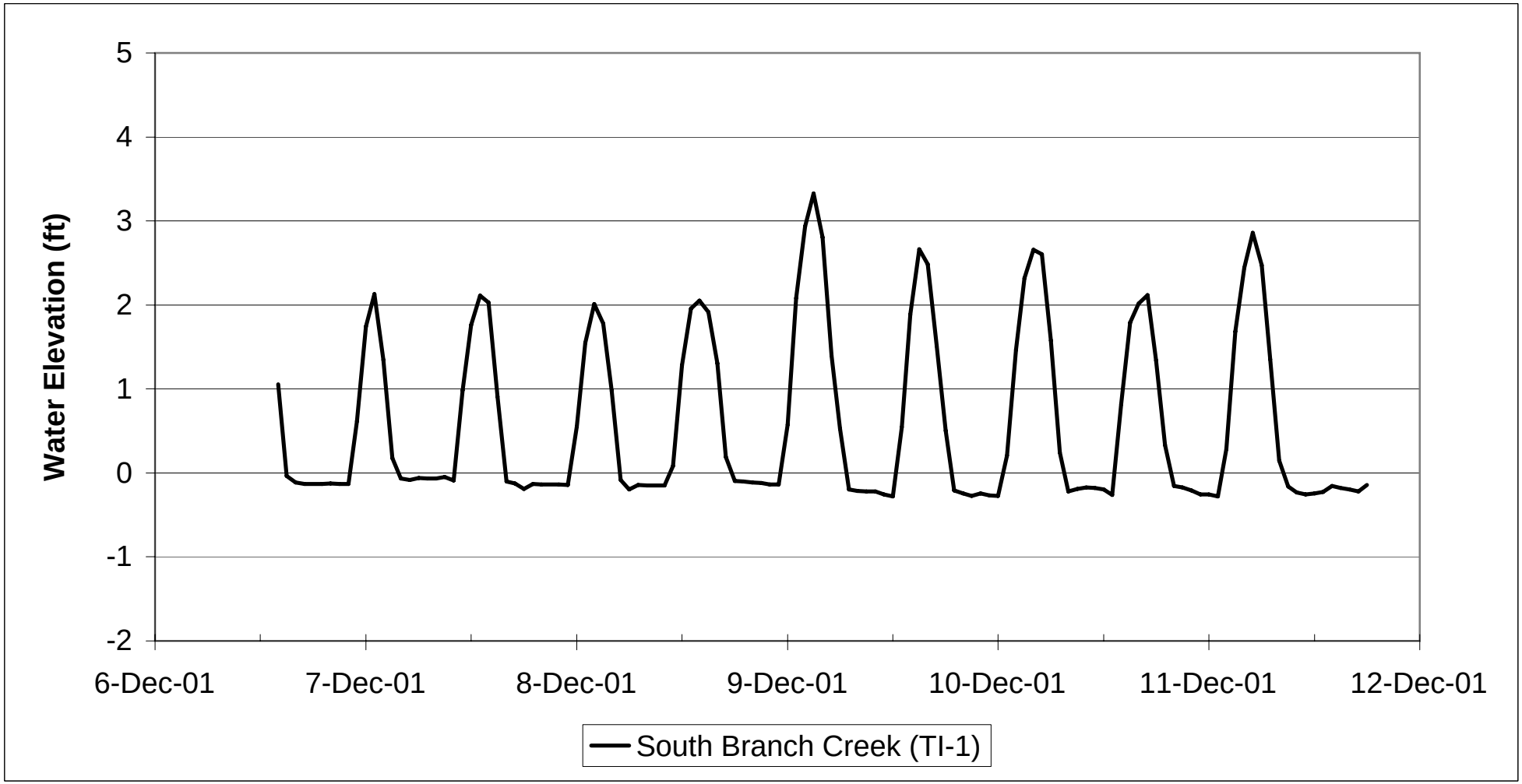
WELL DATA (MW-26S)

Initial Displacement: 1.189 ft
Total Well Penetration Depth: 5. ft
Casing Radius: 0.083 ft
Static Water Column Height: 4.05 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.0006591 m/day
y0 = 0.4168 ft

131369



HYDROGRAPH FOR
South Branch Creek (TI-1)

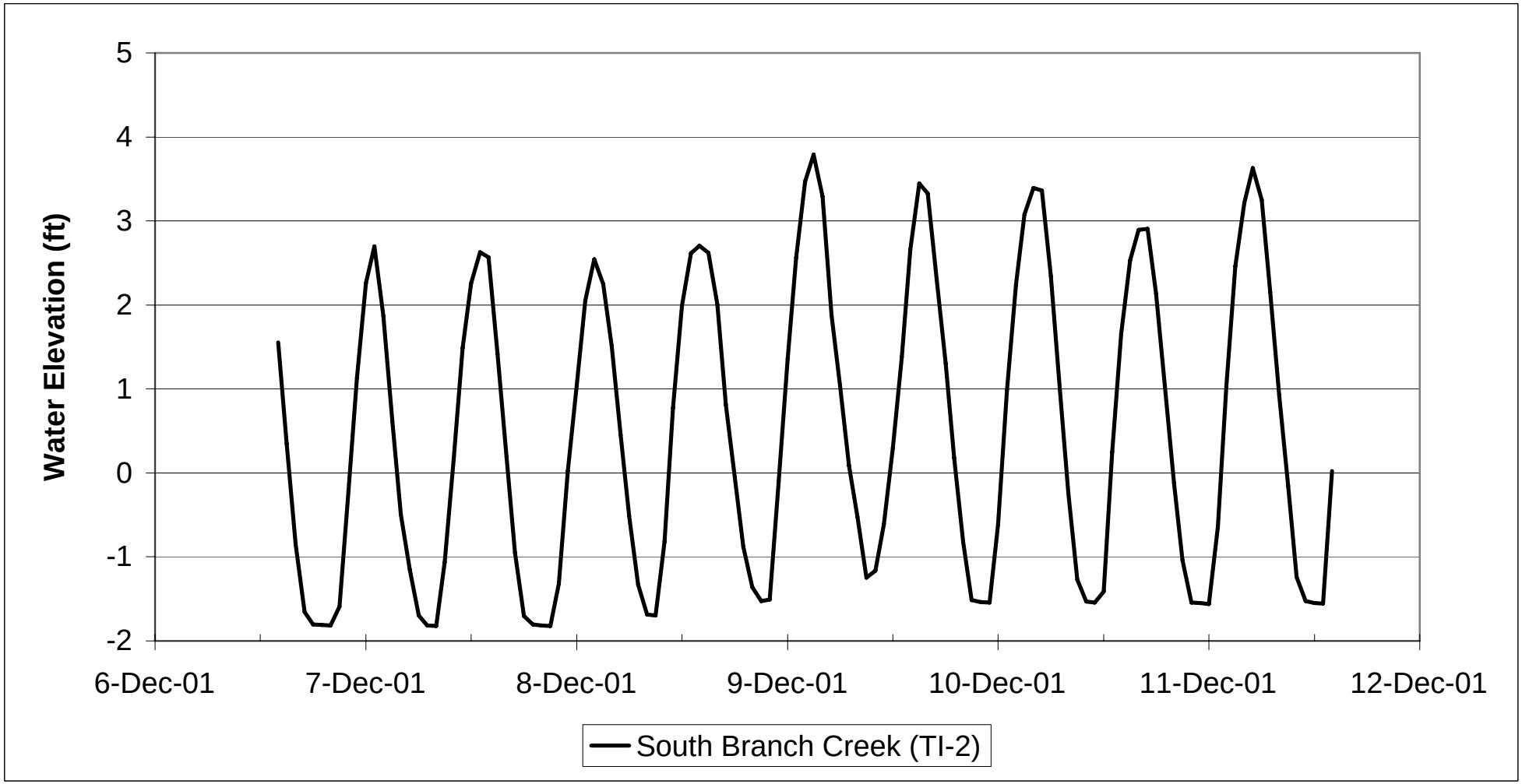
LCP Inc. Superfund Site

Linden, New Jersey

BROWN AND CALDWELL

P:\LCP\131369(Ph_II_RI)\SCSR_II(Ph_II-Rpt)\Appendices\Apx_B_(Hyd_Cond_Tst)\B-2_Hydrographs\PhI_Hydrograph_.xls\SBC (TI-1)
9/5/2007

131369



HYDROGRAPH FOR
South Branch Creek (TI-2)

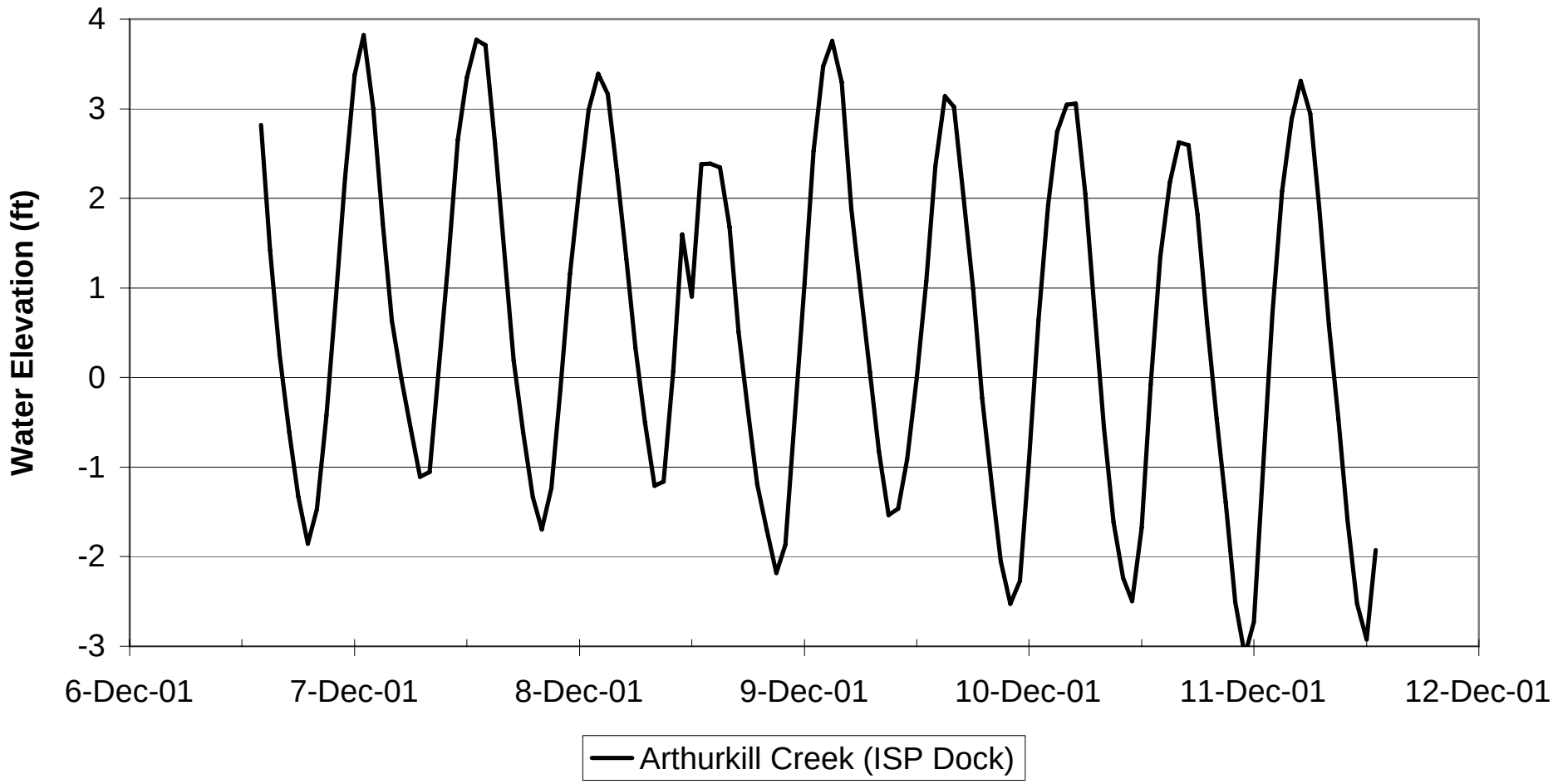
LCP Inc. Superfund Site

Linden, New Jersey

BROWN AND CALDWELL

P:\LCP\131369(Ph_II_RI)\SCSR_II(Ph_II-Rpt)\Appendices\Apx_B_(Hyd_Cond_Tst)\B-2_Hydrographs\PhI_Hydrograph_.xls\SBC (TI-2)
9/5/2007

131369



HYDROGRAPH FOR
Arthur Kill (ISP Dock)

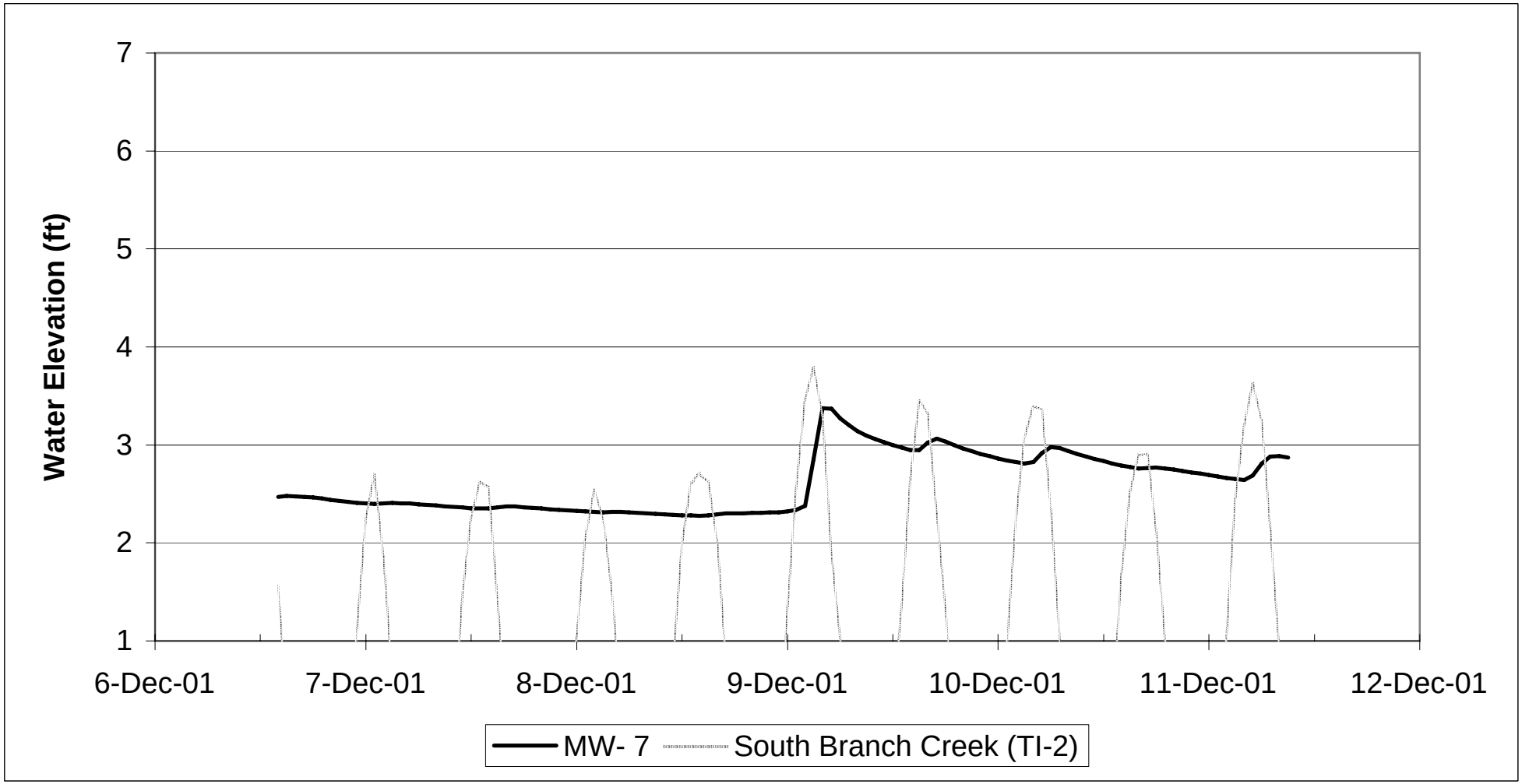
LCP Inc. Superfund Site

Linden, New Jersey

BROWN AND CALDWELL

P:\LCP\131369(Ph_II_RI)\SCSR_II(Ph_II-Rpt)\Appendices\Apx_B_(Hyd_Cond_Tst)\B-2_Hydrographs\PhI_Hydrograph_.xls\Arthurkill Creek (ISP Dock)
9/5/2007

131369



HYDROGRAPH FOR MW-7

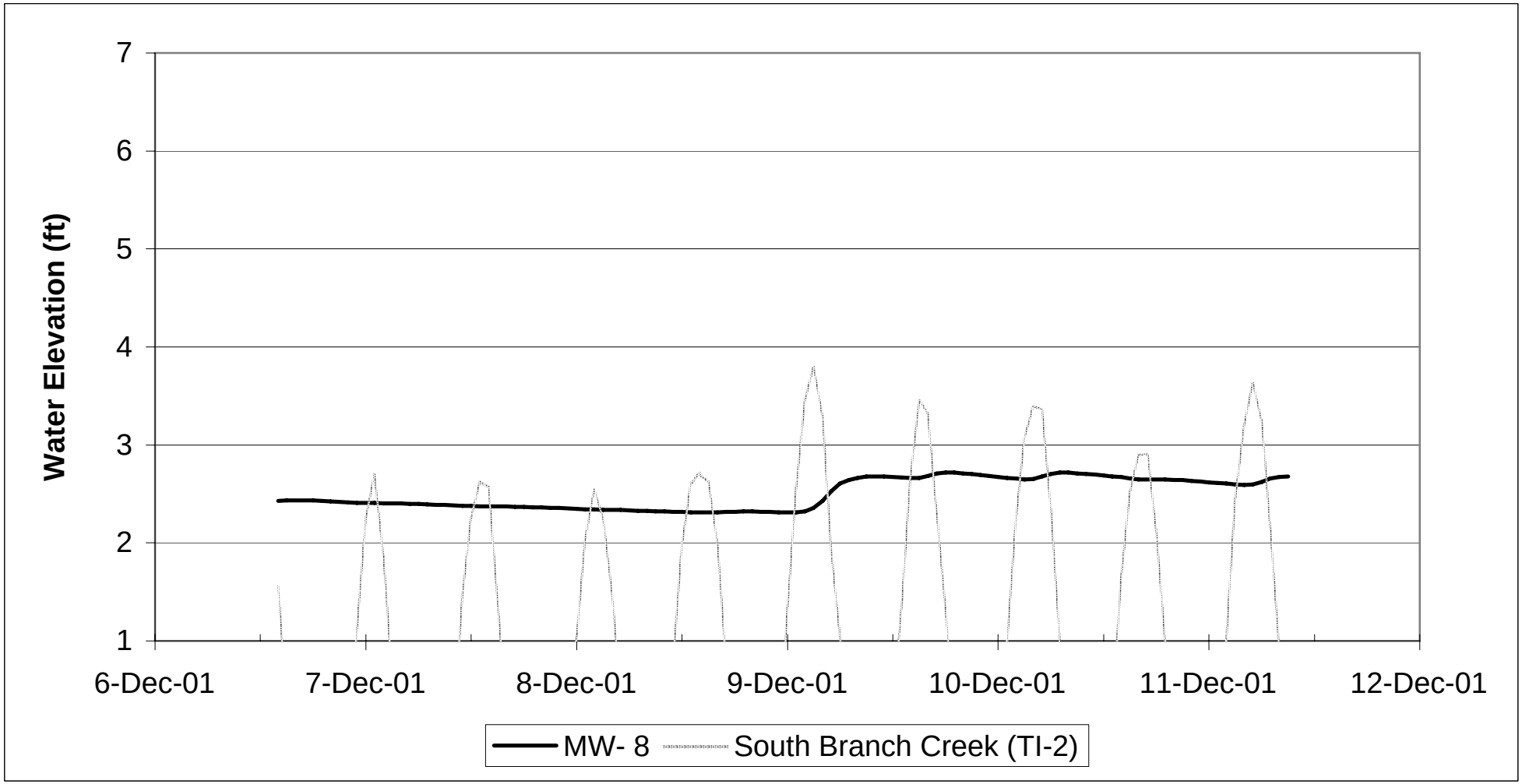
LCP Inc. Superfund Site

Linden, New Jersey

BROWN AND CALDWELL

P:\LCP\131369(Ph_II_RI)\SCSR_II(Ph_II-Rpt)\Appendices\Apx_B_(Hyd_Cond_Tst)\B-2_Hydrographs\PhI_Hydrograph_.xls\MW-7
9/5/2007

131369



HYDROGRAPH FOR MW-8

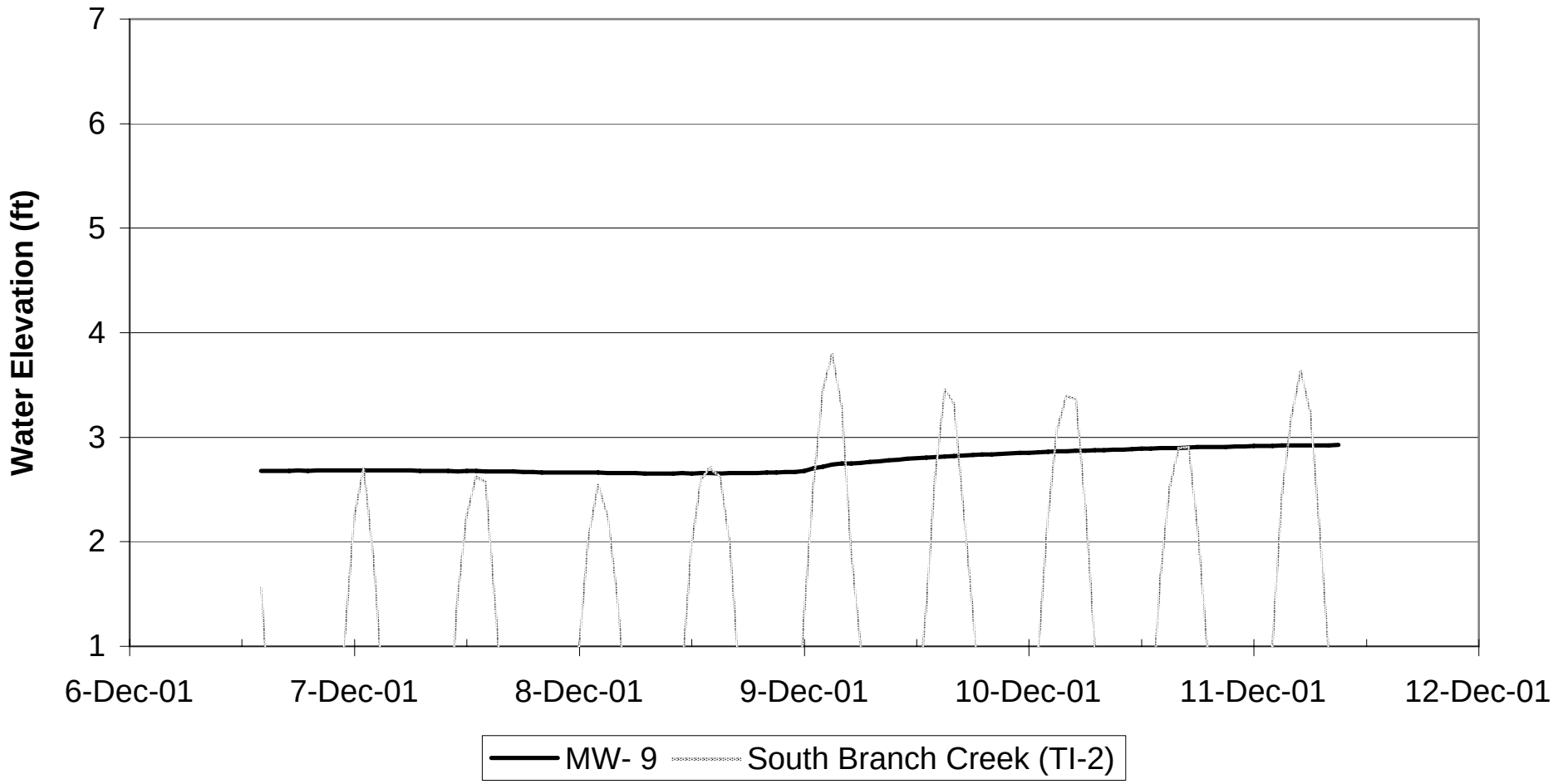
LCP Inc. Superfund Site

Linden, New Jersey

BROWN AND CALDWELL

P:\LCP\131369(Ph_II_RI)\SCSR_II(Ph_II-Rpt)\Appendices\Apx_B_(Hyd_Cond_Tst)\B-2_Hydrographs\PhI_Hydrograph_.xls\MW-8
9/5/2007

131369



HYDROGRAPH FOR MW-9

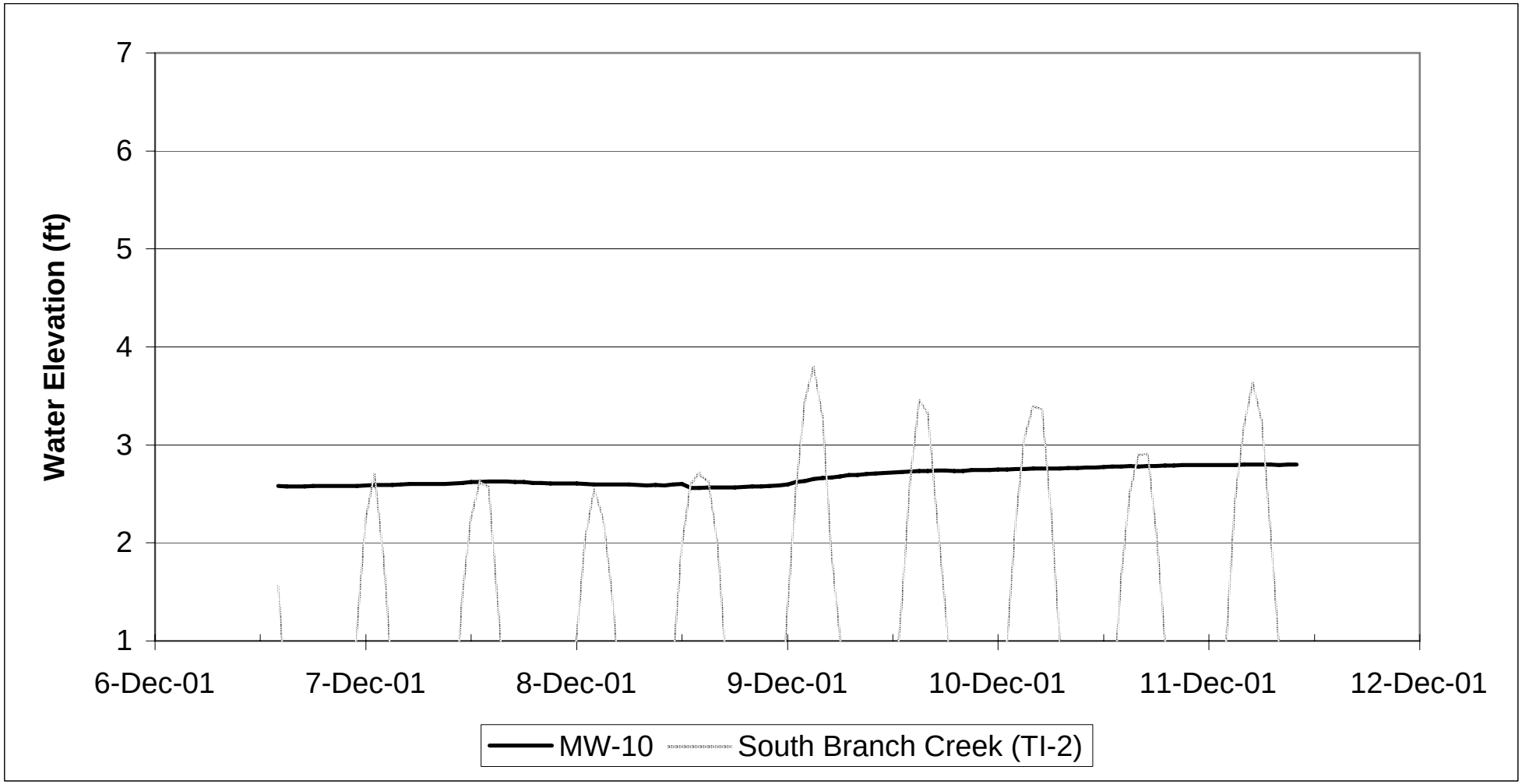
LCP Inc. Superfund Site

Linden, New Jersey

BROWN AND CALDWELL

P:\LCP\131369(Ph_II_RI)\SCSR_II(Ph_II-Rpt)\Appendices\Apx_B_(Hyd_Cond_Tst)\B-2_Hydrographs\PhI_Hydrograph_.xls\MW-9
9/5/2007

131369



HYDROGRAPH FOR MW-10

LCP Inc. Superfund Site

Linden, New Jersey

BROWN AND CALDWELL

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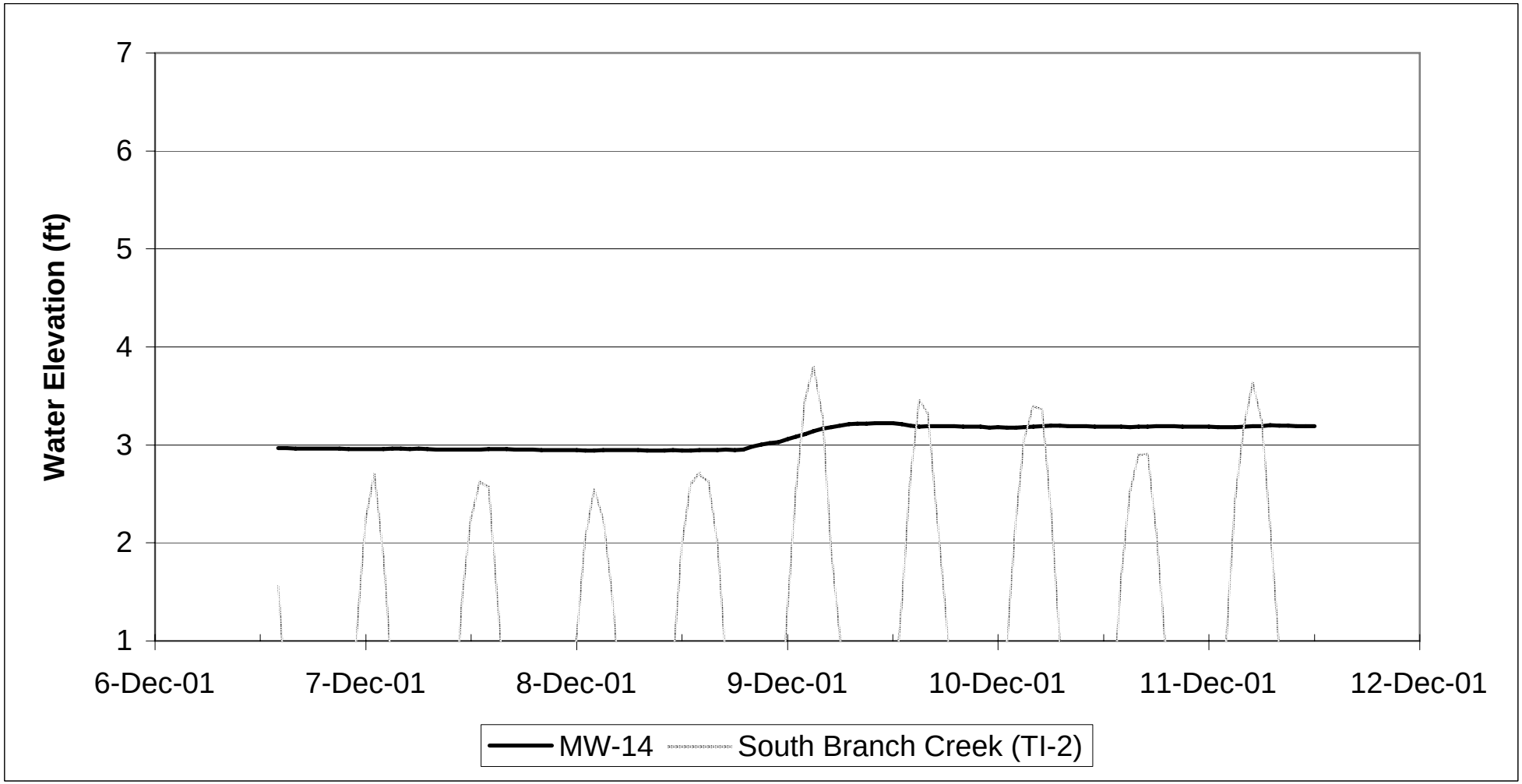
9/5/2007

131369



HYDROGRAPH FOR MW-14

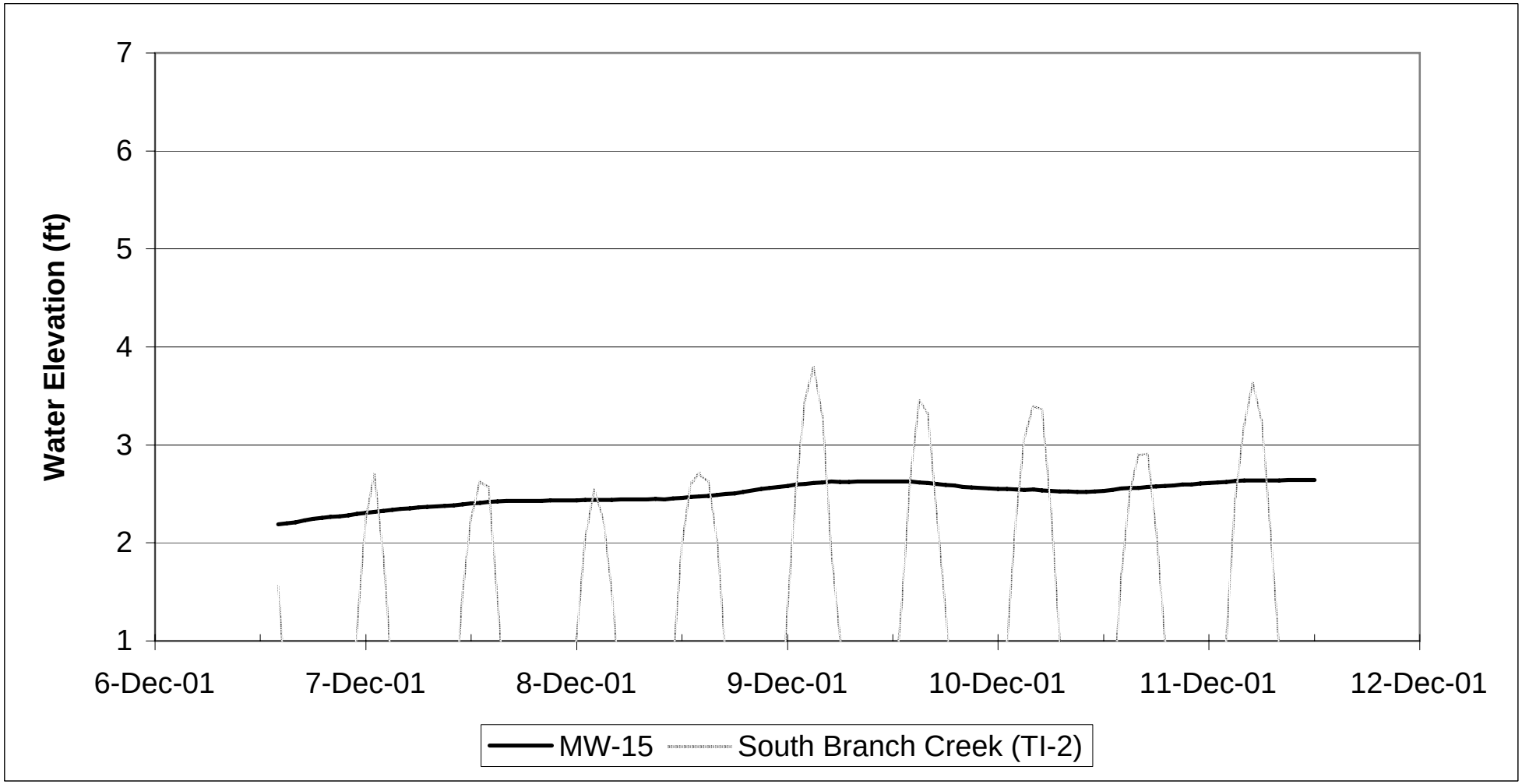
LCP Inc. Superfund Site

Linden, New Jersey

BROWN AND CALDWELL

P:\LCP\131369(Ph_II_RI)\SCSR_II(Ph_II-Rpt)\Appendices\Apx_B_(Hyd_Cond_Tst)\B-2_Hydrographs\PhI_Hydrograph_.xls\MW-14
9/5/2007

131369



HYDROGRAPH FOR MW-15

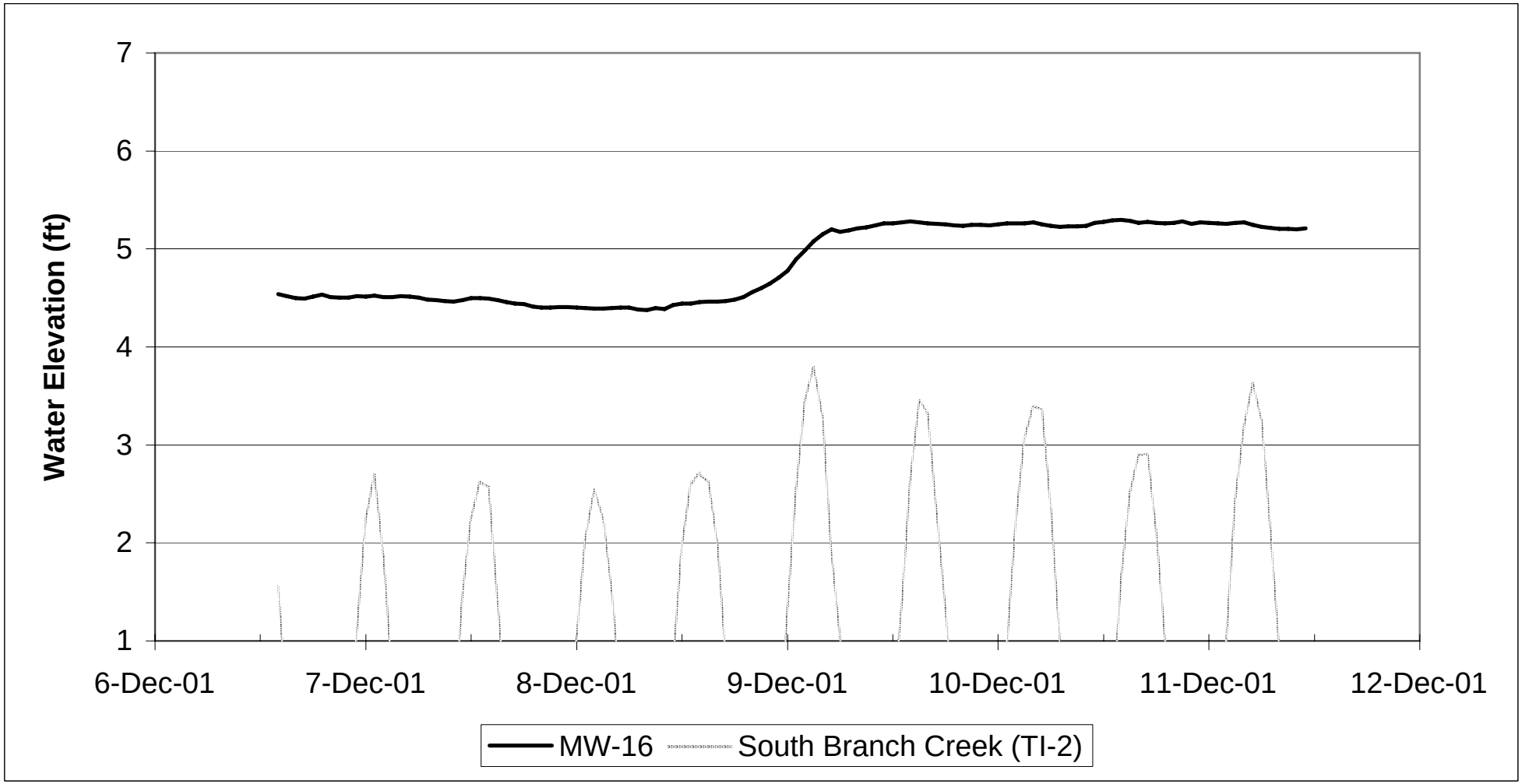
LCP Inc. Superfund Site

Linden, New Jersey

BROWN AND CALDWELL

P:\LCP\131369(Ph_II_RI)\SCSR_II(Ph_II-Rpt)\Appendices\Apx_B_(Hyd_Cond_Tst)\B-2_Hydrographs\PhI_Hydrograph_.xls\MW-15
9/5/2007

131369



HYDROGRAPH FOR MW-16

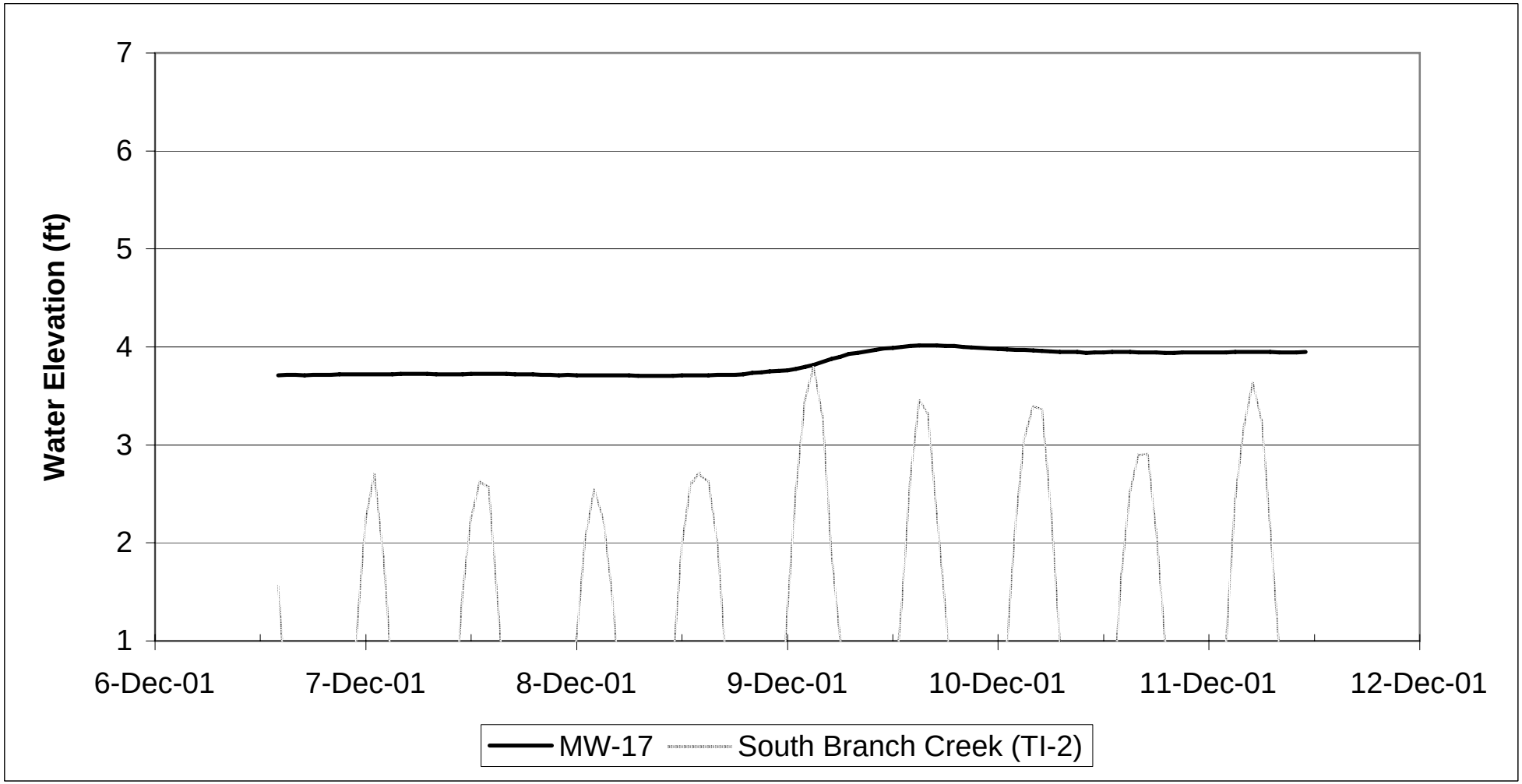
LCP Inc. Superfund Site

Linden, New Jersey

BROWN AND CALDWELL

P:\LCP\131369(Ph_II_RI)\SCSR_II(Ph_II-Rpt)\Appendices\Apx_B_(Hyd_Cond_Tst)\B-2_Hydrographs\PhI_Hydrograph_.xls\MW-16
9/5/2007

131369



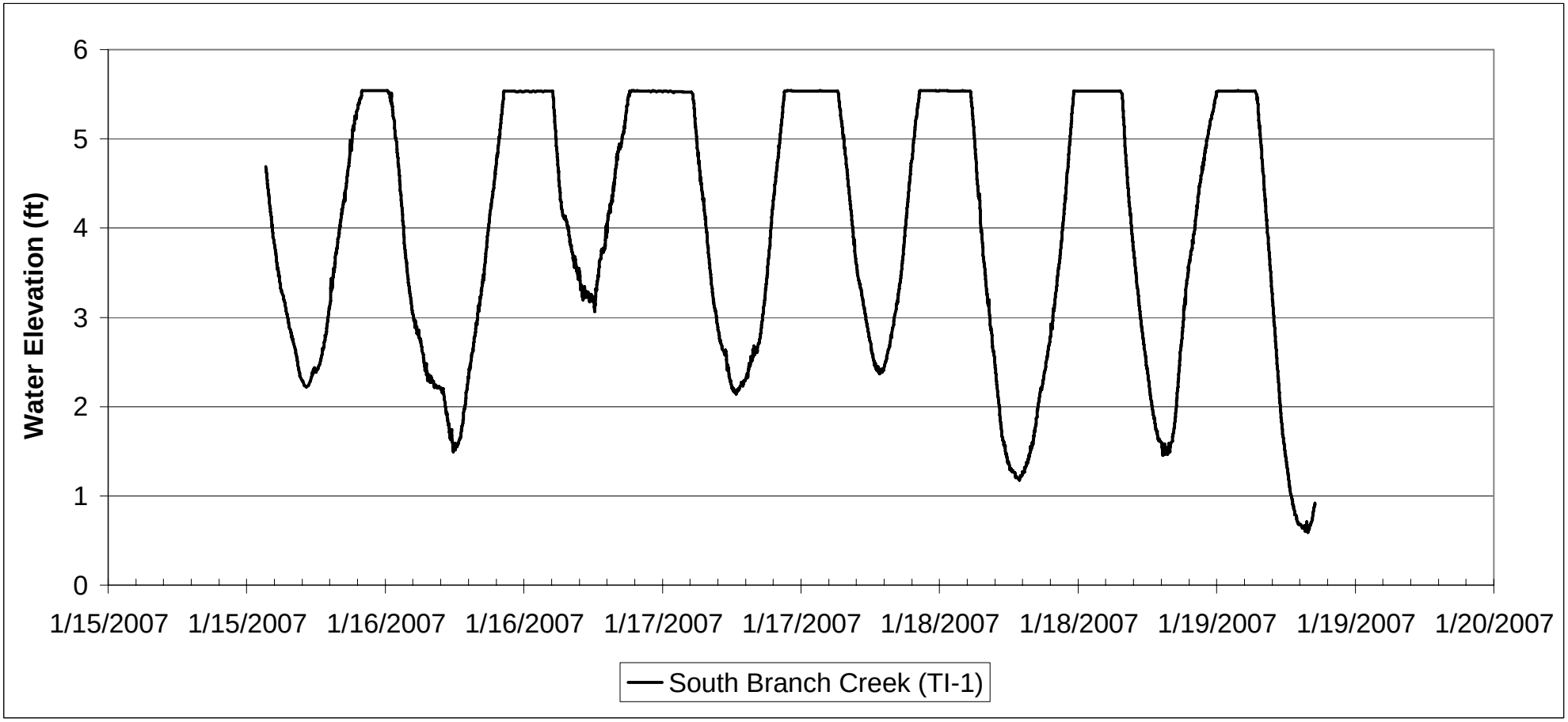
HYDROGRAPH FOR
MW - 17

LCP Inc. Superfund Site
Linden, New Jersey

BROWN AND CALDWELL

P:\LCP\131369(Ph_II_RI)\SCSR_II(Ph_II-Rpt)\Appendices\Apx_B_(Hyd_Cond_Tst)\B-2_Hydrographs\PhI_Hydrograph_.xls\MW-17
9/5/2007

131369



HYDROGRAPH FOR
South Branch Creek (TI-1)

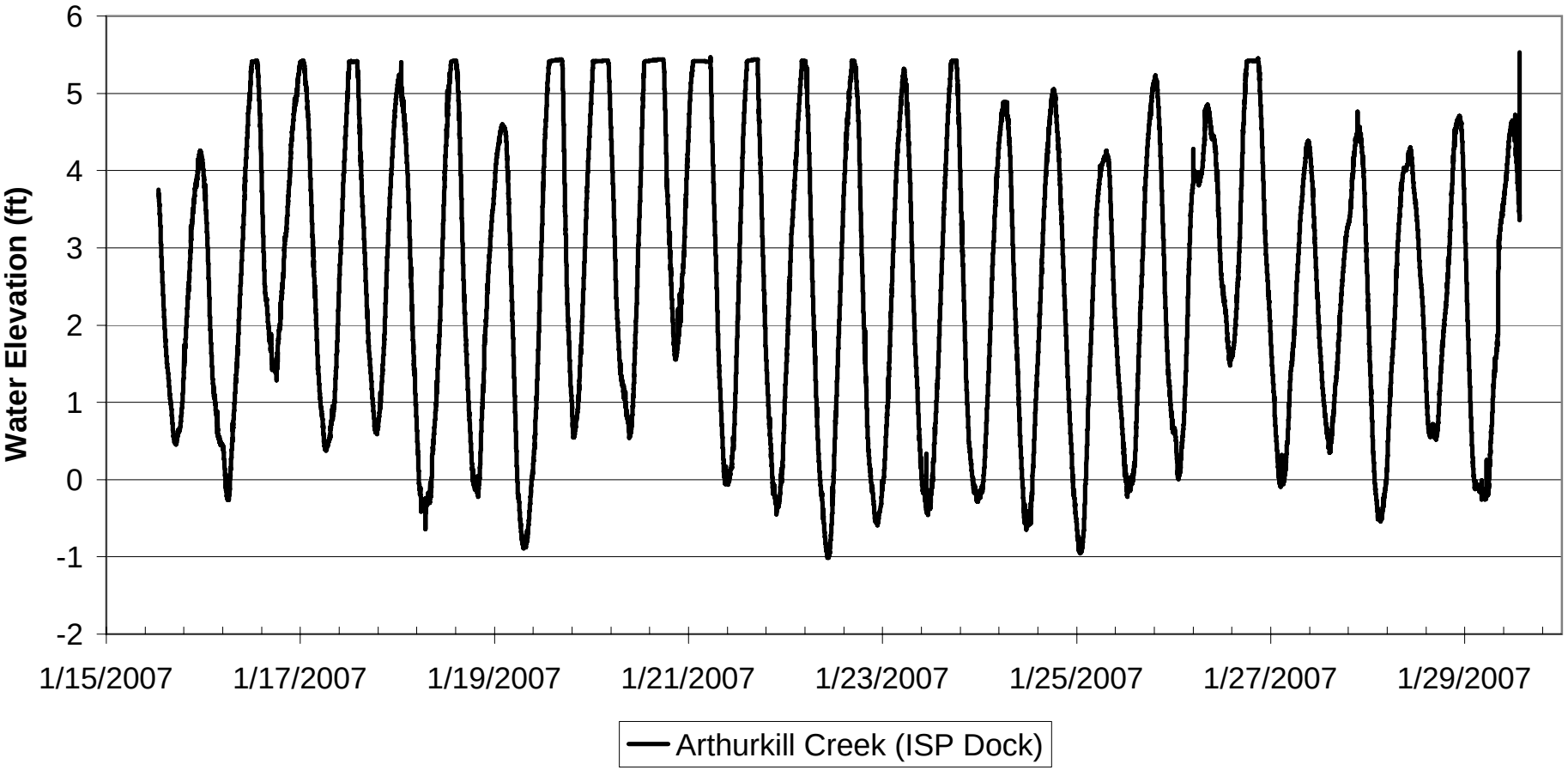
LCP Inc. Superfund Site

Linden, New Jersey

BROWN AND CALDWELL

P:\LCP\131369(Ph_II_RI)\SCSR_II(Ph_II-Rpt)\Appendices\Apx_B_(Hyd_Cond_Tst)\B-2_Hydrographs\PhII_Hydrograph_.xls\SBC (TI-1)
9/5/2007

131369



HYDROGRAPH FOR
Arthur Kill (ISP Dock)

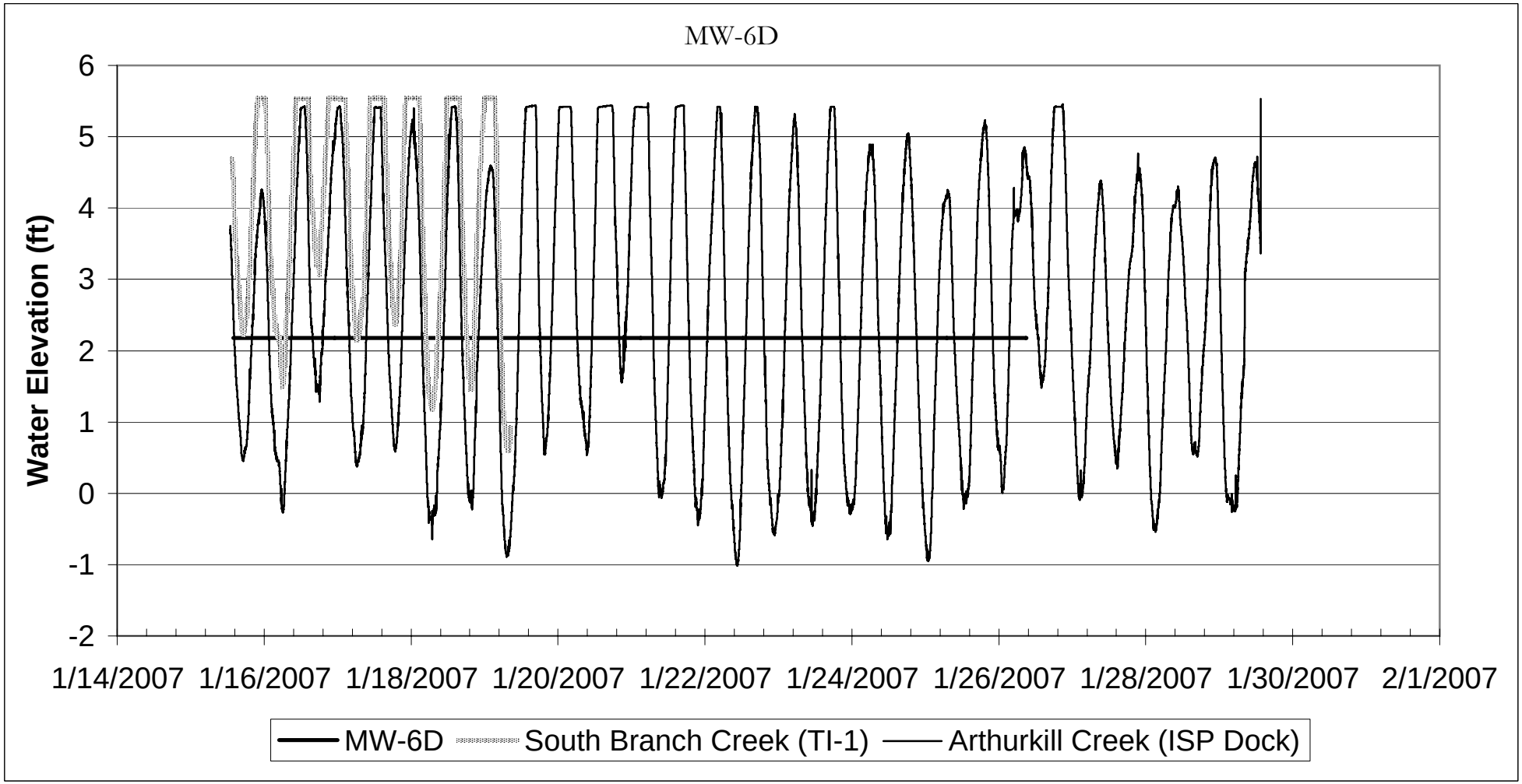
LCP Inc. Superfund Site

Linden, New Jersey

BROWN AND CALDWELL

P:\LCP\131369(Ph_II_RI)\SCSR_II(Ph_II-Rpt)\Appendices\Apx_B_(Hyd_Cond_Tst)\B-2_Hydrographs\PhII_Hydrograph_.xls\Arthurkill Creek (ISP Dock)
9/5/2007

131369



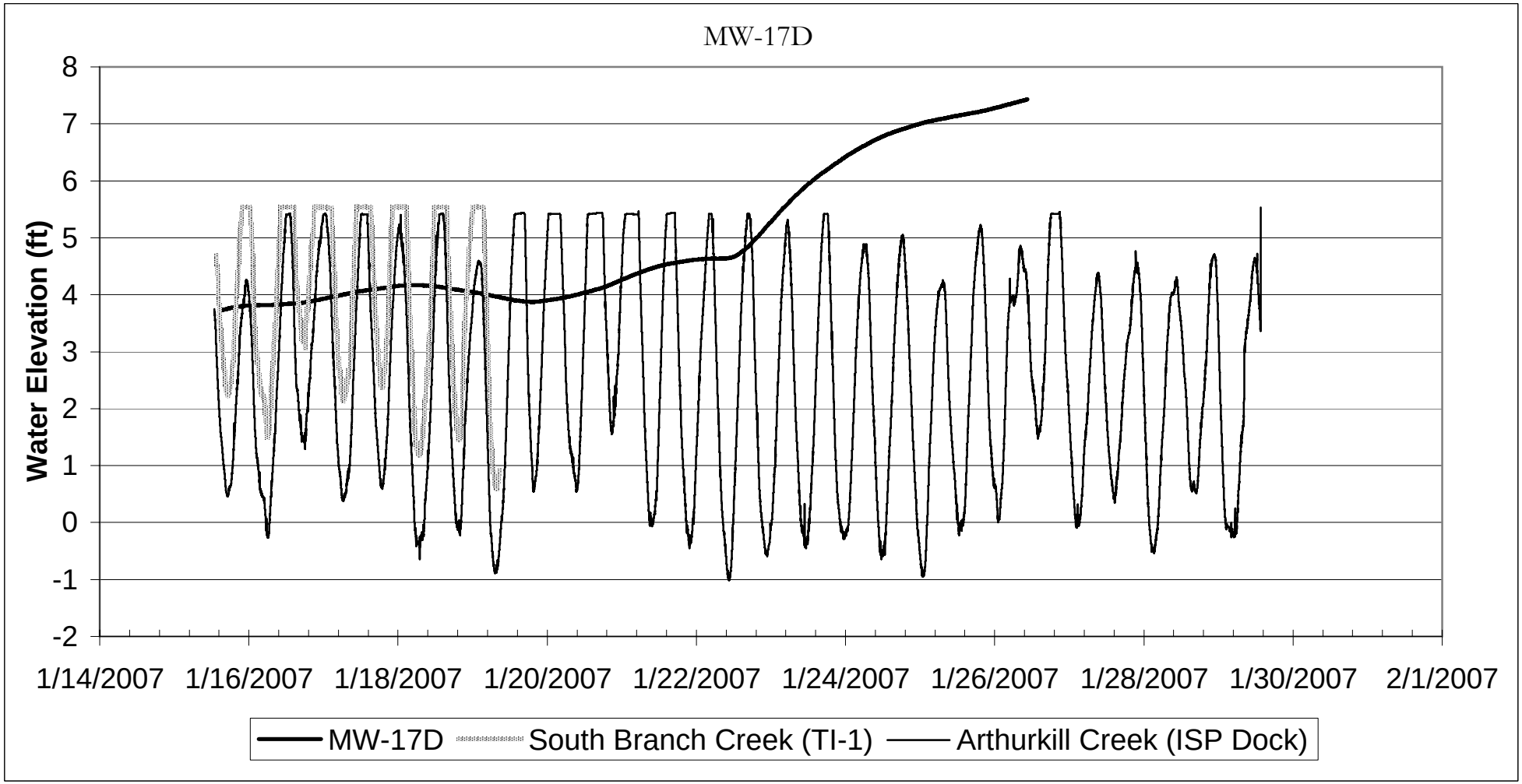
HYDROGRAPH FOR
MW- 6D

LCP Inc. Superfund Site
Linden, New Jersey

BROWN AND CALDWELL

P:\LCP\131369(Ph_II_RI)\SCSR_II(Ph_II-Rpt)\Appendices\Apx_B_(Hyd_Cond_Tst)\B-2_Hydrographs\PhII_Hydrograph_.xls\MW- 6D
9/5/2007

131369



HYDROGRAPH FOR MW-17D

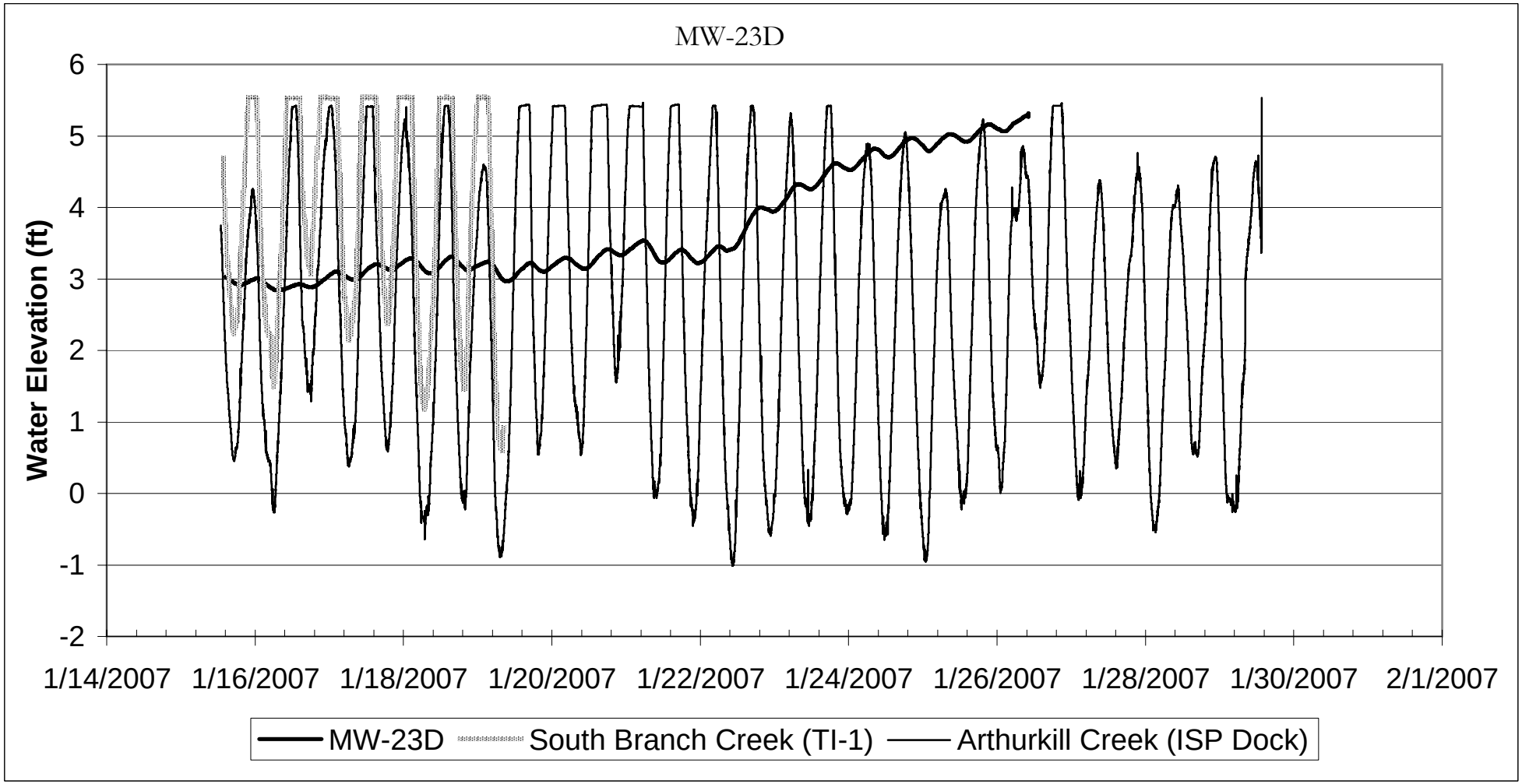
LCP Inc. Superfund Site

Linden, New Jersey

BROWN AND CALDWELL

P:\LCP\131369(Ph_II_RI)\SCSR_II(Ph_II-Rpt)\Appendices\Apx_B_(Hyd_Cond_Tst)\B-2_Hydrographs\PhII_Hydrograph_.xls\MW-17D
9/5/2007

131369



HYDROGRAPH FOR MW-23D

LCP Inc. Superfund Site

Linden, New Jersey

BROWN AND CALDWELL

P:\LCP\131369(Ph_II_RI)\SCSR_II(Ph_II-Rpt)\Appendices\Apx_B_(Hyd_Cond_Tst)\B-2_Hydrographs\PhII_Hydrograph_.xls\MW-23D
9/5/2007

APPENDIX C

Representative Photographic Logs

Photograph #1 – Use of coring device for sediment sampling.

Photograph #2–Detachment of core during sediment sampling.

Photograph #3 – Use of Petite Ponar dredge for sediment sampling.

Photograph #4 – Grab sample during surface water sampling.

Photograph #5 – Surface water grab sample collection.

Photograph #6 – Low marsh soil sampling.

Photograph #7 – Homogenizing low marsh soil sample.

Photograph #8 – Collecting fiddler crabs.

Photograph #9 – Fiddler crab yield for two sample stations.

Photograph #10 – Weighing fiddler crabs.

Photograph #11 – Baited traps for mummichog.

Photograph #12 – Baited trap in water at transect.

Photograph #13 – Fish yield at transect.

Photograph #14 – Measuring fish samples.

Photograph #1 – Deep soil drilling with hollow-stem auger rig.

Photograph #2 – Deep soil sampling, split-tube samples.

Photograph #3 – Shallow soil using GeoProbe direct push sampler.

Photograph #4 – Shallow soil using GeoProbe direct push sampler.

Photograph #5 – Horizontal boring drill rods advanced into shallow trench before proceeding beneath Buildings 230 and 240.

Photograph #6 – Horizontal drilling rig. Drill rods being advanced into and through shallow trench.

Photograph #7 – Elemental mercury from sample HB-105A.

Photograph #8 – Elemental mercury beads on soil (in lower right-hand corner) discovered while digging shallow trench for HB-103. Trench was abandoned and area taped off.

Photograph #9 – Groundwater sample collection.

Photograph #10 – Groundwater sample collection.

Photograph #11 – Mercury soil vapor screening using a Jerome 431B mercury vapor analyzer.

Photograph #12 – Collection of mercury soil vapors via method IO-5. Gold-bead traps are placed inside heated-tube (bottom left of photo)to reduce moisture in sample.

Photograph #13 – Ambient air sample collected in six-liter summa canister.

Photograph #14 – Purging soil vapor probe and monitoring mercury vapors for health and safety purposes.

Photograph #15 – Collection of duplicate soil vapor samples in 1-liter summa canister.

APPENDIX D

Data Usability Reports

Data Validation Services

120 Cobble Creek Road P. O. Box 208

North Creek, N. Y. 12853

Phone 518-251-4429

Facsimile 518-251-4428

July 5, 2007

Matt Cavas
Brown and Caldwell
110 Commerce Dr.
Allendale, NJ 07401

RE: Data Validation for the LCP Superfund site, Linden, NJ
South Branch and Reference Stream Locations
Accutest SDG Nos. J41738, J41741, J42011, J42360, J42535, J42762, J42838, J42866, J43022, J43207, J43284, J43443, J43008, J41738X, J41741X, J42011X, J42360X, J42535X, J42762X, J42838X, J42866X, J43022X, J43207X, J43284X, J43443A, J43443X, and J43008X

Dear Mr. Cavas:

Review has been completed for the data packages generated by Accutest Laboratories that pertain to samples collected 9/21/06 through 10/10/06 at the South Branch and Reference Stream sites of the LCP Superfund, Linden, NJ project. Eighty soil samples and eleven aqueous samples were processed for TCL Volatiles, TCL Semivolatiles, TCL Pesticides, TCL PCBs, TAL metals, hexavalent chromium, total cyanide, and methyl mercury. Twenty-two of the soil and four of the aqueous samples were also processed for Dioxin/Furans (PCDD/PCDF). The aqueous samples were also analyzed for low level total mercury, TOC, cyanide, TSS, DOC, and total hardness. The soils were also analyzed for Particle Size (Sieve) and Redox Potential. Thirty-seven of the soils were also processed for acid volatile sulfide metals (AVS/SEM). Aqueous samples also underwent Selective Ion Monitoring (SIM) for selected semivolatile analytes in order to obtain better sensitivity and lower reporting limits. Blind field duplicates, sample matrix spikes, field blanks, and trip blanks were processed with the project samples. The specific sample location identifications covered in this report are noted in the attached laboratory summary listings.

The analytical methodologies utilized are those of the USEPA SW846 3rd edition and USEPA Standard Methods. The dioxin/furan analyses were subcontracted to SGS/Paradigm, the methyl mercury and low level aqueous mercury analyses were subcontracted to Columbia Analytical Services (CAS)-Kelso and Battelle Marine Sciences, and AVS/SEM were subcontracted to Accutest-Houston.

Validation review of the data packages has been performed utilizing the guidance in the USEPA National Functional Guidelines for Data Review, the USEPA Region II validation SOPs, the project QAPP (including laboratory SOPs), the specific methodology requirements, and professional judgment.

The following items were reviewed:

* Laboratory Narrative Discussion
* Custody Documentation
* Holding Times
* Surrogate Recoveries and Internal Standard Responses
* Matrix Spike Recoveries/Duplicate Correlations
* Field Duplicate Correlations
* Preparation/Calibration Blanks
* Control Spike/Laboratory Control Samples
* Instrumental Tunes
* Calibration/CRI/CRA Standards
* ICP Serial Dilution
* ICP Interference Check Samples
* Dioxin/Furan Recovery and Clean-Up Standards
* Instrument IDLs and Performance
* Method Compliance
* Sample Result Verification

Those items listed above which show deficiencies are discussed within the text of this narrative. All of the other items were determined to be acceptable according to the validation guidelines noted above.

In summary, most of the sample analyte values/reporting limits are usable as reported, or usable with minor qualification as estimated ("J" qualifier) due to typical processing or matrix effects. The following exceptions were noted:

- Due to matrix effect, the results for hexavalent chromium in the soil samples are not usable, as evidenced by the lack of recovery of that analyte in the spiked sample controls.
- Results for hexachlorocyclopentadiene in most of the soil samples are not usable due to lack of recovery in the project matrix spikes.
- Results for several select volatile or semivolatile compounds are not usable in a limited number of samples due to apparent matrix effect
- POC processing was requested, but was not performed on the samples due to laboratory oversight. There are no POC data for the project.
- Many of the reported pesticide detections have been qualified to reflect the potential for false positives due to matrix interferences.
- Some of the low level detections are considered external contamination, as evidenced by presence in associated blank
- A large proportion of the soil samples covered in this report exhibit low solids (high moisture) content. Therefore, all results for those samples have been qualified as being estimated in quantitative value.

Laboratory processing was generally compliant with analytical protocol requirements, and the project data completeness requirement of 90% has been met.

Copies of the laboratory sample identification summary forms that list the sample covered in this report are attached to this text, and should be reviewed in conjunction with this report. Included with this submission are electronic client data tables that have been qualified in red to reflect the edits and qualifications recommended within this report. These tables have been submitted under separate cover.

The following text discusses quality issues of concern.

General

The strong majority of the samples have solids content below 50%. With low solids (high moisture) content, there exists the possibility of a non-homogeneous aliquot taken during sample collection in the field or during sample processing in the laboratory. Additionally, the aqueous matrix (i.e. which is approached with samples having very low solids content) involves significantly different processing procedures than the solid matrix for semivolatiles (including BNA, pesticides, PCBs, and herbicides) and certain of the wet chemistry analytes. Additionally, the aqueous matrix requires preservation for volatiles, metals, and certain of the wet chemistry parameters not required of the soil samples.

Therefore, results (both detected values and the reporting limits of non-detected analytes) for the samples with solids below 50% have been qualified as estimated, with a possible bias of an unknown direction

TCL Volatiles by USEPA SW846 8260B

Results for LM-E-3, LM-E-4, and LM-F-3 are qualified as estimated due to outlying holding times (analyzed at 15 days from collection). These samples are also qualified due to low solids content.

Matrix spikes (MS and MSD) for SW-D, SW-W, SED-Z-1, SED-W-3-0-0.5, SED-E-1-0-0.5, SED-F-1-0-0.5, SED-F-3-0-0.5, SED-E-2-1.0-1.5, SED-C-3-0-0.5, SED-B-1-0-0.5, SED-A-1-0-0.5 (all at low level), and SED-9 (at medium level) show accuracy and precision within QAPP/validation guidelines, with the following exceptions:

- Recoveries of five compounds are below recommended limit in the matrix spike SW-D, but are acceptable in the MSD. Similarly, a total of 14 compounds show elevated duplicate correla-tions with the MSD>MS. The MS also shows a low internal standard response not exhibited by the parent sample or MSD. The MS outliers are a processing anomaly, and no qualifications were made to the parent sample on that basis.
- Bromoform and 1,2,4-trichlorobenzene did not recover in the spikes of SED-C-3-0-0.5. Results for these two compounds in the parent sample are therefore not usable, and are rejected.
- Bromoform and dibromochloromethane did not recover in the spikes of SED-A-1-0-0.5. Results for these two compounds in the parent sample are therefore not usable, and are rejected. 1,2,4-trichlorobenzene also did not recover in those spikes; the detected value in the parent sample is qualified as estimated. Twenty-seven other volatile analytes recovered below the recommended limit in both spikes. All results for the parent sample are already qualified as estimated due to low solids content.

Field duplicate correlations for SW-B, SW-Y, SED-W-1-0-0.5, SED-F-3-0-0.5, SED-Y-3, and LM-C-2 are acceptable, with the exception of that for methyl acetate in LM-C-2 (114%RPD).

Calibrations standards showed acceptable responses, with the following exceptions, results for which are qualified as estimated in the indicated samples:

- acetone and 2-butanone (low RRF) in the three soils reported in SDG J41741, and in LM-B-3 and LM-B-4
- trichlorofluoromethane (28%D) detections in the aqueous samples in SDG J42011
- 2-hexanone (30%D) in samples in SDG J42360
- methyl acetate in eight sample reported in SDG J43443
- acetone (low RRF) in low level soils in SDGs J42535, J42762, J42838, J42866, J43022, J43207
- 2-butanone (low RRF and/or 24%D) in field blanks of 9/29/06, 10/02/06, 10/03/06, and 10/05/06

Results of the field blank of 9/29/06 are qualified as estimated, and may have a low bias, due to elevated temperature at sample receipt (14.5°C).

Tentatively Identified Compounds (TICs) that are flagged as "B" or identified as "system artifacts" are considered external contamination, as shown by presence in the associated blanks.

TCL Semivolatile Analyses by USEPA SW846 8270C

Due to apparent matrix effects, samples SED-F-1-0-0.5, SED-F-2-0-0.5, and SED-F-3-0-0.5 show very low response (<25%) for internal standard d12-perylene. Therefore, the result for the undetected associated analyte, di-n-octylphthalate, is not usable in those three samples. Two of those samples, as well as the field duplicate of the latter, also show low response for internal standard d12-chrysene. Results for all other associated compounds in those samples are qualified as estimated.

The results for the seven compounds associated with d12-perylene are qualified as estimated in SED-E-2-0-0.5, SED-C-3-0-0.5, and SED-B-1-0-0.5 due to low responses of that internal standard in those samples and their matrix spikes.

Matrix spikes (MS and MSD) for SW-D, SW-W, SED-X-3, SED-W-3-0-0.5, SED-E-1-0-0.5, SED-F-1-0-0.5, SED-C-3-0-0.5, SED-C-3-0-0.5, SED-B-1-0-0.5, LM-C-2, and SED-9 show accuracy and precision within validation guidelines, with the following exceptions:

- 3,3'-dichorobenzidine, 3-nitroaniline, and 4-nitroaniline failed to recover in SW-D and SW-W. Results for those three compounds in those two parent samples are therefore rejected, and not usable
- hexachlorocyclopentadiene failed to recover in the matrix spikes of SED-X-3, SED-E-1-0-0.5 SED-F-1-0-0.5, SED-E-2-1.0-1.5, SED-C-3-0-0.5, and SED-9. Due to The persistence of failure in the project soil matrix spikes (in all soils except SED-W-3-0-0.5) the results for this compound in all soil samples covered in this report except those in SDG J42535 are therefore rejected, and not usable.
- bis(2-ethylhexyl)phthalate in SED-F-1-0-0.5 shows elevated recoveries; results in the parent sample are qualified as estimated

- fluoranthene and phenanthrene showed inconsistent results (and very low recoveries) in the spikes of SED-B-1-0-0.5 and SED-9. Results for those two compounds in the two parent samples are qualified as estimated.

Detected values of anthracene and fluoranthene in soils reported in SDG J43022 are qualified as estimated, with a possible high bias, due to elevated recoveries (111% and 118%) in the associated spiked blank control.

Field duplicate correlations for SW-B, SW-Y, and SED-W-1-0-0.5 are acceptable.

The field duplicate evaluation of SED-F-3-0-0.5 shows outlying correlations for acenapthylene, anthracene, benzo(k)fluoranthene, 1,1-biphenyl, dibenz(a,h)anthracene, bis(2-ethylhexyl)phthalate, 2-methylnaphthalene, pyrene (59%RPD to 126%RPD). Results for these analytes in the parent sample and the duplicate are qualified as estimated.

The field duplicate evaluation of SED-Y-3 shows outlying correlations for fluoranthene, phenanthrene, and pyrene (78%RPD to 126%RPD). Results for these analytes in the parent sample and the duplicate are qualified as estimated.

The field duplicate evaluation of LM-D-4 shows outlying correlations for bis(2-ethylhexyl)phthalate and fluoranthene (67%RPD and 101%RPD). Results for these analytes in the parent sample and the duplicate are qualified as estimated.

The results for the field blank of 10/05/06 are qualified as estimated, with a possible low bias, due to outlying holding time to extraction.

Results of the field blank of 9/29/06 are qualified as estimated, and may have a low bias, due to elevated temperature at sample receipt (14.5°C).

Calibrations standards showed acceptable responses with laboratory requirements and validation guidelines, with the following exceptions, results for which are qualified as indicated in the noted samples:

- benzo(k)fluoranthene (28%D) in SIM aqueous samples in SDG J42011
- 2,4-dinitrophenol (33%D) and 4,6-dinitro-2-methylphenol (28%D) in the field blank and all soils reported in SDG J42762
- dibenz(a,h)anthracene (26%D) detections in samples reported in J42866
- hexachlorocyclopentadiene (28%D) in FB 100506
- 2,4-dinitrophenol (28%D) in SED-C-1-0-0.5, SED-C-2-0-0.5, SED-C-2-0.5-1.0, and SED-C-2-1.0-1.5

Due to presence in the associated method or field blank, detected results for bis(2-ethylhexyl)-phthalate in SW-D, and in samples reported in SDGs J42762 and J42838 are considered external contamination, and edited to reflect non-detection ("U").

Tentatively Identified Compounds (TICs) that are flagged as "B" and/or "A", or identified as "system artifacts" are considered external contamination, as shown by presence in the associated blanks.

TCL PCB/Pesticides Analyses by USEPA SW846 8081A and 8082

Some of the pesticide reported detections may reflect responses from the sample matrix or PCB components. Those detections show elevated dual column correlations, with resulting qualifications as either estimated in value ("J"), tentative in identification and estimated in value ("NJ"), or edited to nondetection ("U", sometimes at elevated reporting limits). The correlations reported on summary forms by the laboratory were calculated as %RPD. Per validation protocols, this review evaluation utilized %D. The appropriate qualifica-tions have been made on the attached sample result forms.

Due to elevated surrogate DCB standard recoveries, results for detected pesticides (4,4'-DDD, 4,4'-DDE, and 4,4'-DDT) in the field duplicate of SED-W-1-0-0.5 are qualified as estimated ("J"), and may have a high bias. Results for the parent sample are not affected.

Due to elevated surrogate TCX and/or DCB standard recoveries, results for detected pesticides in SED-F-1-0-0.5, SED-F-2-0-0.5, SED-F-3-0-0.5, SEF-A-2-0-0.5, and the field duplicate of SED-F-3-0-0.5 are qualified as estimated ("J"), and may have a high bias.

Results for SED-7 are qualified as estimated due to outlying holding time for re-extraction (the initial extraction produced outlying low surrogate standard recoveries).

Calibration standards meet protocol and validation requirements.

Matrix spikes of pesticides and Aroclors 1016 and 1260 in SW-D, SW-W, SED-Y-1, SED-W-3-0-0.5, SED-E-1-0-0.5, SED-C-3-0-0.5, SED-B-1-0-0.5, SED-A-1-0-0.5, and SED-9 show acceptable accuracy and precision, with the following exceptions, results for which are qualified as estimated in the indicated parent sample:

- aldrin, a-chlordane, endosulfan I, endosulfan II, heptachlor (outliers 44% to 49%), and 4,4'-DDT (0% and 1000%) in SED-Y-1
- endrin aldehyde, aldrin, and g-chlordane (17% to 44%, 57%RPD to 87%RPD) in SED-E-1-0-0.5
- Aroclor 1260 (225% and 1275%) in SED-B-1-0-0.5

Some of the Aroclor 1016 recoveries in the matrix spikes are elevated due to response contributions from the Aroclor 1254 that is present in the parent sample.

Field duplicate correlations for SW-B and SW-Y are acceptable.

Those for SED-W-1-0-0.5 show an outlying variance for 4,4'-DDT. The results for that analyte in the parent sample and field duplicate are considered additionally estimated (results are also qualified due to low solids content).

The field duplicates of LM-C-2 and LM-D-4 show large variance for 4,4'-DDT, where it was not detected in the parents, but detected at 19 ug/kg or 18 ug/kg in the duplicate. The detected result in the duplicate of LM-C-2 has been qualified as tentative in identification due to dual column variance. The non-detected results of 4,4'-DDT in the parent samples, and the detected result in the duplicate of LM-D-4 are qualified as estimated due to the field duplicate variance.

The field duplicate of SED-F-3-0-0.5 shows significant variances for 4,4'-DDD, 4,4'-DDT, heptachlor epoxide, and methoxychlor (up to more than an order of magnitude). Results are qualified as estimated in the parent sample and duplicate.

The field duplicate evaluation of SED-Y-3 shows outlying correlations for 4,4'-DDD, 4,4'-DDE, an 4,4'-DDT. Results for these analytes in the parent sample and the duplicate are qualified as estimated.

Results of the field blank of 9/29/06 are qualified as estimated, and may have a low bias, due to elevated temperature at sample receipt (14.5°C).

TCL Dioxin/Furan Analyses by USEPA SW846 8290

Results of the field blank of 9/29/06 are qualified as estimated, with a possible low bias, due to elevated temperature at original laboratory sample receipt (14.5°C).

Detected results for samples that were reported with the laboratory "A" qualifier reflect quantitative values below the established linear range of the instrument, and have therefore been qualified as estimated in value.

The method and field blanks contain low levels (below CRDL) of many of the PCDD and PCDF isomers. Field samples containing detected levels of those compounds that are below fivefold of the associated blank concentrations (at the instrument level) are considered potential external contamination. Those detections have been noted as being Estimated Maximum Potential Concentrations (EMPCs). It can be said that these analytes are not present at levels above those originally reported concentrations.

Results for furans that may include quantitative contribution from the corresponding chlorinated biphenyl ethers (BPE) have been noted as being EMPC. They may reflect false positives or a high bias.

Sample responses showing outlying ion ratios do not meet the requirements for identification and have been noted as being EMPC.

Detected results reported with the "Q" laboratory qualifier have been qualified as estimated due to quantitative interferences.

Sample SED-D-3-0-0.5 exhibited an elevated recovery (146%) for recovery standard $^{13}C_{12}$-OCDD. Therefore, the results for associated analyte OCDD are considered additionally estimated in value (all results for that sample are qualified due to low solids content).

The ion ratio of the surrogate standard $^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD in LM-E-3 shows an ion ratio out of acceptable range. The results for this sample are qualified as estimated due to low solids content.

LM-F-2 was re-extracted within holding time. Although the data package only submitted the re-extraction results, the electronic table shows two analysis results. The initial results were deleted from the electronic table.

Matrix spikes were performed on LM-A-3, SW-W, SED-W-3-0-0.5 and show acceptable recoveries and duplicate correlations, with the following exceptions:

- LM-A-3 –two analytes show outlying recoveries in only one spike; three show outlying duplicate correlations. Results for the parent are qualified as estimated due to low solids content
- SED-W-3-0-0.5---OCDD shows elevated recoveries; results for the parent are qualified as estimated due to low solids content
- SED-C-3-0-0.5---these spikes produced nine and ten outlying recoveries and nine outlying duplicate correlations. This is attributed to the matrix. It is also noted that the solids content of the parent sample is 25%, and that for the spikes are 33% and 35%. Sample non-homogeneity is suspected. All results are qualified due to solids content.

Field duplicates of SW-Y, SED-Y-3, SED-W-1-0-0.5, and LMC-2 show acceptable correlations (below 50%RPD or <±CRDL), with the following exceptions, results for which are qualified in the parent sample and its corresponding duplicate:

- Numerous PCDD and PCDF isomers show poor correlations (66%RPD to 200%RPD) in SED-Y-3. All results for that pair are qualified as estimated due to low solids content.
- Six PCDD and PCDF isomers show variances fourfold to fivefold in SED-W-1-0-0.5. All results for that pair are also qualified as estimated due to low solids content.

The date on the method blank summary form for samples in SDG J43207 should have stated the date of 10/18/06, not 10/17/06. The raw data for that blank are correct.

Due to the matrix, sample SED-C-2-0.5-1.0 would not evaporate down to the protocol required volume. This results in elevated reporting limits for undetected compounds.

Detections of 2,3,7,8-TCDF were confirmed by alternate column analyses.

TAL and AVS/SEM Metals by USEPA SW846 6010B, 7470/7471

Results for the AVS/SEM in the field blank of 10/05/06 have been qualified as estimated due to the fact it was not received at the laboratory with adequate preservation.

Holding times were met. Blanks associated with sample analyses show no contamination above the reporting limit.

Matrix spike recovery and laboratory duplicate correlation evaluations were performed for TAL elements on SW-D, SW-W, SED-Z-1, SED-Z-2-0-0.5, SED-W-3-0-0.5, SED-E-1-0-0.5, SED-E-2-1.0-1.5, SED-C-3-0-0.5, SED-B-1-0-0.5, and SED-9, for AVS/SEM processing on SED-Z-2-0-0.5, SED-W-3-0-0.5, SED-E-1-0-0.5, SED-C-3-0-0.5, and SED-9, and for low level total mercury on .

Mercury failed to recover from the SEM digestions for SED-Z-1, SED-E-1-0-0.5, SED-C-3-0-0.5, and SED-9. Results for that element in the SEM fraction of the samples reported in SDGs J42535, J42838, J43022, J43207, J43284, and J43443 that report no detection of mercury are not usable. Detected SEM mercury results in those SDGs are qualified as estimated.

Other recoveries or correlations for the matrix spikes/duplicates that are outside validation guidelines (75% to 125% recovery, 50%RPD) are noted below, with qualification of results as estimated in the indicated samples:

Parent Sample	Analyte	Recoveries	Associated Samples
SED-Z-1	antimony	34% and 34%	Soils in J42535
SED-Z-1	SEM copper	65% and 63%	AVS/SEM in J42535
SED-Z-2-0-0.5	aluminum	126% and 128%	Soils in J42535
	antimony	55% and 55%	"
	copper	136% and 133%	"
SED-W-3-0-0.5	iron	118% and 586% (69%RPD)	Soils in J42762
	aluminum	139% and 105%	"
	antimony	47% and 44%	"
	calcium	70% and 66%	"
	magnesium	131% and 89%	"
	potassium	128% and 84%	"
	manganese	103% and 149%	"
	zinc	104% and 132%	"
	mercury	83% and 54%	"
SED-W-3-0-0.5	SEM cadmium	75% and 70%	AVS/SEM in J42762, J42866, J43022
	SEM lead	198% and 170%	" detections
	SEM zinc	249% and 191%	" detections
SED-E-1-0-0.5	antimony	65% and 65%	Soils in J42838
	barium	10% and 45%	"
	copper	42% and 50%	"
	iron	169% and 70%	"
	magnesium	277% and 208%	"
	manganese	200% and 92%; 62%RPD	"
	potassium	132% and 84%	"
	selenium	70% and 73%	"
	sodium	23% and 90%	"
	calcium	97%RPD	"
SED-E-1-0-0.5	SEM copper	65% and 63%	AVS/SEM in J42838
SED-F-2-0-0.5	antimony	36% and 36%	Soils in J42866
	cadmium	64% and 77%	"
SED-E-2-1.0-1.5	antimony	34% and 33%	Soils in J43022
	silver	275%; 100%RPD	"
	calcium	141%RPD	"
	zinc	71%RPD	"

Parent Sample	Analyte	Recoveries	Associated Samples
SED-C-3-0-0.5	antimony	25% and 29%	Soils in J43207 & J43284
	barium	212% and 250%	"
	cadmium	163% and 78	"
	copper	126% and 494%	"
	chromium	95% and 154%	"
	lead	203% and 108%	"
SED-B-1-0-0.5	aluminum	73% and 90%	"
	antimony	22% and 20%	"
	arsenic	66% and 65%	"
	beryllium	51% and 42%	"
	chromium	27% and 30%	"
	cobalt	70% and 68%	"
	manganese	52% and 56%	"
	nickel	68% and 68%	"
	selenium	68% and 67%	"
SED-C-3-0-0.5	SEM copper	-59% & -55%;74%RPD	AVS/SEM J43207+J43284
	SEM lead	-4% and –20%	"
SED-9	antimony	47% and 50%	Soils in J43443
	magnesium	174% and 108%	"
SED-9	SEM copper	-70% and -61%	AVS/SEM in J43443

Elevated recoveries for elements not detected in the samples do not require qualification of associated data.

The three soil samples reported in SDG J41738 were associated with non-project batch QC that showed seven analytes having low recoveries and ten analytes having outlying duplicate correlations. All results for the samples in that SDG are already qualified as estimated due to low solids content.

Results for all AVS/SEM results in SED-C-3-0-0.5 are qualified as estimated due to low recoveries (60% to 58%) in the volatile sulfide procedure.

Field duplicate evaluations were performed for on SW-B, SW-Y, SED-W-1-0-0.5, SED-F-3-0-0.5, LM-C-2, and LM-D-4, for SEM metals on SED-W-1-0-0.5 and SED-Y-3, and for low level total mercury on SW-B and SW-C. The following outliers were observed, with resultant qualification of that element as estimated in the specific parent sample and associated duplicate:

- mercury in SB-B (66%RPD)
- the field duplicate of SED-W-1-0-0.5 (logged into the laboratory with the suffix "B" to the lab ID number ten days after receipt) shows no detection of any of the analytes; this is atypical of the project soil SEM results. The parent sample shows normal constituency. The reason for the duplicate sample variance is not evident.
- lead and mercury in SED-F-3-0-0.5
- AVS/SEM cadmium in SED-F-3-0-0.5
- aluminum, chromium, and zinc (52%RPD to 74%RPD) in LM-C-2
- barium (55%RPD) in SED-Y-3

The ICP serial dilutions of SEM metals on SED-W-3-0-0.5 and SED-C-3-0-0.5, and of total metals on SED-E-1-0-0.5 and SED-E-2-1.0-1.5 show acceptable correlations.

The following ICP serial dilution evaluations show outlying correlations, with detected results in associated samples qualified as estimated ("J"):

Parent Sample	Analyte	%RPD	Associated SDGs
SW-D	potassium	12	J42011
SW-W	potassium	16	J42360
SED-Z-1	potassium and sodium	12 and 16	J42535
SED-Z-2-0-0.5	lead, magnesium, potassium, and sodium	12 to 16	J42535
SED-Z-1	SEM lead	17	AVS/SEM J42535
SED-E-1-0-0.5	SEM lead	17	AVS/SEM J42838
SED-W-3-0-0.5	cobalt, lead, nickel, sodium, and zinc	11 to 15	J42762
SED-F-2-0-0.5	sodium and zinc	10 to 12	J42866
SED-9	sodium and zinc	10 to 12	J43443
SED-C-3-0-0.5	barium, cobalt, vanadium, and zinc	11 to 28	J43207
SED-B-1-0-0.5	arsenic, cadmium, calcium, chromium, cobalt, copper, lead, magnesium, manganese, nickel, potassium, sodium, and zinc	11 to 22	J43207
SED-9	SEM cadmium and lead	11 and 12	AVS/SEM J43443

The result for sodium in the field blank of 9/21/06 is qualified as estimated ("J"), with a low bias, due to low recovery for the associated low-level CRI standard.

The result for arsenic in the samples reporting detection in SDG J42011 are qualified as estimated ("J"), with a high bias, due to elevated recovery for the associated low-level CRI standard.

The results for mercury in the field blank of 09/29/06 and in the SEM fractions of the soils in J42762, J42866, and J43284 are qualified as estimated ("J"), with a low bias, due to low recoveries for the associated low-level CRI standards.

The result for antimony in the field blank of 10/02/06 is qualified as estimated ("J"), with a low bias, due to low recovery for the associated low-level CRI standard.

The results for arsenic in SED-Z-2-0-0.5, and in all soil reported in J42866 except SED-F-2-0-0.5, are qualified as estimated ("J"), with a high bias, due to elevated recoveries in the associated low-level CRI standards.

Wet Chemistry- Methyl Mercury, Cyanide, Hexavalent Chromium, TOC, Seive, Redox Potential (ORP), TSS, DOC, Hardness, pH

Review was conducted for method compliance, transcription, calculations, standard and blank acceptability, accuracy and precision, etc., as applicable to each procedure.

Hexavalent chromium failed to recover in the matrix spikes of LM-A-1, SED-Z-1, SED-W-3-0-0.5, SED-E-1-0-0.5, SED-F-1-0-0.5, SED-E-2-0-0.5, SED-C-3-0-0.5, SED-B-1-0-0.5, SED-A-1-0-0.5, SW-C, and SED-9. Therefore, all non-detected results for that analyte in soils are rejected, and provide no usable information as to the presence or absence of that analyte. Detected values are qualified as estimated, and may have a significant low bias. Although those data are rejected, it can be said that the total chromium of the samples would represent a maximum potential value for hexavalent chromium.

The following matrix spike recovery/laboratory duplicate evaluations were performed:

- TOC in LM-A-2 and LM-F-3
- hexavalent chromium in LM-A-1, SW-A, SED-Z-1, SED-W-3-0-0.5, SED-E-1-0-0.5, SED-F-1-0-0.5, SED-E-2-0-0.5, SED-C-3-0-0.5, SED-B-1-0-0.5, SED-A-1-0-0.5, and SED-9
- Redox Potential on LM-A-1 and SED-Z-1
- cyanide, TOC, DOC, TSS, and Hardness on SW-D and SW-W
- cyanide on SED-Z-2-1-1.5, SED-W-1-0-0.5, SED-D-2-2.0-2.5, LM-F-1, SED-9, and SED-A-2-0-0.5
- Sieve duplicates on SED-X-3, SED-W-3-0-0.5, SED-F-1-0-0.5, SED-E-2-0.5-1.0, SED-C-3-0-0.5, SED-B-1-0-0.5, SED-9, and SED-A-1-0-0.5
- cyanide, hexavalent chromium, Redox Potential, solids, and ph on SED-W-1-0-0.5
- cyanide and TOC on SED-E-1-0-0.5 and SED-C-3-0-0.5
- methyl mercury on LM-A-2, SW-D, SED-Z-1, SED-W-3-0-0.5, SED-E-2-0-0.5, FB100506, SED-C-3-0-0.5, SED-B-1-0-0.5, and SED-9

The result for cyanide in SED-9 is rejected and not usable due to very low recovery (7%) in the matrix spike of that sample.

Outlying matrix spike recoveries or duplicate correlations (in addition to the hexavalent chromium and cyanide outliers noted above) are listed below, with qualification of results as estimated in the indicated samples:

Parent Sample	Analyte	Associated Samples
SED-Z-2-1-1.5	Cyanide	soils in SDG J42535
SED-F-1-0-0.5	Gravel	parent sample
SED-E-2-0.5-1.0	Gravel	parent sample
SED-C-3-0-0.5	Gravel	parent sample
SED-B-1-0-0.5	Gravel	parent sample
SED-C-3-0-0.5	Cyanide and TOC	soils in SDG J43207
SED-A-1-0-0.5	Gravel	parent sample
SED-9	Gravel and methyl mercury	parent sample

The accuracy and precision evaluation for methyl mercury in LM-A-2 was repeated due to initial spiking error.
Some of the analyte recovery evaluations are not applicable due to high parent sample concentrations.

Field duplicate evaluations were performed for the following sample analytes.

- methyl mercury and total mercury in SW-B and SW-C
- methyl mercury on LMC-2, SED-Y-3, SED-W-1-0-0.5, SED-F-3-0-0.5, and LM-D-4
- TSS, hexavalent chromium, TOC, DOC, Hardness on SW-B and SW-Y
- Redox Potential, TOC, hexavalent chromium, sieve, and cyanide on SED-F-3-0-0.5, SED-Y-3, LM-D-4, and LM-C-2

Outliers were observed for the following analytes, with resultant qualification as estimated in the specific parent sample and associated duplicate:

- TSS (78%RPD) in SB-B
- Redox Potential and solids in SED-F-3-0-0.5
- % solids on LM-C-2
- No. 200 Sieve, %Silt, and Redox Potential on LM-D-4

The samples submitted in J42011 and the field blank of 9/21/06 (J41741) showed inadequate preservation at laboratory receipt. Results for these samples are therefore qualified as estimated, with a potential low bias.

The result for methyl mercury in the field blank of 9/29/06 is qualified as estimated due to elevated temperature at sample receipt (14.5°C).

Results for TOC in LM-D-3, LM-D-4, SED-7, and SED-8 are qualified as estimated, with unknown bias, due to variance in the result of the replicate injections.

Some of the field blanks show low levels of methyl mercury. Associated aqueous sample detected values are of high enough concentration to be disregarded as external contamination. Several of the soil samples reported in J42535, SED-E-2-1.5-2.0, SED-C-2-1.0-1.5 show levels within the action range for consideration as contamination, and have been edited to reflect non-detection at elevated reporting limits.

Samples SED-Y-1, SED-X-1, and SED-X-3 were received in broken containers that were closed into baggies. These samples are qualified for low solids content, but may also have a low bias due to potential losses.

Data Package Completeness/Chains-of-Custody

The chains-of-custody associated with the subcontracts do not include times of collection. They were present on the original field custodies and bottle labels. Some of the custodies do not include specific entries of release time and/or receipt date and time. The down-arrow for collection date was not present on the custody for J42762.

Some of the custodies for the subcontracting transfer to Battelle do not include release date, release times, and/or receipt signatures. The custody entry for SED-D-1-0-0.5 incorrectly denotes it as being HCl preserved.

The matrix of one of the field blanks on a custody submitted to Paradigm was incorrectly denoted as being soil.

The calibration standard sections of the Paradigm data packages are not paginated

Discrepancies in custody entries were resolved at sample receipt. Edits to custodies should have been dated and initialed.

SW-Y was reported as SW-4 in some of the hardcopy data. Similarly, some of the laboratory report forms show SED-4-3 rather than SED-Y-3. The field blank FB100506 is noted as being FB100S06 on some of the forms. Proper identifications were made on the electronic deliverables.

Please do not hesitate to contact me if you have comments or questions regarding this report.

Very truly yours,

Judy Harry

Att: Validation qualifier definitions
Copies of sample client and laboratory identifications

VALIDATION QUALIFIER DEFINITIONS

DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the national qualifiers assigned to results in the data review process. If the Regions choose to use additional qualifiers, a complete explanation of those qualifiers should accompany the data review.

U	-	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	-	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	-	The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ	-	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
UJ	-	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	-	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

LABORATORY SAMPLE IDs AND CASE NARRATIVES

Data Validation Services

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September 11, 2007

Matt Cavas
Brown and Caldwell
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Allendale, NJ 07401

RE: Data Validation for the LCP Superfund site, Linden, NJ
Accutest SDG Nos. J44803, J44938, J45239, J45527, J46783, J45854, J46057, J46213, J46443, J46565, J46700, J46853, J47004, J47128, J47366, J48098, J48211, J48325, J49293, J49409, J49451, J49611, J51040, J51158, J51393, J51494, J51580, J51673, J51889, J52021, J52027, J52130, J52219, J52588, J52669, J52751, J52878, J52971, J53104, J53258, J53388, J53483, J53484, J53630, J53740, J53817, J54238, J54435, J54580, J54581, J54589, J54782, J55249, J55249X, J55951, J55951X, J56074, and J57403

Dear Mr. Cavas:

Review has been completed for the data packages generated by Accutest Laboratories that pertain to samples collected 10/26/07 through 3/30/07 at the LCP Superfund, Linden, NJ project site. One hundred and six soil samples and twenty-eight aqueous samples were processed for TCL Volatiles, TCL Semivolatiles, TCL Pesticides, TCL PCBs, TAL metals, hexavalent chromium, and total cyanide. The soil samples were also processed for TOC and Redox Potential, and the aqueous samples were also processed for filtered metals. Twelve of the soil samples were also processed for Dioxin/Furans (PCDD/PCDF). Twenty-four of the samples were also processed for methyl mercury. A total of thirty samples were processed only for mercury (total or filtered). Four aqueous and one soil sample were analyzed only for metals. Aqueous samples also underwent Selective Ion Monitoring (SIM) for selected semivolatile analytes in order to obtain better sensitivity and lower reporting limits. Blind field duplicates, sample matrix spikes, field blanks, and trip blanks were processed with the project samples. The specific sample location identifications covered in this report are noted in the attached laboratory summary listings.

The analytical methodologies utilized are those of the USEPA SW846 3rd edition and USEPA Standard Methods. The dioxin/furan analyses were subcontracted to SGS/Paradigm, the methyl mercury to Battelle Marine Sciences.

Validation review of the data packages has been performed utilizing the guidance in the USEPA National Functional Guidelines for Data Review, the USEPA Region II validation SOPs, the project QAPP (including laboratory SOPs), the specific methodology requirements, and professional judgment.

The following items were reviewed:

* Laboratory Narrative Discussion
* Custody Documentation
* Holding Times
* Surrogate Recoveries and Internal Standard Responses
* Matrix Spike Recoveries/Duplicate Correlations
* Field Duplicate Correlations
* Preparation/Calibration Blanks
* Control Spike/Laboratory Control Samples
* Instrumental Tunes
* Calibration/CRI/CRA Standards
* ICP Serial Dilution
* ICP Interference Check Samples
* Dioxin/Furan Recovery and Clean-Up Standards
* Instrument IDLs and Performance
* Method Compliance
* Sample Result Verification

Those items listed above which show deficiencies are discussed within the text of this narrative. All of the other items were determined to be acceptable according to the validation guidelines noted above.

In summary, most of the sample analyte values/reporting limits are usable as reported, or usable with minor qualification as estimated ("J" qualifier) due to matrix effects. The following exceptions were noted:

- Due to matrix effect, the results for hexavalent chromium in numerous samples are not usable, as evidenced by the lack of recovery of that analyte in the sample spikes.
- Results for several select volatile or semivolatile compounds are not usable in a limited number of samples due to matrix effects
- Numerous metals results of soil and aqueous samples were qualified as estimated due to matrix effects
- Reporting limits for metals in many of the aqueous samples are elevated, typically tenfold, due to interferences, primarily from sodium constituency
- Some of the low level detections are considered external contamination, as evidenced by presence in associated blank

Laboratory processing was generally compliant with analytical protocol requirements, the samples do not show significant matrix effects on organic target analyte recoveries, and the project data completeness requirement of 90% has been met.

Copies of the laboratory sample identification summary forms that list the sample covered in this report are attached to this text. Included with this submission are electronic client data tables that have been qualified in red to reflect the edits and qualifications referenced and recommended within this report. These tables have been submitted under separate cover.

The following text discusses quality issues of concern.

General

Due to low solids content (20.8%), results (both detected values and the reporting limits of non-detected analytes) for LHP-126-10.5-12 have been qualified as estimated, with a possible bias of an unknown direction. This is due to the potential for non-homogeneity during sample collection/processing, as well as to the variances in analytical methodologies betweennn aqueous and soil matrices.

Field and trip blanks submitted with the samples covered in this report show minimal contamination, with most having no contamination above reporting limits. The rare exceptions where sample results are affected are noted in the following text.

Sample LHP-105-1-3 was reported by the laboratory in the data package as "LHP-105-13-1". The electronic tables are correct.

TCL Volatiles by USEPA SW846 8260B

Results for toluene in MW-13S and MW-18S are considered external contamination due to presence I the associated field blank, and are edited to non-detection.

Matrix spikes (MS and MSD) for MW-6D-12-14, MW-16D-17-19, LHP-111-0-1, LHP-105-1-3, ADS-102-7-8, MW-11D-12-14, MW-23D, MW-9S, MW-24S, H-B-105D, and MW-22S show accuracy and precision within QAPP/validation guidelines, with the following exceptions:

- bromomethane in MW-11D-12-14—that result in the parent sample is qualified as estimated
- numerous analytes show elevated duplicate correlations in MW-23D. The sample reports no detections, and reported results are unaffected.
- carbon disulfide, 1,1-dichloroethene, and trans-1,2-dichloroethene in MW-24S show low recoveries

Field duplicate correlations for WW-101-15-17, MW-16D-17-19, MW-25D-10-12, LHP-105-0-1, LHP-128-0-1, MW-7S, and MW-19S are acceptable, with the exception of that for methylene chloride (>±CRDL) in WW-101-1115-17. Results for that analyte in the parent sample and duplicate are qualified as estimated.

Calibrations standards show acceptable responses, with the following exceptions, results for which are qualified as estimated in the indicated samples:

- acetone and/or 2-butanone (low RRF) in the majority of the sample covered in this report
- bromomethane in MW-11D-12-14
- chloromethane in MW-18S
- carbon disulfide and bromoform in HB-102B and HB-102C

No qualification is made for analytes that show elevated responses in calibration standards but were not detected in the samples.

The results for the trip blank reported in SDG J46700 are qualified as estimated due to analysis beyond the QAPP holding time requirement.

The results for TB020207 are qualified as estimated due to bubbles present in the vials, and the potential of loss through headspace.

No volatile field or trip blank analysis was associated with HB-102A. The sample reports no detection of volatile compounds, and results are therefore not affected.

Tentatively Identified Compounds (TICs) that are flagged as "B" or identified as "system artifacts" are considered external contamination, as shown by presence in the associated blanks.

TCL Semivolatile Analyses by USEPA SW846 8270C

The three soils reported in SDG J44803 and six soils in J48098 show outlying low responses for one or more internal standards. The results for specific target analyte compounds associated with the outlying standards have been qualified as estimated in those samples.

Four soil samples reported in J48325 show sufficiently low responses for internal standard d12-perylene that results for non-detected analytes associated with that internal standard have been rejected, and are not usable. For those samples, detected results associated with d12-perylene, as well as all results associated with d12-chrysene, have been qualified as estimated.

Six detected results in TES-4-0-1 have been qualified as estimated due to elevated response of the associated internal standard.

Results for benzaldehyde in WW-101-15-17, its field duplicate, MW-23D-15-17, and MW-14D-17-19 are not usable due to lack of recovery of this compound in the associated spiked blank controls.

The results for 2-methylphenol MW-23D-15-17 and MW-14D-17-19 are qualified as estimated due to low recovery in the associated spiked blank control.

MW-17D and MW-17S were re-extracted beyond allowable holding time, due to low recoveries for seven analytes in the associated spiked blank control. The initial results are used, with results for those compounds qualified as estimated. Additionally, the result for 2-chlorophenol in MW-17D and the detected values in MW-17S (they are derived from the re-extractions) are qualified as estimated due to the outlying holding time.

MW-16S was re-extracted due to a single low surrogate recovery. The initial result can be used without qualification.

The results for 2-chlorophenol in the soil samples reported in SDG J47004, and for 2,4,6-trichlorophenol in the soils reported in J48098 are qualified as estimated due to slightly low recovery in the associated spiked blank control.

Field duplicate correlations for WW-101-15-17, MW-16D-17-19, MW-25D-10-12, LHP-105-0-1, LHP-128-0-1, MW-7S, and MW-19S are acceptable, with the exception of that for bis(2-ethylhexyl)phthalate in LHP-105-0-1, which shows variance exceeding ±2XCRDL. The results for that analyte in the parent sample and duplicate have been qualified as estimated.

Matrix spikes (MS and MSD) for LHP-124-2-4, LHP-124-10-12, MW-6D-12-14, MW-25D-10-12, LHP-111-0-1, LHP-105-1-3, LB-103-0-1, MW-11D-12-14, MW-11D-16-18, MW-17D, MW-16D, MW-21D, MW-6D, MW-7S, MW-8S, MW-12S, MW-9S, MW-22S, and H-B-104B show accuracy and precision within validation guidelines, with the following exceptions:

- benzaldehyde and hexachlorocyclopentadiene failed to recover in LHP-124-2-4 and hexachlorocyclopentadiene failed to recover in LHP-109-7-9. Results for those specific compounds in the noted parent samples are therefore rejected, and not usable
- benzaldehyde, hexachlorocyclopentadiene, atrazine, 3,3-dichorobenzidine, and caprolactum failed to recover in LHP-109-7-9. Results for those specific compounds in the parent sample are therefore rejected, and not usable. The result for 4-chloroaniline in this parent sample is qualified as estimated due to outlying spike recoveries.
- benzaldehyde failed to recover in DUP02070, and the results for that compound in the field duplicate and parent sample are rejected. The result for phenol is qualified as estimated in that parent and duplicate because the matrix spike responses were not resolved from those of aniline the spikes.
- bis(2-ethylhexyl)phthalate in LHP-124-2-4 shows elevated recoveries; results in the parent sample are qualified as estimated
- five analytes did not recover in the spikes of LHP-111-0-1, but they were analyzed at tenfold dilution. Accuracy and precision for the other analytes were acceptable; no qualification is indicated
- 4,6-nitro-2-methylphenol in LHP-109-0-1 is qualified as estimated due to low recovery
- some of the SIMs matrix spikes show slightly outlying recoveries, but were inadvertently spiked at concentrations exceeding instrument linear range; no qualification is made
- MW-23D shows elevated duplicate correlations for more than thirty analytes; the recoveries are acceptable, and the parent sample shows no detections; no qualification is made
- matrix spikes of MW-12S exhibited elevated duplicate correlations for all but one analyte. This variance was also noted in the surrogate recoveries of the spikes, and is likely an extract-specific anomaly—no qualification is made
- benzo(k)fluoranthene in MW-12S
- five analytes show low recovery in the matrix spikes of MW-22S, and have been qualified as estimated in the parent sample

The results for the field blank of 12/05/06 are qualified as estimated, with a possible low bias, due to outlying holding time to extraction.

Due to presence in the associated field blank, the detected results for bis(2-ethylhexyl)phthalate in H-B-103A and H-B-104A, and for 2-methylnaphthalene inn HB-102B, are considered external contamination, and edited to reflect non-detection ("U").

Calibrations standards showed acceptable responses with laboratory requirements and validation guidelines, with the following exceptions, results for which are qualified as indicated in the noted samples:

- hexachlorocyclopentadiene in MW-17D-15-17, MW-17D-17-19, FB102706, FB110807, LHP-113-0-1, LHP-106-0-1, LHP-119-0-1, TES-4-0-1, TES-1-0-1, FB121406, FB121806, MW-15S, MW-24S, FB022007, and HB-102C
- bis(2-ethylhexyl)phthalate detections in soils in J44803
- 2,4-dinitrophenol and 4-nitrophenol in FB103106
- hexachlorocyclopentadiene, 2,4-dinitrophenol, and 4-nitrophenol in MW-20D-32-34 and MW-20D-36-38
- hexachlorocyclopentadiene and 4,6-dinitro-2-methylphenol in FB111006
- hexachlorocyclopentadiene, benzaldehyde, and 2-methylphenol in FB111306
- 2-methylphenol in FB111506
- 2-chlorophenol, 2,4,6-trichlorophenol, and 1,1-biphenyl in soils reported in J46853
- hexachlorocyclopentadiene, hexachlorobutadiene, and 1,1-biphenyl in FB111606
- hexachlorocyclopentadiene and 2,4-dinitrophenol in four samples in J48325,
- pentachlorophenol in MW-17D, MW-17S, MW-18D, MW-16S, MW-14S, and the associated field blanks
- 4-nitrophenol in MW-18D and its field blank

Tentatively Identified Compounds (TICs) that are flagged as "B" and/or "A", or identified as "system artifacts" are considered external contamination, as shown by presence in the associated blanks.

TCL PCB/Pesticides Analyses by USEPA SW846 8081A and 8082

Samples MW-8S and MW-12S show very high concentrations of elemental sulfur (also noted in the BNA analysis TIC results). Although the extracts went through copper cleanup, there is still sufficient copper as to produced significant interferences in the pesticide and PCB analyses of those samples. These would have completely masked response for heptachlor on both analytical columns used in these analyses, and results for that compound are therefore rejected, and not usable in those samples. Results for the other pesticides and PCB analytes (they report no detection) are qualified as estimated in value, and should be considered as being borderline usability.

Some of the pesticide reported detections may reflect responses from the sample matrix or PCB components. Those detections show elevated dual column correlations, with resulting qualifications as either estimated in value ("J"), tentative in identification and estimated in value ("NJ"), or edited to nondetection ("U", sometimes at elevated reporting limits). The correlations reported on summary forms by the laboratory were calculated as %RPD. Per validation protocols, this review evaluation utilized %D. The appropriate qualifications have been made on the client results tables.

MW-16D-13-15 and LHP-122-0-1 produced low recoveries for all surrogates in the initial extractions. The re-extractions were beyond allowable holding time. The pesticide and PCB results are qualified as estimated, and likely have a low bias.

The results for the field blank of 12/18/06 are qualified as estimated, with a possible low bias, due to outlying holding time to extraction.

The field blanks FB112006 and FB020207 were re-extracted (beyond holding time) due to low surrogate recovery on one column. The initial alternate column responses were acceptable, and are used without qualification.

Calibration standards meet protocol and validation requirements.

Matrix spikes of pesticides and Aroclors 1016 and 1260 were performed on LHP-124-10-12, MW-6D-12-14, MW-25D-10-12, LHP-105-1-3, MW-11D-16-18, MW-16S, MW-23D, H-B-105C, and MW-22S. Matrix spikes of pesticides were performed on LHP-101-0-1 and LHP-109-7-9, and matrix spikes of Aroclors 1016 and 1260 on LHP-105-5-8 and LHP-121-0-1. They show acceptable accuracy and precision, with the following exceptions:

- several recoveries were elevated in LHP-105-1-3 due to high concentrations of Aroclor 1254 in the parent sample.
- seven pesticides show low recoveries in MW-16S spikes, and results for those compounds in the parent sample are qualified as estimated in value
- recoveries were elevated in some cases for analytes not detected in the samples due to interferences; no qualifications are made as a result

Due to slightly low recoveries in the associated spiked blank controls, the results for d-BHC in the soils reported in J49409, and in the aqueous samples in J51494, J51580, J51673, J51889, J52021, and J52219 are qualified as estimated, with a possible low bias.

Field duplicate correlations for WW-101-15-17, MW-16D-17-19, LHP-128-0-1, MW-7S, and MW-19S are acceptable.

The field duplicate correlations for Aroclors 1254 and 1260 in LHP-105-0-1 show variance where there were detections in the parent at levels above CRDL (up to 629 ug/kg), but no detections above the CRDL of 35 ug/kg in the duplicate. Those results have been qualified as estimated in the parent and its duplicate.

TES-3-0-1 shows elevated surrogate recoveries in the pesticide and PCB analyses due to interferences from the PCBs in the sample. No qualification is made.

TCL Dioxin/Furan Analyses by USEPA SW846 8290

Detected results for samples that were reported with the laboratory "A" qualifier reflect quantitative values below the established linear range of the instrument, and have therefore been qualified as estimated in value.

Results for furans that may include quantitative contribution from the corresponding chlorinated biphenyl ethers (BPE) have been noted as being EMPC. They may reflect false positives or a high bias.

The method and field blanks contain low levels (below CRDL) of many of the PCDD and PCDF isomers. Field samples containing detected levels of those compounds that are below fivefold of the associated blank concentrations (at the instrument level) are considered potential external contamination. Those detections have been noted as being Estimated Maximum Potential Concentrations (EMPCs). It can be said that these analytes are not present at levels above those originally reported concentrations.

Sample responses showing outlying ion ratios do not meet the requirements for identification and have been noted as being EMPC.

Detected results reported with the "Q" laboratory qualifier have been qualified as estimated due to quantitative interferences.

TAL Metals by USEPA SW846 6010B, 7470/7471

As noted earlier, reporting limits for many aqueous sample analytes are elevated due to matrix interference. Although this results in limits that are higher than those proposed, this occurs only in samples showing extremely high concentrations of sodium and other elements.

Sample LCP-231-SS112706 was reported on a wet weight basis. A minimal quantity of sample was submitted; no solids determination was performed. The "as-received" basis should be considered in the evaluation of those data.

Analytes showing matrix spikes recoveries that are outside validation guidelines are noted below, with qualification of results as estimated in the samples in the indicated samples:

Parent Sample	Analyte	Associated Samples
LHP-126-2-4	aluminum, barium, beryllium, cobalt, potassium, and sodium	J44803
LHP-125-.5-2	antimony, copper, lead, magnesium, manganese, and zinc	J44938
LHP-125	antimony, barium, manganese	J45239
LP-101-11-13	antimony	J45527
WWT-101-21-23	antimony	J45783
MW-6D-12-14	aluminum, antimony, barium, cadmium, chromium, copper, iron, lead, magnesium, manganese, nickel, potassium, and vanadium	J45854
MW-20D-12-14	antimony, manganese, iron, potassium, and mercury	J46057
MW-20D-36-38	antimony, arsenic, calcium, chromium, manganese, potassium, selenium, zinc	J46213
MW-14D-13-15	antimony, barium, iron, manganese	J46443
MW-23D-15-17	antimony, manganese, iron, magnesium	J46565
MW-23D-37-39	antimony and selenium	J46700, J46853, and J47004
MW-6D-30-32	antimony, aluminum, barium, potassium	J47128 and J47366
LHP-111-0-1	antimony, barium, calcium, magnesium, manganese, zinc	J48098

cont'd

Parent Sample	Analyte	Associated Samples
LHP-105-1-3	antimony and mercury	J48211
LHP-127-3-5	antimony, arsenic, beryllium, chromium, potassium, and mercury (detections)	J48325
MW-11D-16-18	antimony, iron, manganese, selenium	J49293, J49409, and J49611
MW-110-14-16	antimony, iron, manganese, sodium	J49293, J49409, and J49611
TPS-1	sodium	J49451
MW-17D	cadmium and iron	J51040 and J51153
MW-18D	iron, mercury, thallium	J51393, J51494, J51580, and J51673
WC-SOIL-011907B	mercury	J52027
MW-6S	potassium	J52130, J52219, and J52588
MW-23D	potassium	J52669 and J52751
MW-6D	potassium	J52878, J52971, J53104, and J53258,
H-B-105C	mercury	J53484
H-B-103A	antimony and magnesium	J53484 and J54238
SW-SB-2-22-07-1400	mercury	J54435 and J54581
H-B-104B	antimony	J54580 and J54782
HB-101A	antimony	J55249 and J55951
HB-102C	antimony, potassium, thallium	J56074

Laboratory duplicate correlations are acceptable. Matrix spikes for TAL metals on MW-16S, and for mercury on LHP-124-10-12, MW-7S, MW-22S, HB-102B, and DUP110606 show recoveries within recommended limits. Elevated matrix spike recoveries for elements not detected in the samples do not require qualification of associated data.

Field duplicate evaluations were performed for on WW-101-15-17, MW-16D-17-19, MW-25D-10-12, LHP-105-0-1, LHP-128-0-1, MW-7S, and MW-19S, and for filtered mercury in SW-VB-02-23-07-0900. The following outliers were observed, with resultant qualification of that element as estimated in the specific parent sample and associated duplicate:

- barium and manganese inn WW-101-15-17
- zinc in MW-16D-17-19
- mercury in MW-25D-10-12
- iron in filtered fraction of MW-19S

Due to low level detection in the associated field blank, the results for manganese in MW-22S and its filtrate are edited to reflect non-detection at the originally reported concentrations.

The following ICP serial dilution evaluations show outlying correlations, with detected results (greater than 10 X IDL) in associated samples qualified as estimated ("J"):

Parent Sample	Analytes	Associated SDGs
LHP-126-2-4	calcium, cobalt, magnesium, nickel	J44803
LHP-125-.5-2	zinc	J44938
LHP-125	aluminum, barium, beryllium, calcium, potassium and zinc	J45239
LP-101-11-13	calcium, chromium, cobalt, copper, nickel, zinc	J45527
WWT-101-21-23	calcium, chromium, cobalt, iron, manganese, sodium, vanadium, and zinc	J45783
MW-6D-12-14	barium, cadmium, cobalt, iron, nickel, potassium, sodium	J45854
MW-20D-12-14	copper	J46057
MW-20D-36-38	aluminum, barium, calcium, chromium, cobalt, iron, magnesium, manganese, nickel, potassium, sodium, vanadium, zinc	J46213
MW-14D-13-15	aluminum and beryllium	J46443
MW-23D-37-39	beryllium, chromium, manganese, nickel, potassium sodium, vanadium, zinc	J46700, J46853 and J47004
MW-6D-30-32	nickel and sodium	J47128 and J47366
LHP-105-1-3	arsenic, barium, beryllium, calcium, chromium magnesium, and nickel	J48211
LHP-127-3-5	arsenic, beryllium, calcium, chromium, magnesium, nickel, silver, sodium	J48325
MW-11D-16-18	aluminum, barium, calcium, chromium, cobalt, magnesium, manganese, nickel, potassium, sodium, and zinc	J49293, J49409, and J49611
MW-110-14-16	potassium and sodium	J49293 andJ49409
MW-17D	potassium	J51040 and J51153
MW-18D	copper, potassium, sodium	J51153, J51494, J51580, and J51673
MW-16S	manganese and potassium	J51889 and J52021
MW-6S	potassium	J52130, J52219, and J52588
MW-23D	iron and potassium	J52669 and J52751
MW-23D-Filt	potassium	J52669 and J52751
MW-6D	potassium and sodium	J52878, J52971, J53104, and J53258
MW-22S-Filt	barium in filtered	J53388, J53483, J53630, J53740, and J53817
H-B-104B	calcium and zinc	J54580 and J54782
HB-101A	cobalt, potassium, and sodium	J55249and J55951

cont'd

Parent Sample	Analytes	Associated SDGs
HB-102C	aluminum, barium, calcium, chromium, cobalt, iron, magnesium, manganese, nickel, potassium, vanadium, and zinc	J56074

The ICP serial dilutions of MW-23D-15-17, LHP-111-0-1, WC-SOIL-011907B, and MW-22S-Total show acceptable correlations.

The following analytes show concentrations higher in the filtered fractions by more than 10%D, and results for those elements have been qualified in both the total and filtered fractions of the indicated samples:

Sample ID	Analytes
MW-17D	cobalt, iron, lead, magnesium, manganese, and sodium
MW-18D	manganese and sodium
MW-16D	calcium, lead, manganese, potassium, sodium
MW-20D	calcium and lead
MW-14D	calcium
MW-14S	sodium
MW-21D	calcium, iron, potassium, sodium
MW-21S	lead and iron
MW-11S	antimony, calcium, iron, lead, magnesium, selenium, and sodium
MW-6D	calcium
MW-7S	potassium
MW-8S	manganese
MW-10S	arsenic
MW-12S	arsenic and manganese
MW-24S	magnesium
MW-15S	barium, nickel, potassium
MW-22S	arsenic

The result for mercury in LHP-125-0.5-2, MW-13S and MW-18S are qualified as estimated, with a low bias, due to low recoveries for the associated low-level CRI standards.

The results for antimony in soils reported in SDG J48211, MW-21S, MW-21D, MW-23S, MW-23D-Filt, and in the field blanks of 11/02/06 and 11/07/06 are qualified as estimated, with a low bias, due to low recoveries for the associated low-level CRI standards.

The result for arsenic in FB111606 is qualified as estimated, with a low bias, due to low recovery in the associated low-level CRI standard.

The results for lead in MW-9S, MW019S, DUP020707, and FB121506 are qualified as estimated, with a low bias, due to low recovery in the associated low-level CRI standards.

The result for thallium in the filtrate of MW-17D is qualified as estimated, with a low bias, due to low recovery in the associated low-level CRI standard.

The results for arsenic and beryllium in MW-24S and MW-15S are qualified as estimated, with a low bias, due to low recovery in the associated low-level CRI standard.

The results for arsenic and antimony in MW-22S and MW-15S (Filt only) are qualified as estimated, with a low bias, due to low recovery in the associated low-level CRI standard.

Detected results for lead in MW-25D, for cadmium in samples reported in J47366, and selenium in MW-11S and MW-11D are qualified as estimated, with a high bias, due to elevated recoveries for the associated low-level CRI standards.

MW-18S was received by the laboratory with incomplete preservation. The sample was preserved at the laboratory. Results are qualified as estimated, and may have a low bias.

Wet Chemistry- Cyanide, Hexavalent Chromium, TOC, Methyl Mercury, Redox Potential (ORP), TSS, pH

Review was conducted for method compliance, transcription, calculations, standard and blank acceptability, accuracy and precision, etc., as applicable to each procedure.

Cyanide recovered below 10% in the matrix spikes of LHP-126-2-4 and LHP-127-3-5. Therefore, the non-detected result for that analyte in the parent samples are rejected, and provide no usable information as to the presence or absence of that analyte. Results for all associated samples (J44803, J44938, J48325, and J48293) are qualified as estimated, and may have a significant low bias.

Hexavalent chromium recovered below 10% in the matrix spikes of MW-6D-12-14, LHP-127-3-5, LHP-105-1-3, MW-20S, MW-14D-Filt, MW-21D-Filt, MW-6D-Filt, MW-10S-Filt, MW-12S-Filt, MW-9S-Filt, and HB-102C. Therefore, the non-detected results for that analyte in the samples in J45854 J48211, J48325, J49409, J51580, J51673, J52021, J52878, J53104, J53258, J53388 and J56074 are rejected, and provide no usable information as to the presence or absence of that analyte. Detected values in those samples are qualified as estimated.

The hexavalent chromium reported result for MW-10S is detection at 10 ug/L. The total chromium result for that sample shows no detection at that level. Because the total chromium analysis is more definitive, it is assumed that the hexachrome detection reflects interferences, and it has therefore been edited to non-detection. Following that edit, the result is rejected due to lack of recovery of the matrix spike of that sample.

Although the hexavalent chromium data are rejected, it can be said that the total chromium values in the samples would represent a maximum potential value for hexavalent chromium.

Field duplicate evaluations were performed on WW-101-15-17, MW-16D-17-19, MW-25D-10-12, LHP-105-0-1, LHP-128-0-1, MW-7S, and MW-19S. Outliers were observed for the following analytes, with resultant qualification as estimated in the specific parent sample and associated duplicate:

- cyanide in WW-101-15-17
- TOC in LHP-105-0-1
- TOC in LHP-128-0-1

The cyanide fraction of MW-18S was received by the laboratory with incomplete preservation. The sample was preserved at the laboratory. The result is qualified as estimated, and may have a low bias.

The following matrix spike/laboratory duplicate evaluations were performed:

- TOC on MW-265-8-10, MW-20D-12-14, MW-23D-15-17, MW-21D-15-17, MW-16D-17-19, LHP-111-0-1, LHP-105-1-3, LHP-127-3-5, MW-11D-16-18, H-B-105C, H-B-104B, H-B-104D, H-B-101A, and HB-102B
- Cyanide on LHP-126-2-4, LHP-125-10-12, WW-101-21-23, MW-6D-12-14, MW-20D-12-14, MW-20D-36-38, MW-14D-13-15, MW-23D-15-17, MW-21D-13-15, MW-16D-17-19, LHP-101-0-1, LHP-105-1-3, LHP-127-3-5, LB-101-0-1, MW-11D-16-18, MW-25D-33-35, MW-17D. MW-17S, MW-18D, MW-20S, MW-14D, MW-14S-Filt, MW-25D, MW-23S, MW-23D, MW-11S, MW-6D, H-B-105C, MW-22S, MW-13S, H-B-103A, H-B-104B, H-B-104D, H-B-101A, HB-102A, and HB-102B
- Hexavalent chromium on MW-6D-12-14, LHP-125-0.5-2, DUP110606, LHP-111-0-1, LHP-127-3-5, LHP-105-1-3, MW-17D-Filt, MW-17S-Filt, MW-18D-Filt, MW-16D, MW-14D-Filt, MW-14S-Filt, MW-21D-Filt, MW-6-Filt, MW-25D, MW-23D, MW-11S, MW-6D-Filt, DUP020107-Filt, MW-10S-Filt, MW-12S-Filt, MW-9S-Filt, MW-22S, MW-13S-Filt, H-B-104B, H-B-104D
- Redox Potential on LHP-125-10-12, LP-101-11-13, MW-14D-13-15, LHP-105-1-3, LHP-127-3-5, MW-11D-16-18, and MW-25D-33-35
- Petroleum hydrocarbon on WC-SOIL-011907B
- Specific Gravity on MW-6D and MW-11D
- TSS on SW-SB-2-22-07-1400
- Methyl mercury on HB-101A

Outlying matrix spike recoveries or duplicate correlations (in addition to the hexavalent chromium and cyanide outliers noted above) are listed below, with qualification of results as estimated in the indicated parent samples:

Parent Sample	Analyte	Associated Samples
MW-265-8-10 TOC		J44803
DUP110606	hexavalent chromium	J45783
MW-6D-12-14	cyanide	J45854
MW-20D-12-14	TOC	J46057
LHP-127-3-5	TOC	J48325
MW-16D	hexavalent chromium	J51494
MW-14S-Filt	hexavalent chromium	J51889
MW-16S-Filt	hexavalent chromium	J52130
MW-25D-Filt	hexavalent chromium	J52219
MW-11S	hexavalent chromium	J52751
DUP020107-Filt	hexavalent chromium	J52971
H-B-105C	TOC	J53484
MW-13S-Filt	hexavalent chromium	J53740
HB-102B	TOC	J56074

Results for TOC in MW-6D-0-2, MW-17D-17-19, MW-16D-13-15, LHP-101-5-8, LHP-120-0-1, H-B-104B, H-B-104C, and nine samples reported in SDG J48325 are qualified as estimated, with unknown bias, due to variance in the result of the replicate determinations.

Data Package Completeness/Chains-of-Custody

Two samples reported in J45239 were submitted and reported with the same client ID (LHP-125). The electronic deliverables distinquishes the two different depths.

Two samples submitted for SDG J45239 were not entered onto the custody form until sample receipt.

The calibration standard sections of the Paradigm data packages are not paginated

Discrepancies in custody entries were resolved at sample receipt. Edits to custodies should have been dated and initialed.

Please do not hesitate to contact me if you have comments or questions regarding this report.

Very truly yours,

Judy Harry

Att: Validation qualifier definitions
Copies of sample client and laboratory identifications

VALIDATION QUALIFIER DEFINITIONS

DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the national qualifiers assigned to results in the data review process. If the Regions choose to use additional qualifiers, a complete explanation of those qualifiers should accompany the data review.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

CLIENT and LABORATORY SAMPLE IDs

LCP SUPERFUND SITE, LINDEN, NJ

Sample Summary

Brown & Caldwell

LCP Superfund Site, Linden, NJ

Job No: J44803

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J44803-1	10/26/06	09:12 MC	10/26/06	SO	Soil	MW-265-8-10
J44803-1R	10/26/06	09:12 MC	10/26/06	SO	Soil	MW-265-8-10
J44803-2	10/26/06	15:08 MC	10/26/06	SO	Soil	LHP-126-2-4
J44803-2R	10/26/06	15:08 MC	10/26/06	SO	Soil	LHP-126-2-4
J44803-3	10/26/06	15:17 MC	10/26/06	SO	Soil	LHP-126-8-10
J44803-3R	10/26/06	15:17 MC	10/26/06	SO	Soil	LHP-126-8-10
J44803-4	10/26/06	15:02 MC	10/26/06	AQ	Field Blank Soil	FB102606
J44803-5	10/26/06	15:17 MC	10/26/06	AQ	Trip Blank Soil	TB102606

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

LCP Superfund Site, Linden, NJ

Job No: J44938

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J44938-1	10/27/06	08:45 MPC	10/27/06	SO	Soil	LHP-125-5-2
J44938-1R	10/27/06	08:45 MPC	10/27/06	SO	Soil	LHP-125-5-2
J44938-1RD	10/27/06	08:45 MPC	10/27/06	SO	Soil Dup/MSD	LHP-125-5-2
J44938-1RS	10/27/06	08:45 MPC	10/27/06	SO	Soil Matrix Spike	LHP-125-5-2
J44938-2	10/27/06	08:53 MPC	10/27/06	SO	Soil	LHP-125-4-6
J44938-2R	10/27/06	08:53 MPC	10/27/06	SO	Soil	LHP-125-4-6
J44938-3	10/27/06	10:32 MPC	10/27/06	SO	Soil	LHP-125-5-2
J44938-3R	10/27/06	10:32 MPC	10/27/06	SO	Soil	LHP-125-5-2
J44938-4	10/27/06	10:43 MPC	10/27/06	SO	Soil	LHP-124-2-4
J44938-4R	10/27/06	10:43 MPC	10/27/06	SO	Soil	LHP-124-2-4
J44938-5	10/27/06	13:15 MPC	10/27/06	SO	Soil	LP-101-8-10
J44938-6	10/27/06	13:50 MPC	10/27/06	AQ	Field Blank Soil	FB-102706
J44938-7	10/27/06	14:30 MPC	10/27/06	SO	Soil	WWT-101-12-14

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

LCP Superfund Site, Linden, NJ

Job No: J45239

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J45239-1	10/31/06	13:26 JMB	11/01/06	SO	Soil	LHP-124-10-12
J45239-1R	10/31/06	13:26 JMB	11/01/06	SO	Soil	LHP-124-10-12
J45239-2	10/31/06	14:28 JMB	11/01/06	SO	Soil	LHP-124-28-30
J45239-2R	10/31/06	14:28 JMB	11/01/06	SO	Soil	LHP-124-28-30
J45239-3	11/01/06	15:02 JMB	11/01/06	AQ	Field Blank Soil	FB-103106
J45239-4	11/01/06	08:34 JMB	11/01/06	SO	Soil	LHP-125
J45239-4R	11/01/06	08:34 JMB	11/01/06	SO	Soil	LHP-125
J45239-5	11/01/06	08:40 JMB	11/01/06	SO	Soil	LHP-125
J45239-5R	11/01/06	08:40 JMB	11/01/06	SO	Soil	LHP-125
J45239-6	11/01/06	13:10 JMB	11/01/06	AQ	Field Blank Soil	FB110106
J45239-7	11/01/06	13:46 JMB	11/01/06	AQ	Trip Blank Soil	TB110106
J45239-8	11/01/06	13:46 JMB	11/01/06	SO	Soil	LHP-126-14-16
J45239-8R	11/01/06	13:46 JMB	11/01/06	SO	Soil	LHP-126-14-16

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

LCP Superfund Site, Linden, NJ

Job No: J45527

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J45527-1	11/02/06	09:48 JMB	11/03/06	SO	Soil	LP-101-11-13
J45527-1R	11/02/06	09:48 JMB	11/03/06	SO	Soil	LP-101-11-13
J45527-2	11/02/06	10:10 JMB	11/03/06	SO	Soil	LP-101-14-16
J45527-2R	11/02/06	10:10 JMB	11/03/06	SO	Soil	LP-101-14-16
J45527-3	11/02/06	11:04 JMB	11/03/06	SO	Soil	LP-101-26-28
J45527-3R	11/02/06	11:04 JMB	11/03/06	SO	Soil	LP-101-26-28
J45527-4	11/02/06	15:03 JMB	11/03/06	SO	Soil	LP-101-50-52
J45527-4R	11/02/06	15:03 JMB	11/03/06	SO	Soil	LP-101-50-52
J45527-5	11/03/06	08:12 JMB	11/03/06	AQ	Field Blank Soil	FB-110206
J45527-6	11/03/06	08:12 JMB	11/03/06	AQ	Trip Blank Soil	TB-110206

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

LCP Superfund Site, Linden, NJ

Job No: J45783

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J45783-1	11/06/06	11:34 MC	11/07/06	SO	Soil	WWT-101-15-17
J45783-1R	11/06/06	11:34 MC	11/07/06	SO	Soil	WWT-101-15-17
J45783-1RD	11/06/06	11:34 MC	11/07/06	SO	Soil	WWT-101-15-17
J45783-1RS	11/06/06	11:34 MC	11/07/06	SO	Soil	WWT-101-15-17
J45783-2	11/06/06	11:50 MC	11/07/06	SO	Soil	WWT-101-21-23
J45783-2R	11/06/06	11:50 MC	11/07/06	SO	Soil	WWT-101-21-23
J45783-3	11/06/06	00:00 MC	11/07/06	SO	Soil	DUP110606
J45783-3R	11/06/06	00:00 MC	11/07/06	SO	Soil	DUP110606
J45783-4	11/07/06	09:30 MC	11/07/06	AQ	Field Blank Soil	FB110706
J45783-5	11/07/06	09:30 MC	11/07/06	AQ	Trip Blank Soil	TB

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

LCP Superfund Site, Linden, NJ

Job No: J45854

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J45854-1	11/08/06	08:30 MC	11/08/06	SO	Soil	MW-6D-0-2
J45854-1R	11/08/06	08:30 MC	11/08/06	SO	Soil	MW-6D-0-2
J45854-2	11/08/06	12:00 MC	11/08/06	AQ	Field Blank Soil	FB110706
J45854-3	11/08/06	09:18 MC	11/08/06	SO	Soil	MW-6D-12-14
J45854-3D	11/08/06	09:18 MC	11/08/06	SO	Soil Dup/MSD	MW-6D-12-14
J45854-3R	11/08/06	09:18 MC	11/08/06	SO	Soil	MW-6D-12-14
J45854-3RD	11/08/06	09:18 MC	11/08/06	SO	Soil Dup/MSD	MW-6D-12-14
J45854-3RS	11/08/06	09:18 MC	11/08/06	SO	Soil Matrix Spike	MW-6D-12-14
J45854-3S	11/08/06	09:18 MC	11/08/06	SO	Soil Matrix Spike	MW-6D-12-14
J45854-4	11/08/06	12:00 MC	11/08/06	AQ	Trip Blank Soil	TB110706

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

Job No: J46057

LCP Superfund Site, Linden, NJ

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J46057-1	11/09/06	15:00 MPC	11/09/06	AQ	Field Blank Soil	FB-110906
J46057-2	11/09/06	11:15 MPC	11/09/06	SO	Soil	MW-11D-6-8
J46057-3	11/09/06	11:47 MPC	11/09/06	SO	Soil	MW-11D-10-12
J46057-4	11/09/06	15:27 MPC	11/09/06	AQ	Trip Blank Soil	TB-110906
J46057-5	11/09/06	15:27 MPC	11/09/06	SO	Soil	MW-20D-12-14
J46057-5R	11/09/06	15:27 MPC	11/09/06	SO	Soil	MW-20D-12-14

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Accutest LabLink@391527 11:39 29-Jul-2007

Sample Summary

Brown & Caldwell

Job No: J46213

LCP Superfund Site, Linden, NJ

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J46213-1	11/10/06	08:11 MPC	11/10/06	SO	Soil	MW-20D-32-34
J46213-1R	11/10/06	08:11 MPC	11/10/06	SO	Soil	MW-20D-32-34
J46213-2	11/10/06	08:40 MPC	11/10/06	SO	Soil	MW-20D-36-38
J46213-2R	11/10/06	08:40 MPC	11/10/06	SO	Soil	MW-20D-36-38
J46213-3	11/10/06	13:52 MPC	11/10/06	AQ	Trip Blank Soil	TB-111006
J46213-4	11/10/06	13:45 MPC	11/10/06	AQ	Field Blank Soil	FB-111006
J46213-5	11/10/06	13:50 MPC	11/10/06	SO	Soil	MW-17D-15-17
J46213-5R	11/10/06	13:50 MPC	11/10/06	SO	Soil	MW-17D-15-17
J46213-6	11/10/06	13:52 MPC	11/10/06	SO	Soil	MW-17D-17-19
J46213-6R	11/10/06	13:52 MPC	11/10/06	SO	Soil	MW-17D-17-19

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

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Sample Summary

Brown & Caldwell

Job No: J46443

LCP Superfund Site, Linden, NJ
Project No: 131369

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J46443-1	11/13/06	15:47 THC	11/14/06	SO	Soil	MW-180-13-15
J46443-1R	11/13/06	15:47 THC	11/14/06	SO	Soil	MW-180-13-15
J46443-2	11/13/06	15:43 THC	11/14/06	SO	Soil	MW-180-17-19
J46443-2R	11/13/06	15:43 THC	11/14/06	SO	Soil	MW-180-17-19
J46443-3	11/14/06	08:10 THC	11/14/06	AQ	Field Blank Soil	FB-111306
J46443-4	11/14/06	14:05 THC	11/14/06	AQ	Trip Blank Soil	TB-111306
J46443-5	11/14/06	10:43 THC	11/14/06	AQ	Field Blank Soil	FB-111406
J46443-6	11/14/06	14:05 THC	11/14/06	SO	Soil	MW-14D-13-15
J46443-6R	11/14/06	14:05 THC	11/14/06	SO	Soil	MW-14D-13-15

Sample Summary

Brown & Caldwell

LCP Superfund Site, Linden, NJ

Job No: J46565

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J46565-1	11/15/06	14:50 THC	11/15/06	SO	Soil	MW-23D-15-17
J46565-1R	11/15/06	14:50 THC	11/15/06	SO	Soil	MW-23D-15-17
J46565-2	11/14/06	14:45 THC	11/15/06	SO	Soil	MW-14D-17-19
J46565-2R	11/14/06	14:45 THC	11/15/06	SO	Soil	MW-14D-17-19
J46565-3	11/15/06	10:31 THC	11/15/06	AQ	Field Blank Soil	FB-111506
J46565-4	11/14/06	14:50 THC	11/15/06	AQ	Trip Blank Soil	TB-111506

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

Job No: J46700

LCP Superfund Site, Linden, NJ

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J46700-1	11/15/06	16:40 THC	11/16/06	SO	Soil	MW-23D-37-39
J46700-1R	11/15/06	16:40 THC	11/16/06	SO	Soil	MW-23D-37-39
J46700-2	11/16/06	09:56 THC	11/16/06	AQ	Field Blank Soil	FB-111606
J46700-3	11/16/06	15:23 THC	11/16/06	AQ	Trip Blank Soil	TB-111606
J46700-4	11/16/06	15:23 THC	11/16/06	SO	Soil	MW-21D-13-15
J46700-4R	11/16/06	15:23 THC	11/16/06	SO	Soil	MW-21D-13-15

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

Job No: J46853

LCP Superfund Site, Linden, NJ

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J46853-1	11/16/06	15:45 THL	11/17/06	SO	Soil	MW-21D-15-17
J46853-1R	11/16/06	15:45 THL	11/17/06	SO	Soil	MW-21D-15-17
J46853-2	11/17/06	10:12 THL	11/17/06	AQ	Field Blank Soil	FB-111706
J46853-3	11/17/06	14:30 THL	11/17/06	SO	Soil	MW-16D-13-15
J46853-3R	11/17/06	14:30 THL	11/17/06	SO	Soil	MW-16D-13-15
J46853-4	11/17/06	14:30 THL	11/17/06	AQ	Trip Blank Soil	TB-111706

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Accutest LabLink@391930 09:41 31-Jul-2007

Sample Summary

Brown & Caldwell

LCP Superfund Site, Linden, NJ

Job No: J47004

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J47004-1	11/20/06	11:00 THC	11/20/06	SO	Soil	MW-16D-17-19
J47004-1R	11/20/06	11:00 THC	11/20/06	SO	Soil	MW-16D-17-19
J47004-2	11/20/06	10:30 THC	11/20/06	AQ	Field Blank Soil	FB-112006
J47004-3	11/20/06	15:30 THC	11/20/06	AQ	Trip Blank Soil	TB-112006
J47004-4	11/20/06	15:30 THC	11/20/06	SO	Soil	MW-6D-16-18
J47004-4R	11/20/06	15:30 THC	11/20/06	SO	Soil	MW-6D-16-18
J47004-5	11/20/06	00:00 THC	11/20/06	SO	Soil	DUP112006
J47004-5R	11/20/06	00:00 THC	11/20/06	SO	Soil	DUP112006

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

Job No: J47128

LCP Superfund Site, Linden, NJ

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J47128-1	11/21/06	14:00 THC	11/21/06	AQ	Field Blank Soil	FB-112106
J47128-2	11/21/06	14:00 THC	11/21/06	AQ	Trip Blank Soil	TB-112106
J47128-3	11/21/06	08:20 THC	11/21/06	SO	Soil	MW-6D-30-32
J47128-4	11/21/06	15:26 THC	11/21/06	SO	Soil	MW-25D-10-12
J47128-5	11/21/06	00:00 THC	11/21/06	SO	Soil	DUP112106

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

Job No: J47366

LCP Superfund Site, Linden, NJ

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J47366-1	11/27/06	14:45 MPC	11/27/06	AQ	Ground Water	LCP-PW112706
J47366-2	11/27/06	12:00 MPC	11/27/06	SO	Soil	LCP-231-SS112706

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

LCP Superfund Site, Linden, NJ

Job No: J48098

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J48098-1	12/04/06	09:15 MPC	12/04/06	SO	Soil	LHP-101-0-1
J48098-2	12/04/06	09:25 MPC	12/04/06	SO	Soil	LHP-101-5-8
J48098-3	12/04/06	10:12 MPC	12/04/06	SO	Soil	LHP-110-0-1
J48098-4	12/04/06	10:32 MPC	12/04/06	SO	Soil	LHP-111-0-1
J48098-5	12/04/06	10:24 MPC	12/04/06	SO	Soil	LHP-112-0-1
J48098-6	12/04/06	10:40 MPC	12/04/06	SO	Soil	LHP-113-0-1
J48098-7	12/04/06	10:52 MPC	12/04/06	SO	Soil	LHP-114-0-1
J48098-8	12/04/06	11:25 MPC	12/04/06	SO	Soil	LHP-115-0-1
J48098-9	12/04/06	11:06 MPC	12/04/06	SO	Soil	LHP-116-0-1
J48098-10	12/04/06	11:16 MPC	12/04/06	SO	Soil	LHP-117-0-1
J48098-11	12/04/06	13:50 MPC	12/04/06	SO	Soil	TES-2-0-1
J48098-12	12/04/06	14:15 MPC	12/04/06	SO	Soil	TES-3-0-1
J48098-13	12/04/06	14:35 MPC	12/04/06	SO	Soil	230-B-101-0-1

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Brown & Caldwell

Job No: J48098

LCP Superfund Site, Linden, NJ

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J48098-14	12/04/06	14:50 MPC	12/04/06	SO	Soil	DSP-101-0-1
J48098-15	12/04/06	15:05 MPC	12/04/06	SO	Soil	LHP-123-0-1
J48098-16	12/04/06	15:25 MPC	12/04/06	SO	Soil	LHP-106-1-3
J48098-17	12/04/06	15:25 MPC	12/04/06	SO	Soil	LHP-106-0-1
J48098-18	12/04/06	09:55 MPC	12/04/06	SO	Soil	LHP-118-0-1
J48098-19	12/04/06	09:46 MPC	12/04/06	SO	Soil	LHP-119-0-1
J48098-20	12/04/06	09:05 MPC	12/04/06	SO	Soil	LHP-120-0-1
J48098-21	12/04/06	13:02 MPC	12/04/06	SO	Soil	LHP-102-0-1
J48098-22	12/04/06	13:55 MPC	12/04/06	SO	Soil	237-102-0-1
J48098-23	12/04/06	14:08 MPC	12/04/06	AQ	Field Blank Soil	FB-120406
J48098-24	12/04/06	15:25 MPC	12/04/06	AQ	Trip Blank Soil	TB-120406

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

Job No: J48211

LCP Superfund Site, Linden, NJ
Project No: 131369

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J48211-1	12/05/06	08:28 MPC	12/05/06	SO	Soil	LHP-107-0-1
J48211-1R	12/05/06	08:28 MPC	12/05/06	SO	Soil	LHP-107-0-1
J48211-2	12/05/06	08:31 MPC	12/05/06	SO	Soil	LHP-107-5-7
J48211-2R	12/05/06	08:31 MPC	12/05/06	SO	Soil	LHP-107-5-7
J48211-3	12/05/06	08:46 MPC	12/05/06	SO	Soil	LHP-105-0-1
J48211-3R	12/05/06	08:46 MPC	12/05/06	SO	Soil	LHP-105-0-1
J48211-4	12/05/06	08:50 MPC	12/05/06	SO	Soil	LHP-105-13-1
J48211-4D	12/05/06	08:50 MPC	12/05/06	SO	Soil Dup/MSD	LHP-105-13-1
J48211-4DR	12/05/06	08:50 MPC	12/05/06	SO	Soil Dup/MSD	LHP-105-13-1
J48211-4R	12/05/06	08:50 MPC	12/05/06	SO	Soil	LHP-105-13-1
J48211-4S	12/05/06	08:50 MPC	12/05/06	SO	Soil Matrix Spike	LHP-105-13-1
J48211-4SR	12/05/06	08:50 MPC	12/05/06	SO	Soil Matrix Spike	LHP-105-13-1
J48211-5	12/05/06	09:28 MPC	12/05/06	SO	Soil	LHP-104-0-1

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Brown & Caldwell

Job No: J48211

LCP Superfund Site, Linden, NJ
Project No: 131369

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J48211-5R	12/05/06	09:28 MPC	12/05/06	SO	Soil	LHP-104-0-1
J48211-6	12/05/06	09:31 MPC	12/05/06	SO	Soil	LHP-104-7-9
J48211-6R	12/05/06	09:31 MPC	12/05/06	SO	Soil	LHP-104-7-9
J48211-7	12/05/06	10:25 MPC	12/05/06	SO	Soil	TES-4-0-1
J48211-8	12/05/06	10:41 MPC	12/05/06	SO	Soil	LHP-102-0-1
J48211-8R	12/05/06	10:41 MPC	12/05/06	SO	Soil	LHP-102-0-1
J48211-9	12/05/06	10:49 MPC	12/05/06	SO	Soil	LHP-102-7-9
J48211-9R	12/05/06	10:49 MPC	12/05/06	SO	Soil	LHP-102-7-9
J48211-10	12/05/06	11:20 MPC	12/05/06	SO	Soil	ADS-101-0-1
J48211-10R	12/05/06	11:20 MPC	12/05/06	SO	Soil	ADS-101-0-1
J48211-11	12/05/06	11:20 MPC	12/05/06	SO	Soil	ADS-101-1-3
J48211-11R	12/05/06	11:20 MPC	12/05/06	SO	Soil	ADS-101-1-3
J48211-12	12/05/06	11:36 MPC	12/05/06	SO	Soil	ADS-102-0-1.5

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Brown & Caldwell

Job No: J48211

LCP Superfund Site, Linden, NJ
Project No: 131369

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J48211-12R	12/05/06	11:36 MPC	12/05/06	SO	Soil	ADS-102-0-1.5
J48211-13	12/05/06	13:55 MPC	12/05/06	SO	Soil	LHP-103-0-1
J48211-13R	12/05/06	13:55 MPC	12/05/06	SO	Soil	LHP-103-0-1
J48211-14	12/05/06	13:55 MPC	12/05/06	SO	Soil	LHP-103-1-3
J48211-14R	12/05/06	13:55 MPC	12/05/06	SO	Soil	LHP-103-1-3
J48211-15	12/05/06	11:43 MPC	12/05/06	SO	Soil	ADS-102-7-8
J48211-15R	12/05/06	11:43 MPC	12/05/06	SO	Soil	ADS-102-7-8
J48211-16	12/05/06	15:10 MPC	12/05/06	AQ	Field Blank Soil	FB-120506
J48211-17	12/05/06	15:10 MPC	12/05/06	AQ	Trip Blank Soil	TB-120506
J48211-18	12/05/06	00:00 MPC	12/05/06	SO	Soil	DUP-120506
J48211-18R	12/05/06	00:00 MPC	12/05/06	SO	Soil	DUP-120506

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

LCP Superfund Site, Linden, NJ

Job No: J48325

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J48325-1	12/06/06	10:26 MPC	12/06/06	SO	Soil	LHP-109-7-9
J48325-1D	12/06/06	10:26 MPC	12/06/06	SO	Soil	LHP-109-7-9
J48325-1R	12/06/06	10:26 MPC	12/06/06	SO	Soil	LHP-109-7-9
J48325-1S	12/06/06	10:26 MPC	12/06/06	SO	Soil	LHP-109-7-9
J48325-2	12/06/06	10:50 MPC	12/06/06	SO	Soil	LHP-121-0-1
J48325-2D	12/06/06	10:50 MPC	12/06/06	SO	Soil	LHP-121-0-1
J48325-2R	12/06/06	10:50 MPC	12/06/06	SO	Soil	LHP-121-0-1
J48325-2S	12/06/06	10:50 MPC	12/06/06	SO	Soil	LHP-121-0-1
J48325-3	12/06/06	12:17 MPC	12/06/06	SO	Soil	231-101-0-1
J48325-4	12/06/06	13:25 MPC	12/06/06	SO	Soil	BSL-101-0-1
J48325-5	12/05/06	16:07 MPC	12/06/06	SO	Soil	TES-1-0-1
J48325-6	12/06/06	14:22 MPC	12/06/06	SO	Soil	LHP-102-7-9
J48325-7	12/06/06	14:35 MPC	12/06/06	SO	Soil	ADS-102-7-8

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

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Sample Summary
(continued)

Brown & Caldwell

LCP Superfund Site, Linden, NJ

Job No: J48325

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J48325-8	12/06/06	11:44 MPC	12/06/06	AQ	Field Blank Soil	FB-120606
J48325-9	12/06/06	15:14 MPC	12/06/06	AQ	Trip Blank Soil	TB-120606
J48325-10	12/06/06	14:48 MPC	12/06/06	SO	Soil	LHP-127-0-1
J48325-10R	12/06/06	14:48 MPC	12/06/06	SO	Soil	LHP-127-0-1
J48325-11	12/06/06	08:25 MPC	12/06/06	SO	Soil	LB-101-0-1
J48325-11R	12/06/06	08:25 MPC	12/06/06	SO	Soil	LB-101-0-1
J48325-12	12/06/06	08:25 MPC	12/06/06	SO	Soil	LB-101-1-3
J48325-12R	12/06/06	08:25 MPC	12/06/06	SO	Soil	LB-101-1-3
J48325-13	12/06/06	08:54 MPC	12/06/06	SO	Soil	LB-102-0-1
J48325-13R	12/06/06	08:54 MPC	12/06/06	SO	Soil	LB-102-0-1
J48325-14	12/06/06	08:54 MPC	12/06/06	SO	Soil	LB-102-1-3
J48325-14R	12/06/06	08:54 MPC	12/06/06	SO	Soil	LB-102-1-3
J48325-15	12/06/06	09:20 MPC	12/06/06	SO	Soil	LB-103-0-1

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Brown & Caldwell

LCP Superfund Site, Linden, NJ

Job No: J48325

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J48325-15D	12/06/06	09:20 MPC	12/06/06	SO	Soil	LB-103-0-1
J48325-15R	12/06/06	09:20 MPC	12/06/06	SO	Soil	LB-103-0-1
J48325-15S	12/06/06	09:20 MPC	12/06/06	SO	Soil	LB-103-0-1
J48325-16	12/06/06	09:25 MPC	12/06/06	SO	Soil	LB-103-5-7
J48325-16R	12/06/06	09:25 MPC	12/06/06	SO	Soil	LB-103-5-7
J48325-17	12/06/06	09:53 MPC	12/06/06	SO	Soil	LHP-108-0-1
J48325-17R	12/06/06	09:53 MPC	12/06/06	SO	Soil	LHP-108-0-1
J48325-18	12/06/06	09:56 MPC	12/06/06	SO	Soil	LHP-108-3-7
J48325-18R	12/06/06	09:56 MPC	12/06/06	SO	Soil	LHP-108-3-7
J48325-19	12/06/06	10:08 MPC	12/06/06	SO	Soil	LHP-122-0-1
J48325-19R	12/06/06	10:08 MPC	12/06/06	SO	Soil	LHP-122-0-1
J48325-20	12/06/06	10:15 MPC	12/06/06	SO	Soil	LHP-109-0-1
J48325-20R	12/06/06	10:15 MPC	12/06/06	SO	Soil	LHP-109-0-1

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

LCP Superfund Site, Linden, NJ

Job No: J49293

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J49293-1	12/14/06	14:00 CED	12/14/06	SO	Soil	MW-11D-12-14
J49293-1R	12/14/06	14:00 CED	12/14/06	SO	Soil	MW-11D-12-14
J49293-2	12/14/06	15:09 CED	12/14/06	AQ	Field Blank Soil	FB-121406
J49293-3	12/14/06	15:09 CED	12/14/06	AQ	Trip Blank Soil	TB-121406

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

LCP Superfund Site, Linden, NJ

Job No: J49409

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J49409-1	12/14/06	14:15 TC	12/15/06	SO	Soil	MW-110-14-16
J49409-1R	12/14/06	14:15 TC	12/15/06	SO	Soil	MW-110-14-16
J49409-2	12/14/06	14:38 TC	12/15/06	SO	Soil	MW-11D-16-18
J49409-2D	12/14/06	14:38 TC	12/15/06	SO	Soil Dup/MSD	MW-11D-16-18
J49409-2R	12/14/06	14:38 TC	12/15/06	SO	Soil	MW-11D-16-18
J49409-2S	12/14/06	14:38 TC	12/15/06	SO	Soil Matrix Spike	MW-11D-16-18
J49409-3	12/15/06	13:50 TC	12/15/06	AQ	Trip Blank Soil	TB-121506
J49409-4	12/15/06	13:50 TC	12/15/06	AQ	Field Blank Soil	FB-121506

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

LCP Superfund Site, Linden, NJ

Job No: J49451

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J49451-1	12/15/06	11:15 SS	12/15/06	AQ	Water	TPS-1

Accutest LabLink@394207 10:50 12-Aug-2007

Sample Summary

Brown & Caldwell

Job No: J49611

LCP Superfund Site, Linden, NJ
Project No: Phase II RI

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J49611-1	12/18/06	10:15 THC	12/18/06	SO	Soil	MW-25D-33-35
J49611-1R	12/18/06	10:15 THC	12/18/06	SO	Soil	MW-25D-33-35
J49611-2	12/18/06	13:45 THC	12/18/06	AQ	Field Blank Soil	FB-121806
J49611-3	12/18/06	13:45 THC	12/18/06	AQ	Trip Blank Soil	TB-121806

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

Job No: J51040

LCP Superfund Site, Linden, NJ
Project No: 131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J51040-1	01/09/07	14:00 PKS	01/09/07	AQ	Ground Water	MW17D
J51040-1F	01/09/07	14:00 PKS	01/09/07	AQ	Groundwater Filtered	MW17D
J51040-2	01/09/07	00:00 PKS	01/09/07	AQ	Field Blank Water	FB 1/9/07

Sample Summary

Brown & Caldwell

Job No: J51153

LCP Superfund Site, Linden, NJ
Project No: 131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J51153-1	01/10/07	11:45 CJL	01/10/07	AQ	Ground Water	MW17S
J51153-1F	01/10/07	11:45 CJL	01/10/07	AQ	Groundwater Filtered	MW17S
J51153-2	01/10/07	14:30 CJL	01/10/07	AQ	Field Blank Water	FB1/10/07

Sample Summary

Brown & Caldwell

Job No: J51393

LCP Superfund Site, Linden, NJ
Project No: 131369-105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J51393-1	01/12/07	12:25 PKS	01/12/07	AQ	Ground Water	MW18D
J51393-1F	01/12/07	12:25 PKS	01/12/07	AQ	Groundwater Filtered	MW18D
J51393-2	01/12/07	17:50 PKS	01/12/07	AQ	Field Blank Water	FB

Sample Summary

Brown & Caldwell

Job No: J51494

LCP Superfund Site, Linden, NJ
Project No: 131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J51494-1	01/15/07	11:30 PKS	01/15/07	AQ	Ground Water	MW16D
J51494-1F	01/15/07	11:30 PKS	01/15/07	AQ	Groundwater Filtered	MW16D
J51494-2	01/15/07	16:15 PKS	01/15/07	AQ	Field Blank Water	FB 1/15/07

Accutest LabLink@395528 13:23 18-Aug-2007

Sample Summary

Brown & Caldwell

Job No: J51580

LCP Superfund Site, Linden, NJ
Project No: 131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J51580-1	01/16/07	10:30 PKS	01/16/07	AQ	Ground Water	MW20D
J51580-1F	01/16/07	10:30 PKS	01/16/07	AQ	Groundwater Filtered	MW20D
J51580-2	01/16/07	14:30 PKS	01/16/07	AQ	Ground Water	MW20S
J51580-2F	01/16/07	14:30 PKS	01/16/07	AQ	Groundwater Filtered	MW20S
J51580-3	01/16/07	16:00 PKS	01/16/07	AQ	Field Blank Water	FB 1/16/07

Sample Summary

Brown & Caldwell

Job No: J51673

LCP Superfund Site, Linden, NJ
Project No: 131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J51673-1	01/17/07	10:35 PKS	01/17/07	AQ	Ground Water	MW14D
J51673-1F	01/17/07	10:35 PKS	01/17/07	AQ	Groundwater Filtered	MW14D-FILTERED
J51673-2	01/17/07	12:40 PKS	01/17/07	AQ	Field Blank Water	FB1/17/07

Accutest LabLink@395528 13:40 18-Aug-2007

Sample Summary

Brown & Caldwell

Job No: J51889

LCP Superfund Site, Linden, NJ
Project No: 131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J51889-1	01/18/07	11:40 PKS	01/18/07	AQ	Ground Water	MW14S
J51889-1F	01/18/07	11:40 PKS	01/18/07	AQ	Groundwater Filtered	MW14S-FILTERED
J51889-2	01/18/07	15:55 PKS	01/18/07	AQ	Field Blank Water	FB 1/18/07
J51889-3	01/18/07	14:55 PKS	01/18/07	AQ	Ground Water	MW16S
J51889-3F	01/18/07	14:55 PKS	01/18/07	AQ	Groundwater Filtered	MW16S-FILTERED

Sample Summary

Brown & Caldwell

Job No: J52021

LCP Superfund Site, Linden, NJ
Project No: 131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J52021-1	01/19/07	12:05 TC	01/19/07	AQ	Ground Water	MW-21D
J52021-2	01/19/07	15:35 TC	01/19/07	AQ	Ground Water	MW-21S
J52021-3	01/19/07	13:50 TC	01/19/07	AQ	Field Blank Water	FB011907
J52021-5F	01/19/07	13:15 TC	01/19/07	AQ	Groundwater Filtered	MW-21D-F
J52021-6F	01/19/07	16:02 TC	01/19/07	AQ	Groundwater Filtered	MW-21S-F

Sample Summary

Brown & Caldwell

Job No: J52027

LCP Superfund Site, Linden, NJ
Project No: 131369

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J52027-1	01/19/07	10:49 CL	01/19/07	SO	Soil	WCSOIL011907B
J52027-2	01/19/07	10:20 CL	01/19/07	SO	Soil	WCSOIL011907A

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

Job No: J52130

LCP Superfund Site, Linden, NJ
Project No: Proj# 131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J52130-1	01/22/07	11:10 PKS	01/22/07	AQ	Ground Water	MW6S
J52130-1F	01/22/07	11:10 PKS	01/22/07	AQ	Groundwater Filtered	MW6S-FILTERED
J52130-2	01/22/07	12:35 PKS	01/22/07	AQ	Field Blank Water	FB 1/22/07

Sample Summary

Brown & Caldwell

Job No: J52219

LCP Superfund Site, Linden, NJ
Project No: 131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J52219-1	01/23/07	12:20 PKS	01/23/07	AQ	Ground Water	MW25D
J52219-1F	01/23/07	12:20 PKS	01/23/07	AQ	Groundwater Filtered	MW25D-FILTERED
J52219-2	01/23/07	15:00 PKS	01/23/07	AQ	Field Blank Water	FB1/23/07
J52219-2F	01/23/07	15:00 PKS	01/23/07	AQ	Field Blank Filtered	FB1/23/07-FILTERED

Sample Summary

Brown & Caldwell

Job No: J52588

LCP Superfund Site, Linden, NJ
Project No: 131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J52588-1	01/26/07	14:42 THC	01/26/07	AQ	Ground Water	MW-23S
J52588-2	01/26/07	16:18 THC	01/26/07	AQ	Groundwater Filtered	MW-23S-F

Sample Summary

Brown & Caldwell

Job No: J52669

LCP Superfund Site, Linden, NJ
Project No: Proj#:131369.105 PO#:131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J52669-1	01/29/07	12:15 MDW	01/29/07	AQ	Ground Water	MW-23D
J52669-1D	01/29/07	12:15 MDW	01/29/07	AQ	Water Dup/MSD	MW-23D
J52669-1F	01/29/07	12:15 MDW	01/29/07	AQ	Groundwater Filtered	MW-23D
J52669-1FD	01/29/07	12:15 MDW	01/29/07	AQ	Water Dup/MSD	MW-23D
J52669-1FS	01/29/07	12:15 MDW	01/29/07	AQ	Water Matrix Spike	MW-23D
J52669-1S	01/29/07	12:15 MDW	01/29/07	AQ	Water Matrix Spike	MW-23D
J52669-2	01/29/07	16:55 MDW	01/29/07	AQ	Field Blank Water	FB012907
J52669-2F	01/29/07	16:55 MDW	01/29/07	AQ	Field Blank Filtered	FB012907

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Sample Summary

Brown & Caldwell

Job No: J52751

LCP Superfund Site, Linden, NJ
Project No: 131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J52751-1	01/30/07	10:05 MDW	01/30/07	AQ	Ground Water	MW-11S
J52751-1F	01/30/07	10:05 MDW	01/30/07	AQ	Groundwater Filtered	MW-11S
J52751-2	01/30/07	14:15 MDW	01/30/07	AQ	Ground Water	MW-11D
J52751-2F	01/30/07	14:15 MDW	01/30/07	AQ	Groundwater Filtered	MW-11D
J52751-3	01/30/07	14:15 MDW	01/30/07	AQ	Trip Blank Water	TB013007

Sample Summary

Brown & Caldwell

Job No: J52878

LCP Superfund Site, Linden, NJ
Project No: PO#:131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J52878-1	01/31/07	09:00 MW	01/31/07	AQ	Field Blank Water	FB013107
J52878-1F	01/31/07	09:00 MW	01/31/07	AQ	Field Blank Filtered	FB013107
J52878-2	01/31/07	13:20 MW	01/31/07	AQ	Ground Water	MW-6D
J52878-2F	01/31/07	13:20 MW	01/31/07	AQ	Groundwater Filtered	MW-6D
J52878-3	01/31/07	13:20 MW	01/31/07	AQ	Trip Blank Water	TB013107

Sample Summary

Brown & Caldwell

Job No: J52971

LCP Superfund Site, Linden, NJ
Project No: 131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J52971-1	02/01/07	13:30 MDW	02/01/07	AQ	Trip Blank Water	TB020107
J52971-2	02/01/07	08:45 MDW	02/01/07	AQ	Field Blank Water	FB020107
J52971-3	02/01/07	13:30 MDW	02/01/07	AQ	Ground Water	MW-7S
J52971-3F	02/01/07	13:30 MDW	02/01/07	AQ	Groundwater Filtered	MW-7S
J52971-4	02/01/07	00:00 MDW	02/01/07	AQ	Ground Water	DUP020107
J52971-4F	02/01/07	00:00 MDW	02/01/07	AQ	Groundwater Filtered	DUP020107

Sample Summary

Brown & Caldwell

Job No: J53104

LCP Superfund Site, Linden, NJ
Project No: 131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J53104-1	02/02/07	14:10 MDW	02/02/07	AQ	Trip Blank Water	TB020207
J53104-2	02/02/07	08:05 MDW	02/02/07	AQ	Field Blank Water	FB020207
J53104-3	02/02/07	11:30 MDW	02/02/07	AQ	Ground Water	MW-8S
J53104-3F	02/02/07	11:30 MDW	02/02/07	AQ	Groundwater Filtered	MW-8S
J53104-4	02/02/07	14:10 MDW	02/02/07	AQ	Ground Water	MW-10S
J53104-4F	02/02/07	14:10 MDW	02/02/07	AQ	Groundwater Filtered	MW-10S

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Sample Summary

Brown & Caldwell

Job No: J53258

LCP Superfund Site, Linden, NJ
Project No: PO#:131369-105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J53258-1	02/06/07	09:00 MMR	02/06/07	AQ	Field Blank Water	FB020607
J53258-2	02/06/07	12:00 MMR	02/06/07	AQ	Ground Water	MW-12S
J53258-2F	02/06/07	12:00 MMR	02/06/07	AQ	Groundwater Filtered	MW-12SF

Sample Summary

Brown & Caldwell

Job No: J53388

LCP Superfund Site, Linden, NJ
Project No: 131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J53388-1	02/07/07	07:30 MMR	02/07/07	AQ	Field Blank Water	FB020707
J53388-2	02/07/07	11:00 MMR	02/07/07	AQ	Ground Water	MW-9S
J53388-2F	02/07/07	11:00 MMR	02/07/07	AQ	Groundwater Filtered	MW-9S
J53388-3	02/07/07	14:15 MMR	02/07/07	AQ	Ground Water	MW-19S
J53388-3F	02/07/07	14:15 MMR	02/07/07	AQ	Groundwater Filtered	MW-19S
J53388-4	02/07/07	00:00 MMR	02/07/07	AQ	Ground Water	DUP020707
J53388-4F	02/07/07	00:00 MMR	02/07/07	AQ	Groundwater Filtered	DUP020707
J53388-5	02/07/07	14:15 MMR	02/07/07	AQ	Trip Blank Water	TB020707

Sample Summary

Brown & Caldwell

Job No: J53483

LCP Superfund Site, Linden, NJ
Project No: 131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J53483-1	02/08/07	07:30 MMR	02/08/07	AQ	Field Blank Water	FB020807
J53483-2	02/08/07	10:30 MMR	02/08/07	AQ	Ground Water	MW-24S
J53483-2F	02/08/07	10:30 MMR	02/08/07	AQ	Groundwater Filtered	MW-24S
J53483-3	02/08/07	14:00 MMR	02/08/07	AQ	Trip Blank Water	TB020807
J53483-4	02/08/07	14:00 MMR	02/08/07	AQ	Ground Water	MW-15S

Sample Summary

Brown & Caldwell

Job No: J53484

LCP Superfund Site, Linden, NJ
Project No: 131369.103

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J53484-1	02/08/07	09:45 CJM	02/08/07	SO	Soil	H-B-105C
J53484-2	02/08/07	12:10 CJM	02/08/07	SO	Soil	H-B-105D
J53484-3	02/08/07	15:30 CJM	02/08/07	AQ	Field Blank Soil	FB020807-A
J53484-4	02/08/07	16:15 CJM	02/08/07	AQ	Trip Blank Soil	TB020807-A
J53484-5	02/08/07	16:15 CJM	02/08/07	SO	Soil	H-B-105E

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

Job No: J53630

LCP Superfund Site, Linden, NJ
Project No: 131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J53630-1	02/09/07	08:00 MMR	02/09/07	AQ	Field Blank Water	FB020907
J53630-2	02/09/07	10:25 MMR	02/09/07	AQ	Ground Water	MW-22S
J53630-2D	02/09/07	10:25 MMR	02/09/07	AQ	Water Dup/MSD	MW-22S-MSD
J53630-2F	02/09/07	10:25 MMR	02/09/07	AQ	Groundwater Filtered	MW-22S
J53630-2FD	02/09/07	10:25 MMR	02/09/07	AQ	Water Dup/MSD	MW-22S-MSD
J53630-2FS	02/09/07	10:25 MMR	02/09/07	AQ	Water Matrix Spike	MW-22S-MS
J53630-2S	02/09/07	10:25 MMR	02/09/07	AQ	Water Matrix Spike	MW-22S-MS
J53630-3	02/09/07	12:20 MMR	02/09/07	AQ	Ground Water	MW-15S
J53630-3F	02/09/07	12:20 MMR	02/09/07	AQ	Groundwater Filtered	MW-15S

Sample Summary

Brown & Caldwell

Job No: J53740

LCP Superfund Site, Linden, NJ
Project No: 131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J53740-1	02/12/07	08:00 CM	02/12/07	AQ	Field Blank Water	FB021207
J53740-2	02/12/07	11:40 CM	02/12/07	AQ	Ground Water	MW-13S
J53740-2F	02/12/07	11:40 CM	02/12/07	AQ	Groundwater Filtered	MW-13S
J53740-3	02/12/07	14:40 CM	02/12/07	AQ	Ground Water	MW-18S
J53740-3F	02/12/07	14:40 CM	02/12/07	AQ	Groundwater Filtered	MW-18S
J53740-4	02/12/07	14:40 CM	02/12/07	AQ	Trip Blank Water	TB021207

Sample Summary

Brown & Caldwell

Job No: J53817

LCP Superfund Site, Linden, NJ
Project No: PO#:131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Matrix Type	Client Sample ID
J53817-1	02/13/07	11:21 CM	02/13/07	AQ	Ground Water	MW-6D
J53817-2	02/13/07	11:53 CM	02/13/07	AQ	Ground Water	MW-21D
J53817-3	02/13/07	12:05 CM	02/13/07	AQ	Ground Water	MW-11D
J53817-4	02/13/07	12:14 CM	02/13/07	AQ	Ground Water	MW-14D
J53817-5	02/13/07	12:17 CM	02/13/07	AQ	Ground Water	MW-20D
J53817-6	02/13/07	12:22 CM	02/13/07	AQ	Ground Water	MW-17D
J53817-7	02/13/07	12:26 CM	02/13/07	AQ	Ground Water	MW-18D
J53817-8	02/13/07	12:31 CM	02/13/07	AQ	Ground Water	MW-16D
J53817-9	02/13/07	07:50 CM	02/13/07	AQ	Ground Water	MW-26D
J53817-10	02/13/07	14:30 CM	02/13/07	AQ	Ground Water	MW-25D
J53817-11	02/12/07	15:40 CM	02/13/07	AQ	Ground Water	MW-26S

Sample Summary

Brown & Caldwell

Job No: J54238

LCP Superfund Site, Linden, NJ
Project No: 131369.103

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J54238-1	02/20/07	14:15 CJM	02/20/07	SO	Soil	H-B-103A
J54238-2	02/20/07	16:30 CJM	02/20/07	AQ	Field Blank Soil	FB022007
J54238-3	02/20/07	16:30 CJM	02/20/07	AQ	Trip Blank Soil	TB02207

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

Job No: J54435

LCP Superfund Site, Linden, NJ
Project No: 131369

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J54435-1	02/22/07	14:25 THC	02/22/07	AQ	Surface Water	SW-VB-2-22-07-1400
J54435-1F	02/22/07	14:27 THC	02/22/07	AQ	Surface H2O Filtered	SW-VB-2-22-07-1400-F
J54435-2	02/22/07	16:00 THC	02/22/07	AQ	Surface Water	SW-VB-2-22-07-1600
J54435-2F	02/22/07	16:05 THC	02/22/07	AQ	Surface H2O Filtered	SW-VB-2-22-07-1600-F

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Sample Summary

Brown & Caldwell

Job No: J54580

LCP Superfund Site, Linden, NJ
Project No: PO#: 131369.103

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J54580-1	02/23/07	08:45 CJM	02/23/07	SO	Soil	H-B-104A
J54580-2	02/23/07	12:05 CJM	02/23/07	SO	Soil	H-B-104B
J54580-3	02/23/07	16:00 CJM	02/23/07	SO	Soil	H-B-104C
J54580-4	02/23/07	13:00 CJM	02/23/07	AQ	Field Blank Soil	FB022307
J54580-5	02/23/07	16:00 CJM	02/23/07	AQ	Trip Blank Soil	TB022307

Sample Summary

Brown & Caldwell

Job No: J54581

LCP Superfund Site, Linden, NJ

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J54581-1	02/23/07	07:02 TCH	02/23/07	AQ	Surface Water	SW-VB-02-23-07-0700
J54581-2	02/23/07	09:00 TCH	02/23/07	AQ	Surface Water	SW-VB-02-23-07-0900
J54581-3F	02/23/07	07:10 TCH	02/23/07	AQ	Surface H2O Filtered	SW-VB-02-23-07-0700-F
J54581-4F	02/23/07	09:05 TCH	02/23/07	AQ	Surface H2O Filtered	SW-VB-02-23-07-0900-F
J54581-5F	02/23/07	11:03 TCH	02/23/07	AQ	Surface H2O Filtered	SW-VB-02-23-07-1100-F
J54581-6	02/23/07	11:08 TCH	02/23/07	AQ	Surface Water	SW-VB-02-23-07-1100
J54581-7	02/23/07	13:00 TCH	02/23/07	AQ	Surface Water	SW-VB-02-23-07-1300
J54581-8F	02/23/07	13:08 TCH	02/23/07	AQ	Surface H2O Filtered	SW-VB-02-23-07-1300-F
J54581-9	02/23/07	15:00 TCH	02/23/07	AQ	Surface Water	SW-VB-02-23-07-1500
J54581-10F	02/23/07	15:06 TCH	02/23/07	AQ	Surface H2O Filtered	SW-VB-02-23-07-1500-F
J54581-11F	02/23/07	00:00 TCH	02/23/07	AQ	Surface H2O Filtered	DUP022307
J54581-12	02/23/07	14:50 TCH	02/23/07	AQ	Field Blank Water	FB022307

Sample Summary

Brown & Caldwell

Job No: J54589

LCP Superfund Site, Linden, NJ
Project No: Proj#: 131369

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J54589-1	02/22/07	17:20 THC	02/23/07	AQ	Surface Water	SW-ERRT
J54589-2F	02/22/07	17:23 THC	02/23/07	AQ	Surface H2O Filtered	SW-ERRT-F
J54589-3F	02/22/07	17:37 THC	02/23/07	AQ	Surface H2O Filtered	SW-WRRT-F
J54589-4	02/22/07	17:27 THC	02/23/07	AQ	Surface Water	SW-WRRT
J54589-5	02/23/07	17:00 THC	02/23/07	AQ	Surface Water	SW-VB-2-23-07-1700
J54589-6F	02/23/07	17:08 THC	02/23/07	AQ	Surface H2O Filtered	SW-VB-2-23-07-1700-F
J54589-7	02/23/07	19:00 THC	02/23/07	AQ	Surface Water	SW-VB-2-23-07-1900
J54589-8F	02/23/07	19:06 THC	02/23/07	AQ	Surface H2O Filtered	SW-VB-2-23-07-1900-F
J54589-9	02/22/07	18:00 THC	02/23/07	AQ	Surface Water	SW-VB-2-22-07-1800
J54589-10F	02/22/07	18:05 THC	02/23/07	AQ	Surface H2O Filtered	SW-VB-2-22-07-1800-F

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Sample Summary

Brown & Caldwell

Job No: J54782

LCP Superfund Site, Linden, NJ
Project No: PO#:131369.103

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J54782-1	02/27/07	12:15 CJM	02/27/07	SO	Soil	H-B-104D
J54782-2	02/27/07	12:55 CJM	02/27/07	AQ	Field Blank Soil	FB022707
J54782-3	02/27/07	16:40 CJM	02/27/07	AQ	Trip Blank Soil	TB022707
J54782-4	02/27/07	16:40 CJM	02/27/07	SO	Soil	H-B-104E

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

Job No: J55249

LCP Superfund Site, Linden, NJ
Project No: 131369.103

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J55249-1	03/05/07	14:35 THC	03/05/07	SO	Soil	HB-101A
J55249-1R	03/05/07	14:35 THC	03/05/07	SO	Soil	HB-101A
J55249-2	03/05/07	16:05 THC	03/05/07	AQ	Field Blank Soil	FB030507
J55249-3	03/05/07	16:05 THC	03/05/07	AQ	Trip Blank Soil	TB030507

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

Job No: J55951

LCP Superfund Site, Linden, NJ
Project No: 131369.103

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J55951-1	03/13/07	14:40 AG	03/13/07	SO	Soil	HB-102A
J55951-1R	03/13/07	14:40 AG	03/13/07	SO	Soil	HB-102A
J55951-2	03/13/07	15:30 AG	03/13/07	AQ	Field Blank Soil	FB031307

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

Job No: J56074

LCP Superfund Site, Linden, NJ
Project No: PO#131369.103

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J56074-1	03/14/07	12:15 AG	03/14/07	SO	Soil	HB-102B
J56074-1R	03/14/07	12:15 AG	03/14/07	SO	Soil	HB-102B
J56074-2	03/14/07	12:30 AG	03/14/07	AQ	Field Blank Soil	FB031407
J56074-3	03/14/07	17:00 AG	03/14/07	SO	Soil	HB-102C
J56074-3R	03/14/07	17:00 AG	03/14/07	SO	Soil	HB-102C
J56074-3RD	03/14/07	17:00 AG	03/14/07	SO	Soil Dup/MSD	HB-102C
J56074-3RS	03/14/07	17:00 AG	03/14/07	SO	Soil Matrix Spike	HB-102C

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary

Brown & Caldwell

Job No: J57403

LCP Superfund Site, Linden, NJ
Project No: 131369.105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
J57403-1	03/30/07	13:56 BR	03/30/07	AQ	Ground Water	MW-11D
J57403-2	03/30/07	14:05 BR	03/30/07	AQ	Ground Water	MW-14D
J57403-3	03/30/07	14:10 BR	03/30/07	AQ	Ground Water	MW-20D
J57403-4	03/30/07	14:15 BR	03/30/07	AQ	Ground Water	MW-17D
J57403-5	03/30/07	14:21 BR	03/30/07	AQ	Ground Water	MW-18D
J57403-6	03/30/07	14:25 BR	03/30/07	AQ	Ground Water	MW-23D
J57403-7	03/30/07	14:30 BR	03/30/07	AQ	Ground Water	MW-16D
J57403-8	03/30/07	14:36 BR	03/30/07	AQ	Ground Water	MW-21D
J57403-9	03/30/07	14:43 BR	03/30/07	AQ	Ground Water	MW-6D
J57403-10	03/30/07	14:48 BR	03/30/07	AQ	Ground Water	MW-25D

QUALITATIVE
DATA USABILITY REPORT
Soil Vapor Sampling
LCP Superfund Site

SDG No.: J63094 and J63222

Laboratory: Accutest Laboratories, Dayton, New Jersey

Site: LCP Superfund Site, Linden, New Jersey

Date: July 25, 2007

Data Reviewed by: Gregory Cole, Brown and Caldwell

A Qualitative Data Usability Review was performed on all analytical data from SDGs J63094, and J63222. The following table outlines the samples and analytical methods reviewed;

Sample	Analysis	Method
SV-8	Volatile Organic Compounds (VOC)	TO-15
SV-9	Volatile Organic Compounds (VOC)	TO-15
SV-10	Volatile Organic Compounds (VOC)	TO-15
SV-12	Volatile Organic Compounds (VOC)	TO-15
SV-13	Volatile Organic Compounds (VOC)	TO-15
DUP060707	Volatile Organic Compounds (VOC)	TO-15
TB060707	Volatile Organic Compounds (VOC)	TO-15
SV-1	Volatile Organic Compounds (VOC)	TO-15
SV-2	Volatile Organic Compounds (VOC)	TO-15
SV-3	Volatile Organic Compounds (VOC)	TO-15
SV-4	Volatile Organic Compounds (VOC)	TO-15
SV-5	Volatile Organic Compounds (VOC)	TO-15
AA2-060707	Volatile Organic Compounds (VOC)	TO-15
AA1-060707	Volatile Organic Compounds (VOC)	TO-15

This review was performed based on the requirements provided in the project Quality Assurance Project Plan, the USEPA Region II validation SOPs, and on guidance provided in the Contract Laboratory Program National Functional Guidelines for Organic and Inorganic Data Review, 2004.

The review included the parameters listed below.

- Sample Documentation
- Sample Holding Times
- Laboratory and Field Blank Review
- Surrogate Recovery Review
- MS/MSD Recovery and Precision
- Field/Laboratory Duplicate Review
- Laboratory Control Sample (LCS) Review
- Sample Quantitation

DESCRIPTION OF QUALITATIVE REVIEW

Summary Evaluation of Data and Potential Usability Issues

Overall, the data is acceptable for the intended purposes. No results were rejected. Data quality issues with respect to field duplicate precision and results exceeding the calibration range were identified requiring qualification of some data.

Sample Documentation

Provided laboratory reports included all the necessary information to perform the described data review except the following:

- Detection limits were not provided in the hardcopy lab report. The lab report provides the reporting limit only. However, results detected at concentrations between the detection limit and the reporting limit are reported as estimated values The detection limits were provided as part of the electronic deliverable and have been loaded into the project database. Results reported as not detected can be considered to be less than the detection limit

Sample Holding Times

Each sample was prepared and analyzed within the specified holding time for each analysis

Laboratory and Field Blank Review

All compounds were reported as not detected in the laboratory and field blanks

Surrogate Recovery Data

Each of the surrogate recoveries were within the guidance limits.

MS/MSD Review

Matrix spikes were not performed on any Site samples.

Field/Laboratory Duplicate Review

One field duplicates was collected and analyzed for the same parameters as the associated parent samples. DUP060707 is a field duplicate for SV-10. In general, duplicate precision was poor. This is likely due to the inherent difficulties in collecting high volumes of soil vapor. Soil vapor becomes diluted as the sample volume collected increases. Therefore, reported results may be biased low. The field duplicate had much lower concentrations than the parent sample indicating that it was collected after the parent sample. The following analytes have been qualified as estimated due to field duplicate imprecision.

Constituent	**Parent amt. (ppbv)**	**Duplicate amt. (ppbv)**	**RPD**	**RPD Limit**	**Action**
Ethylbenzene	13.9	4.7	99	50	J
1,3,5-Trimethylbenzene	4.0	1.3	102	50	J
Toluene	91.8	35.2	89	50	J
Hexane	23.3	12.9	57	50	J

Constituent	Parent amt. (ppbv)	Duplicate amt. (ppbv)	RPD	RPD Limit	Action
Mixed Xylenes	74.1	24.3	101	50	J
Heptane	11.1	5.1	74	50	J
2,2,4-Trimethylpentane	5.5	3.1	56	50	J
1,3-Dichlorobenzene	6.3	1.5	123	50	J
4-Ethyltoluene	3.9	1.2	105	50	J
Ethanol	2360	956	85	50	J
Isopropanol	290	111	90	50	J
Chloroform	6.4	2.5	88	50	J
Benzene	16.6	7.7	80	50	J
Chloromethane	11.8	3.9	101	50	J
Tert-Butyl alcohol	7.0	2.5	95	50	J
Trichlorofluoromethane	2.1	1.2	54	50	J
2-Butanone	7.4	2.7	85	50	J
O-Xylene	16.6	5.3	103	50	J
1,2,4-Trimethylbenzene	13.9	4.3	105	50	J
M,P-Xylene	57.5	19.1	100	50	J

Laboratory Control Sample (LCS) Review

Each of the criteria is within guidance limits.

Sample Quantitation

Results for Ethanol in two samples (SV-10 and DUP060707) exceeded the calibration limit and are qualified as estimated.

The following table provides the affected samples and associated qualifications:

Sample	Constituent	amt. (ppbv)	Action
SV-10	Ethanol	2360	J
DUP060707	Ethanol	956	J

Validation Qualifiers

The following validation qualifiers may have been applied to the data, as appropriate.

- J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ = The analyte was not detected above the sample reporting limit; and the reporting limit is approximate.
- U = The analyte was tested, but was not detected above the sample reporting limit.
- R = The sample result is rejected due to serious deficiencies. The presence or absence of the analyte cannot be verified.

QUALITATIVE
DATA USABILITY REPORT
Arsenic Speciation in Biota Sampling
LCP Superfund Site

SDG No.:	90638, 90639, 90641, 90643, and 90644
Laboratory:	West Coast Analytical Service, Inc., Santa Fe Springs, California
Site:	LCP Superfund Site, Linden, New Jersey
Date:	September 11, 2007
Data Reviewed by:	Gregory Cole, Brown and Caldwell

A Qualitative Data Usability Review was performed on all analytical data from SDGs 90638, 90639, 90641, 90643, and 90644. The following table outlines the samples and analytical methods reviewed;

Sample	Analysis	Method
FC-B-2	Arsenic Speciation	SOP 7240
FC-C-1	Arsenic Speciation	SOP 7240
FC-C-2	Arsenic Speciation	SOP 7240
FC-B-1	Arsenic Speciation	SOP 7240
MC-A	Arsenic Speciation	SOP 7240
MC-A-DUP	Arsenic Speciation	SOP 7240
MC-B	Arsenic Speciation	SOP 7240
MC-C	Arsenic Speciation	SOP 7240
FC-X-2	Arsenic Speciation	SOP 7240
FC-X-1	Arsenic Speciation	SOP 7240
FC-W-1	Arsenic Speciation	SOP 7240
FC-W-2-DUP	Arsenic Speciation	SOP 7240
FC-W-2	Arsenic Speciation	SOP 7240
MC-X	Arsenic Speciation	SOP 7240
MC-W	Arsenic Speciation	SOP 7240
FC-Y-1	Arsenic Speciation	SOP 7240
FC-Y-2	Arsenic Speciation	SOP 7240
FC-Z-1	Arsenic Speciation	SOP 7240
FC-Z-2	Arsenic Speciation	SOP 7240
MC-Y	Arsenic Speciation	SOP 7240

MC-Z	Arsenic Speciation	SOP 7240
FC-D-1	Arsenic Speciation	SOP 7240
FC-D-2	Arsenic Speciation	SOP 7240
FC-E-1	Arsenic Speciation	SOP 7240
FC-E-2	Arsenic Speciation	SOP 7240
FC-F-1	Arsenic Speciation	SOP 7240
FC-F-2	Arsenic Speciation	SOP 7240
MC-D	Arsenic Speciation	SOP 7240
MC-E	Arsenic Speciation	SOP 7240
MC-F	Arsenic Speciation	SOP 7240
FC-A-1	Arsenic Speciation	SOP 7240
FC-A-2	Arsenic Speciation	SOP 7240

This review was performed based on the requirements provided in the project Quality Assurance Project Plan, the USEPA Region II validation SOPs, and on guidance provided in the Contract Laboratory Program National Functional Guidelines for Organic and Inorganic Data Review, 2004.

The review included the parameters listed below.

- Sample Documentation
- Sample Holding Times
- Laboratory and Field Blank Review
- MS/MSD Recovery and Precision
- Field/Laboratory Duplicate Review
- Laboratory Control Sample (LCS) Review
- Sample Quantitation

DESCRIPTION OF QUALITATIVE REVIEW

Summary Evaluation of Data and Potential Usability Issues

Overall, the data is acceptable for the intended purposes. No results were rejected. Data quality issues with respect to field duplicate precision were identified requiring qualification of some data.

Sample Documentation

Provided laboratory reports included all the necessary information to perform the described data review.

Sample Holding Times

Each sample was prepared and analyzed within the specified holding time for each analysis

Laboratory and Field Blank Review

All compounds were reported as not detected in the laboratory and field blanks

MS/MSD Review

Matrix spikes and matrix spike duplicates were performed on three Site samples. All recoveries were within limits.

Field/Laboratory Duplicate Review

Two field duplicates were collected and analyzed for the same parameters as the associated parent samples. MC-A-DUP is a field duplicate for MC-A and FC-W-2-DUP is a field duplicate for FC-W-2. In addition, the laboratory performed laboratory replicate analyses on

three samples. In general, duplicate precision was good. However, the RPDs for several duplicate pairs exceeded the limit and have been qualified. The following results have been qualified as estimated due to duplicate imprecision.

Sample	Constituent	Parent amt. (ug/g)	Duplicate amt. (ug/g)	RPD	RPD Limit	Action
MC-A	As+3 as As	0.088	0.037	82	50	J
MC-A	As+5 as As	0.184	0.104	56	50	J
FC-F-2	DMA as As	0.013	0.005	89	50	J

Laboratory Control Sample (LCS) Review

Each of the criteria is within guidance limits.

Sample Quantitation

Each of the criteria is within guidance limits.

Validation Qualifiers

The following validation qualifiers may have been applied to the data, as appropriate.

- J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ = The analyte was not detected above the sample reporting limit; and the reporting limit is approximate.
- U = The analyte was tested, but was not detected above the sample reporting limit.
- R = The sample result is rejected due to serious deficiencies. The presence or absence of the analyte cannot be verified.

QUALITATIVE
DATA USABILITY REPORT
Biota Sampling
LCP Superfund Site

SDG No.:	K0608003, K0608035, K0608105, K0608357, and K0608432
Laboratory:	Columbia Analytical Services, Kelso, Washington
Site:	LCP Superfund Site, Linden, New Jersey
Date:	September 11, 2007
Data Reviewed by:	Gregory Cole, Brown and Caldwell

A Qualitative Data Usability Review was performed on all analytical data from SDGs K0608003, K0608035, K0608105, K0608357, and K0608432. The following table outlines the samples and analytical methods reviewed;

Sample	Analysis	Method
FC-A-1	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
FC-A-2	Volatile Organic Compounds (VOC)	TO-15
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
FB-091806	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/E200.8/SW7470A
FC-B-2	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
FC-C-1	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
FC-C-2	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A

FC-B-1	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
MC-A	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
MC-A-DUP	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
MC-B	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
MC-C	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
FB-091906	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/E200.8/SW7470A
FC-D-1	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
FC-D-2	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
FC-E-1	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
FC-E-2	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
FC-F-1	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
FC-F-2	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
MC-D	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A

	Methyl Mercury	CAS SOP
MC-E	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
	Methyl Mercury	CAS SOP
MC-F	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
	Methyl Mercury	CAS SOP
FB092006	PCB Congeners	E1668A
	Metals	SW6010B/E200.8/SW7470A
	Methyl Mercury	CAS SOP
FC-X-2	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
	Methyl Mercury	CAS SOP
FC-X-1	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
	Methyl Mercury	CAS SOP
FC-W-1	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
	Methyl Mercury	CAS SOP
FC-W-2-DUP	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
	Methyl Mercury	CAS SOP
FC-W-2	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
	Methyl Mercury	CAS SOP
MC-X	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
	Methyl Mercury	CAS SOP
MC-W	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
	Methyl Mercury	CAS SOP
FB-092606	PCB Congeners	E1668A
	Metals	SW6010B/E200.8/SW7470A
	Methyl Mercury	CAS SOP
FC-Y-1	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
	Methyl Mercury	CAS SOP
FC-Y-2	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A

FC-Z-1	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
FC-Z-2	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
MC-Y	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
MC-Z	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/SW6020/SW7471A
FB-092706	Methyl Mercury	CAS SOP
	PCB Congeners	E1668A
	Metals	SW6010B/E200.8/SW7470A

This review was performed based on the requirements provided in the project Quality Assurance Project Plan, the USEPA Region II validation SOPs, and on guidance provided in the Contract Laboratory Program National Functional Guidelines for Organic and Inorganic Data Review, 2004.

The review included the parameters listed below.

- Sample Documentation
- Sample Holding Times
- Laboratory and Field Blank Review
- Labeled Standards Recovery Review
- MS/MSD Recovery and Precision
- Field/Laboratory Duplicate Review
- Laboratory Control Sample (LCS) Review
- Sample Quantitation

DESCRIPTION OF QUALITATIVE REVIEW

Summary Evaluation of Data and Potential Usability Issues

Overall, the data is acceptable for the intended purposes. Three PCB congener results in one sample (FC-E-2) were rejected due to extremely low labeled standard recoveries. Data quality issues with respect to labeled standard recoveries outside of limits, field duplicate precision and results exceeding the calibration range were identified requiring qualification of some data.

Sample Documentation

Provided laboratory reports included all the necessary information to perform the described data review.

Sample Holding Times

Each sample was prepared and analyzed within the specified holding time for each analysis

Laboratory and Field Blank Review

PCB congeners were detected in the laboratory and field blanks. Associated sample results were qualified as not detected with an estimated detection limit (UJ). Low levels of manganese were also detected in method blanks. However, associated sample concentrations were greater than five times the blank concentration and results were not qualified. The following analytes have been qualified due to blank contamination:

Sample ID	Analyte	Sample amt. (ng/Kg)	Blank amt. (ng/Kg)	Action
FC-A-1	3,3'-Dichlorobiphenyl	469.72	105	UJ
	3-Chlorobiphenyl	5.89	1.8	UJ
	4-Chlorobiphenyl	21.51	5.5	UJ
FC-A-2	3,3'-Dichlorobiphenyl	351.2	105	UJ

Sample ID	Analyte	Sample amt. (ng/Kg)	Blank amt. (ng/Kg)	Action
	3-Chlorobiphenyl	4.51	1.8	UJ
	4-Chlorobiphenyl	19.03	5.5	UJ
FC-B-2	2,2'-Dichlorobiphenyl	35.67	9.41	UJ
	3,3'-Dichlorobiphenyl	355.43	100.2	UJ
	2-Chlorobiphenyl	9.85	3.88	UJ
	4-Chlorobiphenyl	10.22	5.43	UJ
FC-C-2	3,3'-Dichlorobiphenyl	373.03	100.2	UJ
	2-Chlorobiphenyl	9.45	3.88	UJ
	4-Chlorobiphenyl	10.12	5.43	UJ
FC-B-1	3,3'-Dichlorobiphenyl	370.72	100.2	UJ
	2-Chlorobiphenyl	12.41	3.88	UJ
	4-Chlorobiphenyl	11.37	5.43	UJ
MC-A	3,3'-Dichlorobiphenyl	156.78	100.2	UJ
	4-Chlorobiphenyl	19.66	5.43	UJ
MC-A-DUP	3,3'-Dichlorobiphenyl	168.4	100.2	UJ
	4-Chlorobiphenyl	16.81	5.43	UJ
MC-B	3,3'-Dichlorobiphenyl	155.35	100.2	UJ
MC-C	3,3'-Dichlorobiphenyl	135.64	100.2	UJ
	2-Chlorobiphenyl	14.72	3.88	UJ
	4-Chlorobiphenyl	5.26	5.43	UJ
MC-D	3,3'-Dichlorobiphenyl	181.04	100.2	UJ
MC-E	3,3'-Dichlorobiphenyl	289.11	100.2	UJ
MC-F	3,3'-Dichlorobiphenyl	134.66	100.2	UJ
FC-X-2	4-Chlorobiphenyl	7.16	1.55	UJ
FC-X-1	2-Chlorobiphenyl	6.02	1.42	UJ
	4-Chlorobiphenyl	5.23	1.55	UJ
FC-W-1	2-Chlorobiphenyl	5.87	1.42	UJ
	4-Chlorobiphenyl	4.22	1.55	UJ
FC-W-2-DUP	2-Chlorobiphenyl	5.89	1.42	UJ
	4-Chlorobiphenyl	5.5	1.55	UJ
	2,2',6-Trichlorobiphenyl	5.62	1.5	UJ

Sample ID	Analyte	Sample amt. (ng/Kg)	Blank amt. (ng/Kg)	Action
MC-X	4-Chlorobiphenyl	7.06	1.55	UJ
MC-W	4-Chlorobiphenyl	7.45	1.55	UJ
FC-Y-1	2-Chlorobiphenyl	5.88	1.42	UJ
	4-Chlorobiphenyl	4.97	1.55	UJ
	2,2',6-Trichlorobiphenyl	5.68	1.5	UJ
FC-Y-2	2-Chlorobiphenyl	5.63	1.42	UJ
	4-Chlorobiphenyl	5.34	1.55	UJ
FC-Z-1	2-Chlorobiphenyl	5.74	1.42	UJ
	4-Chlorobiphenyl	5.11	1.55	UJ
FC-Z-2	2-Chlorobiphenyl	6.64	1.42	UJ
MC-Y	4-Chlorobiphenyl	5.91	1.55	UJ
MC-Z	4-Chlorobiphenyl	5.79	1.55	UJ

Labeled Standards Recovery Data

Labeled Standards were added to the samples for PCB congener analysis. Recovery limits for labeled standards are 15-150 percent recovery. Results associated with recoveries outside limits were qualified as shown below.

Sample ID	Analyte	Spike recovery. (%)	Sample amt. (ng/Kg)	Action
FC-A-1	Decachlorobiphenyl	199	1241	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	341	440.22	J
	2,3',4,4',5-Pentachlorobiphenyl	156	11834.16	J
	2,3,3',4,4',5-Hexachlorobiphenyl	153	1112.24	J
	2,2'3,3',4,5,5',6,6'-Nonachlorobiphenyl	170	241.64	J
FC-A-2	Decachlorobiphenyl	198	1842.03	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	341	700.21	J
	2,3,3',4,4',5,5'-Heptachlorobiphenyl	164	127.79	J
	2,2'3,3',4,5,5',6,6'-Nonachlorobiphenyl	165	334.54	J
FC-B-2	Decachlorobiphenyl	194	632.84	J

Sample ID	Analyte	Spike recovery. (%)	Sample amt. (ng/Kg)	Action
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	325	385.3	J
	2,3,3',4,4',5,5'-Heptachlorobiphenyl	159	53.55	J
	2,2'3,3',4,5,5',6,6'-Nonachlorobiphenyl	359	213.99	J
FC-C-1	Decachlorobiphenyl	485	1576.64	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	651	1205.11	J
	2,3,3',4,4',5,5'-Heptachlorobiphenyl	352	211.38	J
	2,2'3,3',4,4',5,5',6-Nonachlorobiphenyl	384	1468.33	J
	2,2'3,3',4,5,5',6,6'-Nonachlorobiphenyl	700	784.43	J
FC-C-2	Decachlorobiphenyl	193	463.64	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	316	317.27	J
	2,3',4,4',5-Pentachlorobiphenyl	165	4500	J
	2,3,3',4,4',5-Hexachlorobiphenyl	163	571.96	J
	2,2'3,3',4,4',5,5',6-Nonachlorobiphenyl	151	379.23	J
	2,3',4,4',5,5'-Hexachlorobiphenyl	157	302.43	J
	2,2'3,3',4,5,5',6,6'-Nonachlorobiphenyl	153	179.78	J
FC-B-1	Decachlorobiphenyl	219	795.02	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	432	274.92	J
	2,3',4,4',5-Pentachlorobiphenyl	151	4817.21	J
	2,3,3',4,4',5,5'-Heptachlorobiphenyl	205	32.09	J
	2,2'3,3',4,4',5,5',6-Nonachlorobiphenyl	175	370.31	J
	2,2'3,3',4,5,5',6,6'-Nonachlorobiphenyl	196	158.7	J
MC-A	Decachlorobiphenyl	195	644.28	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	374	514.64	J
	2,3',4,4',5-Pentachlorobiphenyl	152	14418.6	J
	2,3,3',4,4',5,5'-Heptachlorobiphenyl	181	94.97	J
	2,2'3,3',4,5,5',6,6'-Nonachlorobiphenyl	167	199.2	J
	2,2',3,4,5,6,6'-Heptachlorobiphenyl	446	194.06	J
MC-A-DUP	Decachlorobiphenyl	195	590.11	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	342	460.6	J
	2,2'3,3',4,5,5',6,6'-Nonachlorobiphenyl	153	214.16	J

Sample ID	Analyte	Spike recovery. (%)	Sample amt. (ng/Kg)	Action
MC-C	Decachlorobiphenyl	161	184.96	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	224	185.3	J
FC-D-1	Decachlorobiphenyl	208	473.7	J
	2-Chlorobiphenyl	38	10.49	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	345	310.15	J
	2,3',4,4',5-Pentachlorobiphenyl	152	5450.77	J
	2,3,3',4,4',5-Hexachlorobiphenyl	160	607.15	J
	2,2'3,3',4,4',5,5',6-Nonachlorobiphenyl	160	342.69	J
	2,2'3,3',4,5,5',6,6'-Nonachlorobiphenyl	170	169.97	J
FC-D-2	Decachlorobiphenyl	262	850.56	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	309	497.66	J
	2',3,4,4',5-Pentachlorobiphenyl	186	7104.82	J
	2,3,3',4,4',5-Hexachlorobiphenyl	155	897.21	J
	2,3,3',4,4',5,5'-Heptachlorobiphenyl	175	64.5	J
	2,2'3,3',4,4',5,5',6-Nonachlorobiphenyl	198	646.03	J
	2,3',4,4',5,5'-Hexachlorobiphenyl	155	512.13	J
	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	193	310.52	J
FC-E-1	Decachlorobiphenyl	222	400.57	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	207	258.32	J
	2,3,3',4,4',5,5'-Heptachlorobiphenyl	163	25.53	J
	2,2'3,3',4,4',5,5',6-Nonachlorobiphenyl	170	754.95	J
	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	154	196.39	J
FC-E-2	2,2'-Dichlorobiphenyl	2	<108.76	UR
	Decachlorobiphenyl	214	423	J
	2-Chlorobiphenyl	0	<62.65	UR
	4-Chlorobiphenyl	2	<43.506	UR
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	268	649.45	J
	2,2',6-Trichlorobiphenyl	11	17.59	J
	2,3,3',4,4',5,5'-Heptachlorobiphenyl	162	61.36	J
	2,2'3,3',4,4',5,5',6-Nonachlorobiphenyl	152	777.07	J

Sample ID	Analyte	Spike recovery. (%)	Sample amt. (ng/Kg)	Action
	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	182	329.07	J
FC-F-1	Decachlorobiphenyl	173	255.2	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	156	317.07	J
	2',3,4,4',5-Pentachlorobiphenyl	166	7201.5	J
	2,3,3',4,4',5-Hexachlorobiphenyl	155	735.02	J
FC-F-2	Decachlorobiphenyl	154	1157.25	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	164	1128.11	J
MC-D	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	249	585.38	J
MC-E	Decachlorobiphenyl	731	992.93	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	1034	1022.43	J
	2,3',4,4',5-Pentachlorobiphenyl	177	16912.46	J
	2,3,3',4,4'-Pentachlorobiphenyl	156	6365.3	J
	2,3,3',4,4',5-Hexachlorobiphenyl	180	2026.27	J
	2,3,3',4,4',5,5'-Heptachlorobiphenyl	468	<106.48	UJ
	2,2'3,3',4,4',5,5',6-Nonachlorobiphenyl	583	1779.14	J
	2,3',4,4',5,5'-Hexachlorobiphenyl	172	1021.28	J
	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	402	691.43	J
	2',3,4,4',5-Pentachlorobiphenyl	197	<106.48	UJ
	2,2',3,4,5,6,6'-Heptachlorobiphenyl	1278	<212.96	UJ
	2,3,3',4,4',5,5',6,-Octachlorobiphenyl	2	413007.1	J
MC-F	Decachlorobiphenyl	174	409.73	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	308	446.3	J
	2,3,3',4,4',5,5'-Heptachlorobiphenyl	151	<104.86	UJ
	2,2',3,4,5,6,6'-Heptachlorobiphenyl	352	<209.73	UJ
FC-X-2	2,2'-Dichlorobiphenyl	23	30.09	J
	Decachlorobiphenyl	168	379.37	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	236	275.8	J
	2,3,3',4,4',5,5'-Heptachlorobiphenyl	152	13.94	J
	2,2',3,4,5,6,6'-Heptachlorobiphenyl	289	<238.6	UJ
FC-X-1	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	286	354.91	J

Sample ID	Analyte	Spike recovery. (%)	Sample amt. (ng/Kg)	Action
	2,3',4,4',5-Pentachlorobiphenyl	152	2675.68	J
	2,3,3',4,4',5-Hexachlorobiphenyl	154	421	J
	2,3,3',4,4',5,5'-Heptachlorobiphenyl	152	53.26	J
	2,2'3,3',4,4',5,5',6-Nonachlorobiphenyl	163	555.72	J
	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	151	288.98	J
	2',3,4,4',5-Pentachlorobiphenyl	172	<88.463	UJ
	2,2',3,4,5,6,6'-Heptachlorobiphenyl	354	<176.92	UJ
FC-W-1	Decachlorobiphenyl	189	341.92	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	254	209.3	J
	2,3,3',4,4',5-Hexachlorobiphenyl	156	214.41	J
	2',3,4,4',5-Pentachlorobiphenyl	188	<111.3	UJ
	2,2',3,4,5,6,6'-Heptachlorobiphenyl	319	<222.61	UJ
FC-W-2-DUP	Decachlorobiphenyl	166	540.16	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	231	632.41	J
	2',3,4,4',5-Pentachlorobiphenyl	169	<118.99	UJ
	2,2',3,4,5,6,6'-Heptachlorobiphenyl	288	<237.98	UJ
FC-W-2	Decachlorobiphenyl	159	413.24	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	176	391.46	J
	2,2',3,4',5,6,6'-Heptachlorobiphenyl	202	<104.8	UJ
MC-X	Decachlorobiphenyl	337	685.8	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	559	831.8	J
	2,3',4,4',5-Pentachlorobiphenyl	158	10431.63	J
	2,3,3',4,4',5-Hexachlorobiphenyl	158	1372.98	J
	2,3,3',4,4',5,5'-Heptachlorobiphenyl	262	<99.938	UJ
	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	254	913.82	J
	2,3',4,4',5,5'-Hexachlorobiphenyl	154	806.88	J
	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	256	475.05	J
	2',3,4,4',5-Pentachlorobiphenyl	188	<99.938	UJ
	2,3,4,4',5-Pentachlorobiphenyl	160	227.37	J
	2,3,3',4,4',5,5',6-Octachlorobiphenyl	14	<199.87	UJ

Sample ID	Analyte	Spike recovery. (%)	Sample amt. (ng/Kg)	Action
	2,2',3,4',5,6,6'-Heptachlorobiphenyl	711	<99.938	UJ
MC-W	Decachlorobiphenyl	6	21130.6	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	305	771.25	J
	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	154	924.02	J
	2',3,4,4',5-Pentachlorobiphenyl	172	<116.13	UJ
	2,2',3,4',5,6,6'-Heptachlorobiphenyl	376	<116.13	UJ
FC-Y-1	Decachlorobiphenyl	205	587.29	
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	336	345.29	
	2,3,3',4,4',5,5'-Heptachlorobiphenyl	156	<105.05	UJ
	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	158	521.41	J
	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	153	273.53	J
	3,3',4,4',5-Pentachlorobiphenyl	190	<105.05	UJ
	2,2',3,4',5,6,6'-Heptachlorobiphenyl	407	<105.05	UJ
FC-Y-2	Decachlorobiphenyl	210	631.84	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	322	3953.92	J
	2,3',4,4',5-Pentachlorobiphenyl	152	2899.62	J
	2,3,3',4,4',5-Hexachlorobiphenyl	157	392.94	J
	2,3,3',4,4',5,5'-Heptachlorobiphenyl	156	42.71	J
	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	155	619.1	J
	2,3',4,4',5,5'-Hexachlorobiphenyl	155	243.1	J
	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	155	307.04	J
	2',3,4,4',5-Pentachlorobiphenyl	174	<109.23	UJ
	2,3,4,4',5-Pentachlorobiphenyl	152	27.73	J
	2,2',3,4',5,6,6'-Heptachlorobiphenyl	384	<109.23	UJ
FC-Z-1	Decachlorobiphenyl	218	880.83	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	303	593.64	J
	2,3',4,4',5-Pentachlorobiphenyl	151	4425.23	J
	2,3,3',4,4',5-Hexachlorobiphenyl	174	610.94	J
	2,3,3',4,4',5,5'-Heptachlorobiphenyl	170	27.07	J
	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	155	992.19	J

Sample ID	Analyte	Spike recovery. (%)	Sample amt. (ng/Kg)	Action
	2,3',4,4',5,5'-Hexachlorobiphenyl	169	370.06	J
	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	159	449.46	J
	2',3,4,4',5-Pentachlorobiphenyl	192	211.98	J
	2,3,4,4',5-Pentachlorobiphenyl	160	<112.51	UJ
	2,2',3,4',5,6,6'-Heptachlorobiphenyl	361	<112.51	UJ
FC-Z-2	Decachlorobiphenyl	168	777.54	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	182	460.35	J
	2,3,3',4,4',5-Hexachlorobiphenyl	167	446.2	J
	2,3',4,4',5,5'-Hexachlorobiphenyl	163	274.12	J
	2',3,4,4',5-Pentachlorobiphenyl	175	<103.62	UJ
	2,2',3,4',5,6,6'-Heptachlorobiphenyl	210	<103.62	UJ
MC-Y	Decachlorobiphenyl	221	575.44	J
	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	340	771.2	J
	2,3,3',4,4',5-Hexachlorobiphenyl	166	1270.19	J
	2,3,3',4,4',5,5'-Heptachlorobiphenyl	176	<109.7	UJ
	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	163	897.94	J
	2,3',4,4',5,5'-Hexachlorobiphenyl	157	731.45	J
	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	166	433.91	J
	2',3,4,4',5-Pentachlorobiphenyl	175	<109.7	UJ
	2,2',3,4',5,6,6'-Heptachlorobiphenyl	392	<109.7	UJ
MC-Z	2,2'3,3',5,5',6,6'-Octachlorobiphenyl	192	983.7	J
	2,3',4,4',5-Pentachlorobiphenyl	164	12650.88	J
	2,3,3',4,4',5-Hexachlorobiphenyl	180	1425.66	J
	2,3',4,4',5,5'-Hexachlorobiphenyl	168	722.54	J
	2,2',3,4',5,6,6'-Heptachlorobiphenyl	228	<112.48	UJ

MS/MSD Review

Matrix spikes and matrix spike duplicates were performed on three Site samples (FC-C-1, MC-B, and MC-X). Many recoveries were outside of acceptance limits. This is likely due to the

matrix interferences inherent in tissue samples. Results associated with recoveries outside limits were qualified as shown below.

Sample ID	Analyte	Spike recovery. (%)	Sample amt. (ng/Kg)	Action
FC-C-1	2,2'-Dichlorobiphenyl	-51	369.05	J
	3,3',4,4'-Tetrachlorobiphenyl	-58	671.61	J
	3,4,4'-Trichlorobiphenyl	22	550.22	J
	2,3,3',4,4',5,5'-Heptachlorobiphenyl	21	211.38	J
	2,2'3,3',4,5,5',6,6'-Nonachlorobiphenyl	-171	784.43	J
	3,3',4,4',5-Pentachlorobiphenyl	26	212.45	J
	2,3,3',4,4',5,5'6-Octachlorobiphenyl	42	263.32	J
	2,3,3',4,4',5,5'6-Octachlorobiphenyl	27	0	UJ
	Zinc	140	145	J
MC-B	Zinc	134	175	J
MC-X	2,2'-Dichlorobiphenyl	153	213.38	J
	Decachlorobiphenyl	161	685.8	J
	2,2',3,3',5,5',6,6'-Octachlorobiphenyl	176	831.8	J
	2,2'3,3',4,5,5',6,6'-Nonachlorobiphenyl	151	475.05	J

Field/Laboratory Duplicate Review

Two field duplicates were collected and analyzed for the same parameters as the associated parent samples. MC-A-DUP is a field duplicate for MC-A. FC-W-2-DUP is a field duplicate for FC-W-2. Laboratory replicates were also performed. In general, duplicate precision was fair. The following analytes have been qualified as estimated due to field duplicate imprecision.

Sample	Constituent	Parent amt. (ppbv)	Duplicate amt. (ppbv)	RPD	RPD Limit	Action
MC-A	2,3,3',4',6-Pentachlorobiphenyl	17155.71	9370.8	59	50	J
	2,3',6-Trichlorobiphenyl	98.89	<42.598	80	50	J
	2,3,3',4'-Tetrachlorobiphenyl	675.41	<42.598	176	50	J

Sample	Constituent	Parent amt. (ppbv)	Duplicate amt. (ppbv)	RPD	RPD Limit	Action
	2,2'3,3',4,4',5,6'-Octachlorobiphenyl	909.43	318.99	96	50	J
	2,2',3,4-Tetrachlorobiphenyl	2661.14	<106.49	184	50	J
	2,2',3,3',6-Pentachlorobiphenyl	826.33	453.23	58	50	J
	2,2',3,3',4-Pentachlorobiphenyl	463.14	<106.49	125	50	J
	2,2',3,4,5,5'-Hexachlorobiphenyl	1804.33	<42.598	190	50	J
	2,2',3,4,5-Pentachlorobiphenyl	4686.81	1575.9	99	50	J
	2,3',4,5',6-Pentachlorobiphenyl	304.11	170.17	56	50	J
	2,2',3,4,5',6-Hexachlorobiphenyl	379.17	70.38	137	50	J
	2,3,3',5-Tetrachlorobiphenyl	355.86	<106.49	107	50	J
	2,3,3',4,5-Pentachlorobiphenyl	2040.45	<106.49	180	50	J
	2,3,3',6-Tetrachlorobiphenyl	563.64	<42.598	171	50	J
	2,3,4,4',5-Pentachlorobiphenyl	237.04	<106.49	76	50	J
	2,3,3',4',5',6-Hexachlorobiphenyl	<97.031	646.3	147	50	J
FC-W-2	3,4-Dichlorobiphenyl	29.74	10.45	95	50	J
	2,3',4,4'-Tetrachlorobiphenyl	1678.25	9927.29	142	50	J
	2,3',4',5-Tetrachlorobiphenyl	2940.09	16090.41	138	50	J
	2,3,4,4'-Tetrachlorobiphenyl	286.53	1652.18	140	50	J
	2,2'3,3',4,4',6,6'-Octachlorobiphenyl	137.3	353.7	88	50	J
	2,2',3,4,4',5-Hexachlorobiphenyl	479.61	<237.98	67	50	J
	2,2',3,3',6,6'-Hexachlorobiphenyl	171.25	571.47	107	50	J
	2,2',3,3',4,5,6'-Heptachlorobiphenyl	2817.73	5096.59	57	50	J
	3,4,4'-Trichlorobiphenyl	214.73	<118.99	57	50	J
	2,2'3,3',4,5',6,6'-Octachlorobiphenyl	238.96	485.17	68	50	J
	2,3',5,5'-Tetrachlorobiphenyl	34.72	133.25	117	50	J
	2,2',3,4',5,5'-Hexachlorobiphenyl	<104.8	962.15	160	50	J
	2,3,4',6-Tetrachlorobiphenyl	1277.83	<47.596	185	50	J
	2,2',3,4-Tetrachlorobiphenyl	659.72	<188.99	110	50	J
	2,2',3,3',5,6,6'-Heptachlorobiphenyl	521.77	1024.95	65	50	J
	2,2',3,3',4,5'-Hexachlorobiphenyl	170.12	74.69	77	50	J
	2,2',3,4,4',5',6-Heptachlorobiphenyl	507.17	1743.37	109	50	J

Sample	Constituent	Parent amt. (ppbv)	Duplicate amt. (ppbv)	RPD	RPD Limit	Action
	2,2',3,3',5,6'-Hexachlorobiphenyl	1141.06	3606.28	103	50	J
	2,2',3,4,4'-Pentachlorobiphenyl	691.38	1300.33	61	50	J
	2,2',3,4,5',6-Hexachlorobiphenyl	141.53	1711.96	169	50	J
	2,2',4,5-Tetrachlorobiphenyl	357.15	851.31	81	50	J
	2,3,3',4,5-Pentachlorobiphenyl	<104.8	727.01	149	50	J
	2,3',4,5-Tetrachlorobiphenyl	63.99	158.38	85	50	J
	2,3,3',4',5',6-Hexachlorobiphenyl	<104.8	1552.22	175	50	J
	2,3,3',5,5',6-Hexachlorobiphenyl	969.7	<237.98	121	50	J

Laboratory Control Sample (LCS) Review

Each of the criteria is within guidance limits.

Sample Quantitation

Results for four PCB congeners in two samples (MC-X and MC-W) exceeded the calibration limit and are qualified as estimated.

The following table provides the affected samples and associated qualifications:

Sample	Constituent	amt. (ng/Kg)	Action
MC-X	2,3',4,4',5-Pentachlorobiphenyl	10431.63	J
	2,2',3,5',6-Pentachlorobiphenyl	8181.67	J
MC-W	Decachlorobiphenyl	21130.6	J
	2,3',4,4',5-Pentachlorobiphenyl	9516.31	J

Validation Qualifiers

The following validation qualifiers may have been applied to the data, as appropriate.

- J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ = The analyte was not detected above the sample reporting limit; and the reporting limit is approximate.
- U = The analyte was tested, but was not detected above the sample reporting limit.
- R = The sample result is rejected due to serious deficiencies. The presence or absence of the analyte cannot be verified.

QUALITATIVE
DATA USABILITY REPORT
Gaseous Mercury Sampling
LCP Superfund Site

SDG No.: 0607133

Laboratory: Frontier Geosciences, Inc., Seattle, Washington

Site: LCP Superfund Site, Linden, New Jersey

Date: September 11, 2007

Data Reviewed by: Gregory Cole, Brown and Caldwell

A Qualitative Data Usability Review was performed on all analytical data from SDG 0607133. The following table outlines the samples and analytical methods reviewed;

Sample	Analysis	Method
IO5-1	Total Gaseous Mercury (TGM)	IO-5
IO5-2	Total Gaseous Mercury (TGM)	IO-5
IO5-3	Total Gaseous Mercury (TGM)	IO-5
IO5-5	Total Gaseous Mercury (TGM)	IO-5
IO5-6	Total Gaseous Mercury (TGM)	IO-5

This review was performed based on the requirements provided in the project Quality Assurance Project Plan, the USEPA Region II validation SOPs, and on guidance provided in the Contract Laboratory Program National Functional Guidelines for Organic and Inorganic Data Review, 2004.

The review included the parameters listed below.

- Sample Documentation
- Sample Holding Times
- Laboratory and Field Blank Review
- Field/Laboratory Duplicate Review

- Laboratory Control Sample (LCS) Review
- Sample Quantitation

DESCRIPTION OF QUALITATIVE REVIEW

Summary Evaluation of Data and Potential Usability Issues

No results were rejected. Data quality issues with respect to exceeding holding times and high mercury breakthrough were identified requiring qualification of all results. The data user should determine if the data is acceptable for the intended purposes.

Sample Documentation

Provided laboratory reports included all the necessary information to perform the described data review.

Sample Holding Times

All samples were prepared past the recommended seven day holding time. Results have been qualified as estimated (J/UJ).

Laboratory and Field Blank Review

Mercury was reported as not detected in the laboratory and field blanks

Field/Laboratory Duplicate Review

No field duplicates were submitted for analysis. Laboratory replicates are not applicable to the method.

Laboratory Control Sample (LCS) Review

Each of the criteria is within guidance limits.

Sample Quantitation

Sample breakthrough in the second trap was observed for sample IO5-3. The mercury result was qualified as estimated (J) with a possible low bias.

The following table provides the affected samples and associated qualifications:

Sample	Constituent	amt. (ppbv)	Action
IO5-3	Mercury	1.04	J

Validation Qualifiers

The following validation qualifiers may have been applied to the data, as appropriate.

- J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ = The analyte was not detected above the sample reporting limit; and the reporting limit is approximate.
- U = The analyte was tested, but was not detected above the sample reporting limit.
- R = The sample result is rejected due to serious deficiencies. The presence or absence of the analyte cannot be verified.

APPENDIX E

Environmental Database (CD-ROM)

ID	AnalysisTypeDesc
DL	Dilution of original sample
DL2	Second dilution of original sample
DL3	Third dilution of original sample
RE	Reanalysis/re-extraction of sample
RE2	Second reanalysis/re-extraction of sample
RE3	Third reanalysis/re-extraction of sample
RE4	Fourth reanalysis/re-extraction of sample
RE5	Fifth reanalysis/re-extraction of sample
RES	The initial or original sample result.
RES/TCLP	The initial or original result following a TCLP extraction

AnalyteType

ID	AnalyteTypeDesc
SPK	Spiked Analyte
SURR	Surrogate
TRG	Target Compound
IS	Internal Standard
TIC	Tentatively Identified Compound

ID	AnaMethodDesc
0090	CESIUM-137
1631	MERCURY
40CFRB	40 CFR Part 50, Chapter I, Appendix B
40CFRJ	40 CFR Part 50, Chapter I, Appendix J
60	SURVIVAL BIOASSAY
A203	Calcium Carbonate Saturation
A205	Specific Conductivity
A209A	Total Solids Dried at 103-105 C
A209B	Total Dissolved Solids Dried at 180 C
A209C	Total Suspended Solids, Dried at 103-105 C
A209F	Total, Fixed, and Volatile Solids in Solid and Semisolid Sam
A2320	Alkalinity
A2320B	Alkalinity
A2340	Hardness By Calculation
A2340B	Hardness By Calculation
A2340C	Hardness By Calculation
A2340D	SM 2450 D
A2510B	Conductance, Laboratory Method.
A2520B	Salinity, Electrical Conductivity Method.
A2540C	Total Dissolved Solids, Dried at 180'C.
A2540D	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 'C
A2540G	Total, Fixed, and Volatile Solids in Solid and Semi-Solid Sa
A2580A	OXIDATION REDUCTION POTENTIAL MEASUREMENT IN CLEAN WATER
A2580B	OXIDATION REDUCTION POTENTIAL MEASUREMENT IN CLEAN WATER
A2710F	Specific Gravity
A2720C	Sludge Digester Gas GC/TCD Method For CH4, CO2, N, H, H2S, O
A303A	Metals (By Direct Aspiration into an Air-Acetylene Flame)
A303C	Determination of AL,* BA, BE, *MO, OS, RE, SI, TH, TI & V by
A303E	Determ. of As & Se by Conversion to their Hydrides by Sodium
A3111B	Metals by Flame Atomic Absorption Spectrometry, Direct Air-A
A3113B	Metals by Electrothermal Atomic Absorption Spectrometry, Ele
A312B	Chromium, Hexavalent (Colorimetric Method)
A314A	Hardness by Calculation
A315B	PHENANTHROLINE METHOD
A3500D	Standard Methods for the Determination of Metals
A3500M	FORMALDEHYDE
A403	Alkalinity
A405	Bromide
A406B	Titrimetric Method For Free Carbon Dioxide
A407A	Chloride (Argentometric)
A407B	Chloride (Mercuric Nitrate Method)
A412D	Total Cyanide Colorimetric Method
A412E	Cyanide, By Ion Selection Electrode
A412F	Cyanide, Amenable to Chlorination
A413B	Fluoride, Electrode Method
A413C	Fluoride (Spadns)
A417C	Nitrogen (Ammonia) Phenate Method
A417G	Amonia
A418B	Nitrate Electrode Screening Method
A418C	Nitrogen (Nitrate) Cadmium Reduction Method
A418F	Nitrogen (Nitrate, Automated Cadmium Reduction Method)
A419	Nitrogen (Nitrite)

ID	AnaMethodDesc
A423	pH Value
A424G	Phosphate (Ascorbic Acid Reduction)
A425C	Silica, Molybdosilicate Method
A426C	Sulfate Turbidimeric Method
A426D	Sulfate (Automated Methylthymol Blue Method)
A429	Anions by Ion Chromatography
A4500B	The Determination of Inorganic Non-Metallic Constituents
A4500C	The Determination of Inorganic Non-Metallic Constituents
A4500D	The Determination of Inorganic Non-Metalic Constituents.
A4500E	ASCORBIC ACID METHOD
A4500F	Standard Methods A4500F
A4500G	The Determination of Inorganic Non-Metallic Constituents
A4500H	THE DETERMINATION OF INORGANIC NON-METALIC CONSTITUENTS
A503A	Oil And Grease, Partition - Gravimetric Method
A503D	Oil and Grease in Soil and Sludge Samples
A503DE	Oil and Grease in Soil and Sludge with Silica Gel Hydrocarbo
A506	Total Organic Halides (TOX)
A507	Oxygen Demand (Biochemical)
A508A	Chemical Oxygen Demand (COD)
A508B	Chemical Oxygen Demand (Closed Reflux, Titrimetric)
A509A	Organochlorine Pesticides
A509B	Chlorinated Phenoxy Herbicides
A510B	Phenols, Chloroform Extraction Method
A5310B	Standard Method for the Determination of Total Organic Carbo
A5520	Oil And Grease
A5520C	SM5520C-Partition-IR Oil and Grease Determination
A703	Gross Alpha-Gross Beta
A704	Total Radioactive Strontium And Strontium 90 In Water
A705	Total Radium
A706	Radium-226 By Radon In Water (Soluble, Suspended, And Total)
A707	Radium-228 (Soluble) (Tentative)
A708	Tritium
A709	Radioactive Cesium
A710A	Radioactive Iodine, Precipitation Method
A711	Uranium
A711A	Uranium Radiochemical (Tentative)
A907A	Total Bacteria (Pour Plate Method)
A907B	Total Bacteria (Spread Plate Method)
A907C	Total Bacteria (Membrane Filter Method)
A908C	Fecal Coliform, MPN Procedure
A909A	Standard Total Coliform, Membrane Filter Technique
A918A	Iron Bacteria
A9215B	Heterotrophic Plate Count, Pour Plate Method
A9215C	Heterotrophic Plate Count - Spread Plate Method
A9221E	Multiple Tube Fermentation Techinique for Total and Fecal Co
A9222B	MEMBRANE FILTER TECHNIQUE FOR MEMBERS OF THE COLIFORM GROUP
A9222D	FECAL COLIFORM: MEMBRANE FILTER PROCEDURE
ABP	Acid Base Potential by Method Sobek Modified
AK101	Gasoline Range Organics, Alaska Dept. of Environmental Conse
AK102	Diesel Range Organics, Alaska Dept. of Environmental Conserv
AK103	Residual Range Organics, Alaska Dept. of Environmental Conse
AM19GA	DISSOLVED GASES IN WATER, BUBBLE STRIPPER/HEADSPACE, FID, TC

ID	AnaMethodDesc
AOAC931.0	AOAC method 931.0 for Formaldehyde
APIRPC	API RP-40 Recommended Practice for Core Analysis, Bulk Densi
AS9302	Bulk Density
ASA245	Phophorus Soluble in Dilute-Acid-Fluoride ASA 24-5.1, Availa
AVS	EPA Draft Method for the Determination of Acid Volatile Sulf
BIOSS	OIL DEGRADERS/SHEEN SCREEN
BNASIM	GC/MS-SIM Analysis of Selected BNA's from SW8270.
BS1377	Bulk Density (Water Displacement), Manual of Soil Laboratory
C-01 M	CARBON-14
C14_1	CARBON-14
C200.7	ICP Metals (TCL)
C204.2	Antimony (TCL)
C206.2	Arsenic (TCL)
C213.2	Cadmium (AA, Furnace Technique) (TCL)
C239.2	Lead (Furnace Technique) (TCL)
C245.1	Mercury (TCL)
C245.2	Mercury, Automated Cold Vapor (TCL)
C245.5	Mercury Analysis in Soil/Sediment by Manual Cold Vapor Techn
C258.1	Potassium (AA, Furnace Technique) (TCL)
C270.2	Selenium (TCL)
C273.1	Sodium (AA, Furnace Technique) (TCL)
C279.2	Thallium (TCL)
C335.2	Cyanide (TCL)
CAAIR	Air Sample Analyses
CACARB	The Determination of Volatile Sulfur Compounds in Air by GC/
CALC	Calculated Analytical Parameter
CAPBO	Determination of Organic Lead DHS Method
CARBV	CARB Method for BTEX in Ambient Air by GC/PID
CATFH	Total Fuel Hydrocarbons: LUFT Method (California)
CATPH-D	Total Petroleum Hydrocarbon - Diesel (California)
CATPH-G	Total Petroleum Hydrocarbon - Gasoline (California)
CLP FURN	Historical/unkonwn method for metals
CLP90	Historical/unkonwn method for VOCS and pesticides/herbicides
CLPMET	Historical/unkonwn method for metals
CLPOLM03.1	Pesticides/PCBs
CNFTEL	Columbia National Fisheries Research Laboratory Method for t
COD	CHEMICAL OXYGEN DEMAND
CPEST	CLP Pesticides (TCL)
CSGAS	The Determination of CSGAS in Soil and Water, GC/ECD Method
CSVOL	Semi-Volatile Organic Compounds (TCL)
CVOL	Volatile Organic Compounds (TCL)
D1140	Amount of Material in Soils Finer than the # 200 (75-um) Sie
D1385	Hydrazine (Spectrophotometric)
D1498	Determination of the Oxidation-Reduction Potential of Water
D1556	Density of Soil in Place by the Sand-Cone Method
D1890	Beta Particle Radioactivity Of Water
D1943	Alpha Particle Radioactivity of Water
D1945	Analysis of Natural Gas By Gas Chromatography
D1946	Determination of Fixed or Reformed Gases by GC
D2036C	Weak Acid Dissociable Cyanide, Colorimetric Determination
D2166	Unconfined Compressive Strength Of Cohesive Soil
D2167	Density & Unit Weight of Soil in Place by the Rubber Balloon

ID	AnaMethodDesc
D2216	Percent Solid
D2325	Capillary-Moisture Relationships for Coarse- & Medium-Textur
D2460	Radionuclides Of Radium In Water
D2487	Classification of Soils, for Engineering Purposes
D2907	URANIUM IN WATER BY FLUOROMETRY
D2937	Density of Soil in Place by the Drive-Cylinder Method
D2974	Total Organic Content
D3084	ASTM Method for Alpha Spectrometry of Water
D3152	Capillary-Moisture Relationships for Fine-Textured Soils by
D3155	Lime Content of Uncured Soil-Lime Mixtures
D3328	ASTM Method for the Comparison of Waterborne Petroleum Oils
D3385	Infiltration Rate of Soils in Field Using Double-Ring Infilt
D3416	Total Hydrocarbons, Methane, and Carbon Monoxide in the Atmo
D3695	Volatile Alcohols In Water By Direct Aqueous Injection GC
D3865	Standard Test Method for Plutonium in Water by Alpha Spectro
D4129	Total and Organic Carbon in Water Oxidation by Coulometric D
D421	Dry Preparation of Soil Samples For Particle-Size Analysis &
D4219	Unconfined Compressive Strength Index of Chemical-Grouted So
D422	Grain Size
D4221	Dispersive Characteristics of Clay Soil by Double Hydrometer
D425	Centrifuge Moisture Equivalent of Soils
D427	Shrinkage Factors Of Soils
D4318	Liquid Limit, Plastic Limit, and Plasticity Index of Soils
D4373	Calcium Carbonate Content of Soils
D4380	Density of Bentonitic Slurries
D4381	Sand Content By Volume of Bentonitic Slurries
D4452	X-RAY FLOURESCENCE SPECTROMETRY
D4525	Permeability of Rocks by Flowing Air
D4531	Bulk Density of Peat and Peat Products
D4542	Pore Water Extraction and Determination of the Soluble Salt
D4564	Density of Soil in Place by the Sleeve Method
D4643	Determination of Water (Moisture) Content of Soil by the Mic
D4972A	Soil PH, PH Meter Method
D4972B	Soil PH, PH Paper Method
D512A	Chloride Ion in Water
D5174	ASTM Method for Total Uranium in Water and Soil by Pulsed La
D550	GC
D854	Specific Gravity Of Soils
DCNDMA	Datachem Labs Method for N-Nitrosodimethylamine by GC/MS SIM
DHS LUFT	DHS LUFT Shell Method
DOE EML HA	AM-241 and PU-241
E110.1	Color (Colorimetric, ADMI)
E110.2	Color (Colorimetric-Platinum-Cobalt)
E110.3	Color (Spectrophotometric)
E120.1	Specific Conductance
E130.1	Hardness, Total (Colorimetric, Automated EDTA)
E130.2	Hardness, Total (Titrimetric)
E140.1	Odor (Threshold Odor, Consistent Series)
E150.1	pH, Electrometric
E156.0	SELENIUM
E160.0	Residue
E160.1	Residue, Filterable (TDS)

ID	AnaMethodDesc
E160.2	Residue, Non-Filterable
E160.3	Residue, Total (Gravimetric, Dried at 103-105 Degree Celsius
E160.4	Residue, Volatile (Gravimetric, Ignition at 550 Degree Celsi
E160.5	Settleable Matter (Volumetric, Imhoff Cone)
E1613	EPA Standard Method for High Resolution Analysis of Dioxins/
E1624	Volatile Organic Compounds by Isotope Dilution GC/MS
E1625	Semivolatile Organic Compounds by Isotope Dilution GC/MS
E1630	E1630
E1631E	E1631E
E1658	The Determination of Phenoxy-Acid Herbicides in Municipal an
E1664	N HEXANE EXTRACTABLE MATERIAL (HEM) & SILICA GEL TREATED HEM
E1668	TOXIC POLYCHLORINATED BIPHENYLS BY ISOTOPE DILUTION HIGH RES
E170.1	Temperature
E18	Measurement of Gaseous Organic Compound Emissions By Gas Chr
E180.1	Turbidity (Nephelometric)
E18PF	Modified E18, on Column Pre-Fractionation of Vinyl Chloride
E193.7	ARSENIC
E200.7	Inductively Coupled Plasma (ICP) Metals Screen
E200.8	DETERMINATION OF TRACE ELEMENTS IN WATER AND WASTES BY INDUC
E200.9	Determination of Trace Elements by Stabilized Temperature Gr
E202.1	Aluminum
E202.2	Aluminum (AA, Furnace Technique)
E204.1	Antimony (AA, Direct Aspiration)
E204.2	Antimony (AA, Furnace Technique)
E206.2	Arsenic (AA, Furnace)
E206.3	Arsenic (AA, Hydride)
E208.1	Barium (AA, Direct Aspiration)
E208.2	Barium (AA, Furnace)
E210.1	Beryllium
E210.2	Beryllium (AA, Furnace Technique)
E212.3	Boron (Colorimetric, Curcumin)
E213.1	Cadmium (AA, Direct Aspiration)
E213.2	Cadmium (AA, Furnace)
E215.1	Calcium (AA, Direct Aspiration)
E218.1	Chromium (AA, Direct Aspiration)
E218.2	Chromium (AA, Furnace)
E218.4	Chromium Hexavalent (AA, Chelation-Extraction)
E218.5	Soluble Chromium (AA, Furnace)
E218.6	Hexavalent Chromium by EPA Method
E219.1	Cobalt (AA, Direct Aspiration)
E219.2	Cobalt (Atomic Absorption, Furnace Technique)
E220.1	Copper (AA, Direct Aspiration)
E220.2	Copper (AA, Furnace)
E23	Determination of Polychlorinated Dioxins and Furans in Air
E236.1	Iron (AA, Direct Aspiration)
E236.2	Iron (AA, Furnace Technique)
E239.1	Lead (AA, Direct Aspiration)
E239.2	Lead (AA, Furnace)
E242.1	Magnesium (AA, Direct Aspiration)
E243.1	Manganese (AA, Direct Aspiration)
E243.2	Manganese (AA, Furnace Technique)
E245.1	Mercury (Cold Vapor, Manual)

ID	AnaMethodDesc
E245.2	Mercury (Cold Vapor, Automated)
E245.5	Mercury (Cold Vapor, Sediments)
E246.1	Molybdenum (AA, Direct Aspiration)
E246.2	Molybdenum (AA, Furnace Technique)
E249.1	Nickel (AA, Direct Aspiration)
E249.2	Nickel (AA, Furnace)
E258.1	Potassium by AA, Direct Aspiration
E25C	Determination of Total Gaseous Nonmethane Organic Emissions
E26	Determination of Hydrogen Chloride Emmisions from Stationary
E270.1	Selenium (AA, Direct Aspiration)
E270.2	Selenium (AA, Furnace)
E270.3	Selenium (AA, Hydride)
E272.1	Silver (AA, Direct Aspiration)
E272.2	Silver (AA, Furnace)
E273.1	Sodium (AA, Direct Aspiration)
E273.2	Sodium (AA, Furnace Technique)
E279.1	Thallium (AA, Direct Aspiration)
E279.2	Thallium (AA, Furnace)
E282.1	Tin (AA, Direct Aspiration)
E283.1	Titanium (AA, Direct Aspiration)
E283.2	Titanium (AA, Furnace Technique)
E283.3	Titanium (AA, Hydride)
E286.1	Vanadium (AA, Direct Aspiration)
E286.2	Vanadium (AA, Furnace Technique)
E289.1	Zinc (AA, Direct Aspiration)
E289.2	Zinc (AA, Furnace)
E3.2.3	Neutralization Potential (NP)
E3.2.6	Sulfur Forms (SF)
E300	Determination of Inorganic Anions In Water By Ion Chromatogr
E300.7	DISSOLVED SODIUM, AMMONIUM, POTASSIUM, MAGNESIUM & CALCIUM I
E300A	Determination of Inorganic Anions In Water By Ion
E305.1	Acidity (Titrimetric)
E306	Sulfate
E310.1	Alkalinity (Titrimetric)
E310.2	Alkalinity Colorimetric, Methyl
E320.1	Total Bromide, Titrimetric
E325.1	Chloride (Colorimetric, Automated Ferricyanide AAI)
E325.2	Chloride (As CL), Colorimetric Automated Ferricyanide, AA II
E325.3	Chloride (Titrimetric, Mercuric Nitrate)
E330.2	Chlorine, Total Residual (Titrimetric, Back, Iodometric)
E330.3	Chlorine, Total Residual (Titrimetric, Iodometric)
E330.4	Chlorine, Total Residual
E335.1	Cynaides, Amenable to Chlorination (Titrimetric; Spectrophot
E335.2	Total Cyanide
E335.3	Total Cyanide (Colorimetric, Automated UV)
E335.4	THE DETERMINATION OF TOTAL CYANIDE BY SEMI-AUTOMATED COLORIM
E340.1	Fluoride (Colorimetric)
E340.2	Fluoride, Potentiometric, Ion Selective Electrode
E340.3	Fluoride (Colorimetric, Automated Complexone)
E345.1	Iodide (Titrimetric)
E350.0	Nitrogen (Ammonia - Colorimetric)
E350.1	Nitrogen (Ammonia - Colorimetric, Automated Phenate)

ID	AnaMethodDesc
E350.1M	Nitrogen (Ammonia - Colorimetric)
E350.2	Nitrogen Ammonia
E350.3	Nitrogen, Ammonia (Potentiometric, Ion Selective Electrode)
E351.1	Nitrogen, Kjeldahl, Total (Colorimetric, Automated Phenate)
E351.2	Nitrogen, Kjeldahl, Total (Colorimetric, Semi-Automated Bloc
E351.2M	Nitrogen, Kjeldahl, Total (Colorimetric, Semi-Auto
E351.3	Nitrogen, Kjeldahl, Total (Colorimetric; Titrimetric; Potent
E351.4	Nitrogen, Kjeldahl, Total (Potentiometric, Ion Sel Electrode
E352.1	Nitrogen (Nitrate - Colorimetric Brucine)
E353.1	Nitrogen, Nitrate-Nitrite (Colorimetric Automated, Hydrazine
E353.2	Nitrogen, Nitrate-Nitrite (Colorimetric Automated, Cadmium R
E353.3	Nitrogen, Nitrate-Nitrite
E354.1	Nitrogen, Nitrite (Spectrophotometric)
E360.1	Oxygen, Dissolved (Membrane Electrode)
E365.1	Phosphorus, All Forms (Colorimetric, Automated, Ascorbic Aci
E365.2	Phosphorus, All Forms (as P)
E365.3	Phosphorus, All Forms (Colorimetric, Ascorbic Acid, Two Reag
E365.4	Phosphorus, Total (Colorimetric, Automated Block Digestor AA
E370.1	Silica, Dissolved (Colorimetric)
E375.1	Sulfate, Colorimetric, Automated Chloranilate
E375.2	Sulfate, Colorimetric, Automated Methylthymol Blue, AA II
E375.3	Sulfate (As SO4), Gravimetric
E375.4	Sulfate (As SO4), Turbidimetric
E376.1	Sulfide, Titrimetric, Iodine
E376.2	Sulfide (Colorimetric, Methylene Blue)
E376.3	Sulfide
E377.1	Sulfite (Titrimetric)
E3C	EPA METHOD 3C FOR THE DETERMINATION OF CARBON DIOXIDE, METHA
E405.1	Biochemical Oxygen Demand
E410.1	Chemical Oxygen Demand
E410.2	Chemical Oxygen Demand
E410.3	COD (Titrimetric, High Level for Saline Waters)
E410.4	Chemical Oxygen Demand (Colorimetric, Automated Manual)
E413.1	Oil and Grease, Total Recoverable (Gravimetric)
E413.2	Oil and Grease, Total Recoverable (Spectrophotometric IR)
E415.1	Total Organic Carbon (Combustion or Oxidation)
E415.2	Total Organic Carbon (UV Promoted, Persulfate Oxidation)
E418.1	Petroleum Hydrocarbons, Total Recoverable (Spectrophoto IR)
E418.1M	
E420.1	Phenolics, Total Recoverable (Spectrophotometric, Manual)
E420.2	Phenolics (Colorimetric, Automated 4-AAP with Distillation)
E420.3	Phenolics, Total Recoverable (Spectrophotometric, Man. 4-AAP
E425.1	Methylene Blue Active Substances (MBAS)
E430.2	NTA (Colorimetric, Automated, Zinc-Zincon)
E450.1	Total Organic Halides (TOX)
E501.1	Trihalomethanes
E502.1	Volatile Halogenated Organic Compounds
E502.2	Vol Organic Compds in Water by Purge & Trap Cap Col GC (Phot
E503.1	Volatile Aromatic and Unsaturated Organic Compounds
E504	1,2-Dibromoethane and 1,2-Dibromo-3-Chloropropane
E504.1	1,2-DIBROMOETHANE, 1,2-DIBROMO-3-CHLORO-PROPANE, AND 1,2,3-T
E505	Organohalide Pesticides and Aroclors (Microextraction)

ID	AnaMethodDesc
E507	Determination of Nitrogen-and Phosphorus-Containing Pesticid
E508	Determination of Chlorinated Pesticides in Ground Water
E508A	Polychlorinated Biphenyls (PCB's)
E510.1	Determination Of The Maximum Total Trihalomethane Potential
E515	Determination Of Chlorinated Herbicides in Drinking Water
E515.1	Determination of Chlorinated Acids in Water by GC/ECD
E524	Measurement Of Purgeable Organic Compounds In Drinking Water
E524.1	Volatile Organic Compounds in Water by Purge and Trap GC/MS
E524.2	Volatile Organic Compounds by Purge & Trap Capillary Column
E525	Organics in Water
E525.1	Determination of Organic Compounds in Drinking Water by Liqu
E525.2	DETERMINATION OF ORGANIC COMPOUNDS IN DRINKING WATER BY LIQU
E531.1	Determ. of N-Methylcarbamoyloximes & N-Methylcarbamates in W
E547	Determin. of Glyphosate in Drinking Water by Direct Aqueous
E548	Determination of Endothall in Drinking Water by Aqueous Deri
E548.1	Determination of Endothall in Drinking Water by Ion Exchange
E549	Determination of Diquat and Paraquat in Drinking Water by Li
E549.1	Determination of Diquat & Paraquat in Drinking Water Liquid-
E600_4	Aquatic Toxicity
E601	Purgeable Halocarbons
E601-2	Combined Methods E601/E602, Same Column and Detector
E602	Purgeable Aromatics
E603	Acrolein and Acrylonitrile
E604	Phenols
E605	Benzidines
E606	Phthalate Esters
E607	Nitrosamines
E608	Organochlorine Pesticides and PCBs
E608_1	Organochlorine Pesticides and PCBs
E609	Nitroaromatics And Isophorone
E610	Polynuclear Aromatic Hydrocarbons
E611	Haloethers
E612	Chlorinated Hydrocarbons
E613	2,3,7,8-Tetrachlorodibenzo-p-Dioxin
E614	Determination of Organophosphorus Pesticides in Wastewater
E615	Chlorinated Herbicides In Industrial & Municipal Wastewater
E617	Determination of Carbophenothion in Wastewater
E619	Determination Of Triazine Pesticides In Wastewater
E624	Volatile Organics GC/MS
E624_1	Volatile Organics GC/MS
E625	Extractable Priority Pollutants (Base/Neutral and Acid)
E625_1	Extractable Priority Pollutants (Base/Neutral and
E632	Determination of Carbamate and Urea Pesticides in Wastewater
E7C	Determination of Nitrogen Oxide Emissions from Stationary So
E80005	FASP Method F080.005 Volatile Organic Compounds in Water by
E81.1	Ammonia Nitrogen Determination by Ion Selective Electrode
E900	Gross Alpha and Beta Radiation
E900.0	Gross Alpha and Beta Radiation
E901.1	Gamma Emitting Radionuclides in Drinking Water
E903.0	Alpha Emitting Radium Isotopes in Drinking Water
E903.1	Radium 226 in Drinking Water
E903.1M	Radium 226 in Drinking Water - Modified

ID	AnaMethodDesc
E904.0	Radium 228 in Drinking Water (Beta Activity)
E904.0M	Radium 228 in Drinking Water (Beta Activity) Modified
E905	Radioactive Strontium in Drinking Water
E905.0	Radioactive Strontium in Drinking Water
E905.0M	Radioactive Strontium in Drinking Water - Modified
E906.0	Tritium in Drinking Water
E906.0M	Tritium in Drinking Water - Modified
E908	Uranium in Drinking Water. Radiochemical Method
E908.1	Uranium in Drinking Water - Fluorometric Method
EERF C	CARBON-14
EERF CM	CARBON-14 Modified
EERF01	
EERF07	Radiochemical Determination of Thorium and Uranium in Water.
ENVR31	DDT in Soil by EIA
ENVR40	Chlordane in Soil by EIA
EOX	EPA Draft Method for the Determination of Extractable Organi
EPACLP	Historical/unkonwn method for chromium and mercury
EPI 003B	CARBON-14
EPI020	EPI LABS METHOD FOR THE DETERMINATION OF PROMETHIUM 147 IN S
EPI022	NI-63 AND NI-69 IN SOIL & WATER SAMPLES, EPI RAD LAB, LIQUID
EPIA-001B	
EPIA-002	TRITIUM
EPIA-003	CARBON-14
EPIA-004	STRONTIUM-90
EPIA-008	RADIUM-226
EPIA-011	AM-241 and PU-241
EPIA-012	
EPIA-013	Various RAD Analytes by EPI Labs
FCBGAS	Field Screening Method for the Determination of Combustible
FLDASV	Field Screening Method for Heavy Metals in Water by Anode St
FLDFXG	Field Screening Method for Fixed Gas Analysis, Portable On-b
FORMAL	FORMALDEHYDE
FORMAW	FORMALDEHYDE
FPUR	Field Method For Purgeable Aromatics Based on Method E624
FSV	Field Method For Semi-Volatile Organics Based on EPA Method
FVMS	Field Method for the Determination of VOCs & FUELS by GC/MS
FVOC	Field Method for Volatile Halogenated and aromatic organic c
G9017	Geochemical & Environmental Research Group (GERG) Quantitati
G9202	Geochemical & Environmental Research Group (GERG) Analysis o
GA01R	GAMMA SPECTROSCOPY
GEL Method	Ethane, Ethene and Methane
GL-EPI-B-0	GROSS ALPHA/BETA
GTELFG	GTEL Laboratories Modified Method for the Determination of F
HASL 3	RAD Analytes
HASL 300	DOE EML HASL-300
HASL 300M	DOE EML HASL-300, Modified
HEADSP	VOCs
HPLC/UV	HPLC/UV Method for Shell
ILM02.1	
ILM03.0	
ILM04.0	
ILM4.0CLP	CHROMIUM

ID	AnaMethodDesc
ISOTH	
ITTEL	IT Corp. Method for Tetraethyl Lead Analysis in Water. GC/E
LAB SP	UNIDENTIFIED LABORATORY METHOD FOR DETECTING SELECT RAD
LAL0060	GROSS ALPHA/BETA by Lockheed Labs
LAL0063	Various RAD Analytes by Lockheed Labs
LAL0065	STRONTIUM-90 by Lockheed Labs
LAL0066	TRITIUM by Lockheed Labs
LAL0073	RADIUM-226 by Lockheed Labs
LAL064	Lockheed Analytical Laboratories Method of Sample Preparatio
LAL108	AMERICIUM-241 by Lockheed Labs
LAL178	PLUTONIUM-241 by Lockheed Labs
LAL209	CARBON-14 by Lockheed Labs
LAL357	LAL SOP 357, DETERMINATION OF MCPP AND MCPA IN SOIL AND WATE
LAL40	LAL Method for Actinide Sample Preparation, Nuclide Separati
LALHZ	Lockheed Analytical Lab Method for Hydrazines by Ion Chromat
LAS108	AMERICIUM-241 by Lockheed Labs
LAS178	PLUTONIUM-241 by Lockheed Labs
LER130	Los Alamos National Laboratories Method ER-130 Gamma Spectro
LF03	USATHAMA Method for the Determination of Nitrocellulose in S
LF05	USATHAMA Method for the Automated Colorimetric Determination
LL03	USATHAMA METHOD FOR THE DETERMINATION OF ORGANOSULFUR CHEMIC
LL04	USATHAMA Method for the Determination of Organosulfur Compou
LSC	CARBON-14
LT03	USATHAMA METHOD FOR THE DETERMINATION OF CHEMICAL WARFARE AG
LVMS	Screening Method for VOCs & FUELS by GC/MS.
LW18	USATHAMA Method for the Analysis of Thiodiglycol and Chloroa
LW27	USATHAMA Method for the Determination of Nitroglycerin and P
LW28	USATHAMA Method for the Determination of Tetrazene in Soil b
LW30	USATHAMA Method for the Determination of Nitroguanidine in S
LWCNVOA	VOCs
LWGLYS	Law Environmental Method for the Determination of Glycols by
LYDKHN	Lloyd Kahn Method for the Determination of Total Organic Car
M110.3	Modified E110.3, Flood Screening Method for Colorimetric Det
M18MS	Modified E18 for the Determination of Volatile Organics in A
M18TCD	Modified E18 for the Determination of Volatile Organics in A
M2720C	Modified A2720C for the Determination of Dissolved Gases in
M2720M	GAS CHROMATOGRAPHIC ANALYSIS OF GASEOUS SAMPLES FOR PART PER
M370.1	Modified E370.1, Omitting Digestion Procedure
M418.1	Heavy Oils in Soil and Water, Modified 418.1, IR, Freon 113
M4500A	Modified Standard Method 4500, Electrometric Ammonia Analysi
M4500P	Modified Standard Method 4500, Ascorbic Acid Phosphate Analy
M5500	Glycols and Alcohols in Soil and Water by Direct Aqueous Inj
M617	Analysis of Aqueous and Solid Samples for Mirex, Photomirex,
M8015D	Modified SW8015 for the Determination of Diesel Range Organi
M8015V	Modified SW8015 for the Determination of Gasoline Range Orga
M8100	Determination of Diesel Range Organics (Lab and/or State Var
M8150	PENTACHLOROPHENOL AND TETRACHLOROPHENOL IN WATER AND SOIL BY
M8330	Modified SW8330 by LC/MS
M9215C	Modified Standard Methods 9215C, Enumeration of Total Hetero
MCTNP	THE SIMULTANEOUS ANALYSIS OF TOTAL NITROGEN AND TOTAL PHOSPH
MITLAM	Void Ratio (Soil Testing for Engineers, W.T. Lambert, John W
MMBOC	Organic Carbon in Soil by Modified Mebius Dichromate Titrati

ID	AnaMethodDesc
MT13EC	MT13EC Modified TO13 for the Determination of PCB's in Ambie
MT13MS	MT13MS Modified TO13 for the Determination of SVOCS and Pest
MT14FI	MT14FI Modified TO14 for the Determination of Methane in Amb
MT14FP	MT14FP Modified TO14 for the Determination of Reduced Sulfur
MT14MS	MT14MS Modified TO14 for the Determination of VOC's in Ambie
MTO3S	Simultaneous Determination of Carbon Chain Speciation, BTEX,
MTO3T	Simultaneous Determination of Carbon Chain Speciation, BTEX,
N0500	Total Dust
N0600	Nuisance Dust, Respirable
N1000	Allyl Chloride
N1002	Chloroprene
N1003	Halogenated Hydrocarbons
N1004	sym-Dichloroethyl Ether
N1005	Methylene Chloride
N1007	Vinyl Chloride
N1008	Ethylene Dibromide
N1009	Vinyl Bromide
N1010	Epichlorohydrin
N1011	Ethyl Bromide
N1012	Dibromodifluoromethane
N1013	1,2-Dichloropropane
N1014	Methyl Iodide
N1022	TRICHLOROETHYLENE
N1300	Ketones I
N1301	Ketones II
N1400	Alcohols I
N1401	Alcohols II
N1402	Alcohols III
N1403	Alcohols IV
N1450	Esters I
N1500	Hydrocarbons, BP 36-126 C
N1501	Aromatic Hydrocarbons in Air
N1550	Naphthas
N1551	Turpentine
N1600	Carbon Disulfide
N1601	1,1-Dichloro-1-Nitroethane
N1602	Dioxane
N1603	Acetic Acid
N1604	Acrylonitrile
N1606	Acetonitrile
N1607	Ethylene Oxide
N1608	Glycidol
N1609	Tetrahydrofuran
N1610	Ethyl Ether
N1611	Methylal
N1612	Propylene Oxide
N173	Metals by Atomic Absorption
N189	Antimony
N2000	Methanol
N2001	Cresol, All Isomers
N2002	Amines, Aromatic
N2003	1,1,2,2-Tetrabromoethane (Acetylene Tetrabromide)

ID	AnaMethodDesc
N2004	Dimethylacetamide and Dimethylformamide
N2005	Nitrobenzenes
N2007	Aminoethanol Compounds
N209	Chlorine
N217	Benzene Solubles
N219	Phosgene
N221	Aliphatic Amines
N236	4.4'-Methylene-bis-(2-Chloroaniline)
N2500	2-Butanone
N2501	Acrolein
N2502	Formaldehyde
N2503	Mevinphos
N2504	Tetraethyl Pyrophosphate
N2506	Acetone Cyanohydrin
N2507	Nitroglycerin and Ethylene Glycol Dinitrate
N2508	Isophorone
N2510	1-Octanethiol
N2513	Ethylene Chlorohydrin
N2514	Anisidine
N2515	Diazomethane
N2516	Dichlorofluoromethane
N2517	Pentachloroethane
N2518	Hexachloro-1,3-Cyclopentadiene
N2519	Ethyl Chloride
N2520	Methyl Bromide
N2521	Methylcyclohexanone
N2523	1,3-Cyclopentadiene
N2524	Dimethyl Sulfate
N269	4-Aminobiphenyl
N272	2-Nitropropane
N273	4-Nitrobiphenyl
N276	Ethylene Diamine
N278	Vinyl Acetate
N331	Methyl Ethyl Ketone Peroxide
N3500	Formaldehyde
N3501	Formaldehyde
N3502	Phenol
N3503	Hydrazine
N3505	Tetramethyl Thiourea
N3506	Acetic Anhydride
N5000	Carbon Black
N5001	2,4-D and 2,4,5-T
N5002	Warfarin
N5003	Paraquat
N5004	Hydroquinone
N5005	Thiram
N5006	Carbaryl
N5007	Rotenone
N5008	Pyrethrum
N5009	Benzoyl Peroxide
N5010	Bromoxynil And Bromoxynil Octanoate
N5011	Ethylene Thiourea

ID	AnaMethodDesc
N5012	EPN, Malathion, and Parathion
N5013	Dyes, Benzidine-, o-Tolidine, o-Dianisidine
N5014	Chlorinated Terphenyl (60% Chlorine)
N5016	Strychnine
N5017	Dibutyl Phosphate
N5018	2,4,7-Trinitrofluoren-9-One
N5019	Azelaic Acid
N5020	Dibutyl Phthalate And Di (2-Ethylhexyl) Phthalate
N5021	o-Terphenyl
N5022	Arsenic, Organo
N5023	Coal Tar Pitch Volatiles
N5500	Ethylene Glycol
N5502	Aldrin And Lindane
N5503	Polychlorobiphenyls (PCB's)
N5505	Isocyanate Group
N5506	Polynuclear Aromatic Hydrocarbons (HPCL)
N5508	Kepone
N5509	Benzidine and 3,3'-Dichlorobenzidine
N5514	Demeton
N5515	Polynuclear Aromatic Hydrocarbons (GC)
N6000	Mercury
N6001	Arsine
N6009	MERCURY IN AIR
N6402	Phosphorus Trichloride
N6600	Nitrous Oxide
N6601	Oxygen
N6700	Nitrogen Dioxide
N6701	Ammonia
N7013	Aluminum And Compounds, as Al
N7020	Calcium And Compounds, as Ca
N7024	Chromium And Compounds, as Cr
N7027	Cobalt And Compounds, as Co
N7029	Copper (Dust And Fume)
N7030	Zinc And Compounds, as Zn
N7048	Cadmium And Compounds, as Cd
N7074	Tungsten (Soluble And Insoluble)
N7082	Lead
N7102	Beryllium And Compounds, as Be
N7200	Welding And Brazing Fume
N7300	Elements (ICP)
N7400	Fibers, Asbestos in Air
N7401	Alkaline Dusts
N7402	Asbestos (Transmission Electron Microscope)
N7500	Silica, Crystalline, Respirable
N7501	Silica, Amorphous
N7502	Zinc Oxide
N7505	Lead Sulfide
N7506	Boron Carbide
N7600	Chromium, Hexavalent
N7601	Silica, Crystalline
N7602	Silica, Crystalline (IR)
N7900	Arsenic And Compounds, as As

ID	AnaMethodDesc
N7901	Arsenic Trioxide, as As
N7902	Fluorides, Aerosol And Gas
N7903	Acids, Inorganic
N7904	Cyanides, Aerosol And Gas
NCA SOP	
NIOSH	FORMALDEHYDE
NJGLYS	NJDEP Method for the Determination of Glycols in Drinking Wa
NYGLYS	New York State Department of Health, Tentative Method for t
OBGEDB	Modified SW8010/E601 for the Determination of Ethylene Dibro
OLM1.8	VOCs
OLM3.1CLPA	Pesticides/PCBs/VOCs
OLM4.2CLP	
OLM4.2CLPA	
OLM4.2CLPB	Pesticides/PCBs/VOCs
OLM4.2CLPE	Pesticides/PCBs
OLM4.2CLPV	VOCs
OLMO	VOCs
ORTPHD	Diesel in Soil - Adapted Method from EPA SW846 Methods 3540
ORTPHG	Gasoline in Soil - Adapted Method from EPA SW846 5030 &/or 8
OTTOFL	The Determination of Trace Levels of Otto Fuel II in Soil an
P_T	PHOSPHATE, TOTAL (AS P)
PEST CLP	CLP Pesticides
PID	Handheld PID for Pre-Screening Volatile Organics in the Fiel
PM-10	Particulate matter less than 10 microns
PO4_T	PHOSPHATE, TOTAL (AS P)
PRG752	NI-63 IN SOIL SAMPLES, PARAGON ANALYTICS, BETA LIQUID SCINTI
PRG758	PM-147 IN WATER SAMPLES, PARAGON ANALYTICS, BETA LOW BACKGRO
PU11RC	PLUTONIUM PURIFICATION-ION EXCHANGE TECHNIQUE
RA05	Radiochemical Determination of Radium-228 in Water Samples
RAD	RAD Analytes
RSK175	METHANE, ETHANE AND ETHENE
S100	Hexachloronaphthalene
S102	Fluorotrichloromethane
S108	Dichlorotetrafluoroethane
S111	Dichlorodifluoromethane
S124	1,1,2,2-Tetrachloroethane
S125	Trifluorobromomethane
S126	1,2,3-Trichloropropane
S128	Trichloronaphthalene
S129	1,1,2-Trichloro-1,2,2-Trifluoroethane
S130	Tetrachloronaphthalene
S131	1,1,1,2-Tetrachlorodifluoroethane
S132	1,1,2,2-Tetrachlorodifluoroethane
S134	1,1,2-Trichloroethane
S149	Methyl Hydrazine
S150	Morpholine
S153	Monomethylaniline
S155	Tetramethyl Succinonitrile
S158	2-Aminopyridine
S160	Phenyl Hydrazine
S161	Pyridine
S179	Phthalic Anhydride

ID	AnaMethodDesc
S181	Quinone
S187	Tellurium Hexafluoride
S188	Rhodium (Fume And Dust)
S189	Rhodium (Soluble)
S208	Tributyl Phosphate
S209	Triorthocresyl Phosphate
S210	Triphenyl Phosphate
S214	Dinitrobenzene
S215	Dinitrotoluene
S219	Nitroethane
S224	Tetranitromethane
S225	Tetryl
S227	n-Propyl Nitrate
S228	Picric Acid
S24	Diphenyl
S244	Sulfur Hexafluoride
S249	Carbon Dioxide
S272	Oil Mist
S274	DDT Isomers
S278	Chlordane
S293	Nicotine
S297	Pentachlorophenol
S308	Sulfur Dioxide
S335	Tetrachloroethylene
S336	Trichloroethylene (TCE)
S340	Carbon Monoxide
S346	Allyl Glycidyl Ether
S350	n-Butyl Mercaptan
S36	Ethyl Formate
S365	Furfuryl Alcohol
S368	Isopropyl Ether
S374	Methylcyclohexanol
S38	Methyl Acrylate
S383	Tetraethyl Lead
S385	Titanium Dioxide
S39	Methyl Cellosolve Acetate
S4	Hydrogen Sulfide
S42	Methyl Acetate
S49	Ethyl Acetate
S50	Isopropyl Acetate
S67	Chlorinated Camphene (Toxaphene)
S69	Dipropylene Glycol Methyl Ether
S72	Phenyl Ether
S73	Phenyl Ether-Biphenyl Mixture
S74	Phenyl Glycidyl Ether
S77	Isopropyl Glycidyl Ether
S8	Ozone
S81	n-Butyl Glycidyl Ether
S87	Propane
S91	Butadiene
S93	Liquid Petroleum Gas
S96	Pentachloronaphthalene

ID	AnaMethodDesc
S97	Octachloronaphthalene
S99	Methyl Chloride
SGECD	Field Method for Soil Gas Using Capillary Column with ECD.
SGMS	Field Method for Soil Gas Using a Packed Column with ECD & M
SGPID	Field Method for Soil Gas Using a Capillary Column with PID.
SGTCD	ANALYSIS OF SOIL GAS FOR SELECTED VOCS GAS CHROMATOGRAPHY, C
SGVOAF	Field Method for Soil Gas by Modified SW8010/SW8015, Dual Co
SGVOCF	Field Method for Soil Gas VOC's by Modified SW8010/SW8020 by
SGVOCL	Laboratory Method for Soil Gas VOC's by Modified SW8010/SW80
SGVOCS	Field Screening Analysis of VOC's in Soil Gas by Modified SW
SGVOCT	Field Method for Soil Gas Analysis, Dual Capillary Columns/T
SGVOPF	Field Method for VOC's in Soil Gas Using a Capillary Column
SM2320B	
SM2340B	
SM2540G	Moisture
SM9215	Standard Plate Count
SOW390	Pesticides/PCBs
SR02RC	STRONTIUM-90 (GAS PROPORTIONAL COUNTING)
SW1010	Flash Point (Closed Cup Tester)
SW1020	Setaflash Closed-Cup Method For Determining Ignitability
SW1110	Corrosivity Toward Steel
SW3005	Metals
SW3050B	
SW3500M	
SW3550	
SW3810	Headspace
SW3820	Hexadecane Extraction and Screening of Purgeable Organics
SW4020	Proposed SW-846 Method for Screening PCB's in Soil by Immuno
SW4035	Soil Screening for Polynuclear Aromatic Hydrocarbons by Immu
SW6010	Inductively Coupled Plasma Atomic Emission Spectroscopy
SW6010/6020	Metals
SW6010A	TRACE METALS BY ICP
SW6010B	TRACE METALS BY ICP
SW6010B-Cations	TRACE METALS CATIONS BY ICP
SW6020	Inductively Coupled Plasma Mass Spectrometry
SW7.3	SW846 CH 7.3 Cyanide/Sulfide Reactivity
SW7.3.3	
SW7.3.4M	
SW7020	Aluminum (AA, Direct Aspiration)
SW7040	Antimony (AA, Direct Aspiration)
SW7041	Antimony (AA, Furnace Technique)
SW7060	Arsenic, (AA, Furnace Technique)
SW7060A	GRAPHITE FURNACE ATOMIC ABSORPTION (ARSENIC)
SW7060B	GRAPHITE FURNACE ATOMIC ABSORPTION (ARSENIC)
SW7061	Arsenic (AA, Gaseous Hydride)
SW7062	Antimony and Arsenic (Atomic Absorption, Gaseous Borohydride
SW7080	Barium (AA, Direct Aspiration)
SW7081	Barium (AA, Furnace Technique)
SW7090	Beryllium (AA, Direct Aspiration)
SW7091	Beryllium (AA, Furnace Technique)
SW7130	Cadmium (AA, Direct Aspiration)
SW7131	Cadmium (AA, Furnace Technique)

ID	AnaMethodDesc
SW7131A	GRAPHITE FURNACE ATOMIC ABSORPTION (CADMIUM)
SW7140	Calcium (AA, Direct Aspiration)
SW7190	Chromium (AA, Direct Aspiration)
SW7191	Chromium (AA, Furnace Technique)
SW7195	Chromium, Hexavalent (Coprecipitation)
SW7196	Chromium, Hexavalent (Colorimetric)
SW7196A	HEXAVALENT CHROMIUM (COLORIMETRIC)
SW7197	Chromium, Hexavalent (Chelation/Extraction)
SW7198	Chromium, Hexavalent (Differential Pulse Polarography)
SW7199	DETERMINATION OF HEXAVALENT CHROMIUM IN DRINKING WATER, GROU
SW7200	Cobalt (AA, Direct Aspiration)
SW7201	Cobalt (AA, Furnace Technique)
SW7210	Copper (AA, Direct Aspiration)
SW7211	Copper (Furnace)
SW7380	Iron (AA, Direct Aspiration)
SW7420	Lead (AA, Direct Aspiration)
SW7421	Lead (AA, Furnace Technique)
SW7450	Magnesium (AA, Direct Aspiration)
SW7460	Manganese (AA, Direct Aspiration)
SW7470	Mercury in Liquid Waste (Manual Cold-Vapor Technique)
SW7470A	MERCURY MANUAL COLD-VAPOR TECHNIQUE IN WATER
SW7471	Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Tech)
SW7471A	MERCURY MANUAL COLD-VAPOR TECHNIQUE IN SOIL
SW7480	Molybdenum (AA, Direct Aspiration)
SW7481	Molybdenum (AA, Furnace Technique)
SW7520	Nickel (AA, Direct Aspiration)
SW7521	NICKEL (ATOMIC ABSORPTION, FURNACE METHOD)
SW7550	Osmium (AA, Direct Aspiration)
SW7610	Potassium (AA, Direct Aspiration)
SW7740	Selenium (AA, Furnace Technique)
SW7741	Selenium (AA, Gaseous Hydride)
SW7742	Selenium (Atomic Absorption, Gaseous Borohydride)
SW7760	Silver (AA, Direct Aspiration)
SW7761	Silver (AA, Furnace Technique)
SW7770	Sodium (AA, Direct Aspiration)
SW7840	Thallium (AA, Direct Aspiration)
SW7841	Thallium (AA, Furnace Technique)
SW7870	Tin (AA, Direct Aspiration)
SW7910	Vanadium (AA, Direct Aspiration)
SW7911	Vanadium (AA, Furnace Technique)
SW7950	Zinc (AA, Direct Aspiration)
SW8010	Halogenated Volatile Organics
SW8010B	HALOGENATED VOLATILE ORGANICS
SW8011	Ethylene Dibromide and Dibromochloropropane by Microextracti
SW8015	Nonhalogenated Volatile Organics
SW8015B	NONHALOGENATED ORGANICS USING GC/FID
SW8015M	
SW8020	Aromatic Volatile Organics
SW8020A	AROMATIC VOLATILE ORGANICS
SW8021	Halogenated and Aromatic Volatiles by GC Using Electrolytic
SW8021A	HALOGENATED VOLATILE ORGANICS
SW8021B	AROMATIC AND HALOGENATED VOLATILES BY GAS CHROMATOGRAPHY USI

ID	AnaMethodDesc
SW8030	Acrolein, Acrylonitrile, Acetonitrile
SW8040	Phenols
SW8041	PHENOLS
SW8060	Phthalate Esters
SW8070	NITROSAMINES
SW8070A	NITROSAMINES BY GAS CHROMATOGRAPHY
SW8080	Organochlorine Pesticides and PCBs
SW8080A	ORGANOCHLORINE PESTICIDES AND POLYCHLORINATED BIPHENYLS
SW8081	Organochlorine Pesticides and PCBs as Aroclors by Gas Chroma
SW8081A	ORGANOCHLORINE PESTICIDES BY GAS CHROMATOGRAPHY CAPILLARY CO
SW8081A/8082	
SW8082	POLYCHLORINATED BIPHENYLS (PCB)
SW8090	Nitroaromatics and Cyclic Ketones
SW8100	Polynuclear Aromatic Hydrocarbons
SW8120	Chlorinated Hydrocarbons
SW8121	Chlorinated Hydrocarbons Capillary GC/ECD
SW8140	Organophosphorus Pesticides
SW8141	Organophosphorus Compounds By Gas Chromatography: Capillary
SW8141A	ORGANOPHOSPHORUS PESTICIDES
SW8150	Chlorinated Herbicides
SW8150B	CHLORINATED HERBICIDES
SW8151	Chlorinated Herbicides by GC Using Methylation or Pentafluor
SW8151A	CHLORINATED HERBICIDES BY GC USING METHYLATION OR PENTAFLUOR
SW8240	GC/MS for Volatile Organics
SW8240B	VOLATILE ORGANICS
SW8250	GC/MS for Semivolatile Organics (Packed Column Technique)
SW8260	Volatile Organic Compounds by Gas Chromatgraph/Mass Spectrom
SW8260/8270	Modified SW8260/SW8270
SW8260A	VOLATILE ORGANICS
SW8260B	VOLATILE ORGANICS
SW8270	GC/MS for Semivolatile Organics (Capillary Column Technique)
SW8270B	SEMIVOLATILE ORGANICS
SW8270C	SEMIVOLATILE ORGANICS
SW8270CSIM	SEMIVOLATILE ORGANICS SIM
SW8280	Polychlorinated Dibenzo-p-Dioxins and Dibenzofurans
SW8280A	Polychlorinated Dibenzo-p-Dioxins and Dibenzofurans
SW8290	Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dib
SW8310	Polynuclear Aromatic Hydrocarbons
SW8315	Determination of Carbonyl Compounds by HPLC
SW8318	N-METHYLCARBAMATES BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY
SW8321	Solvent Extractable Non-Volatile Compounds by HPLC/TSP/MS or
SW8330	Nitroaromatics And Nitramines By High Performance Liquid Chr
SW8332	NITROGLYCERINE BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY
SW846	Metals
SW9010	Total and Amenable Cyanide (Colorimetric, Manual)
SW9010A	TOTAL CYANIDE AND CYANIDE AMENABLE TO CHLORINATION
SW9012	Total and Amendable Cyanide (Colorimetric, Automated UV)
SW9012A	Total and Amendable Cyanide (Colorimetric, Automated UV)
SW9014	TITRIMETRIC AND MANUAL SPECTROPHOTOMETRIC DETERMINATIVE METH
SW9020	Total Organic Halides (TOX)
SW9022	Total Organic Halides (TOX) by Neutron Activation Analysis
SW9023	EXTRACTABLE ORGANIC HALIDES (EOX) IN SOLIDS

ID	AnaMethodDesc
SW9030	Sulfides
SW9030A	ACID-SOLUBLE AND ACID-INSOLUBLE SULFIDES
SW9034	TITRIMETRIC PROCEDURE FOR ACID-SOLUBLE AND ACID-INSOLUBLE SU
SW9035	Sulfate (Colorimetric, Automated, Chloranilate)
SW9036	Sulfate (Colorimetric, Automated, Methylthymol Blue, AA II)
SW9038	Sulfate (Turbidimetric)
SW9040	pH Electrometric Measurement
SW9041	pH Paper Method
SW9045	Soil pH
SW9045B	SOIL AND WASTE PH
SW9045C	SOIL AND WASTE PH
SW9050	Specific Conductance
SW9056	Anion Chromatography
SW9060	Total Organic Carbon
SW9060M	Total Organic Carbon - Modified
SW9065	Phenolics (Spectrophotometric, Manual 4-AAP with Distillatio
SW9066	Phenolics (Colorimetric, Automated 4-AAP with Distillation)
SW9067	Phenolics (Spectrophotometric, MBTH with Distillation)
SW9070	Total Recoverable Oil & Grease (Gravimetric, Separatory Funn
SW9070/41	Total Recoverable Oil & Grease (Gravimetric, Separ
SW9071	Oil and Grease Extraction for Sludge
SW9073	Total Recoverable Petroleum Hydrocarbons
SW9076	TOTAL CHLORINE IN NEW AND USED PETROLEUM PRODUCTS BY OXIDATI
SW9080	Cation-Exchange Capacity of Soils (Ammonium Acetate)
SW9081	Cation-Exchange Capacity of Soils (Sodium Acetate)
SW9090	Compatibility Test for Wastes and Membrane Liners
SW9095	Paint Filter Liquids Test
SW9100	Saturated Hydraulic Conductivity, Saturated Leachate Conduct
SW9131	Total Coliform: Multiple Tube Fermentation Technique
SW9132	Total Coliform: Membrane Filter Technique
SW9200	Nitrate
SW9250	Chloride (Colorimetric, Automated Ferricyanide AA I)
SW9251	Chloride (Colorimetric, Automated Ferricyanide AA II)
SW9252	Chloride (Titrimetric, Mercuric Nitrate)
SW9252A	Chloride (Titrimetric, Mercuric Nitrate)
SW9310	Gross Alpha & Gross Beta
SW9315	Alpha-Emitting Radium Isotopes
SW9320	Radium-228
SWNDMA	Southwest Labs Method for N-Nitrosodimethylamine by GC/MS
SWVOL	Combined Methods SW8010/SW8020, Same Column and Detector
T8	USATHAMA METHOD FOR THE DETERMINATION OF CHEMICAL WARFARE AG
TL427	Thiokol Laboratories Method for the Analysis of Furfuryl, Al
TO12	Determination of Non-Methane Organic Compds in Ambient Air U
TO13FI	The Determination of PAH's in Ambient Air by GC/FID
TO13LC	The Determination of PAH's in Ambient Air by HPLC with a UV
TO13MS	The Determination of PAH's in Ambient Air by GC/MS
TO14	The Deter. Of Volatile Orgainic Compounds in Ambient Air
TO15	The Deter. Of Volatile Orgainic Compounds in Ambient Air
TO3	Determination of Volatile Organic Compounds in Ambient Air
TT9	USATHAMA METHOD FOR THE DETERMINATION OF CHEMICAL WARFARE AG
UF03	USATHAMA Method for the Determination of Nitrocellulose in W
UF05	The Determination of Nitrocellulose by Colorimetric Autoanal

ID	AnaMethodDesc
UL04	USATHAMA METHOD FOR THE DETERMINATION OF ORGANOSULFUR CHEMIC
UNK	Unknown (Data Unavailable)
US1379	USGS Method for the Colorimetric Determination of Dissolved
US1388	Iron, Ferrous, Dissolved Colorimetric, Bipyridine, USGS Meth
USA4B	USATHAMA Explosives Method (Soil)
USAC2	USATHAMA Explosives by GC/ECD, in Water Contractor/USACE Var
USAD1	USATHAMA Explosives Method (Water)
USAD2	USATHAMA Explosives by GC/ECD, in Soil Contractor/USACE Vari
USAL32	USATHAMA Method for the Determination of Explosives by Diode
USALW2	USATHAMA Explosives Method For Soil
USARDX	USATHAMA, UV FIELD SCREENING METHOD FOR RDX IN SOIL.
USATNT	USATHAMA, UV FIELD METHOD FOR THE DETERMINATION OF TNT IN SO
USAU35	USATHAMA Method for the Determination of Explosives by Diode
USAUW4	USATHAMA Explosives Method For Water
USGS01	TNT, RDX, Picric Acid
UT03	USATHAMA METHOD FOR THE DETERMINATION OF CHEMICAL WARFARE AG
UW22	USATHAMA Method for the Analysis of Thiodiglycol and Thiodig
UW27	Determination of PETN and Nitroglycerin in Water by High Pre
UW29	USATHAMA Method for the Determination of Nitroguanidine in W
UW30	USATHAMA Method for the Determination of Tetrazene in Water
WAHCID	State of Wash. Method for the Qualitative Identification of
WBLACK	Walkley-Black Method, Organic Carbon (TOC)
WTPHD	WASHINGTON STATE METHOD FOR THE DETERMINATION OF DIESEL IN S
WTPHG	WASHINGTON STATE METHOD FOR THE DETERMINATION OF GASOLINE IN

Basis

ID	BasisDesc
D	Dry basis
W	Wet basis
X	Not Applicable

CoordMethod

ID	CoordMethodDesc
CONV	CONVERTED FROM NAD27
DIGIT	DIGITIZED
ESTIM	ESTIMATED
GC	GEODETIC CALCULATOR
GPS	GLOBAL POSITIONING SYSTEM
NA	NOT APPLICABLE
SRVEY	SURVEY

DetectionLimitType

ID	DetectionLimitTypeDesc
CRDL	Contract Required Detection Limit
IDL	Instrument Detection Limit
MDA	Minimum Detectable Activity
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reportable Detection Limit

ID	LocationTypeDesc
A	Air
AS	Fixed Air Sampler w/ 8x10 Filter for Air Quality Monitoring
AV	Sparge and Vent Groundwater Treatment System
BF	BACKFILLED LOCATION
BH	Borehole
BL	Manmade Building Materials from Roof, Walls, Basement, etc.
BR	Non-Fixed Locations Receptacle Including Barrels & Container
BS	Borrow Site Sample
CH	Channel/Ditch
CP	Composite From Several Locations
CY	CRYOPILE
DD	Dirty Disposal Stockpile
DS	Dirty Stockpile Bottom
EB	Excavation Bottom
ED	Excavation Discretionary
EP	Treatability Unit Effluent Monitoring Point
ES	Excavation Side
FW	Faucet/Tap
HA	Hand Auger
HP	Holding Pond/Lagoon
IP	Treatability Unit Influent Monitoring Point
LH	Leachate From Landfill
LK	Lake/Pond
LY	Lysimeter
ME	Medallion Sample
MS	Marine Sediment
NQ	Location Type Not Applicable, QC Sample
OC	Outcrop
ON	Ocean
PH	Cone Penetrometer/Hydropunch/Geoprobe
PL	Pipe Location
PR	Soil Gas Probe
PZ	Piezometer
RE	Residence
RV	River/Stream
SE	Seep
SL	Surface Location
SP	Spring
SR	Sewer System
SS	Surface Survey
ST	Stockpile Sample
SU	Sump
SV	Soil Vapor Extraction System
SW	Storm Water
TE	Tank/Pipe removal excavation
TK	Fix Loc Receptacle Including Tanks, Containers and Vats
TP	Test Pit
TR	Trench
UN	Unknown
WB	Storm Water Bypass

ID	LocationTypeDesc
WE	Storm Water Effluent
WF	WASTE WATER TREATMENT FACILITY
WI	Storm Water Influent
WL	Well
WO	Storm Water Overflow
WT	Wetlands/Swamp
WW	Waste Water
WX	Weather Station

ID	MatrixDesc
AA	Ambient Air
AD	Drilling Air
AE	Air, Vapor Extraction Well Effluent
AQ	Air Quality Control Matrix
AZ	AIR FOR QAPP PROJECTS
CA	Cinder-Ash
CF	Fly Ash Cinder
GE	Gaseous Effluent (Stack Gas)
GL	Headspace of Liquid Sample
GQ	Headspace or Gaseous Phase QC Matrix
GS	Soil Gas
LA	Aqueous Phase of a Multiple Phase Liquid or Solid Sample
LC	Liquid Condensate
LD	Drilling Fluid
LE	Liquid Emulsion
LF	Floating/Free Product on Groundwater Table
LH	Free-Flowing, or Liquid Waste Containing Less than 0.5% Dry
LM	Multiple Phase Liquid Waste Sample
LO	Organic Liquid
LQ	ORGANIC LIQUID QUALITY CONTROL MATRIX
LV	Liquid From Vadose Zone
O	Other
QA	Not Applicable LabQC
SB	Bentonite
SC	Cement
SD	Drill Cuttings, Solid Matrix
SE	Sediment (associated with surface water)
SF	Filter Sandpack
SH	Solid Waste Containing Greater than or Equal to 0.5% Dry Sol
SK	Asphalt
SL	Sludge
SM	Water Filter (Solid Material used to Filter Water)
SN	Miscellaneous Solid Materials - Building Materials
SO	Soil
SP	Casing (PVC, Stainless Steel, Cast Iron, Iron Piping, etc.)
SQ	Soil/Solid Quality Control Matrix
SR	Water Filter Residue (Solid That Gets Filtered Out of Water)
SS	Scrapings
ST	Solid Waste
SW	Swab or Wipe
SZ	SOIL FOR QAPP PROJECTS
TA	Animal Tissue
TP	Plant Tissue
TQ	Tissue Quality Control Matrix
WA	Drill Cuttings, Aqueous Matrix
WC	Drilling Water (Used for Well Construction)
WD	Well Development Water
WE	Estuary
WG	Ground Water
WH	Equipment Wash Water, i.e. Water used for Washing Equipment

ID	MatrixDesc
WL	Leachate
WO	Ocean Water
WP	Drinking Water
WQ	Water Quality Control Matrix
WR	Treated Water
WS	Surface Water
WT	Storm Water
WV	Water From Vadose Zone
WW	Waste Water
WZ	WATER FOR QAPP PROJECTS

ID	ParvqDesc
=	Detected Above Reporting Limit
>	Exceeded Calibration Range
CE	Co-eluted with Another Compound
I	Interferences Present
ND	Not Detected Above Detection Limit
S	Method of Standard Additions
TI	Tentatively Identified Compound
TR	Trace Detection; Below RL, Above DL

ID	PrepMethodDesc
A412	Cyanide
A412B	Total Cyanide after Distillation
A417A	Nitrogen (Ammonia) Preliminary Distillation
A503D	Sludge Samples (Soil, Sediment, Sludge)
A5520G	SM5520F-Petroleum Hydrocarbon Fraction of SM5520 Oil and Gre
A5520H	SM5520F-Petroleum Hydrocarbon Fraction of SM5520 Oil and Gre
AS3332	ASA 33-3.2 Extraction of Exchangeable Ammonium, Nitrate and
ASE200	
AV3050	Acid Volatile Metals Extract of Soil, Sediment, or Sludge Sa
AVS	EPA Draft Method for the Determination of Acid Volatile Sulf
CALC	Calculated Analytical Parameter
DI	Direct Injection
E0010	Modified Method 5 Sampling Train
E200.2	Total metals digestion for aqueous samples
EH01	Radiochemical Determination of Tritium in Soil, Vegetation a
FDA01	Food & Drug Admin Prep Method For Tissue Prior to Organ. Ana
FDAPH	Extraction and Cleanup of Organochlorine, Organophosphate, O
FLDFLT	Field Filtering For Dissolved Metals
FLTRES	Residue After Filtering (0.45 Micron)
G9016	Geochemical & Environmental Method Research Group (GERG) Ext
GST07	Geochemical & Environmental Method Research Group (GERG) Dig
ITAS07	Preparation of Samples for the Sequential Determination of I
ITAS30	Preparation of Samples for Gamma Spectroscopy, ITAS 13030, H
LUFT	Extraction Method Specified in the LUFT Manual for Modified
M3510	Modified SW3510
M3540	Modified SW3540
M3550	Modified SW3550
M3810	Headspace
METHOD	Extraction Method Specified in Analytical Method
MUST	DHS UNDERGROUND STORAGE TANK PROGRAM METHOD FOR THE DETERMIN
NONE	No Extraction Required For This Method
RC5007	Separation of Tritium in Water and Aqueous Components of Win
RC5017	Preparation of all Matrices for Analysis by Gamma Spectrosco
SAMOSA	Method of Soil Analysis (MOSA)
SW1311	TOXICITY CHARACTERISTIC LEACHING PROCEDURE
SW1320	Multiple Extraction Procedure
SW1330	Extraction Procedure for Oily Wastes
SW3005A	Acid Digestion of Waters for Total Recoverable or Dissolved
SW3010	Digestion for Total Metals for Flame AA and ICP
SW3010A	Digestion for Total Metals for Flame AA and ICP
SW3015	Microwave Assisted Acid Digestion of Aqueous Samples and Ext
SW3020	Digestion for Total Metals for Furnace AA
SW3020A	ACID DIGESTION OF AQUEOUS SAMPLES AND EXTRACTS FOR TOTAL MET
SW3031	Acid Digestion of Oils for Metals Analysis by AA or ICP
SW3040	Dissolution Procedure for Oils, Greases, or Waxes
SW3050	Acid Digestion of Sediments, Sludges, and Soils
SW3050A	ACID DIGESTION OF SEDIMENTS, SLUDGES AND SOILS
SW3050B	Acid Digestion of Sediments, Sludges, and Soils
SW3050B_M	Acid Digestion of Sediments, Sludges, and Soils
SW3051	Microwave Assisted Acid Digestion of Soils, Sediments, Sludg

ID	PrepMethodDesc
SW3060	Alkaline Digestion of Soil and Solid Waste for Hexavent Chro
SW3060A	Alkaline Digestion for Hexavalent Chromium
SW3510	Separatory Funnel Liquid-Liquid Extraction
SW3510A	Separatory Funnel Liquid-Liquid Extraction
SW3510B	SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION
SW3510C	Separatory Funnel Liquid-Liquid Extraction
SW3520	Continuous Liquid-Liquid Extraction
SW3520A	Continuous Liquid-Liquid Extraction
SW3520B	CONTINUOUS LIQUID-LIQUID EXTRACTION
SW3520C	CONTINUOUS LIGQUID-LIQUID EXTRACTION
SW3535	SOLID-PHASE EXTRACTION (SPE)
SW3540	Soxhlet Extraction
SW3540C	Soxhlet Extraction
SW3541	Automated Soxhlet Extraction
SW3542	AIR SAMPLE PREPARATION OF SAMPLES COLLECTED BY METHOD 0010
SW3545	AUTOMATED SOLVENT EXTRACTION DEVICE
SW3550	Sonication Extraction
SW3550A	ULTRASONIC EXTRACTION
SW3550B	SONICAITON EXTRACTION
SW3560	SUPERCRITICAL FLUID EXTRACTION OF TOTAL RECOVERABLE PETROLEU
SW3561	SUPERCRITICAL FLUID EXTRACTION
SW3580	Waste Dilution
SW3580A	
SW3585	WASTE DILUTION FOR VOLATILE ORGANICS
SW3610	Alumina Column Cleanup
SW3611	Alumina Column Cleanup And Separation Of Petroleum Wastes
SW3620	Florisil Column Cleanup
SW3630	Silica Gel Cleanup
SW3640	Gel-Permeation Cleanup
SW3650	Acid-Base Partition Cleanup
SW3660	Sulfur Cleanup
SW3810	Headspace
SW5020	Headspace Method
SW5021	VOLATILE ORGANIC COMPOUNDS IN SOILS AND OTHER SOLID MATRICES
SW5030	Purge-and-Trap
SW5030B	PURGE-AND-TRAP
SW5032	VOLATILE ORGANIC COMPOUNDS BY VACUUM DISTILLATION
SW5035	CLOSED SYSTEM PURGE AND TRAP AND EXTRACTION FOR VOLATILE ORG
SW5040	Protocol for Analysis of Sorbent Cartridges from Vol Organic
SW7.33	Reactivity CN
SW7.34	Reactivity Sulfide
SW7060A	
SW7470A	Acid Digestion of Waters for Mercury Analysis
SW7471A	Acid Digestion of Soils and Solids for Mercury Analysis
SW7740	
SW8151A	
SW8330	
SW9010B	TOTAL AND AMENABLE CYANIDE DISTALLATION
SW9012A	Total and Amenable Cyanide (Automated Colorimetric, with Off
SW9013	

ID	PrepMethodDesc
SW9030	SULFIDES
SW9071	Oil & Grease Extraction Method for Sludge Samples
SW9081A	CATION EXCHANGE CAPACITY OF SOILS (SODIUM ACETATE)
T3550	Modified SW3550/GPC Method for the Extraction of PCB's and P
TDIG	SAMPLE PREPARATION OF BIOLOGICAL TISSUE FOR METALS ANALYSIS
TOTAL	HNO3 Digestion of Unfiltered Water and Soil Samples for Tota
TOTREC	Total Recoverable Digestion of Unfiltered Sample for Metals
UNKNOWN	Unknown or Not Reported
WOS	Water Extraction of Soils for the Determination of Anions an

PVCCode

ID	PVCCodeDesc
1C	1st Column
2C	2nd Column
3C	3rd Column
PR	Primary Result

QCLevel

ID	QCLevelDesc
3	Level 3 Data Package
4	Level 4 Data Package
COA	Certificate of Analysis
COACAL	Certificate of Analysis w/ Calibration

ReportingLimitType

ID	ReportingLimitTypeDesc
CRDL	Contract-required detection limit
CRQL	Contract-required quantitation limit
MRL	Method Reporting Limit
PQL	Practical quantitation limit
RDL	Reportable detection limit
RL	Reporting Limit
SQL	Sample quantitation limit

ID	SampleTypeDesc
AB	Ambient Conditions Blank
BB	Bottle Blank
BD	Blank Spike Duplicate
BS	Blank Spike
DB	Filter Blank for Dissolved Metals
EB	Equipment Blank
FB	Field Blank
FD	Field Duplicate
FR	Field Replicate
FS	Field Spike
KD	Known (External Reference Material) Duplicate
LB	Lab Blank
LR	Lab Replicate
MB	Material Blank
MS	Lab Matrix Spike
N	Normal Environmental Sample
PB	Prep Blank
PE	Performance Evaluation Sample
PS	Prep Spike
PU	Pump Blank
QA	Not Applicable LabQC
RB	Material Rinse Blank
RD	Regulatory Duplicate
RM	Known (External Reference Material)
SD	Lab Matrix Spike Duplicate
TB	Trip Blank

ID	SamplingMethodDesc
AC	Air Canister
AF	Air Filter
AL	Air-Lift Sampler
AP	Air Lift Pump
AS	Ashing
AT	Sampling Train
AV	Sparge and Vent Pre-Treatment Collection Port
B	Bailer
BL	Undisturbed Bulk Sample
BP	Gas Operated Bladder Pump
BR	Brass (California) Ring
C	Continuous Flight Auger
CC	Core Sampler
CF	Flow Weighted Composite
CH	Charcoal Sampling Tube
CL	Clover Leaf Dredge Sampler
CN	Cone Penetrometer
CP	Centrifugal Pump
CR	Cutting Returns
CS	Composite Sample
CT	Time Weighted Composite
CU	Cryogenic Preconcentrator Tube
CY	Cyclone Method of Sampling Drill Cuttings
D	Disturbed Bulk Sample
DS	Dredge Sampler (Brass, Etc.)
DT	Driven Tube
E1	Electrical Submersible Pump (Pre-1982)
E2	Electrical Submersible Pump (1982+)
EC	ENCORE SOIL SAMPLER
EK	Eckman Dredge Sampler
ES	Environmentalist's Subsoil Probe
FC	Cassette Filter
G	Grab
GB	Geoprobe
GD	Electrical Submersible Pump (Gear-Driven)
GP	Gas-operated, double acting Piston Pump
H	Hollow Stem Auger
HA	Hand Auger
HB	Hand Bucket Auger
HC	Hammer - AMS Core Sampler
HP	Hydropunch
HR	Electrical Submersible Pump (Helical Rotor)
HS	Hand Core Sampler - Shallow Water Usage
HU	High-Volume Air Sampler with Puf Resin
HV	High Volume Air Sampler
HX	High-Volume Air Sampler with XAD Resin
HY	Hydrasleeve
KS	Kemmerer Sampler
LF	Low Flow
LV	Low Volume Continuous Air Sampler

ID	SamplingMethodDesc
LY	Lysimeter
NA	Not Applicable
NB	NISKIN BOTTLE
NC	Nickel Coated Brass Bomb Sampler
NQ	NQ Wireline Rock Coring/ASTM-D2113
NS	Non-Submersible Pump
NX	NX Rock Coring/ASTM-D2113
PI	Piston Pump
PN	PONAR
PP	Peristaltic Pump
PR	Stainless Steel Soil Gas Probe with a Retractable Inlet Slee
PS	Passive Soil Gas Sampling Probe
RS	Hollow Glass Sampling Rod
S	Drive Sample - 2 inch/ASTM-D1586
SA	Summa Passivated Air Canister
SC	Scraped From Exposed Surface
SD	DEPTH INTEGRATING SEDIMENT SAMPLER
SI	Simulprobe
SL	Suction Lift Pump
SP	Submersible Pump
SS	Split Spoon
ST	Submersible Turbine Pump
SV	SVE Air permeability system, utilizing stainless steel soil
SY	Syringe
T	Shelby Tube/ASTM-D1587
TE	Terracore Soil Sampler
TP	Tubing for Groundwater Sampling (e.g. Polyethylene Tubing)
TS	Thief Sampler and/or Thief Type Sampler
U	Tube Sampler - 3 inch/ASTM-D3550
VF	Emission isolation flux chamber, utilizing stainless steel s
VS	Van Dorn Sampler
W	Swab Or Wipe
WD	DEPTH SPECIFIC GROUNDWATER SAMPLER
WF	Wellhead Faucet (Grab Sample From)

TotalDissolved

ID	TotalDissolvedDesc
D	Dissolved
N/A	Not Applicable
T	Total

ID	UnitsDesc
% OPEN	% open
%V/V	Percent by Volume
1/S	Per second
ACRE FT	Acre Feet
ACRES	Acres
ADMI COLOR	ADMI (American Dye Manufacturers Institute) Color Units
BARS	Bars
CFS	Cubic feet per second
CFU/100ML	Colony forming Units per 100 milliliters
CFU/G	Colony forming Units per gram
CFU/ML	Colony forming units per milliliters
CM	Centimeters
CM/HR	Centimeters per hour
CM/SEC	Centimeters per second
CM/YR	Centimeters per year
CM2/SEC	Square centimeters per second
COLF/100ML	Coliform Bacteria per 100 milliliters
COLF/G	Coliform Bacteria per gram
COLOR UNIT	Color Unit
DAY	Days
DEG C	Degrees Celsius
DEG C/HR	Degrees Celsius per hour
DEG F	Degrees Fahrenheit
DIGITS	Number of digits to the right of the decimal point
DOLLARS	Dollars
DPY	Drums per year
DYNES/CM	Dynes per centimeter
FIBERS/L	Fibers per liter
FT	Feet
FT BTOC	Feet Below Top of Casing
FT CANDLES	Foot Candles
FT MSL	Feet above mean sea level
FT/DAY	Feet per day
FT/IN	Feet per inch
FT/MIN	Feet per minute
FT/SEC	Feet per second
FT2	Square feet
FT2/DAY	Square feet per day (Cubic feet/day-foot)
FT2/MIN	Feet squared per minute (for units of transmissivity)
FT3	Cubic feet
FT3/YR	Cubic feet per year
G	Grams
G/100G	GRAMS PER 100 GRAMS
G/CC	Grams per cubic centimeter
G/G	Grams per gram
G/KG	Grams per Kilogram
G/L	Grams per liter
G/M2/YR	Grams per square meter per year
G/ML	Grams per milliliter
GAL	Gallons

ID	UnitsDesc
GAL/MIN	Gallons per minute
GPD	Gallons per day
GPD/FT	Gallons per day per foot
GPD/FT2	Gallons per day per foot squared
GPM/FT	Gallons per minute per foot
GPY	Gallons per year
HRS	Hours
HRS/DAY	Hours per day
IN	Inches
IN(HG)	Inches of Mercury
IN/DAY	Inches per day
IN/FT	Inches per foot
IN/HR	Inches per hour
IN/IN	Inches per inch
IN/WK	Inches per week
IN2/FT	Square inches per foot
JCU	Jackson Candle Units
JTU	Jackson Turbidity Units
KG/1000GAL	Kilograms per 1000 gallons
KG/BATCH	Kilograms per batch
KG/DAY	Kilograms per day
KG/M3	Kilogram per meter cubed
KG/M3/S	Kilogram per meter cubed per second
KG/S	Kilogram per second
KM2	Square kilometers
KNOTS	Knots
LB/1000LB	Pounds per thousand pounds
LB/BARREL	Pound per barrel
LB/IN2	Pounds per square inch
LB/TON	Pounds per ton
LBS	Pounds
LBS/DAY	Pounds per day
LBS/MON	Pounds per month
LBS/YR	Pounds per year
M	Meter
M/DAY	Meters per day
M/S	Meter per second
M2	Meter squared
M2/S	Meter squared per second
M3	Meters cubed
M3 X 10(6)	Meter cubed (in millions)
M3/KG	Meter cubed per kilogram
M3/S	Meter cubed per second
MEQ/100G	Milliequivalents per 100 grams
MG	Milligrams
MG/100CM2	Milligrams per 100 square centimeters
MG/FLT	Milligrams per Filter
MG/G	Milligrams per Gram
MG/KG	Milligrams per Kilogram
MG/L	Milligrams per Liter

ID	UnitsDesc
MG/M2	Milligrams per square meter
MG/M2/DAY	Milligrams per meter squared per day
MG/M3	Milligrams per cubic meter (PPBV)
MG/ML	Milligrams per milliliter
MGAL	Million gallons
MGD	Millions of gallons per day
MGDO/L	Milligrams Dissolved Oxygen per Liter
MGM	Millions of gallons per month
MGY	Millions of gallons per year
MILE2	Square miles
MILES	Miles
MILL FT3	Million feet cubed
MILLIVOLTS	Millivolts
MIN	Minutes
ML	Milliliter
ML/L	Milliliter per liter
ML/MIN	Milliliters per minute
MM	Millimeter
MM/M2/HR	Millimeter per meter squared per hour
MM/YR	Millimeter per year
MMHOS/CM	Milliohms (MMHOS) per Centimeter
MOL %	Mole Percent
MOLES/KG	MOLES PER KILOGRAM
MON	Month
MPH	Miles per hour
MPN/100ML	Most Probable Number per 100 ML
MPN/G	MOST PROBABLE NUMBER PER GRAM
MPN/ML	MOST PROBABLE NUMBER PER MILLILITER
MS/CM	Microsiemens per centimeter
NAUT.MILE	Nautical mile
NG/100CM2	Nanograms per 100 square centimeters
NG/G	Nanograms per Gram
NG/KG	Nanogram per Kilogram
NG/L	Nanogram per liter
NG/M3	Nanogram per cubic meter
NG/ML	Nanograms per Milliliter
NM/L	NANO-MOLES PER LITER
NONE	No unit of measure
NTU	Nephelometric Turbidity Units
PCF	Pounds per cubic foot
PCI	PicoCuries
PCI/CM2	PicoCuries per square centimeter
PCI/G	PicoCuries per gram
PCI/L	PicoCuries per liter
PCI/ML	PicoCuries per Milliliters
PER LOSS	Percent Loss
PERCENT	Percent
PG/G	Picogram per gram
PG/KG	Picograms per kilogram
PG/L	Picogram per liter

ID	UnitsDesc
PG/M3	Picograms per Cubic Meter
PG/UL	Picograms per Microliter
PH UNITS	PH Units
PPB	Parts per billion
PPBV	Parts per billion by volume
PPM	Parts per million
PPMV	Parts Per Million By Volume
PPTV	Parts Per Trillion By Volume
PSF	Pounds per square foot
PSI	Pounds per square inch
S	Second
T.O.N.	Threshold Order Number
T/KT	Tons of lime per kiloton of soil
TONS/ACRE	Tons per acre
TONS/DAY	Tons per day
UEQ/L	Micro equivalents per liter
UG	Micrograms
UG/100CM2	Micrograms per 100 square centimeters
UG/CM2	Microgram per square centimeters
UG/G	Micrograms per gram
UG/KG	Micrograms per killogram
UG/L	Micrograms/Liter
UG/M3	Micrograms per cubic meter
UG/YR	Micrograms per year
UM/SEC	Micrometer per second
UMHOS/CM	UMHOS per centimeter
UMOLES/G	Micro-Moles per gram
UMOLES/KG	MICRO-MOLES PER KILOGRAM
UPY	Units per year

APPENDIX F

Wetland Delineation

SDM

RECEIVED
FEB 22 2007
D. McNICHOL

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Land Use Regulation
P.O. Box 439, Trenton, NJ 08625-0439
Fax # (609) 777-3656
www.state.nj.us/dep/landuse

JON S. CORZINE
Governor

LISA P. JACKSON
Commissioner

FEB 16 2007

Michael Kovacs
EcolSciences, Inc.
75 Fleetwood Drive – Suite 250
Rockaway, NJ 07866

RE: Letter of Interpretation; Line Verification
File No.: 2009-02-0005.3FWW060001
Applicant: ISP Environmental Services, Inc.
Block: 587; Lots: 3.01, 3.02 & 3.03
Linden City, Union County

Dear Mr. Kovacs:

This letter is in response to your request for a Letter of Interpretation to verify the jurisdictional boundary of the freshwater wetlands and waters on the referenced property.

In accordance with agreements between the State of New Jersey Department of Environmental Protection, the U.S. Army Corps of Engineers Philadelphia and New York Districts, and the U.S. Environmental Protection Agency, the NJDEP, Division of Land Use Regulation is the lead agency for establishing the extent of State and Federally regulated wetlands and waters. The USEPA and/or USACOE retains the right to reevaluate and modify the jurisdictional determination at any time should the information prove to be incomplete or inaccurate.

Based upon the information submitted, the Division of Land Use Regulation has determined that the wetlands and waters boundary line(s) as shown on the plan map entitled "TOPOGRAPHIC SURVEY LCP CHEMICALS & PLASTICS, INC. BLOCK 587 LOTS 3.01, 3.02 & 3.03 CITY OF LINDEN, UNION COUNTY, NEW JERSEY", dated March 14, 2001, last revised October 17, 2006, and prepared by Keller & Kirkpatrick is accurate as shown.

Any activities regulated under the Freshwater Wetlands Protection Act proposed within the wetlands or transition areas or the deposition of any fill material into any water area, will require a permit from this office unless exempted under the Freshwater Wetlands Protection Act, N.J.S.A. 13:9B-1 et seq., and implementing rules, N.J.A.C. 7:7A. A copy of this plan, together with the information upon which this boundary determination is based, has been made part of the Division's public records.

Pursuant to the Freshwater Wetlands Protection Act Rules (N.J.A.C. 7:7A-1 et seq.), you are entitled to rely upon this jurisdictional determination for a period of five years from the date of this letter.

The freshwater wetlands and waters boundary line(s), as determined in this letter, must be shown on any future site development plans. The line(s) should be labeled with the above LUR file number and the following note:

"Freshwater Wetlands/Waters Boundary Line as verified by NJDEP."

In addition, the Department has determined that the wetlands on the subject property are of intermediate resource value. The standard transition area or buffer required adjacent to intermediate resource value wetlands is 50 feet. This classification may affect the requirements for an Individual Wetlands Permit (see N.J.A.C. 7:7A-7), the types of Statewide General Permits available for the wetlands portion of this property (see N.J.A.C. 7:7A-5) and the modification available through a transition area waiver (see N.J.A.C. 7:7A-6). Please refer to the Freshwater Wetlands Protection Act (N.J.S.A. 13:9B-1 et seq.) and implementing rules for additional information.

It should be noted that this determination of wetlands classification is based on the best information presently available to the Department. The classification is subject to change if this information is no longer accurate, or as additional information is made available to the Department, including, but not limited to, information supplied by the applicant. Under NJSA 13:9B-7a)(2), if the Department has classified a wetland as exceptional resource value, based on a finding that the wetland is documented habitat for threatened and endangered species that remains suitable for use for breeding, resting or feeding by such species, an applicant may request a change in this classification. Such requests for a classification change must demonstrate that the habitat is no longer suitable for the documented species because there has been a change in the suitability of this habitat. Requests for resource value classification changes and associated documentation should be submitted to the Division of Land Use Regulation, P.O. Box 439, Trenton, New Jersey 08625.

This letter in no way legalizes any fill which may have been placed, or other regulated activities which may have occurred on-site. Also this determination does not affect your responsibility to obtain any local, State, or Federal permits which may be required.

In accordance with N.J.A.C. 7:7A-1.7, any person who is aggrieved by this decision may request a hearing within 30 days of the decision date by writing to:

New Jersey Department of Environmental Protection
Office of Legal Affairs
Attention: Adjudicatory Hearing Requests
401 East State Street
P.O. Box 402
Trenton, NJ 08625-0402

This request must include a completed copy of the Administrative Hearing Request Checklist.

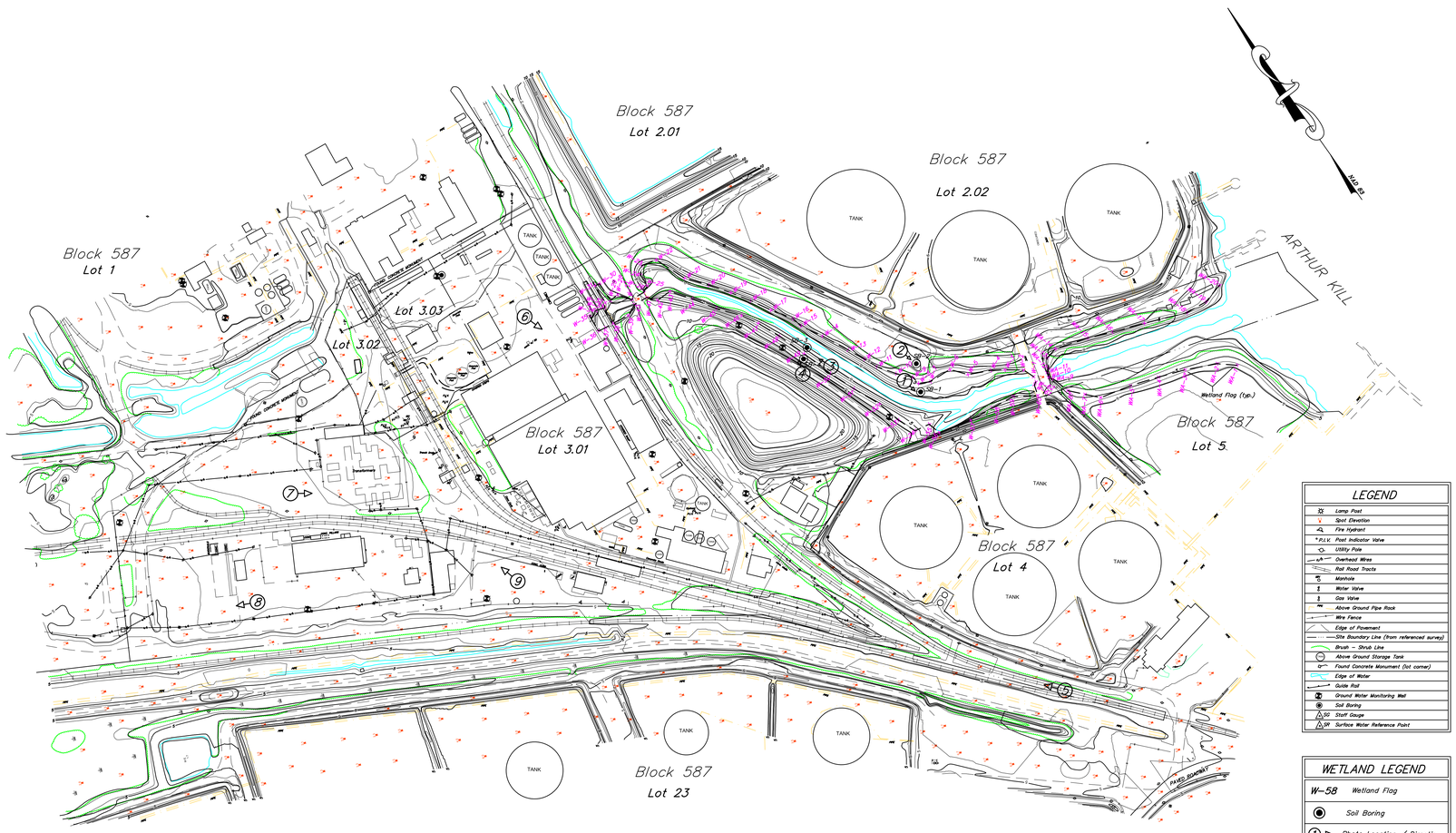
Please contact Tina Wolff of our staff at (609) 633-6754 or e-mail at Tina.Wolff@dep.state.nj.us should you have any questions regarding this letter. Be sure to indicate the Division's file number in all communication.

Sincerely,

Christopher Jones
Section Chief
Bureau of Inland Regulation

c:

Linden City Municipal Construction Official



LEGEND

	Lamp Post
	Spot Elevation
	Fire Hydrant
*F.D.V.	Post Indicator Valve
	Utility Pole
	Overhead Wires
	Rail Road Tracks
	Manhole
	Water Valve
	Gas Valve
	Above Ground Pipe Rack
	Wire Fence
	Edge of Pavement
	Site Boundary Line (from referenced survey)
	Brush – Shrub Line
	Above Ground Storage Tank
	Found Concrete Monument (lot corner)
	Edge of Water
	Guide Rail
	Ground Water Monitoring Well
	Soil Boring
SG	Staff Gauge
SR	Surface Water Reference Point

WETLAND LEGEND

W-58	Wetland Flag
	Soil Boring
1	Photo Location / Direction

SURVEY NOTES:

THE WORD CERTIFY, AS USED HEREON, IS UNDERSTOOD TO BE AN EXPRESSION OF PROFESSIONAL OPINION BY THE SURVEYOR, WHICH IS BASED ON HIS BEST KNOWLEDGE, INFORMATION AND BELIEF. AS SUCH, IT CONSTITUTES NEITHER A GUARANTEE NOR A WARRANTY, EXPRESSED OR IMPLIED.

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IF THIS SURVEY DOES NOT CONTAIN THE RAISED SEAL OF THE SURVEYOR, IT IS AN UNAUTHORIZED REPRODUCTION OF THE SURVEY.

THE WETLAND DELINEATION SHOWN HEREON IS AS MARKED BY ECOLSCIENCES, INC. IN MAY, 2006 AND LOCATED BY KELLER & KIRKPATRICK ON MAY 17 & 18, 2006.

THE BOUNDARY LINES SHOWN HEREON ARE TAKEN FROM A MAP ENTITLED "RESUBDIVISION MAP OF LOT 3 IN BLOCK 587 OF THE TAX MAP OF THE CITY OF LINDEN, UNION COUNTY, N.J., INTO THREE LOTS", SAID MAP WAS PREPARED BY GRASSMANN, KRIEH & MIKER, UNION, N.J. DATED OCT. 26, 1976.

LOT AND BLOCK NUMBERS SHOWN HEREON ARE BASED UPON THE CURRENT TAX MAPS OF THE CITY OF LINDEN, SHEET No. 128.

PLANIMETRIC AND TOPOGRAPHIC INFORMATION SHOWN HEREON SUPPLIED BY ATLANTIS AERIAL SURVEY CO. , INC. PER AERIAL PHOTOGRAPHY DATED DECEMBER 5, 2000.

HORIZONTAL DATUM BASED ON NAD83, VERTICAL DATUM BASED ON NGVD29 ESTABLISHED USING GLOBAL POSITIONING METHODS. HOLDING N.J.T COORS STATION AS FIXED.

KELLER & KIRKPATRICK DID NOT PERFORM A BOUNDARY SURVEY ON THE ABOVE PARCEL.

LOT LINES SHOWN HEREON ARE APPROXIMATE.

IF DIGITAL INFORMATION IS ALSO SUPPLIED, IT IS DONE SO FOR INFORMATIONAL PURPOSES, ONLY. THE ORIGINAL SIGNED AND SEALED DOCUMENT IS THE DOCUMENT OF RECORD.

UTILITY LOCATIONS SHOWN HEREON ARE FROM ABOVE GROUND OBSERVATIONS THE TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE USER OF THIS SURVEY IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATIONS AS TO THE TYPE AND LOCATIONS OF UNDERGROUND AND OTHER UTILITIES AS MAY BE NECESSARY.

SOIL BORING LOCATIONS ARE AS MARKED IN THE FIELD BY ECKENFELDER, BROWN & CALDWELL PERSONNEL AND LOCATED BY KELLER & KIRKPATRICK.

ELEVATIONS ON STAFF GAUGES ARE TO REFERENCE MARKS ON WOODEN SUPPORTS.

SOIL BORING LOCATIONS SB-1 TO SB-4 AND PHOTO LOCATION AND DIRECTION POSITIONS WERE PROVIDED TO KELLER & KIRKPATRICK BY ECOLSCIENCES, INC.

AREA CHART:

TOTAL TRACT (INCLUDING AREA WITHIN ARTHUR KILL)	25.83± ACRES
WETLANDS (EXCLUDING AREA WITHIN ARTHUR KILL)	2.01± ACRES
UPLANDS (EXCLUDING AREA WITHIN ARTHUR KILL)	23.42± ACRES
AREA WITHIN ARTHUR KILL	0.40± ACRES

REVISIONS		
6		
5		
4	ADD PHOTO/BORING LOCATIONS	9/18/06
3	ADD WETLAND FLAGS	5/18/06
2	ADD WELLS, BORINGS & REFS.	12/14/01
1	ADD LOT LINES 3.02 & 3.03	6/01/01

DATE: 5/14/01 SCALE: 1"=100' FLD. BK.: 56-52
PROJ.: 2001202.01 CHKD.: PAGE:

0 50 100 200 400

Keller & Kirkpatrick Certificate of Authorization #24GA28000300
CONSULTING ENGINEERS 930 Lanidex Plaza, Parsippany, N.J. 07054 973-887-0208 LANDSCAPE ARCHITECTS PLANNERS
LAND SURVEYORS
ROBERT C. KIRKPATRICK, Jr., Professional Engineer and Land Surveyor, Lic. 11339
GEORGE A. MILLER, Professional Engineer, Lic. 31767
WERNER A. MILL, Professional Land Surveyor, Lic. 32203

Preliminary

TOPOGRAPHIC SURVEY
LCP Chemicals & Plastics, Inc.
BLOCK 587
LOTS 3.01, 3.02 & 3.03
CITY OF LINDEN, UNION COUNTY, NEW JERSEY

SHEET No. 1 OF 1

W:/2001202/DWG/SURVDWG/LCP_WETLANDS.dwg

APPENDIX G

Habitat Assessment Reports

Ecological Assessment Report

LCP Chemicals Inc. Superfund Site

City of Linden
Union County, New Jersey

August 23, 2007

THE Chazen COMPANIES®

Engineers / Surveyors
Planners
Environmental Scientists
Landscape Architects

Prepared for:

ISP Environmental Services, Inc.
1361 Alps Road
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Ecological Assessment Report

LCP Chemicals Inc. Superfund Site

City of Linden
Union County, New Jersey

August 23, 2007

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EXECUTIVE SUMMARY

This Ecological Assessment (EA) Report was completed by The Chazen Companies (TCC) for ISP Environmental Services, Inc. as part of the Phase II Remedial Investigation of the 26-acre LCP Chemicals Inc. Superfund Site in the City of Linden, Union County, New Jersey. The following sections of this report describe the methodologies used in the EA and provide a detailed description of the Site and the ecological resources present within the project area.

The methodology utilized to complete this EA consisted of gathering information from federal, state, and local agencies, supplemented by site visits designed to identify and characterize the Site's flora and fauna. Additionally, the Site was studied for the presence of endangered, threatened, and/or rare (ETR) species and their habitats.

The Site is a 26-acre abandoned chlor-alkali chemical plant. A man-made ditch (South Branch Creek) with associated wetlands is located in the eastern portion of the Site. The creek flows to the east, connecting to the Arthur Kill. Pralls Island, located approximately 1,200 feet to the east of the Site, is an uninhabited island owned by the NYC Department of Parks and Recreation and is part of the Harbor Herons Rookery Complex.

During this EA, 79 species of plants, 42 species of wildlife, and 3 ecological communities were identified within the Site. No ETR species or significant ecological communities were identified within the Site.

Correspondence with the New Jersey Department of Environmental Protection (NJDEP) indicated that there are no records of any rare wildlife or plant species or ecological communities within the Site. The NJDEP reported that foraging habitat for black (*Nycticorax nycticorax*) and yellow-crowned night herons (*Nyctanassa violacea*) and colonial waterbirds was located within ¼ mile of the Site. Based on information from the NJDEP, no records of any rare plants or ecological communities were recorded within ¼ mile of the Site. According to the New York State Department of Environmental Conservation (NYSDEC), yellow-crowned night herons and pied-billed grebes (*Podilymbus podiceps*) are located within ¼ mile of the Site. These species were not observed during the EA.

A review of the Comprehensive List of Endangered and Threatened species provided on the USFWS's website indicated that the federally-threatened bog turtle (*Glyptemys muhlenbergii*) and the federally-endangered Indiana bat (*Myotis soldalis*) historically occurred in Union County, New Jersey. These species were not observed, nor was any suitable habitat for these species observed during the EA.

Overall, the flora and fauna found on the Site are species typically found in heavily industrialized areas within intertidal marsh ecosystems. Vegetative species found within the Site are very common to highly disturbed areas and possess no Federal or New Jersey State protection.

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1.0 Introduction

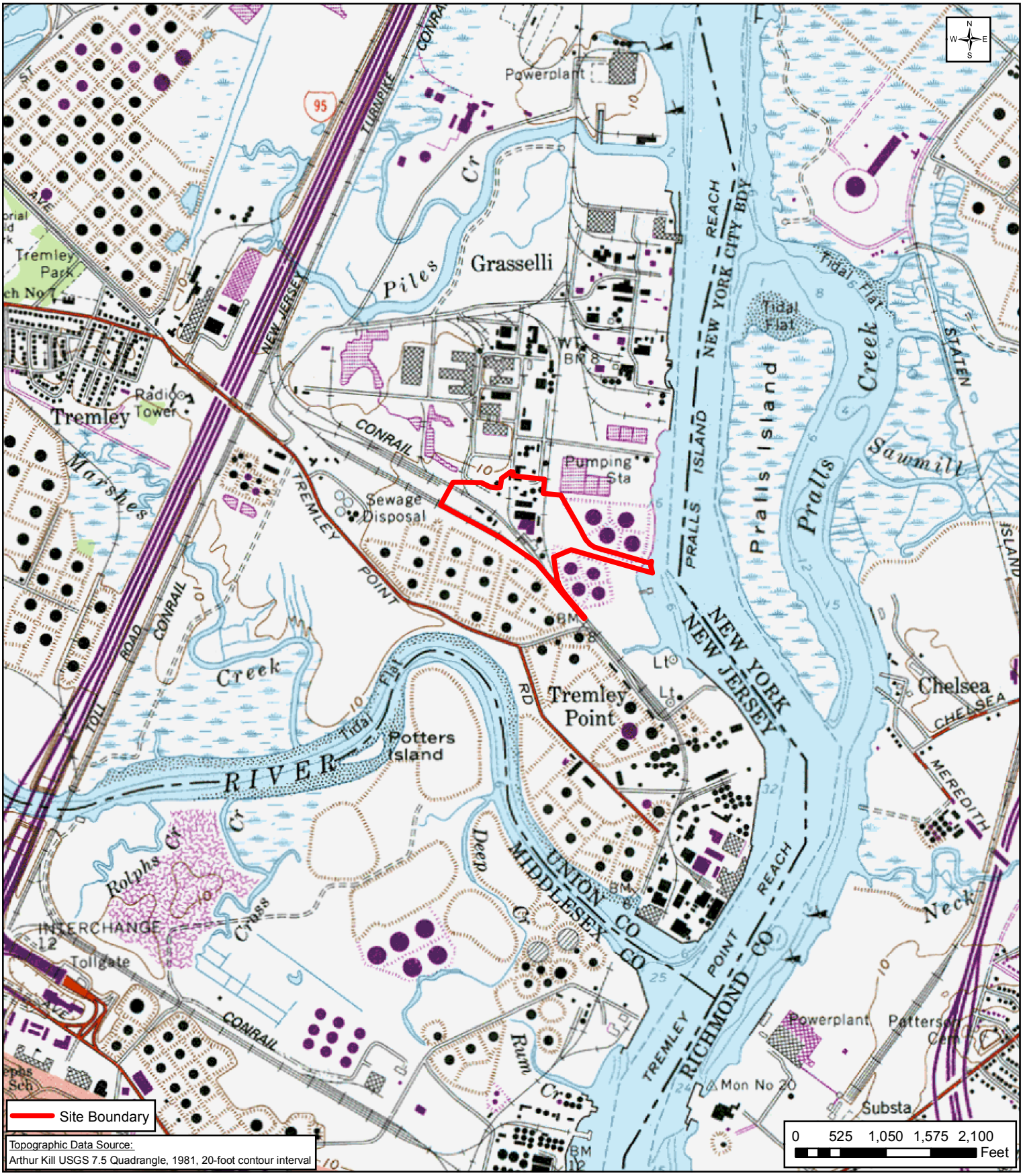
This Ecological Assessment (EA) Report was completed by The Chazen Companies (TCC) for ISP Environmental Services, Inc. as part of the Phase II Remedial Investigation of the 26-acre LCP Chemicals Inc. Superfund Site located in the City of Linden, Union County, New Jersey (hereafter "Site"). Figure 1.0-1, "Site Location Map," illustrates the "Site" on the *USGS Arthur Kill River, NY-NJ (1966, photorevised 1981) Topographic Quadrangle*.

The Site is located on Tremley Point along the Arthur Kill in the City of Linden. The site area has historically been developed for heavy industrial use. The coordinates of the center of the Site are Latitude 40.6032, Longitude -74.21163. The Arthur kill is located immediately east of the Site and receives flow from the Site, through South Branch Creek.

Currently, the Site is vacant, containing several abandoned industrial buildings in the western portion of the Site. A former brine sludge lagoon containing an impervious cap approximately 1.6 acres in size is located in the eastern-central portion of the Site adjacent to South Branch Creek.

South Branch Creek is a man-made tidal ditch that originates near the east-central portion of the Site and flows approximately 1,200 feet to the east, discharging into the Arthur Kill. The ditch is approximately 15 feet wide at the head of the stream and becomes as wide as 30 feet on the eastern end of the Site. The tidal flux of the Arthur Kill and South Branch Creek is approximately four to five feet. The substrate consists of very soft, organic muck up to three feet in depth. Some rip-rap is present along the banks of the creek and some construction debris along the bottom and banks of the creek.

The following sections of this report describe the methodologies used in the EA and provide a detailed description of the Site, surrounding area, and the ecological resources present at the Site.



Topographic Data Source:
Arthur Kill USGS 7.5 Quadrangle, 1981, 20-foot contour interval

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LCP Chemicals

Figure 1.0-1
Site Location Map

City of Linden
Union County, New Jersey

Created by:	JFT
Date:	09/14/06
Scale:	1:17,987
Project #:	70620.00

1.1 Surrounding Landscape

The primary active land use in the surrounding area is bulk storage and transport of petroleum products and aggregate. The transport of these materials occurs by ship and barge using on-site dockage on the Arthur Kill as well as by truck and pipeline. Other active facilities in the area include a municipal wastewater treatment plant, trucking and warehousing, and truck repair. A number of large chemical manufacturing facilities formerly operated within one mile of the site, each of which is currently inactive and in various stages of demolition and site remediation. The industrial properties located immediately adjacent to the LCP site include:

- Valero Linden Terminal located north and south of South Branch Creek along the Arthur Kill.

- The former GAF Chemicals chemical manufacturing facility to the north which is currently being remediated by ISPESI. The site remediation included demolition of site structures, grading and drainage improvements, construction of a fully circumferential shallow groundwater barrier and groundwater collection system, installation of bedrock groundwater extraction wells, and the construction and operation of a groundwater conveyance and treatment system.

- Citgo Petroleum Corp, Linden Transload Terminal located to the south and southwest.

Various undeveloped areas are located within one mile of the Site, much of which is either vacant former chemical manufacturing facilities or tidal wetlands. The only area of residential development within one mile of the Site is the Tremley section of Linden which is located west of the New Jersey turnpike approximately 4,700 feet from the center of the Site. Zoning regulations are in effect for the City of Linden. All of the land located west of the New Jersey Turnpike on Tremley Point is zoned H1 - Heavy Industrial. Figure 1.1-1, "Surrounding Land Use Map" depicts the land-use patterns surrounding the Site.

Several watercourses are located in the area surrounding the Site. Piles Creek is located approximately 2350 feet north of the Site and the Rahway River is located approximately 1550 feet to the south. Both watercourses have tidal marshes associated with them. Piles Creek and Rahway River are mapped as estuarine, subtidal, unconsolidated bottom, subtidal rivers [E1UBL] by the National Wetland Inventory (NWI) program. The tidal marshes associated with Piles Creek are mapped as estuarine, intertidal, emergent, persistent, irregularly flooded, partially drained/ditched wetlands [E2EM1Pd]. According to the NJDEP, Piles Creek is

classified as a SE3 watercourse. The SE3 classification is given to estuarine waters designated for secondary contact recreation, maintenance and migration of fish populations, migration of diadromous fish, maintenance of wildlife, and any other reasonable uses.[1] The section of the Rahway River nearest to the Site is classified as SE3.

The Arthur Kill is located immediately east of the Site. The Arthur kill is a large river, approximately 300-600 feet wide and greater than 30 feet deep that flows from north to south, discharging into the Raritan Bay. The Arthur Kill is frequently dredged to maintain a passageway for commercial ships. It is mapped as an estuarine, unconsolidated bottom, subtidal river [E1UBL]. According to the NJDEP, the Arthur Kill is classified as a SE3 watercourse. The stretch of the Arthur Kill adjacent to the Site is classified as SD by the NYSDEC. The SD classification is for saline waters that are suitable for fish survival. This classification is given to waters that, because of natural or man-made conditions, cannot meet the requirements for primary and secondary contact recreation and fish propagation.[2]

Pralls Island is located approximately 1,200 feet to the east of the Site within the Arthur Kill. It is an approximately 80-acre uninhabited island that was created from former dredge spoil deposits. The central portion of the island is forested and dominated primarily by tree-of-heaven (*Ailanthus altissima*), gray birch (*Betula populifolia*), and black cherry (*Prunus serotina*), all less than 30 feet in height. Tree-of-heaven is an aggressive invasive species. The perimeter of the island contains tidal wetlands. The wetlands are mapped as estuarine, intertidal, emergent, persistent, regularly exposed [E1EM1N]; and estuarine, intertidal, unconsolidated shore, sand, irregularly flooded wetlands [E1US2P]. The island is owned by the City of New York Department of Parks and Recreation and is part of the Harbor Herons Sanctuary.

Since 1987, the New York City Audubon Society has overseen a study on the breeding success of wading birds on this island. According to a 1989 study by the NYS DOS Division of Coastal Resources, there was an estimated 200 pairs of herons nesting on the island, including 7 pairs of cattle egrets (*Bubulcus ibis*), 88 pairs of glossy ibis (*Plegadis falcinellus*), and 77 pairs of black-crowned night herons (*Nycticorax nycticorax*)[3]. Over the past sixteen years, the number of herons nesting on the island has significantly decreased. During the NYC Audubon's Harbor Herons 2005 Interim Nesting Survey, a total of 39 black-crowned night heron nests were located[4]. Five of the nests were occupied and 34 of the nests were inactive[5].

---

[1] N.J.A.C. 7:9B-1.12(f)
[2] 6 NYCRR Article 890, Part 890.6
[3] NYS DOS Division of Coastal Resources. 1989. Designated Habitat: Pralls Island.
[4] Bernick, A.J. 2005. New York City Audubon's Harbor Herons Project: 2005 Interim Nesting Survey.

The island is subject to chemicals (i.e., heavy metals, DDT, and petrochemicals), nutrient pollution stresses, and stormwater and sewage discharges[6]. All of these pollutants have negative effects on the habitat used by the herons and may be a cause for their decreased use of the island.

Other avian species observed on Pralls Island include great blue (*Ardea herodias*) and little blue herons (*Egretta caerulea*); great (*Ardea alba*), cattle, and snowy egrets (*E. thula*); glossy ibis; yellow- (*Nyctanassa. violacea*) and black-crowned night herons; herring (*Larus argentatus*) and great black-backed gulls (*Larus marinus*); water fowl species such as American black duck (*Anas rubripes*), gadwall (*Anas strepera*), mallard (*Anas platyrhynchos*), and Canada geese (*Branta canadensis*); and American woodcocks (*Scolopax minor*).

[5] Ibid
[6] NYS DOS Division of Coastal Resources. 1989. Significant Habitats and Habitat Complexes of the New York Bight Watershed: Arthur Kill Complex.

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LCP Chemicals

Figure 1.1-1
Surrounding Land Use Map

City of Linden
Union County, New Jersey

Created by:	JFT
Date:	02/16/2007
Scale:	1:11,650
Project #:	70620.00

2.0 Methodology

As part of this EA, information was gathered from federal, state, and local agencies and was supplemented by a literature review and an on-site field investigation. The field investigation was designed to catalog the Site's flora and fauna. A brief description of the methods used follows.

2.1 Federal and State Agencies and Literature Review

The NJDEP was contacted on August 8, 2006, and the NYSDEC was contact on October 3, 2006, to obtain information concerning known occurrences of endangered, threatened, and/or rare (ETR) species located on, or within the vicinity of, the Site. Copies of these letters are included in Appendix A, "Correspondence." On August 31, 2006, the NJDEP Natural Heritage Program responded in a letter stating that no rare wildlife or plant species, or ecological communities were located within the Site. Within a ¼ mile of the Site, the NJDEP has records of foraging habitat for black and yellow-crowned night herons and colonial waterbirds. However, no records of any rare plants or ecological communities were reported within a ¼ mile of the Site.

On October 27, 2006, the NYSDEC responded in a letter stating that the New Jersey State-endangered pied-billed grebe (*Podilymbus podiceps*), and New Jersey State-threatened yellow-crowned night herons were located within a ¼ mile of the LCP Chemicals Inc. Superfund Site. In addition, several endangered and threatened vascular plants including rose-pink (*Sabatia angularis*), persimmon (*Diospyros virginiana*), Nantucket juneberry (*Amelanchier nantucketensis*), sweetbay magnolia (*Magnolia virginiana*), featherfoil (*Hottonia inflata*), thicket sedge (*Carex abscondita*), glaucous sedge (*Carex glaucodea*), primrose-leaf violet (*Viola primulifolia*), southern dodder (*Cuscuta obtusiflora* var. *glandulosa*), swamp cottonwood (*Populus heterophylla*), possum-haw (*Viburnum nudam* var. *nudum*), and American strawberry bush (*Euonymus americanus*) were recorded within two miles of the Site (Confidential correspondence with NYSDEC). Due to the sensitivity of some of the information provided within this letter, pages describing the locations of species will not be provided.

To determine if any federally-listed species occur in the project area, TCC reviewed the Comprehensive List of Endangered and Threatened species as provided on the USFWS's New Jersey Field Office website.[7] This list identifies federally-listed species by the counties and municipalities in which they occur. According to this document, the federally-threatened bog turtle (*Clemmys muhlenbergii*) and the federally-endangered Indiana bat (*Myotis soldalis*) are known to occur in Union County. However, bog turtles are known to only occur in four municipalities in

[7] http://www.fws.gov/northeast/njfieldoffice/Endangered/munlist.pdf

Union County: Berkeley Heights Township, Mountainside Borough, Scotch Plains Township, and Summit City. The Site is located in the City of Linden municipality, which does not border any of the abovementioned municipalities. Indiana bats may occur in any municipality in Union County; therefore, they may occur in the vicinity of the Site. However, suitable habitat was not found on-site except for several abandoned buildings.

Below, TCC presents a brief review of the habitat requirements of the ETR species identified as potentially occurring in the project area.

2.2 Endangered and Threatened Species

Indiana Bat

Indiana bat habitat is composed of both hibernacula and summer roosting areas. Hibernacula typically are located in abandoned mines or caves. Summer roosting habitat is characterized by wooded areas with trees that have a southern exposure, are ≥ 5 inches in diameter, and that exhibit specific physical characteristics (e.g., exfoliating bark, crevices, dead limbs, snags) that provide refuge for bats during the day for both resting and maternity purposes.[8]

Pied-billed Grebe

Primary nesting habitat typically includes dense stands of emergent vegetation or low-lying aquatic vegetation. Open water is usually found near nesting habitat. Pied-billed grebes may nest in heavily populated areas as along as nesting-habitat requirements are met.[9] During the nonbreeding season, they can be found in a variety of habitats including brackish marshes and tidal creeks.

Yellow-crowned Night Heron

Yellow-crowned night herons typically nest and roost on dredge spoils, barrier and bay islands that contain forested wetlands and shrub thickets.[10] Nesting areas with insufficient cover are usually avoided; however, recently yellow-crowned night herons have been observed nesting in residential neighborhoods, parks, and other areas near humans.[11] Primary foraging habitat includes the shores of tidal creeks and pools within salt and brackish tidal marshes dominated by smooth cordgrass (*Spartina alternifolia*).[12]

---

[8] Indiana Bat Project Review Fact Sheet. USFWS New York Field Office. August 2005.
9 Muller, M.J. and R.W. Stoner. 1999. Pied-billed Grebe (Podilymbus podiceps). *In* The Birds of North America, No. 410 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.
[10] Yellow-crowned night heron fact sheet. NJDEP.
[11] Ibid
[12] Ibid

2.3 Field Investigation

Biologists from The Chazen Companies (TCC) conducted on-site investigations of the Property on the following dates, shown below.

Table 2.3.1 Work Field Days

LCP Chemicals Inc. Superfund Site Work Field Days and Activity Sheet			
Dates	**Staff**	**Man Hours**	**Work Conducted**
07/20/2006		10	Habitat Assessment
08/24/2006		24	Habitat Assessment and Pilot Biota Sampling
09/18/2006		16	Habitat Assessment and Biota Sampling
09/19/2006		23	Habitat Assessment and Biota Sampling
09/20/2006		23	Habitat Assessment and Biota Sampling
09/21/2006		12	Habitat Assessment and Biota Sampling
09/26/2006		10	Habitat Assessment
09/27/2006		10	Habitat Assessment
Total Field Days		8	
Total Man Hours		136	*Total man hours does not include drive time

During the field investigations, plant and animal species were inventoried to characterize existing populations, habitats, and communities. The potential for rare plants and animals, as well as general observations regarding overall plant community composition and structure, wetlands and watercourses, the degree of site disturbance, and other site characteristics were noted and recorded during the site inspection. The Site was transected in its entirety excluding entering hazard zones (i.e., on-site buildings) to ensure that each vegetative community type was surveyed.

In addition to investigating the Site, other areas within a half mile perimeter from the Site were investigated to document vegetation and the presence of wildlife species which live in the area.

Moreover, a literature review was conducted to provide supporting documentation for use in the EA. Information gathered included topographic maps, soil and geology maps, aerial photographs, pertinent plant and animal species information (i.e., known species in the area, characteristics required for identification, etc.), historical information, and information on the Pralls Island heron rookery.

2.3.1 Ecological Communities

Community (habitat) types described herein generally follow those utilized by the NJDEP and New York Natural Heritage Programs as described in *A Preliminary*

Natural Community Classification For New Jersey[13] and *Ecological Communities of New York.*[14] Vegetation identified within the Site is described in the following sections in terms of strata (layers – "overstory;" "understory;" and "groundcover").

Overstory vegetation represents the canopy tree species greater than six inches in diameter. Understory/shrub vegetation is comprised of woody tree species between two and six inches in diameter, and saplings and shrubs less than two inches in diameter and three to 12 feet in height. Ground layer vegetation consists of both woody and herbaceous vegetation less than three feet in height.

During the Site evaluation, the distributions of various communities were noted along with the vegetative species composition, plant structure (i.e., layers), and other vegetative characteristics. This information was used to provide a written description of each community type as presented below. Additionally, aerial photographic interpretation was used to assist in preparing a depiction of the ecological communities of the Site.

Plants species were field-identified to genus and species, when possible. Unidentified plant species were collected for later identification. Upon the compilation of the species list, plants identified at the Site were reviewed to determine if any federally- or state-listed plants were documented. Finally, species were categorized by location and general habitat characteristics were documented.

2.3.2 Wildlife

On-site field surveys of wildlife species were conducted for reptiles, amphibians, mammals, fish, bird, and crustacean species. An area of approximately ½ mile from the Site was also surveyed to document species living within close proximity to the Site. The following discussion outlines the methods used.

Reptiles and Amphibians

Methods used to conduct the reptiles and amphibian surveys include turning debris, and large stones to reveal herpetological species underneath.

---

[13] Breden. T.F. A preliminary natural community classification for New Jersey. Repinted from: Karlin, E.F. [editor]. 1989. New Jersey's Rare and Endangered Plants and Animals. Institute for Environmental Studies, Ramapo College, Mahwah, NJ. 280p.

[14] Edinger, G.J., D.J. Evans, S. Gebauer, T.G. Howard, D.M. Hunt, and A.M. Olivero (editors). 2002. Ecological Communities of New York State. Second Edition. A revised and expanded edition of Carol Reschke's Ecological Communities of New York State. (Draft for review). New York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, NY.136 pgs.

Mammals

Methods to detect mammals were based on visual encounters, vocalization, tracks, scat, remains, or other signs.

Birds

Bird species were identified throughout the Site either visually, by song, and/or by nest evaluations. Associations between bird species and their corresponding preferred habitat types were noted during the investigation.

Fish and Crustaceans

Fish and crustacean species were identified by seining and visual observation in the South Branch Creek. Seining occurred at several locations along the stretch of the South Branch Creek located on-site.

3.0 Existing physical conditions

The Site consists primarily of abandoned industrial buildings. Many of the buildings are decrepit and falling down. Several dirt roads and railroad tracks bisect the Site. A former brine sludge lagoon containing an impervious cap approximately 1.6 acres in size is located in the eastern portion of the Site adjacent to the South Branch Creek. The following section describes the Site's topography, soils, hydrology including wetland mapping, and vegetative communities.

3.1 Topography

According to the *USGS Arthur Kill NY-NJ (1966, photorevised 1981) Topographic Quadrangle* map, the Site is flat and is less than 10 feet above mean sea level (msl). Figure 1.0-1 provides an illustration of the overall Site topography.

3.2 Hydrology and Wetland Mapping

3.2.1 Watercourses

South Branch Creek is a man-made brackish tidal ditch originating in the central portion of the Site and flowing east over 1,200 feet before discharging into the Arthur Kill. The watercourse is approximately 15 feet wide at the head of the stream and becomes as wide as 30 feet on the eastern end of the Site. The substrate consists of very soft, organic muck up to three feet in depth. South Branch Creek has a large tidal change from low to high tide (i.e., 4-5 feet).

3.2.2 Wetland Mapping

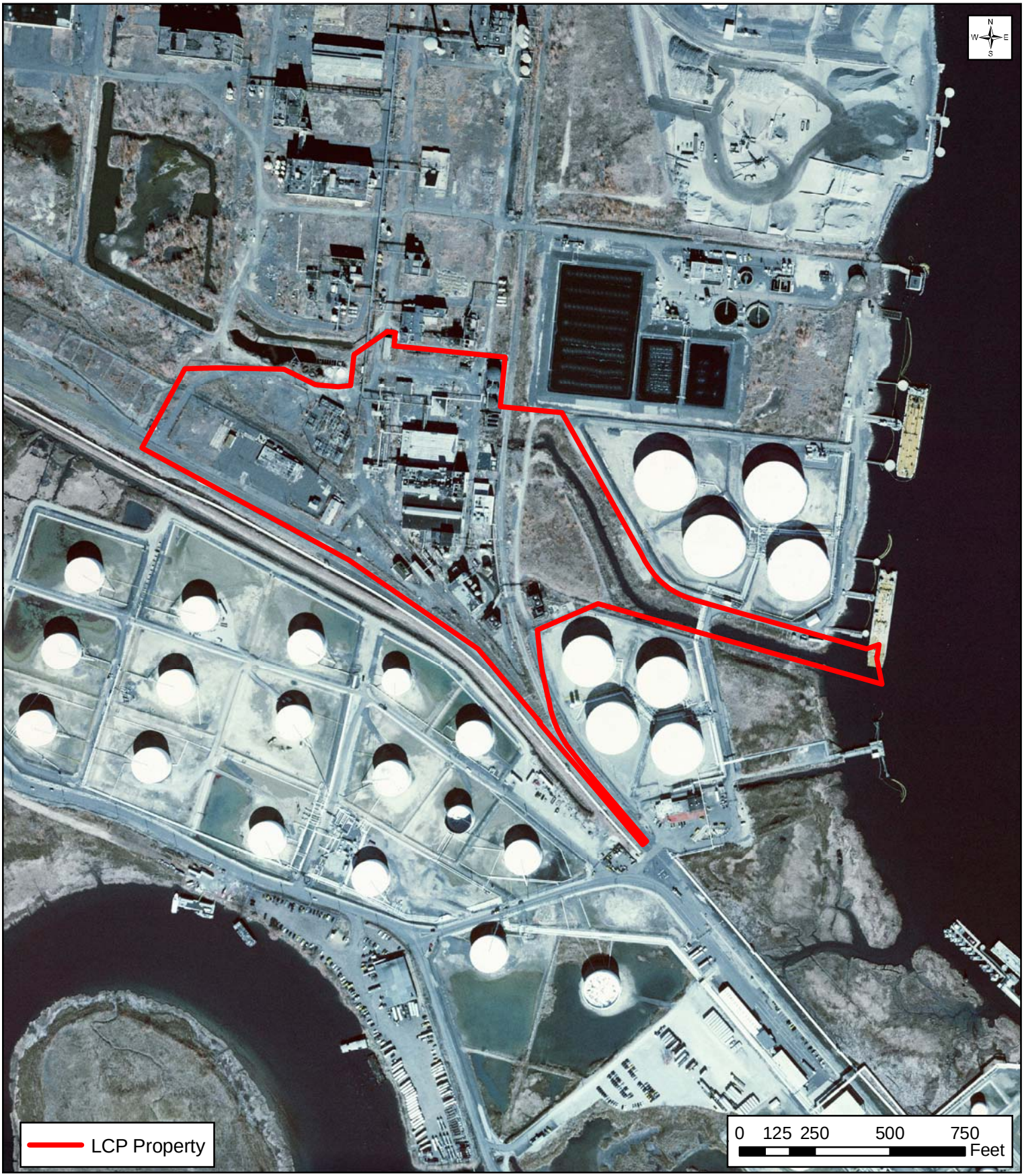
NWI Mapping

According to the National Wetland Inventory (NWI) digital data provided by the USFWS there are several watercourses and wetlands mapped within the project area. Only one NWI wetland is mapped within the boundaries of the Site. The wetland is mapped in the locality of South Branch Creek. The wetland is mapped as an estuarine, intertidal, emergent, mesohaline, irregularly flooded wetland [E2EM5P]. A wetland mapped located immediately adjacent to the northwestern Site boundary is mapped as an Estuarine, subtidal, unconsolidated bottom, subtidal, excavated wetland [E1UB1x].

NJDEP Wetland Mapping

According to a Geographic Information System (GIS) dataset provided by the NJDEP, no NJDEP wetlands are mapped on the Site. The closest NJDEP wetland is mapped approximately 100 feet south of the southwestern corner of the Site. This wetland is mapped as a palustrine, emergent, persistent, saturated wetland [PEM1B].

The wetlands and watercourses on-site were delineated by the EcolSciences, Inc. of Rockaway, New Jersey. According to the delineation, one wetland was identified in the eastern portion of the Site and it was delineated with flagging labeled W1 - W62, and WA-1 – WA-20. A Letter of Interpretation was received from the NJDEP and the wetland delineation line was determined to be correct. In addition, the NJDEP determined that the onsite wetland (i.e., South Branch Creek) is of intermediate resource value, thus a 50 foot regulatory buffer is required. Figure 3.2-2, "Wetlands Map", provides an illustration of the mapped wetlands on and adjacent to the Site.



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LCP Chemicals

Figure 3.0-1 Aerial Map

City of Linden
Union County, New Jersey

Created by:	JFT
Date:	09/14/06
Scale:	1:5,152
Project #:	70620.00

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LCP Chemicals

Figure 3.2-2 Wetlands Map

City of Linden
Union County, New Jersey

Created by:	JFT
Date:	09/14/06
Scale:	1:8,192
Project #:	70620.00

4.0 Results

The Site is a heavily developed area consisting of abandoned industrial buildings and a capped brine sludge lagoon. South Branch Creek is a man-made tidal ditch that originates near the east-central portion of the Site and flows east before discharging into the Arthur Kill. The Site primarily consists of three ecological communities including an urban vacant lot, capped brine sludge lagoon, and brackish tidal marsh.

The following sections provide descriptions of the types of ecological communities located within the Site. Section 4.2 describes the Site's fauna and habitat characteristics.

4.1 Ecological Communities

TCC staff identified 79 plant species within three ecological communities as described in *Ecological Communities of New York*[15] *and A Preliminary Natural Community Classification for New Jersey.*[16] Many of the plant species observed within the urban vacant lot and capped brine sludge lagoon (i.e., successional old field) communities were also observed in adjacent open fields. The mowed fields are located adjacent to the north and northeastern portions of the Site. These fields consist primarily of early successional species. Figure 4.1-1 "Ecological Communities Map" illustrates the approximate location of each of the community types on the Site. Representative photographs of each community type are included as Appendix B "Site Photographs".

During this EA, no federally and/or state endangered or threatened plant species were observed within the boundaries of the Site. The following presents a general description of the ecological communities observed within the Site.

Urban Vacant Lot, With Structures – The community type is located throughout the Site and consists of exposed soil, rubble, and derelict buildings. This community type makes up most of the Site as the Site is completely disturbed and has been abandoned since the early 1990's. Vegetation was sparse and consisted mostly of first successional recruitment species and invasive species typically found in urban areas. Trees are generally sparse and many exist as small saplings. Shrubs

[15] Edinger, G.J., D.J. Evans, S. Gebauer, T.G. Howard, D.M. Hunt, and A.M. Olivero (editors). 2002. Ecological Communities of New York State. Second Edition. A revised and expanded edition of Carol Reschke's Ecological Communities of New York State. (Draft for review). New York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, NY.136 pgs.
[16] Breden. T.F. A preliminary natural community classification for New Jersey. Repinted from: Karlin, E.F. [editor]. 1989. New Jersey's Rare and Endangered Plants and Animals. Institute for Environmental Studies, Ramapo College, Mahwah, NJ. 280p.

account for approximately 1-5% coverage in this community. The dominant shrub species include groundsel tree (*Baccharis halimifolia*), staghorn sumac (*Rhus typhina*), and white mulberry (*Morus alba*). The groundlayer accounts for approximately 20-25% of this community and is composed of common milkweed (*Asclepias syriaca*), spotted knapweed (*Centaurea maculosa*), pokeweed (*Phytolacca americana*), and common plantain (*Plantago major*). Table 4.1.1 provides a list of the species encountered within the urban vacant lot community.

Table 4.1.1 List of Species observed within the Urban Vacant Lot Community

Scientific Name	**Common Name**
Trees	
Ailanthus altissima	Tree of heaven
Acer rubrum	Red maple (saplings)
Catalpa speciosa	Northern catalpa
Liquidambar styraciflua	Sweet gum
Populus deltoides	Eastern cottonwood (saplings)
Populus tremuloides	Quaking aspen (saplings)
Robinia pseudoacacia	Black locust
Quercus rubra	Red oak
Shrubs	
Baccharis halimifolia	Groundsel tree
Clethra alnifolia	Coastal sweetpepperbush
Diospyros virginiana	Common persimmon
Elaeagnus umbellate	Autumn olive
Morus alba	White mulberry
Polygonum cuspidatum	Japanese knotweed
Rhus copallinum	Winged sumac
Rhus typhina	Staghorn sumac
Rosa multiflora	Multiflora rose
Rubus allegheniensis	Common blackberry
Viburnum recognitum	Southern arrowwood
Herbs	
Apocynum cannabinum	Indian hemp
Asclepias syriaca	Common milkweed
Aster spp.	Aster
Centaurea maculosa	Spotted knapweed
Chenopodium album	Pigweed
Chicorium intybus	Chicory
Cirsium arvense	Canada thistle
Newcomb, Lawrence. 1977. Newcomb's Wildflower Guide. Little, Brown and Company. Boston. Edinger, G.J., D.J. Evans, S. Gebauer, T.G. Howard, D.M. Hunt, and A.M. Olivero (editors). 2002. Ecological Communities of New York State. Second Edition. A revised and expanded edition of Carol Reschke's Ecological Communities of New York State. (Draft for review). New York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, NY.136 pgs.	

Table 4.1.1 List of Species observed within the Urban Vacant Lot Community (cont.)

Scientific Name	**Common Name**
Herbs (cont.)	
Cirsium vulgare	Bull thistle
Commelina communis	Asiatic dayflower
Daucus carota	Queen Anne's lace
Fragaria spp.	Strawberry
Hypericum perforatum	Common St. Johnswort
Lactusa serriola	Prickly lettuce
Lepidium virginicum	Wild peppergrass
Leucanthemum vulgare	Oxeye daisy
Linaria vulgaris	Butter-and-eggs
Lychnis alba	White campion
Lycopus americanus	American water horehound
Melilotus officinalis	Yellow sweet clover
Oxalis stricta	Yellow wood-sorrel
Phytolacca americana	Pokeweed
Plantago major	Common plantain
Polygonum hydropiper	Water pepper
Polygonum lapathifolium	Curlytop knotweed
Polygonum persicaria	Lady's thumb
Potentilla simplex	Common cinquefoil
Ranunculus acris	Tall buttercup
Rumex crispus	Curly dock
Solanum dulcamara	Bittersweet nightshade
Solidago canadensis	Canada goldenrod
Solidago juncea	Early goldenrod
Vines	
Celastrus scandens	American bittersweet
Convolvulus sepium	Hedge bindweed
Echinocystis lobata	Wild cucumber
Ipomoea purpurea	Common morning glory
Parthenocissus quinquefolia	Virginia creeper
Toxicodendron radicans	Poison ivy
Vitis aestivalis	Summer grape
Grasses and Sedges	
Cyperus esculentus	Yellow nutsedge
Cyperus strigosus	Strawcolored flatsedge
Digitaria spp.	Crabgrass
Elymus repens	Quackgrass
Phleum pratense	Timothy

Newcomb, Lawrence. 1977. Newcomb's Wildflower Guide. Little, Brown and Company. Boston.
Edinger, G.J., D.J. Evans, S. Gebauer, T.G. Howard, D.M. Hunt, and A.M. Olivero (editors). 2002. Ecological Communities of New York State. Second Edition. A revised and expanded edition of Carol Reschke's Ecological Communities of New York State. (Draft for review). New York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, NY.136 pgs.

Successional Old Field (i.e., Brine Sludge Lagoon) – This community is located in the east-central portion of the Site. It consists of a capped brine sludge lagoon that has become vegetated with early successional species. The former brine sludge lagoon has a clean cover and it is a closed RCRA lagoon. It is not part of the contaminated site. Over the years, the cap has become vegetated with early successional species such as daisy fleabane (*Erigeron strigosus*), narrowleaf plantain (*Plantago lanceolata*), clover (*Trifolium* spp.), and brome grass (*Bromus* sp.). A woodchuck (*Marmota monax*) burrow was observed at the western edge of the former brine sludge lagoon.

Table 4.1.1 List of Species observed within the Successional Old Field Community

Scientific Name	Common Name
Herbs	
Brassica spp.	Mustard
Chamaesyce maculata	Prostrate spurge
Erigeron strigosus	Daisy fleabane
Leontodon autumnalis	Fall dandelion
Linaria vulgaris	Butter-and-eggs
Lotus corniculatus	Birdsfoot trefoil
Plantago lanceolata	Narrowleaf plantain
Plantago major	Common plantain
Taraxacum officinale	Common dandelion
Trifolium pratense	Red clover
Trifolium repens	White clover
Verbascum thapsus	Common mullein
Vicia villosa	Winter vetch
Grasses and Sedges	
Aleopecurus spp.	Foxtail
Bromus spp.	Brome grass
Digitaria spp.	Crabgrass
Elymus repens	Quackgrass
Phleum pratense	Timothy

Newcomb, Lawrence. 1977. Newcomb's Wildflower Guide. Little, Brown and Company. Boston.
Edinger, G.J., D.J. Evans, S. Gebauer, T.G. Howard, D.M. Hunt, and A.M. Olivero (editors). 2002. Ecological Communities of New York State. Second Edition. A revised and expanded edition of Carol Reschke's Ecological Communities of New York State. (Draft for review). New York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, NY.136 pgs.

Brackish Tidal Marsh – This community is located in the eastern portion of the Site and includes South Branch Creek and its banks. South Branch Creek is a man-made ditch that has been excavated in artificial fill and a brackish tidal marsh. Over the years, the ditch has been filled and realigned to its current state. Vegetation within this community was dense and dominated by tall graminoids. Vegetation along the sides of the ditch consists primarily of common reed (*Phragmites australis*) and smooth cordgrass (*Spartina alternifolia*). Several bird

species including a little blue heron (*Egretta caerulea*), green heron (*Butorides virescens*), and swamp sparrow (*Melospiza georgiana*) were observed in this community. Mummichogs (*Fundulus* sp.), fiddler crabs (*Uca pugnax*), and ribbed mussels (*Geukensia demissa*) were relatively abundant in the marsh. Blue crabs (*Callinectes sapidus*) were also noted further out in South Branch Creek, closer to the Arthur Kill.

Table 4.1.2 List of Species observed within the Brackish Tidal Marsh Community

Scientific Name	**Common Name**
Grasses and Sedges	
Lythrum salicaria	Purple loosestrife
Phragmites australis	Common reed
Spartina alternifolia	Smooth cordgrass
Newcomb, Lawrence. 1977. Newcomb's Wildflower Guide. Little, Brown and Company. Boston. Edinger, G.J., D.J. Evans, S. Gebauer, T.G. Howard, D.M. Hunt, and A.M. Olivero (editors). 2002. Ecological Communities of New York State. Second Edition. A revised and expanded edition of Carol Reschke's Ecological Communities of New York State. (Draft for review). New York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, NY.136 pgs.	

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LCP Chemicals

Figure 4.1-1
Ecological Communities Map

City of Linden
Union County, New Jersey

Created by:	JFT
Date:	09/14/06
Scale:	1:4,219
Project #:	70620.00

4.2 Fauna

The fauna of the Site was also cataloged during the on-site investigation. In all, 42 species of wildlife were observed during the Site visits.

4.2.1 Mammals

Six mammalian species were either observed or recognized by their sign on or within the immediate vicinity of the Site (Table 4.2.1). A woodchuck burrow was observed at the former sludge lagoon; a mouse (*Peromyscus* sp.) nest was observed near an abandoned building; a raccoon (*Procyon lotor*) track was observed along the main access road through the site; a whitetail deer (*Odocoileus virginianus*) was observed near the abandoned buildings; a red fox (*Vulpes vulpes*) was observed along the railroad tracks; and an eastern cottontail (*Sylvilagus floridanus*) was observed in the vicinity of the Site. No aquatic mammals or endangered, threatened, or special concern mammalian species were observed within the Site.

Table 4.2.1 Mammal Species Observed

Scientific Name	Common Name	Habitat
Marmota monax	Woodchuck	SOF
Odocoileus virginanus	Whitetail deer	UVL
Peromyscus sp.	Mouse	UVL
Procyon lotor	Raccoon	UVL
Vulpes vulpes	Red fox	UVL
Sylvilagus floridanus	Eastern cottontail	OF (Adjacent to Site)
Ecological Communities: **SOF**- Successional Old Field, **UVL**- Urban Vacant Lot		

4.2.2 Reptiles and Amphibians

One reptile and one amphibian species were observed at the Site (Table 4.2.2). No endangered, threatened, or special concern reptile or amphibian species were observed within the Site.

Table 4.2.2 Reptile and Amphibian Species Observed

Scientific Name	Common Name	Habitat
Bufo americanus	American toad	UVL
Thamnophis sirtalis	Common garter snake	UVL
Ecological Communities: **BTM**- Brackish Tidal Marsh, **UVL**- Urban Vacant Lot		

4.2.3 Fish and Crustaceans

Three species of fish and eight species of crustaceans were observed during the field investigation (Table 4.2.3). No endangered, threatened, or special concern fish or crustacean species were observed within the Site.

Table 4.2.3 Fish and Crustaceans Species Observed

Scientific Name	Common Name	Habitat
Fish		
Fundulus diaphanous	Banded killifish	BTM
Fundulus heteroclitus	Mummichog	BTM
Fundulus majalis	Striped mummichog	BTM
Crustaceans		
Balanus spp.	Barnacle	BTM
Callinectes sapidus	Blue crab	BTM
Carcinus maenas	Green crab	BTM
Geukensia demissa	Ribbed mussel	BTM
Neopanopeus sayi	Black-fingered mud crab	BTM
Palaemontetes spp.	Grass shrimp	BTM
Uca minax	Red-jointed fiddler crab	BTM
Uca pugnax	Atlantic Marsh fiddler crab	BTM
Ecological Communities: **BTM**- Brackish Tidal Marsh, **UVL**- Urban Vacant Lot		

4.2.4 Birds

Twenty-three species of birds were observed on or within the immediate vicinity of the Site (Table 4.2.4). Thirteen of the species were observed on-site and 10 species were observed in tidal marshes within ½ mile of the Site. Associations between bird species and their corresponding preferred habitat types were noted during the investigation. All avian species observed are common in New Jersey/New York and are typically found within the communities they were observed in. No ETR bird species were observed during the field investigation.

Since the Site is located within the Atlantic coast migration corridor, numerous migrating land and water birds could potentially use the site or surrounding area as a stopover/overwintering site. The Atlantic coast is regularly used by migrating birds and approximately 50 different kinds of landbirds travel this flyway.[17] Flocks of Canada geese (*Branta canadensis*) and mourning doves (*Zenaida macroura*) were observed in mowed fields adjacent to the Site during the field investigations.

[17] Peterson, S.R. 1979. Atlantic Coast Route and Tributaries. Migration of Birds. Fish and Wildlife Service, Circular 16. pg. 70.

Table 4.2.4 Bird Species Observed

Scientific Name	Common Name	Habitat
Birds		
Agelaius phoeniceus	Red-winged blackbird	BTM
Anas platyrhynchos	Mallard	Arthur kill
Anas rubripes	American black duck	Piles Creek
Ardea herodias	Great blue heron	Piles Creek
Botaurus lentiginosus	American bittern	Rahway Creek
Branta canadensis	Canada goose	UVL, Arthur Kill
Butorides virescens	Green heron	BTM
Calidris minutilla	Least sandpiper	Piles Creek
Casmerodius albus	Great egret	Piles Creek
Charadrius vociferus	Killdeer	UVL
Dumetella carolinensis	Gray catbird	UVL
Egretta caerulea	Little blue heron	BTM
Egretta thula	Snowy egret	Piles Creek
Hirundo rustica	Barn swallow	UVL
Larus atricilla	Laughing gull	Piles Creek
Larus argentatus	Herring gull*	UVL
Melospiza georgiana	Swamp sparrow	BTM
Melospiza melodia	Song sparrow	UVL
Mimus polyglottos	Northern mockingbird	UVL
Phalacrocorax auritus	Double-crested cormorant	Arthur kill
Sterna hirundo	Common tern	Rahway Creek
Sturnus vulgaris	European starling	UVL
Zenaida macroura	Mourning dove	UVL
Ecological Communities: **BTM**- Brackish Tidal Marsh, **UVL**- Urban Vacant Lot * denotes a flyover		

4.2.5 Endangered, Threatened, and Rare Wildlife Species

During this EA, no ETR species were found on the Site. According to the Comprehensive List of Federally Listed, Threatened, and Endangered Species of New Jersey, the Indiana bat (*Myotis soldalis*) is the only federally protected ETR species known historically to be in the City of Linden municipality. Based upon the habitat found within the Site, it is unlikely that Indiana bats are found in the project area. The abandoned buildings throughout the Site could provide suitable habitat for Indiana bats; however, no bats were observed during the site visits.

Indiana bat roosts typically are identified by trees with exfoliating bark in open tree canopies where there is significant exposure to sunlight. There are very few trees on the Site, and the closest black locust was a single tree approximately 1,000 feet north of the Site. Several black locust trees were identified along the Rahway River corridor approximately ½ mile away. These trees were approximately 15 feet high with insufficient diameters and physical structures for roosting.

According to the NYSDEC, pied-billed grebes and yellow-crowned night herons are recorded approximately ¼ from the Site. Based upon the habitat found within the Site, potential nonbreeding habitat for pied-billed grebes and foraging habitat for yellow-crowned night herons exists within the Site. The brackish tidal marsh community located in the eastern portion of the Site is dominated by common reed and smooth cordgrass, which is commonly associated with yellow-crowned night heron foraging habitat. Nesting habitat for both of these species was not observed within the Site.

5.0 CONCLUSIONS

The project area is an abandoned industrial site consisting of deteriorating buildings and disturbed land. One watercourse (i.e., South Branch Creek) flows east, discharging into the Arthur Kill, which eventually flows into the Raritan Bay.

The wildlife species observed during this EA are all fairly common to the area. Pralls Island, located approximately 1,200 feet to the east of the project within the Arthur Kill is part of a Harbor Herons Sanctuary, owned by the NYC Department of Parks and Recreation. The uninhabited island provides a nesting habitat for numerous birds, including herons, shorebirds, gulls, waterfowl, and songbirds. However, declining populations of herons have been noted on this island.

In regards to ETR species, there were no ETR species or significant ecological communities observed within or in the immediate vicinity of the project area. The brackish tidal marsh community, located in the eastern portion of the Site, is the only area onsite which may provide suitable nonbreeding and foraging habitat for the state-endangered pied-billed grebe and state-threatened yellow-crowned night heron. Although this community may provide low-grade habitat for these species, plenty of similar habitat is located in the surrounding area (i.e., Piles Creek, Rahway River). Since both species are highly mobile and because the Site does not provide nesting habitat, it is expected that the both species would migrate and use similar habitat in the surrounding area.

As this Site has been subject to highly industrialized previous land uses, it is highly modified and disturbed. This has led to a species assemblage of generalists and/or early successional/weedy/invasive species. The flora and fauna species found on the site are typical species that would be found in heavily industrialized areas within intertidal marsh ecosystems. As most of the species found on-site are mobile, it is anticipated that they will migrate to higher quality habitat in the surrounding areas such as Piles Creek and the Arthur Kill. Vegetative species found within the Site are very common to highly disturbed areas and possess no special protection. All species observed or documented in the intertidal marsh community are common species in this habitat type and are secure in the region.

Appendix A: Correspondence

CHAZEN ENGINEERING & LAND SURVEYING CO., P.C.

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North Country Office
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August 8, 2006

Office of Natural Lands Management
Natural Heritage Program
PO Box 404
22 South Clinton Avenue
Trenton, NJ 08625-0404

Re: Freedom of Information Request, Threatened or Endangered Species
26 Acre Site Located at the foot of South Wood Avenue
City of Linden, Union County, New Jersey

Dear Sir or Madam:

The Chazen Companies are in the process of conducting a natural resource inventory at the above referenced property. The approximately 26-acre site is located at the foot of South Wood Avenue in the City of Linden, Union County, New Jersey. The tax parcel map for this area identifies the property as parcel #'s (i.e., Block and Lot number): 587 3.1, 587 3.2, and 587 3.3. Please find the enclosed USGS topographic map (Arthur Kill Quadrangle) illustrating the approximate location of the subject property.

The project site has been designated a superfund site by the Environmental Protection Agency (EPA). As part of a Phase II Remedial Investigation at the LCP Chemicals Superfund Site, an on site habitat assessment will be conducted. All species will be inventoried on the property.

Please provide any information you have concerning known occurrences of endangered, threatened and/or special concern wildlife species as well as rare plant, animal, natural community occurrences, or other significant habitats either on the site or in the immediate surrounding area. This information will help us focus on habitat which may be critical to endangered or threatened species.

If you have any questions, please do not hesitate to contact me at (845) 567-1133 if you have any questions. Thank you for your assistance.

Sincerely,

Jason Tourscher

Jason Tourscher
Wetland Scientist/Biologist

Enclosure

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JON S. CORZINE
Governor

LISA P. JACKSON
Commissioner

Division of Parks and Forestry
Office of Natural Lands Management
Natural Heritage Program
P.O. Box 404
Trenton, NJ 08625-0404
Tel. #609-984-1339
Fax. #609-984-1427

August 31, 2006

Jason Tourscher
The Chazen Companies
356 Meadow Avenue
Newburgh, NY 12550

Re: LCP Chemicals Superfund Site

Dear Mr. Tourscher:

Thank you for your data request regarding rare species information for the above referenced project site in Linden City, Union County.

Searches of the Natural Heritage Database and the Landscape Project (Version 2) are based on a representation of the boundaries of your project site in our Geographic Information System (GIS). We make every effort to accurately transfer your project bounds from the topographic map(s) submitted with the Request for Data into our Geographic Information System. We do not typically verify that your project bounds are accurate, or check them against other sources.

Neither the Natural Heritage Database nor the Landscape Project has records for any rare wildlife species on the referenced site.

We have also checked the Natural Heritage Database and the Landscape Project habitat mapping for occurrences of any rare wildlife species or wildlife habitat within 1/4 mile of the referenced site. Please see the table below for species list and conservation status.

Species within 1/4 mile of referenced site.

Common Name	Scientific Name	Federal Status	State Status	Grank	Srank
black-crowned night-heron foraging habitat	*Nycticorax nycticorax*		T/S	G5	S3B,S4N
colonial waterbird foraging habitat					
yellow-crowned night-heron foraging habitat	*Nyctanassa violacea*		T/T	G5	S2B

We have also checked the Natural Heritage Database for occurrences of rare plant species or ecological communities. The Natural Heritage Database does not have any records for rare plants or ecological communities on or within 1/4 mile of the site.

Attached is a list of rare species and ecological communities that have been documented from Union County. If suitable habitat is present at the project site, these species have potential to be present.

Status and rank codes used in the tables and lists are defined in the attached EXPLANATION OF CODES USED IN NATURAL HERITAGE REPORTS.

If you have questions concerning the wildlife records or wildlife species mentioned in this response, we recommend that you visit the interactive I-Map-NJ website at the following URL, http://www.state.nj.us/dep/gis/depsplash.htm or contact the Division of Fish and Wildlife, Endangered and Nongame Species Program.

PLEASE SEE THE ATTACHED 'CAUTIONS AND RESTRICTIONS ON NHP DATA'.

Thank you for consulting the Natural Heritage Program. The attached invoice details the payment due for processing this data request. Feel free to contact us again regarding any future data requests.

Sincerely,

Herbert A. Lord

Herbert A. Lord
Data Request Specialist

cc: Robert J. Cartica
Lawrence Niles
NHP File No. 06-4007452

CAUTIONS AND RESTRICTIONS ON NATURAL HERITAGE DATA

The quantity and quality of data collected by the Natural Heritage Program is dependent on the research and observations of many individuals and organizations. Not all of this information is the result of comprehensive or site-specific field surveys. Some natural areas in New Jersey have never been thoroughly surveyed. As a result, new locations for plant and animal species are continuously added to the database. Since data acquisition is a dynamic, ongoing process, the Natural Heritage Program cannot provide a definitive statement on the presence, absence, or condition of biological elements in any part of New Jersey. Information supplied by the Natural Heritage Program summarizes existing data known to the program at the time of the request regarding the biological elements or locations in question. They should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. The attached data is provided as one source of information to assist others in the preservation of natural diversity.

This office cannot provide a letter of interpretation or a statement addressing the classification of wetlands as defined by the Freshwater Wetlands Act. Requests for such determination should be sent to the DEP Land Use Regulation Program, P.O. Box 401, Trenton, NJ 08625-0401.

The Landscape Project was developed by the Division of Fish & Wildlife, Endangered and Nongame Species Program in order to map critical habitat for rare animal species. Natural Heritage Database response letters will also list all species (if any) found during a search of the Landscape Project. However, this office cannot answer any inquiries about the Landscape Project. All questions should be directed to the DEP Division of Fish and Wildlife, Endangered and Nongame Species Program, P.O. Box 400, Trenton, NJ 08625-0400.

This cautions and restrictions notice must be included whenever information provided by the Natural Heritage Database is published.

NJ Department of Environmental Protection
Division of Parks and Forestry
Natural Lands Management

UNION COUNTY
RARE SPECIES AND NATURAL COMMUNITIES PRESENTLY RECORDED IN THE NEW JERSEY NATURAL HERITAGE DATABASE

NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK
*** Vertebrates						
BARTRAMIA LONGICAUDA	UPLAND SANDPIPER		E		G5	S1B
CLEMMYS INSCULPTA	WOOD TURTLE		T		G4	S3
CLEMMYS MUHLENBERGII	BOG TURTLE	LT	E		G3	S2
EURYCEA LONGICAUDA LONGICAUDA	LONGTAIL SALAMANDER		T		G5T5	S2
PASSERCULUS SANDWICHENSIS	SAVANNAH SPARROW		T/T		G5	S2B,S4N
STERNA ANTILLARUM	LEAST TERN		E		G4	S1B
STRIX VARIA	BARRED OWL		T/T		G5	S3B
*** Ecosystems						
TRAPROCK GLADE/ROCK OUTCROP COMMUNITY	TRAPROCK GLADE/ROCK OUTCROP COMMUNITY				G2	S1
*** Invertebrates						
ALASMIDONTA UNDULATA	TRIANGLE FLOATER		T		G4	S3
PAPAIPEMA AERATA	A BORER MOTH				GH	SH
POLITES MYSTIC	LONG DASH				G5	S3?
PONTIA PROTODICE	CHECKERED WHITE		T		G4	S1
*** Other types						
COASTAL HERON ROOKERY	COASTAL HERON ROOKERY				GU	S3
*** Vascular plants						
CAREX BEBBII	BEBB'S SEDGE				G5	S2
CAREX POLYMORPHA	VARIABLE SEDGE		E		G3	S1
CYNOGLOSSUM VIRGINIANUM VAR VIRGINIANUM	WILD COMFREY				G5T5	S2
LEMNA VALDIVIANA	PALE DUCKWEED		E		G5	S1
LIATRIS SCARIOSA VAR NOVAE-ANGLIAE	NORTHERN BLAZING-STAR		E		G5?T3	SH

UNION COUNTY
RARE SPECIES AND NATURAL COMMUNITIES PRESENTLY RECORDED IN
THE NEW JERSEY NATURAL HERITAGE DATABASE

NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK
MIMULUS ALATUS	WINGED MONKEY-FLOWER				G5	S3
MONARDA CLINOPODIA	BASIL BEEBALM		E		G5	SH
MUHLENBERGIA CAPILLARIS	LONG-AWN SMOKE GRASS		E		G5T?	S1
PHLOX PILOSA	DOWNY PHLOX		E		G5T5	SH
RANUNCULUS PUSILLUS VAR PUSILLUS	LOW SPEARWORT				G5T4?	S2
VIOLA CANADENSIS	CANADIAN VIOLET		E		G5T?	S1

24 Records Processed

EXPLANATIONS OF CODES USED IN NATURAL HERITAGE REPORTS

FEDERAL STATUS CODES

The following U.S. Fish and Wildlife Service categories and their definitions of endangered and threatened plants and animals have been modified from the U.S. Fish and Wildlife Service (F.R. Vol. 50 No. 188; Vol. 61, No. 40; F.R. 50 CFR Part 17). Federal Status codes reported for species follow the most recent listing.

LE	Taxa formally listed as endangered.
LT	Taxa formally listed as threatened.
PE	Taxa already proposed to be formally listed as endangered.
PT	Taxa already proposed to be formally listed as threatened.
C	Taxa for which the Service currently has on file sufficient information on biological vulnerability and threat(s) to support proposals to list them as endangered or threatened species.
S/A	Similarity of appearance species.

STATE STATUS CODES

Two animal lists provide state status codes after the Endangered and Nongame Species Conservation Act of 1973 (NSSA 23:2A-13 et. seq.): the list of endangered species (N.J.A.C. 7:25-4.13) and the list defining status of indigenous, nongame wildlife species of New Jersey (N.J.A.C. 7:25-4.17(a)). The status of animal species is determined by the Nongame and Endangered Species Program (ENSP). The state status codes and definitions provided reflect the most recent lists that were revised in the New Jersey Register, Monday, June 3, 1991.

D	Declining species-a species which has exhibited a continued decline in population numbers over the years.
E	Endangered species-an endangered species is one whose prospects for survival within the state are in immediate danger due to one or many factors - a loss of habitat, over exploitation, predation, competition, disease. An endangered species requires immediate assistance or extinction will probably follow.
EX	Extirpated species-a species that formerly occurred in New Jersey, but is not now known to exist within the state.
I	Introduced species-a species not native to New Jersey that could not have established itself here without the assistance of man.
INC	Increasing species-a species whose population has exhibited a significant increase, beyond the normal range of its life cycle, over a long term period.
T	Threatened species-a species that may become endangered if conditions surrounding the species begin to or continue to deteriorate.
P	Peripheral species-a species whose occurrence in New Jersey is at the extreme edge of its present natural range.
S	Stable species-a species whose population is not undergoing any long-term increase/decrease within its natural cycle.
U	Undetermined species-a species about which there is not enough information available to determine the status.

Status for animals separated by a slash(/) indicate a duel status. First status refers to the state breeding population, and the second status refers to the migratory or winter population.

Special Concern applies to animal species that warrant special attention because of some evidence of decline, inherent vulnerability to environmental deterioration, or habitat modification that would result in their becoming a Threatened species. This category would also be applied to species that meet the foregoing criteria and for which there is little understanding of their current population status in the state.

Plant taxa listed as endangered are from New Jersey's official Endangered Plant Species List N.J.S.A. 131B-15.151 et seq.

E Native New Jersey plant species whose survival in the State or nation is in jeopardy.

REGIONAL STATUS CODES FOR PLANTS AND ECOLOGICAL COMMUNITIES

LP Indicates taxa listed by the Pinelands Commission as endangered or threatened within their legal jurisdiction. Not all species currently tracked by the Pinelands Commission are tracked by the Natural Heritage Program. A complete list of endangered and threatened Pineland species is included in the New Jersey Pinelands Comprehensive Management Plan.

HL Indicates taxa or ecological communities protected by the Highlands Water Protection and Planning Act within the jurisdiction of the Highlands Preservation Area.

EXPLANATION OF GLOBAL AND STATE ELEMENT RANKS

The Nature Conservancy has developed a ranking system for use in identifying elements (rare species and natural communities) of natural diversity most endangered with extinction. Each element is ranked according to its global, national, and state (or subnational in other countries) rarity. These ranks are used to prioritize conservation work so that the most endangered elements receive attention first. Definitions for element ranks are after The Nature Conservancy (1982: Chapter 4, 4.1-1 through 4.4.1.3-3).

GLOBAL ELEMENT RANKS

G1 Critically imperiled globally because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extinction.

G2 Imperiled globally because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extinction throughout its range.

G3 Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g., a single western state, a physiographic region in the East) or because of other factors making it vulnerable to extinction throughout it's range; with the number of occurrences in the range of 21 to 100.

G4 Apparently secure globally; although it may be quite rare in parts of its range, especially at the periphery.

G5 Demonstrably secure globally; although it may be quite rare in parts of its range, especially at the periphery.

GH Of historical occurrence throughout its range i.e., formerly part of the established biota, with the expectation that it may be rediscovered.

GU Possibly in peril range-wide but status uncertain; more information needed.

GX Believed to be extinct throughout range (e.g., passenger pigeon) with virtually no likelihood that it will be rediscovered.

G? Species has not yet been ranked.

GNR Species has not yet been ranked.

STATE ELEMENT RANKS

S1 Critically imperiled in New Jersey because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres). Elements so ranked are often restricted to very specialized conditions or habitats and/or restricted to an extremely small geographical area of the state. Also included are elements which were formerly more abundant, but because of habitat destruction or some other critical factor of its biology, they have been demonstrably reduced in abundance. In essence, these are elements for which, even with intensive searching, sizable additional occurrences are unlikely to be discovered.

S2 Imperiled in New Jersey because of rarity (6 to 20 occurrences). Historically many of these elements may have been more frequent but are now known from very few extant occurrences, primarily because of habitat destruction. Diligent searching may yield additional occurrences.

S3 Rare in state with 21 to 100 occurrences (plant species and ecological communities in this category have only 21 to 50 occurrences). Includes elements which are widely distributed in the state but with small populations/acreage or elements with restricted distribution, but locally abundant. Not yet imperiled in state but may soon be if current trends continue. Searching often yields additional occurrences.

S4 Apparently secure in state, with many occurrences.

S5 Demonstrably secure in state and essentially ineradicable under present conditions.

SA Accidental in state, including species (usually birds or butterflies) recorded once or twice or only at very great intervals, hundreds or even thousands of miles outside their usual range; a few of these species may even have bred on the one or two occasions they were recorded; examples include European strays or western birds on the East Coast and vice-versa.

SE Elements that are clearly exotic in New Jersey including those taxa not native to North America (introduced taxa) or taxa deliberately or accidentally introduced into the State from other parts of North America (adventive taxa). Taxa ranked SE are not a conservation priority (viable introduced occurrences of G1 or G2 elements may be exceptions).

SH Elements of historical occurrence in New Jersey. Despite some searching of historical occurrences and/or potential habitat, no extant occurrences are known. Since not all of the historical occurrences have been field surveyed, and unsearched potential habitat remains, historically ranked taxa are considered possibly extant, and remain a conservation priority for continued field work.

SP Element has potential to occur in New Jersey, but no occurrences have been reported.

SR Elements reported from New Jersey, but without persuasive documentation which would provide a basis for either accepting or rejecting the report. In some instances documentation may exist, but as of yet, its source or location has not been determined.

SRF Elements erroneously reported from New Jersey, but this error persists in the literature.

SU Elements believed to be in peril but the degree of rarity uncertain. Also included are rare taxa of uncertain taxonomical standing. More information is needed to resolve rank.

SX Elements that have been determined or are presumed to be extirpated from New Jersey. All historical occurrences have been searched and a reasonable search of potential habitat has been completed. Extirpated taxa are not a current conservation priority.

SXC Elements presumed extirpated from New Jersey, but native populations collected from the wild exist in cultivation.

SZ Not of practical conservation concern in New Jersey, because there are no definable occurrences, although the taxon is native and appears regularly in the state. An SZ rank will generally be used for long distance migrants whose occurrences during their migrations are too irregular (in terms of repeated visitation to the same locations), transitory, and dispersed to be reliably identified, mapped and protected. In other words, the migrant regularly passes through the state, but enduring, mappable element occurrences cannot be defined.

Typically, the SZ rank applies to a non-breeding population (N) in the state - for example, birds on migration. An SZ rank may in a few instances also apply to a breeding population (B), for example certain lepidoptera which regularly die out every year with no significant return migration.

Although the SZ rank typically applies to migrants, it should not be used indiscriminately. Just because a species is on migration does not mean it receives an SZ rank. SZ will only apply when the migrants occur in an irregular, transitory and dispersed manner.

B Refers to the breeding population of the element in the state.

N Refers to the non-breeding population of the element in the state.

T Element ranks containing a "T" indicate that the infraspecific taxon is being ranked differently than the full species. For example *Stachys palustris* var. *homotricha* is ranked "G5T? SH" meaning the full species is globally secure but the global rarity of the var. *homotricha* has not been determined; in New Jersey the variety is ranked historic.

Q Elements containing a "Q" in the global portion of its rank indicates that the taxon is of questionable, or uncertain taxonomical standing, e.g., some authors regard it as a full species, while others treat it at the subspecific level.

.1 Elements documented from a single location.

Note: To express uncertainty, the most likely rank is assigned and a question mark added (e.g., G2?). A range is indicated by combining two ranks (e.g., G1G2, S1S3).

IDENTIFICATION CODES

These codes refer to whether the identification of the species or community has been checked by a reliable individual and is indicative of significant habitat.

Y Identification has been verified and is indicative of significant habitat.

BLANK Identification has not been verified but there is no reason to believe it is not indicative of significant habitat.

? Either it has not been determined if the record is indicative of significant habitat or the identification of the species or community may be confusing or disputed.

CHAZEN ENGINEERING & LAND SURVEYING CO., P.C.

Capital District Office
Phone: (518) 273-0055

Orange County Office
Phone: (845) 567-1133

21 Fox Street, Poughkeepsie, New York 12601
Phone: (845) 454-3980 Fax: (845) 454-4026
Email: poughkeepsie@chazencompanies.com
Web: www.chazencompanies.com

North Country Office
Phone: (518) 812-0513

October 3, 2006

Ms. Jean Pietrusiak
NYSDEC - Information Services
NY Natural Heritage Program
625 Broadway, 5th Floor
Albany, NY 12233-4754

Re: Freedom of Information Request, Threatened or Endangered Species
Site Located adjacent to Old Place Creek
South of Port Ivory, Richmond County, New York

Dear Ms. Pietrusiak:

The Chazen Companies are in the process of conducting a Phase II Remedial Investigation and Ecological Risk Assessment (ERA) of a 26-acre site in the City of Linden, Union County, New Jersey. As part of the remediation process, a reference stream within the vicinity of the site is being studied.

The reference stream is located along Old Place Creek, which is located south of Port Ivory, Richmond County, New York. Old Place Creek is located below the Goethals Bridge which connects New Jersey and Staten Island. Please find the enclosed USGS topographic maps (Arthur Kill and Elizabeth Quadrangle) illustrating the approximate location of the site and reference stream. The land use surrounding the site and reference stream is industrial. Brackish tidal marshes are located adjacent to the reference stream.

Please provide any information you have concerning known occurrences of endangered, threatened and/or special concern wildlife species as well as rare plant, animal, natural community occurrences, or other significant habitats either at the reference stream site or in the immediate surrounding area. Also, although the 26-acre site is located within New Jersey, we are requesting any information you may have for the portion of New York (i.e., Chelsea, New York) which is located east of the site.

If at all possible, please fax the requested information to me at (845) 567-1925. Please do not hesitate to contact me at (845) 567-1133 if you have any questions.

Thank you for your assistance.

Sincerely,

Jason Tourscher

Jason Tourscher
Wetland Scientist/Biologist

New York State Department of Environmental Conservation
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, 5th floor, Albany, New York 12233-4757
Phone: (518) 402-8935 • FAX: (518) 402-8925
Website: www.dec.state.ny.

Denise M. Sheehan
Commissioner

October 27, 2006

Jason Tourscher
Chazen Engineering
21 Fox Street
Poughkeepsie, NY 12601

Dear Mr. Tourscher:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment for the proposed 26-acre Phase II Remedial Investigation and Ecological Risk Assessment, area along Old Place Creek below Goethals Bridge which connects New Jersey and Staten Island, area as indicated on the map you provided, located in Richmond County, New York State.

Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicate occur, or may occur, on your site or in the immediate vicinity of your site. The information contained in this report is considered sensitive and should not be released to the public without permission from the New York Natural Heritage Program.

The presence of rare species may result in this project requiring additional permits, permit conditions, or review. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, at the enclosed address.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement on presence or absence of all rare or state-listed species or significant natural communities. This information should not be substituted for on-site surveys that may be required for environmental impact assessment.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

Sincerely,

Tara Seoane

Tara Seoane, Information Services
NY Natural Heritage Program

Enc.
cc: Reg. 2, Wildlife Mgr
Reg. 2, Fisheries Mgr.
Peter Nye, Endangered Species Unit, Albany
Jack Cooper, Fish and Wildlife, Albany

COMPREHENSIVE LIST OF NEW JERSEY MUNICIPALITIES WITH EXTANT AND HISTORIC OCCURRENCES OF FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES, AND CANDIDATE SPECIES, PURSUANT TO THE ENDANGERED SPECIES ACT OF 1973
(87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*)

{Revised June 2004; Bald eagle data revised July 2005}

1. SPECIES OCCURRENCES BY COUNTY AND MUNICIPALITY

Index of symbols used in the tables:

T – Federally listed as threatened.
E – Federally listed as endangered.
X – Known occurrence of extant federally listed or candidate species.
H – Historic occurrence of federally listed or candidate species.
W – Wintering foraging habitat for bald eagles.

2. FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES AND CANDIDATE SPECIES IN NEW JERSEY UNDER U.S. FISH AND WILDLIFE SERVICE JURISDICTION (Species Narratives)

LISTED SPECIES - PLANTS
- Swamp pink (*Helonias bullata*)
- Knieskern's beaked-rush (*Rhynchospora knieskernii*)
- Sensitive joint-vetch (*Aeschynomene virginica*)
- American chaffseed (*Schwalbea americana*)
- Small whorled pogonia (*Isotria medeoloides*)
- Seabeach amaranth (*Amaranthus pumilus*)

LISTED SPECIES - INVERTEBRATES
- Dwarf wedgemussel (*Alasmidonta heterodon*)
- Northeastern beach tiger beetle (*Cicindela dorsalis dorsalis*)

LISTED SPECIES - REPTILES
- Bog turtle (*Clemmys muhlenbergii*)

LISTED SPECIES - BIRDS
- Bald eagle (*Haliaeetus leucocephalus*)
- Piping plover (*Charadrius melodus*)
- Roseate tern (*Sterna dougallii*)

LISTED SPECIES - MAMMALS
- Indiana bat (*Myotis sodalis*)

CANDIDATE SPECIES
- Bog asphodel (*Narthecium americanum*)
- Hirst's panic grass (*Dichanthelium hirstii*)

DELISTED SPECIES
- Peregrine falcon (*Falco peregrinus*)

UNION COUNTY

The species listed below are known to occur in at least one of the Union County municipalities listed below.

Species	
Bog Turtle	
Indiana Bat	(*)

Municipalities
Berkeley Heights Township
Mountainside Borough
Scotch Plains Township
Summit City

(*) Indiana bats may occur in any municipality within Union County

Appendix B:
Site Photographs

Photo #1
Northern view of the urban vacant lot ecological community located throughout the majority of the Site.

Photo #2
Southern view of abandoned buildings located within the central portion of the Site

Photo #3
Eastern view of South Branch Creek

Photo #4
View of fiddler crabs within South Branch Creek

Photo #5
View of the eastern shore of Pralls Island and the Arthur Kill

Photo #6
View of successional fields surrounding the Site. Bulk petroleum storage tanks are located in the distance.

Photo #7
View of the urban vacant lot community along the southern Site boundary

Photo #8
View of the eastern slope of the capped sludge lagoon

Photo #9
Northeastern view of Pile's Creek. The DuPont chemical plant is in the background

Photo #10
Southeastern view of Rahway Creek. Valero LP petroleum storage tanks are displayed in the background.

Ecological Assessment Report

LCP Chemicals Reference Channel

Staten Island
Richmond County, New York

August 23, 2007

THE Chazen COMPANIES®

Engineers / Surveyors
Planners
Environmental Scientists
Landscape Architects

Prepared for:

ISP Environmental Services, Inc.
1361 Alps Road
Wayne, New Jersey 07470

Ecological Assessment Report

LCP Chemicals Reference Channel

Staten Island
Richmond County, New York

August 23, 2007

Prepared by:

Chazen Engineering, Land Surveying & Landscape Architecture Co., P.C.
or
Chazen Environmental Services, Inc.
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Dutchess County	*Orange County*	*Capital District*	*North Country*
(845) 454-3980	*(845) 567-1133*	*(518) 273-0055*	*(518) 812-0513*

EXECUTIVE SUMMARY

This Ecological Assessment (EA) Report was completed by The Chazen Companies (TCC) for ISP Environmental Services, Inc. as part of the Phase II Remedial Investigation of the 26-acre LCP Chemical Superfund site located in the City of Linden, Union County, New Jersey.

As part of the ERA, a Reference Channel located within the same biotic system as the LCP Chemical site was chosen to provide a means of evaluating the data collected within South Branch Creek, which is located at the LCP Site. This comparison is necessary to determine if the data obtained from South Branch Creek are indicative of previous site use or are representative of conditions throughout the Arthur Kill and its tributaries. It should be noted that the Reference Channel was only selected for comparison to South Branch Creek, and not to the entire LCP Site. The following sections of this report describe the methodologies used in the EA for the Reference Channel and provide a detailed description of the Reference Channel and the ecological resources present within the surrounding area.

The methodology utilized to complete this EA consisted of gathering information from federal, state, and local agencies, supplemented by site visits designed to identify and characterize the Reference Channel's flora and fauna. Additionally, the Reference Channel was studied for the presence of endangered, threatened, and/or rare (ETR) species and their habitats.

The Reference Channel is a tidal channel/tributary of Old Place Creek, which consists of salt marshes and an adjacent successional southern hardwood forest. Old Place Creek is a tidal creek that flows adjacent to the Reference Channel and eventually connects to the Arthur Kill. Heavy industrial development surrounds the Reference Channel.

During this EA, 17 species of plants, 29 species of wildlife, and 3 ecological communities were identified within the Reference Channel and immediate surrounding area (i.e., Reference Channel Area).

A review of the Comprehensive List of Endangered and Threatened Species provided on the United States Fish and Wildlife Service's (USFWS) New York Field Office website identified the federally-endangered shortnose sturgeon (*Acipenser brevirostrum*) as a species which could occur in Richmond County, New York. The Arthur Kill and Old Place Creek could potentially provide habitat for this species. A review of endangered and threatened species data listed on the USWFS's New Jersey Field Office website identified the federally-threatened bog turtle (*Clemmys muhlenbergii*) and federally-endangered Indiana bat (*Myotis sodalis*) as species

which could occur in the Union County, New Jersey, which is located immediately west of the Reference Channel. Suitable habitat for Indiana bats was not identified at the Reference Channel or in the immediate surrounding area (i.e., Reference Channel Area). Suitable bog turtle habitat was also not identified at the Reference Channel Area. In addition, bog turtles are only known in municipalities located in the western portion of Union County.

Correspondence with the New York State Department of Environmental Conservation (NYSDEC) indicated that the state-endangered eastern mud turtle (*Kinosternon subrubrum*) and peregrine falcon (*Falco peregrinus*), and the state-threatened least bittern (*Ixobrychus exilis*), pied-billed grebe (*Podilymbus podiceps*), and persimmon (*Diospyros virginiana*) have been documented in the vicinity of the Reference Channel. Although primary habitat for all of these species was identified within the Reference Channel, TCC did not observe any of these species during this EA. Several other ETR species were observed during site visits at the Reference Channel. An osprey (*Pandion haliaetus*), a NYSDEC Species of Concern and a New Jersey Department of Environmental Protection (NJDEP) threatened-species, was observed hunting over the Reference Channel Two yellow-crowned night herons (*Nyctanassa violacea*), a New York State-protected species and a NJDEP threatened-species, were also observed foraging along Old Place Creek. No significant ecological communities were identified within the Reference Channel.

TCC reviewed endangered and threatened species data provided through the New Jersey Department of Environmental Protection's (NJDEP) Landscape Project to determine if suitable habitat for any New Jersey State listed species is located in vicinity of the project area. According to the Landscape Project data, within New Jersey there is no suitable habitat for any endangered or threatened species mapped within ¼ mile of Reference Channel. However, black-crowned night heron, yellow-crowned night heron, and colonial bird foraging habitat is located within a ½ mile of the Reference Channel. Black-crowned and yellow-crowned night herons are listed as threatened species in New Jersey. Suitable habitat for these species was identified at the Reference Channel and both of these species were also observed by TCC in the Reference Channel Area.

The Reference Channel is located within the Harbor Herons Bird Conservation Area, which supports the largest breeding bird population of colonial water birds in the northeastern United States. The Reference Channel is also located within the Atlantic coast migration corridor. Numerous migrating land and water birds use areas along the corridor as a stopover/overwintering sites, and the corridor is regularly used by migrating birds and approximately 50 different kinds of landbirds travel this flyway.

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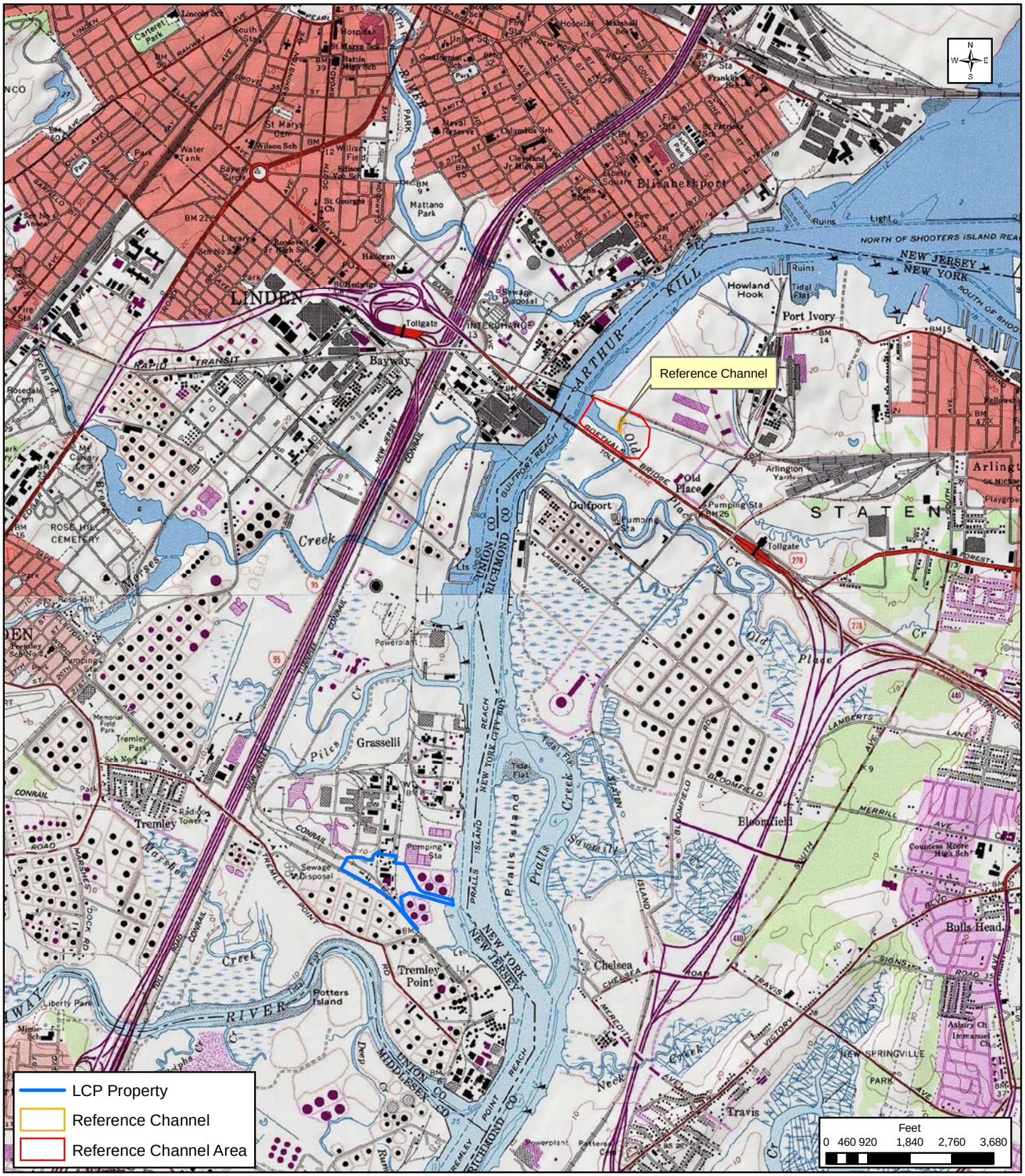
1.0 Introduction

This Ecological Assessment (EA) Report was completed by The Chazen Companies (TCC) for ISP Environmental Services, Inc. as part of the Phase II Remedial Investigation of the 26-acre LCP Chemical Superfund site located in the City of Linden, Union County, New Jersey. As part of the ERA, a site (i.e., Reference Channel) within the same biotic region was chosen to provide a means of evaluating the data collected at South Branch Creek, which is located within the LCP Site. Physical parameters of surface water such as salinity, dissolved oxygen, temperature, and pH were compared between South Branch Creek and the Reference Channel. Ecological parameters such as the plant and animal species composition at each location were also inventoried to characterize existing populations, habitats, and communities. This comparison is necessary to determine if the data obtained from South Branch Creek are indicative of previous site use or are representative of conditions throughout the Arthur Kill and its tributaries. The Reference Channel is located approximately 1.8 miles north of the LCP Chemicals Superfund Site. Figure 1.0-1, "Site Location Map," identifies the "Reference Channel" on the *USGS Elizabeth, NY-NJ (1967, photorevised 1981) Topographic Quadrangle*.

The Reference Channel is located in a heavily industrialized area along the Arthur Kill. The Howland Hook Marine Terminal, a container/cargo facility owned by the Port Authority of New York and New Jersey, is located approximately 400 feet north of the Reference Channel. Warehouses and distribution facilities are located to the east. Industrial operations are also located on the western edge of the Arthur Kill. NYSDEC Wetland AR-42 is located south of the Reference Channel. Bulk petroleum storage tanks border the eastern and western sides of Wetland AR-42. Figure 1.0-2, "Aerial Map," depicts the land-use patterns surrounding the Reference Site.

Currently, the Reference Channel consists of a tidal channel of Old Place Creek, which contains salt marshes and a successional southern hardwood forest. Old Place Creek is a tidal creek that flows south of the Reference Channel and eventually connects to the Arthur Kill.

The following sections of this report describe the methodologies used in the EA and provide a detailed description of the Reference Channel and the ecological resources present at the Reference Channel.



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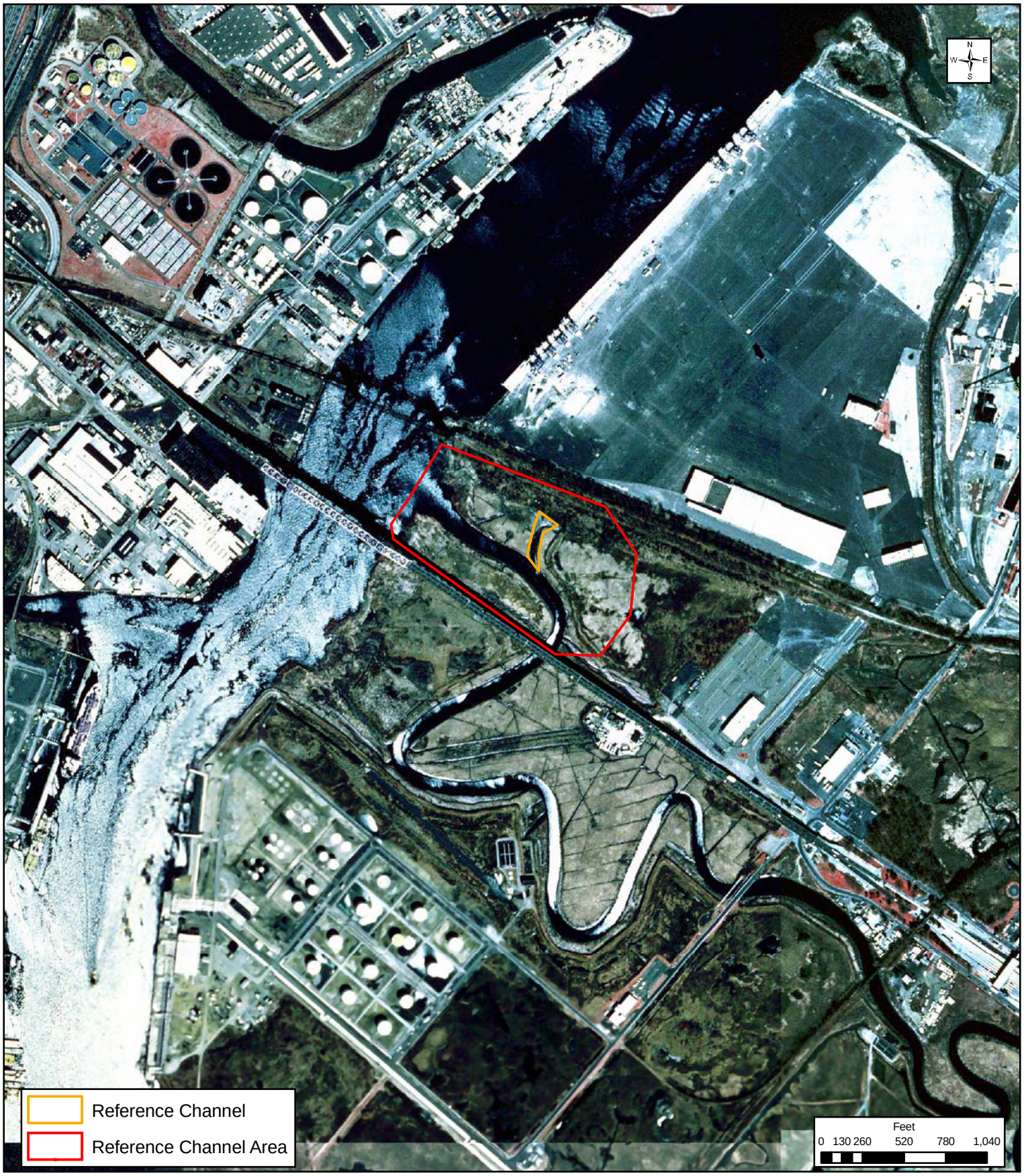
LCP Chemicals Reference Channel

Figure 1.0-1:
Site Location Map

Staten Island
Richmond County, New York

Created by:	J.F.T.
Date:	10/31/2006
Scale:	1:33,990
Project #:	70620.00



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LCP Chemicals Reference Channel

Figure 1.0-2:
Aerial Map

Staten Island
Richmond County, New York

Created by:	J.F.T.
Date:	08/03/07
Scale:	1:9,681
Project #:	70620.00

1.1 Surrounding Landscape

The landscape surrounding the Reference Channel Area consists primarily of industrial operations and salt marsh wetlands. Industrial operations in the surrounding area include the Howland Hook Marine Terminal owned by the Port Authority of New York and New Jersey to the north and east, bulk petroleum storage tanks to the west, and bulk petroleum storage facilities to the south.

Several watercourses are located in the area surrounding the Reference Channel. The Arthur Kill, located west of the Reference Channel, is a large tidal strait approximately 700-1,200 feet wide and greater than 30 feet deep. The Kill Van Kull is an approximately 1,000 feet wide tidal strait located along the northern portion of Staten Island. Both watercourses are heavily used by commerce ships. The Elizabeth River is located northwest of the Reference Channel and discharges into the Arthur Kill from the west. The Elizabeth River is bordered by heavy industry and bulk petroleum storage facilities. Morses Creek is a tidal creek located southwest of the Reference Channel that is primarily bordered by bulk petroleum storage facilities.

Several important bird rookeries are also located near the Reference Channel. Pralls Island is located approximately two miles south of the Reference Channel within the Arthur Kill. This uninhabited island is approximately 80-acres and was created from dredge spoil deposits. The central portion of the island is a forest dominated by tree-of-heaven (*Ailanthus altissima*), gray birch (*Betula populifolia*), and black cherry (*Prunus serotina*)[1]. The trees in this area are all less than 30 feet in height. The perimeter of the island consists of tidal wetlands dominated by smooth cordgrass (*Spartina alternifolia*) and common reed (*Phragmites australis*). The island is owned by the City of New York Department of Parks and Recreation and is part of the Harbor Herons Sanctuary.

Shooters Island is located approximately 1.5 miles north of the Reference Channel within the Kill van Kull. This uninhabited island consists of bedrock and dredge spoils. The island is a mixture of wooded and salt marsh habitats. The wooded areas are dominated by black locust (*Robinia pseudoacacia*) and tree-of-heaven. The salt marshes are dominated by smooth cordgrass and common reed.

Pralls and Shooters Islands provide critical nesting areas for colonial wading birds. Wading birds observed on these islands include cattle egrets (*Bubulcus ibis*), glossy ibis (*Plegadis falcinellus*), and black-crowned night herons (*Nycticorax nycticorax*)[2]. Other avian species observed on these islands include: great blue (*Ardea herodias*) and little blue herons (*Egretta caerulea*); great egrets (*Ardea alba*), cattle egrets

[1] http://training.fws.gov/library/pubs5/necas/web_link/19_harbor%20herons.htm
[2] NYS DOS Division of Coastal Resources. 1989. Designated Habitat: Pralls Island.

(*Bubulcus ibis*), and snowy egrets (*Egretta thula*); yellow-crowned (*N. violacea*) and black-crowned night herons; herring gulls (*Larus argentatus*) and great black-backed gulls (*L. marinus*). Water fowl such as American black duck (*Anas rubripes*), gadwall (*A. strepera*), mallard (*A. platyrhynchos*), and Canada geese (*Branta canadensis*), and American woodcocks (*Scolopax minor*) are also common on these islands. Many of these species nest on the island and then forage in nearby marshes, such as those bordering Old Place Creek, or they use the area as stopovers on spring and fall migrations.[3]

2.0 Methodology

As part of this EA, information was gathered from federal, state, and local agencies and was supplemented by a literature review and an on-site field investigation. The field investigation was designed to catalog the Reference Channel's flora and fauna. A brief description of the methods used follows.

2.1 Federal and State Agencies and Literature Review

The NYSDEC was contacted on October 3, 2006, to obtain information concerning known occurrences of ETR species located on, or within the vicinity of, the Reference Channel. The NYSDEC responded in a letter dated October 27, 2006, indicating that the state-endangered eastern mud turtle (*Kinosternon subrubrum*) and peregrine falcon (*Falco peregrinus*), and the state-threatened least bittern (*Ixobrychus exilis*), pied-billed grebe (*Podilymbus podiceps*), and persimmon (*Diospyros virginiana*) have been documented in the vicinity of the Reference Channel. A copy of this letter is included in Appendix A, "Correspondence." However, due to the sensitivity of some of the information provided within this letter, pages describing the locations of species will be omitted. TCC presents a brief review of the habitat requirements of these species in section 2.2, "Endangered and Threatened Species".

TCC also reviewed endangered and threatened species data provided through the New Jersey Department of Environmental Protection's (NJDEP) Landscape Project to determine if suitable habitat for any New Jersey State listed species is located in vicinity of the project area. The Landscape Project maps areas of critical habitat for imperiled species in New Jersey. According to the data, within New Jersey there is no suitable habitat for any endangered or threatened species mapped within ¼ mile of Reference Channel. However, black-crowned night heron, yellow-crowned night heron, and colonial bird foraging habitat is located within a ½ mile of the Reference Channel. Black-crowned and yellow-crowned night herons are listed as threatened species in New Jersey.

[3] http://training.fws.gov/library/pubs5/necas/web_link/19_harbor%20herons.htm

To determine if any federally-listed species occur at the Reference Channel, TCC reviewed the "Federally Listed Endangered and Threatened Species and Candidate Species in New York (By County)" as provided on the USFWS's New York Field Office website[4]. This list identifies federally-listed species by the counties in which they occur. According to this document, the federally-endangered shortnose sturgeon (*Acipenser brevirostrum*) may occur in Richmond County, New York. In addition to identifying federally-listed species which may occur in New York State, TCC also reviewed the list of federally-listed species located in Union County, New Jersey. Union County is adjacent to the western edge of the Arthur Kill, which is located immediately west of the Reference Channel. Based on the "Comprehensive List of Endangered and Threatened Species" as provided on the USFWS's New Jersey Field Office website[5], the federally-threatened bog turtle (*Clemmys muhlenbergii*) and the federally-endangered Indiana bat (*Myotis soldalis*) are known to occur in Union County. However, bog turtles are known to only occur in four municipalities in Union County: Berkeley Heights Township, Mountainside Borough, Scotch Plains Township, and Summit City. The Reference Channel is located near the City of Elizabeth municipality, which does not border any of the abovementioned municipalities. Suitable bog turtle habitat was not identified in the Reference Channel Area. Therefore, further consideration of this species is not necessary. Indiana bats may occur in any municipality in Union County; therefore, they may occur in the vicinity of the Reference Channel. However, suitable habitat was not found at the Reference Channel.

2.2 Endangered and Threatened Species

Shortnose Sturgeon

Shortnose sturgeon are 36-38 inches long and weigh approximately 8 pounds. They are anadramous and depending on their sex, spawn every other year or every third year. Shortnose sturgeon inhabit rivers and estuaries. They prefer the marine, estuarine, and riverine habitat of large river systems[6] and deep pools with soft substrates and vegetated bottoms[7]. Spawning occurs over rubble substrate with some gravel and large rocks.[8] According to the New York Natural Heritage Program (NYNHP), shortnose sturgeon are frequently associated with saltwater tidal creeks and tidal rivers and could be present in either the Arthur Kill or the mouth of Old Place Creek.

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[4] http://www.fws.gov/northeast/nyfo/es/section7.htm
[5] http://www.fws.gov/northeast/njfieldoffice/Endangered/consultation.htm
[6] National Oceanic and Atmospheric Adminstration. Shortnose Sturgeon (*Acipenser brevirostrum*). Available from: http://www.nmfs.noaa.gov/pr/species/fish/shortnosesturgeon.htm. Accessed October 4th, 2006.
[7] Seibel, D. 1991. Habitat Selection, Movement, and Response to Illumination of Shortnose Sturgeon in the Connecticut River. M.A. Thesis, University of Massachusetts, Amherst.
[8] New York Natural Heritage Program. 2006. Online Conservation Guide for *Acipenser brevirostrum.* Available from: http://www.acris.nynhp.org/guide.php?id=7168. Accessed October 4th, 2006.

Peregrine Falcon

Peregrine falcons are crow-sized, slate-grey above and pale below, with fine dark bars and spots on their underparts.[9] They usually nest on rock cliffs and ledges; however, they will also nest on man-made structures such as bridges and tall buildings.[10] Ideal locations include undisturbed areas with a wide view, near water, and close to plentiful prey.[11] Nearby bridges provide suitable habitat for this species.

Least Bittern

Least bitterns range in size from 11-14.5 inches in length and weigh approximately 3 ounces. Their crown, back and tail are greenish black and their neck, sides, and underparts are brown and white.[12] They commonly nest in tall emergent vegetation, such as brackish tidal marshes. They prefer stands of cattails (*Typha* spp.) or bulrush (*Scirpus* spp.) with bur-reed (*Sparganium* spp.), sedges (*Carex* spp.), or common reed.[13]

Eastern mud turtle

"Eastern mud turtles are semi-aquatic and are commonly found in fresh or brackish water, including marshes, small ponds, wet ditches and fields, and offshore islands".[14] Primary habitat includes soft-bottomed, slow moving water. In New York, only five populations remain.[15]

Pied-billed Grebe

Pied-billed grebes are 12-15 inches in length and weigh 0.5-1.3 pounds. They have a brown throat, horn-colored bill, and brown plumage which is darker on the crown and back. Alternate coloration includes a horn-colored bill with a black ring and a white throat. Juveniles have black and white striping on their heads. Pied-billed grebes are found in fresh to moderately brackish water. Primary habitat typically includes dense stands of emergent vegetation or low-lying aquatic vegetation. Open

[9] New York Natural Heritage Program. 2006. Online Conservation Guide for *Falco peregrinus*. Available from: http://www.acris.nynhp.org/guide.php?id=6824. Accessed October 27th, 2006.
[10] Ibid
[11] Ibid
[12] Gibbs, J. P., F. A. Reid, and S. M. Melvin. 1992. Least Bittern. *In* The Birds of North America, No. 17 (A. Poole, P. Stettenheim, and F. Gill, Eds.). Philadelphia: The Academy of Natural Sciences; Washington, DC: The American Ornithologists' Union.
[13] New York Natural Heritage Program. 2006. Online Conservation Guide for *Ixobrychus exilis*. Available from: http://www.acris.nynhp.org/guide.php?id=6751. Accessed October 27th, 2006.
[14] http://www.dec.state.ny.us/website/dfwmr/wildlife/endspec/mutufs.html
[15] Ibid

water is usually found near nesting habitat. Pied-billed grebes may nest in heavily populated areas as along as nesting-habitat requirements are met.[16]

Indiana Bat

Indiana bat habitat is composed of both hibernacula and summer roosting areas. Hibernacula typically are located in abandoned mines or caves. Summer roosting habitat is characterized by wooded areas with trees that have a southern exposure, are ≥ 5 inches in diameter, and that exhibit specific physical characteristics (e.g., exfoliating bark, crevices, dead limbs, snags) that provide refuge for bats during the day for both resting and maternity purposes.[17]

Persimmon

Persimmon is a single or multi-trunked tree that grows to heights of approximately 25 feet. Persimmon leaves are alternate, simple, ovate, and up to seven inches long and four inches wide. In the vicinity of the Reference Site, Persimmon is typically associated with black cherry (*Prunus serotina*), tree-of-heaven, sassafras (*Sassfras albidum*), poison ivy (*Toxicodendron radicans*), sumac (*Rhus typhina*), goldenrod (*Solidago* sp.), and tall buttercup (*Ranunculus acris*).[18]

2.3 Field Investigation

TCC biologists conducted ecological field investigations of the Reference Channel on September 26 and 27, 2006. During the field investigations, plant and animal species were inventoried to characterize existing populations, habitats, and communities. The potential for rare plants and animals, as well as general observations regarding overall plant community composition and structure, wetlands and watercourses, the degree of site disturbance, and other site characteristics were noted and recorded during the site inspection.

In addition to investigating the Reference Channel, Old Place Creek, the immediate surrounding area (i.e., Reference Channel Area), and adjacent marshes located to the south were observed to document the vegetative and wildlife species which occur in the project area.

A literature review was also conducted to provide supporting documentation for use in the EA. Information gathered included topographic maps, soil maps, aerial

16 Muller, M.J. and R.W. Stoner. 1999. Pied-billed Grebe (Podilymbus podiceps). *In* The Birds of North America, No. 410 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.
17 Indiana Bat Project Review Fact Sheet. USFWS New York Field Office. August 2005.
18 Correspondence with NYSDEC. October 27, 2006.

photographs, pertinent plant and animal species information (i.e., known species in the area, characteristics required for identification, etc.), and historical information.

2.3.1 Ecological Communities

Community (habitat) types described herein generally follow those utilized by the New York Natural Heritage Program as described in Ecological Communities of New York.[19] Vegetation identified within the Reference Channel is described in the following sections in terms of strata (layers – "overstory;" "understory;" and "groundcover").

Overstory vegetation represents the canopy tree species greater than six inches in diameter. Understory/shrub vegetation is comprised of woody tree species between two and six inches in diameter, and saplings and shrubs less than two inches in diameter and three to 12 feet in height. Ground layer vegetation consists of both woody and herbaceous vegetation less than three feet in height.

During the field investigations, the distributions of various communities were noted along with the vegetative species composition, plant structure (i.e., layers), and other vegetative characteristics. This information was used to provide a written description of each community type as presented below. Additionally, aerial photographic interpretation was used to assist in preparing a depiction of the ecological communities of the Reference Channel.

Plants species were field-identified to genus and species, when possible. Unidentified plant species were collected for later identification. Upon the compilation of the species list, plants identified in the Reference Site were reviewed to determine if any federally- or state-listed plants were documented. Finally, species were categorized by location and general habitat characteristics were documented.

2.3.2 Wildlife

On-site field surveys of wildlife species were conducted for reptiles, amphibians, mammals, fish, bird, and crustacean species. The following discussion outlines the methods used.

[19] Edinger, G.J., D.J. Evans, S. Gebauer, T.G. Howard, D.M. Hunt, and A.M. Olivero (editors). 2002. Ecological Communities of New York State. Second Edition. A revised and expanded edition of Carol Reschke's Ecological Communities of New York State. (Draft for review). New York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, NY.136 pgs.

Reptiles and Amphibians

Methods used to conduct the reptiles and amphibian surveys include turning debris, driftwood, and large matted vegetation to reveal herpetological species underneath.

Mammals

Methods to detect mammals were based on visual encounters, vocalization, tracks, scat, remains, or other signs. The Reference Channel was traversed to ensure that each vegetative community type was surveyed.

Birds

Bird species were identified throughout the Reference Channel and Reference Channel Area either visually, by song, and/or by nest evaluations. Old Place Creek and salt marshes located south of the Reference Channel Area were observed to identify bird species within a ¼ mile of the Reference Channel. Associations between bird species and their corresponding preferred habitat types were noted during the investigation.

Fish and Aquatic Invertebrates

Fish and crustacean species were identified by trapping and visual observations in the Reference Channel. For two days, minnow traps were placed in the Reference Channel at high tide and removed before low tide.

3.0 Existing physical conditions

The Reference Channel is located in the north-western portion of the Staten Island, New York. It is surrounded by a salt marsh and a successional southern hardwood forest. The following section describes the Reference Channel Area's topography, hydrology including wetland mapping, and vegetative communities.

3.1 Topography

According to the *USGS Elizabeth NY-NJ (1967, photorevised 1981) Topographic Quadrangle map*, the Reference Channel Area is flat and is less than five feet above mean sea level (msl). Figures 1.0-1 provides an illustration of the overall topography in the Reference Channel Area.

3.2 Hydrology and Wetland Mapping

3.2.1 Watercourses

Three watercourses are mapped within the immediate vicinity of the Reference Channel. The main channel of Old Place Creek is mapped along the southern portion of the Reference Channel; the Arthur Kill is located to the west of the Reference Channel, and an unnamed watercourse is mapped approximately 2,220 feet northeast of the Reference Channel (see Figure 3.2-1).

Old Place Creek is a tidal creek that originates off-site to the east and flows west, adjacent to the Reference Channel, before discharging into the Arthur Kill. The main channel of Old Place Creek is 130 feet wide, while the Reference Channel is 50 feet wide. The substrate consists of very soft, organic muck. The tidal portions of Old Place Creek are classified by the NYSDEC as "SD", and the freshwater portions are class "C". The SD classification is for saline waters that are suitable for fish survival, and the "C" classification is for waters suitable for fish propagation.

The Arthur Kill is an approximately 10 mile long tidal river/strait that flows north to south between New Jersey and Staten Island. The Arthur Kill connects Newark Bay and Raritan Bay. The Arthur Kill is greater than 30 feet deep and 870 feet wide at its junction with Old Place Creek. According to the NYSDEC, the Arthur Kill is classified as a SD watercourse.

An unnamed tributary of the Arthur Kill is located northeast of the Reference Channel. The watercourse is approximately 50 feet wide. This watercourse is mapped classified by the NYSDEC as a SD watercourse.

3.2.2 Wetland Mapping

NWI Mapping

According to the National Wetland Inventory (NWI) digital data provided by the USFWS there are several wetlands mapped within the immediate vicinity of the Reference Channel. The Reference Channel (i.e., tributary of Old Place Creek) and the Arthur Kill are mapped as estuarine, subtidal, unconsolidated bottom, subtidal wetlands [E1UBL]. Wetlands located immediately east and west of the Reference Channel are mapped as estuarine, intertidal, emergent, persistent, irregularly flooded wetlands [E2EM1P]. A palustrine, forested, broad-leaved deciduous, seasonal-tidal [PFO1R] wetland is located directly north of the Reference Channel, and an estuarine, intertidal, emergent, mesohaline, irregularly flooded [E2EM5P] wetland and [E2EM1P] wetland are located south of the Reference Channel. Other NWI wetlands within a ¼ mile of the Reference Channel include three estuarine,

intertidal, emergent, persistent, regularly exposed [E2EM1N] wetlands and a large estuarine, intertidal, emergent, persistent, irregularly flooded, partially drained/ditched [E2EM1Pd] wetland.

NYSDEC Wetland Mapping

According to a Geographic Information System (GIS) dataset provided by the NYSDEC, no NYSDEC wetlands are located in the immediate vicinity of the Reference Channel. The closest NYSDEC wetland is Wetland AR-42, which is mapped approximately 1,500 feet to the southeast of the Reference Channel. NYSDEC Wetland AR-42 is classified by the NYSDEC as a class I wetland. NYSDEC Class I wetlands provide the greatest wetland benefits and hold the highest regulatory rank. NYSDEC Wetland AR-42 is regulated as a Class I wetland because it is resident habitat of an endangered or threatened animal species and it supports an animal species in abundance or diversity unusual for the state or for the major region of the state in which it is found. Figure 3.2-2, "Wetlands and Watercourses Map", provides an illustration of the mapped wetlands and watercourses on and adjacent to the Reference Channel.

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LCP Chemicals Reference Channel

Figure 3.2-1:
Wetlands and Watercourses Map

Staten Island
Richmond County, New York

Created by:	J.F.T.
Date:	10/31/2006
Scale:	1:13,262
Project #:	70620.00

4.0 Results

The Reference Channel consists primarily of a tidal channel surrounded by salt marshes and a successional hardwood forest to the north. The following sections provide descriptions of the types of ecological communities located within the Reference Channel Area. Section 4.2 describes the Reference Channel's fauna and habitat characteristics.

4.1 Ecological Communities

Within the Reference Channel Area, TCC staff identified 17 plant species among three ecological communities as described in Ecological Communities of New York[20]. The Reference Channel consists of a tidal watercourse (i.e., channel of Old Place Creek) flowing through high salt marsh wetlands. A successional hardwood forest is located in the northern portion of the Reference Channel Area. Figure 4.1-1, "Ecological Communities Map" illustrates the approximate location of each of the community type in the Reference Channel Area. Representative photographs of each community type are included as Appendix B "Site Photographs".

During this EA, no federal and/or state endangered or threatened plant species were observed within the boundaries of the Reference Channel Area. The following presents a general description of the ecological communities observed within the Reference Channel Area.

Tidal Creek – This community is located throughout the central portion of the Reference Channel Area. The Reference Channel and Old Place Creek flows east-west through salt marsh habitat before emptying into the Arthur Kill. Vegetation within the subtidal (i.e., permanently flooded) and intertidal (i.e., banks and terraces) portions of the creek is sparse. Vegetation within the intertidal zone consists of common glasswort (*Salicornia europaea*), marsh elder (*Iva frutescens*), and smooth cordgrass (*Spartina alternifolia*). Several bird species including yellow-crowned night herons (*Nyctanassa violacea*), great blue herons (*Ardea herodias*), and cattle egrets (*Bubulcus ibis*) were observed along the banks of Old Place Creek. Mummichogs (*Fundulus* spp.), fiddler crabs (*Uca pugnax*), and jellyfish were abundant in this community. Photo #1 in Appendix B, "Site Photographs" illustrates this community type.

[20] Edinger, G.J., D.J. Evans, S. Gebauer, T.G. Howard, D.M. Hunt, and A.M. Olivero (editors). 2002. Ecological Communities of New York State. Second Edition. A revised and expanded edition of Carol Reschke's Ecological Communities of New York State. (Draft for review). New York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, NY.136 pgs.

Table 4.1.1 List of Vegetation observed within the Tidal Creek Community

Scientific Name	**Common Name**
Herbs	
Iva frutescens	Marsh elder
Salicornia europaea	Common glasswort
Grasses	
Phragmites australis	Common reed
Spartina alternifolia	Smooth cordgrass
Tiner, R. Jr. 1987. A Field Guide to Coastal Wetland Plants of the Northeastern United States. Cushing-Malloy.	

High Salt Marsh – This community type is located throughout the Reference Channel Area and it consists of former Estuarine Dredge spoils which have developed into high salt marsh wetlands. This community borders both sides of the Reference Channel. The western shore of the Reference Channel was dominated by spike grass (*Distichlis spicata*) and small patches of salt meadow grass (*Spartina patens*), which was scattered throughout the spike grass. The vegetation was approximately six to twelve inches high. Vegetation on the east shore of the Reference Channel was similar in species composition to the western shore; however, a large stand of common reed was located in the eastern portion of the Reference Channel Area. Other species observed within this community include seaside goldenrod, marsh elder, and tree groundsel (*Baccharis halimifolia*). Herring gulls (*Larus argentatus*), great egrets (*Ardea alba*), and snowy egrets were observed flying over this community. Raccoon (*Procyon lotor*) tracks were observed on the western shore of the Reference Channel. Photos #3 and 4 illustrate this community type.

Table 4.1.2 List of Vegetation observed within the High Salt Marsh Community

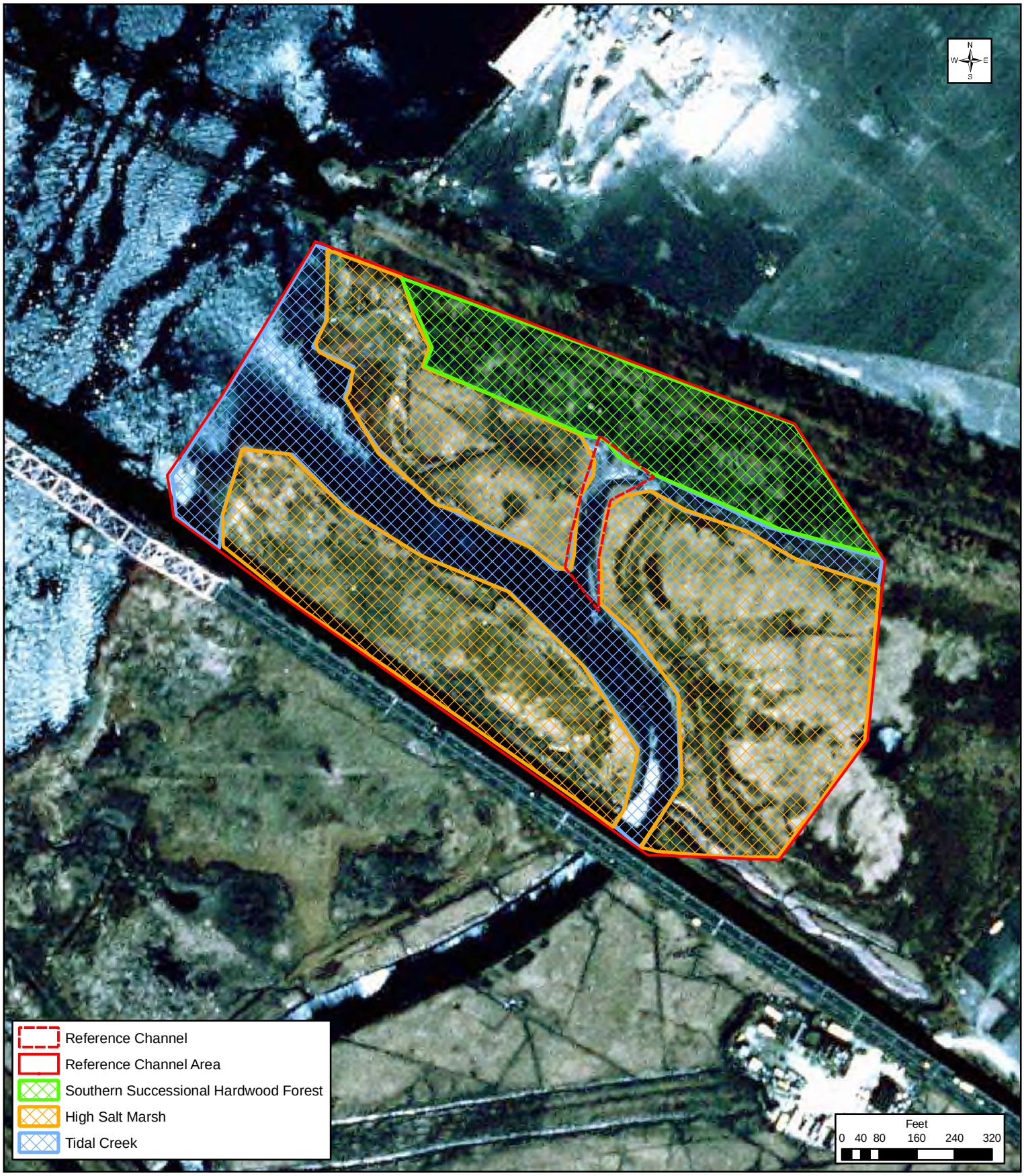
Scientific Name	**Common Name**
Shrubs	
Baccharis halimifolia	Tree groundsel
Herbs	
Atriplex patula	Marsh orach
Iva frutescens	Marsh elder
Salicornia europaea	Common glasswort
Solidago sempervirens	Seaside goldenrod
Grasses	
Distichlis spicata	Spike grass
Phragmites australis	Common reed
Spartina alternifolia	Smooth cordgrass
Spartina patens	Salt meadow grass
Tiner, R. Jr. 1987. A Field Guide to Coastal Wetland Plants of the Northeastern United States. Cushing-Malloy.	

Southern successional hardwood forest – This community is found along the northern boundary of the Reference Channel Area. The overstory vegetation is comprised of a monotypic stand of 12-20 inch diameter southern catalpa (*Catalpa bignonioides*). The understory is comprised of 6-12 inch diameter sumac (*Rhus* spp.), black willow (*Salix nigra*), and red mulberry (*Morus rubra*). Several bird species including a belted kingfisher (*Ceryle alcyon*), red-tailed hawk (*Buteo jamaicensis*), and gray catbird (*Dumetella carolinensis*) were observed in this community. An osprey was observed on several occasions flying from the successional hardwood forest located along the northern boundary of the Reference Channel Area. Photos #2 illustrates this community type.

Table 4.1.3 List of Vegetation observed within the Southern Successional Hardwood Forest Community

Scientific Name	**Common Name**
Trees	
Ailanthus altissima	Tree-of-heaven
Catalpa bignonioides	Southern catalpa
Populus deltoides	Eastern cottonwood
Shrubs	
Baccharis halimifolia	Tree groundsel
Morus rubra	Red mulberry
Rhus spp.	Sumac
Salix nigra	Black willow
Herbs	
Iva frutescens	Marsh elder
Solidago sempervirens	Seaside goldenrod
Vines	
Partenocissus quinquefolia	Virginia creeper
Toxicodendron radicans	Poison ivy
Grasses	
Phragmites australis	Common reed
Spartina alternifolia	Smooth cordgrass

Tiner, R. Jr. 1987. A Field Guide to Coastal Wetland Plants of the Northeastern United States. Cushing-Malloy.
USDA, NRCS. 2006. The PLANTS Database (http://plants.usda.gov, 3 October 2006). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.



THE Chazen COMPANIES
Engineers/Surveyors
Planners
Environmental Scientists
GIS Consultants

CHAZEN ENGINEERING & LAND SURVEYING CO., P.C.

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LCP Chemicals Reference Channel

Figure 4.1-1:
Ecological Communities Map

Staten Island
Richmond County, New York

Created by:	J.F.T.
Date:	10/03/2006
Scale:	1:3,309
Project #:	70620.00

4.2 Fauna

The fauna of the Reference Channel Area was also cataloged during the on-site investigation. In all, 29 species of wildlife were observed during the site visits.

4.2.1 Mammals

One mammalian species was recognized by its sign within the Reference Channel Area (Table 4.2.1). Raccoon (*Procyon lotor*) tracks were observed in a small depression on the western shore of the Reference Channel. No other mammals were observed within the Reference Channel Area.

Table 4.2.1 Mammal Species Observed

Scientific Name	Common Name	Habitat
Procyon lotor	Raccoon	HSM
Ecological Community: **HSM**- High Salt Marsh		

4.2.2 Reptiles and Amphibians

No reptile or amphibian species were observed within the Reference Channel Area. This may partially be due to the time of year the field work was conducted.

4.2.3 Fish and Invertebrates

Three species of fish, five species of crustaceans, one species of mussel, one species of gastropod, and one species of jellyfish were observed during the field investigation (Table 4.2.3). No endangered, threatened, or special concern aquatic species were observed within the Reference Channel Area.

Table 4.2.3 Fish and Invertebrate Species Observed

Scientific Name	Common Name	Habitat
Fish		
Fundulus diaphanous	Banded killifish	TC
Fundulus heteroclitus	Mummichog	TC
Menidia menidia	Atlantic silverside	TC
Crustaceans		
Balanus spp.	Barnacle	TC
Callinectes sapidus	Blue crab	TC
Ecological Community: **TC**- Tidal Creek		

Table 4.2.3 Fish and Invertebrate Species Observed (cont.)

Scientific Name	Common Name	Habitat
Crustaceans (cont.)		
Neopanopeus sayi	Black-fingered mud crab	TC
Palaemontetes spp	Grass shrimp	TC
Uca minax	Red-jointed fiddler crab	TC
Uca pugnax	Atlantic Marsh fiddler crab	TC
Bivalvia		
Geukensia demissa	Atlantic ribbed mussel	TC
Gastropoda		
Melampus bidentatus	Marsh snails	TC
Ecological Community: **TC**- Tidal Creek		

4.2.4 Birds

Seventeen species of birds were observed on or within the vicinity of the Reference Channel (Table 4.2.4). Associations between bird species and their corresponding preferred habitat types were noted during the investigation. Most of the bird species observed are common in New Jersey/New York. However, two ETR bird species were observed during the field investigation. Two yellow-crowned night herons and an osprey were observed within the Reference Channel Area.

Table 4.2.4 Bird Species Observed

Scientific Name	Common Name	Habitat
Birds		
Anas platyrhynchos	Mallard	TC
Ardea herodias	Great blue heron	HSM
Branta canadensis	Canada goose	HSM
Buteo jamaicensis	Red-tailed hawk	SSHF
Casmerodius albus	Great egret	HSM
Ceryle alcyon	Belted kingfisher	HSM, SSHF
Columba livia	Rock dove*	SSHF
Dumetella carolinensis	Gray catbird	SSHF
Egretta thula	Snowy egret	HSM
Larus argentatus	Herring gull*	HSM, TC
Melospiza melodia	Song sparrow	SSHF
Nycticorax violacea	Yellow-crowned night heron	TC
Pandion haliaetus	Osprey*	HSM, SSHF, TC
Phalacrocorax auritus	Double-crested cormorant	HSM
Sturnella magna	Eastern meadowlark	HSM
Sturnus vulgaris	European starling	SSHF
Zenaida macroura	Mourning dove*	SSHF
Ecological Communities: **HSM**- High Salt Marsh **SSHF**- Southern Successional Hardwood Forest **TC**- Tidal Creek * denotes a flyover		

4.2.5 Endangered, Threatened, and Rare (ETR) Wildlife Species

During this EA, two ETR species were observed in the Reference Channel Area. An osprey (*Pandion haliaetus*), classified as a Species of Concern in New York State and as a threatened species (breeding populations only) in New Jersey, was observed flying and hunting over the Reference Channel Area. Two yellow-crowned night herons (*Nyctanassa violacea*), which are classified by the NJDEP as a threatened species, were observed foraging along Old Place Creek. No significant ecological communities were identified within the Reference Channel Area.

Although no other ETR species were observed during site visits at the Reference Channel Area, primary habitat for several ETR species was identified during this EA. Shortnose sturgeons are associated with tidal creeks, which are less than 6 feet deep at low tide, and tidal rivers that are greater than six feet deep at low tide.[21] These habitat types were found within the Reference Channel Area and surrounding area (i.e, Arthur Kill and Old Place Creek). The soft mucky substrate and slow moving water in Old Place Creek provides suitable habitat for Eastern mud turtles. Suitable habitat for the peregrine falcon includes Goethals Bridge and the Arthur Kill lift bridge. Suitable habitat for least bitterns and pied-billed grebes is located in the eastern portion of the Reference Channel Area in a large monoculture of common reed. The southern successional hardwood forest located in the northern portion of the Reference Channel Area may provide suitable habitat for persimmon, as well as nest sites for many tree dwelling birds. Several species commonly associated with persimmon were located within this section of forest; however, no persimmon was actually observed. Sumac, tree-of-heaven, poison ivy, and goldenrods, all common associates of persimmon, were observed within the southern successional hardwood forest.

5.0 LCP Chemical Site and Reference Channel Comparison

5.1 Site Features

The LCP Site is a 26-acre abandoned chlor-alkali chemical plant. A man-made ditch, South Branch Creek, with associated salt marsh wetlands is located in the eastern portion of the LCP Site, and a capped brine sludge lagoon is located in the central portion of the Site. South Branch Creek (SBC) is approximately 15 to 30 feet wide, several feet deep, and flows east, connecting to the Arthur Kill. The Reference Channel is located approximately 1.8 miles to the north of SBC and is comprised of a tributary/channel of Old Place Creek, which flows into the Arthur Kill. Salt marshes and a successional forest surround the Reference Channel. The Reference Channel is approximately 50 feet wide and several feet deep. It flows

[21] New York Natural Heritage Program. 2006. Online Conservation Guide for *Acipenser brevirostrum.* Available from: http://www.acris.nynhp.org/guide.php?id=7168. Accessed October 4th, 2006.

south into Old Place Creek, which flows to the west, eventually connecting to the Arthur Kill.

5.2 Surrounding Landscape

South Branch Creek and the Reference Channel are both located in highly industrialized areas along the Arthur Kill. South Branch Creek is bordered by bulk petroleum storage tanks and terminal operations immediately to the north and south. An urban vacant lot with dilapidated buildings is located immediate west of SBC and a capped former brine sludge lagoon is located to the southwest. South Branch Creek flows east into the Arthur Kill. The Reference Channel is bordered to the north by a successional hardwood forest. The Howland Hook Marine Terminal, a container/cargo facility owned by the Port Authority of New York and New Jersey is located immediately north of the hardwood forest. Salt marshes border the eastern and western portions of the Reference Channel, and Old Place Creek is immediately south of the Channel. Old Place Creek flows west into the Arthur Kill.

5.3 Physical Parameters

A comparison of the physical parameters of the surface waters at SBC and the Reference Channel is provided below (Tables 5.3-1 and 5.3-2). The average salinity at the Reference Channel was 1.87% and it was 1.46% at SBC. Temperature and dissolved oxygen were slightly higher at SBC and pH was slightly lower. Overall, the physical nature of the surface waters at SBC and Reference Channel were quite similar.

Table 5.3-1 South Branch Creek Parameters

Physical Parameters				
Field ID	**Salinity (%)**	**Dissolved Oxygen (mg/L)**	**Temperature (°C)**	**pH (SU)**
SW-A	0.36	12.85	21.8	8.29
SW-B	1.22	14.23	21.8	8.47
SW-C	1.75	14.42	21.3	8.51
SW-D	1.80	15.33	21.3	8.45
SW-E	1.87	15.68	21.0	8.48
SW-F	1.81	15.99	21.5	8.32
SW-G	1.42	10.95	22.5	8.30
Average	1.46	14.21	21.6	8.40
Ecological Parameters				
Ecological Communities	Urban Vacant Lot, Brackish Tidal Marsh, and Successional Old Field			
Dominant Vegetation	Smooth cordgrass and common reed			
Biota	*Fundulus heteroclitus, Uca pugnax, Geukensia demissa, Larus argentatus, and Egretta caerulea*			

Table 5.3-2 Reference Channel Parameters

Physical Parameters				
Field ID	**Salinity (%)**	**Dissolved Oxygen (mg/L)**	**Temperature (°C)**	**pH**
SW-W	1.86	10.14	21.2	8.84
SW-X	1.87	13.13	21.2	8.68
SW-Y	1.87	14.28	21.3	8.79
SW-Z	1.87	18.83	21.5	8.87
Average	1.87	14.10	21.3	8.80
Ecological Parameters				
Ecological Communities	Tidal creek, southern successional hardwood forest, high salt marsh			
Dominant Vegetation	Smooth cordgrass, spike grass, salt meadow grass, and common reed			
Biota	*Fundulus heteroclitus, Uca pugnax, Geukensia demissa* and *Larus argentatus*			

5.4 Ecological Parameters

South Branch Creek and the Reference Channel have relatively similar ecological attributes. Both watercourses have a mucky substrate and ample mud flats. Several species such as mummichog, Atlantic marsh fiddler crabs, ribbed mussels, herring gulls, and snowy egrets were observed in the vicinity of both watercourses. Furthermore, the number species of fish, crustaceans, and wading birds appeared similar at both sites (Table 5.4-1). The increased number of bird species at the Reference Channel is most likely due to the extensive amount of suitable foraging habitat in the immediate surrounding area.

Table 5.4-1 Ecological Attributes of South Branch Creek and the Reference Channel

Parameter	LCP Site	Reference Site
Plant Species	11	17
Mammal Species	0	1
Reptile and Amphibian Species	2	0
Fish Species	3	3
Crustacean Species	8	5
Bird Species	4	16

While the physical and ecological characteristics of these watercourses sites are comparable, the ecological attributes surrounding SBC and the Reference Channel differ. South Branch Creek is surrounded by a vacant lot that contains several abandoned buildings and a successional old field (i.e., former brine sludge lagoon). This habitat configuration provides upland habitats in close proximity to South Branch Creek. Conversely, the Reference Channel is surrounded by extensive salt marshes and hardwood forest. Therefore, there are no developed uplands in the immediate vicinity of the Reference Channel.

6.0 Conclusions

The Reference Channel is a tidal channel surrounded by salt marshes and a successional southern hardwood forest. The Reference Channel flows into Old Place Creek, which eventually discharges into the Arthur Kill.

The wildlife species and ecological communities observed within the Reference Channel Area are common along the Arthur Kill corridor and in the surrounding marsh habitats. Mummichogs, blue crab, and Atlantic marsh fiddler crabs are common in many of the salt marshes along the Arthur Kill. Other species, such as ribbed mussels and grass shrimp are also common in the Arthur Kill corridor. Salt marshes are located adjacent to many of the nearby watercourses and estuarine dredge spoils and ditches are scattered throughout many of the salt marshes.

In regards to ETR species, two ETR species were observed within the immediate vicinity of the Reference Channel. An osprey was observed on several occasions flying over the Reference Channel and sitting atop an electrical pole. Ospreys are listed as a Species of Concern in New York and breeding populations are listed as threatened in New Jersey. Two yellow-crowned night herons were also observed foraging on mud flats along Old Place Creek, which is located immediately south of the Reference Channel. Yellow-crowned night herons are listed as a protected species in New York and they are listed as a threatened species in New Jersey.

Suitable habitat for other ETR species was observed within the Reference Channel Area however, no other ETR species were observed during the EA. The Arthur Kill and Old Place Creek provide suitable habitat for shortnose sturgeon. Suitable habitat for least bitterns and pied-billed grebes is located in the eastern portion of the Reference Channel Area, and habitat for peregrine falcons includes Goethals Bridge and the Arthur Kill lift bridge. Old Place Creek provides habitat for eastern mud turtles, and many of the species located in the successional forest in the northern portion of the project are associated with persimmon.

Overall, the Reference Channel and surrounding area provide relatively high-quality habitat for wildlife. The value of this habitat is greatly enhanced by its size and the adjacency of other vegetated habitats. As with any habitat area, the larger the size, the greater the number of species that can be found in that area. The Reference Channel Area is located within the Harbor Herons Bird Conservation Area. This conservation area supports the largest breeding bird population of colonial water birds in the northeastern United States.[22] Many of the birds use nearby islands such as Pralls Island and Shooters Island for nesting and then they

[22] The Trust for Public Land. 2006. Staten Island Wetlands Protected (NY). Accessed from: http://www.tpl.org/tier3_cd.cfm?content_item_id=11430&folder_id=630. Accessed: October 4th, 2006.

forage in close by tidal marshes such as salt marshes adjacent to Old Place Creek.[23] The Reference Channel is also located within the Atlantic coast migration corridor. Numerous migrating land and water birds use areas along the corridor as a stopover/overwintering sites. The Atlantic coast is regularly used by migrating birds and approximately 50 different kinds of landbirds travel this flyway.[24]

Despite the differences in the ecological parameters immediately surrounding the Reference Channel (salt marsh habitat) and South Branch Creek (upland vacant lot), the physical nature and ecological attributes of the tidal creeks at both locations was quite similar, except for size (i.e., Reference Channel was wider). Therefore, these data support the assumption that, despite the differences in the habitats surrounding these areas, the Reference Channel provides an appropriate means of comparison between South Branch Creek and the Reference Channel.

[23] http://training.fws.gov/library/pubs5/necas/web_link/19_harbor%20herons.htm
[24] Peterson, S.R. 1979. Atlantic Coast Route and Tributaries. Migration of Birds. Fish and Wildlife Service, Circular 16. pg. 70.

Appendix A: Correspondence

CHAZEN ENGINEERING & LAND SURVEYING CO., P.C.

Capital District Office
Phone: (518) 273-0055

Orange County Office
Phone: (845) 567-1133

21 Fox Street, Poughkeepsie, New York 12601
Phone: (845) 454-3980 Fax: (845) 454-4026
Email: poughkeepsie@chazencompanies.com
Web: www.chazencompanies.com

North Country Office
Phone: (518) 812-0513

October 3, 2006

Ms. Jean Pietrusiak
NYSDEC - Information Services
NY Natural Heritage Program
625 Broadway, 5th Floor
Albany, NY 12233-4754

Re: Freedom of Information Request, Threatened or Endangered Species
Site Located adjacent to Old Place Creek
South of Port Ivory, Richmond County, New York

Dear Ms. Pietrusiak:

The Chazen Companies are in the process of conducting a Phase II Remedial Investigation and Ecological Risk Assessment (ERA) of a 26-acre site in the City of Linden, Union County, New Jersey. As part of the remediation process, a reference stream within the vicinity of the site is being studied.

The reference stream is located along Old Place Creek, which is located south of Port Ivory, Richmond County, New York. Old Place Creek is located below the Goethals Bridge which connects New Jersey and Staten Island. Please find the enclosed USGS topographic maps (Arthur Kill and Elizabeth Quadrangle) illustrating the approximate location of the site and reference stream. The land use surrounding the site and reference stream is industrial. Brackish tidal marshes are located adjacent to the reference stream.

Please provide any information you have concerning known occurrences of endangered, threatened and/or special concern wildlife species as well as rare plant, animal, natural community occurrences, or other significant habitats either at the reference stream site or in the immediate surrounding area. Also, although the 26-acre site is located within New Jersey, we are requesting any information you may have for the portion of New York (i.e., Chelsea, New York) which is located east of the site.

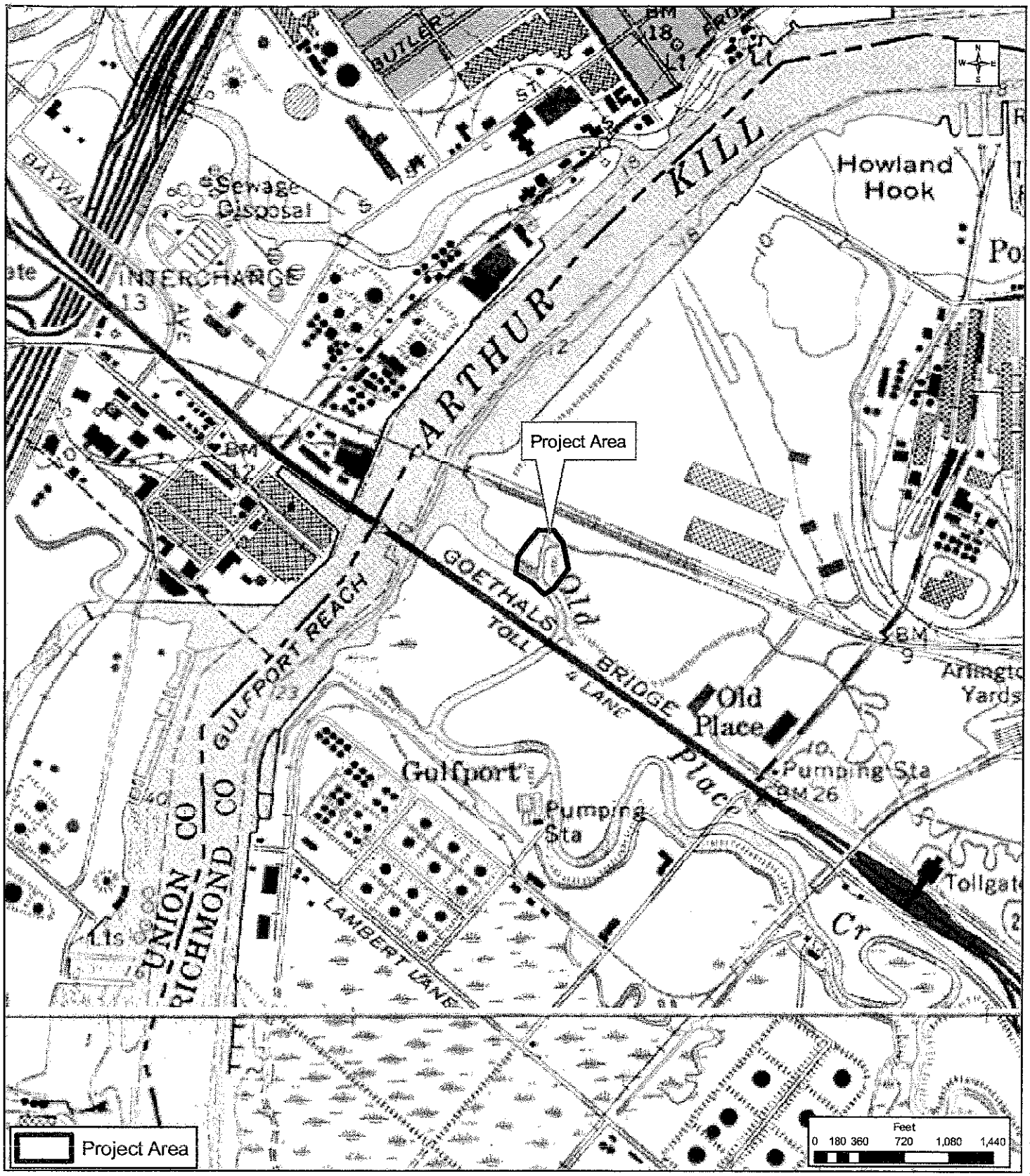
If at all possible, please fax the requested information to me at (845) 567-1925. Please do not hesitate to contact me at (845) 567-1133 if you have any questions.

Thank you for your assistance.

Sincerely,

Jason Tourscher

Jason Tourscher
Wetland Scientist/Biologist



THE Chazen COMPANIES
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Planners
Environmental Scientists
GIS Consultants

CHAZEN ENGINEERING & LAND SURVEYING CO., P.C.

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Poughkeepsie, NY 12601	Newburgh, NY 12550	Troy, NY 12180	Glens Falls, NY 12801
Phone: (845) 454-3980	Phone: (845) 567-1133	Phone: (518) 273-0055	Phone: (518) 812-0513

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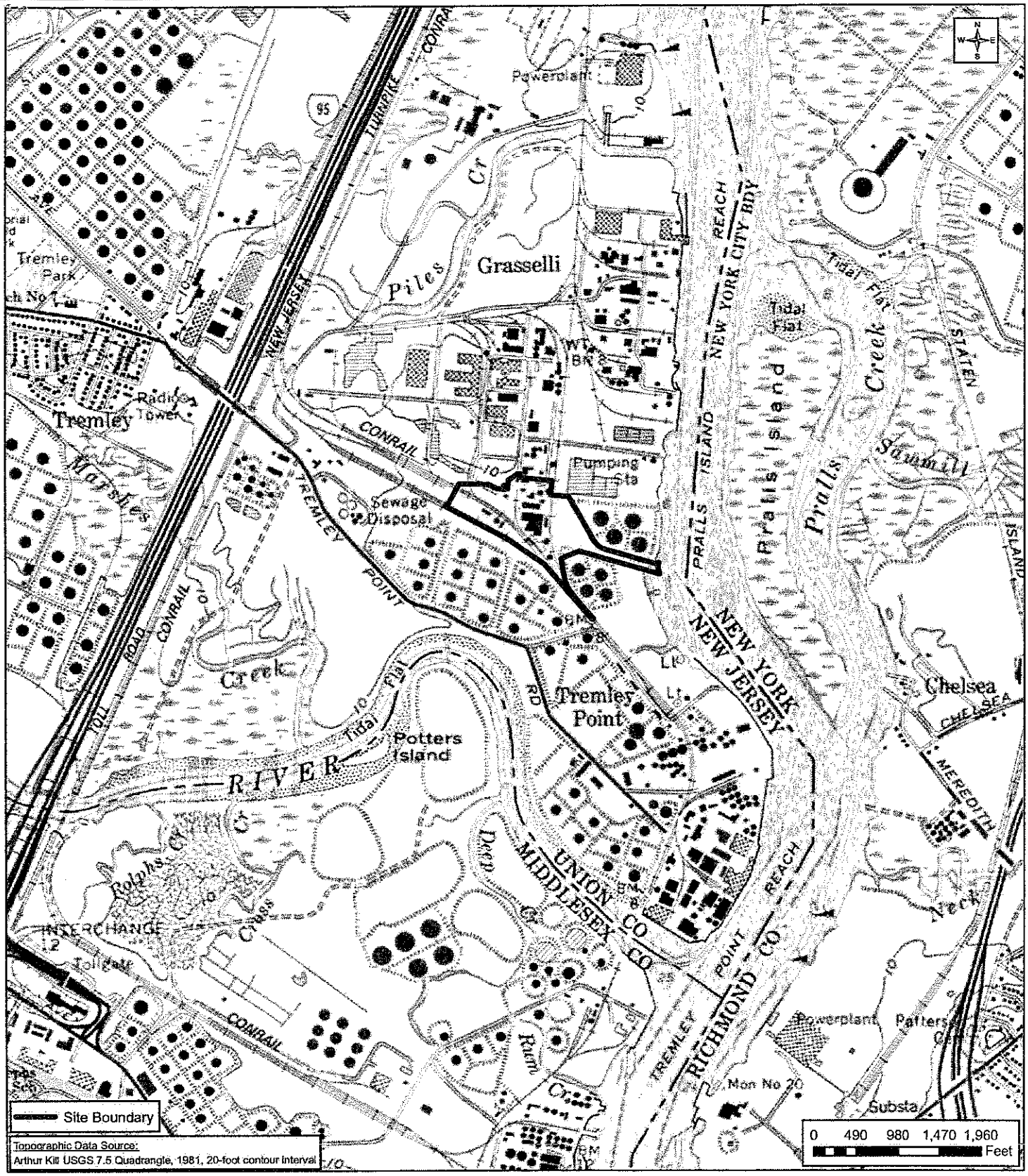
LCP Chemicals Reference Stream Site

Figure 1:
Site Location Map

Richmond County, New York

Created by:	J.F.T.
Date:	10/03/2006
Scale:	1:12,343
Project #:	70620.00



Topographic Data Source:
Arthur Kill USGS 7.5 Quadrangle, 1981, 20-foot contour interval

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Planners
Environmental Scientists
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LCP Chemicals

Figure 1.1-1
Site Location Map

City of Linden
Union County, New Jersey

Created by:	JFT
Date:	09/14/06
Scale:	1:17,987
Project #:	70621.00

NYS Department of Environmental Conservation
Office of Media Relations
625 Broadway, Albany, New York 12233-1016
(518) 402-8000 (518) 402-2209 (Fax)

Denise M. Sheehan
Commissioner

FOIL Request No. 06-1659
10/18/2006

Mr. Jason Tourscher
Chazen Engineering
21 Fox Street
Poughkeepsie, NY 12601-

Dear Mr. Tourscher:

This is to acknowledge receipt of your Freedom of Information Law request seeking records regarding: **occurrences of endangered, threatened and/or special concern wildlife, rare plant and other significant habitats in vicinity of site adjacent to Old Place Creek, Richmond Cty.**

I have referred your request to the following Records Custodian(s) / Freedom of Information Law Coordinator(s) who may possess the records you are requesting:

Mr. Jack Cooper - Fish and Wildlife
625 Broadway
Albany, NY 12233-4750 (518) 402-8907

You may expect a response to your request by **11/15/2006.**

If I can be of further assistance, please contact me at(518) 402-8000 . Refer to request number **06-1659** , if you write or call.

Sincerely,

Ruth L. Earl
Records Access Officer

New York State Department of Environmental Conservation
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, 5th floor, Albany, New York 12233-4757
Phone: (518) 402-8935 • **FAX:** (518) 402-8925
Website: www.dec.state.ny.

Denise M. Sheehan
Commissioner

October 27, 2006

Jason Tourscher
Chazen Engineering
21 Fox Street
Poughkeepsie, NY 12601

Dear Mr. Tourscher:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment for the proposed 26-acre Phase II Remedial Investigation and Ecological Risk Assessment, area along Old Place Creek below Goethals Bridge which connects New Jersey and Staten Island, area as indicated on the map you provided, located in Richmond County, New York State.

Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicate occur, or may occur, on your site or in the immediate vicinity of your site. The information contained in this report is considered sensitive and should not be released to the public without permission from the New York Natural Heritage Program.

The presence of rare species may result in this project requiring additional permits, permit conditions, or review. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, at the enclosed address.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement on presence or absence of all rare or state-listed species or significant natural communities. This information should not be substituted for on-site surveys that may be required for environmental impact assessment.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

Sincerely,

Tara Seoane

Tara Seoane, Information Services
NY Natural Heritage Program

Enc.
cc: Reg. 2, Wildlife Mgr
Reg. 2, Fisheries Mgr.
Peter Nye, Endangered Species Unit, Albany
Jack Cooper, Fish and Wildlife, Albany

NY Natural Heritage Program, NYS DEC, 625 Broadway, 5th Floor, Albany, NY 12233-4757
(518) 402-8935

Reference Stream

HISTORICAL RECORDS:

No recent information; Precise locations unknown; Current status unknown.

~Because precise locations are unknown, no maps are provided for these records.
~Refer to the User's Guide for explanations of codes, ranks and fields.

Natural Heritage Report on Rare Species and Ecological Communities

REPTILES

Kinosternon subrubrum

					Office Use
Eastern Mud Turtle	**NY Legal Status:**	Endangered	**NYS Rank:**	S1; Critically imperiled	1480
	Federal Listing:		**Global Rank:**	G5; Demonstrably secure	M
	Last Report:	**	**EO Rank:**	Historical, no recent information	ESU
	County:	Richmond			
	Town:	City Of New York			
	Location:	Old Place Creek			
	Directions:	Specimen labels: Old Place Creek and salt meadows at Old Place, Staten Island.			
	General Quality and Habitat:				

1 Records Processed

United States Department of the Interior

FISH AND WILDLIFE SERVICE

New York Field Office
3817 Luker Road, Cortland, NY 13045
Phone: (607) 753-9334
Fax: (607) 753-9699

Long Island Field Office
3 Old Barto Rd., Brookhaven, NY 11719
Phone: (631) 776-1401
Fax: (631) 776-1405

Endangered Species Act List Request Response Cover Sheet

This cover sheet is provided in response to a search of our website* for information regarding the potential presence of species under jurisdiction of the U.S. Fish and Wildlife Service (Service) within a proposed project area.

Attached is a copy of the New York State County List of Threatened, Endangered, and Candidate Species for the appropriate county(ies). The database that we use to respond to list requests was developed primarily to assist Federal agencies that are consulting with us under Section 7(a)(2) of the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*). Our lists include all Federally-listed, proposed, and candidate species known to occur, as well as those likely to occur, in specific counties.

The attached information is designed to assist project sponsors or applicants through the process of determining whether a Federally-listed, proposed, or candidate species and/or "critical habitat" may occur within their proposed project area and when it is appropriate to contact our offices for additional coordination or consultation. You may be aware that our offices have provided much of this information in the past in project-specific letters. However, due to increasing project review workloads and decreasing staff, we are now providing as much information as possible through our website. We encourage anyone requesting species list information to print out all materials used in any analyses of effects on listed, proposed, or candidate species.

The Service routinely updates this database as species are proposed, listed, and delisted, or as we obtain new biological information or specific presence/absence information for listed species. If project proponents coordinate with the Service to address proposed and candidate species in early stages of planning, this should not be a problem if these species are eventually listed. However, we recommend that both project proponents and reviewing agencies retrieve from our online database an *updated* list every 90 days to append to this document to ensure that listed species presence/absence information for the proposed project is *current*.

Reminder: Section 9 of the ESA prohibits unauthorized taking** of listed species and applies to Federal and non-Federal activities. For projects not authorized, funded, or carried out by a Federal agency, consultation with the Service pursuant to Section 7(a)(2) of the ESA is not required. However, no person is authorized to "take**" any listed species without appropriate authorizations from the Service. Therefore, we provide technical assistance to individuals and agencies to assist with project planning to avoid the potential for "take**," or when appropriate, to provide assistance with their application for an incidental take permit pursuant to Section 10(a)(1)(B) of the ESA.

Additionally, endangered species and their habitats are protected by Section 7(a)(2) of the ESA, which requires Federal agencies, in consultation with the Service, to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. An assessment of the potential direct, indirect, and cumulative impacts is required for all Federal actions that may affect listed species.

For instance, work in certain waters of the United States, including wetlands and streams, may require a permit from the U.S. Army Corps of Engineers (Corps). If a permit is required, in reviewing the application pursuant to the Fish and Wildlife Coordination Act (48 Stat. 401, as amended;16 U.S.C. 661 *et seq.*), the Service may concur, with or without recommending additional permit conditions, or recommend denial of the permit depending upon potential adverse impacts on fish and wildlife resources associated with project construction or implementation. The need for a Corps permit may be determined by contacting the appropriate Corps office(s).*

For additional information on fish and wildlife resources or State-listed species, we suggest contacting the appropriate New York State Department of Environmental Conservation regional office(s) and the New York Natural Heritage Program Information Services.*

Since wetlands, ponds, streams, or open or sheltered coastal waters may be present in the project area, it may be helpful to utilize the National Wetlands Inventory (NWI) maps as an initial screening tool. However, they may or may not be available for the project area. Please note that while the NWI maps are reasonably accurate, they should not be used in lieu of field surveys for determining the presence of wetlands or delineating wetland boundaries for Federal regulatory purposes. Online information on the NWI program and digital data can be downloaded from Wetlands Mapper, http://wetlands.fws.gov/mapper_tool.htm.

Project construction or implementation should not commence until all requirements of the ESA have been fulfilled. After reviewing our website and following the steps outlined, we encourage both project proponents and reviewing agencies to contact our office to determine whether an accurate determination of species impacts has been made. If there are any questions about our county lists or agency or project proponent responsibilities under the ESA, please contact the New York or Long Island Field Office Endangered Species Program at the numbers listed above.

Attachment (county list of species)

*Additional information referred to above may be found on our website at: http://www.fws.gov/northeast/nyfo/es/section7.htm

** Under the Act and regulations, it is illegal for any person subject to the jurisdiction of the United States to ***take*** (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these), import or export, ship in interstate or foreign commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any endangered fish or wildlife species and most threatened fish and wildlife species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. "Harm" includes any act which actually kills or injures fish or wildlife, and case law has clarified that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.

Richmond County

Federally Listed Endangered and Threatened Species and Candidate Species

This list represents the best available information regarding known or likely County occurrences of Federally-listed and candidate species and is subject to change as new information becomes available.

Common Name	Scientific Name	Status
Shortnose sturgeon[1]	*Acipenser brevirostrum*	E

E=Endangered T=Threatened P=Proposed C=Candidate

[1]Primarily occurs in Hudson River. Principal responsibility for this species is vested with the National Oceanic and Atmospheric Administration/Fisheries.

Please visit the following website for more information http://www.nmfs.noaa.gov/pr/species/esa.htm.

Information current as of: 7/9/2007

COMPREHENSIVE LIST OF NEW JERSEY MUNICIPALITIES WITH EXTANT AND HISTORIC OCCURRENCES OF FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES, AND CANDIDATE SPECIES, PURSUANT TO THE ENDANGERED SPECIES ACT OF 1973
(87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*)

{Revised June 2004; Bald eagle data revised July 2005}

1. SPECIES OCCURRENCES BY COUNTY AND MUNICIPALITY

Index of symbols used in the tables:

T – Federally listed as threatened.
E – Federally listed as endangered.
X – Known occurrence of extant federally listed or candidate species.
H – Historic occurrence of federally listed or candidate species.
W – Wintering foraging habitat for bald eagles.

2. FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES AND CANDIDATE SPECIES IN NEW JERSEY UNDER U.S. FISH AND WILDLIFE SERVICE JURISDICTION (Species Narratives)

LISTED SPECIES - PLANTS
- Swamp pink (*Helonias bullata*)
- Knieskern's beaked-rush (*Rhynchospora knieskernii*)
- Sensitive joint-vetch (*Aeschynomene virginica*)
- American chaffseed (*Schwalbea americana*)
- Small whorled pogonia (*Isotria medeoloides*)
- Seabeach amaranth (*Amaranthus pumilus*)

LISTED SPECIES - INVERTEBRATES
- Dwarf wedgemussel (*Alasmidonta heterodon*)
- Northeastern beach tiger beetle (*Cicindela dorsalis dorsalis*)

LISTED SPECIES - REPTILES
- Bog turtle (*Clemmys muhlenbergii*)

LISTED SPECIES - BIRDS
- Bald eagle (*Haliaeetus leucocephalus*)
- Piping plover (*Charadrius melodus*)
- Roseate tern (*Sterna dougallii*)

LISTED SPECIES - MAMMALS
- Indiana bat (*Myotis sodalis*)

CANDIDATE SPECIES
- Bog asphodel (*Narthecium americanum*)
- Hirst's panic grass (*Dichanthelium hirstii*)

DELISTED SPECIES
- Peregrine falcon (*Falco peregrinus*)

UNION COUNTY

The species listed below are known to occur in at least one of the Union County municipalities listed below.

Species	
Bog Turtle	
Indiana Bat	(*)

(*) Indiana bats may occur in any municipality within Union County

Municipalities
Berkeley Heights Township
Mountainside Borough
Scotch Plains Township
Summit City

Appendix B:
Site Photographs

Photo #1
Northern view of the Reference Channel before high tide

Photo #2
Northern view of the Reference Channel before low tide. The northern successional hardwood forest community is located in the distance.

Photo #3
Spike grass, smooth cordgrass, and salt meadow grass are the dominant vegetation along the shores of the Reference Channel and Old Place Creek.

Photo #4
View of the eastern shore of the Reference Channel. The vegetation is similar; however, common reed is more prevalent.

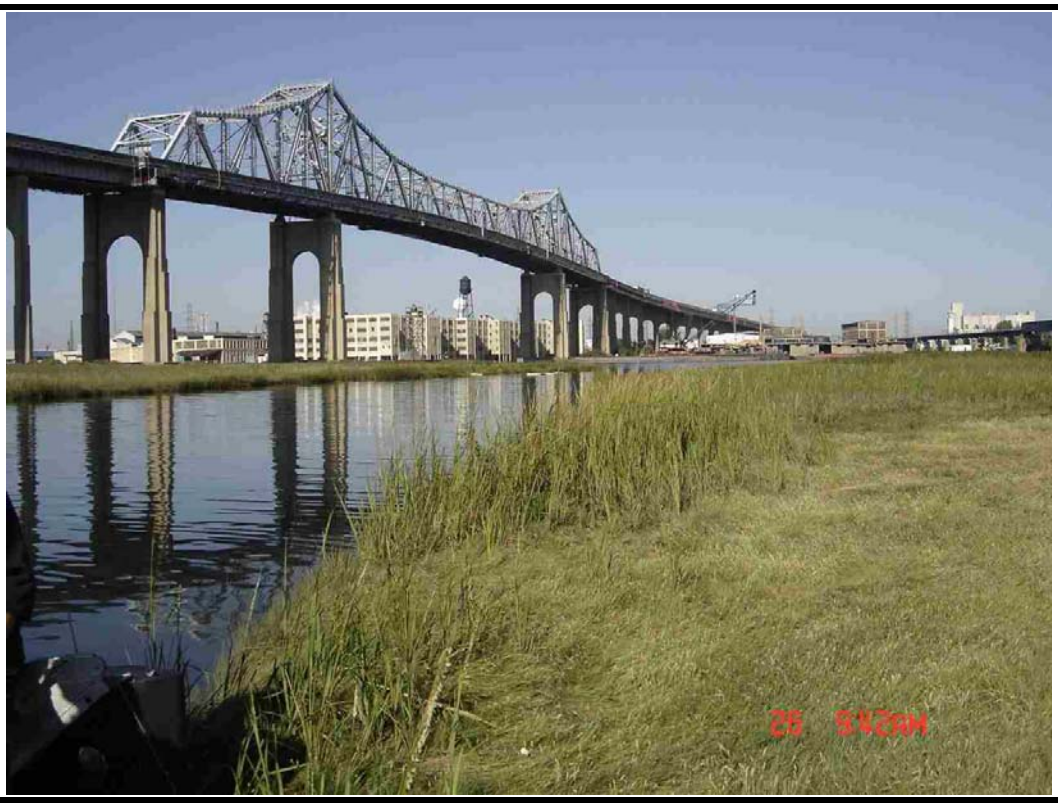

Photo #5
Western view of the main channel of Old Place Creek. Goethals Bridge is located in the background.

Photo #6
Western view of salt marsh wetlands located south of the Reference Channel Area. These wetlands provide important foraging habitat for water birds.

Photo #7
Numerous minnow traps were placed in the Reference Channel to trap biota

Photo #8
Northern view of the wetlands located south of the Reference Channel Area.

APPENDIX H

Sediment Toxicity Testing Report

BROWN & CALDWELL
LCP CHEMICALS, INC. SUPERFUND SITE
SEDIMENT TOXICITY TESTING

Contents

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Results	6

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III:	Mean dry weight (mg) of *L. plumulosus* by replicate chamber and location	7

Appendices

A. Raw data for *Leptocheirus plumulosus* 10-day survival and growth test

B. Statistical data for *Leptocheirus plumulosus* 10-day survival and growth test

C. Chain of Custody Documentation

BROWN & CALDWELL
LCP CHEMICALS, INC. SUPERFUND SITE
SEDIMENT TOXICITY TESTING

INTRODUCTION

During the month of October, 2006 samples were collected from the LCP Chemicals, Inc. Superfund site in Linden, New Jersey as described in the *Brown and Caldwell Supplemental Work Plan: Sediment Toxicity Testing (South Branch Creek) Phase II Remedial Investigation LCP Chemicals, Inc. Superfund Site,* dated September 2006. These sediment samples were used to perform acute toxicity tests to determine if the tested matrices represent a significant threat to potential receptor organisms.

The sediment samples from the site were evaluated for toxicity using a 10-day solid phase exposure using the saltwater amphipod *Leptocheirus plumulosus*[1]. Following the exposure period, surviving test organisms from the sediment samples collected at the site were compared to control and reference sediments tested under similar conditions using a water of known environmental quality, laboratory prepared artificial salt water (ASW). The endpoints used for determination of an impact were mortality, measured as mean survival and growth, measured as mean dry weight.

MATERIALS AND METHODS

Sediment samples were collected from the LCP Chemicals, Inc. Superfund site in Linden, New Jersey, as described above. These sites were selected to represent an area that has been impacted by the facility's operations (South Branch Creek) and an off-site Reference Area, which would likely not have been affected. The Reference Area was Old Place Creek, an Arthur Kill tidal inlet in Staten Island, New York. Three samples were collected from South Branch Creek. Two of these were found to emit mercury vapors upon agitation and therefore could not be tested safely. After discussion with and approval by EPA, these samples were properly disposed along with other investigation-derived waste. The sediment toxicity program proceeded with one sample from South Branch Creek and one from the Old Place Creek (the reference sediment).

Preparation of sediment samples for testing

The sediment samples collected were transported to the laboratory in two-gallon HDPE containers on ice. Prior to sieving, each sample was monitored for mercury vapor using a Jerome 4100 mercury analyzer. Of the four samples collected, two were found to be producing mercury vapors at levels that precluded their use in the sediment toxicity analysis. These samples were returned to the site unused. The remaining two samples sieved using a #18 mesh sieve (1000 μm) to remove large debris and indigenous species

that may have either competed with or potentially preyed upon the test organisms. The sieved portion of the sediment was then transferred to new, clean 1-gallon HDPE containers, sealed and stored at 0-4 °C until used for testing on November 3, 2006.

Control sediment used for the test was provided by the culture facility that provided the test organisms. It was collected from Olds House Creek, a tributary to the Chesapeake Bay near Selden, Virginia in October 2006. The control sediment was sieved and all material between 500 and 335 µm used for culture and testing. Prior to testing it was stored in the same manner as the sediment samples from the LCP site.

Test organisms

Study amphipods (*Leptocheirus plumulosus*) were obtained from stock cultures maintained by ABS, Inc. of Fort Collins, CO. During the short holding period prior to test initiation, the organisms were held under conditions similar to those that they would encounter during the test (see Table I). Amphipods were fed once daily prior to testing using crushed flake fish food.[1]. Test organisms chosen for testing were 2 to 4 mm in length, collected on 500 µm sieve after passing through a 710 µm sieve.

Experimental procedures

The entire sediment exposure series for this project consisted of one sediment samples from the LCP Chemicals, Inc., Superfund site, one regional reference sample, and control sediment. Test chambers (1000 mL tall form borosilicate glass beakers) were filled with 200 mL of sediment. Each then had the sediment layer covered with 800 mL of ASW. Each treatment had four replicate chambers. All of the test chambers were allowed to settle for 24 hours prior to test initiation.

After the settling period, porewater was analyzed for ammonia to ensure levels were low enough to introduce test organisms. Overlying water was then siphoned off and fresh laboratory water was introduced, using a round HDPE disk suspended over the sediment to deflect the water flow and minimize disturbance to the sediment. At this time alkalinity, conductivity, dissolved oxygen, pH, salinity and temperature were measured for the overlying water for each test sample and the control.

The exposure period began by placing 20 randomly selected test organisms into intermediate containers prior to introduction into each test chamber, to insure the correct number was added to each chamber. Care was taken to ensure that the organisms were released beneath the surface of the overlying water to keep air bubbles from forcing the organisms to the surface. Test conditions are summarized in Table I.

Each day during the exposure period observations were carried out in each chamber to determine the number of organisms dead, swimming, on the surface of the sediment or on the surface of the water. Dissolved oxygen, pH, salinity and temperature were also

measured. The overlying water was aerated during the entire 10-day exposure with an oil free air source to maintain acceptable dissolved oxygen levels. The aeration was introduced to each chamber via a Pasteur pipette attached to the inside of the test chamber approximately one inch beneath the water surface, to minimize sediment disturbance. The overlying water was not changed during the 10-day exposure, and the test organisms were not fed.

At the end of the 10-day exposure the final alkalinity, ammonia, conductivity, dissolved oxygen, pH, salinity and temperature were measured, and the test chambers were prepared for the removal of test organisms. Each chamber was gently stirred using a pipette to suspend the sediment in the overlying water. This slurry was then poured into a #60 mesh sieve (250 µm) and rinsed in a shallow pan of ASW to remove the finer grains of the sediment. The remaining contents of the sieve were placed into a second shallow pan of ASW, placed over a light table, and carefully sorted to find the surviving test organisms in each of the four replicates for each site. All surviving amphipods for each chamber were transferred to a 30 mL soufflé cup for live count verification and preparation for weight analysis.

When all test chambers had been sorted and the number of survivors verified, 0.5 mL of ethanol was added to each soufflé cup to dispatch the organisms. They were then transferred to a previously dried and tared aluminum pan and placed into an oven to dry at 105° C for a minimum of six hours. Upon removal from the oven, the pans were placed into a desiccator to cool and then were measured to the nearest 0.01 mg.

Data analysis

Data analysis was performed following procedures published by the USEPA[1] using the ToxCalc™ v5.0.23F data analysis software. Survival data were arcsine squareroot transformed, tested for normality and then tested for homogeneity of variances. Due to the small sample size, a two-sample test was used to determine significance. Growth data was not transformed as the data set was found to be normally distributed and had homogeneous variance. A two-sample test was also used to analyze growth due to the small sample size.

All raw data sheets are located in Appendix A.

TABLE I: Summary of Conditions for *Leptocheirus plumulosus* Toxicity Test

1.	Test type:	Whole sediment, static non-renewal
2.	Temperature:	25.0 +/- 1.0° C
3.	Light quality;	Wide-spectrum fluorescent illumination
4.	Light intensity:	50 - 100 foot-candles
5.	Photoperiod:	16 hours light, 08 hours dark
6.	Test chamber size:	1000 mL high form borosilicate glass beakers
7.	Sediment volume:	200 mL / replicate
8.	Overlying water volume:	800 mL / replicate
9.	Renewal:	None
10.	Size of test organisms:	2 to 4 mm in length, retained on a 500 µm sieve
11.	Number organisms / container:	20
12.	Replicates:	4
13.	Feeding:	None
14.	Aeration:	Continuous @ ~ 100 bubbles / min.
15.	Overlying water:	Artificial Salt Water
16.	Test chamber cleaning:	None
17.	Overlying water quality:	Dissolved oxygen, pH, salinity and temperature daily; alkalinity, ammonia, conductivity and hardness at beginning and end of test
18.	Test duration:	10 days
19.	Endpoints:	Survival and growth (mean dry weight)
20.	Test acceptability:	Minimum control survival 90 %

RESULTS

Effects on Survival

For the first of the two endpoints used, survival, the data from the test location was compared to the reference site. The control exposure conducted concurrently was used to establish satisfactory survival for the test organisms and were not used for sample analysis.

Arcsine squareroot transformed data were first analyzed for normality using the Shapiro-Wilk's Test. The data were found to be normal in distribution. Homogeneity of the variances were then tested using an F-Test and variances were found to be homogeneous. The Wilcoxon Two-Sample Test was performed to determine if the test sample was found to be impacted relative to the reference location.

The survival of the control exposures was 95%, which exceeded the minimum requirement of 90% for the method. The survival of the Reference Creek sample met the required 90% survival. Locations A-3 from the LCP site had survival of 56.3%, which was determined to be statistically different from the Reference Creek value. The survival of the test organisms is summarized in Table II by location and replicate.

Effects on Growth

For the second of the two endpoints used. growth, measured as mean dry weight, the data from the test location was compared to the reference site. The control exposure conducted concurrently was used to establish satisfactory growth for the test organisms and was not used for sample analysis.

Data were first analyzed for normality using the Shapiro-Wilk's Test. The data were found to be normal in distribution. Homogeneity of the variances was then tested using an F-Test and variances were found to be homogeneous. The Wilcoxon Two-Sample Test was performed to determine if the test sample was found to be impacted relative to the reference location.

Mean dry weight analysis of test organisms at the end of the 10-day exposure found that the Reference Creek sample and the A-3 sample both exhibited larger mean dry weights than did the control exposure. Further statistical analysis was not necessary. The mean dry weight data should be viewed with caution as the survival endpoint indicates a significant difference between the reference site and the sample collected at the LCP site. It should be noted that both the reference and test samples contained significantly higher amounts of organic matter, which likely contributed to the larger average size. Also, in the test sample there fewer individuals surviving, which may have led to less competition among survivors for food, and/or a reduction is stress relative to the loading of test organisms. The mean dry weights of the test organisms are summarized in Table III by location and replicate.

All statistical analysis is located in Appendix B.

Table II: Percent survival of *L. plumulosus* by replicate chamber and location

	SAMPLE LOCATION		
Rep	Control	Reference Creek	A-3
A	95	95	55
B	95	90	35
C	90	90	65
D	100	85	70
Mean Survival	95	90	56.3
Statistically Different from Reference Creek?		-	**YES**

Table III: Mean dry weight (mg) of *L. plumulosus* by replicate chamber and location

	SAMPLE LOCATION		
Rep	Control	Reference Creek	A-3
A	0.2495	0.2963	0.2927
B	0.1721	0.2406	0.3443
C	0.1806	0.1339	0.2377
D	0.1335	0.2888	0.2936
Mean Dry Weight	0.1839	0.2399	0.2921
Statistically Different from Reference Creek?		-	**No**

[1] **C.E. Schlekat**, C. E. Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods Office of Research and Development U.S. Environmental Protection Agency Narragansett, Rhode Island 02882, EPA/600R-94/025, June 1994

APPENDIX A

RAW DATA FOR *Leptocheirus plumulosus* 10 DAY SURVIVAL AND GROWTH TEST

Client/Toxicant: 214
Project Number: 01-01
Species: L. plumulosus

Beginning Date & Time: 11-3-06 1800
Ending Date & Time: 11-13-06 1700
Hatch Date: 10/4-11/06

Sediment Test
American Aquatic Testing, Inc.
Observations / Live Count

Conc.	Rep	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10 Observ.	Day 10 Final Live Count
Control	A	N	N	N	1F	N	N	N	N	N	N	19
	B	N	N	N	N	N	N	N	N	N	N	19
	C	N	N	N	1D	N	N	N	N	N	N	18
	D	N	N	N	N	N	N	N	N	N	N	20
	~~E~~											
	~~F~~											
	~~G~~											
	~~H~~											
Reference Creek	A	N	N	N	N	N	N	2D	N	N	N	19
	B	N	N	N	N	N	N	1D	N	N	N	18
	C	N	N	N	N	N	N	N	N	N	2D	18
	D	N	N	N	N	N	N	N	N	N	1D	17
	~~E~~											
	~~F~~											
	~~G~~											
	~~H~~											
A3	A	2M	N	N	~~N~~ 0	7D	1D	4D	N	N	N	11
	B	N	N	N	N	9D	3D	1D	N	N	N	~~8~~ ②
	C	N	N	N	4D	3D	1D	2D	N	N	N	12
	D	N	N	N	3D	1D	2D	4D	N	N	3D	14
	~~E~~											
	~~F~~											
	~~G~~											
	~~H~~											
	A											
	B											
	C											
	D											
	E											
	F											
	G											
	H											
	A											
	B											
	C											
	D											
	E											
	F											
	G											
	H											
	Intials	MKP	MKP	MKP	MKP	TAP	TAP	KMM TAP	KMM	KMM	KMM	TAP
	Date	11/4	11/5	11/6	11/7	11/8	11/9	11/10	11/11	11/12	11/13	11/14

Comments: ① 4D MKP 11/7 ② 7 - TAP 11/13

Key: D=dead, W=on water surface, M=swimming, F=on sediment surface, N=no observations

FWSEDOBS.wk4

Client/Toxicant: 214
Project Number: 01-01
Species: L. plumulosus

Beginning Date & Time: 11-3-06 1800
Ending Date & Time: 11-13-06 1700
Hatch Date: 10/4-11/06

American Aquatic Testing, Inc.
Weight Data

Conc.	Rep	Pan #	A weight of boat (g)	B weight of boat & org. (g)	(B-A)*1000=C dry weight of organisms (mg)	D # of surviving org.	C/D mean dry weight (mg)	C/E IC_{25} & NOEC calc. weight (mg)
Control	A	1	0.00925	0.01399	4.74	19	0.249	
	B	2	0.00908	0.01235	3.27	19	0.172	
	C	3	0.00912	0.01237	3.25	18	0.181	
	D	4	0.00939	0.01206	2.67	20	0.134	
	~~E~~							
	~~F~~							
	~~G~~							
	~~H~~							
Reference Creek	A	5	0.00920	0.01483	5.63	19	0.296	
	B	6	0.00929	0.01362	4.33	18	0.241	
	C	7	0.01000	0.01241	2.41	18	0.134	
	D	8	0.00894	0.01385	4.91	17	0.289	
	~~E~~							
	~~F~~							
	~~G~~							
	~~H~~							
A3	A	9	0.00946	~~0.01385~~ (1)	3.22	11	0.293	
	B	10	0.00959	~~0.01268~~ (2)	2.41	7	0.344	
	C	11	0.00944	~~0.01200~~ (3)	3.09	13	0.238	
	D	12	0.00987	0.01398	4.11	14	0.294	
	~~E~~							
	~~F~~							
	~~G~~							
	~~H~~							
	A							
	B							
	C							
	D							
	E							
	F							
	G							
	H							
	Initials		TAP	TAP	thd	TAP	thd	
	Date		11/13	11/14	11/14/06	11/13	11/14/06	

E = Original number of organisms at test initiation, adjusted for losses.

Observations: (1) 0.01268 (2) 0.01200 (3) 0.01253 TAP 11/14

BasicWT.wk3

Client/Toxicant: 214
Job Number: 01-01
Species: L. plumulosus

Beginning Date & Time: 11-3-06 1800
Ending Date & Time: 11-13-06 1700

Freshwater Sediment Test
American Aquatic Testing, Inc.,
Physical / Chemical Parameters

Parameter	Concentration	Day 0	1	2	3	4	5	6	7	8	9	10
TEMP (C)	Control	25.0	25.0	24.5	24.5	24.5	24.5	25.0	24.5	24.0	24.0	24.5
	Ref. Creek	25.0	25.0	24.5	24.5	24.5	24.5	24.5	24.5	24.0	24.0	24.5
	A3	25.0	25.0	24.5	24.5	24.5	24.5	24.5	24.5	24.0	24.0	24.5
Dissolved Oxygen (mg/L)	Control	6.5	6.8	7.0	6.8	6.0	~~7.30~~ ①	6.1	6.6	6.8	6.7	6.7
	Ref. Creek	6.6	6.3	7.0	6.9	5.9	6.4	6.7	6.9	7.0	6.7	6.7
	A3	6.4	5.0	6.9	6.9	5.9	6.0	6.9	6.5	6.8	6.4	6.7
pH	Control	8.2	8.0	8.0	8.0	7.8	7.9	7.5	7.5	7.6	7.8	7.7
	Ref. Creek	8.2	8.0	8.1	8.1	8.2	8.0	7.9	8.0	8.1	8.0	7.8
	A3	8.3	7.9	8.0	8.1	8.0	8.0	8.2	8.2	8.2	8.2	8.3
	Initials	MKP	MKP	MKP	MKP	MKP	MKP	MKP	MKP	MKP	MKP	MKP
	Date	11/3	11/4	11/5	11/6	11/7	11/8	11/9	11/10	11/11	11/12	11/13

Concentration	Cond. (umhos) Initial	Final	Alkalinity (mg/L) Initial	Final	Hardness (mg/L) Initial	Final	Ammonia (mg/L) Initial	Final
Control	32340	34894	120	60			1.17	0.00
Ref. Creek	32400	35350	110	70			0.34	0.00
A3	32350	34650	120	150			0.39	0.00
Initials	MKP	MKP	MKP	MKP			MKP	MKP
Date	11/3	11/13	11/3	11/13			11/9	11/13

Comments:
① 6.3 MKP 11/8

FWSEDPAR.wk3

Client/Toxicant: 214
Job Number: 01-01
Species: L. plumulosus

Beginning Date & Time: 11-3-06 1800
Ending Date & Time: 11-13-06 1700

Freshwater Sediment Test
American Aquatic Testing, Inc.,
Physical / Chemical Parameters

Parameter	Concentration	Day 0	1	2	3	4	5	6	7	8	9	10
Salinity (ppt)	Control	20.1	21.6	22.6	23.8	20.2	20.0	20.2	20.0	21.1	21.0	21.8
	Ref. Creek	20.1	21.9	23.0	24.4	20.0	21.0	21.4	20.2	21.0	21.2	20.0
	A3	20.1	21.1	21.9	22.7	20.1	20.4	20.3	20.0	20.4	20.6	21.6
	Control											
	Control											
	Initials	MKP	MKP	MKP	MKP	MKP	MKP	MKP	MKP/JRP	VBK	VBK	VBK
	Date	11/3	11/4	11/5	11/6	11/7	11/8	11/9	11/10	11/11	11/12	11/13

Concentration	Cond. (umhos) Initial	Final	Alkalinity (mg/L) Initial	Final	Hardness (mg/L) Initial	Final	Ammonia (mg/L) Initial	Final
Control								
Initials								
Date								

Comments:

FWSEDPAR.wk3

APPENDIX B

STATISTICAL DATA FOR *Leptocheirus plumulosus* 10 DAY SURVIVAL AND GROWTH TEST

Leptocheirus 10 - day survival and growth test - survival

Start Date:	11/3/2006	Test ID:	2140101Lp	Sample ID:	Brown & Caldwell
End Date:	11/13/2006	Lab ID:	American Aquatic	Sample Type:	SEDIMENT
Sample Date:		Protocol:	EPAM 94-EPA Marine	Test Species:	LP - Leptocheirus plumulosus
Comments:					

Conc-%	1	2	3	4
Control	0.9500	0.9500	0.9000	1.0000
Ref. Creek	0.9500	0.9000	0.9000	0.8500
A3	0.5500	0.3500	0.6500	0.7000

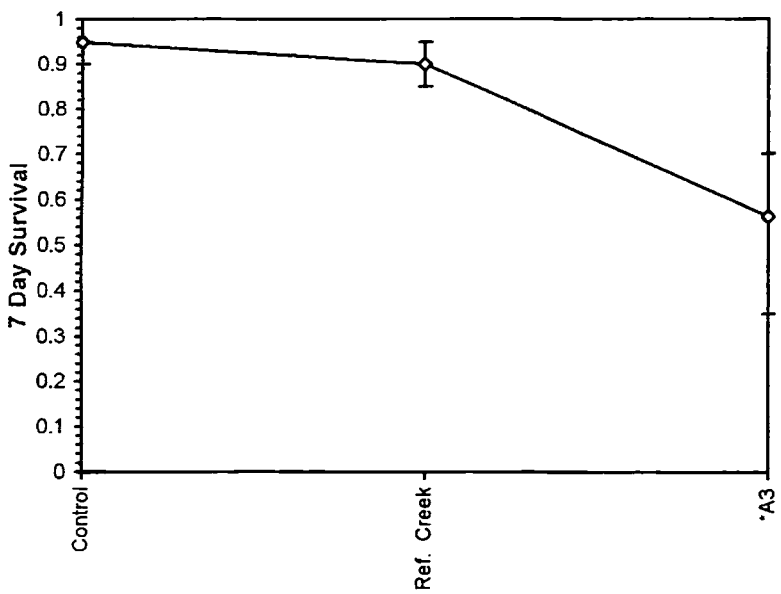
			Transform: Arcsin Square Root					Rank	1-Tailed
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical
Control	0.9500	1.0556	1.3496	1.2490	1.4588	6.354	4		
Ref. Creek	0.9000	1.0000	1.2541	1.1731	1.3453	5.625	4		
*A3	0.5625	0.6250	0.8494	0.6331	0.9912	18.603	4	10.00	11.00

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.92999	0.749	-0.8329	0.86046
F-Test indicates equal variances (p = 0.22)	5.01778	47.4683		
The control means are not significantly different (p = 0.14)	1.71962	2.44691		

Hypothesis Test (1-tail, 0.05)

Wilcoxon Two-Sample Test indicates significant differences
Treatments vs Ref. Creek

Dose-Response Plot



ToxCalc v5.0.23

Reviewed by: _____

Leptocheirus 10 - day survival and growth test - growth

Start Date:	11/3/2006	Test ID:	2140101Lp	Sample ID:	Brown & Caldwell
End Date:	11/13/2006	Lab ID:	American Aquatic	Sample Type:	SEDIMENT
Sample Date:		Protocol:	EPAM 94-EPA Marine	Test Species:	LP - Leptocheirus plumulosus
Comments:					

Conc-%	1	2	3	4
Control	0.2495	0.1721	0.1806	0.1335
Ref. Creek	0.2963	0.2406	0.1339	0.2888
A3	0.2927	0.3443	0.2377	0.2936

			Transform: Untransformed					Rank	1-Tailed
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical
Control	0.1839	0.7666	0.1839	0.1335	0.2495	26.247	4		
Ref. Creek	0.2399	1.0000	0.2399	0.1339	0.2963	31.208	4		
A3	0.2921	1.2175	0.2921	0.2377	0.3443	14.906	4	21.00	11.00

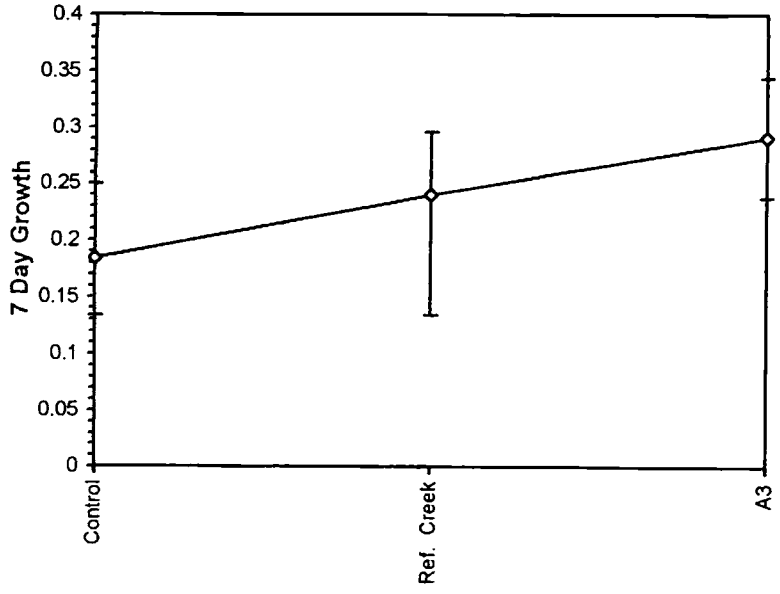
Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.87714	0.749	-0.9542	0.35341
F-Test indicates equal variances (p = 0.40)	2.95722	47.4683		
The control means are not significantly different (p = 0.26)	1.25702	2.44691		

Hypothesis Test (1-tail, 0.05)

Wilcoxon Two-Sample Test indicates no significant differences

Treatments vs Ref. Creek

Dose-Response Plot



ToxCalc v5.0.23

Reviewed by:

APPENDIX C

CHAIN OF CUSTODY DOCUMENTATION

AMERICAN AQUATIC TESTING, INC.

CHAIN OF CUSTODY

890 North Graham St.
ALLENTOWN, PA 18109
610 434 9015

Job #: 214-01-01

Client: Brown + Caldwell
Address: ISP Linden, NJ
Phone #:

Client Contact: Sem Femke Hartog

Sample Disposal: Return to client [ ] Lab disposal [X]

	Initial Chemistry Upon Arrival @ Laboratory						SAMPLE INFORMATION					Toxicity Testing Requested			
Sample #	Temp °C	Dis. O_2	pH	Alk. mg/L	Hard. mg/L	Cl- mg/L	Sample Identification	Sample Type C = Comp G=Grab	Sample Volume	Sample Date	Sample Time	Acute	Chronic	Sediment	Other
01	4.0						A3	C	2GAL	10/09/06	1343			X	
02	4.0						C1 (2)	↓	↓	10/06/06	1440			X	
03	4.0						E1 (2)	↓	↓	10/06/06	1357			X	
04	4.0						REF. CREEK	↓	↓	~~09/29/06~~ (1)	1240				

Samples were:
1. Collected by AAT personnel [ ] Client personnel [X]
2. Transported on ice? Yes [X] No [ ]
3. Received with in holding time? Yes [X] No [ ]
4. Sample matrix is: Liquid [ ] Sediment [X] Soil [ ] Other [ ]

CUSTODY INFORMATION									Lab Use
Sample #	Relinquished by:	Received by:	Date	Time	Relinquished by:	Received for Lab:	Date	Time	ISTN#
01	[signature]	[signature]	10/11/06	1100	[signature]	[signature]	10/11/06	1800	06817
02	↓	↓	↓	↓	↓	↓	↓	↓	06818
03	↓	↓	↓	↓	↓	↓	↓	↓	06819
04	↓	↓	↓	↓	↓	↓	↓	↓	06820

Special Instructions: Dilution water collection date(s)

Will ammonia be analyzed on these samples? Yes (No)
Will additional parameters be analyzed on these samples? Yes (No)

(1) 10/02/06 (2) RETURNED TO CLIENT UNTESTED

APPENDIX I

Agency Correspondence

110 Commerce Drive
Allendale, New Jersey 07401

Tel: (201) 574-4700
Fax: (201) 236-1607

www.brownandcaldwell.com

BROWN AND CALDWELL

Revised July 24, 2007
July 2, 2007 28-131369.211.002

Mr. Jon Gorin
Remedial Project Manager
United States Environmental Protection Agency, Region II
290 Broadway
19th Floor
New York, New York 10007-1866

Mr. Frank Faranca
Project Manager
New Jersey Department of Environmental Protection
401 East State Street
CN-401
Trenton, New Jersey 08625-0028

Subject: LCP Chemicals, Inc. Superfund Site,
Dioxin and Furan Sediment Results

Dear Messrs. Gorin and Faranca:

On behalf of ISP Environmental Services, Inc., this letter is a slightly amended version of the letter originally dated July 2, 2007. Specifically, the PCCD/PDDF Toxicity Equivalence Quotients for the Phase II RI samples presented in Tables 1 and 2 have been updated to reflect use of the World Health Organization (WHO) 2005 Toxicity Equivalence Factors (TEFs). The previous TEQs were provided by the laboratory and are not based on the most recent available TEFs, which we used to evaluate the regional data. The overall results, figures, and conclusions are unaffected.

In accordance with Addendum No. 2 (South Branch Creek & Ecological Issues) Work Plan: Phase II Remedial Investigation, LCP Chemicals, Inc. Superfund Site, Revised October 2006, biological tissue specimens (fiddler crabs and mummichog)

were collected and archived for potential PCDD/PCDF analysis. The Work Plan indicates that 20% of these samples would be analyzed for PCDDs and PCDFs in the event that these chemicals were detected above screening levels in surface water or sediment.

Applicable screening levels for either surface water or sediment are apparently not available for all of the PCDD and PCDF congeners, although some sets of benchmarks include values for one or two individual PCDD or PCDF congeners. However, 17 individual PCDD/PCDF congeners and congener groups were analyzed, each of which contributes to toxicity. Individual congener benchmarks are therefore not useful for evaluating the array of constituents present in this highly complex system. Therefore, we have evaluated the South Branch Creek results in the context of regional information.

Surface water was analyzed for PCDDs/PCDFs at four locations, two in South Branch Creek and two in Old Place Creek (the Reference Area). Results in both areas were comparable, in the low part-per-quadrillion range:

Station	Location	Total Dioxin/Furan Toxicity Equivalence Quotient (TEQ)[1]	Units
SW-C	South Branch Creek	0.00322	ng/L
SW-F	South Branch Creek	0.00087	ng/L
SW-W	Old Place Creek	0.00057	ng/L
SW-Y	Old Place Creek	0.00399	ng/L

The sediment results for PCDDs/PCDFs collected in the LCP Remedial Investigation (RI) are provided in the Attachment. For context, a large body of sediment data is available from several publicly available databases; these results also appear in the Attachment. The figure summarizes the sediment PCDD and PCDF results. For consistency, each of results in the tables and on the figure are expressed in World Health Organization (WHO) 2005 Toxicity Equivalent Quotients (TEQs) which have been recently adopted by USEPA.

The PCDD/PCDF concentrations in South Branch Creek are comparable to those in the Arthur Kill and substantially lower than those in Newark Bay. Accordingly, the pattern indicates that the LCP site and South Branch Creek are not sources of PCDD/PCDF contamination.

Based on the regional information, the PCDDs/PCDFs TEQs in sediment, which are in the part-per-quadrillions, are within the range of urban background for the Arthur Kill area. Surface water impacts are similarly not in evidence. Given the highly industrialized and degraded system into which South Branch Creek discharges,

[1] Using World Health Organization (WHO) 2005 Toxicity Equivalence factors.

the presence of trace concentrations of PCDDs and PCDFs is expected, especially since there are known sources of PCDDs and PCDFs in waterways such as the Passaic River that are interconnected with the Arthur Kill.

Given the absence of PCDD/PCDF contamination associated with the LCP site, we do not recommend analysis of the frozen biota samples for PCDD/PCDF. Such analyses would not assist in the risk management for the Site since these constituents are clearly not Site related.. We are, however, retaining these samples for now in the event that future analyses for these or other parameters is desired. We will notify you ahead of time should we decide to discard this material.

Please contact us if you have any questions.

Sincerely,

Brown and Caldwell

Tamara L. Sorell, Ph.D.
Manager, Risk Assessment Services

Scott MacMillin, P.G.
Supervising Hydrogeologist

Attachments

cc: S. Miller, NJDHSS
M. Sundram, Esq., USEPA
D. McNichol, ISP-ESI
S. Kirschner, CDM
C. Wills, Esq., ISP-ESI
D. Toft, Esq.
N. Johnson, Esq.
C. McGowan
M. DeFlaun, GeoSyntec
J. Kubitz, Entrix

TABLE 1
SUMMARY OF PCDD/PCDF (DIOXIN AND FURAN) RESULTS IN SURFACE WATER
FORMER LCP CHEMICALS, INC. SUPERFUND SITE, LINDEN, NEW JERSEY

Location	Sample Station	Total PCDDs/PCDFs (ng/l)	Toxicity Equivalence Quotient (TEQ) (ng/l)
South Branch Creek	SW-C	0.0594	0.00322
Arthur Kill	SW-F	0.0559	0.00087
Old Place Creek (Reference Area)	SW-W	0.0505	0.00057
Old Place Creek (Reference Area)	SW-Y	0.103	0.00399

Notes:
PCDDs/PCDFs - Polychlorinated dibenzo-p-dioxins and polychlorinated dibenzo-p-furans
TEQ - 2,3,7,8-TCDD equivalents based on World health Organization (WHO) 1995 Toxicity Equivalence Factors (TEFs). The TEQs have been updated to reflect use of the WHO 2005 TEFs. The previous TEQs presented in the previous version of this table were provided by the laboratory and are not based on the most recent available TEFs, which we used to evaluate the regional data.

TABLE 2
SUMMARY OF PCDD/PCDF (DIOXIN AND FURAN) RESULTS IN SEDIMENT
FORMER LCP CHEMICALS, INC. SUPERFUND SITE, LINDEN, NEW JERSEY

Location	Sample Station	Sample Depth	Total PCDDs/PCDFs (ng/kg)	Toxicity Equivalence Quotient (TEQ)
South Branch Creek	SED-A-1	0-0.5'	1518	57.5
South Branch Creek	SED-A-2	1.0-1.5'	227	2.0
South Branch Creek	SED-A-3	0-0.5'	1249	27.0
South Branch Creek	SED-B-2	0.5-1.0'	558	29.3
South Branch Creek	SED-C-2	0.5-1.0'	613	50.1
South Branch Creek	SED-C-3	0-0.5'	3580	169
South Branch Creek	SED-D-3	0-0.5'	7293	124
Arthur Kill	SED-E-1	0-0.5'	714	16.1
Arthur Kill	SED-F-1	0-0.5'	523	15.1
Arthur Kill	SED-G-1	0-0.5'	3325	4.0
Old Place Creek (Reference Area)	SED-W-1	0-0.5'	678	9.3
Old Place Creek (Reference Area)	SED-W-3	0-0.5'	540	1.7
Old Place Creek (Reference Area)	SED-Y-3	0-0.5'	1050	14.5

Notes:
All TEQs in pg/g (ng/kg)
PCDDs/PCDFs - Polychlorinated dibenzo-p-dioxins and polychlorinated dibenzo-p-furans
TEQ - 2,3,7,8-TCDD equivalents based on World health Organization (WHO) 1995 Toxicity Equivalence Factors (TEFs). The TEQs have been updated to reflect use of the WHO 2005 TEFs. The TEQs presented in the previous version of this table were provided by the laboratory and are not based on the most recent available TEFs, which we used to evaluate the regional data.

Table 3
CARP Harbor Ambient Sediment and Sediment Trackdown Sampling Projects 1998-2001

Top of Sample Depth	Bottom of Sample Depth	STATION_NAME	LAT	LONG	PCDDin TEQ Total	PCDF TEQ Total	PCDD PCDF Total TEQ (pg/g)
0	0.46	ARTHUR KILL EAST JERSEY AND FRONT ST STORMWATER OV	40.6145	-74.1971	225.7	98.451	320
0.46	0.58	ARTHUR KILL EAST JERSEY AND FRONT ST STORMWATER OV	40.6145	-74.1971	121.667	36.867	160
0.58	1.02	ARTHUR KILL EAST JERSEY AND FRONT ST STORMWATER OV	40.6145	-74.1971	34.66	23.4696	58
1.02	1.32	ARTHUR KILL EAST JERSEY AND FRONT ST STORMWATER OV	40.6145	-74.1971	9.008	7.7887	17
1.32	1.88	ARTHUR KILL EAST JERSEY AND FRONT ST STORMWATER OV	40.6145	-74.1971	15.038	14.3853	29
0.1	0.28	UPPER BAY AMBIENT SITE	40.6855	-74.0679	43.113	6.4634	50
0.28	0.56	UPPER BAY AMBIENT SITE	40.6855	-74.0679	11.5753	2.7395	14
0.56	1.17	UPPER BAY AMBIENT SITE	40.6855	-74.0679	4.2827	0.94689	5.2
1.17	1.42	UPPER BAY AMBIENT SITE	40.6855	-74.0679	315.944	28.1171	340
0	0.17	Newark Bay	40.6962	-74.1103	155.387	27.6774	180
0.17	0.43	Newark Bay	40.6962	-74.1103	294.624	45.844	340
0.43	0.69	Newark Bay	40.6962	-74.1103	387.362	51.381	440
0.69	0.94	Newark Bay	40.6962	-74.1103	454.744	50.927	510
0.94	1.19	Newark Bay	40.6962	-74.1103	509.335	48.726	560
1.19	1.45	Newark Bay	40.6962	-74.1103	583.59	60.2	640
1.45	1.7	Newark Bay	40.6962	-74.1103	1215.88	45.997	1300
1.7	1.96	Newark Bay	40.6962	-74.1103	1236.467	113.494	1300
1.96	2.29	Newark Bay	40.6962	-74.1103	1655.08	45.02	1700
0	0.1	UPPER BAY AMBIENT SITE	40.6855	-74.0679	21.952	7.0382	29
0	0.1	Newark Bay	40.6962	-74.1103	132.208	16.3473	150
0	0.1	PASSAIC RIVER SMITH MARINA STORMWATER OVERFLOW	40.7343	-74.1186	327.93	70.63	400
0	0.1	HUDSON RIVER AMBIENT STATION 19	42.17119	-73.8962	2.815	1.1577	4
0	0.1	ARTHUR KILL AMBIENT STATION 7	40.615	-74.2008	21.63	10.263	32
0	0.1	HACKENSACK RIVER AMBIENT STATION 5	40.7194	-74.1003	164.65	210.55	380
0	0.1	NEWARK BAY AMBIENT STATION 6	40.6875	-74.1136	276.19	8.195	280
0	0.1	PASSAIC RIVER AMBIENT STATION 4	40.7231	-74.1197	310.39	102.65	410
0	0.1	RARITAN BAY AMBIENT STATION 8	40.4939	-74.2492	15.04	6.975	22
0	0.1	EAST RIVER AMBIENT STATION 13	40.7047	-73.9911	21.4	11.07	32
0	0.1	HUDSON RIVER AMBIENT STATION 16	40.7628	-74.0192	15.07	6.262	21
0	0.1	LONG ISLAND SOUND AMBIENT STATION 14	40.7808	-73.8872	30.26	15.519	46
0	0.1	UPPER BAY AMBIENT STATION 12	40.6831	-74.0597	9.33	3.8676	13
0	0.1	HACKENSACK RIVER AMBIENT STATION 1	40.80617	-74.05633	74.94	42.443	120
0	0.1	HUDSON RIVER AMBIENT STATION 17	41.0389	-73.8964	24.61	8.076	33
0	0.1	HUDSON RIVER AMBIENT STATION 18	41.1636	-73.8906	9.2	6.1788	15

Table 3
CARP Harbor Ambient Sediment and Sediment Trackdown Sampling Projects 1998-2001

Top of Sample Depth	Bottom of Sample Depth	STATION_NAME	LAT	LONG	PCDDin TEQ Total	PCDF TEQ Total	PCDD PCDF Total TEQ (pg/g)
0	0.1	PASSAIC RIVER AMBIENT STATION 2	40.8141	-74.1375	481.33	76.63	560
0	0.1	BIGHT AMBIENT STATION 10	40.467	-73.8839	1.0042	0.4641	1.5
0	0.1	JAMAICA BAY AMBIENT STATION 11	40.5871	-73.8526	1.3443	0.45926	1.8
0	0.1	LOWER BAY AMBIENT STATION 9	40.545	-74.0486	6.442	2.1679	8.6
0	0.1	LONG ISLAND SOUND AMBIENT STATION 15	40.9084	-73.6852	10.86	10.144	21
0	0.06	Flushing Bay near Riker's Island	40.78002	-73.85887	53.53	17.888	71
0	0.06	Harlem River/East River near Ward's Island	40.7924	-73.92955	31.83	25.28	57
0.06	0.12	Flushing Bay near Riker's Island	40.78002	-73.85887	51.44	20.667	72
0.06	0.12	Harlem River/East River near Ward's Island	40.7924	-73.92955	31.59	22.738	54
0.12	0.24	Flushing Bay near Riker's Island	40.78002	-73.85887	54.72	23.585	78
0.12	0.28	Harlem River/East River near Ward's Island	40.7924	-73.92955	29.88	15.858	46
0.24	0.48	Flushing Bay near Riker's Island	40.78002	-73.85887	55.42	28.994	84
0.28	0.52	Harlem River/East River near Ward's Island	40.7924	-73.92955	28.75	22.175	51
0.48	0.8	Flushing Bay near Riker's Island	40.78002	-73.85887	21.05	23.912	45
0.52	0.72	Harlem River/East River near Ward's Island	40.7924	-73.92955	32.17	15.312	47
0.72	0.99	Harlem River/East River near Ward's Island	40.7924	-73.92955	40.41	16.79	57
0	0.06	Lower Bay near Ambient Site (LB001)	40.55243	-74.05467	14.31	6.617	21
0	0.06	Lower Bay near Sandy Hook	40.42545	-74.00943	13.03	4.983	18
0	0.06	Raritan Bay east of Ward Pt Secondary Channel	40.48327	-74.2342	38.2	11.875	50
0	0.06	Raritan River near Garden State Pkwy Bridge	40.50957	-74.29443	19.3	6.635	26
0.06	0.12	Lower Bay near Ambient Site (LB001)	40.55243	-74.05467	20.62	9.417	30
0.06	0.12	Lower Bay near Sandy Hook	40.42545	-74.00943	5.143	2.0464	7.2
0.06	0.12	Raritan Bay east of Ward Pt Secondary Channel	40.48327	-74.2342	31.63	11.327	43
0.06	0.12	Raritan River near Garden State Pkwy Bridge	40.50957	-74.29443	18.9	7.649	27
0.12	0.28	Lower Bay near Sandy Hook	40.42545	-74.00943	5.166	1.8893	7.1
0.12	0.28	Raritan Bay east of Ward Pt Secondary Channel	40.48327	-74.2342	41.83	12.398	54
0.12	0.36	Lower Bay near Ambient Site (LB001)	40.55243	-74.05467	10.06	4.9164	15
0.12	0.36	Raritan River near Garden State Pkwy Bridge	40.50957	-74.29443	24.2	7.859	32
0.28	0.52	Raritan Bay east of Ward Pt Secondary Channel	40.48327	-74.2342	68.25	17.403	86
0.28	0.64	Lower Bay near Sandy Hook	40.42545	-74.00943	2.711	0.48497	3.2
0.36	0.6	Lower Bay near Ambient Site (LB001)	40.55243	-74.05467	48.88	12.411	61
0.36	0.6	Raritan River near Garden State Pkwy Bridge	40.50957	-74.29443	24.43	8.309	33
0.52	0.84	Raritan Bay east of Ward Pt Secondary Channel	40.48327	-74.2342	48.33	11.859	60
0.6	0.8	Raritan River near Garden State Pkwy Bridge	40.50957	-74.29443	19.01	7.922	27
0.6	0.88	Lower Bay near Ambient Site (LB001)	40.55243	-74.05467	85.01	12.226	97
0.8	0.96	Raritan River near Garden State Pkwy Bridge	40.50957	-74.29443	23.7	6.701	30

Table 3
CARP Harbor Ambient Sediment and Sediment Trackdown Sampling Projects 1998-2001

Top of Sample Depth	Bottom of Sample Depth	STATION_NAME	LAT	LONG	PCDDin TEQ Total	PCDF TEQ Total	PCDD PCDF Total TEQ (pg/g)
0.84	1.08	Raritan Bay east of Ward Pt Secondary Channel	40.48327	-74.2342	17.79	13.834	32
1.08	1.5	Raritan Bay east of Ward Pt Secondary Channel	40.48327	-74.2342	9.96	14.056	24
0	0.06	Upper Bay between Pier 57 and Pier 39	40.65443	-74.02233	14.89	8.006	23
0.06	0.12	Upper Bay between Pier 57 and Pier 39	40.65443	-74.02233	17.7	8.075	26
0.12	0.4	Upper Bay between Pier 57 and Pier 39	40.65443	-74.02233	22.3	7.165	29
0.4	0.65	Upper Bay between Pier 57 and Pier 39	40.65443	-74.02233	17.93	6.781	25
0.65	1	Upper Bay between Pier 57 and Pier 39	40.65443	-74.02233	20.28	8.802	29
1	1.4	Upper Bay between Pier 57 and Pier 39	40.65443	-74.02233	30	12.881	43
1.4	1.8	Upper Bay between Pier 57 and Pier 39	40.65443	-74.02233	58.55	19.453	78
0	0.06	Jamaica Bay at Hendrick's Creek	40.64038	-73.8695	21.42	7.848	29
0	0.06	Jamaica Bay near Little Bay	40.60933	-73.78438	13.9	6.0155	20
0.06	0.12	Jamaica Bay at Hendrick's Creek	40.64038	-73.8695	23.97	9.058	33
0.06	0.12	Jamaica Bay near Little Bay	40.60933	-73.78438	12.03	6.279	18
0.12	0.32	Jamaica Bay at Hendrick's Creek	40.64038	-73.8695	33.1	19.738	53
0.12	0.4	Jamaica Bay near Little Bay	40.60933	-73.78438	20.41	7.7632	28
0.32	0.74	Jamaica Bay at Hendrick's Creek	40.64038	-73.8695	220.5	39.198	260
0.4	0.7	Jamaica Bay near Little Bay	40.60933	-73.78438	32.18	12.323	45
0.7	1.06	Jamaica Bay near Little Bay	40.60933	-73.78438	38.69	13.784	52
0	0.06	Upper Harbor near Governor's Island	40.68203	-74.02568	21.7	14.565	36
0.06	0.12	Upper Harbor near Governor's Island	40.68203	-74.02568	33.38	21.711	55
0.12	0.24	Upper Harbor near Governor's Island	40.68203	-74.02568	19.49	30.532	50
0.24	0.4	Upper Harbor near Governor's Island	40.68203	-74.02568	11.46	18.295	30
0.4	0.6	Upper Harbor near Governor's Island	40.68203	-74.02568	7.01	38.623	46
0.6	0.8	Upper Harbor near Governor's Island	40.68203	-74.02568	7.38	27.506	35
0	0.06	Newtown Creek at mouth of Maspeth Cr.	40.7238	-73.9254	126.6	204.21	330
0	0.06	Newtown Creek near Whale Creek	40.7349	-73.947	402.9	344.72	750
0.06	0.12	Newtown Creek at mouth of Maspeth Cr.	40.7238	-73.9254	222	174.74	400
0.06	0.12	Newtown Creek near Whale Creek	40.7349	-73.947	538	438.61	980
0.12	0.32	Newtown Creek at mouth of Maspeth Cr.	40.7238	-73.9254	241	290.29	530
0.12	0.42	Newtown Creek near Whale Creek	40.7349	-73.947	639	504.03	1100
0.32	0.7	Newtown Creek at mouth of Maspeth Cr.	40.7238	-73.9254	251.4	471.48	720
0.42	0.77	Newtown Creek near Whale Creek	40.7349	-73.947	986.7	786.62	1800
0.7	1.07	Newtown Creek at mouth of Maspeth Cr.	40.7238	-73.9254	250.9	622.72	870
0.77	1.12	Newtown Creek near Whale Creek	40.7349	-73.947	466.5	557.66	1000
0	0.06	Arthur Kill near Tuft's Point	40.5592	-74.225	5.099	4.8593	10
0	0.06	Newark Bay near Bayonne City Park	40.664	-74.1368	85.49	16.975	100
0.06	0.12	Arthur Kill near Tuft's Point	40.5592	-74.225	42.92	50.19	93
0.06	0.12	Newark Bay near Bayonne City Park	40.664	-74.1368	80.02	15.682	96
0.12	0.22	Newark Bay near Bayonne City Park	40.664	-74.1368	72.25	16.892	89
0.12	0.32	Arthur Kill near Tuft's Point	40.5592	-74.225	69.8	63.09	130
0.22	0.52	Newark Bay near Bayonne City Park	40.664	-74.1368	91.58	15.407	110

Table 3
CARP Harbor Ambient Sediment and Sediment Trackdown Sampling Projects 1998-2001

Top of Sample Depth	Bottom of Sample Depth	STATION_NAME	LAT	LONG	PCDDin TEQ Total	PCDF TEQ Total	PCDD PCDF Total TEQ (pg/g)
0.32	0.62	Arthur Kill near Tuft's Point	40.5592	-74.225	25.92	19.863	46
0.52	0.72	Newark Bay near Bayonne City Park	40.664	-74.1368	52.77	6.577	59
0.62	0.9	Arthur Kill near Tuft's Point	40.5592	-74.225	10.65	10.483	21
0	0.08	Harlem River at Spuyten Duyvil Creek Park	40.87425	-73.91856	10.93	7.829	19
0.08	0.16	Harlem River at Spuyten Duyvil Creek Park	40.87425	-73.91856	13.75	5.7753	20
0.16	0.24	Harlem River at Spuyten Duyvil Creek Park	40.87425	-73.91856	12.35	5.8972	18
0.24	0.32	Harlem River at Spuyten Duyvil Creek Park	40.87425	-73.91856	15.21	6.0035	21
0.32	0.4	Harlem River at Spuyten Duyvil Creek Park	40.87425	-73.91856	16.13	7.1744	23
0.4	0.48	Harlem River at Spuyten Duyvil Creek Park	40.87425	-73.91856	19.45	7.32	27
0.48	0.56	Harlem River at Spuyten Duyvil Creek Park	40.87425	-73.91856	57.9	12.91	71
0.56	0.65	Harlem River at Spuyten Duyvil Creek Park	40.87425	-73.91856	73.49	19.504	93
0	0.06	Newark Bay near Bayonne City Park	40.6542	-74.14377	28.18	13.685	42
0.06	0.12	Newark Bay near Bayonne City Park	40.6542	-74.14377	44.42	15.616	60
0.12	0.24	Newark Bay near Bayonne City Park	40.6542	-74.14377	65.72	12.058	78
0.24	0.36	Newark Bay near Bayonne City Park	40.6542	-74.14377	74.39	18.671	93
0.36	0.48	Newark Bay near Bayonne City Park	40.6542	-74.14377	4.75	1.5315	6.3
0.48	0.84	Newark Bay near Bayonne City Park	40.6542	-74.14377	0.933	0.21473	1.1
0	0.06	Hudson R. btw Tappen Zee and Harlem R.	40.8841	-73.9398	15.24	10.614	26
0	0.06	Lower Bay at Gravesend Bay	40.59447	-74.00508	24.28	14.106	38
0	0.06	Upper Bay south of Governor's Island	40.68187	-74.02563	31.47	30.401	62
0	0.14	Pier 6 near Battery	40.70137	-74.00997	60.05	36.788	97
0.06	0.12	Hudson R. btw Tappen Zee and Harlem R.	40.8841	-73.9398	17.36	11.863	29
0.06	0.12	Lower Bay at Gravesend Bay	40.59447	-74.00508	38.04	45.198	83
0.06	0.12	Upper Bay south of Governor's Island	40.68187	-74.02563	19.78	36.868	57
0.12	0.18	Hudson R. btw Tappen Zee and Harlem R.	40.8841	-73.9398	27.34	19.966	47
0.12	0.38	Lower Bay at Gravesend Bay	40.59447	-74.00508	94.7	42.068	140
0.12	0.4	Upper Bay south of Governor's Island	40.68187	-74.02563	10.71	32.9252	44
0.14	0.43	Pier 6 near Battery	40.70137	-74.00997	1.0809	0.99384	2.1
0.18	0.24	Hudson R. btw Tappen Zee and Harlem R.	40.8841	-73.9398	35.38	25.05	60
0.24	0.3	Hudson R. btw Tappen Zee and Harlem R.	40.8841	-73.9398	37.87	26.794	65
0.3	0.4	Hudson R. btw Tappen Zee and Harlem R.	40.8841	-73.9398	7.97	4.3595	12
0.38	0.8	Lower Bay at Gravesend Bay	40.59447	-74.00508	2.384	1.4317	3.8
0.4	0.6	Hudson R. btw Tappen Zee and Harlem R.	40.8841	-73.9398	1.779	0.43424	2.2
0.4	0.7	Upper Bay south of Governor's Island	40.68187	-74.02563	5.33	23.606	29
0.43	0.76	Pier 6 near Battery	40.70137	-74.00997	0.71908	0.16393	0.88
0.6	1	Hudson R. btw Tappen Zee and Harlem R.	40.8841	-73.9398	3.14	0.4587	3.6
0.7	1	Upper Bay south of Governor's Island	40.68187	-74.02563	3.68	12.4928	16
0.8	0.98	Lower Bay at Gravesend Bay	40.59447	-74.00508	0.88	0.6967	1.6
1	1.3	Upper Bay south of Governor's Island	40.68187	-74.02563	4.18	4.2173	8.4
1	2	Hudson R. btw Tappen Zee and Harlem R.	40.8841	-73.9398	1.046	0.1574	1.2
1.3	1.6	Upper Bay south of Governor's Island	40.68187	-74.02563	3.55	4.0223	7.6
1.6	1.9	Upper Bay south of Governor's Island	40.68187	-74.02563	3.52	3.8583	7.4
1.9	2.2	Upper Bay south of Governor's Island	40.68187	-74.02563	3.23	5.4621	8.7

Table 3
CARP Harbor Ambient Sediment and Sediment Trackdown Sampling Projects 1998-2001

Top of Sample Depth	Bottom of Sample Depth	STATION_NAME	LAT	LONG	PCDDin TEQ Total	PCDF TEQ Total	PCDD PCDF Total TEQ (pg/g)
2	2.28	Hudson R. btw Tappen Zee and Harlem R.	40.8841	-73.9398	1.323	0.13144	1.5
2.2	2.69	Upper Bay south of Governor's Island	40.68187	-74.02563	3.83	4.7447	8.6
0	0.03	East River near Riker's Island	40.79207	-73.8692	14.66	10.3473	25
0	0.06	East River at Bronx River	40.8044	-73.86577	14.2	7.91	22
0.03	0.08	East River near Riker's Island	40.79207	-73.8692	25.67	25.676	51
0	0.06	Lower Bay near Keansbury	40.46725	-74.1018	32.14	11.044	43
0	0.06	Raritan Bay NE of Seidler Beach	40.46663	-74.22518	14.61	5.2359	20
0	0.06	Long Island Sound	40.84783	-73.80472	14.89	12.298	27
0	0.06	Long Island Sound	40.7937	-73.76262	14.79	8.912	24
0	0.06	Long Island Sound in Manhassett Bay	40.82373	-73.71238	15.17	8.036	23
0	0.06	Upper Bay in Gowanus Canal	40.66845	-74.00078	31	10.139	41
0.06	0.12	Long Island Sound	40.84783	-73.80472	13.97	12.722	27
0.06	0.12	Long Island Sound	40.7937	-73.76262	19.19	13.674	33
0.06	0.12	Long Island Sound in Manhassett Bay	40.82373	-73.71238	17.77	12.077	30
0.06	0.12	Upper Bay in Gowanus Canal	40.66845	-74.00078	19	12.26	31
0.12	0.17	Long Island Sound	40.84783	-73.80472	15.92	14.355	30
0.12	0.17	Long Island Sound in Manhassett Bay	40.82373	-73.71238	25.19	19.144	44
0.12	0.3	Upper Bay in Gowanus Canal	40.66845	-74.00078	26.34	15.951	42
0.17	0.22	Long Island Sound	40.84783	-73.80472	15.12	9.4692	25
0	0.06	Jamaica Bay in Grassy Bay	40.63332	-73.8001	20.83	7.677	29
0	0.06	Jamaica Bay in Head of Bay	40.62802	-73.7597	16.04	9.7215	26
0	0.06	Jamaica Bay near Penn and Fountain Landfills	40.633	-73.86703	4.24	2.3133	6.6
0.06	0.12	Jamaica Bay in Grassy Bay	40.63332	-73.8001	22.6	7.638	30
0.06	0.12	Jamaica Bay near Penn and Fountain Landfills	40.633	-73.86703	5.832	4.0896	9.9
0.06	0.14	Jamaica Bay in Head of Bay	40.62802	-73.7597	11.95	7.8322	20
0.12	0.32	Jamaica Bay near Penn and Fountain Landfills	40.633	-73.86703	21.09	10.157	31
0.12	0.4	Jamaica Bay in Grassy Bay	40.63332	-73.8001	28.44	13.749	42
0.32	0.6	Jamaica Bay near Penn and Fountain Landfills	40.633	-73.86703	40.49	11.264	52
0.4	0.75	Jamaica Bay in Grassy Bay	40.63332	-73.8001	120	29.692	150
0.6	1.1	Jamaica Bay near Penn and Fountain Landfills	40.633	-73.86703	40.47	14.211	55
0.75	1.15	Jamaica Bay in Grassy Bay	40.63332	-73.8001	4.194	1.76186	6
1.15	1.73	Jamaica Bay in Grassy Bay	40.63332	-73.8001	3.595	1.69547	5.3
0	0.06	Upper Bay near Pier 9B	40.68725	-74.00797	10.75	7.3355	18
0	0.1	Arthur Kill at end of Pralls Island	40.60967	-74.19925	85.1	46.81	130
0.06	0.12	Upper Bay near Pier 9B	40.68725	-74.00797	18.06	7.6205	26
0	0.1	Gowanus Canal mid bay	40.6689	-74.0059	34.75	10.445	45
0	0.1	Harlem River below Willis Ave. Bridge	40.8029	-73.928	22.14	11.818	34
0	0.1	Newtown Creek at English Kills	40.715	-73.9316	132.4	150.46	280

Table 3
CARP Harbor Ambient Sediment and Sediment Trackdown Sampling Projects 1998-2001

Top of Sample Depth	Bottom of Sample Depth	STATION_NAME	LAT	LONG	PCDDin TEQ Total	PCDF TEQ Total	PCDD PCDF Total TEQ (pg/g)
0	0.1	Newtown Creek near mouth	40.7365	-73.9605	34.47	26.087	61
0	0.06	Arthur Kill between Morses Cr. And Piles Cr.	40.6242	-74.2042	57.71	19.371	77
0	0.06	Arthur Kill near Isle of Meadow's	40.5769	-74.2085	8.23	3.2285	11
0	0.1	Arthur Kill near West Charleston	40.5329	-74.2484	30.08	17.806	48
0	0.1	Arthur Kill at end of Pralls Island	40.60967	-74.19925	85.02	33.543	120
0	0.1	Arthur Kill below Outer Bridge	40.5227	-74.2452	29.82	19.315	49
0	0.1	Arthur Kill near Woodbridge Creek outlet	40.5394	-74.2546	11.21	8.304	20
0	0.1	Arthur Kill near mouth of Rahway River	40.5937	-74.2055	25.96	12.266	38
0	0.1	Kill Van Kull near STP outfall	40.6419	-74.1247	142.32	20.717	160
0	0.1	Arthur Kill at end of Pralls Island	40.60967	-74.19925	101.3	44.019	150
0	0.1	Harlem River at Spuyten Duyvil Creek Park	40.87425	-73.91856	10.18	5.3915	16
0	0.1	Harlem River below 138th Street Bridge	40.80944	-73.93417	16.15	16.027	32
0	0.1	Harlem River near NYC Police Boat Yard	40.80111	-73.92667	18.71	8.353	27
0	0.1	Harlem River near the 207th Street Bridge	40.86367	-73.91272	8.65	4.7985	13
0	0.1	Harlem River near the 207th Street Bridge	40.86406	-73.91481	11.71	7.7424	19
0	0.1	HEM1	42.7367	-73.7945	33.353	18.0231	51
0	0.1	HEM1	42.7367	-73.7945	35.21	18.292	54
0	0.1	HEM1	42.7367	-73.7945	36.2022	22.2248	58
0	0.1	Arthur Kill at end of Pralls Island	40.60967	-74.19925	102.43	39.657	140
0	0.1	Arthur Kill at end of Pralls Island	40.60967	-74.19925	163.3	62.08	230
0	0.1	Pier 6 near Battery	40.7015	-74.01028	19.282	8.1556	27
0	0.1		40.7185	-74.01389	13.712	5.5605	19
0	0.06	Long Island Sound Site 1Core	41.0737	-73.1805	3.6	3.542	7.1
0	0.06	Long Island Sound Site 2 Core	40.938	-73.2055	6.32	5.81	12
0	0.06	Long Island Sound Site 3 Core	40.9301	-73.4195	6.25	5.375	12
0	0.06	Long Island Sound Site 4 Core	40.9992	-73.5111	3.276	2.5352	5.8
0	0.06	Long Island Sound Site 5 Core	40.8583	-73.6674	10.28	9.465	20
0	0.06	Long Island Sound Site 6 Core	40.9156	-73.7252	7.04	4.546	12
0	0.06	Long Island Sound Site 7 Core	40.9866	-73.5772	7.06	5.022	12
0	0.06	Long Island Sound Site 9 Core	41.0939	-73.3109	4.282	3.36	7.6
0	0.16	Long Island Sound Site 8 Core	40.9887	-73.4778	6.76	4.36	11
0.06	0.12	Long Island Sound Site 2 Core	40.938	-73.2055	5.41	5.257	11
0.06	0.12	Long Island Sound Site 3 Core	40.9301	-73.4195	6.21	5.1274	11
0.06	0.12	Long Island Sound Site 4 Core	40.9992	-73.5111	2.455	1.6587	4.1
0.06	0.12	Long Island Sound Site 5 Core	40.8583	-73.6674	13.05	11.955	25
0.06	0.12	Long Island Sound Site 6 Core	40.9156	-73.7252	3.507	2.3289	5.8
0.06	0.12	Long Island Sound Site 7 Core	40.9866	-73.5772	8.58	5.77	14
0.06	0.18	Long Island Sound Site 9 Core	41.0939	-73.3109	3.384	1.7833	5.2
0.06	0.22	Long Island Sound Site 1Core	41.0737	-73.1805	4.41	4.556	9
0.12	0.2	Long Island Sound Site 5 Core	40.8583	-73.6674	14.11	12.855	27
0.12	0.22	Long Island Sound Site 6 Core	40.9156	-73.7252	3.076	1.3097	4.4
0.12	0.25	Long Island Sound Site 4 Core	40.9992	-73.5111	1.859	0.57822	2.4
0.12	0.3	Long Island Sound Site 3 Core	40.9301	-73.4195	6.43	6.141	13

Table 3
CARP Harbor Ambient Sediment and Sediment Trackdown Sampling Projects 1998-2001

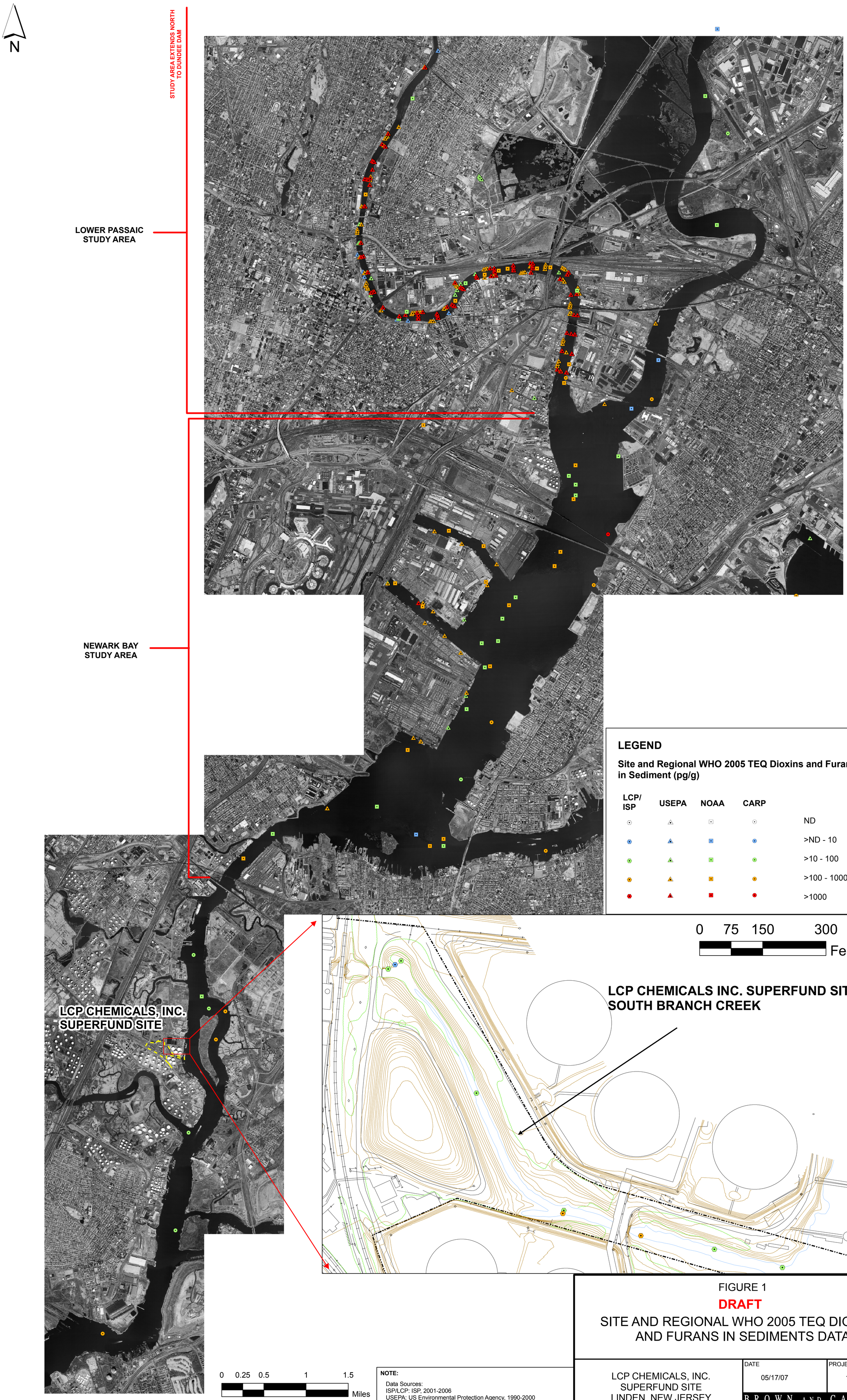
Top of Sample Depth	Bottom of Sample Depth	STATION_NAME	LAT	LONG	PCDDin TEQ Total	PCDF TEQ Total	PCDD PCDF Total TEQ (pg/g)
0.12	0.34	Long Island Sound Site 2 Core	40.938	-73.2055	5.81	6.578	12
0.12	0.35	Long Island Sound Site 7 Core	40.9866	-73.5772	8.59	5.238	14
0.16	0.32	Long Island Sound Site 8 Core	40.9887	-73.4778	12.3	7.097	19
0.2	0.38	Long Island Sound Site 5 Core	40.8583	-73.6674	9.75	9.7978	20
0	0.06	Hackensack River above Turning Basin	40.765	-74.08283	24.49	62.845	87
0	0.06	Newark Bay near Bayonne City Park	40.6542	-74.14377	38.94	18.186	57
0	0.06	Upper Bay at Wallabout Bay	40.70525	-73.97493	36.09	21.232	57
0	0.12	Hudson R. btw Tappen Zee and Harlem R.	40.8841	-73.9398	12.14	9.813	22
0.06	0.12	Upper Bay at Wallabout Bay	40.70525	-73.97493	22.65	14.648	37

Table 4
NOAA National Status and Trends 1993 Regional Sediment Data

Top of Sample Depth	Bottom of Sample Depth	Latitude	Longitude	PCDDin TEQ Total	PCDF TEQ Total	PCDD PCDF Total TEQ (pg/g)
0	3	40.78943	-74.14575	121.11	12.85	130
0	3	40.77123	-74.15406	43.765	7.428	51
0	3	40.75477	-74.16476	325	47.402	370
0	3	40.7346	-74.15559	33.478	7.2613	41
0	3	40.73643	-74.14459	539.73	67.1	610
0	3	40.73943	-74.14225	58.93	13.328	72
0	3	40.7381	-74.11709	93.707	8.8379	100
0	3	40.72544	-74.11892	388.62	99.68	490
0	3	40.72544	-74.11892	433.57	116.26	550
0	3	40.72544	-74.11892	506.7	98.62	610
0	3	40.72227	-74.12009	363.65	99.89	460
0	3	40.79727	-74.07125	15.12	4.757	20
0	3	40.79377	-74.07659	13.538	4.981	19
0	3	40.7911	-74.07859	110.05	54.04	160
0	3	40.78293	-74.08509	9.9483	5.0244	15
0	3	40.77143	-74.08792	12.09	16.897	29
0	3	40.74927	-74.08542	38.24	12.242	50
0	3	40.7261	-74.09875	9.4516	5.2328	15
0	3	40.71777	-74.10492	9.9111	10.704	21
0	3	40.7096	-74.10792	51.76	19.676	71
0	3	40.7081	-74.11759	158.06	28.421	190
0	3	40.70477	-74.11759	53.688	23.076	77
0	3	40.70627	-74.11909	10.6108	4.276	15
0	3	40.70294	-74.11759	10.3565	4.3584	15
0	3	40.70227	-74.11809	138.098	30.6636	170
0	3	40.69321	-74.12109	546.12	81.74	630
0	3	40.69077	-74.12242	183.421	44.833	230
0	3	40.7151	-74.15192	137.533	21.801	160
0	3	40.69694	-74.14625	169.672	32.5128	200
0	3	40.69694	-74.14625	200.128	34.5247	230
0	3	40.69427	-74.13842	224.575	31.5489	260
0	3	40.68544	-74.13125	99.85	32.271	130
0	3	40.68794	-74.15842	137.654	25.5163	160
0	3	40.68794	-74.15842	68.264	9.3699	78
0	3	40.6881	-74.13792	193.348	31.7411	230
0	3	40.6841	-74.13275	100.249	15.878	120
0	3	40.68177	-74.13425	60.61	10.5523	71
0	3	40.67794	-74.13525	98.49	26.877	130
0	3	40.68394	-74.15225	158.604	24.8125	180
0	3	40.6776	-74.13892	97.012	15.2593	110
0	3	40.6736	-74.13709	302.031	15.4142	320
0	3	40.67344	-74.13825	93.758	16.0192	110
0	3	40.66627	-74.14242	24.9452	5.06866	30
0	3	40.65927	-74.15575	168.201	25.4344	190

Table 4
NOAA National Status and Trends 1993 Regional Sediment Data

Top of Sample Depth	Bottom of Sample Depth	Latitude	Longitude	PCDDin TEQ Total	PCDF TEQ Total	PCDD PCDF Total TEQ (pg/g)
0	3	40.6171	-74.20242	31.142	6.8011	38
0	3	40.64077	-74.19292	133.545	29.6326	160
0	3	40.64494	-74.18626	97.011	19.0729	120
0	3	40.6496	-74.16275	84.93	13.517	98
0	3	40.64399	-74.14775	120.459	21.7828	140
0	3	40.64277	-74.15081	103.4	22.0361	130
0	3	40.64277	-74.14775	78.56	15.408	94
0	3	40.64477	-74.15392	9.103	2.3262	11
0	3	40.74193	-74.13275	464.69	57.38	520
0	3	40.7416	-74.13475	520.76	71.77	590
0	3	40.7416	-74.13475	447.61	75.6	520
0	3	40.7416	-74.13475	442.65	63	510
0	3	40.74093	-74.13792	721.2	100.8	820
0	3	40.7421	-74.12309	547.28	95.42	640
0	3	40.74193	-74.12609	393.53	55.27	450



NOTE:
Data Sources:
ISP/LCP: ISP, 2001-2006
USEPA: US Environmental Protection Agency, 1990-2000
NOAA: National Oceanic & Atmospheric Administration, 1991-1993
CARP: Contamination Assessment and Reduction Project, 1998-2001

FIGURE 1

DRAFT

SITE AND REGIONAL WHO 2005 TEQ DIOXINS AND FURANS IN SEDIMENTS DATA

LCP CHEMICALS, INC.
SUPERFUND SITE
LINDEN, NEW JERSEY

DATE	PROJECT NUMBER
05/17/07	131369.212.002

BROWN AND CALDWELL
ALLENDALE, NEW JERSEY

LCP_Sediment_Dioxin_Regional_2x3_062207.mxd