Click Here to Return to AR Index

Industri Plex
6 +
S.M. 230920

Golder Associates Inc.

CONSULTING ENGINEERS

SDMS DocID 000230920

PRE-DESIGN INVESTIGATION
TASK GW-1
PLUME DELINEATION
INTERIM FINAL REPORT

INDUSTRI-PLEX SITE
WOBURN, MASSACHUSETTS

VOLUME 2 OF 2

Prepared for:

Industri-Plex Site Remedial Trust
800 North Lindbergh Boulevard
St. Louis, Missouri 63167

DISTRIBUTION:

8 Copies - Industri-Plex Site Remedial Trust
6 Copies - U.S. Environmental Protection Agency
1 Copy - Massachusetts Dept. of Environmental Protection
1 Copy - NUS Corporation
2 Copies - Golder Associates Inc.
1 Copy - Roux Associates

January 1991 Project No.: 893-6255

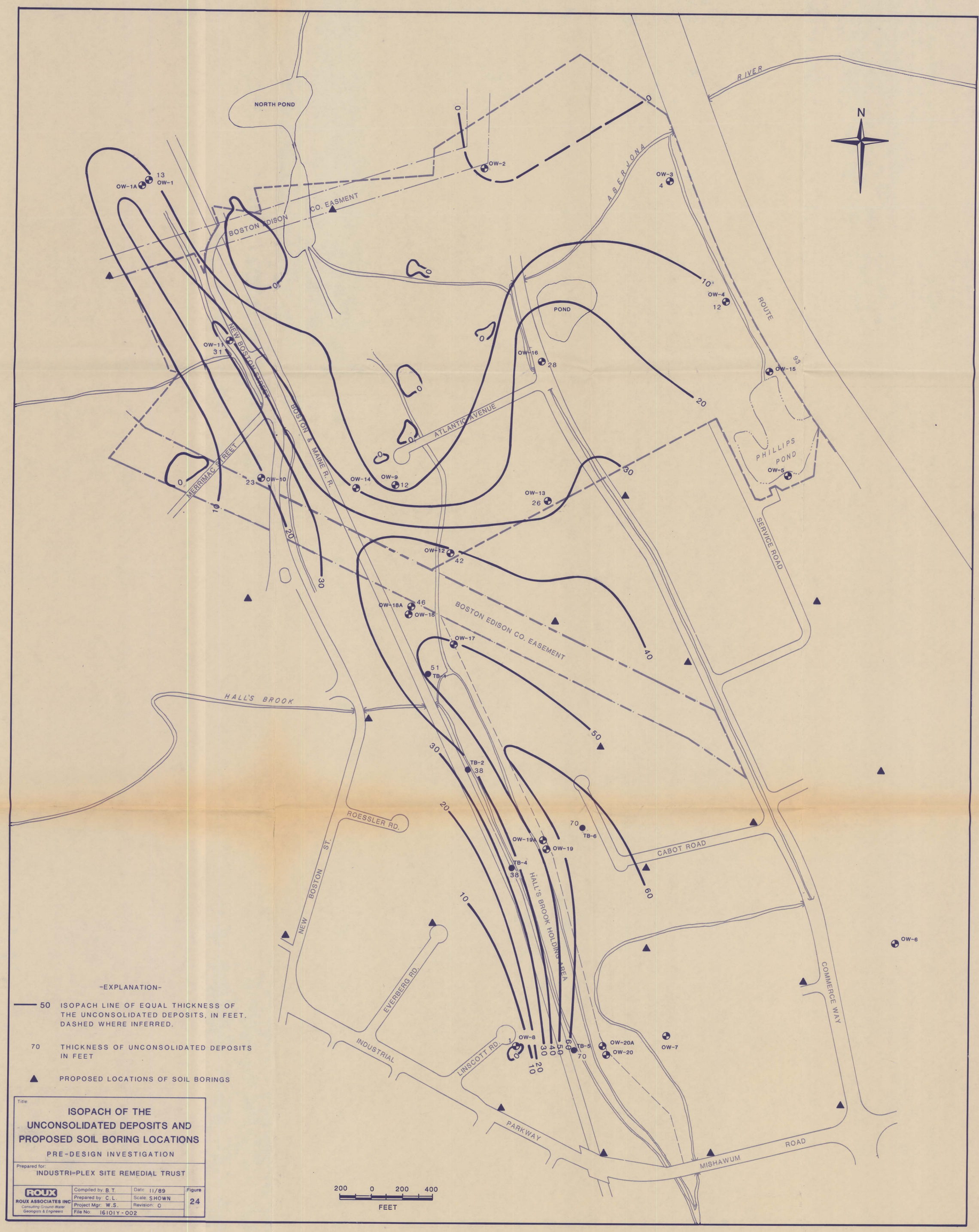
GOLDER ASSOCIATES INC. • 20000 HORIZON WAY, SUITE 500, MT. LAUREL, NEW JERSEY 08054 • TELEPHONE (609) 273-1110 • FACSIMILE (609) 273-0778

OFFICES IN UNITED STATES • CANADA • UNITED KINGDOM • SWEDEN • ITALY • AUSTRALIA

APPENDICES

APPENDIX A

Locations of Proposed
PDI Aquifer Thickness Borings



-EXPLANATION-

50 ISOPACH LINE OF EQUAL THICKNESS OF THE UNCONSOLIDATED DEPOSITS, IN FEET. DASHED WHERE INFERRED.

70 THICKNESS OF UNCONSOLIDATED DEPOSITS IN FEET

▲ PROPOSED LOCATIONS OF SOIL BORINGS

Title:

ISOPACH OF THE UNCONSOLIDATED DEPOSITS AND PROPOSED SOIL BORING LOCATIONS

PRE-DESIGN INVESTIGATION

Prepared for:
INDUSTRI-PLEX SITE REMEDIAL TRUST

ROUX ASSOCIATES INC Consulting Ground-Water Geologists & Engineers	Compiled by: B. T.	Date: 11/89	Figure 24
	Prepared by: C. L.	Scale: SHOWN	
	Project Mgr: W. S.	Revision: 0	
	File No: 16101Y-002		

APPENDIX B

Geologic Logs
Phase 1 and Phase 2

APPENDIX B

Geologic Logs
Phase 1

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No.	16101Y
Date	4/24/90
Project	Industri-Plex Site PDI
Client	Golder Associates
Page	1 of 1
Logged By	L. McTiernan
Well No.	ATB-1
Loc.	Woburn, Mass
M.P. Elevation	64.53
Drilling Started	2/28/90
Ended	2/28/90
Driller	D.L. Maher
Type Of Rig	Hollow Stem Auger

WELL DATA

Hole Diam. (in.)	10"
Final Depth (ft.)	8.0'
Casing Diam. (in.)	
Casing Length (ft.)	
Screen Setting (ft.)	
Screen Slot & Type	
Well Status	

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type	Split spoon
Hammer	140 lb.
Fall	30 in.

DEVELOPMENT

Hnu	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
2.7		1.65	0-2'			0	Top 1.0': Brown medium to coarse SAND, trace organic material. Bottom: Black fine SAND; trace organic material, stiff
1.8		0.35	5-7'			5	Brown fine-medium SAND, some fine gravel; bottom is black organic material, Strong H_2S odor. B.O.B @ 8.0'
						10	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 3/1/90	**WELL DATA**	**G W READINGS(1)**
Project Industri-Plex PDI		Hole Diam. (in.) 8"	Date / DTW MP(2) / Elev. W.T.
Client Golder Associates		Final Depth (ft.) 54'	
Page 1 of 2		Casing Diam. (in.)	
Logged By L.McTiernan		Casing Length (ft.)	
Well No. ATB-2		Screen Setting (ft.)	
Loc. Woburn, Mass		Screen Slot & Type	
M.P. Elevation 64.50		Well Status	
Drilling Started 2/27/90	Ended 3/21/90	**SAMPLER**	**DEVELOPMENT**
Driller D.L. Maher Company		Type split spoon	
Type Of Rig Hollow Stem Auger		Hammer 140 lb.	
		Fall 30 in.	

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
—	1	1.25	0-2'		SP		0-0.5' Woody mulch 0.5-1.25 Light to dark brown fine to coarse (+) SAND, little fine to coarse (+) Gravel.
4.6	2	1.0'	5-7'		SW	5	Dark brown fine (+) to medium SAND, little coarse Gravel, trace woody debris, wet.
9.1	3	1.05'	10-12'		GW SW	10	0-0.95 Gray fine to coarse GRAVEL and coarse sand. 0.45-1.05 Gray fine to medium SAND.
5.2	4	1.9'	15-17'		SP	15	Gray fine to medium SAND, trace fine to medium Gravel.
10.0	5	1.25'	20-22'		SP	20	Gray fine (+) to coarse SAND, little fine Gravel.
9.4	6	0.5'	25-27'		SP	25	Brown medium to coarse SAND, little fine Gravel.
—	7	0.9'	30-32'		SP	30	Fine to coarse (+) SAND, and fine Gravel.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

PID erratic due to high humidity.

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 3/21/90
Project Industri-Plex PDI	
Client Golder Associates	
Page 2	Of 2
Logged By L. McTiernan	
Well No. ATB-2	
Loc. Woburn, Mass	
M.P. Elevation 64.60	
Drilling Started 2/27/90	Ended 3/21/90
Driller D.L. Maher Company	
Type Of Rig Hollow Stem Auger	

WELL DATA

Hole Diam. (in.)	8"
Final Depth (ft.)	54'
Casing Diam. (in.)	
Casing Length (ft.)	
Screen Setting (ft.)	
Screen Slot & Type	
Well Status	

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type	split spoon
Hammer	140 lb.
Fall	30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
—	8	1.4'	35-36.5'		SW	35	Brown fine to medium SAND, trace fine Gravel.
—	9	1.4'	40-41'		SW	40	Brown medium SAND Auger refusal @ 41.5' Soft weathered bedrock 41.5 to 54.0.
	10	0.2'	47.5.0'			45	Soft weathered mafic rock.
	11	0.65'	51-54'	22%recovery		50	Gray-green fine grain gabbro, little magnetite, fractured, weathered.
						55	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 3/1/90
Project Industri-Plex P.D.I.
Client Golder Associates
Page 1 Of 2
Logged By L. McTiernan
Well No. ATB-3
Loc. Woburn, MA
M.P. Elevation 61.7
Drilling Started 2/28/90 Ended 3/11/90
Driller D.L. Maher
Type Of Rig Hollow-stem auger

WELL DATA
Hole Diam. (in.) 8"
Final Depth (ft.) 50'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER
Type Split-Spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft)	SAMPLE DESCRIPTION
6.5	1	1.5	0-2'		SM		Dark brown fine sand and silt, little organic debris, stiff. Brown medium sand, little fine gravel at 0.35-0.95'.
4.1	2	0.6'	5-7'		OL SW	5	Dark brown silt and clay, some organic material, stiff. Coarse sand 0-0.1'.
18.2	3	0.95'	10-12'		ML SP	10	Dark brown silt and fine sand, little coarse gravel. Fine-coarse sand at 0.85-0.95'.
9.8	4	1.15'	15-17'		SW	15	Gray medium to coarse sand, some fine gravel. Wet.
8.9	5	1.0	20-22'		SW	20	0-0.7' Gray coarse sand and fine gravel. 0.7-1.0' Light brown fine sand.
7.4	6	1.7	25-27'		SW OL	25	0-1.05' Gray-brown coarse sand, some fine gravel. 1.05-1.7' Light brown silt & clay, trace organic material very stiff.
—	7	NR	30-32'			30	No recovery.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 3/1/90
Project Industri-Plex P.D.I.
Client Golder Associaties
Page 2 of 2
Logged By L. McTiernan
Well No. ATB-3
Loc. Woburn, MA
M.P. Elevation 61.7
Drilling Started 2/28/90 Ended 3/11/90
Driller D.L. Maher
Type Of Rig Hollow-Stem Auger

WELL DATA
Hole Diam. (in.) 10
Final Depth (ft.) 50'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

SAMPLER
Type Split Spoon
Hammer 140 lb.
Fall 30 in.

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
1.3	8	0.55'	35-37'		GW	35	Gray fine gravel and coarse sand.
6.3	9	0.7'	40-40.3	100/4"	SW	40	Gray fine sand, some fine gravel.
25.3	10	0.6	45-45.3	200/4"	SP	45	Gray fine to coarse sand, some fine gravel (Gabbro). Auger refusal at 46.0'.
—	11	0.2	46-46.2				
	12	2.3'	46.4-49.4'	77% recovery		50	Dark grey fine grain gabbro trace pyrite, calcite veins. Oblique fractures, two sand seams.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 3/5/90
Project Industri-Plex PDI
Client Golder Associates, Inc.
Page 1 of 2
Logged By L. McTiernan
Well No. ATB-4
Loc. Woburn, MA
M.P. Elevation 57.20
Drilling Started 3/5/90 Ended 3/26/90
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 8"
Final Depth (ft.) 49.5'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0	1	1.2'	0-2'	4,12,11,12	SW d u SM		0-0.75'-Brown medium SAND, little fine gravel. 0.75-0.95'-Artificial fill material light brown fine SAND and silt.
8.3	2	1.2'	5-7'	5,20,20,23	SM d u	5	Light brown fine SAND and silt. Stiff. Wet below 0.3'.
0.0	3	1.1'	10-12'	4,6,8,10	SW	10	Brown fine to medium SAND.
12.1	4	1.4'	15-17'	6,8,13,15	SW	15	Brown fine to medium SAND. Graded (fining upwards) Iron staining from 0.9-1.1'.
0.0	5	1.35'	20-22'	6,8,11,11	SW	20	Brown fine (+) to medium SAND. Medium sand in lense from 0.9-1.1'.
0.0	6	1.5'	25-27'	8,13,16,20	SW	25	Brown fine (+) to medium SAND.
0.0	7	1.65'	30-32'	9,16,22,29	SM d u	30	Gray fine SAND and silt.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC.

GEOLOGIC LOG

Study No. 16101Y	Date 3/5/90
Project: Industri - Plex PDI	
Client: Golder Associates	
Page 2 of 2	
Logged By: L. McTiernan	
Well No. ATB-4	
Loc. Woburn, MA	
M.P. Elevation 57.20	
Drilling Started 3/5/90	Ended 3/26/90
Driller D.L. Maher	
Type Of Rig Hollow Stem Auger	

WELL DATA

Hole Diam. (in.)	8"
Final Depth (ft.)	49.5
Casing Diam. (in.)	
Casing Length (ft.)	
Screen Setting (ft.)	
Screen Slot & Type	
Well Status	

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type	split spoon
Hammer	140 lb.
Fall	30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
2.3	3	1.4'	35-37'	7,12,15,17	SW	35	Gray fine SAND. Stiff
0.0	9	1.6'	40-42'	4,6,7,14	SW	40	Gray fine SAND. Stiff.
	10	2.5'	45-49.5'	62% recovery		45	Auger refusal @ 45.0' (bedrock) Dark grey-green fine grain gabbro calcite veins, no fractures

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 3/8/90
Project Industri-Plex PDI
Client Golder Assoiciates
Page 1 Of 1
Logged By L. McTiernan
Well No. ATB-5
Loc. Woburn, MA
M.P. elevation 74.10
Drilling Started 3/7/90 Ended 3/19/90
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 8"
Final Depth (ft.) 10'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0	1	0.6	0-2'	8;16;23;28	SP		0-0.45' - Dark brown, medium to coarse SAND, some fine gravel little organic material 0.45-0.6' - Artificial fill material
0.0	2	1.4	5-7'	11,20,34, 50/5"	GP SW	5	0-0.1' - Gray fine to coarse gravel, some coarse sand. Wet. 1.0-1.4' - Gray medium to coarse SAND. Auger refusal @ 7.0' (bedrock)
	3	2.9	7-10'	97%recovery		10	Grey coarse grain diorite pyrite as accessory mineral, calcite veins. Rock has undergone low grade metamorphism. Oblique and horizontal fractures contain sand seams, weathered.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 3/8/90
Project Industri-Plex P.D.I
Client Golder Associates
Page 1 of 2
Logged By L. McTiernan
Well No. ATB-6
Loc. Woburn, MA
M.P. Elevation 65.70
Drilling Started 3/7/90 Ended 3/9/90
Driller D.L. Maher
Type Of Rig Hollow-Stem Auger

WELL DATA
Hole Diam. (in.) 8"
Final Depth (ft.) 50'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER
Type Split-spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0	1	0.85'	0-2 '	5,9,11,14	SP		Brown fine to medium SAND, trace fine Gravel, trace organic material
—	2	0.5'	5-7'	6,5,5,5	SW	5	Brown fine to medium SAND.
0.0	3	1.1'	10-12'	5,8,6,4	SP	10	Light brown, fine to medium SAND, oxidized brown-orange. Lense of coarse sand and fine gravel from 0.1-0.3'. Wet.
0.0	4	2.0'	15-17'	8,8,8,10	SW	15	Light brown, medium to coarse SAND.
0.0	5	2.0'	20-22'	12,12,12,23	SW	20	Brown fine to medium(+) SAND, trace organic material at 0.6' (fine from 0.6-1.2').
0.0	6	1.7'	25-27'	6,14,11,22	SW	25	Light brown, fine to medium SAND (fining downwards),
0.0	7	1.5'	30-32'	4,8,38,31	SW SM_u^d	30	0-0.8'-Brown medium SAND 0.8-1.5'-Brown fine SAND and silt, trace coarse gravel. Stiff

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 3/9/90
Project Indusrri-Plex P.D.I.
Client Golder Associates
Page 2 of 2
Logged By L. McTiernan
Well No. ATB-6
Loc. Woburn, MA
M.P. Elevation 5.7
Drilling Started 3/7/90 Ended 3/9/90
Driller D.L. Maher
Type Of Rig Hollow-Stem Auger

WELL DATA
Hole Diam. (in.)
Final Depth (ft.) 50'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER
Type Split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Hnu	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	8		35-40'			35	No sample.
0.0	9	0.5'	40-40.25'	100/3"		40	Auger refusal at 40.25' (bedrock).
	10	2.0'	46.6-50.1	57% recovery		45	Fractured, weathered gabbro with numerous veins of quartz and low -quartz granite(syanite?)
						50	(41-50' was mostly weathered bedrock and seams of sand) (Cored with 3" bedrock corer) B.O.B 50'.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 3/14/90
Project Indusrri-Plex P.D.I.
Client Golder Associates
Page 1 Of
Logged By L. McTiernan
Well No. ATB-7
Loc. Woburn, MA
M.P. Elevation 68.00
Drilling Started 3/12/90 Ended 3/19/90
Driller D.L. Maher
Type Of Rig Hollow-Stem Auger

WELL DATA
Hole Diam. (in.) 8"
Final Depth (ft.) 14'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER
Type Split-Spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
2.5	1	1.2'	0-2'	10,10,18, 18	SP		Brown to black, fine to coarse sand and fine to coarse gravel.
4.1	2	0.2'	5-7'	3,3,5,25	SP	5	Brown medium to coarse Sand, some fine to coarse gravel.
—	3 4	0.3' 2.9'	9-5-10.1'	70,50/1 89.6%recovery	—	10	Auger refusal @ 9.5' (bedrock) Brown-gray fine to medium grain gabbro, severely fractured. Oblique and horizontal fractures some (+) sand seams, weathered.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 3/14/90
Project Industri-Plex P.D.I.
Client Golder Associates
Page 1 Of 2
Logged By L. McTiernan
Well No. ATB-8
Loc. Woburn, MA
M.P. Elevation 84.40
Drilling Started 3/12/90 Ended 3/23/90
Driller D.L. Maher
Type Of Rig Hollow-stem auger

WELL DATA
Hole Diam. (in.) 8"
Final Depth (ft.) 53.5
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER
Type Split-spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.7	1	1.1'	0-2'	7,4,9,23	SP		Brown fine to medium (+) sand, trace fine to coarse gravel.
4.7	2	0.75'	5-7'	9,19,21,22	SP	5	0-0.4 dark brown fine sand, some fine to coarse gravel. Wet 0.4-0.75 light brown laminated fine sand and silt. Stiff lense of fine gravel and coarse sand at 0.55-0.6.
1.6	3	NR	10-10.5'	65/6"		10	No recovery.
1.9	4	1.1'	15-17'	8,14,23,29	SP	15	Gray fine to coarse sand, some fine to coarse gravel, trace silt and clay
5.9	5	1.55'	20-22'	7,38,50,30	SP	20	Gray fine to coarse sand, some fine to coarse gravel, trace silt and clay.
2.5	6	0.45'	25-27'	20,41,50/1"	SP	25	Gray fine to coarse (+) sand, some fine to coarse gravel, trace silt and clay.
4.4	7	NR	30-30.4'	100/5"		30	No recovery.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 3/14/90
Project Industri-Plex P.D.I.
Client Golder Associates
Page 2 of 2
Logged By L. McTiernan
Well No. ATB-8
Loc. Woburn, MA
M.P. Elevation 84.40
Drilling Started 3/12/90 Ended 3/23/90
Driller D.L. Maher
Type Of Rig Hollow-Stem Auger

WELL DATA
Hole Diam. (in.) 8"
Final Depth (ft.) 53.5'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER
Type Split Spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0	8	NR	35-35,25'	100/3"		35	No recovery
0.0	9	NR	40-40,25'	100/3"		40	No recovery
0.0	10	0.9'	45-46'	49,130	SP	45	Gray fine to coarse sand, some fine gravel, trace silt and clay. Barely wet. Auger refusal @ 46' (bedrock).
	11	2.7'	50-53.5'	90% recovery		50	Grey coarse grain diorite, low quartz, trace pyrite as accessory mineral. Oblique fractures filled with calcite sand; weathered.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 3/5/90	**WELL DATA**	
Project Industri - Plex PDI		Hole Diam. (in.) 8"	
Client Golder Associates		Final Depth (ft.) 43.5	
Page 1 of 2		Casing Diam. (in.)	
Logged By Hillary Hollister		Casing Length (ft.)	
Well No. ATB-9		Screen Setting (ft.)	
Loc. Woburn, MA		Screen Slot & Type	
M.P. Elevation 62.7		Well Status	
Drilling Started 3/19/90 Ended 3/22/90		**SAMPLER** Type split spoon	
Driller D.L. Maher		Hammer 140 lb.	
Type Of Rig Hollow Stem Auger		Fall 30 in.	

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0	1	1.4	0-2'	6,6,8,8	SM d u SP		0-0.3' Organic SAND 0.3-0.9' Brown medium SAND, some coarse gravel.
11.2	2	0.3	5-7'	5,9,5,9	SW	5	Buff fine SAND, little coarse gravel
—	3	NR	10-12'	13,16,15,29		10	No recovery
7.3	4	0.9	15-17'	2,2,5,7	SP	15	Brown coarse SAND, some coarse to fine gravel.
0.0	5	0.9	20-22'	8,20,30,30	SP CL	20	0-0.4' Brown coarse SAND, some coarse to fine gravel. 0.4-0.9' Brown/red clayey silt and coarse gravel, poorly sorted matrix
0.0	6	0.4	25-27'	62,17,10,6	GP	25	Brown coarse to fine GRAVEL, some coarse sand.
0.0	7	1.6	30-32'	60,35,34,36	GW SM d u	30	0-0.5' Fine to coarse GRAVEL, 0.5-1.6' Grey brown fine SAND, some clay, little coarse to fine gravel, poorly sorted, tight, till

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 3/5/90	**WELL DATA**	**G W READINGS(1)**
Project Industri - Plex PDI		Hole Diam. (in.) 8"	Date | DTW MP(2) | Elev. W.T.
Client Golder Associates		Final Depth (ft.) 43.5	
Page 2 of 2		Casing Diam. (in.)	
Logged By Hillary Hollister		Casing Length (ft.)	
Well No. MTB-9		Screen Setting (ft.)	
Loc. Woburn, MA		Screen Slot & Type	
M.P. Elevation 62.7'		Well Status	
Drilling Started 3/19/90 Ended 3/22/90		**SAMPLER** Type split spoon	**DEVELOPMENT**
Driller D.L. Maher		Hammer 140 lb.	
Type Of Rig Hollow Stem Auger		Fall 30 in.	

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	8	NR	35-37'			35	Three feet of heaving sands; no recovery.
							Refusal at 39 feet. (Bedrock)
	9	2.8	40.5-43.5'			40	Grey-green medium to coarse grain gabbro, pyrite as accessory mineral large amount of plagioclase at top of sample. Vertical and oblique fractures filled with calcite, some sand seams in oblique fractures; weathered.

REMARKS: (1) In feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 3/5/90	**WELL DATA**	**G W READINGS(1)**
Project Industri - Plex PDI		Hole Diam. (in.) 8"	Date / DTW MP(2) / Elev. W.T.
Client Golder Associates		Final Depth (ft.) 73.5	
Page 1 of 3		Casing Diam. (in.)	
Logged By Hillary Hollister		Casing Length (ft.)	
Well No. ATB-10		Screen Setting (ft.)	
Loc. Woburn, MA		Screen Slot & Type	
M.P. Elevation 62.0'		Well Status	
Drilling Started 3/20/90 Ended 3/30/90		**SAMPLER**	**DEVELOPMENT**
Driller D.L. Maher		Type split spoon	
Type Of Rig Hollow Stem Auger		Hammer 140 lb.	
		Fall 30 in.	

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
3.7	1	1.4'	0-2'	3,3,8,12	OL SM d u OL		0-0.5' Organic SILT with roots 0.5-0.9' Dark brown silt and fine sand, little coarse to fine (+) gravel. 0-4' Cuttings black organic SILT.
0.0	2	1.3'	5-7'	3,3,4,4	OL	5	Grey organic SILT and clay, laminated silt seams wet.
0.0	3	2.0'	10-12'	1,2,1,2	PT	10	Dark brown organic SILT and clay, wooded fragments, (immature peat) moist.
36.1	4	2.0'	15-17'	1,2,1,2	OH	15	Grey organic SILT, little coarse sand, trace fine gravel, sand seams throughout sample, wooded fragments?
0.4	5	1.1'	20-22'	13,35,32,30	GP	20	Brown coarse to fine GRAVEL and coarse (+) to medium sand.
0.0	6	0.4'	25-27'	4,5,7,10	GP	25	Brown coarse to fine GRAVEL, trace coarse sand.
0.0	7	0.3'	30-30.5	100/6"	GP	30	Dark grey coarse GRAVEL, trace coarse sand.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 3/5/90
Project: Industri - Plex PDI	
Client Golder Associates	
Page 2 of 3	
Logged By Hillary Hollister	
Well No. ATB-10	
Loc. Woburn, MA	
M.P. Elevation 62.0	
Drilling Started 3/20/90	Ended
Driller D.L. Maher	
Type Of Rig Hollow Stem Auger	

WELL DATA

Hole Diam. (in.)	8
Final Depth (ft.)	73.5
Casing Diam. (in.)	
Casing Length (ft.)	
Screen Setting (ft.)	
Screen Slot & Type	
Well Status	

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T

SAMPLER

Type	split spoon
Hammer	140 lb.
Fall	30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0	8	0.2'	33-33.5'	100/5"		33	Auger refusal at 33.5'.
0.0	9	1.1'	34-37'			35	Spun 3" casing through a gabbro boulder and grantic boulder.
0.0	10	0.4'	38.5-39.5'	72, 120/4"	SP	40	Brown fine to medium SAND, some fine gravel, some silt.
0.0	11	0.75'	42.5-44.5'	30,120,90,120	SP		Brown fine to coarse SAND, some fine gravel, some silt.
						45	
0.3	12	1.0'	48-49'	100 120/3"	GP		Grey fine (+) to coarse GRAVEL and fine to coarse (+) sand. Gravel is angular.
						50	
3.0	13	0.7'	54-55'	30,100,100/2"	SP	55	Brown medium (+) to coarse SAND Some fine (+) to coarse gravel.
3.9	14	0.8'	59-60.25'	56,125,168/3"	SP	60	Grey fine to coarse SAND, some fine to coarse gravel, tight.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 3/5/90
Project Industri-Plex PDI	
Client Golder Associates	
Page 3 of 3	
Logged By H. Hollister	
Well No. ATB-10	
Loc. Woburn, MA	
M.P. Elevation 62.00	
Drilling Started 3/20/90	Ended 3/30/90
Driller D.L. Maher Company	
Type Of Rig Hollow Stem Auger	

WELL DATA

Hole Diam. (in.)	9"
Final Depth (ft.)	73.5'
Casing Diam. (in.)	
Casing Length (ft.)	
Screen Setting (ft.)	
Screen Slot & Type	
Well Status	

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type	split spoon
Hammer	140 lb.
Fall	30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
						65	
0.0	15	0.25'	67.5-68.25'	38,155/3"			Roller bit drives hard. Grey fine to coarse SAND, little fine gravel little silt.
—	16	2.2'	70.5-73.5'	73% recovery		70	Refusal @ 69.5'. (Bedrock) Grey low quartz, hornblende diorite epidote as accessory mineral, oblique fractures and vertical fractures, weathered no sand seams.
						75	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 3/5/90
Project Industri - Plex PDI
Client Golder Associates
Page 1 of 2
Logged By Hillary Hollister
Well No. ATB-11
Loc. Woburn, MA
M.P. Elevation 62.6
Drilling Started 3/20/90 Ended 4/3/90
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 8"
Final Depth (ft.) 46.5'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	1		0-2'		SP		Coarse to medium SAND, trace coarse gravel. 2-5' Cuttings: light brown medium to coarse SAND, little coarse gravel.
0.0	2	1.5'	5-7'	6,8,8,8	SW	5	Buff fine to medium SAND.
0.0	3	1.6'	10-12'	3,7,7,8	SM^{d}_{u}	10	Light tan fine sand and silt, laminated sand seams.
0.0	4	1.2'	15-17'	2,4,6,8	SP SP	15	Top 0-0.6' Grey fine to medium SAND, some fine gravel, trace silt. Bottom 0.6-1.2' Brown coarse to medium SAND and coarse to fine (+) gravel (oxidized between top and bottom layer)
0.0	5	0.5'	20-22'	4,4,4,4	GP	20	Brown coarse to fine GRAVEL, some coarse to medium sand, poorly sorted.
0.0	6	1.4'	25-27'	8,12,11,19	GM^{d}_{u} SP	25	Top 0-1.2' Brown coarse to fine (+) GRAVEL and coarse to fine sand, trace silt. Bottom 1.2-1.4' Brown medium to fine SAND, trace gravel, trace silt.
0.0	7	0.9'	30-32'	9,14,19,21	SP	30	Light brown coarse to fine (+) SAND, trace silt, trace fine gravel (oxidize layer 0.6-0.7').

REMARKS: (1) In feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 3/5/90	**WELL DATA**	**G W READINGS(1)**
Project Industri - Plex PDI		Hole Diam. (in.) 8	Date / DTW MP(2) / Elev. W.T.
Client Golder Associates		Final Depth (ft.) 46.5'	
Page 2 of 2		Casing Diam. (in.)	
Logged By Hillary Hollister		Casing Length (ft.)	
Well No. ATB-11		Screen Setting (ft.)	
Loc. Woburn, MA		Screen Slot & Type	
M.P. Elevation 62.60		Well Status	
Drilling Started 3/20/90 Ended 4/3/90		**SAMPLER** Type split spoon	**DEVELOPMENT**
Driller D.L. Maher		Hammer 140 lb.	
Type Of Rig Hollow Stem Auger		Fall 30 in.	

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0	8	0.5'	35-37'	6/15/32/52	GP	35	Brown and black coarse GRAVEL, some coarse sand, poorly sorted.
	9	5.1'	40-46.5'	85% recovery		39	Auger refusal at 39'. (Bedrock) Dark grey-green fine grain gabbro. Vertical and horizontal fractures; foliated; weathered. Vertical fractures filled with calcite (secondary mineralization). Horizontal fractures are sand seams.

REMARKS: (1) In feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 3/5/90
Project Industri - Plex PDI
Client Golder Associates
Page 1 of 1
Logged By Hillary Hollister
Well No. ATB-12
Loc. Woburn, MA
M.P. Elevation 120.68
Drilling Started 3/21/90 Ended
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 8
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0	1	1.7'	0-2'	5,6,7,8	SW SW		0-0.6' Dark brown medium organic SAND, some roots. 0.6-1.7' Orange/brown medium SAND, well sorted
0.0	2	1.2	5-6.5'	27 40,50,4	SP	5	Brown medium sand and coarse gravel; moist.
							uttings: grey till; hard.
						7	Auger refusal at 7' cutting: hard grey till.

REMARKS: (1) In feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 4/6/90	**WELL DATA**	**G W READINGS(1)**
Project Inddustri-Plex PDI		Hole Diam. (in.) 8"	Date | DTW MP(2) | Elev. W.T.
Client Golder Associates		Final Depth (ft.) 98.5'	
Page 1 of 4		Casing Diam. (in.)	
Logged By L. McTiernan		Casing Length (ft.)	
Well No. ATB-13		Screen Setting (ft.)	
Loc. Woburn, Mass		Screen Slot & Type	
M.P. Elevation 54.0		Well Status	
Drilling Started 4/4/90 Ended 4/5/90		**SAMPLER**	**DEVELOPMENT**
Driller D.L. Maher Company		Type split spoon	
Type Of Rig Hollow Stem Auger		Hammer 140 lb.	
		Fall 30 in.	

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
4.6	1	1.6	0-2.0	2,7,9,11	SW	0	0-0.9 dark brown fine to medium SAND, trace fine gravel, trace silt trace organics. Bottom: Orange brown medium SAND with laminae of dark brown fine SAND, and silt.
4.2	2	1.2	5-7.0'	8,15,15,18	GP	5	Light brown fine GRAVEL and coarse sand, trace coarse gravel, oxidized from 0.7-0.8'.
5.1	3	0.6	10-12.0'	10,12,12,25	SP	10	Brown medium to coarse SAND and fine gravel; wet. cuttings: fine gravel.
6.6	4	1.75'	15-17.0'	6,8,4,8	MH	15	Grey SILT, little fine sand, iron staining 0-0.3'; Thin (less than 0-0.25) lenses of dark gray clay. Obliquely oriented.
5.8	5	1.6	20-22.0'	6,7,6,5	MH	20	Gray SILT, little fine Sand, little black clay; laminated clay seams in top 0.5' of sample.
5.5	6	1.5	25-27.0'	4,6,5,5	SM_u^d	25	Gray Silt and fine sand; coarsening downward; stiff.
3.8	7	1.5	30-32.0'	6,10,16,28	SM_u^d	30	Gray fine SAND and silt, trace fine gravel, laminated in lcaceous sand; stiff.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

2" Diameter rockcore collected

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101	Date 4/6/90	**WELL DATA**	**G W READINGS(1)**
Project Industri-Plex Site		Hole Diam. (in.) 8"	Date / DTW MP(2) / Elev. W.T.
Client Golder Associates		Final Depth (ft.) 98.5"	
Page 2 Of 4		Casing Diam. (in.)	
Logged By H. Hollister		Casing Length (ft.)	
Well No. ATB-13		Screen Setting (ft.)	
Loc. Woburn, MA		Screen Slot & Type	
M.P. Elevation 54.0		Well Status	
Drilling Started 4/4/90	Ended 4/5/90	**SAMPLER**	**DEVELOPMENT**
Driller D.L. Maher		Type Split spoon	
Type Of Rig Hollow Stem Auger		Hammer 140 lb.	
		Fall 30 in.	

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
6.8	8	1.65	35-37'	8,11,8,16	SP	35	Brown fine(+) to Medium SAND, some silt trace fine gravel; Laminated in lower half of sample.
4.0	9	0.8	40-42'	55,97/5"	GW	40	Fine GRAVEL, large Pebble in tip.
6.3	10	0.5	45-47'	100,89	SP	45	Brown fine to medium SAND, some fine to coarse gravel.
3.4	11	0.55	50-52'	100,130,50/0	SMd GP	50	Top 0.2': Brown fine SAND and silt. Bottom: Brown fine to coarse GRAVEL and fine to coarse Sand.
6.2	12	1.7	55-57'	30,55,27,30	SW GP	55	Top 1.15': Brown to grey fine(+) to medium SAND, trace fine gravel. Bottom: Grey to green fine to coarse GRAVEL, some medium to coarse sand.
0.0	13	2.0	60-62'	6,7,11,15	SP	60	Grey fine to coarse SAND, trace fine gravel, trace silt; very Stiff; fining downward.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

2" diameter rock core collected

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101 Date 4/6/90
Project Industri-Plex Site
Client Golder Associates
Page 3 Of 4
Logged By H. Hollister
Well No. ATB-13
Loc. Woburn, MA
M.P. Elevation 54.0'
Drilling Started 4/4/90 Ended 4/5/90
Driller D.L. Maher Company
Type Of Rig Hollow Stem Auger

WELL DATA
Hole Diam. (in.) 8"
Final Depth (ft.) 98.5'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER
Type Split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Hnu	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0	14	1.7	64-66'	4,4,10,14	SP	64	Grey fine to coarse SAND, trace fine gravel.
2.2	15	1.6	70-72'	4,6,8,8	SW	70	Grey fine to medium SAND.
1.1	16	2.0	75-77'	6,12,12,23	SW	75	Same as above
2.5	17	1.8	80-82'	5,10,15,22	SMu[d]	80	Grey fine SAND and Silt: Some medium sand: coarsening downward; well sorted.
0.3	18	1.7	85-87'	6,14,15,15	GW SMu[d] GW	85 90	Grey fine GRAVEL, little fine to coarse sand, trace silt. middle Grey fine SAND and Silt, trace clay, trace fine gravel. back to grey fine GRAVEL. little fine to coarse sand, trace silt
			92.5'		Bedrock		Auger refusal @ 92.5' (Bedrock)
			95-98.5'	91'6 recovery		95	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

2" Diameter rockcore collected

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101 Date 4/6/90
Project Industri-Plex Site
Client Golder Associates
Page 4 Of 4
Logged By H. Hollister
Well No. ATB-13
Loc. Woburn, MA
M.P. Elevation 54.0
Drilling Started 4/4/90 Ended 4/5/90
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 8"
Final Depth (ft.) 98.5'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type Split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Sample No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		95-98.5'	91'6 recovery	Bedrock		Some fractures, oblique and vertical Fractures in rock. sand Seamsin fractures near top of rock.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

2" Diameter rock core collected

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 4-11-90
Project INDUSTRI-PLEX PDI	
Client Golder Associates	
Page 1	Of 3
Logged By H.H.	
Well No. ATB-14	
Loc. Woburn, MA	
M.P. Elevation 54.10	
Drilling Started 4-9-90	Ended 4-10-90
Driller D.L. Maher	
Type Of Rig Hollow Stem Auger	

WELL DATA

Hole Diam. (in.)	
Final Depth (ft.)	47.3
Casing Diam. (in.)	
Casing Length (ft.)	
Screen Setting (ft.)	
Screen Slot & Type	
Well Status	

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type	Split Spoon
Hammer	140 lb.
Fall	30 in.

DEVELOPMENT

PID (ppm)	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	1	0.7'	0-1'	4,35	SP		0-0.3' Brown Coarse SAND, little fine Gravel, some organic materials, Larvae. 0.3-0.5' Brown fine to medium SAND, little fine Gravel. 0.5-0.7' Orange Medium to Coarse SAND, little fine Gravel. Split Spoon refusal at 1'-hit a rock. 0-5' Cuttings-Brown Medium SAND, coarse Gravel(cobbles), hard drilling. DTW at 3'
	2	1.1'	5-7'	6,10,22,35	SW	5	0-0.6' Grey medium to coarse SAND.
					SP		0.6-0.7' Light brown coarse SAND and fine to coarse Gravel.
					SM d u		0.7-1.1' Light brown fine SAND, trace silt, stiff.
							5-10' Cuytings- Coarse SAND and cobbles.
	3	NR	10-12'	30,51,30,31		10	No recovery
	4	0.9'	15-17'	26,22,19,11	SP SW	15	0.5' Brown coarse SANDand fine Gravel. 0.5-0.9' Light brown fine

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 4-11-90	**WELL DATA**	**G W READINGS(1)**
Project INDUSTRI-PLEX PDI		Hole Diam. (in.) 8"	Date / DTW MP(2) / Elev. W.T.
Client Golder Associates		Final Depth (ft.) 47.3	
Page 2 of 3		Casing Diam. (in.)	
Logged By H.H.		Casing Length (ft.)	
Well No. ATB-14		Screen Setting (ft.)	
Loc. Woburn, MA.		Screen Slot & Type	
M.P. Elevation 54.10		Well Status	
Drilling Started 4-9-90	Ended 4-10-90	**SAMPLER**	**DEVELOPMENT**
Driller D.L. Maher		Type Split Spoon	
Type of Rig Hollow Stem Auger		Hammer 140 lb.	
		Fall 30 in.	

PID (ppm)	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
							SAND, trace silt.
	5	1.2'	20-22'	3,13,12,12	SP	20	Brown fine SAND, trace fine Gravel.
	6	0.9'	25-27'	10,11,12,14	SP	25	Brown fine SAND, trace fine Gravel.
	7	1.1'	30-32'	5,8,5,8	SM^{d}_{u}	30	Brown fine SAND, little (+) Silt, red thin laminations.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16I01Y Date 4/11/90
Project Industri-Plex PDI
Client Golder Associates
Page 3 Of 3
Logged By Hillary Hollister
Well No. ATB-14
Loc. Woburn, MA
M.P. Elevation 54.10
Drilling Started 4/9/90 Ended 4/10/90
Driller D.L. Maher
Type Of Rig Hollow stem auger

WELL DATA
Hole Diam. (in.) 8"
Final Depth (ft.) 47.3
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER
Type split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID (ppm)	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	8	1.6'	35-37'	5,13,27,70	SP SM$^{d}_{u}$ SP	35	0-0.4' Brown medium to coarse SAND and fine gravel. 0.4-1.1'Brown fine SAND, some silt, trace fine gravel. 1.1-1.6' Brown medium to coarse SAND, trace fine gravel. Auger refusal at 37'.
	9	1.1'	39.5-43.3'	29% recovery		39 39.5	GABBRO, veins of feldspar with mica, oblique fracture filled with calcite and sand, sand seams, very weathered
	10	4.0'	43.3-47.3'	100%recovery		43 43.3	Top 0-1.5' Grey green GABBRO with feldspar musconite, veins, sand seams, weathered. Bottom 1.5-4.0' Grey green GABBRO, plagioclose with calcite veins, two fractures over 3' filled with calcite, small veins are off-set possibly fault fractures at 44.5-45.0', sand seams at 44.0 and 47.3'.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 4/12/90
Project Industri-Plex PDI	
Client Golder Associates	
Page 1	Of 4
Logged By H. Hollister	
Well No. ATB-15	
Loc. Woburn, MA	
M.P. Elevation 54.24	
Drilling Started 4/11/90	Ended 4/12/90
Driller D.L. Maher	
Type Of Rig Hollow-stem Auger	

WELL DATA

Hole Diam. (in.)	8"
Final Depth (ft.)	116'
Casing Diam. (in.)	
Casing Length (ft.)	
Screen Setting (ft.)	
Screen Slot & Type	
Well Status	

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type	Splitspoon
Hammer	140 lb.
Fall	30 in.

DEVELOPMENT

PID (ppm)	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
7.4	1	1.0'	0-2'	2,4,8,8	SP		Dark brown fine to medium SAND trace silt, trace fine Gravel trace organic material Cuttings 0-5': Light brown fine to medium SAND, trace silt.
5.2	2	1.4'	5-7'	6,10,9,10	SP	5	Light brown to gray fine to medium SAND, trace SILT, trace fine Gravel, trace organic material. Moist. Laminated.
1.7	3	1.3'	10-12'	3,5,6,7	SP	10	Light brown to gray fine coarse SAND, trace organic material. Wet.
1.2	4	1.3'	15-17'	1,4,5,8	SW	15	Light brown to gray fine to medium SAND, iron-stained and laminated.
0.0	5	1.5'	20-22'	4,8,5,7	SW	20	Orange-brown to gray fine (+) to medium SAND, iron-stained and laminated.
0.0	6	2.0'	25-27'	6,8,9,14	SW	25	Brown medium SAND, iron-stained at 0.5' and 1.4'.
0.0	7	1.6'	30-32'	8,25,23,22	SP	30	Brown to gray fine coarse SAND, little fine(+) to coarse Gravel

REMARKS: (1) In feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 4/12/90
Project Industri-Plex PDI
Client Golder Associates
Page 2 of 4
Logged By H. Hollister
Well No. ATB-15
Loc. Woburn, MA
M.P. Elevation 54.24
Drilling Started 4/11/90 Ended 4/12/90
Driller D.L. Maher
Type Of Rig Hollow-stem Auger

WELL DATA
Hole Diam. (in.) 8"
Final Depth (ft.) 116'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER
Type Splitspoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID (ppm)	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
2.0.	8	1.6'	35-37'	9,12,15,19	SP GP SP	35	Red to brown coarse SAND, and fine(+) to coarse Gravel; iron-stained; Gravel abundant from 0.6-0.9'.
2.1	9	1.5'	40-42'	12,23,22,24	SP	40	Orange to brown coarse SAND, and fine(+) to coarse Gravel; iron-stained.
2.4	10	1.4'	45-47'	14,21,15,16	SP	45	Orange to brown medium to coarse(+) SAND, and fine(+) to coarse Gravel; coarsening downward, iron-stained.
2.0	11	0.5'	50-52'	24,18,22,34	SW	50	Brown coarse SAND, trace fine Gravel
3.0	12	0.9'	55-57'	10,12,18,14	SP	55	Brown coarse SAND, little fine(+) to coarse Gravel.
3.2	13	1.3'	60-62'	17,16,18,20	SP	60	Brown coarse SAND, some fine(+) to coarse Gravel, coarsening downward; iron-stained.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 4/12/90
Project Industri-Plex PDI
Client Golder Associates
Page 3 Of 4
Logged By H. Hollister
Well No. ATB-15
Loc. Woburn, MA
M.P. Elevation 54.24
Drilling Started 4/11/90 Ended 4/12/90
Driller D.L. Maher
Type Of Rig Hollow-stem Auger

WELL DATA
Hole Diam. (in.) 8"
Final Depth (ft.) 116'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER
Type Splitspoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID (ppm)	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
1.8	14	1.1'	65-67'	8,11,12,14	SP	65	Brown medium to coarse SAND, little fine(+) to coarse Gravel, trace Silt; Silt in lamination at 0.1'; coarsening downward.
1.9	15	1.1'	70-72'	10,35,32,42	SP CL	70	Brown fine to coarse(+) SAND, trace clay, trace fine gravel; Silt and Clay in lamination at 0.75'-0.95'.
1.5	16	1.0'	75-77'	20,28,23,26	SP CL	75	Brown medium to coarse SAND, little silt, little clay, trace fine(-) to coarse(+) Gravel; silt and clay found in lowest 0.3'.
2.0	17	0.8'	80-82'	40,60,14,28	SP	80	Brown fine to coarse SAND, trace fine (+) to coarse Gravel; coarsening downward; Tight.
1.2	18	2.0'	85-87'	45,56,29,20	SP	85	Brown medium to coarse(+) SAND little fine to coarse(+) Gravel; iron-stained.
1.5	19	1.0'	90-92'	36,34,45,57	SP	90	Brown to gray fine to coarse SAND, trace Silt, trace fine Gravel; fining downward; Tight
-	20	1.8'	95-97'	16,45,55,57	SM d u	95	Brown to gray fine(+) SAND and Silt, little Clay. Coarsening downward.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16010Y Date 4/12/90
Project Industri-Plex PDI
Client Golder Associates
Page 4 Of 4
Logged By H. hollister
Well No. ATB-15
Loc. Woburn, MA
M.P. Elevation 54.24
Drilling Started 4/11/90 Ended 4/12/90
Driller D.L. Maher
Type Of Rig Hollow-stem Auger

WELL DATA

Hole Diam. (in.) 8"
Final Depth (ft.) 116'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type Splitspoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID (ppm)	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
-	21	1.6'	100-102'	38,37,60,71	SM_u^d	100	Light brown to gray fine to medium SAND, some Silt.
-	22	1.7'	105-107'	12,21,32,40	SM_u^d	105	Light brown to gray fine SAND, and Silt, little Clay
-	23	0.4'	108-108.5'	100|4"		108	Grey fine GRAVEL, some coarse gravel angular rock fragments. Auger refusal at 108' (bedrock).
		3.0'	112-116'	75% recovery		110	Soft weathered bedrock 108'-112'. Grey-green grabbro some oblique and horizontal fractures. Sand seams in fractures.
						115	
						120	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 4/19/90
Project Industri-Plex Site PDI	
Client Golder Associates	
Page 1 of 3	
Logged By B. Thomas	
Well No. ATB-16	
Loc. Woburn, Mass	
M.P. Elevation 53.75	
Drilling Started 4/16/90	Ended 4/17/90
Driller D.L. Maher	
Type Of Rig Hollow Stem Auger	

WELL DATA

Hole Diam. (in.)	8"
Final Depth (ft.)	74'
Casing Diam. (in.)	
Casing Length (ft.)	
Screen Setting (ft.)	
Screen Slot & Type	
Well Status	

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type Splitspoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Hnu	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.2		1.3	0-2'	2,5,12,15	SM^d_u SW	0	Top 0.6'. Dark brown fine -medium SAND, little coarse gravel, little silt; moist Bottom: Buff medium SAND, little fine gravel; moist
0.2		1.0	5-7'	13,14,12,10	SW	5	Brown medium to coarse SAND, well sorted; wet @ 4.6'.
0.0		1.3	10-12'	17,65,44,53	SM^d_u SP	10	Top 1.0' Grey coarse SAND some fine to coarse gravel, some silt, trace clay. Bottom 0.3': Brown coarse SAND, some fine gravel;oxidized tight.
0.0		1.0	15-17'	14,18,19,15	SM^d_u	15	Grey fine SAND, little silt: laminated orange fine sand seams.
0.1		1.1	20-22'	17,10,10,14	SW	20	Brown medium SAND, trace fine gravel; well sorted; oxidized sand seams near 20'.
0.0		1.3	25-27'	5,5,8,8	SW	25	Brown coarse to medium SAND well sorted; coarse sand in middle of sample.
0.1		1.5	30-32'	3,6,7,13	SW	30	Brown medium SAND, little coarse sand @ bottom; well sorted

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101y Date 4/19/90
Project Industri-Plex Site PDI
Client Golder Associates
Page 2 of 3
Logged By R. Thomas
Well No. ATB-16
Loc. Woburn Mass
M.P. Elevation 53.75
Drilling Started 4/16/90 Ended
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA
Hole Diam. (in.) 8"
Final Depth (ft.) 74'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER
Type splitspoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Hnu	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0		1.6'	35-37'	7,14,15,26	SW	35	Brown medium to coarse SAND, well sorted
0.2		1.7'	40-42'	4,7,7,8	SW	40	Top 1.0': Brown coarse SAND . Bottom: Grey medium SAND, little grey clay; clay seame 41.3'.
0.0		1.3'	45-47'	5,8,10,15	SW	45	Brown medium to coarse SAND.
0.0		1.3'	50-52'	7,7,6,8	SW	50	Grey medium SAND.
0.0		1.5'	55-57'	8,10,11,11	SMd	55	Grey fine to medium SAND, little silt.
0.0		1.4'	60-62	5,6,17,50	SMd	60	Grey fine to medium SAND, little coarse gravel, little silt. Gravel is red sandstone fragments.
		0.5'	62-64'	2,5,19,20	SMd		Grey fine to medium SAND, little silt, little red sand from crushed sandstone.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 4/19/90
Project Industri-Plex Site PDI
Client Golder Associates
Page 3 of 3
Logged By B. Thomas
Well No. ATB-16
Loc. Woburn Mass
M.P. Elevation 53.75
Drilling Started 4/16/90 Ended 4/17/90
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 8"
Final Depth (ft.) 74'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type splitspoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Hnu	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0		0.3'	65-67'	17,26,62,90	GP	65	Auger refusal @ Grey coarse GRAVEL and medium to coarse sand, little silt. (till).
							Bedrock @ 68.0'
		2.8'	70-74'	70% recovery		70	Grey-green medium grain Gabbro. Calcite veins, little plagioclase. Vertical and oblique fractures. Sand seams in fractures; weathered.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 5/8/90
Project Industri-Plex Site
Client Golder Associates
Page 1 Of 1
Logged By H. Hollister
Well No. ATB-17
Loc. Woburn, MA
M.P. Elevation 63.0
Drilling Started 5/3/90 Ended
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type Split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Hnu	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
							See log of OW-30B

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date
Project Industri-Plex Site
Client Golder Associates
Page 1 Of 1
Logged By L. McTiernan
Well No. ATB-18
Loc. Woburn, Mass.
M.P. Elevation 72.5
Drilling Started 4/24/90 Ended 4/24/90
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA
Hole Diam. (in.) 8"
Final Depth (ft.) 26.5
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER
Type Split Spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0		1.0	0-2	3,4,4,5	SW	0	Dark brown fine(+) to medium SAND, trace coarse sand, trace fine to coarse gravel.
0		1.4	5-7'	2,2,2,2	SW	5	Dark brown fine to medium SAND, trace coarse gravel, trace organic material; moist.
0		1.9	10-12'	7,10,10,11	SW ML SW	10	Top 0.3': Black fine SAND trace organic material; Middle 1.2': Tan SILT; iron stained. Bottom: Orange-tan fine SAND; well sorted.
0		0.9	15-16'	10,60,50/1'	SP	15	Brown fine to coarse SAND some fine gravel, trace silt. Duger refusal @ 17.0' (Bedrock)
						20	
		4.3	22-26.5'	96%recovery		25	Green-grey medium grain gabbro accessory minerals of pyrite and epidate. Oblique fractures in rock filled with sand or calcite.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 1610IY Date 7/3/90
Project Industri-Plex Site
Client Golder Associates
Page 1 Of 1
Logged By B. Thomas
Well No. ATB-19
Loc. Woburn, Mass
M.P. Elevation 93.53
Drilling Started 6/27/90 Ended 6/27/90
Driller D.L. Maher Company
Type Of Rig Hollow Stem Auger

WELL DATA
Hole Diam. (in.) 8"
Final Depth (ft.) 21'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER
Type split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0		0.7	1-3'	12,18,15,11	SP	0	Top 0.1': Grey coarse gravel (crushed Gabbro). Bottom 0.6: Brown fine medium SAND some coarse gravel, little silt, (fil
0.0		0.8	4.5-6.5'	6,14,24,45	SP	5	Dark brown to brown fine to coarse sand and coarse gravel. Sharp angular gravel; moist (fill). cuttings: light brown medium coarse sand and coarse gravel, little cobble (fill).
		NR	10-12'	38,100/1"		10	No recovery; pushed a cobble.
0.0		0.9	15-17'	79,45,19,18	GP	15	Grey coarse GRAVEL, little medium sand; gravel is fractured bedrock Auger refusal @17' (bedrock). Green-grey medium grain Gabbro. 2 fractures horizontal fracture @ 19.5' oblique fracture @20'; both fractures filled with calcite. Note: Petroleum hydrocarbon sheen and odor detected on drill rods.
						20	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 7/3/90
Project Industri-Plex Site
Client Golder Associates
Page 1 Of 2
Logged By H. Ernst
Well No. ATB-20
Loc. Woburn, Mass
M.P. Elevation 80.12
Drilling Started 6/28/90 Ended 6/28/90
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA
Hole Diam. (in.) 8"
Final Depth (ft.) 40.5
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER
Type split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0		1.4	0-2'	3,9,9,9	SW	0	Top 0.3:Dark brown organic SILT. Bottom 1.1': Light brown coarse (+) to medium SAND, little gravel.
0.0		1.0'	4-6'	3,3,5,6	SW	5	Top 0.6': Light brown coarse (+) to medium SAND, trace gravel. Bottom 0.4': Coarse SAND, trace gravel coarsening downward.
0.0		0.9	10-12'	4,5,8,20	SW	10	Brown medium to coarse (+) SAND some fine gravel; coarsening downward.
0.0		1.1	15-17'	6,9,7,8	SP	15	Brown coarse sand and fine gravel; uniform; moist.
0.0		0.4	20-22'	13,34,27,12	SW	20	Brown coarse SAND and fine gravel; uniform; pushed a cobble.
0.0		0.4	25-27'	10,8,9,10	SW	25	Light brown medium (+) to fine SAND; wet; pushed a cobble.
0.0		1.4	30-32'	5,7,18,15	SW	30	Brown, black, orange to grey fine SAND; sand is oxidized; wet.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 7/3/90
Project Industri-Plex Site	
Client Golder Associates	
Page 2	Of 2
Logged By H. Ernst	
Well No. ATB-20	
Loc. Woburn, Mass	
M.P. Elevation 80.12	
Drilling Started 6/28/90	Ended 6/28/90
Driller D.L. Maher Company	
Type Of Rig Hollow Stem Auger	

WELL DATA

Hole Diam. (in.)	8"
Final Depth (ft.)	40.5
Casing Diam. (in.)	
Casing Length (ft.)	
Screen Setting (ft.)	
Screen Slot & Type	
Well Status	

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type	split spoon
Hammer	140 lb.
Fall	30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0		0.5	35-36'	4,24	SP	35	Grey fine (+) to medium SAND and coarse grave; little silt, and gravel appears to be fractured bedrock. Auger refusal 36'.
		1.1	37.5-40.5	37% recovery		40	Green-grey medium grain Gabbro, weathered, severely fractured, oblique and vertical fractures some sand seams.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 7/3/90	**WELL DATA**	**G W READINGS(1)**
Project Industri-Plex Site		Hole Diam. (in.) 8"	Date / DTW MP(2) / Elev. W.T.
Client Golder Associates		Final Depth (ft.) 20.5	
Page 1 of 1		Casing Diam. (in.)	
Logged By H. Ernst		Casing Length (ft.)	
Well No. ATB-21		Screen Setting (ft.)	
Loc. Woburn, Mass		Screen Slot & Type	
M.P. Elevation 94.22		Well Status	
Drilling Started 6/29/90	Ended 7/2/90	**SAMPLER**	**DEVELOPMENT**
Driller D.L. Maher Company		Type split spoon	
Type Of Rig Hollow Stem Auger		Hammer 140 lb.	
		Fall 30 in.	

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0		0.85	0-2'	12,20,31,25	SP SP	0	Top 0.4': Organic SILT Bottom 0.45'; Brown coarse gravel and medium to coarse (+) sand. Cuttings: Brown medium to coarse sand and cobbles (fill).
0.0		1.0	4.5-6.5'	7,7,4,6	SW SP	5	Light brown medium to coarse (+) SAND, little fine gravel: coarsening downward. cuttings: Brown medium to coarse SAND, and cobbles.
0.0		0.9	9-11'	8,5,6,7	SW	10	Top 0.5': same as above. Bottom : Brown medium (+) to fine SAND, moist.
0.0		0.8	14-16'	15,43,100/3"	SW	15	Top 0.3': Brown medium to coarse (+) SAND, some fine gravel; uniform. Bottom 0.5': Green grey medium sand and fractured rock. Auger refusal @16.0'. Grey coarse grain low quartz diorite trace epidote, trace magnetive, weathered; severely fractured oblique fractures filled with sand.
		0.9	16.5-20.5	22% recovery	SP	20	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101	Date 5/30/90	**WELL DATA**	**G W READINGS(1)**
Project Industri-Plex Site PDI		Hole Diam. (in.) 10"	Date / DTW MP(2) / Elev. W.T.
Client Golder Associates		Final Depth (ft.) 27'	
Page 1 of 2		Casing Diam. (in.) 4"	
Logged By H. Hollister		Casing Length (ft.) 20'	
Well No. OW-23		Screen Setting (ft.) 17-27'	
Loc. Woburn, Mass		Screen Slot & Type .010" PVC	
M.P. Elevation 68.54		Well Status	
Drilling Started 5/16/90 Ended		**SAMPLER**	**DEVELOPMENT**
Driller D.L. Maher		Type Split spoon	
Type Of Rig Hollow Stem Auger		Hammer 140 lb.	
		Fall 30 in.	

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
3.5		0.8	0-2'	1,1,1,1	SP	0	Dark brown medium(+) to coarse SAND, little fine gravel, organic material.
							Cuttings: Dark brown medium to coarse SAND, some fine gravel; moist.
0.0		0.8	5-7'	1,2,1,1	SP	5	Dark brown fine to coarse SAND, little fine gravel, trace silt organic material.
0.0		1.2	10-12'	1,1,1,1	PT	10	Dark brown fine to medium organic SAND, trace fine gravel some PEAT throughout Sample.
0.0		1.2	15-17'	3,9,12,12	PT SW	15	Top 0.5': Dark brown PEAT. Bottom: Grey fine(+) to medium SAND, little organic material, trace coarse gravel.
0.0		1.8	20-22'	8,10,10,11	SMu[d] SW	20	Top 1.65': Light brown fine SAND, some silt, trace coarse sand, iron stained laminated. Bottom 0.1': Light brown medium to coarse(+) SAND, Little fine gravel.
0.0		1.1	25-27'	30,45,33,20	SW GWu[d]	25	Top 0.5': Brown medium to coarse SAND. Bottom: Brown medium to coarse SAND and fine(+) to coarse gravel.
0.0		1.0	30-32'	27,24,22,20	SP	30	Brown Medium to coarse(+) SAND, some fine gravel, trace coarse gravel; iron stained.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101 Date 5/30/90
Project Industri-Plex PDI
Client Golder Associates
Page 2 of 2
Logged By H. Hollister
Well No. OW-23
Loc. Woburn, Mass
M.P. Elevation 68.54
Drilling Started 5/16/90 Ended 5/17/90
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10"
Final Depth (ft.) 27'
Casing Diam. (in.) 4
Casing Length (ft.) 20'
Screen Setting (ft.) 17-27'
Screen Slot & Type .010" PVC
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type Split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
5.2		0.5	35-36'	32,20	SP	35	Grey fine to coarse SAND and fine gravel, little coarse gravel. Auger refusal @ 37.6'
		2.2	38.5-41.5'	73% recovery	Bedrock	40	Green-grey granodiorite some quartsome calcite veins, Oblique andvertical fractures

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101	Date 4/30/90	**WELL DATA**	**G W READINGS(1)**
Project Industri plex PDT		Hole Diam. (in.) 10"	Date | DTW | MP(2) | Elev. W.T.
Client Golder Associates		Final Depth (ft.) 24.97	
Page 1 of 1		Casing Diam. (in.) 4"	
Logged By L. McTiernan		Casing Length (ft.) 14.87	
Well No. OW-24a		Screen Setting (ft.) 14.87-24.97	
Loc. Woburn, M.A.		Screen Slot & Type 10 Slot PVC	
		Well Status	
M.P. Elevation 57.47		**SAMPLER**	**DEVELOPMENT**
Drilling Started 4/30/90	Ended 4/30/90	Type	
Driller D.L. Maher Company		Hammer lb.	
Type Of Rig Hollow Stem Auger		Fall in.	

SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
						See log of OW-24b

REMARKS: (1) In feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 4/30/90
Project Industri-Plex PDI
Client Golder Associates
Page 1 Of
Logged By L. McTiernan
Well No. OW-24b
Loc. Woburn, M.A.
M.P. Elevation 57.26'
Drilling Started 4/25/90 Ended 4/27/90
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10"
Final Depth (ft.) 59.65
Casing Diam. (in.) 4"
Casing Length (ft.) 49.50-59.65
Screen Setting (ft.) 10 Slot PVC
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type Split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
9.1	1	0.8'	0-2'	1,2,6,12	SP		Light dark brown, fine to coarse SAND, little fine to coarse Gravel, trace organic materials. (fill).
7.8	2	1.4'	5-7'	10,20,18,18	SP	5	Light brown fine(+) to coarse SAND, trace fine gravel. Moist at bottom.
6.2	3	2.0'	10-12'	6,12,13,14	SP	10	Gray fine to coarse SAND, some fine Gravel, coarsening downwards. Wet.
—	4	1.35	15-17'	10,12,12,15	SP SW SP	15	0.-0.2' Brown fine to coarse SAND, trace fine Gravel. 0.2-1.2' Gray-brown fine SAND, laminated orange & black 1.2-1.35' Gray-brown to orange fine Gravel.
12.2	5	1.3'	20-22'	4,6,7,9	SW	20	Light brown fine to medium SAND; several orange laminae.
3.1	6	1.5	25-27'	5,10,12,21	SW	25	Light brown fine(+) to medium SAND.
3.6	7	1.7	30-32'	8,11,12,15	SW	30	Light brown fine to medium, trace silt; micacous sand.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 4/30/90	**WELL DATA**	**G W READINGS(1)**
Project Industri plex PDI		Hole Diam. (in.) 10"	Date | DTW MP(2) | Elev. W.T.
Client Golder Associates		Final Depth (ft.) 59.65	
Page 2 of 3		Casing Diam. (in.) 4"	
Logged By L. McTiernan		Casing Length (ft.) 49.50	
Well No. OW-24b		Screen Setting (ft.) 49.50-59.65	
Loc. Woburn, M.A.		Screen Slot & Type 10 Slot PVC	
M.P. Elevation 57.26		Well Status	
Drilling Started 4/25/90	Ended 4/27/90	**SAMPLER**	**DEVELOPMENT**
Driller D.L. Maher Company		Type Split spoon	
Type Of Rig Hollow Stem Auger		Hammer 140 lb.	
		Fall 30 in.	

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
3.1		1.4	35-37'	3,5,7,10	SW	35	Light brown fine SAND, very tight seam of silt and clay at 35.9'.
3.2		1.7	40-42'	5,6,8,14	SW	40	Top 1.3': Brown fine to medium SAND, coarsening doenward. Bottom 0.4': Brown to grey medium to coarse SAND and fine to coarse gravel; coarsening downward.
2.3		0.7	45-47'	7,19,13,10	GP	45	Grey-brown fine to coarse angular GRAVEL, some fine to coarse sand, trace silt.
2.4		1.6	50-52'	8,10,12,12	SMu[d] MH	50	Top 0.7': Brown fine SAND, some silt. Bottom: Grey SILT, little fine sand; tight.
2.2		1.3	55-57'	7,9,10,8	SMu[d]	55	Grey fine SAND and silt, trace black clay; tight.
2.0		2.0	60-62'	7,6,10,11	SMu[d]	60	Grey fine SAND, little silt. fining downward; moderately tight.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101 Date 4/30/90
Project Industri-Plex PDI
Client Golder Associates
Page 3 Of 3
Logged By L. McTiernan
Well No. OW-24b
Loc. Woburn, M.A.
M.P. Elevation 57.26
Drilling Started 4/25/90 Ended 4/27/90
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA
Hole Diam. (in.) 10"
Final Depth (ft.) 59.65
Casing Diam. (in.) 4"
Casing Length (ft.) 49.50
Screen Setting (ft.) 49.50-59.65
Screen Slot & Type 10 Slot PVC
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER
Type Split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0	0.6	64-65.5	14,40,35	SW	65	Grey fine SAND, auger refusal @ 65.5'. (Bedrock).
-	3.5	69.5-73'	100%recovery		70	Green-grey coarse grain grano-diorite low quartz. Moderately fractured both vertical and oblique fractures, some sand in rock.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No.	16101
Date	5/24/90
Project	Industri-Plex Site
Client	Golder Associate
Page	1 of 1
Logged By	B. Thomas
Well No.	OW-25a
Loc.	Woburn, Mass
M.P. Elevation	66.00
Drilling Started	5/22/90
Ended	5/22/90
Driller	D.L. Maher
Type Of Rig	Dual Reverse Rotary

WELL DATA

Hole Diam. (in.)	8"
Final Depth (ft.)	23.0
Casing Diam. (in.)	4"
Casing Length (ft.)	13.15
Screen Setting (ft.)	13.15-23.3
Screen Slot & Type	.010" PVC
Well Status	

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type	Split spoon
Hammer	140 lb.
Fall	30 in.

DEVELOPMENT

#	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
							See log of OW-25b

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101	Date 5/19/90	**WELL DATA**	**G W READINGS(1)**
Project Industri-Plex Site		Hole Diam. (in.) 8"	Date / DTW MP(2) / Elev. W.T.
Client Golder Associate		Final Depth (ft.) 40.3	
Page 1 Of 2		Casing Diam. (in.) 4"	
Logged By B. Thomas		Casing Length (ft.) 29.8'	
Well No. OW-25b		Screen Setting (ft.) 29.8-40.3	
Loc. Woburn, Mass		Screen Slot & Type .010"PVC	
M.P. Elevation 65.34		Well Status	
Drilling Started 5/17/90	Ended 5/20/90	**SAMPLER**	**DEVELOPMENT**
Driller D.L. Maher		Type Split spoon	
Type Of Rig Dual Reverse Rotary		Hammer 140 lb.	
		Fall 10 in.	

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0		0.8	0-2'	3,18,60/3"	SP	0	Brown fine to coarse SAND some fine to coarse gravel(fill).
							Cuttings 0-10': Brown coarse sand and cobbles(fill).
						5	
		NR	10-12'	7,11,11,12		10	No recovery.
0.0		0.7	13-15'	4,6,4,8	SW		Light brown fine to medium(+) SAND; iron stained lamination.
						15	
						20	
0.0		1.1	23-25'	3,10,2,5	SW	25	Grey-brown fine to coarse SAND, some fine gravel, trace silt; coarsening downward, wet.
						30	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101 Date 5/19/90
Project Industri-Plex Site
Client Golder Associates
Page 2 of 2
Logged By B. Thomas
Well No. OW-25b
Loc. Woburn, Mass
M.P. Elevation 65.34
Drilling Started 5/17/90 Ended 5/20/90
Driller D.L. Maher
Type Of Rig Dual Reverse Rotary Rig

WELL DATA

Hole Diam. (in.) 8"
Final Depth (ft.) 40.3
Casing Diam. (in.) 4"
Casing Length (ft.) 29.8
Screen Setting (ft.) 29.8-40.3
Screen Slot & Type .010" PVC
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type Split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0		1.0	33-35'	10,10,11,7	SW	35	Brown medium to coarse(+) SAND, little fine gravel; coarsening downward; well sorted.
						40	
0.0		0.4	43-45'	2,5,9,12	SP	45	Brown coarse SAND and fine gravel.
		2.8	47.5-50.5	93% recovery		50	Bedrock @ 47.4' Green-grey medium grain Granodiorite some oblique and horizontal fractures. Sand Seam @ 49.'

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date -
Project Industri plex PDI
Client Golder Associates
Page 1 Of 1
Logged By B. Thomas
Well No. OW-26a
Loc. Woburn, M.A.
M.P. Elevation 64.15
Drilling Started 5/11/90 Ended 5/11/90
Driller D.L. Maher Company
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 12"
Final Depth (ft.) 23.20
Casing Diam. (in.) 4
Casing Length (ft.) 14.95'
Screen Setting (ft.) 13.05-23.20
Screen Slot & Type 10 Slot PVC
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type
Hammer lb.
Fall in.

DEVELOPMENT

SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
						See log of ATB-3

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 5/30/90	**WELL DATA**	**G W READINGS(1)**
Project Industri Plex PDI		Hole Diam. (in.) 8"	Date / DTW MP(2) / Elev. W.T.
Client Golder Associates		Final Depth (ft.) 41.46'	
Page 1 of 1		Casing Diam. (in.) 4"	
Logged By B. Thomas		Casing Length (ft.) 33.61	
Well No. OW-26b		Screen Setting (ft.) 31.31-41.46	
Loc. Woburn, M.A.		Screen Slot & Type 10 Slot PVC	
M.P. Elevation 63.8		Well Status	
Drilling Started 5/24/90	Ended 5/24/90	**SAMPLER**	**DEVELOPMENT**
Driller D.L. Maher Company		Type	
Type Of Rig Dual Reverse Rotary		Hammer lb.	
		Fall in.	

SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
						See log of ATB-3.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101 Date 5/8/90
Project Industri-Plex Site
Client Golder Associate
Page 1 of 1
Logged By B. Thomas
Well No. OW-27a
Loc. Woburn, Mass
M.P. Elevation 70.84
Drilling Started 5/3/90 Ended
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 12"
Final Depth (ft.) 39.6
Casing Diam. (in.) 4"
Casing Length (ft.) 32.0
Screen Setting (ft.) 29.6-39.6
Screen Slot & Type .010" PVC
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type
Hammer lb.
Fall in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
							See log of OW-27b.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101 Date 5/8/90
Project Industri-Plex Site
Client Golder Associates
Page 1 of 4
Logged By L. McTiernan
Well No. OW-27b
Loc. Woburn, Mass
M.P. Elevation 70.52
Drilling Started 5/90 Ended
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 8"
Final Depth (ft.) 94.57
Casing Diam. (in.) 4"
Casing Length (ft.) 85.85
Screen Setting (ft.) 84.42-94.57
Screen Slot & Type .010" PVC
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type Split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0		0.9	0-2.0	13,17,50/3"	SP	0	Grey to brown fine to coarse SAND, some fine to coarse gravel(fill)
2.6		1.0	5 -7'	8,5,6,32	SP	5	Grey to brown fine to coarse SAND and fine to coarse gravel, some brick and cement fragments. (fill).
3.4		0.6	1 0-12'	1,2,1,2	SP	10	Grey to brown fine to coarse SAND, some fine to coarse gravel; moist(fill).
0.3		1.45	15-17'	3,6,6,5	SW	15	Light brown fine to medium SAND, trace silt, trace fine gravel, wet.
0.7		1.65	20-22'	4,4,4,4	SW	20	Grey fine SAND, trace silt; red and orange laminae, moderatly stiff.
0.9		1.4	25-24'	4,4,6,7	SW	25	Brown fine to medium SAND trace silt, trace fine gravel; fining downward.
1.0		1.3	30-32'	2,3,7,10	SW	30	Brown fine to medium SAND fine sand seam @ 30.6-30.8' Iron stained throughout.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101 Date 5/8/90
Project Industri plex Site PDI
Client Golder Associates
Page 2 Of 4
Logged By L. McTiernan
Well No. OW-27b
Loc. Woburn MA
M.P. Elevation 70.52
Drilling Started 5/3/90 Ended
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 8"
Final Depth (ft.) 94.57
Casing Diam. (in.) 4"
Casing Length (ft.) 85.85
Screen Setting (ft.) 84.42-94.57
Screen Slot & Type .010" PVC
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type Split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		N.R	35-37'	13,20,40/3"		35	No recovery.
0.5		1.25	40-42'	7,2,5,11	SW	40	Light brown fine to medium (+) SAND, trace silt; iron stained, laminae.
		1.35	45-47'	5,5,9,11	SW	45	Gray-brown fine to medium (+) SAND. trace silt; fining downward.
1.3		1.4	50-52'	4,9,10,15	SW	50	Brown fine to medium (+) SAND, moderately tight.
0.0		1.0	55-57'	3,6,4,2	SW	55	Brown fine-medium SAND, little silt, little gray clay; well sorted; tight. Auger refusal @57.0' Note: Dual reverse rotary rig used from 57' to bottom of boring.
0.0		1.5	59-61'	4,2,3,6	SW	60	Brown to gray fine-medium SAND, little silt; well sorted.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 5/8/90	**WELL DATA**	**G W READINGS(1)**
Project Industri-Plex Site		Hole Diam. (in.) 8"	Date | DTW MP(2) | Elev. W.T.
Client Golder Associates		Final Depth (ft.) 94.57	
Page 3 of 4		Casing Diam. (in.) 4"	
Logged By L. McTiernan		Casing Length (ft.) 85.85	
Well No. OW-27B		Screen Setting (ft.) 84.42-94.57	
Loc. Woburn, Mass		Screen Slot & Type .010"PVC	
M.P. Elevation 70.52		Well Status	
Drilling Started 5/3/90 Ended		**SAMPLER**	**DEVELOPMENT**
Driller D.L. Maher		Type split spoon	
Type Of Rig Dual Reverse Rotary Rig		Hammer 140 lb.	
		Fall 30 in.	

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
						65	
0.0		1.6	69-71'		MH	70	Gray SILT, some fine (+) sand trace clay.
						75	
0.0		0.5	79-81'	1,1,2,2	MH	80	Gray SILT, some fine (+) sand trace clay.
						85	
0.0		1.8	89-91'	1,2,2,3	ML	90	Gray SILT and fine sand.
						95	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 5/8/90
Project Industri-Plex Site	
Client Golder Associates	
Page 4	of 4
Logged By L. McTiernan	
Well No. OW-27B	
Loc. Woburn, Mass	
M.P. Elevation 70.52	
Drilling Started 5/3/90	Ended
Driller D.L. Maher	
Type Of Rig Dual Reverse Rotary	

WELL DATA

Hole Diam. (in.)	8"
Final Depth (ft.)	94.57
Casing Diam. (in.)	4"
Casing Length (ft.)	85.85'
Screen Setting (ft.)	84.42-94.57
Screen Slot & Type	.010"PVC
Well Status	

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type	split spoon
Hammer	140 lb.
Fall	30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0		1.5	99-100'	1,1,1,2	ML	100	Gray SILT, fine sand.
						105	
						110	Difficult drilling @ 110' (Bedrock)
		1.3	115-118'	43%recovery		115	Gray-green fine grain Gabbro trace pyrite, plagioclase vein @116'. Oblique and horizontal fractures throughout core, some sandseams; weathered.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No.	16101Y
Date	5/30/90
Project	Industri-Plex PDI
Client	Golder Associates
Page	1 of 1
Logged By	H. Hollister
Well No.	OW-29
Loc.	Woburn, M.A.
M.P. Elevation	62.0
Drilling Started	5/1/90
Ended	5/2/90
Driller	D.L. Maher Company
Type Of Rig	Hollow Stem Auger

WELL DATA

Hole Diam. (in.)	10"
Final Depth (ft.)	25.7'
Casing Diam. (in.)	4"
Casing Length (ft.)	13.55
Screen Setting (ft.)	15.55-25.7
Screen Slot & Type	10 Slot PVC
Well Status	

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type	
Hammer	lb.
Fall	in.

DEVELOPMENT

Sample No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
						See Log of ATB-10

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101 Date 5/8/90
Project Industri-Plex Site PDI
Client Golder Associates
Page 1 Of 3
Logged By H. Hollister
Well No. OW-30b
Loc. Woburn, Mass
M.P. Elevation 65.60
Drilling Started 5/3/90 Ended
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10"
Final Depth (ft.) 60.33
Casing Diam. (in.) 4"
Casing Length (ft.) 52.13
Screen Setting (ft.) 50.13-60.33
Screen Slot & Type .010 PVC
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type Split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0		1.6	0-2.0	2,4,8,8	SW	0	Brown medium SAND, trace fine gravel, trace organic material.
0.0		1.9	5-7'	4,8,11,12	SW	5	Tan medium(+) to Coarse SAND, coarsening downward.
0.0		1.4	10-12'	7,10,12,14	SW	10	Light brown medium(+) to coarse SAND, Trace(-) fine gravel; wet.
1.2		1.15	15-17'	8,14,16,27	SW	15	Dark grey medium SAND, Black medium sand from 15.2 to 15.4 and 15.9-16.1
13.6		0.4	17.5-18	90/6"			Dark grey medium(+) to coarse SAND, some fine gravel.
8.6		0.7	20-22'	36,60,20,12	GM d SW	20	Grey medium to coarse sand and fine to coarse gravel Bottom 0.2': grye fine to medium sand.
0.0		1.4	25-27'	8,12,21,33	SW	25	Grey-brown fine(+) to medium SAND, well sorted. Black Laminated sands.
0.0		2.0	30-32'	6,10,18,24	SW	30	Grey-brown fine(+) to medium SAND; well sorted; black laminated sand.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101	Date 5/8/90	**WELL DATA**	**G W READINGS(1)**
Project Industri-Plex Site PDI		Hole Diam. (in.) 10"	Date / DTW MP(2) / Elev. W.T.
Client Golder Associates		Final Depth (ft.) 60.37	
Page 2 of 3		Casing Diam. (in.) 4"	
Logged By H. Hollister		Casing Length (ft.) 52.13	
Well No. OW-30		Screen Setting (ft.) 50.13-60.33	
Loc. Woburn, Mass		Screen Slot & Type .010" PVC	
M.P. Elevation 65.60		Well Status	
Drilling Started 5/3/90	Ended	**SAMPLER**	**DEVELOPMENT**
Driller D.L. Maher		Type Split spoon	
Type Of Rig Hollow Stem Auger		Hammer 140 lb.	
		Fall 30 in.	

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
1.6		1.4	35-37'	14,16,26,33	SW	35	Grey to light brown fine(+) to medium SAND, trace silt stiff; folded.
0.0		2.0	40-42'	14,40,65,7	SW	40	Light brown fine(+) to medium SAND, fining downward, iron staining.
0.0		1.0	45-47'	17,20,26,44	SMd	45	Light brown fine SAND, trace silt, grey silt @ 45.5 folded.
0.0		1.6	50-52'	29,50,60,80	SW	50	Light brown fine SAND trace fine gravel; stiff.
0.0		1.6	55-57'	14,22,35,45	SW	55	Light brown fine(+) to medium SAND, trace fine gravel, laminated grey sands iron stained.
1.4		N.R	60-61'	20,24,28, 100/6		60	No recovery, heaving Sands.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No.	16101
Date	5/8/90
Project	Industri-Plex Site PDI
Client	Golder Associates
Page	3 of 3
Logged By	H. Hollister
Well No.	OW-30b
Loc.	Woburn, Mass
M.P. Elevation	65.60
Drilling Started	5/3/90
Ended	
Driller	D.L. Maher
Type Of Rig	Hollow Stem Auger

WELL DATA

Hole Diam. (in.)	10"
Final Depth (ft.)	58'
Casing Diam. (in.)	4"
Casing Length (ft.)	52.13
Screen Setting (ft.)	50.13-60.33
Screen Slot & Type	.010" PVC
Well Status	

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type	Split spoon
Hammer	140 lb.
Fall	30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
3.0		1.0	65-67	38,27,37,55	SMd	65	Light brown fine SAND, some silt.
							Difficult drilling @ 68'
					Bedrock		
		1.0	70.8-74.8	25%recovery		70	Grey green Granodiorite weathered, badly fractured with sand and silt seams.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 5/30/90
Project Industri plex PDI
Client Golder Associates
Page 1 of 1
Logged By B. Thomas
Well No. OW-33a
Loc. Woburn, M.A.
M.P. Elevation
Drilling Started 4/23/90 Ended 4/23/90
Driller D.L. Maher Company
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10"
Final Depth (ft.) 44.4'
Casing Diam. (in.) 4"
Casing Length (ft.) 36.64
Screen Setting (ft.) 34.29-44.40
Screen Slot & Type 10 Slot PVC
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type
Hammer lb.
Fall in.

DEVELOPMENT

Elev.	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
							See log of ATB-15

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101 Date 5/9/90
Project Industri-Plex Site PDI
Client Golder Associates
Page 1 of 1
Logged By H. Hollister
Well No. OW-33b
Loc. Woburn, Mass
M.P. Elevation 56.66
Drilling Started 5/9/90 Ended Same
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 12"
Final Depth (ft.) 83.81
Casing Diam. (in.) 4"
Casing Length (ft.) 76.4
Screen Setting (ft.) 73.4-83.8
Screen Slot & Type 10 Slot PVC
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type
Hammer lb.
Fall in.

DEVELOPMENT

SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
						See log of ATB-15

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 4/23/90
Project Industri-Plex PDT
Client Golder Associates
Page 1 of 1
Logged By L. McTiernan
Well No. RB-1
Loc. Woburn, MA
M.P. Elevation 67.6'
Drilling Started 4/18/90 Ended 4/18/90
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA
Hole Diam. (in.) 10"
Final Depth (ft.) 28'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER
Type Split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Hnu	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
2.8		2.0'	0-2'	4,10,11,9	SW	0	Brown to black, fine to medium SAND, trace fin gravel, trace organic material.
1.7		1.3'	5-7'	1,2,3,5	SMd	5	Black fine SAND and Silt, trace clay, trace organic materials, hides.
2.8		1.4'	10-12'	5,16,19,21	SW	10	Dark brown fine SAND, little medium Sand.
3.5		1.9'	15-17'	7,8,9,12	SW	15	Grey fine to medium(+) SAND, trace organic, moderately stiff. Laminated.
1.3		1.5'	20-22'	3,5,5,8	SW	20	Grey fine to medium SAND, trace silt.
0.5		1.25'	25-27'	7,8,8,17	SW	25	Dark grey to black fine SAND, some medium sand, in layers. Well sorted moderately stiff. Auger refusal @ 28'
						30	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 4/23/90	**WELL DATA**	**G W READINGS(1)**
Project Industri-Plex PDI		Hole Diam. (in.) 10"	Date / DTW MP(2) / Elev. W.T.
Client Golder Associates		Final Depth (ft.) 10.5'	
Page 1 Of 1		Casing Diam. (in.)	
Logged By L. McTiernan		Casing Length (ft.)	
Well No. RB-2		Screen Setting (ft.)	
Loc. Woburn, MA		Screen Slot & Type	
M.P. Elevation 68.1		Well Status	
Drilling Started 4/19/90 Ended 4/19/90		**SAMPLER**	**DEVELOPMENT**
Driller D.L. Maher		Type Split spoon	
Type Of Rig Hollow Stem Auger		Hammer 140 lb.	
		Fall 30 in.	

Hnu	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0		1.3'	0-2'	9,7,13,17	SP	0	Tan to dark brown fine- medium(+) to coarse SAND, trace fine gravel, trace organic material.
0		1.1'	5-7'	1,1,1,1	SM^{d}	5	Dark brown to black fine SAND and silt, little yellow clay @ 5.6' mottled reddish-purple staining throughout sample.
0		N.R.	10-10.5'	100/5"		10	No recovery, loose debris, wet. Auger refusal @ 10.5'.
						15	
						20	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 4/23/90
Project Industri-Plex PDI
Client Golder Associates
Page 1 of 1
Logged By L. McTiernan
Well No. RB-3
Loc. Woburn, MA
M.P. Elevation 66.9'
Drilling Started 4/19/90 Ended ~~4/19/90~~
Driller D.L. Maher
Type Of Rig Hollw Stem Auger

WELL DATA
Hole Diam. (in.) 10"
Final Depth (ft.) 18'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER
Type Split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Hnu	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0		0.6'	0-2'	6,15,23	SP	0	Red to Brown fine to coarse SAND, some fine gravel, little organic mateial.
0		1.0'	5-7'	5,4,4,4	SMd	5	Red brown to black fine to medium SAND, some fine to coarse gravel, some silt; wet @ 5.3'.
0.0		1.5'	10-12'	4,8,9,12	SW	10	Black fine(+) to medium SAND, trace coarse sand, trace fine to coase gravel; Well sorted.
0.0		2.0'	15-17'	4/9/35/100/5"	SW	15	Black fine SAND, trace fine to coarse gravel, well sorted, fining downward. Auger refusal @ 18'.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 4/23/90
Project Industri-Plex PDI	
Client Golder Associates	
Page 1	Of 1
Logged By L. McTiernan	
Well No. RB-4	
Loc. Woburn, MA	
M.P. Elevation 67.5'	
Drilling Started 4/19/90	Ended 4/19/90
Driller D.L. Maher	
Type Of Rig Hollow Stem Auger	

WELL DATA

Hole Diam. (in.)	10"
Final Depth (ft.)	11.5'
Casing Diam. (in.)	
Casing Length (ft.)	
Screen Setting (ft.)	
Screen Slot & Type	
Well Status	

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type	Split spoon
Hammer	140 lb.
Fall	30 in.

DEVELOPMENT

PID Hnu	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0		0.4'	0-2'	6,35,50,57	SM	0	Brown fine Sand and Silt, little organic material, trace fine to coarse gravel. Cuttings: reddish-purple sand and silt.
0		0.25'	5-7'	25,39,14,7	SM	5	Dark brown fine to medium SAND, some white and grey clay, lainated sand: stiff: wet. Cuttings: grey silt and clay, trace of fine to medium sand.
0		1.1'	10-12'	20,44,31,56	SP	10	Light to dark brown fine to coarse SAND, little silt, little fine to coarse gravel: wet. Auger refusal @ 11.5'.
						15	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 6/8/90	**WELL DATA**	**G W READINGS(1)**
Project Industri-Plex PDI		Hole Diam. (in.) 8"	Date / DTW MP(2) / Elev. W.T.
Client Golder Associates		Final Depth (ft.) 3.5'	
Page 1 of 1		Casing Diam. (in.)	
Logged By L. McTiernan		Casing Length (ft.)	
Well No. RB-5		Screen Setting (ft.)	
Loc. Woburn, MA		Screen Slot & Type	
M.P. Elevation 73.6'		Well Status	
Drilling Started 4/20/90	Ended 4/20/90	**SAMPLER**	**DEVELOPMENT**
Driller D.L. Maher		Type Split spoon	
Type Of Rig Hollow Stem Auger		Hammer 140 lb.	
		Fall 30 in.	

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
7.9 Back-ground =1.9	1	0.9	0-1.5'	8,45,50/1"	SP		Brown fine to medium SAND, trace fine to coarse Gravel, trace organic material.
							Auger refusal @ 2.5'.
2.9	2	0.5	2.5-3.5'	42,74	SP	5	Brown fine SAND, little silt, little fine to coarse Gravel. (angular fragments of gray rock).

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 6/8/90	**WELL DATA**	**G W READINGS(1)**
Project Industri-Plex PDI		Hole Diam. (in.) 8"	Date | DTW MP(2) | Elev. W.T.
Client Golder Associates		Final Depth (ft.) 12'	
Page 1 of 1		Casing Diam. (in.)	
Logged By L. McTiernan		Casing Length (ft.)	
Well No. RB-6		Screen Setting (ft.)	
Loc. Woburn, MA		Screen Slot & Type	
M.P. Elevation 72.3'		Well Status	
Drilling Started 4/20/90	Ended 4/20/90	**SAMPLER**	**DEVELOPMENT**
Driller D.L. Maher		Type Split spoon	
Type Of Rig Hollow Stem Auger		Hammer 140 lb.	
		Fall 30 in.	

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
3.7	1	0.6'	0-2'	14,35,38,21	SP		Brown medium to coarse SAND, and fine to coarse Gravel, trace organic material. Cuttings 0-5': Brown medium sands and Gravel, some large cobbles.
2.2	2	0.8'	5-7	1,1,1,1	SP	5	Brown fine to medium SAND, trace fine to coarse Gravel; Wet at bottom 0.2'.
2.3	3	1.0'	10-12'	12,29,30,51	SP	10	Brown fine to coarse SAND, some fine to coarse Gravel, trace Silt (Gravel is crushed sialic rock). Auger refusal @ 12'.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 4/23/90
Project Industri-Plex PDI
Client Golder Associates
Page 1 of 1
Logged By L. McTiernan
Well No. RB-7
Loc. Woburn, MA
M.P. Elevation 68.1'
Drilling Started 4/20/90 Ended 4/20/90
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10"
Final Depth (ft.) 16'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type Split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Hnu	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.2		1.3'	0-2'	4,4,1,5	SM$^{d}_{u}$	0	Orange-brown fine to medium SAND, some silt. Cuttings: Orange-brown sand and silt.
1.1		1.0'	5-7'	30,51,72	GM$^{d}_{u}$	5	Grey fine to coarse gravel and fine Sand and silt: wet.
0.0		0.9'	10-12'	12,32,27,35	SP	10	Grey-brown fine to coarse sand and fine to coarse gravel, little silt, very tight.
0.0		0.85'	15-16'	38, 90/4"	GW	15	Grey and pink fine to coarse GRAVEL (bedrock). Auger refusal @ 16'.
						20	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 4/23/90
Project Industri-Plex PDT	
Client Golder Associates	
Page 1	Of 1
Logged By L. McTiernan	
Well No. RB-8	
Loc. Woburn, MA	
M.P. Elevation 69.5	
Drilling Started 4/20/90	Ended 4/20/90
Driller D.L. Maher	
Type Of Rig Hollow Stem Auger	

WELL DATA

Hole Diam. (in.)	10"
Final Depth (ft.)	2'
Casing Diam. (in.)	
Casing Length (ft.)	
Screen Setting (ft.)	
Screen Slot & Type	
Well Status	

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type	Split spoon
Hammer	140 lb.
Fall	30 in.

DEVELOPMENT

PID Hou	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0		1.5'	0-2'	2,3,4,8	SW	0	Orange-brown fine to medium SAND. Auger refusal @ 2'.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 4/23/90	**WELL DATA**	**G W READINGS(1)**
Project Industri-Plex PDT		Hole Diam. (in.) 10"	Date / DTW MP(2) / Elev. W.T.
Client Golder Associates		Final Depth (ft.) 26'	
Page 1 of 1		Casing Diam. (in.)	
Logged By L. McTiernan		Casing Length (ft.)	
Well No. RB-9		Screen Setting (ft.)	
Loc. Woburn, MA		Screen Slot & Type	
M.P. Elevation 66.0'		Well Status	
Drilling Started 4/20/90	Ended 4/20/90	**SAMPLER** Type Split spoon	**DEVELOPMENT**
Driller D.L. Maher		Hammer 140 lb.	
Type Of Rig Hollow Stem Auger		Fall 30 in.	

Hnu	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0		1.6'	0-2'	2,5,9,9	SW	0	Orange to brown fine to medium(+) SAND, laminated at top
0		1.8'	5-7'	6,8,8,7	SW	5	Tan fine-medium to coarse SAND; wet. Cuttings: Orange and tan clean medium sand.
0		1.9'	10-12'	33,34,62,35	SW SP	10	Top 0.7':Grey fine-medium(+) to coarse SAND, little fine gravel. 0.7-1.2': Grey fine SAND, trace silt and clay. Bottom: Grey fine(+) to medium SAND and fine to coarse gravel
0		0.65'	15-16.5'	20,50,70	SP	15	Grey fine to coarse SAND, and fine to coarse gravel, trace silt.
		N.R.	20-22'			20	No recovery, Soft weathered bedrock.
			25-26			25	Fractured, weathered mafic rock (gabbro).

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date
Project Industri-Plex Site
Client Golder Assoiates
Page 1 Of
Logged By H. Hollister
Well No. RB-10
Loc. Woburn, Mass.
M.P. Elevation
Drilling Started 5/18/90 Ended 5/18/90
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 8"
Final Depth (ft.) 11
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type Split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
4.6		1.7	0-2'	7,7,8,7	SW	0	Top 0.2': Dark brown fine to medium SAND with organic material. Bottom: Light brown fine to medium(+) SAND.
1.3		1.4	5-7'	8,16,10,10	SW	5	Brown fine to medium(+) SAND; Wet.
0		0.7	10-11'	24,28	SP	10	Grey medium to coarse SAND and fine gravel, little coarse gravel; till.(Auger refusal).

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101 Date
Project Industri-Plex Site
Client Golder Associates
Page 1 Of 1
Logged By H. Hollister
Well No. RB-11
Loc. Woburn, Mass.
M.P. Elevation
Drilling Started 5/18/90 Ended 5/18/90
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 8"
Final Depth (ft.) 15
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type Split Spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.3		1.7	0-2	5,8,11,14	SW	0	Brown to red medium SAND; laminated dark brown and Iron Stained Sands.
0		1.4	5-7'	5,10,14,8	SW	5	Light brown fine to medium(+) SAND: moist.
0		0.9	10-11	26,50/1"	SP	10	Grey fine to medium SAND some fine to coarse gravel(till); wet.
		N.R.	15-15.3	50/3"		15	No recovery, auger refusal.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 5/23/90
Project Industri-Plex PDI	
Client Golder Associates	
Page 1 of 1	
Logged By L. McTiernan	
Well No. RB-12	
Loc. Woburn, MA	
M.P. Elevation 73.82	
Drilling Started 5/21/90	Ended 5/21/90
Driller D.L. Maher	
Type Of Rig Hollow Stem Auger	

WELL DATA

Hole Diam. (in.)	8"
Final Depth (ft.)	13"
Casing Diam. (in.)	
Casing Length (ft.)	
Screen Setting (ft.)	
Screen Slot & Type	
Well Status	

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type	Split spoon
Hammer	140 lb.
Fall	30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft)	SAMPLE DESCRIPTION
0.0	1	1.6"	0-2'	4,6,7,10	SW		Light brown medium SAND, trace fine Gravel.
0.0	2	1.5'	5-7'	7,10,15,27	SMd	5	Tan fine to medium SAND, little silt (silt in lense at 1.2-1.3'); fining downwards.
0.0	3	0.9"	10-12'	6,15,46/5"	SP	10	Brown to grey, fine to coarse SAND, and fine to coarse Gravel, trace(-) silt. Wet. Auger refusal @ 13'
						15	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 5/23/90
Project Industri-Plex PDT
Client Golder Associates
Page 1 of 1
Logged By L. McTiernan
Well No. RB-13
Loc. Woburn, mA
M.P. Elevation 73.02
Drilling Started 5/21/90 Ended 5/21/90
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 8"
Final Depth (ft.) 14"
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type Split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0	1	1.6	0-2'	2,7,5,6	SP		Light to dark brown, fine to medium (+) SAND, trace silt, trace organic material.
0.4	2	1.3'	5-7'	4,6,9,10	SP	5	Light brown to grey fine to medium SAND, trace(-) fine Gravel. Moist.
3.5 Back ground PID= 3.0	3	2.0'	10-12'	10,22,22, 50/5'	SP	10	Light brown medium to coarse SAND, and fine(+) to coarse Gravel.
							Auger refsal @ 14'.
						15	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 5/23/90
Project Industri-Plex PDI
Client Golder Associates
Page 1 of 1
Logged By L. McTiernan
Well No. RB-14
Loc. Woburn, MA
M.P. Elevation 73.32
Drilling Started 5/21/90 Ended 5/21/90
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 8"
Final Depth (ft.) 12.5'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type Split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
5.8	1	1.3'	0-2'	3,3,2,3	SP		Dark brown to black fine to medium SAND, trace yellow clay, trace organic material. (Yellow clay in layers at 0.1', 1.0', & 1.2')
4.0	2	1.4'	5-7'	3,6,6,10	SW	5	Brown medium SAND, well-sorted, Moist.
3.3	3	2.0'	10-12'	8,18,22, 50/4"	SW SW	10	0-1.0' Brown medium SAND 1.0-2.0' Gray fine(+) to medium SAND Auger refusal @ 12.5'
						15	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 5/23/90	**WELL DATA**	**G W READINGS(1)**
Project Industri-Plex PDI		Hole Diam. (in.) 8"	Date / DTW MP(2) / Elev. W.T.
Client Golder Associates		Final Depth (ft.) 12'	
Page 1 of 1		Casing Diam. (in.)	
Logged By L. McTiernan		Casing Length (ft.)	
Well No. RB-15		Screen Setting (ft.)	
Loc. Woburn, MA		Screen Slot & Type	
M.P. Elevation 70.94		Well Status	
Drilling Started 5/21/90	Ended 5/21/90	**SAMPLER** Type Split spoon	**DEVELOPMENT**
Driller D.L. Maher		Hammer 140 lb.	
Type Of Rig Hollow Stem Auger		Fall 30 in.	

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
4.5	1	1.5'	0-2'	3,5,6,7	SM SW		0-1.0' Dark brown fine organic SAND trace silt and clay. Moist. 1.0-1.5' Tan medium SAND, well-sorted.
4.0	2	1.9'	5-7'	7,13,17,25	SW	5	Brown to gray fine to medium SAND, trace(organic horizon at 0.6', separates browner, slightly coarser sands from grayer, slightly finer sands below).
3.6	3	1.4'	10-12'	1,4,8,50	SW SP	10	Brown to gray medium SAND, little fine to coarse Gravel (well-rounded and restricted to gray sand zone).

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 5/23/90	**WELL DATA**	**G W READINGS(1)**
Project Industri-Plex PDI		Hole Diam. (in.) 8"	Date / DTW MP(2) / Elev. W.T.
Client Golder Associates		Final Depth (ft.) 10.5'	
Page 1 of 1		Casing Diam. (in.)	
Logged By L. McTiernan		Casing Length (ft.)	
Well No. RB-16		Screen Setting (ft.)	
Loc. Woburn, Mass		Screen Slot & Type	
M.P. Elevation 71.74		Well Status	
Drilling Started 5/22/90 Ended 5/22/90		**SAMPLER** Type split spoon	**DEVELOPMENT**
Driller D.L. Maher Company		Hammer 140 lb.	
Type Of Rig Hollow Stem Auger		Fall 30 in.	

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0	1	1.3'	0-2'	4,4,8,8	SP		Dark brown to orange-brown fine to medium SAND, trace fine Gravel, trace organic material; moist.
—	2	NR	5-5.5'	50/5"	—	5	Angular fragments of gray rock.
0	3	0.3'	10-10.25	50/3"	SM^{d}_{u}	10	Brown to black fine to medium SAND, little Silt, little fine Gravel. (Black Silt and Gravel together at base - very tight). Auger refusal at 10.5'.
						15	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 5/23/90
Project Industri-Plex PDI
Client Golder Associates
Page 1 Of 1
Logged By L. McTiernan
Well No. RB-17
Loc. Woburn, Mass
M.P. Elevation 73.64
Drilling Started 5/22/90 Ended 5/22/90
Driller D.L. maher Company
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 8"
Final Depth (ft.) 10.5'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0	1	1.6'	0-2'	1,6,8,10	SM		Light to dark brown (with red blotches) fine to medium SAND, little Silt, trace fine to coarse Gravel, trace organic materials.
0.0	2	1.7'	5-7'	3,4,5,8	SW	5	Brown to Black fine to medium SAND (finer, black sands in layers at 0.6- 0.7' and 1.55-1.7'); Wet.
0.0	3	1.1'	10-10.5'	6.50/0"	SW	10	Black fine (+) to medium, micaceous SAND; fining downwards. Auger refusal at 10.5'.
						15	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 15101Y	Date 5/23/90	**WELL DATA**	**G W READINGS(1)**
Project: Industri-Plex PDI		Hole Diam. (in.) 8"	Date / DTW MP(2) / Elev.W.T.
Client: Golder Associates		Final Depth (ft.) 33'	
Page 1 of 1		Casing Diam. (in.)	
Logged By L. McTiernan		Casing Length (ft.)	
Well No. RB-18		Screen Setting (ft.)	
Loc. Woburn, MA		Screen Slot & Type	
M.P. Elevation 65.39		Well Status	
Drilling Started 5/22/90 Ended 5/22/90		**SAMPLER**	**DEVELOPMENT**
Driller D.L. Maher		Type Split spoon	
Type Of Rig Hollow Stem Auger		Hammer 140 lb.	
		Fall 30 in.	

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0	1	0.4'	0-2'	2,6,50/4"	GP		Gray fine to coarse GRAVEL, some fine to coarse sand, some silt (Till).
0.0	2	1.4'	5-7'	1,6,9,19	SP	5	Gray-brown to orange-brown fine to medium(+) SAND, little fine to coarse Gravel (Till); Fining downwards; Wet.
0.0	3	0.8'	10-11.5'	16,45,50/4"	SP	10	Gray brown fine to coarse SAND, some fine(+) to coarse Gravel (Till)
0.0	4	1.6'	15-17'	3,3,12,13	GW	15	Orange-gray fine(+) to coarse GRAVEL, some medium to coarse Sand. (Sand in layer at 0.2- 0.5').
0.0	5	1.0'	20-22'	11,13,15,22	SP	20	Orange-gray fine to coarse SAND, and fine(+) to coarse Gravel Till); Coarsening downward.
0.0	6	1.5'	26-28'	15,44,33,38	SMd	25	Gray-brown fine to coarse SAND and fine to coarse Gravel, little Silt; very tight (Till).
0.0	7	1.2'	31-33'	19,50,60, 100/5"	SMd	30	Auger refusal at 33'. Gray-brown fine to coarse Gravel little Silt. Very tight (Till).

REMARKS: (1) In feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 5/23/90
Project: Industri-Plex PDI
Client: Golder Associates
Page 1 of 1
Logged By: L. McTiernan
Well No. RB-19
Loc. Woburn, MA
M.P. Elevation 70.34
Drilling Started 5/23/90 Ended 5/23/90
Driller D.L. Maher
Type Of Rig Hollow stem Auger

WELL DATA
Hole Diam. (in.) 8"
Final Depth (ft.) 4.5'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER
Type Split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
—	1	—	0-2'	12,12,8,20	SP	5	Dark brown medium to coarse SAND and fine to coarse Gravel, trace organic material (Till). Cuttings 0-4.5': Brown medium to coarse SAND and Gravel, some small cobbles. Auger refusal @ 4.5'.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 5/23/90
Project Industri-Plex PDI
Client Golder Associates
Page 1 of 1
Logged By L. McTiernan
Well No. RB-20
Loc. Woburn, MA
M.P. Elevation 67.34
Drilling Started 5/23/90 Ended 5/23/90
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 8"
Final Depth (ft.) 7'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type Split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
					SP		Cuttings 0-5' Brown sand, gravel, and small cobbles, mostly well-rounded.
0.0	1	0.4'	5-7'	15,21,28,46	SMd	5	Auger refusal at 7'. Gray fine to coarse SAND, and fine to coarse Gravel, little silt (Till). Tight: wet.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 5/23/90
Project Industri-Plex PDI
Client Golder Associates
Page 1 of 1
Logged By L. McTiernan
Well No. RB-21
Loc. Woburn, MA
M.P. Elevation 70.44
Drilling Started 5/23/90 Ended 5/23/90
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA
Hole Diam. (in.) 8"
Final Depth (ft.) 21.5'
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER
Type Split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

PID	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0	1	1.8'	5-7'	2,3,8,8	SW	5	Brown fine to medium SAND, coarsening downwards. Moist
0	2	2.0'	10-12'	10,30,21,47	SP	10	Gray to brown, fine to medium (+) SAND, little fine to Gravel. Fining downwards (Ground occurs as crushed rock in bottom half).
0	3	1.6'	15-17'	36,70,60,60	SMd	15	Gray-brown fine to coarse Sand, and fine to coarse Gravel, some Silt
0	4	0.8'	20-21.5'	21,44,100/5"	SMd	20	Gray-brown fine to coarse Sand, and fine to coarse Gravel, little Silt. Tight. Auger refusal at 21 feet.
						25	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

PROJECT: INDUSTRI-PLEX

PROJECT LOCATION: WOBURN

PROJECT NUMBER: 893-6255

RECORD OF BOREHOLE 6 (OW-31)

BORING DATE: 05/24/90

BORING LOCATION: N: 564,646
E: 696,796

SHEET: 1 OF 1

DATUM: MSL

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV / DEPTH	SAMPLES: NUMBER	TYPE	BLOWS / 6 in	N	REC/ATT	PENETRATION RESISTANCE BLOWS/FT (10 20 30 40 50 60 70 80 90) / WATER CONTENT, PERCENT (Wp, W, Wl; 10 20 30 40 50 60 70 80 90)	PIEZOMETER OR STANDPIPE INSTALLATION
					71.30							
0		0.0-6.0 ft. Very soft, dark gray, CLAYEY SILT, some f-sand, slight organic odor, possible hairs at 0.0-2.0 ft., (ML to OL). Water encountered at approximately 2.0 ft.	ML to OL		0.00	1	DO	1,0,1,0	1	45		
						2	DO	1,0,1,0	1	50		
5						3	DO	1,0,0,0	0	0		
					65.30							
		6.0-14.0 ft. Compact, olive to medium gray, m-f SAND, little silt, (SP-SM). OUTWASH SAND.	SP-SM		6.00	4	DO	5,7,11,13	18	70		
						5	DO	4,9,11,12	20	65		
10						6	DO	3,7,8,11	15	65		
						7	DO	7,10,12,15	22	50		
					57.30							
		BORING TERMINATED AT 14.0 FT. BELOW GROUND SURFACE.			14.00							
15												
20												
25												
30												
35												
40												

DRILL RIG: Mobile B-57 ATV

DRILLING CONTRACTOR: Geologic

DRILLER: T. Paquette

LOGGED: RJI

CHECKED: JEW

DATE: 05/31/90

Golder Associates

PROJECT: INDUSTRI-PLEX

PROJECT LOCATION: WOBURN

PROJECT NUMBER: 893-6255

RECORD OF BOREHOLE 14 (OW-32)

BORING DATE: 05/23/90

BORING LOCATION: N: 554,559
E: 696,063

SHEET: 1 OF 1

DATUM: MSL

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV / DEPTH	SAMPLES: NUMBER	TYPE	BLOWS / 6 in	N	REC/ATT	PENETRATION RESISTANCE BLOWS/FT (10 20 30 40 50 60 70 80 90) / WATER CONTENT, PERCENT (Wp, W, Wl; 10 20 30 40 50 60 70 80 90)	PIEZOMETER OR STANDPIPE INSTALLATION
0					71.70 / 0.00							
		0.0-6.0 ft. Loose to dense, dark yellowish-brown becoming dark gray, c-f SAND, trace f-gravel, little to some silt, (SW). OUTWASH SAND. Slight organic odor at 4 to 6 ft. Water encountered at approximately 2.0 ft.	SW			1	DO	3,10,8,5	18	45		
						2	DO	5,6,7,10	13	15		
5						3	DO	5,4,2,4	6	65		
		6.0-8.3 ft. Dense, grey, f-GRAVEL and m-f SAND, little silt, (GP-SP). GLACIAL TILL.	GP-SP		65.70 / 6.00	4	DO	3,14,17,100	31	60		
		BORING TERMINATED AT 8.3 FT. BELOW GROUND SURFACE.			63.40 / 8.30	5	DO	100/.3'	>100	20		
10		NOTES: 1.) Auger refusal was encountered at 7.5 ft. depth. The drill rig was moved 9.0 ft. and the borehole redrilled to 8.3 ft. depth, where spoon refusal occurred.										
15												
20												
25												
30												
35												
40												

DRILL RIG: Mobile B-57 ATV

DRILLING CONTRACTOR: Geologic

DRILLER: T. Paquette

LOGGED: RJI

CHECKED: JEW

DATE: 05/31/90

Golder Associates

APPENDIX B

Geologic Logs
Phase 2

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No.	16101Y	Date	9/18/90
Project	IndustriPlex Site PDI		
Client	Golder Associates, Inc		
Page	1 of 1		
Logged By	H. Gregory		
Well No.	OW-36		
Loc.	Woburn, MA		
M.P. Elevation	74.86'		
Drilling Started	9/18/90	Ended	
Driller	D.L. Maher		
Type Of Rig	Hollow Stem Auger		

WELL DATA

Hole Diam. (in.)	10"
Final Depth (ft.)	12.9
Casing Diam. (in.)	4
Casing Length (ft.)	5.2
Screen Setting (ft.)	2.7-12.9
Screen Slot & Type	10 slot PVC
Well Status	

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type	Splitspoon
Hammer	140 lb.
Fall	30 in.

DEVELOPMENT

HNU	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0		1.8	0-2'	2,3,3,4	SP	0	Red-brown fine(+) to medium SAND, little Silt, trace black cinder. 1" brown sand seam at 0.5'
0.0		1.6	5-7'	2,2,5,7	SW	5	Black fine SAND, well sorted; wet.
0.0		2.0	10-12'	6,10,14,50	SW	10	Grey medium to fine SAND, well sorted fining downward; wet.
			13'	50/3"			No recovery, auger refusal.
			15-15.3'	100/3"	Bedrock	15	fine to coarse GRAVEL (bedrock).
						20	
		0.5	22-25'				Dark grey gneiss badly fractured filled with sand, weathered.
						25	
						30	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 9/20/90
Project Industri-Plex Site
Client Golder Associates
Page 1 Of 1
Logged By H. Gregory
Well No. OW-37
Loc. Woburn, Mass
M.P. Elevation 72.60'
Drilling Started 9/20/90 Ended
Driller D.L. Maher Company
Type Of Rig Hollow Stem Auger

WELL DATA
Hole Diam. (in.) 10"
Final Depth (ft.) 15.72
Casing Diam. (in.) 4
Casing Length (ft.) 7.98'
Screen Setting (ft.) 5.52-15.72
Screen Slot & Type 10 slot PVC
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER
Type split spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

HNU	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0		1.0	0-2'	2,3,3,4	OL	0	Top 0.6': Brown organic SILT Bottom 0.4': sand and cinder; wet at tip.
0.0		1.0	5-7'	1,1,1,3	CL SW	5	Top 0.2': Light grey soft clay. Bottom 0.8': Black to brown medium SAND, fining downward; wet.
0.0		2.0	10-12'	5,9,9,18	SW	10	Top 1.2': brown medium SAND. Bottom 0.8': brown fine SAND, well sorted.
0.0		1.0	15-16.5'	4,17,80	SW SP	15	Top 0.5': Brown fine SAND. Bottom 0.5': Brown medium SAND, some coarse angular gravel.
0.0		1.0	20-22'	15,40,60,53	SP	20	Top 0.5': Brown to red brown medium to coarse SAND, some fine gravel. Bottom 0.5': Red brown medium to coarse Sand and fine to coarse angular gravel.
0.0		0.8	25-27'	4,14,45,80	SP	25	Brown medium to fine SAND some coarse gravel, little silt, very tight; wet, poorly sorted.
		3.0	31.3-34.3	100%recovery	Bedrock	30	Auger refusal at 29.5' (bedrock) Grey green medium grain Gabbro oblique and horizontal fractures filled with sand, weathered bedrock

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC.

GEOLOGIC LOG

Study No. 16101Y Date 10/23/90
Project IndustriPlex Site PDI
Client Golder Associates, Inc.
Page 1 of 2
Logged By H. Gregory
Well No. OW-38
Loc. Woburn, MA
M.P. Elevation 71.40'
Drilling Started 10/2/90 Ended
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 12"
Final Depth (ft.) 15.5
Casing Diam. (in.) 4
Casing Length (ft.) 7.5
Screen Setting (ft.) 5.5-15.5
Screen Slot & Type 10 slot PVC
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type Splitspoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

HNU	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
1.1		0.9	0-2'	18,15,14,20	SW	0	Top 0.3': Green-brown fine SAND, some white ash. Middle 0.3': Brown fine to medium SAND. Bottom 0.3': Multicolored dark brown red to black fine to medium SAND.
5.9		0.3	5-6'	34,35	SW	5	Brown to black fine to medium SAND little fine gravel, bottom 0.1 saturated in oil.
1.3		2.0	10-12'	3,3,5,8	SW	10	Top: 1.2': Grey-white fine SAND, well sorted. Bottom 0.8': Tan fine SAND; wet.
1.2		1.5	15-17'	6,8,8,13	SW	15	Grey-white fine SAND, thin laminated black sand; wet.
1.1		1.5	20-22'	6,10,17,39	SP	20	Top 0.4': Grey-white fine SAND. Middle 0.7': tan fine SAND, little silt; tight. Bottom 0.4': Tan fine SAND, little silt, little fine to coarse gracel.
1.3		0.9	25-27'	3,8,5,12	SW	25	Light tan fine SAND, little silt; tight; wet.
						30	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 10/23/90	**WELL DATA**	**G W READINGS(1)**
Project IndustriPlex Site PDI		Hole Diam. (in.) 12"	Date / DTW MP(2) / Elev. W.T.
Client Golder Associates, Inc.		Final Depth (ft.) 15.5'	
Page 2 of 2		Casing Diam. (in.) 4"	
Logged By H. Gregory		Casing Length (ft.) 7.5	
Well No. OW-38		Screen Setting (ft.) 5.5-15.5	
Loc. Woburn, MA		Screen Slot & Type 10 slot PVC	
M.P. Elevation 71.40'		Well Status	
Drilling Started 10/2/90	Ended	**SAMPLER**	**DEVELOPMENT**
Driller D.L. Maher		Type Splitspoon	
Type Of Rig Hollow Stem Auger		Hammer 140 lb.	
		Fall 30 in.	

HNU	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
					Bedrock		Auger refusal @ 33.5'
		1.5	35.5-38.5	50%recovery		35	Grey-green medium Gabbro, pyrite accessory vertical and oblique fractures weathered fractures filled with fine gravel or quartz.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No.	16101Y
Date	10/22/90
Project	IndustriPlex Site PDI
Client	Golder Associates, Inc.
Page	1 of 2
Logged By	B. Thomas
Well No.	OW-39
Loc.	Woburn, MA
M.P. Elevation	74.14'
Drilling Started	9/26/90
Ended	9/27/90
Driller	D.L. Maher
Type Of Rig	Hollow Stem Auger

WELL DATA

Hole Diam. (in.)	10"
Final Depth (ft.)	15.1
Casing Diam. (in.)	2
Casing Length (ft.)	7.1'
Screen Setting (ft.)	5.1-15.1'
Screen Slot & Type	10 slot PVC
Well Status	

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type	Splitspoon
Hammer	140 lb.
Fall	30 in.

DEVELOPMENT

HNU	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0		1.7	0-2'	4,4,4,10	OL SP	0	Top 0.2': Orange brown fine sand and silt; roots. Middle 0.7': light brown to grey fine SAND, some silt, little wood fibers. Bottom 0.8': Black fine SAND hides, pungent H_2S odor.
0.0		1.4	5-7'	3,5,7,8	SP	5	Black fine SAND, some silt, some hide; wet @ bottom 0.2'.
0.0		1.3	10-12'	2,7,7,8	SW	10	Grey to grey brown fine-medium SAND; wet.
						15	No samples collected.
0.0		1.4	20-22'	5,6,10,13	SP	20	Grey-black fine SAND, some silt; odorous.
0.0		1.1	25-27'	25,36,41,53	SP	25	Grey fine sand and silt, some(+) coarse gravel; tight.
					Bedrock		Auger refusal @ 28.0'
						30	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 10/22/90
Project IndustriPlex Site PDI
Client Golder Associates, Inc
Page 2 of 2
Logged By B. Thomas
Well No. OW-39
Loc. Woburn, MA
M.P. Elevation 74.14'
Drilling Started 9/26/90 Ended 9/27/90
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10"
Final Depth (ft.) 15.1
Casing Diam. (in.) 2
Casing Length (ft.) 7.1
Screen Setting (ft.) 5.1-15.1
Screen Slot & Type 10 slot PVC
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T

SAMPLER

Type Splitspoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	1.8	34.5-37.5	60%recovery		35	Grey-green medium grain Gabbro oblique fractures filled with sand; weathered.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 10/22/90
Project IndustriPlex Site PDI
Client Golder Associates, Inc.
Page 1 Of 1
Logged By B. Thomas
Well No. OW-40
Loc. Woburn, MA
M.P. Elevation 71.64'
Drilling Started 9/28/90 Ended
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10"
Final Depth (ft.) 17.0
Casing Diam. (in.) 4
Casing Length (ft.) 9.5
Screen Setting (ft.) 7.0-17.0
Screen Slot & Type 10 slot PVC
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type Splitspoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

HNU	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0		1.6	0-2	3,3,5,7	SC	0	Brown fine-medium SAND, some white clay, little brown silt; roots cuttings: Brown fine-medium Sand and white clay.
					SC		
0.0		1.0	5-7'	2,3,4,5	CL	5	Top 0.5': White CLAY soft little red fine sand; laminated.
					SP		Middle 0.2': Black fine-medium SAND. Bottom 0.3': red medium SAND, trace fine gravel.
					CL		Cuttings:grey-white CLAY,some brownSA
0.0		1.2	10-12'	4,12,15,21	SW	10	Brown medium SAND; iron stained laminated; wet.
0.0		1.5	15-17'	4,6,6,6	SW	15	Grey fine(+) to medium SAND, well sorted; wet.
0.0		1.1	20-22'	2,4,8,7	SW	20	Grey-brown fine-medium SAND; loose.
0.0		0.8	25-27'	2,2,5,12	SW	25	Grey-brown fine-medium SAND, little silt, little clay seam near bottom; fining downward.
					Bedrock		Auger refusal @ 27.5'
		3.0	31.5-34.5'	100%recovery		30	Grey-green medium grain Gabbro some oblique and vertical fractures filled with Calcite or Sand; weathered.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y	Date 10/28/90	**WELL DATA**	
Project IndustriPlex Site PDI		Hole Diam. (in.) 10	
Client Golder Associates, Inc.		Final Depth (ft.) 16.00	
Page 1 of 1		Casing Diam. (in.) 4	
Logged By B. Thomas		Casing Length (ft.) 5.8	
Well No. OW-41		Screen Setting (ft.) 5.8-16.00	
Loc. Woburn, MA		Screen Slot & Type 10 slot PVC	
M.P. Elevation 66.95'		Well Status	
Drilling Started 10/3/90	Ended	**SAMPLER**	
Driller D.L. Maher		Type Splitspoon	
Type Of Rig Hollow Stem Auger		Hammer 140 lb.	
		Fall 30 in.	

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

DEVELOPMENT

HNU	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
			0-0.5'			0	Asphalt
0.0		1.6	1-3'	10,20,27,14	SW SP		Top 0.2': Brown medium-coarse SAND. Bottom 1.4': Black fine SAND, some silt, little fine gravel, H_2S odor. Cuttings: Black fine SAND, some coarse gravel.
0.0		1.1	5-7'	12,5,5,6	SW	5	Black fine SAND, moist near bottom. Cuttings: Black fine SAND, little coarse gravel wet @ 8.0'.
0.0		1.5	10-12'	2,3,2,5	SW	10	Same as above.
0.0		1.5	15-17'	2,2,2,3	SW	15	Same as above; very strong odor.
0.0		1.3	20-22'	2,4,3,26	SMu[d]	20	Black fine SAND, some silt some coarse gravel and grey clay in tip; dry.
17.8		1.3	25-27'	8,19,22,70	OL Bedrock	25	Grey-black SILT, some fine sand, little coarse gravel; moist. Auger refusal @ 27.0' (bedrock)
		3.0	29-32'	100%recovery		30	Grey-green medium grain Gabbro, oblique fractures weathered, silt in fractures.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 16101Y Date 10/25/90
Project IndustriPlex Site PDI
Client Golder Associates, Inc.
Page 1 Of 1
Logged By H. Gregory
Well No. OW-42
Loc. Woburn, MA
M.P. Elevation 69.80'
Drilling Started 10/5/90 Ended 10/7/90
Driller D.L. Maher
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 12"
Final Depth (ft.) 34.0
Casing Diam. (in.) 4
Casing Length (ft.) 26.3
Screen Setting (ft.) 23.8-34.0
Screen Slot & Type 10 slot PVC
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type Splitspoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

HNU±	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
0.0		1.7	0-2'	3,4,8,12	SP SW	0	Top 1.4': Dark brown fine SAND, silt some roots. Bottom 0.3': Tan fine SAND.
0.0		1.7	5-7'	4,2,3,3	SW	5	Brown fine SAND, little fine gravel, laminated brown fine sand and silt with organic material.
0.0		1.9	10-12'	3,5,4,5	SW	10	Tan-white fine to coarse SAND. Bottom 1.8': White fine SAND orange stained laminated Sand; well sorted.
0.0		1.5	15-17'	4,7,6,7	SW	15	White fine SAND, little silt, well sorted; wet.
0.0		1.6	20-22'	2,4,6,6	SW	20	Tan fine SAND, laminated; wet.
0.0		1.4	25-27'	5,14,20,29	SW	25	Tan fine SAND, laminated.
9.0			30-32'	3,6,10,14	SW	30	Grey fine SAND. strong odor methane gas emissions in borehole.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

APPENDIX C

Grain Size Data

Golder Associates Inc.
CONSULTING ENGINEERS

May 25, 1990 Project No.: 893-6125.10

Roux Associates
775 Park Avenue
Suite 255
Huntington, NY 11743

Attn: Brian Thomas

Gentlemen:

As requested, we have performed geotechnical testing on the soil samples you shipped to us. The samples were taken by others and received in our Mt. Laurel testing facility on May 2, 1990 via overnight courier and were contained within glass sampling jars, inside a cooler.

Testing for particle size distribution began on May 4, 1990 and was completed on May 19, 1990. Analysis for coarse fragments (sands and gravels) was performed in accordance with ASTM methods D-421 and D-422 (Mechanical Sieving), with percentage determination of silts and clays using the same ASTM methods (Hydrometer Analysis). As all the samples were retrieved using a split spoon sampler, some contained oversized particles in relation to the total sample size, and these particles were removed from the tested portion. These are samples ATB #2 (20-22), ATB #15 (30-32) and (85-87), each of which contained one or more +3/4" fragments.

The results of these analysis were transmitted to you via facsimile machine on May 21, 1990 and are presented graphically on the attached pages. Your cooler and the remaining samples will be returned to you and if you have any questions, or require additional tests, please feel free to call.

Very truly yours,

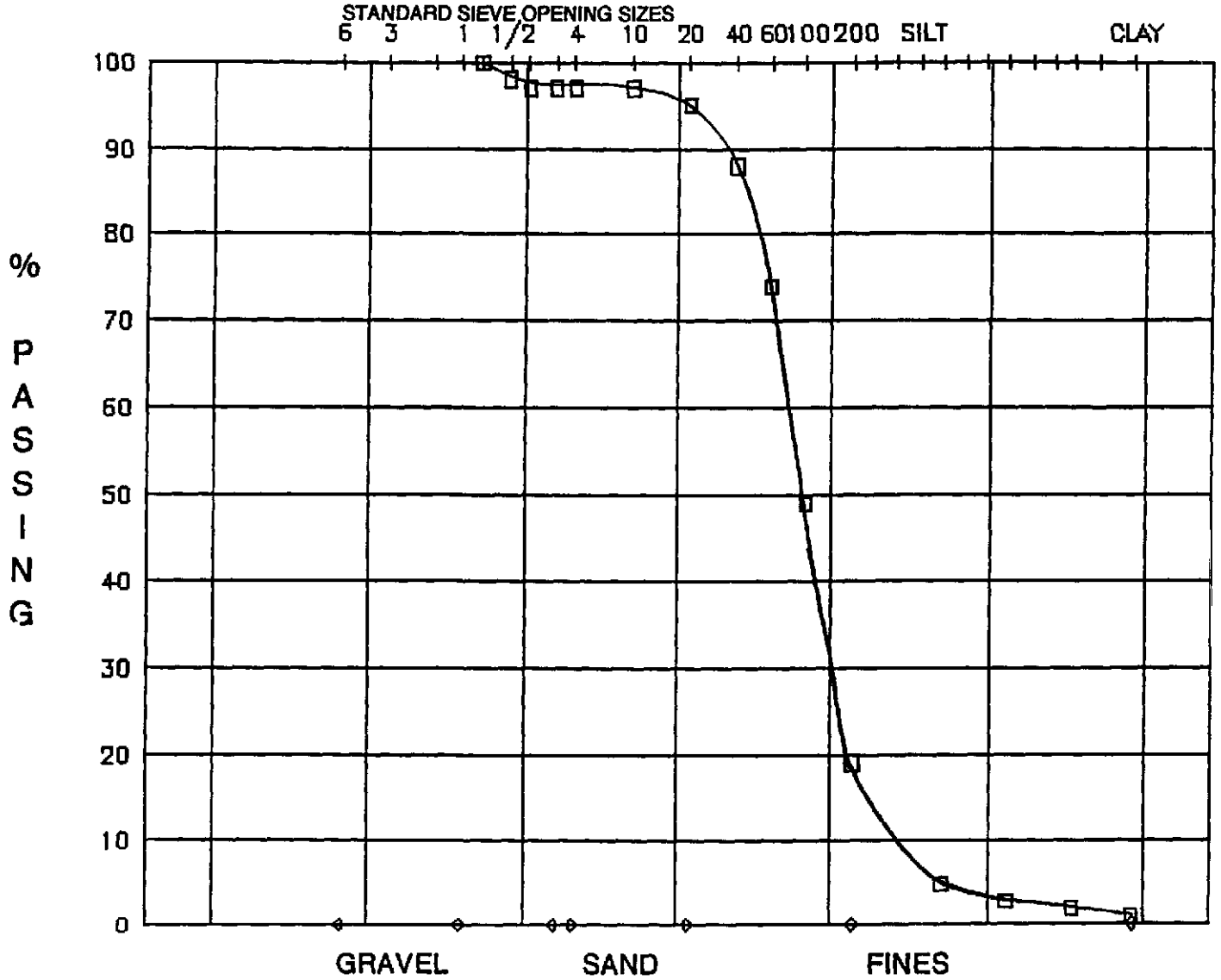
GOLDER ASSOCIATES INC.

Thomas M. Stoops
Laboratory Manager

Pedro C. Repetto
Senior Project Manager

TMS/PCR/drs
D:BT052590
Attachments

PARTICLE SIZE DISTRIBUTION
MECHANICAL AND HYDROMETER ANALYSIS
ASTM D-421 AND 422



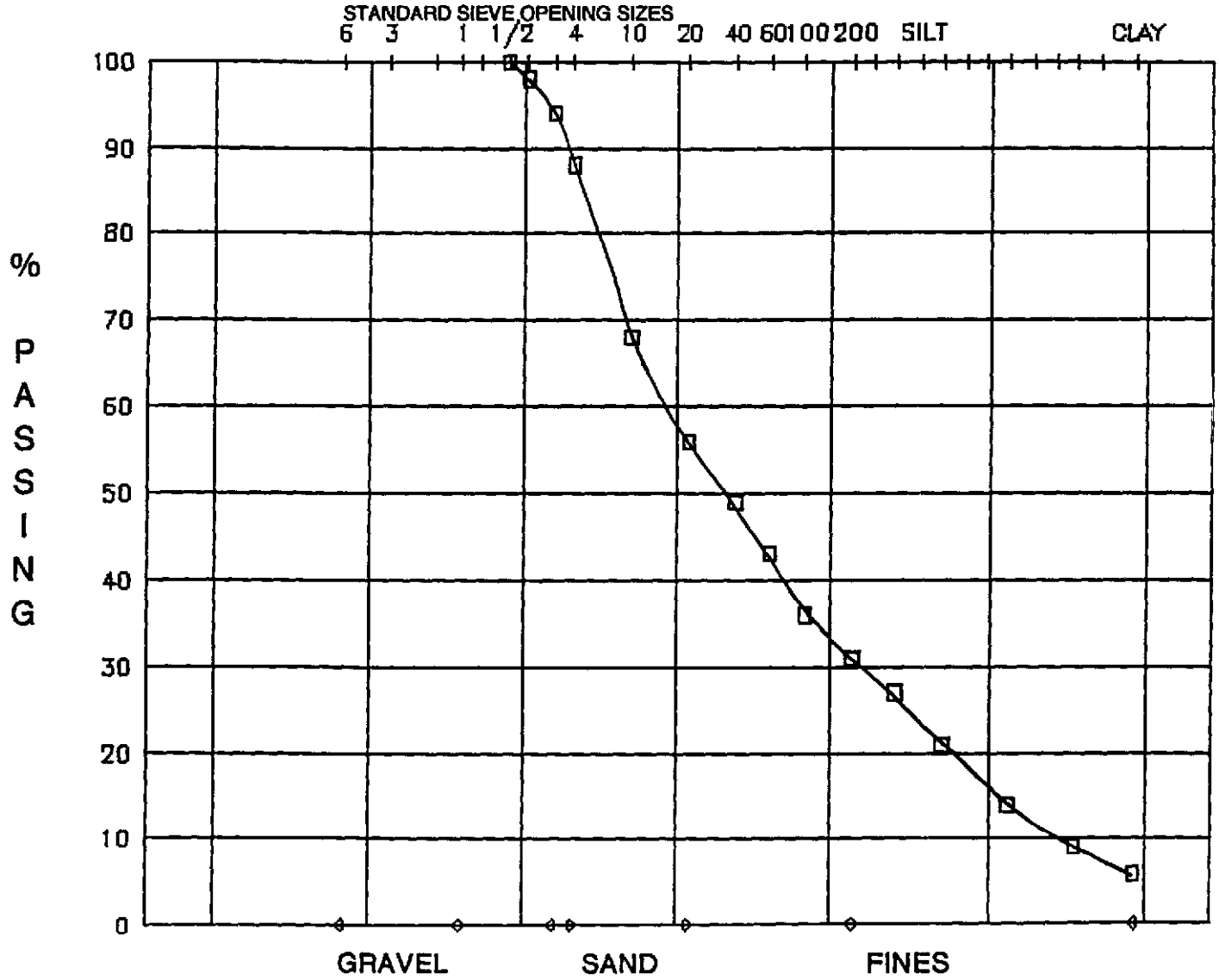
SAMPLE IDENTITY	Wn%	WL	WP	IP	DESCRIPTION
ATB-2	19.7	NR	NR	NR	Greenish grey,dark yellowish orange f SAND,some fines, trace f gravel

ROUX/ISRT/MA

893-6125.10

GOLDER ASSOCIATES
Consulting Engineers

PARTICLE SIZE DISTRIBUTION
MECHANICAL AND HYDROMETER ANALYSIS
ASTM D-421 AND 422



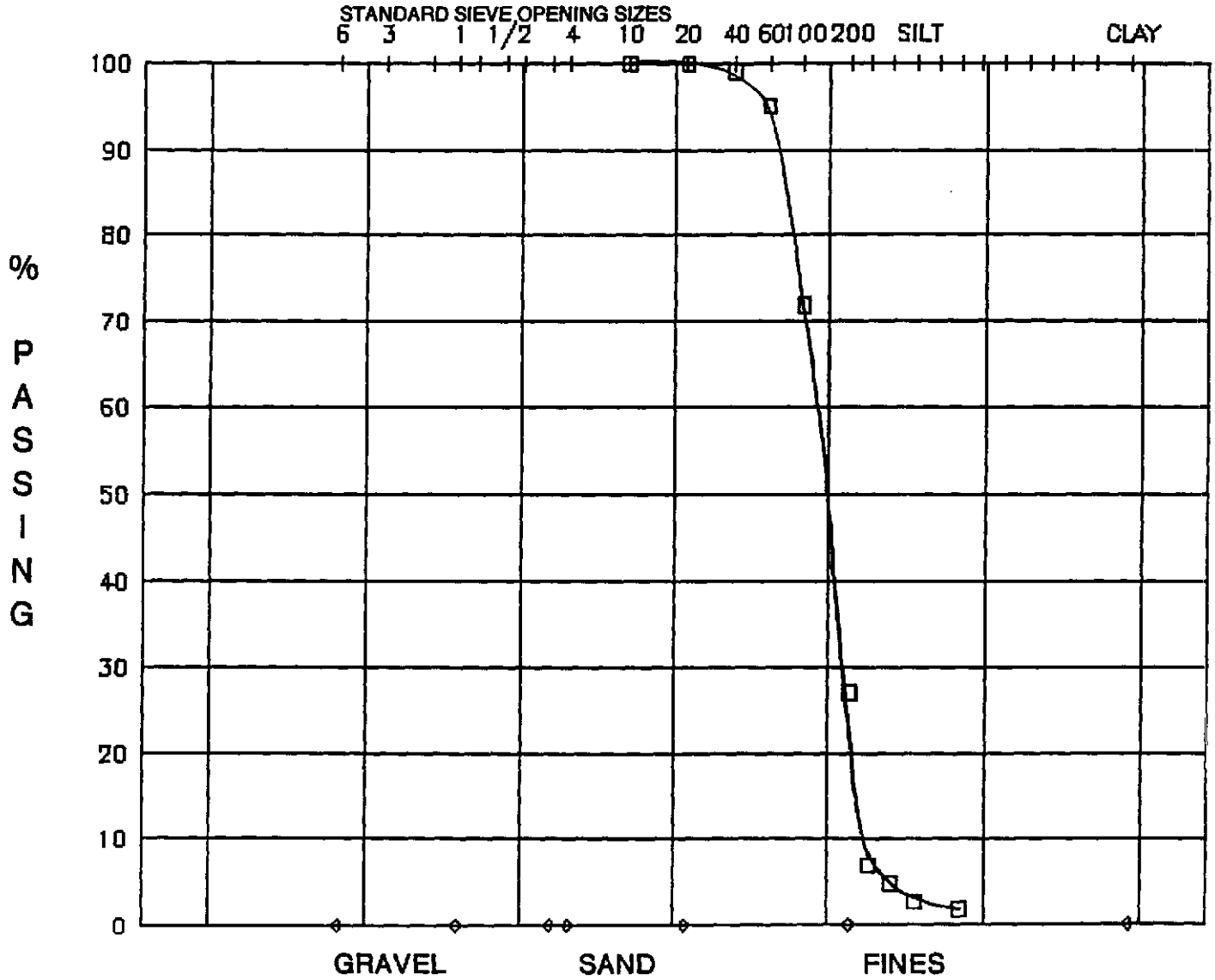
SAMPLE IDENTITY	Wn%	WL	WP	IP	DESCRIPTION
ATB-3 (40'-42')	11.9	NR	NR	NR	Dark greenish grey c-f SAND and FINES, little f gravel

ROUX/ISRT/MA

893-6125.10

GOLDER ASSOCIATES
Consulting Engineers

PARTICLE SIZE DISTRIBUTION
MECHANICAL AND HYDROMETER ANALYSIS
ASTM D-421 AND 422



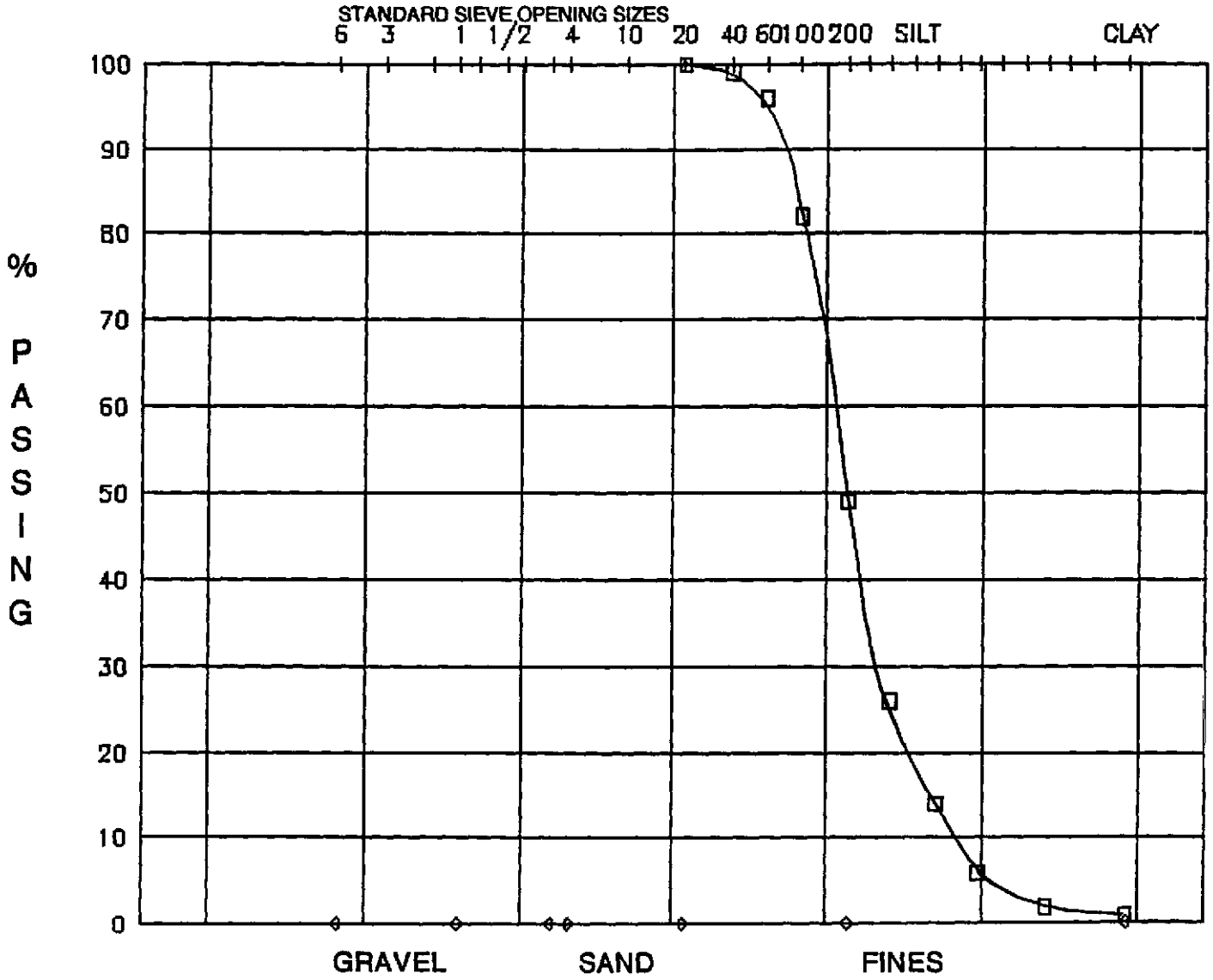
SAMPLE IDENTITY	Wn%	WL	WP	IP	DESCRIPTION
ATB-4 (10'-12')	23.6	NR	NR	NR	Pale yellowish brown f SAND, some fines

ROUX/ISRT/MA

893-6125.10

GOLDER ASSOCIATES
Consulting Engineers

PARTICLE SIZE DISTRIBUTION
MECHANICAL AND HYDROMETER ANALYSIS
ASTM D-421 AND 422



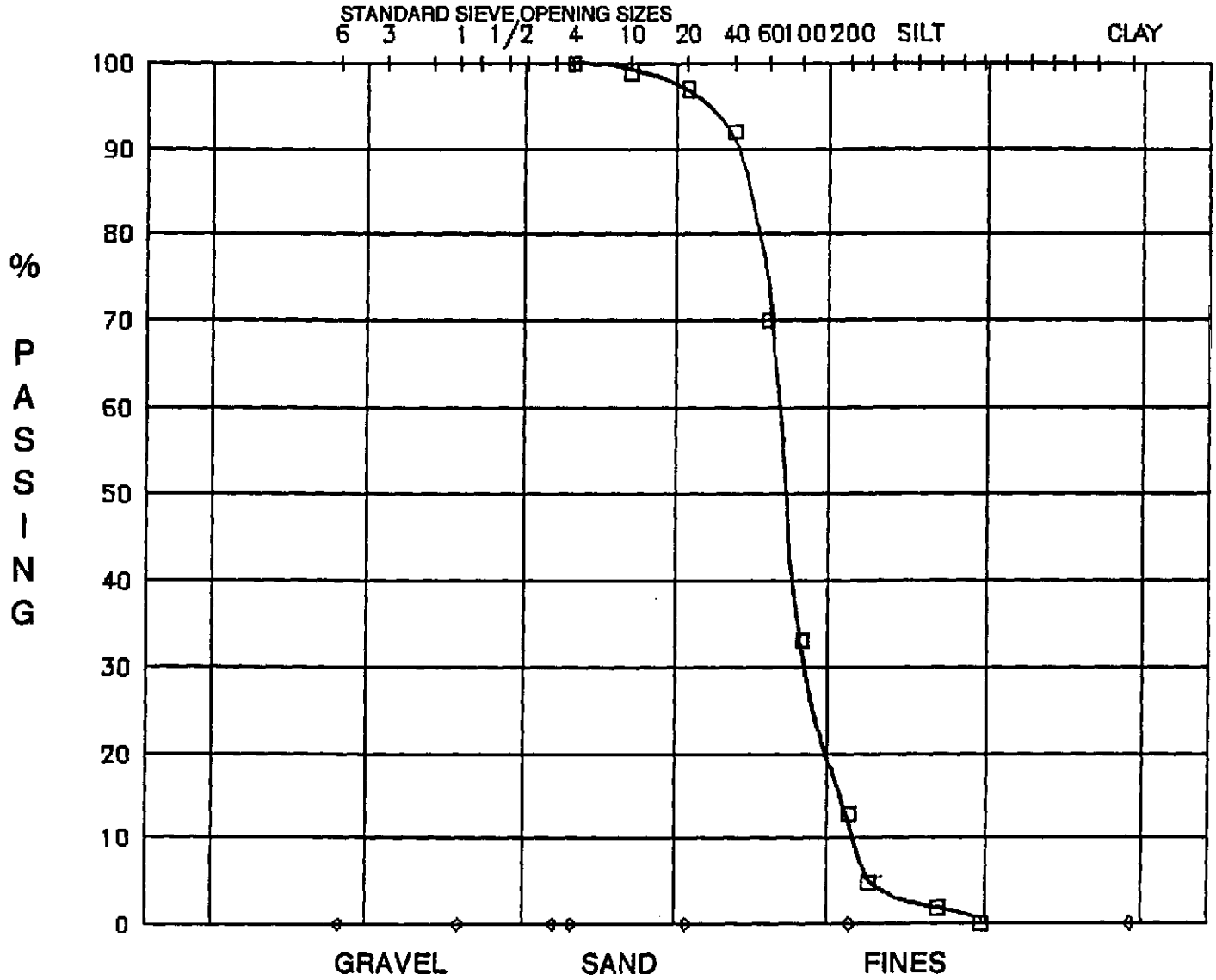
SAMPLE IDENTITY	Wn%	WL	WP	IP	DESCRIPTION
ATB-4 (40'-42')	26.2	NR	NR	NR	Greenish grey FINES and f SAND

ROUX/ISRT/MA

893-6125.10

GOLDER ASSOCIATES
Consulting Engineers

PARTICLE SIZE DISTRIBUTION
MECHANICAL AND HYDROMETER ANALYSIS
ASTM D-421 AND 422



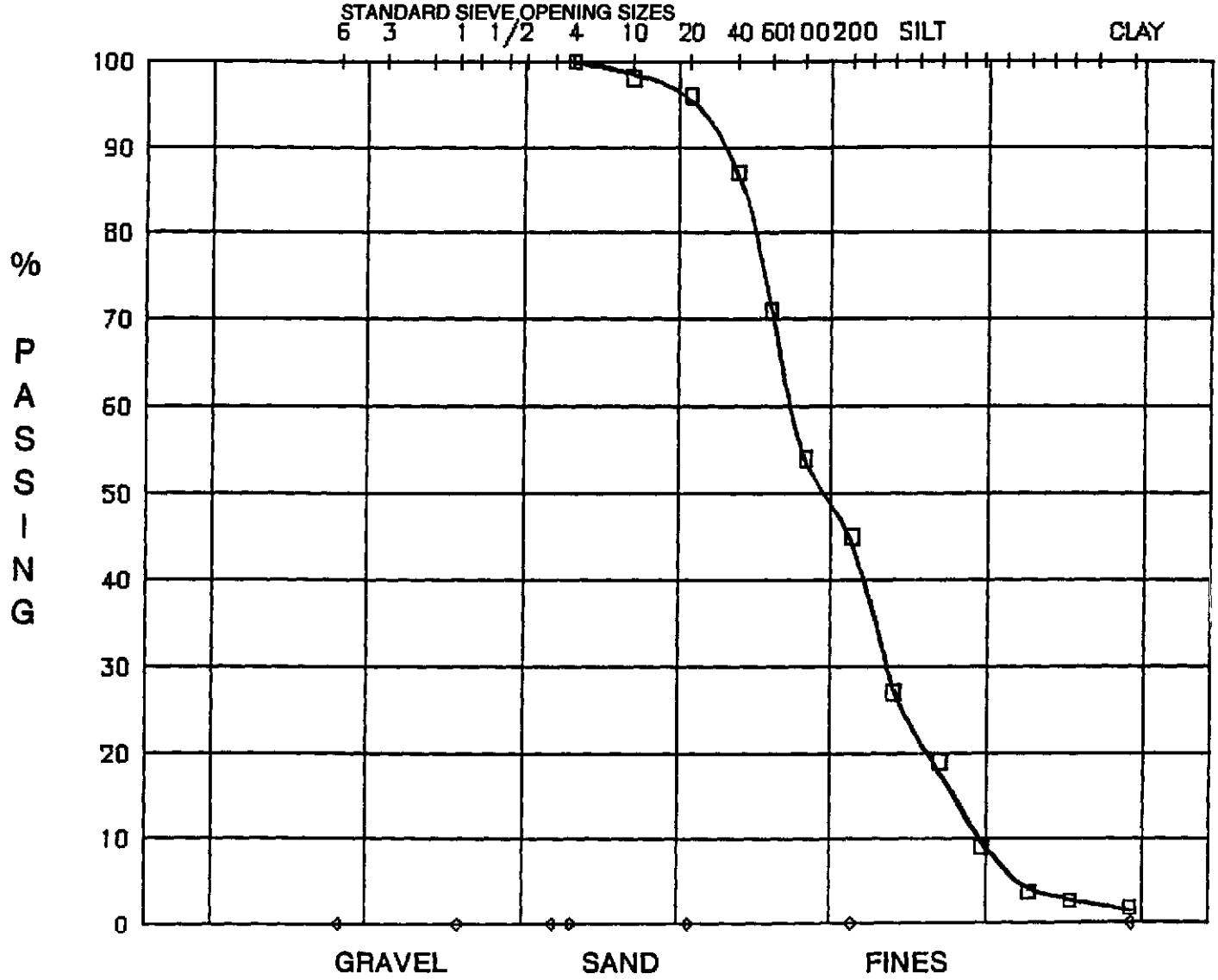
SAMPLE IDENTITY	Wn%	WL	WP	IP	DESCRIPTION
ATB-6 (15'-17')	20	NR	NR	NR	Light yellowish brown f SAND, some fines

ROUX/ISRT/MA

893-6125.10

GOLDER ASSOCIATES
Consulting Engineers

PARTICLE SIZE DISTRIBUTION
MECHANICAL AND HYDROMETER ANALYSIS
ASTM D-421 AND 422



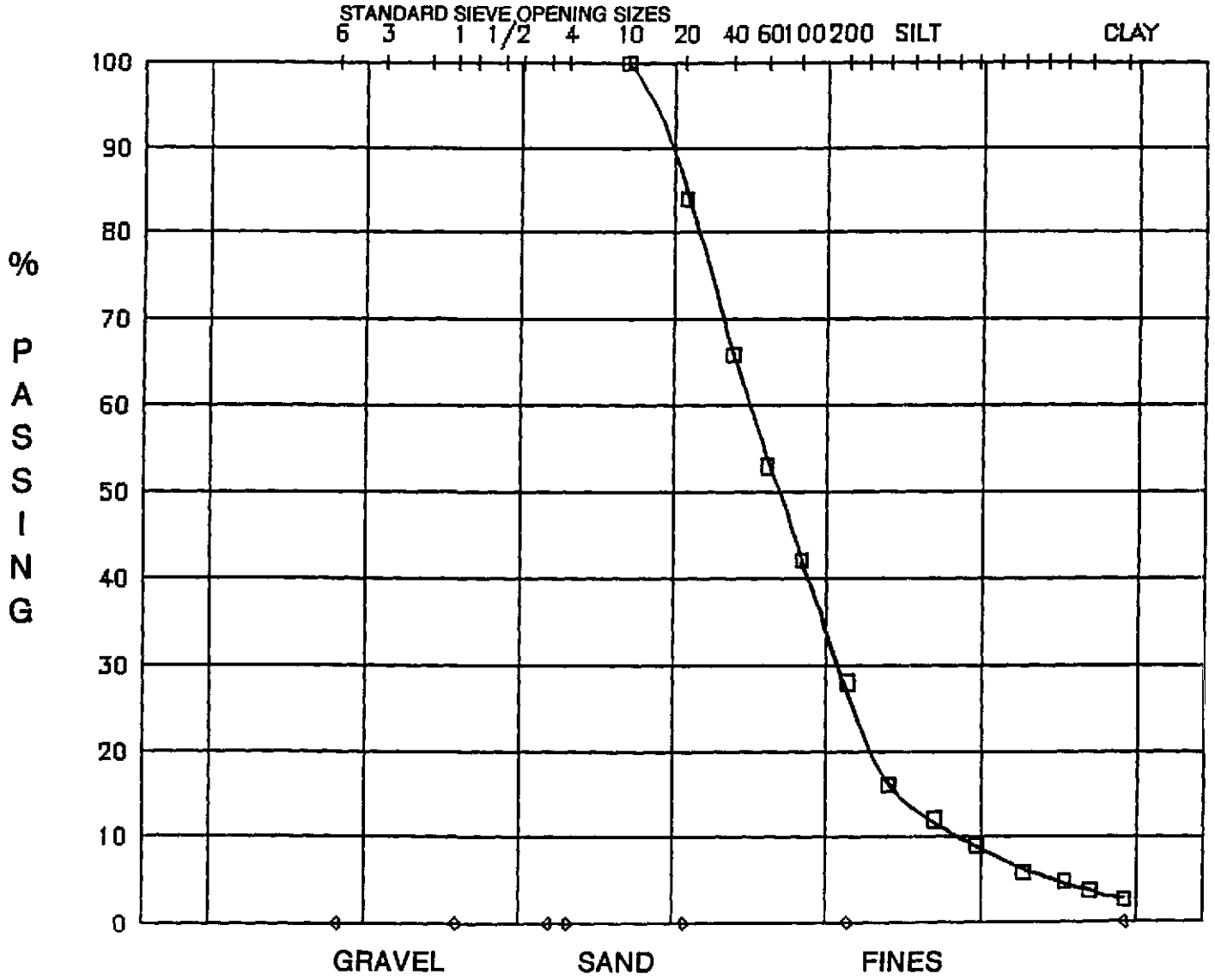
SAMPLE IDENTITY	Wn%	WL	WP	IP	DESCRIPTION
ATB-10 (15'-17')	73	NR	NR	NR	Dark brown m-f SAND and FINES

ROUX/ISRT/MA

893-6125.10

GOLDER ASSOCIATES
Consulting Engineers

PARTICLE SIZE DISTRIBUTION
MECHANICAL AND HYDROMETER ANALYSIS
ASTM D-421 AND 422



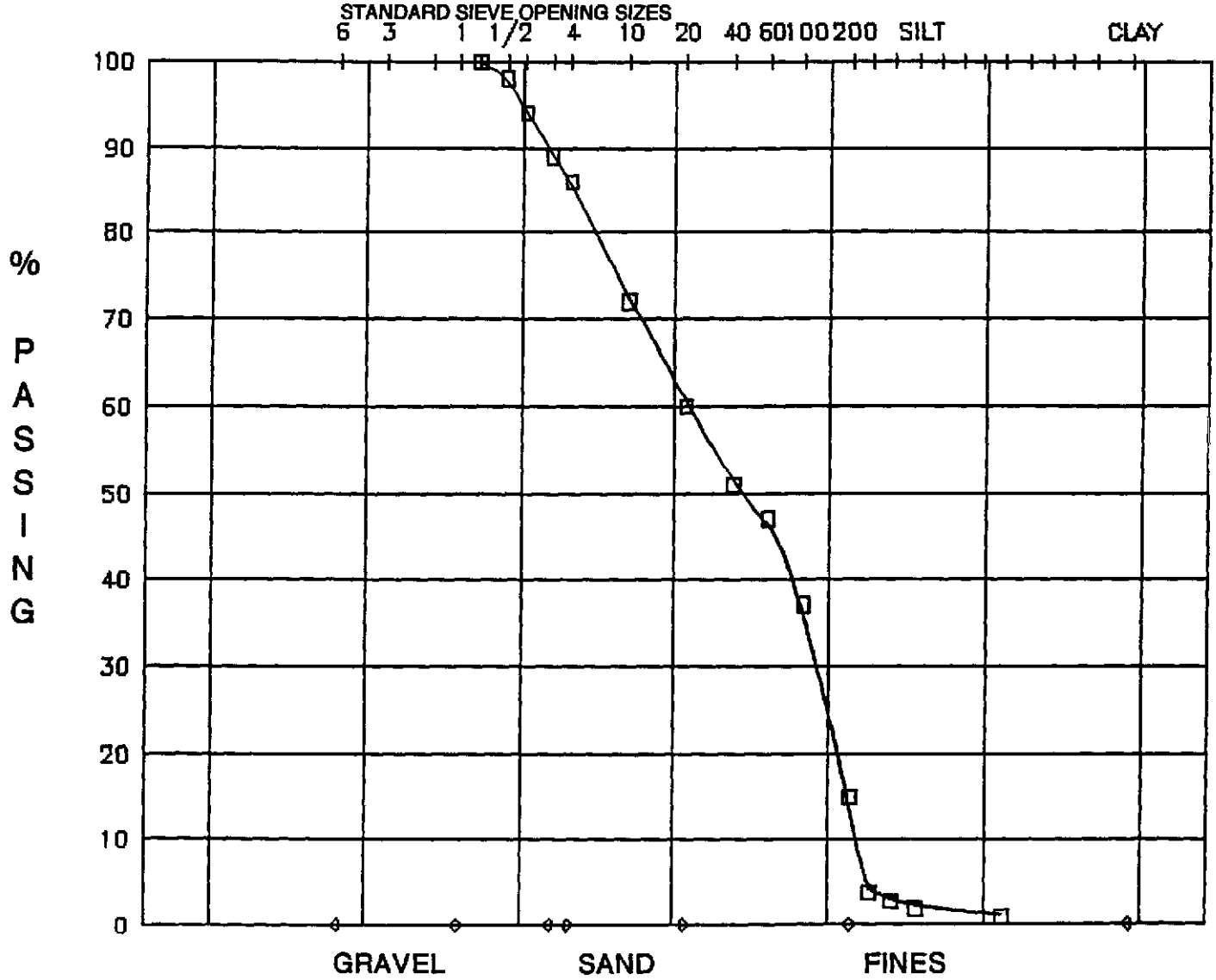
SAMPLE IDENTITY	Wn%	WL	WP	IP	DESCRIPTION
ATB-10 (59'-60')	7.9	NR	NR	NR	Dark brown m-f SAND some fines

ROUX/ISRT/MA

893-6125.10

GOLDER ASSOCIATES
Consulting Engineers

PARTICLE SIZE DISTRIBUTION
MECHANICAL AND HYDROMETER ANALYSIS
ASTM D-421 AND 422



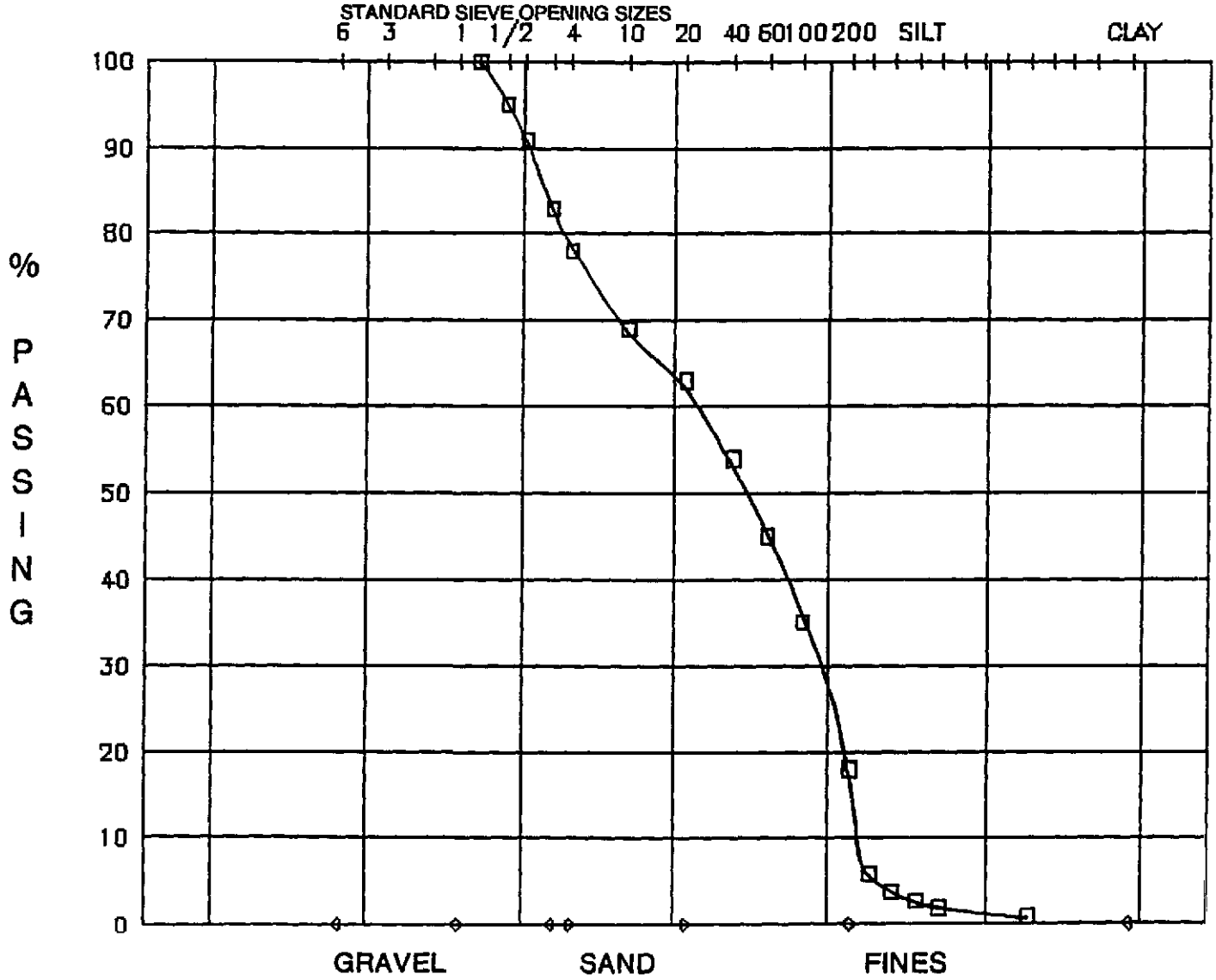
SAMPLE IDENTITY	Wn%	WL	WP	IP	DESCRIPTION
ATB-14 (15'-17')	14.2	NR	NR	NR	Pale yellowish brown c-f SAND,some f gravel,some fines

ROUX/ISRT/MA

893-6125.10

GOLDER ASSOCIATES
Consulting Engineers

PARTICLE SIZE DISTRIBUTION
MECHANICAL AND HYDROMETER ANALYSIS
ASTM D-421 AND 422



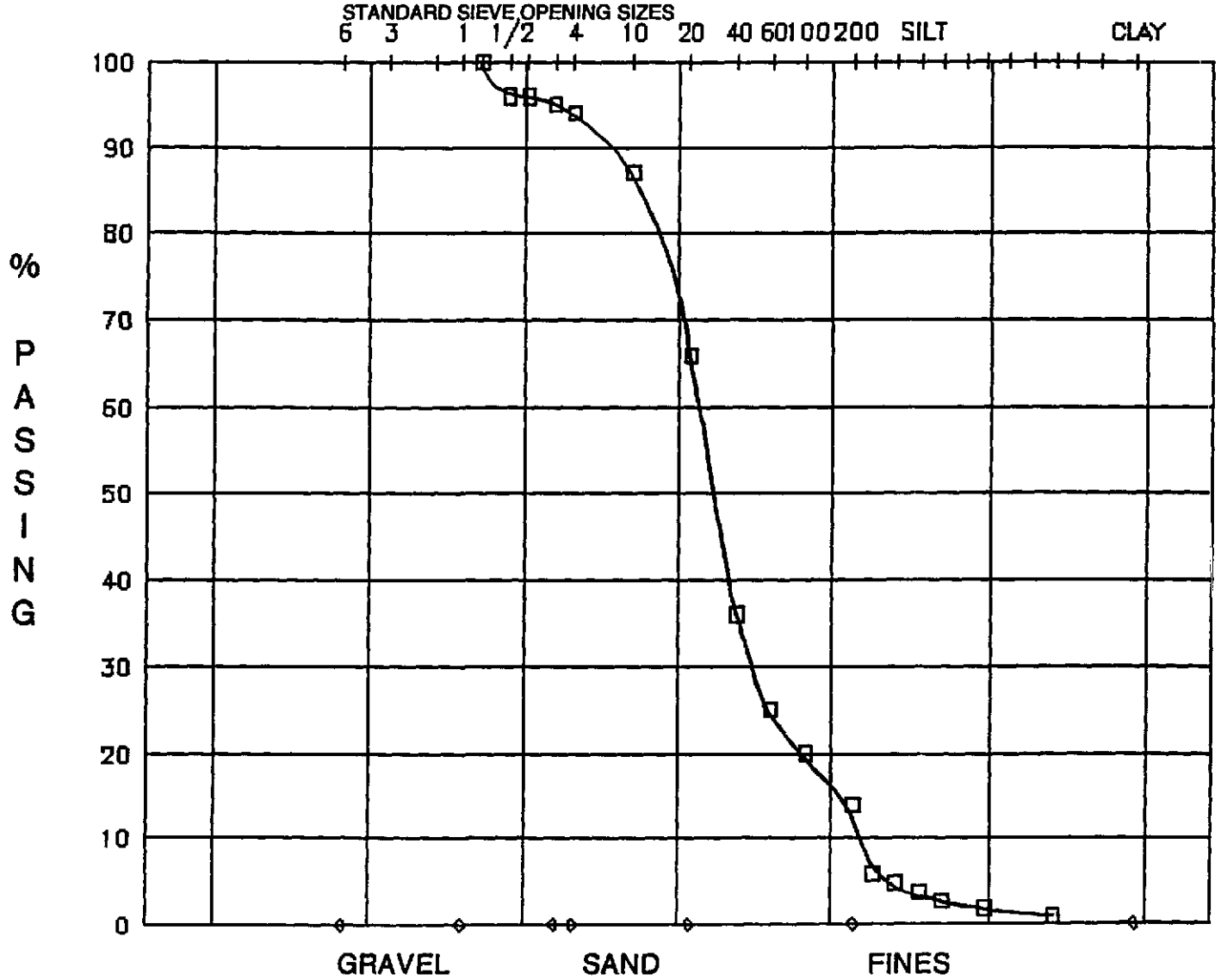
SAMPLE IDENTITY	Wn%	WL	WP	IP	DESCRIPTION
ATB-15 (30'-32')	15.3	NR	NR	NR	Pale yellowish brown m-f SAND,some f gravel,some fines

ROUX/ISRT/MA

893-6125.10

GOLDER ASSOCIATES
Consulting Engineers

PARTICLE SIZE DISTRIBUTION
MECHANICAL AND HYDROMETER ANALYSIS
ASTM D-421 AND 422



SAMPLE IDENTITY	Wn%	WL	WP	IP	DESCRIPTION
ATB-15 (85'-87')	18.3	NR	NR	NR	Pale yellowish brown m-f SAND,some fines, little f gravel

ROUX/ISRT/MA

893-6125.10

GOLDER ASSOCIATES
Consulting Engineers

APPENDIX D

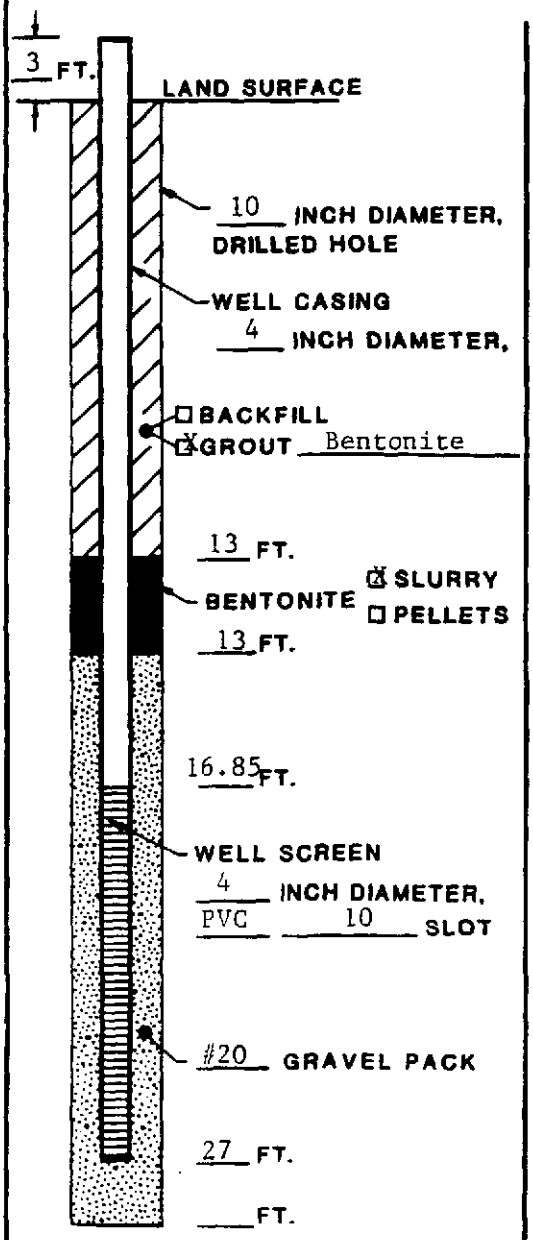
Well Construction Diagrams
Phase 1 and Phase 2

APPENDIX D

Well Construction Diagrams
Phase 1

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET
BELOW LAND SURFACE

PROJECT NAME Industri-Plex PDI NUMBER 16101
WELL NO. OW-23 PERMIT NO.
TOWN/CITY Woburn
COUNTY Middlesex STATE M.A.
LAND-SURFACE ELEVATION
AND DATUM _____ FEET ☒ SURVEYED
M.P. datum= 68.54 ☐ ESTIMATED
INSTALLATION DATE(S) 5/16-5/17/90
DRILLING METHOD Hollow Stem Auger
DRILLING CONTRACTOR D.L Maher Company
DRILLING FLUID None

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Centrifugal pump

FLUID LOSS DURING DRILLING 250 GALLONS
WATER REMOVED DURING DEVELOPMENT 250 GALLONS
STATIC DEPTH TO WATER 13.73 FEET BELOW M.P.
PUMPING DEPTH TO WATER 28.0 FEET BELOW M.P.
PUMPING DURATION _____ HOURS
YIELD _____ GPM _____ DATE
SPECIFIC CAPACITY _____ GPM/FT.
WELL PURPOSE Monitoring Well

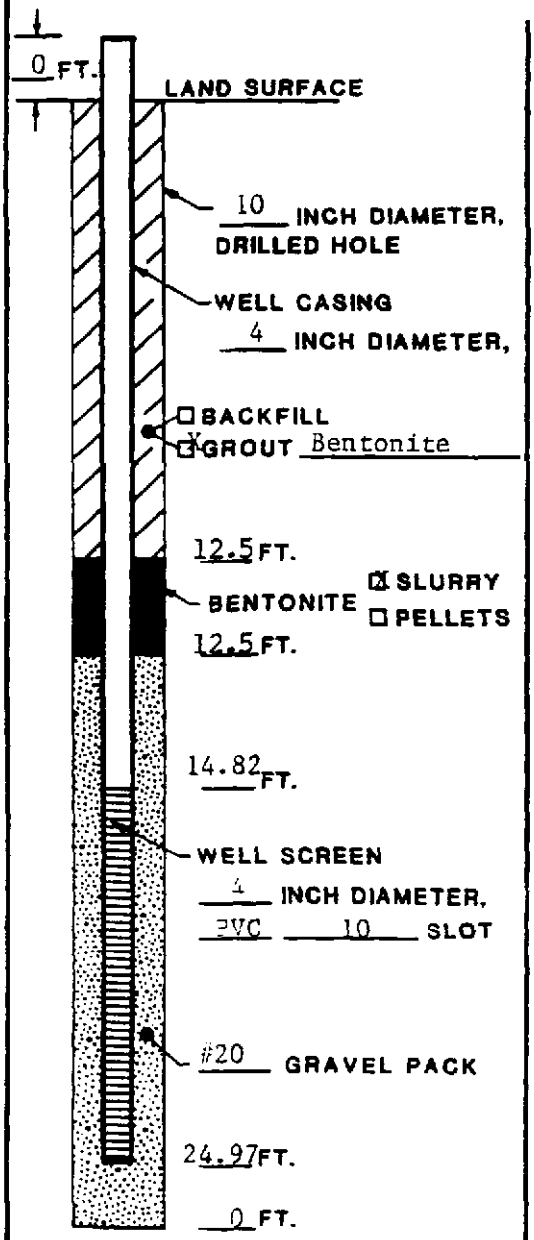
REMARKS Poor yielding well pumped dry four times before steady flow rate was achieved.
Waterproof cap and locking lid installed.

HYDROGEOLOGIST Brian Thomas

1/89

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME Industri-Plex PDI NUMBER 16101
WELL NO. OW-24a PERMIT NO.
TOWN/CITY Woburn
COUNTY Middlesex STATE M.A.
LAND-SURFACE ELEVATION AND DATUM _____ FEET ☒ SURVEYED
M.P. datum 57.47' ☐ ESTIMATED
INSTALLATION DATE(S) 4/30/90-5/1/90
DRILLING METHOD Hollow Stem Auger
DRILLING CONTRACTOR D.L. Maher
DRILLING FLUID None

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Centrifugal pump 5/8/90

FLUID LOSS DURING DRILLING _____ GALLONS
WATER REMOVED DURING DEVELOPMENT 329 GALLONS
STATIC DEPTH TO WATER 4.24 FEET BELOW M.P.
PUMPING DEPTH TO WATER 7.1 FEET BELOW M.P.
PUMPING DURATION _____ HOURS
YIELD _____ GPM _____ DATE _____
SPECIFIC CAPACITY _____ GPM/FT.
WELL PURPOSE Monitoring Well

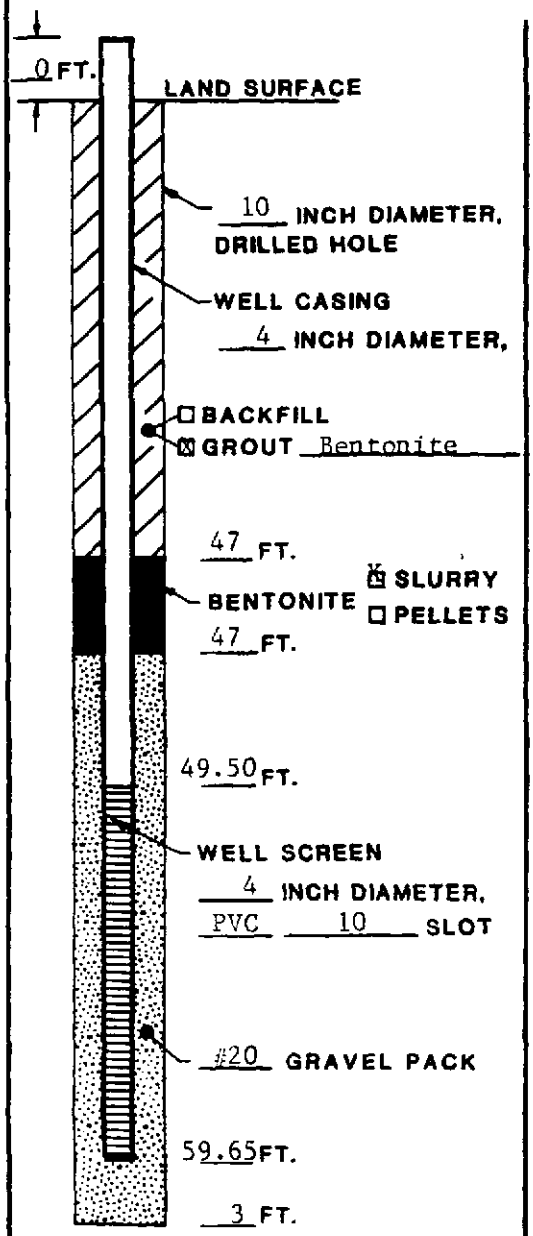
REMARKS Waterproof cap and locking lid installed.

HYDROGEOLOGIST [signature]

1/89

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME Industri-Plex NUMBER
WELL NO. OW-24b PERMIT NO.
TOWN/CITY Woburn
COUNTY Middlesex STATE M.A.
LAND-SURFACE ELEVATION
AND DATUM FEET ☒ SURVEYED
M.P. datum = 57.26' ☐ ESTIMATED
INSTALLATION DATE(S) 4/26-4/27/90
DRILLING METHOD Hollow Stem Auger
DRILLING CONTRACTOR D.L. Maher
DRILLING FLUID None

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Submersible pump 5/8/90

FLUID LOSS DURING DRILLING GALLONS
WATER REMOVED DURING DEVELOPMENT 500 GALLONS
STATIC DEPTH TO WATER 4.12 FEET BELOW M.P.
PUMPING DEPTH TO WATER 20.0' FEET BELOW M.P.
PUMPING DURATION HOURS
YIELD GPM DATE
SPECIFIC CAPACITY GPM/FT.
WELL PURPOSE Monitoring Well

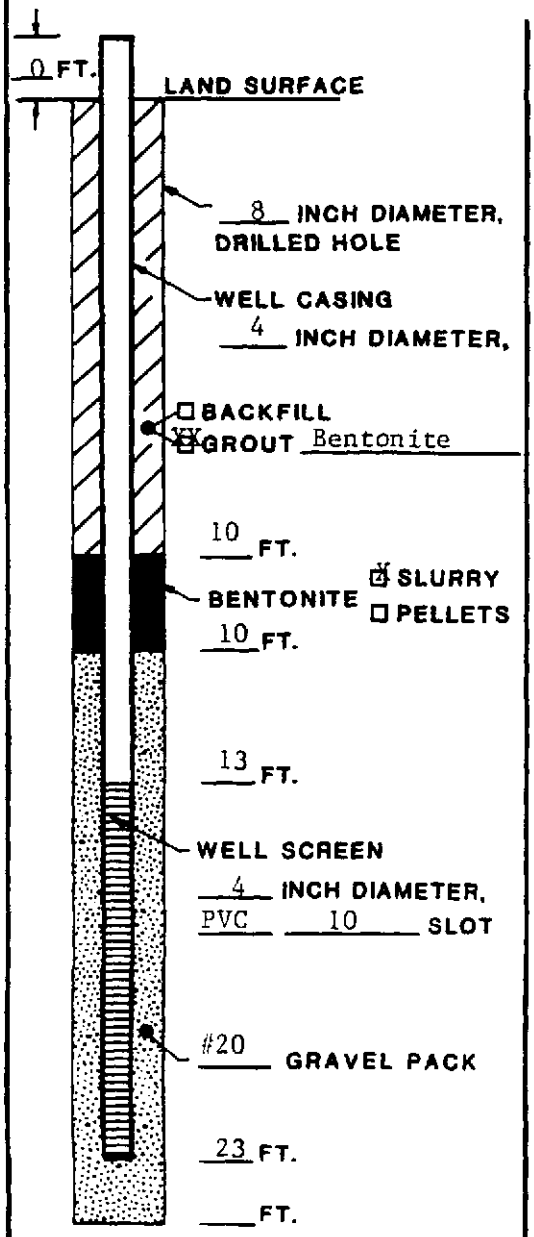
REMARKS Waterproof cap and locking lid installed.

HYDROGEOLOGIST

1/89

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME Indsutri-Plex NUMBER
WELL NO. OW-25a PERMIT NO.
TOWN/CITY Woburn
COUNTY Middlesex STATE M.A.
LAND-SURFACE ELEVATION
AND DATUM FEET ☒ SURVEYED
M.P. datum = 66.00' ☐ ESTIMATED
INSTALLATION DATE(S) 5/23/90
DRILLING METHOD Dual Reverse Rotary
DRILLING CONTRACTOR D.L. Maher
DRILLING FLUID Water

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Centrifugal pump 5/24/90

FLUID LOSS DURING DRILLING GALLONS
WATER REMOVED DURING DEVELOPMENT 100 GALLONS
STATIC DEPTH TO WATER 14.18' FEET BELOW M.P.
PUMPING DEPTH TO WATER 14.35 FEET BELOW M.P.
PUMPING DURATION HOURS
YIELD GPM DATE
SPECIFIC CAPACITY GPM/FT.
WELL PURPOSE Monitoring Well

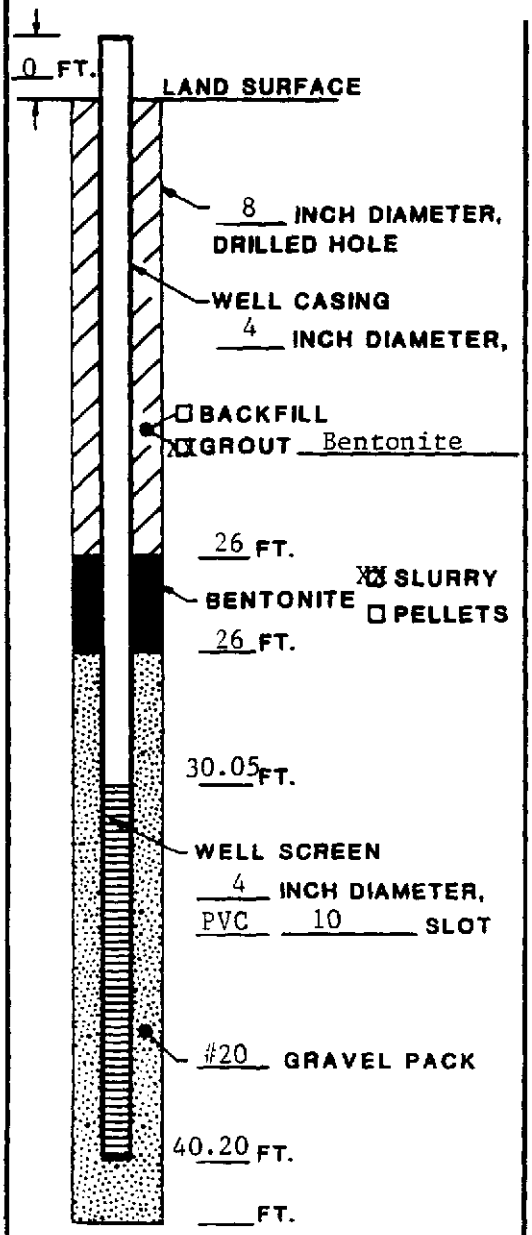
REMARKS Waterproof cap and locking lid instaled.

HYDROGEOLOGIST Brian [illegible]

1/89

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME Industri-Plex NUMBER
WELL NO. OW-25b PERMIT NO.
TOWN/CITY Woburn
COUNTY Middlesex STATE M.A.
LAND-SURFACE ELEVATION
AND DATUM FEET ☒ SURVEYED
M.P. datum = 65.34' ☐ ESTIMATED
INSTALLATION DATE(S) 5/21/90
DRILLING METHOD Dual Reverse Rotary
DRILLING CONTRACTOR D.L. Maher
DRILLING FLUID Water

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Centrifugal pump 5/24/90

FLUID LOSS DURING DRILLING GALLONS
WATER REMOVED DURING DEVELOPMENT 120 GALLONS
STATIC DEPTH TO WATER 13.66 FEET BELOW M.P.
PUMPING DEPTH TO WATER 13.53 FEET BELOW M.P.
PUMPING DURATION HOURS
YIELD GPM DATE
SPECIFIC CAPACITY GPM/FT.
WELL PURPOSE Monitoring Well

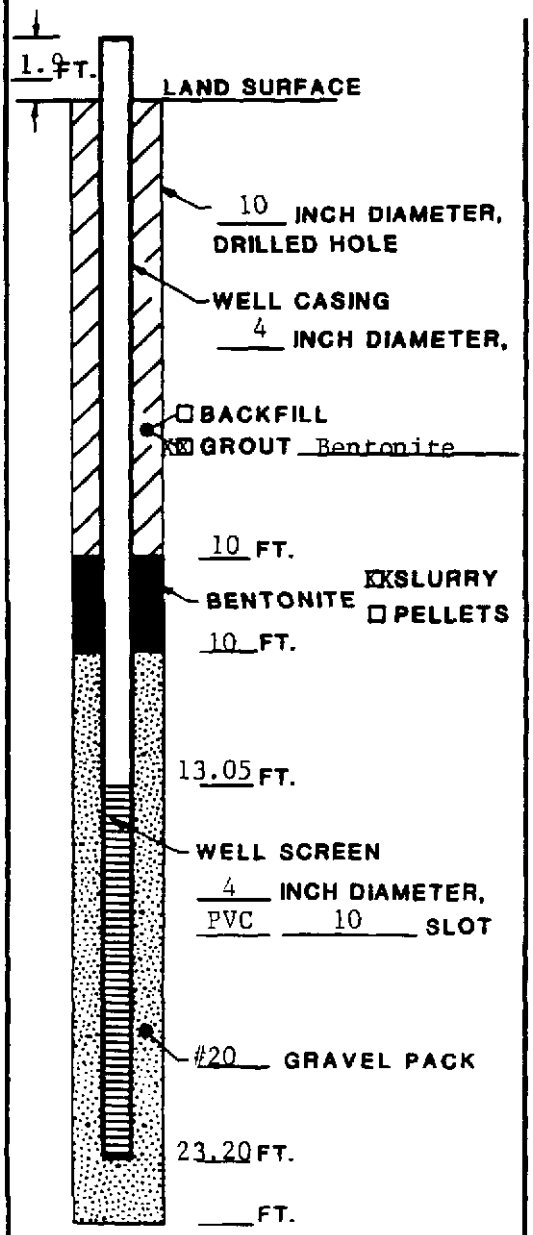
REMARKS Waterproof cap and locking lid installed.

HYDROGEOLOGIST Brian [illegible]

1/89

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME Industri-Plex PDI NUMBER
WELL NO. OW-26a PERMIT NO.
TOWN/CITY Woburn
COUNTY Middlesex STATE M.A.
LAND-SURFACE ELEVATION
AND DATUM FEET ☒ SURVEYED
M.P. datum = 64.15 ☐ ESTIMATED
INSTALLATION DATE(S) 5/11/90
DRILLING METHOD Hollow Stem Auger
DRILLING CONTRACTOR D.L. Maher
DRILLING FLUID None

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Centrifugal pump

FLUID LOSS DURING DRILLING GALLONS
WATER REMOVED DURING DEVELOPMENT 250 GALLONS
STATIC DEPTH TO WATER 8.37 FEET BELOW M.P.
PUMPING DEPTH TO WATER 8.00 FEET BELOW M.P.
PUMPING DURATION HOURS
YIELD GPM DATE
SPECIFIC CAPACITY GPM/FT.
WELL PURPOSE Monitoring Well

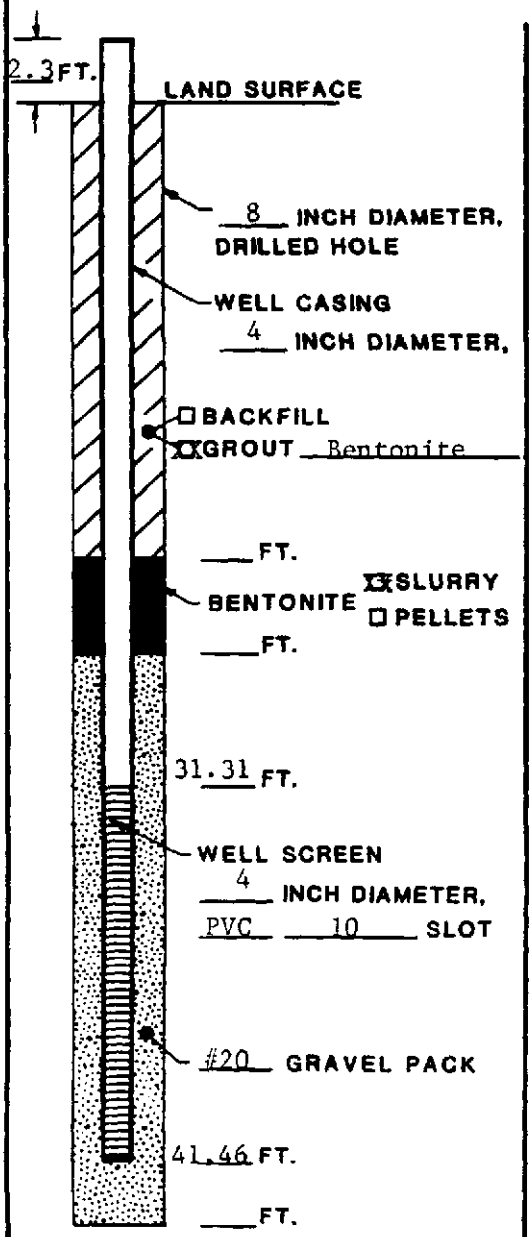
REMARKS Waterproof cap and locking lid installed.

HYDROGEOLOGIST

1/89

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME Industri-Plex NUMBER

WELL NO. OW-26b PERMIT NO.

TOWN/CITY Woburn

COUNTY Middlesex STATE M.A.

LAND-SURFACE ELEVATION AND DATUM _____ FEET ☒ SURVEYED ☐ ESTIMATED

M.P. datum = 63.80

INSTALLATION DATE(S) ~~5/24/90~~

DRILLING METHOD Dual Reverse Rotary

DRILLING CONTRACTOR D.L. Maher

DRILLING FLUID Water

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Centrifugal pump 5/25/90-5/26/90

FLUID LOSS DURING DRILLING 1500 GALLONS

WATER REMOVED DURING DEVELOPMENT 1500 GALLONS

STATIC DEPTH TO WATER 8.19 FEET BELOW M.P.

PUMPING DEPTH TO WATER 27.9' FEET BELOW M.P.

PUMPING DURATION _____ HOURS

YIELD _____ GPM _____ DATE

SPECIFIC CAPACITY _____ GPM/FT.

WELL PURPOSE Monitoring Well

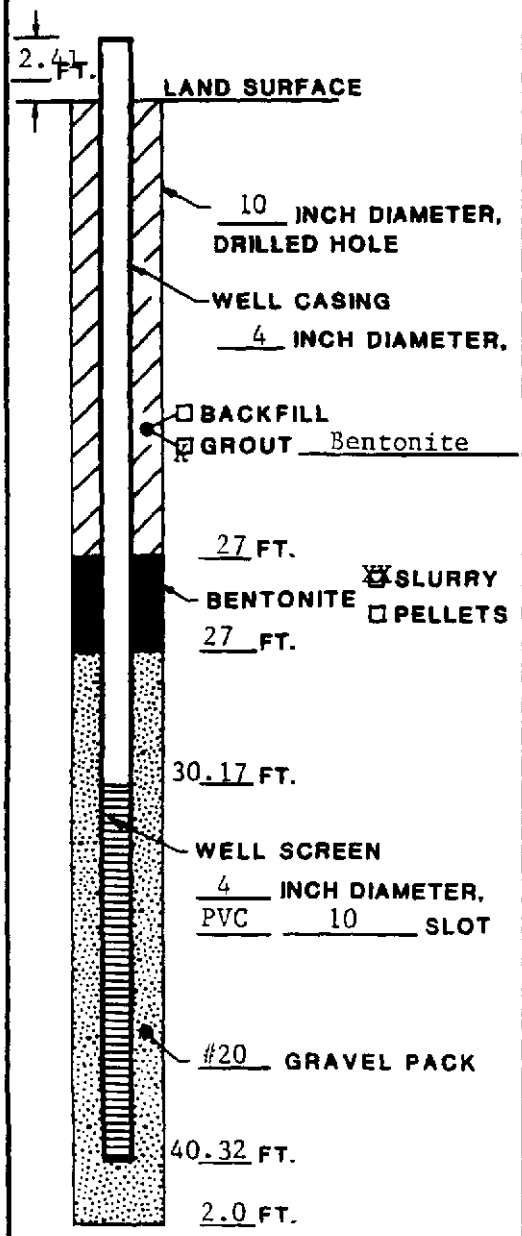
REMARKS Waterproof cap and locking lid installed.

HYDROGEOLOGIST [signature]

1/89

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME Industri-Plex NUMBER
WELL NO. OW-27a PERMIT NO.
TOWN/CITY Woburn
COUNTY Middlesex STATE M.A.
LAND-SURFACE ELEVATION AND DATUM ____ FEET ☒ SURVEYED
M.P. datum 70.84 ☐ ESTIMATED
INSTALLATION DATE(S) 5/3/90
DRILLING METHOD Hollow Stem Auger
DRILLING CONTRACTOR D.L. Maher
DRILLING FLUID

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Centrifugal pump 5/9/90 and 5/25/90

FLUID LOSS DURING DRILLING ____ GALLONS
WATER REMOVED DURING DEVELOPMENT 300 GALLONS
STATIC DEPTH TO WATER 17.17 FEET BELOW M.P.
PUMPING DEPTH TO WATER 19.79' FEET BELOW M.P.
PUMPING DURATION ____ HOURS
YIELD ____ GPM ____ DATE
SPECIFIC CAPACITY ____ GPM/FT.
WELL PURPOSE Monitoring Well

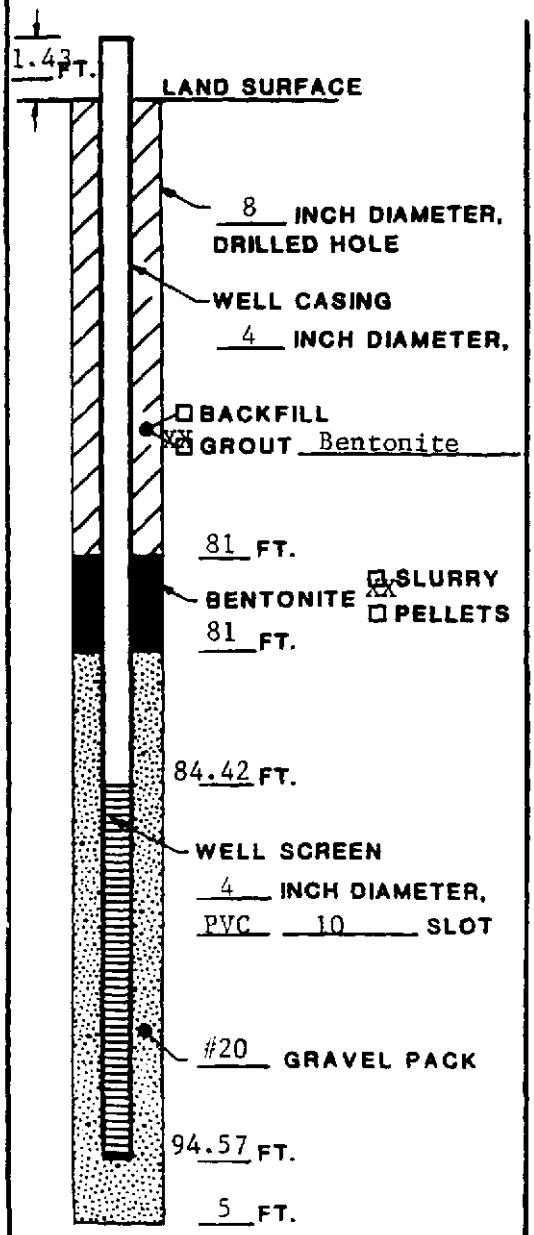
REMARKS Waterproof cap and locking lid instslled.

HYDROGEOLOGIST [signature]

1/89

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME Industri-Plex NUMBER
WELL NO. OW-27b PERMIT NO.
TOWN/CITY Woburn
COUNTY Middlesex STATE M.A.
LAND-SURFACE ELEVATION
AND DATUM FEET ☒ SURVEYED
M.P. datum = 70.52 ☐ ESTIMATED
INSTALLATION DATE(S) 5/16/90
DRILLING METHOD Dual Reverse Rotary
DRILLING CONTRACTOR D.L. Maher
DRILLING FLUID Water

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Submersible pump 5/22/90 5/25/90

FLUID LOSS DURING DRILLING 1500 GALLONS
WATER REMOVED DURING DEVELOPMENT 1500 GALLONS
STATIC DEPTH TO WATER 18.56 FEET BELOW M.P.
PUMPING DEPTH TO WATER FEET BELOW M.P.
PUMPING DURATION HOURS
YIELD GPM DATE
SPECIFIC CAPACITY GPM/FT.
WELL PURPOSE Monitoring Well

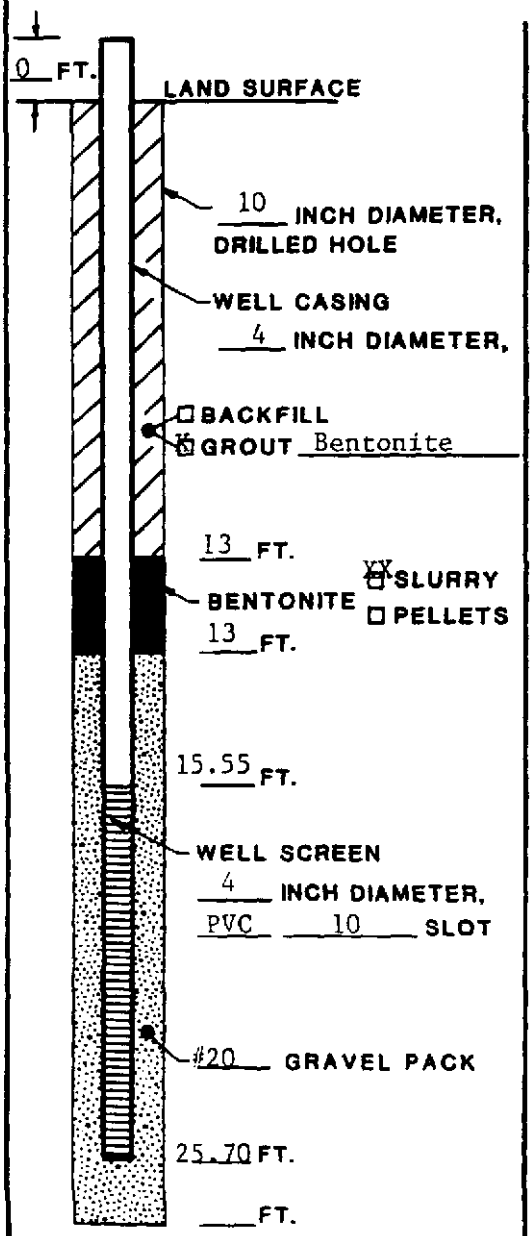
REMARKS Waterproof cap and locking lid installed.

HYDROGEOLOGIST Brian Thomas

1/89

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME Indusrti-Plex PDI NUMBER

WELL NO. OW-29 PERMIT NO.

TOWN/CITY Woburn

COUNTY Middlesex STATE M.A.

LAND-SURFACE ELEVATION AND DATUM FEET ☒ SURVEYED
M.P. datum = 61.17 ☐ ESTIMATED

INSTALLATION DATE(S) 5/1/90-5/2/90

DRILLING METHOD Hollow Stem Auger

DRILLING CONTRACTOR D.L. Maher Company

DRILLING FLUID

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Centrifugal pump 5/8/90 and 5/24/90

FLUID LOSS DURING DRILLING GALLONS

WATER REMOVED DURING DEVELOPMENT 320 GALLONS

STATIC DEPTH TO WATER 5.31 FEET BELOW M.P.

PUMPING DEPTH TO WATER 6.37 FEET BELOW M.P.

PUMPING DURATION HOURS

YIELD GPM DATE

SPECIFIC CAPACITY GPM/FT.

WELL PURPOSE Monitoring Well

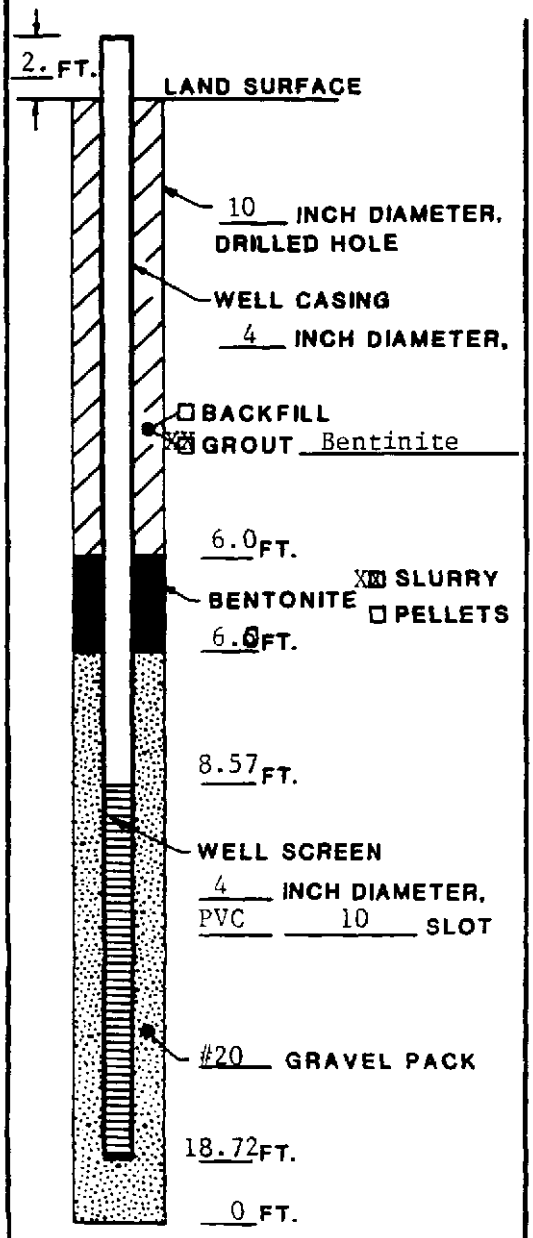
REMARKS Waterproof cap and locking lid installed.

HYDROGEOLOGIST

1/89

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME Industri-Plex PDI NUMBER
WELL NO. OW-30a PERMIT NO.
TOWN/CITY Woburn
COUNTY Middlesex STATE M.A.
LAND-SURFACE ELEVATION AND DATUM FEET ☒ SURVEYED ☐ ESTIMATED
M.P. datum 65.90
INSTALLATION DATE(S) 5/11/90
DRILLING METHOD Hollow Stem Auger
DRILLING CONTRACTOR D.L. Maher
DRILLING FLUID None

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Centrifugal pump 5/31/90

FLUID LOSS DURING DRILLING GALLONS
WATER REMOVED DURING DEVELOPMENT 500 GALLONS
STATIC DEPTH TO WATER 11.61 FEET BELOW M.P.
PUMPING DEPTH TO WATER FEET BELOW M.P.
PUMPING DURATION HOURS
YIELD GPM DATE
SPECIFIC CAPACITY GPM/FT.
WELL PURPOSE Monitoring Well

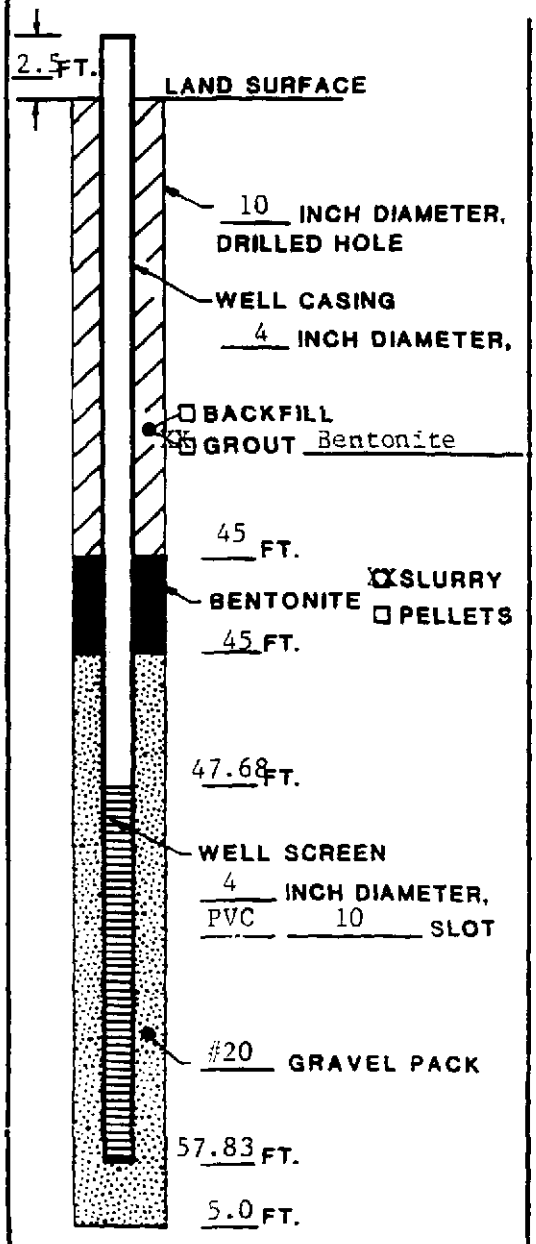
REMARKS Waterproof cap and locking lid installed.

HYDROGEOLOGIST

1/89

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME Industri-Plex PDI NUMBER
WELL NO. OW-30b PERMIT NO.
TOWN/CITY Woburn
COUNTY Middlesex STATE M.A.
LAND-SURFACE ELEVATION AND DATUM _____ FEET ☒ SURVEYED
M.P. datum 65.60 ☐ ESTIMATED
INSTALLATION DATE(S) 5/10/90-5/11/90
DRILLING METHOD Hollow Stem Auger
DRILLING CONTRACTOR D.L. Maher
DRILLING FLUID None

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Centrifugal pump 5/30/90

FLUID LOSS DURING DRILLING _____ GALLONS
WATER REMOVED DURING DEVELOPMENT 500 GALLONS
STATIC DEPTH TO WATER 11.44 FEET BELOW M.P.
PUMPING DEPTH TO WATER 28.50 FEET BELOW M.P.
PUMPING DURATION _____ HOURS
YIELD _____ GPM _____ DATE
SPECIFIC CAPACITY _____ GPM/FT.
WELL PURPOSE Monitoring Well

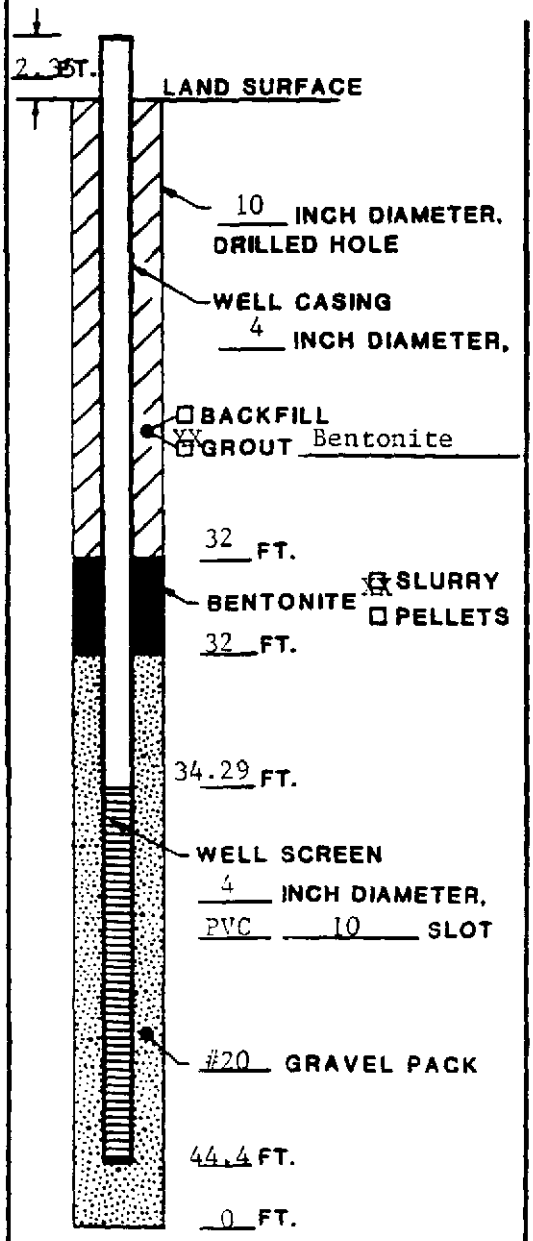
REMARKS Well moved up 0.6' while setting
Waterproof cap and locking lid installed.

HYDROGEOLOGIST [signature]

1/89

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME Industri-Plex Site NUMBER _____

WELL NO. OW-33a PERMIT NO. _____

TOWN/CITY Woburn

COUNTY Middlesex STATE M.A.

LAND-SURFACE ELEVATION AND DATUM _____ FEET ☒ SURVEYED ☐ ESTIMATED

M.P. datum = 56.83

INSTALLATION DATE(S) 4/23/90

DRILLING METHOD Hollow Stem Auger

DRILLING CONTRACTOR D.L. Maher

DRILLING FLUID None

DEVELOPMENT TECHNIQUE(S) AND DATE(S)

Centrifugal pump 5/7/90 5/25/90

FLUID LOSS DURING DRILLING _____ GALLONS

WATER REMOVED DURING DEVELOPMENT 367 GALLONS

STATIC DEPTH TO WATER 5.35 FEET BELOW M.P.

PUMPING DEPTH TO WATER 6.12 FEET BELOW M.P.

PUMPING DURATION _____ HOURS

YIELD _____ GPM _____ DATE _____

SPECIFIC CAPACITY _____ GPM/FT.

WELL PURPOSE Monitoring Well

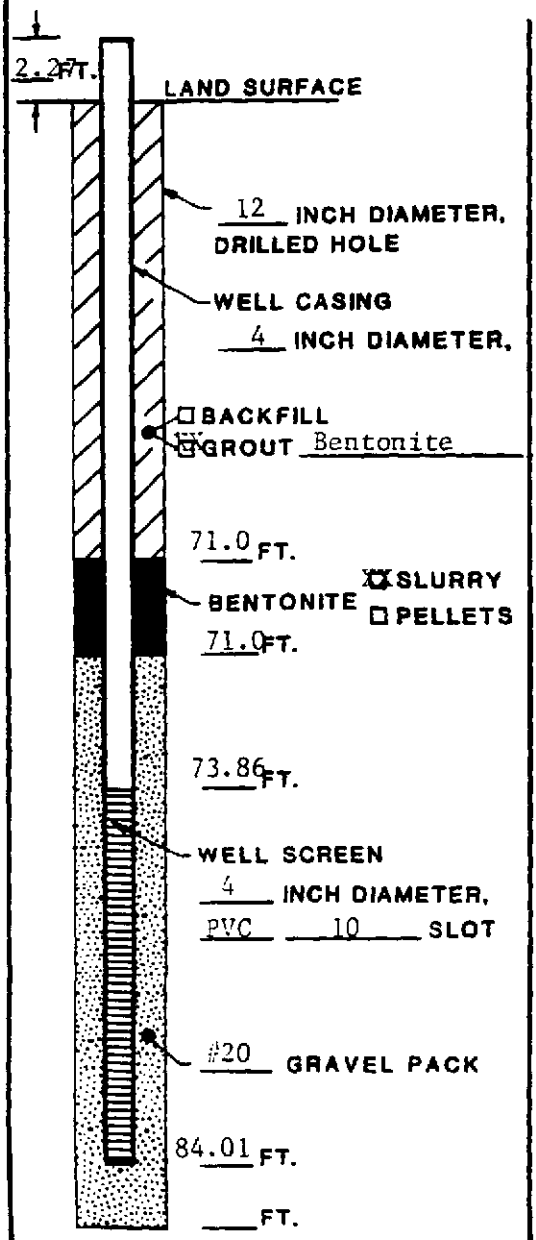
REMARKS Waterproof cap and locking lid installed.

HYDROGEOLOGIST [signature]

1/89

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME Industri-Plex NUMBER
WELL NO. OW-33b PERMIT NO.
TOWN/CITY Woburn
COUNTY Middlesex STATE M.A.
LAND-SURFACE ELEVATION
AND DATUM FEET ☒ SURVEYED
M.P. datum 56.66 ☐ ESTIMATED
INSTALLATION DATE(S) 5/8/90-5/9/90
DRILLING METHOD Hollow Stem Auger
DRILLING CONTRACTOR D.L. Maher
DRILLING FLUID

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Submersible pump 5/30/90 5/24/90-5/25/90

FLUID LOSS DURING DRILLING GALLONS
WATER REMOVED DURING DEVELOPMENT 1250 GALLONS
STATIC DEPTH TO WATER 4.74 FEET BELOW M.P.
PUMPING DEPTH TO WATER 50.03 FEET BELOW M.P.
PUMPING DURATION HOURS
YIELD GPM DATE
SPECIFIC CAPACITY GPM/FT.
WELL PURPOSE Monitoring Well

REMARKS Waterproof cap and locking lid installed.

HYDROGEOLOGIST Brian Thorne

1/89

MONITORING WELL INSTALLATION LOG

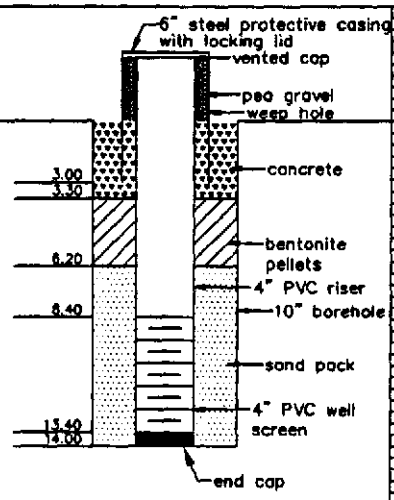
JOB NO. 893-6255 PROJECT ISRT/WOBURN/MASS WELL NO. 6 (OW-31) SHEET 1 OF 1
GA INSP. RJ DRILLING METHOD H.S.A. 6-5/8" I.D. GROUND ELEV. 71.3 WATER DEPTH 1.1' (BGS)
WEATHER SUNNY DRILLING COMPANY GEOLOGIC COLLAR ELEV. 0 DATE/TIME 5-25-90/0930
TEMP. 65 F DRILL RIG MOBILE-B-57 ATV DRILLER T. PAQUETTE STARTED 1230/5-24-90 (TIME / DATE) COMPLETED 1630/5-24-90 (TIME / DATE)
LOCATION / COORDINATES N554643.87 E695793.79

MATERIALS INVENTORY

WELL CASING 4 in. dia. 11.2 l.f. WELL SCREEN 4 in. dia. 5 l.f. BENTONITE SEAL (1) 5 GAL BUCKET
CASING TYPE SCH 40 PVC SCREEN TYPE SCH 40 PVC, MACHINE SLOTTED INSTALLATION METHOD HAND
JOINT TYPE TEFLON WRAPPED, FLUSH THREADED SLOT SIZE .010" FILTER PACK QTY. 200 lbs.
GROUT QUANTITY N/A CENTRALIZERS NOT USED FILTER PACK TYPE MYSTIC WHITE SAND
GROUT TYPE N/A DRILLING MUD TYPE NOT USED INSTALLATION METHOD HAND

ELEV./DEPTH	SOIL/ROCK DESCRIPTION
	GROUND SURFACE
0.0	Very soft, dark gray, CLAYEY SILT, some fine sand, slight organic odor, possible hairs 0'-2' (ML to OL) Water encountered at approximately 2'
6.00	Compact, olive to med-gray, m-f SAND, little silt (SP-SM) OUTWASH SAND
14.00	End of borehole

WELL SKETCH



INSTALLATION NOTES

WELL DEVELOPMENT NOTES

Well developed on 5/25/90.
A total of 100 gallons were purged using a 2 inch stainless steel bailer. Water remained turbid. Conductivity and pH stabalized.

Conductivity = 5400 umho/cm
pH = 6.67

MONITORING WELL INSTALLATION LOG

JOB NO. 893-6255 PROJECT ISRT/WOBURN/MASS WELL NO. 14 (OW-32) SHEET 1 OF 1
GA INSP. RJI DRILLING METHOD H.S.A. 6-5/8" I.D. GROUND ELEV. 71.7 WATER DEPTH 1.3' BGS
WEATHER CLOUDY DRILLING COMPANY GEOLOGIC COLLAR ELEV. 0 DATE/TIME 5-24-90/0900
TEMP. 60 F DRILL RIG MOBILE-B-57 ATV DRILLER T. PAQUETTE STARTED 1315/5-23-90 (TIME / DATE) COMPLETED 1530/5-23-90 (TIME / DATE)
LOCATION / COORDINATES N554557.70 E696061.60

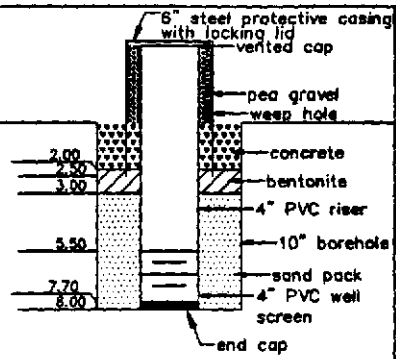
MATERIALS INVENTORY

WELL CASING 4 in. dia. 8.8 l.f. WELL SCREEN 4 in. dia. 2.2 l.f. BENTONITE SEAL (1/2) 5 GAL BUCKET
CASING TYPE SCH 40 PVC SCREEN TYPE SCH 40 PVC, MACHINE SLOTTED INSTALLATION METHOD HAND
JOINT TYPE TEFLON WRAPPED, FLUSH THREADED SLOT SIZE .010" FILTER PACK QTY. 100 lbs.
GROUT QUANTITY N/A CENTRALIZERS NOT USED FILTER PACK TYPE MYSTIC WHITE SAND
GROUT TYPE N/A DRILLING MUD TYPE NOT USED INSTALLATION METHOD HAND

ELEV./DEPTH	SOIL/ROCK DESCRIPTION
	GROUND SURFACE
0.0	Loose to dense, dark yellowish-brown becoming dark gray, c-f SAND, trace f-gravel, little to some silt, (SW). OUTWASH SAND. Slight organic odor at 4 to 6 ft. Water encountered at approximately 2 ft.
6.00	Dense, gray, f-GRAVEL and m-f SAND, little silt, (GP-SP). GLACIAL TILL.
8.30	BORING TERMINATED AT 8.3 FT. BELOW GROUND SURFACE.

NOTES:
1.) Auger refusal was encountered at 7.5 ft. depth. The drill rig was moved 9 ft. and the borehole redrilled to 8.3 ft. depth, where spoon refusal occurred.

WELL SKETCH



INSTALLATION NOTES

Running sand resulted in difficulty installing sand pack and contributed to sand pack going 2.5' above top of screen.

WELL DEVELOPMENT NOTES

Well developed on 5/30/90. A total of 35 gallons were purged using a 2" stainless steel bailer. Water remained very turbid. Conductivity and pH stabalized.

Conductivity = 2300 umho/cm
pH = 6.93

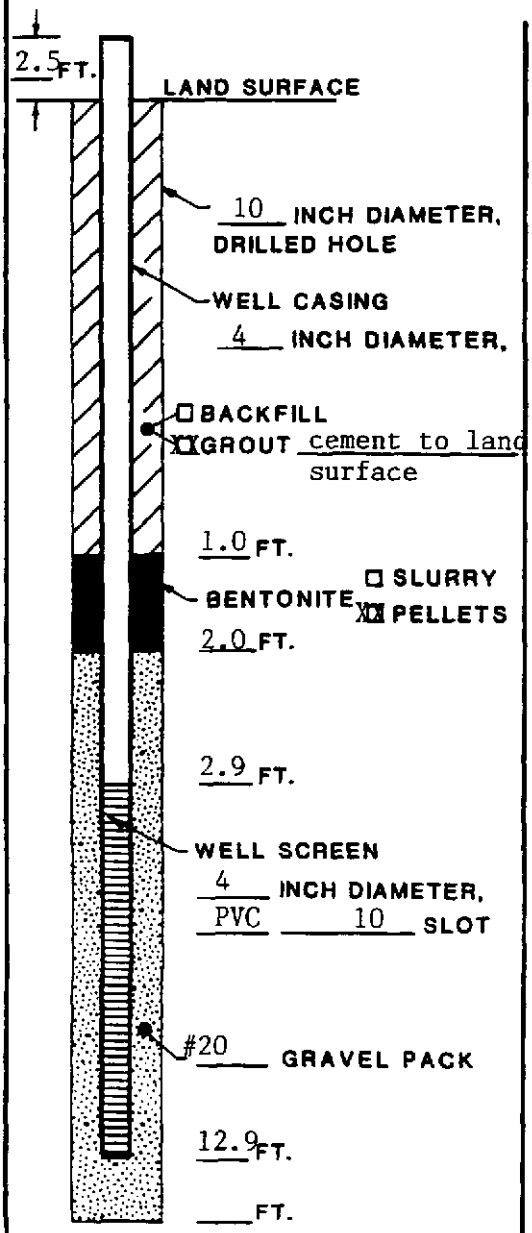
Golder Associates

APPENDIX D

Well Construction Diagrams
Phase 2

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME IndustriPlex Site NUMBER 16101Y
WELL NO. OW-36 PERMIT NO.
TOWN/CITY Woburn
COUNTY Middlesex STATE MA
LAND-SURFACE ELEVATION AND DATUM 72.7 FEET above mean sea level
XX SURVEYED
ESTIMATED
INSTALLATION DATE(S) 9/18/90 - 9/19/90
DRILLING METHOD Hollow Stem Auger
DRILLING CONTRACTOR D.L. Maher
DRILLING FLUID

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Centrifugal Pump 10/7/90

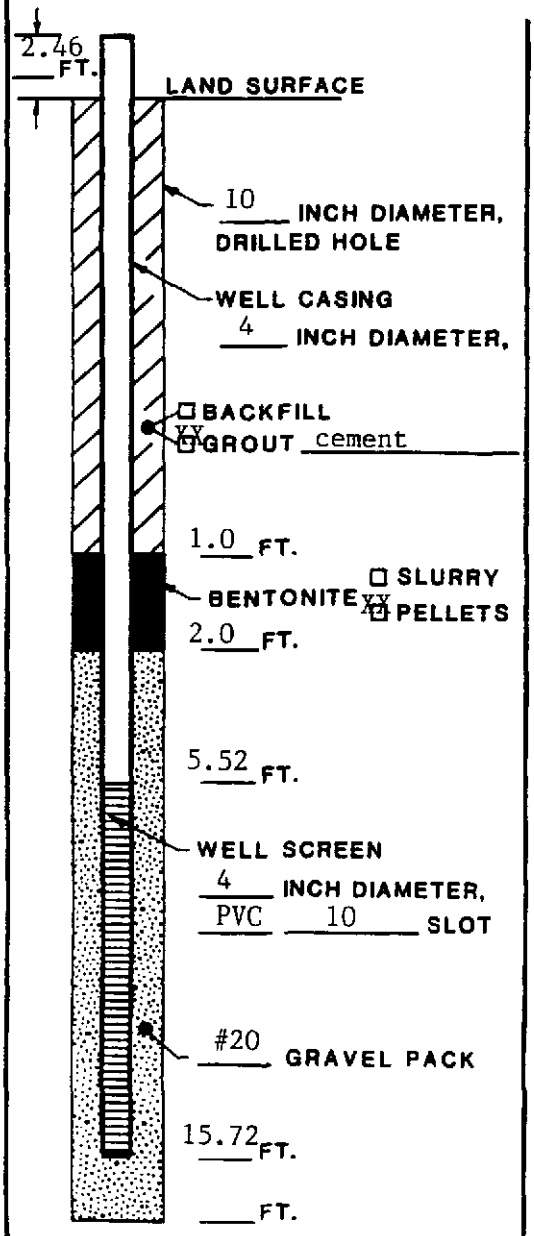
FLUID LOSS DURING DRILLING GALLONS
WATER REMOVED DURING DEVELOPMENT 200 GALLONS
STATIC DEPTH TO WATER 5.86 FEET BELOW M.P.
PUMPING DEPTH TO WATER FEET BELOW M.P.
PUMPING DURATION HOURS
YIELD GPM DATE
SPECIFIC CAPACITY GPM/FT.
WELL PURPOSE Monitoring Well

REMARKS Core bedrock from 22-25'.
Bedrock encountered @ 14.0'.

HYDROGEOLOGIST Brian Thomas

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME IndustriPlex Site NUMBER 16101Y
WELL NO. OW-37 PERMIT NO.
TOWN/CITY Woburn
COUNTY Middlesex STATE MA
LAND-SURFACE ELEVATION AND DATUM 69.3 FEET above mean sea level
XX SURVEYED
ESTIMATED
INSTALLATION DATE(S) 9/25/90
DRILLING METHOD Hollow Stem Auger
DRILLING CONTRACTOR D.L. Maher
DRILLING FLUID

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Centrifugal Pump 10/10/90

FLUID LOSS DURING DRILLING GALLONS
WATER REMOVED DURING DEVELOPMENT 225 GALLONS
STATIC DEPTH TO WATER 5.76 FEET BELOW M.P.
PUMPING DEPTH TO WATER FEET BELOW M.P.
PUMPING DURATION HOURS
YIELD GPM DATE
SPECIFIC CAPACITY GPM/FT.
WELL PURPOSE Monitoring Well

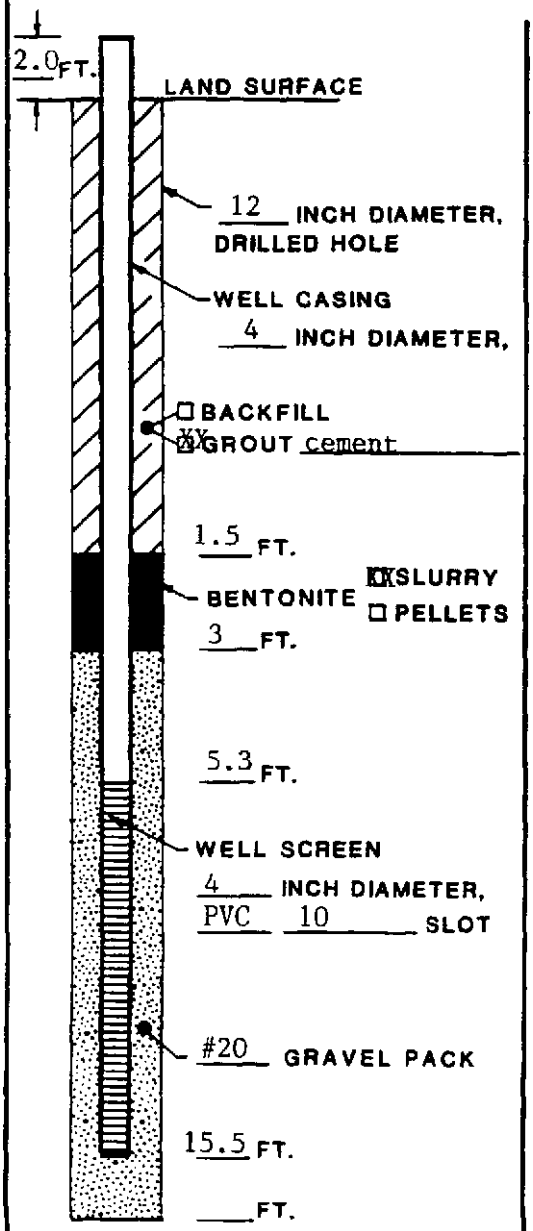
REMARKS Bedrock encountered at 29.5'.

HYDROGEOLOGIST Brian Thomas

1/89

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME IndustriPlex Site NUMBER 16101Y
WELL NO. OW-38 PERMIT NO.
TOWN/CITY Woburn
COUNTY Middlesex STATE MA
LAND-SURFACE ELEVATION AND DATUM 69.8 FEET above mean sea level
☒ SURVEYED ☐ ESTIMATED
INSTALLATION DATE(S) 10/2/90 - 10/3/90
DRILLING METHOD Hollow Stem Auger
DRILLING CONTRACTOR D.L. Maher
DRILLING FLUID

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Centrifugal Pump 10/11/90

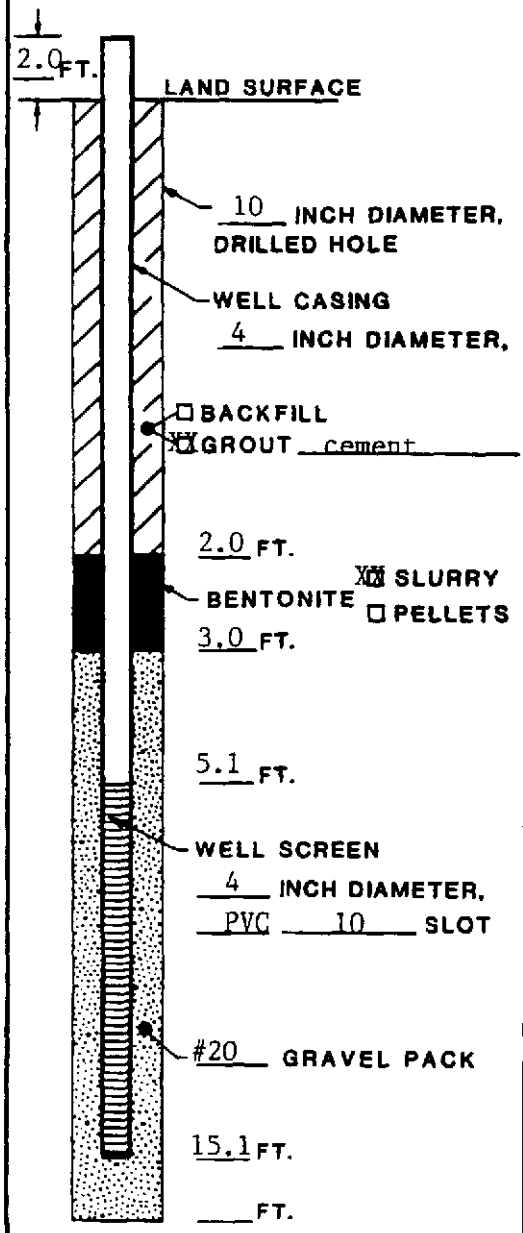
FLUID LOSS DURING DRILLING GALLONS
WATER REMOVED DURING DEVELOPMENT 200 GALLONS
STATIC DEPTH TO WATER FEET BELOW M.P.
PUMPING DEPTH TO WATER FEET BELOW M.P.
PUMPING DURATION HOURS
YIELD GPM DATE
SPECIFIC CAPACITY GPM/FT.
WELL PURPOSE Monitoring Well

REMARKS Bedrock encountered @ 33.5'.

HYDROGEOLOGIST Brian Thomas

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME IndustriPlex Site NUMBER 16101Y
WELL NO. OW-39 PERMIT NO.
TOWN/CITY Woburn
COUNTY Middlesex STATE MA
LAND-SURFACE ELEVATION
AND DATUM 71.8 FEET ☒ SURVEYED
above mean sea level ☐ ESTIMATED
INSTALLATION DATE(S) 9/26/90 - 9/28/90
DRILLING METHOD Hollow Stem Auger
DRILLING CONTRACTOR D.L. Maher
DRILLING FLUID Water

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Centrifugal Pump 10/11/90

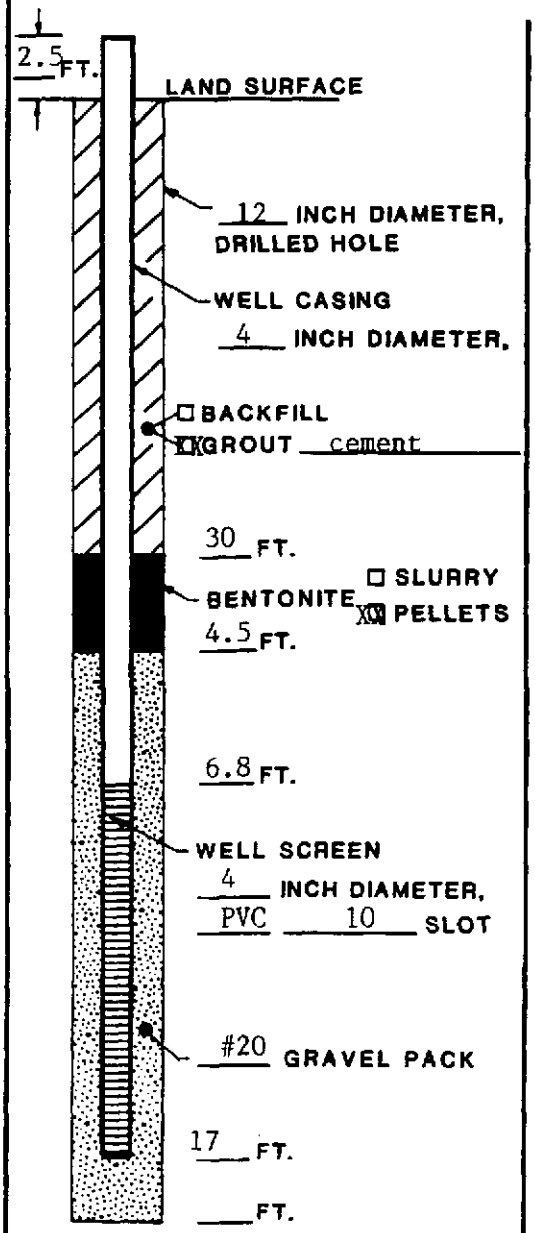
FLUID LOSS DURING DRILLING ____ GALLONS
WATER REMOVED DURING DEVELOPMENT 150 GALLONS
STATIC DEPTH TO WATER ____ FEET BELOW M.P.
PUMPING DEPTH TO WATER ____ FEET BELOW M.P.
PUMPING DURATION ____ HOURS
YIELD ____ GPM ____ DATE ____
SPECIFIC CAPACITY ____ GPM/FT.
WELL PURPOSE Monitoring Well

REMARKS Bedrock encountered @ 28.0'

HYDROGEOLOGIST Brian Thomas

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME IndustriPlex Site NUMBER 16101Y
WELL NO. OW-40 PERMIT NO.
TOWN/CITY Woburn
COUNTY Middlesex STATE MA
LAND-SURFACE ELEVATION
AND DATUM 68.7 FEET ☒ SURVEYED
above mean sea level ☐ ESTIMATED
INSTALLATION DATE(S) 9/28/90 - 10/2/90
DRILLING METHOD Hollow Stem Auger
DRILLING CONTRACTOR D.L. Maher
DRILLING FLUID

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Centrifugal 10/10/90

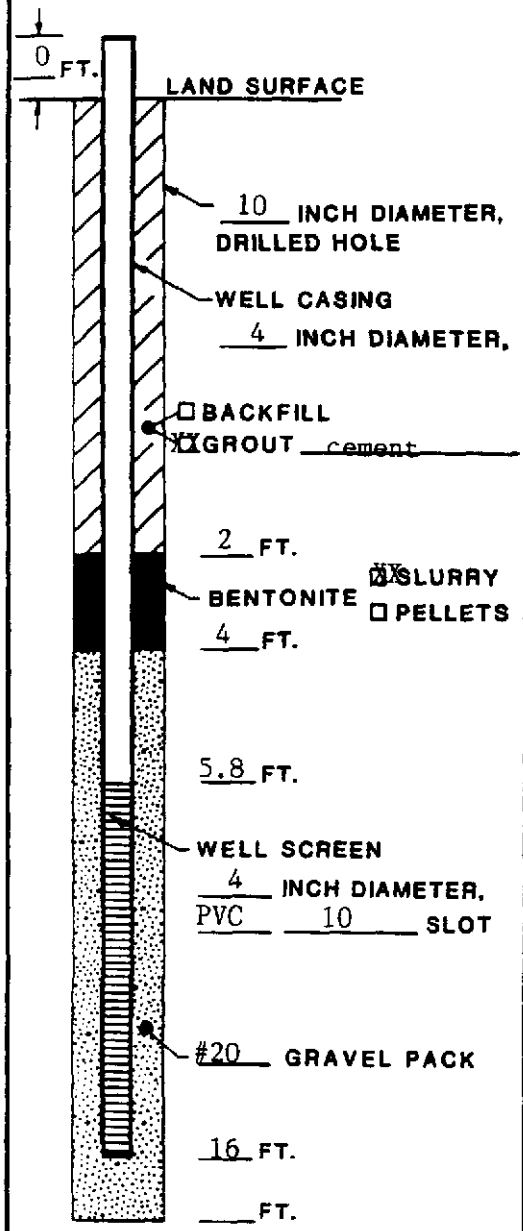
FLUID LOSS DURING DRILLING GALLONS
WATER REMOVED DURING DEVELOPMENT 250 GALLONS
STATIC DEPTH TO WATER FEET BELOW M.P.
PUMPING DEPTH TO WATER FEET BELOW M.P.
PUMPING DURATION HOURS
YIELD GPM DATE
SPECIFIC CAPACITY GPM/FT.
WELL PURPOSE Monitoring Well

REMARKS Bedrock encountered @ 27.5'.

HYDROGEOLOGIST Brian Thomas

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET
BELOW LAND SURFACE

PROJECT NAME IndustriPlex Site NUMBER 16101Y
WELL NO. OW-41 PERMIT NO.
TOWN/CITY Woburn
COUNTY Middlesex STATE MA
LAND-SURFACE ELEVATION
AND DATUM 67.5 FEET XX ☐ SURVEYED
above mean sea level ☐ ESTIMATED
INSTALLATION DATE(S) 10/4/90
DRILLING METHOD Hollow Stem Auger
DRILLING CONTRACTOR D.L. Maher
DRILLING FLUID

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Centrifugal Pump 10/11/90

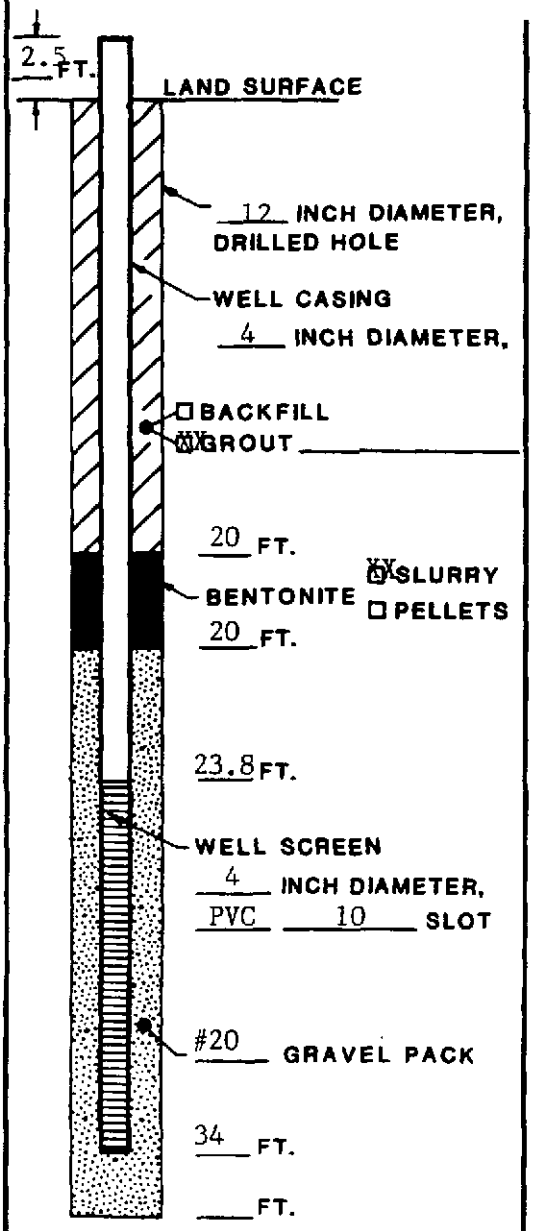
FLUID LOSS DURING DRILLING GALLONS
WATER REMOVED DURING DEVELOPMENT 250 GALLONS
STATIC DEPTH TO WATER FEET BELOW M.P.
PUMPING DEPTH TO WATER FEET BELOW M.P.
PUMPING DURATION HOURS
YIELD GPM DATE
SPECIFIC CAPACITY GPM/FT.
WELL PURPOSE Monitoring Well

REMARKS Bedrock encountered @ 27.0'

HYDROGEOLOGIST Brian Thomas

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME IndustriPlex Site NUMBER 16101Y
WELL NO. OW-42 PERMIT NO. _____
TOWN/CITY Woburn
COUNTY Middlesex STATE MA
LAND-SURFACE ELEVATION AND DATUM 67.0 FEET above mean sea level
☒ SURVEYED
☐ ESTIMATED
INSTALLATION DATE(S) 10/9/90
DRILLING METHOD Hollow Stem Auger
DRILLING CONTRACTOR D.L. Maher
DRILLING FLUID Water

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Centrifugal Pump 10/11/90

FLUID LOSS DURING DRILLING _____ GALLONS
WATER REMOVED DURING DEVELOPMENT 100 GALLONS
STATIC DEPTH TO WATER _____ FEET BELOW M.P.
PUMPING DEPTH TO WATER _____ FEET BELOW M.P.
PUMPING DURATION _____ HOURS
YIELD _____ GPM _____ DATE _____
SPECIFIC CAPACITY _____ GPM/FT.
WELL PURPOSE Monitoring Well

REMARKS High concentration of Methane gas, some H_2S gas encountered during drilling and well installation.

HYDROGEOLOGIST Brian Thomas

APPENDIX E

Well Sampling Forms
Phase 1 and Phase 2

APPENDIX E

Well Sampling Forms
Phase 1

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associates
PROJECT NO. 161014
LOCATION Industri-Plex, Woburn Mass

WELL NUMBER OW-23
DATE 6/5/90
WEATHER Partly Sunny
SAMPLED BY B. Thomas

TYPE OF WELL Monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	30.10	FT.
DEPTH TO WATER	13.73	FT.
WATER COLUMN	16.37	FT.
VOLUME OF WATER IN WELL	10.64	GAL.
VOLUME OF WATER TO REMOVE	31.92	GAL.
VOLUME REMOVED	~~35~~ 34	GAL.

RATE OF PURGE 5gpm (2 min); 2gpm (12 min.)
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS

Clear, slightly turbid
pH

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
10:05	5.43	1400 umh.	10°C	NM	NM	NM

NM - Not Measured

TYPES OF SAMPLES COLLECTED

TCL analysis Volatile organic compounds, Semi Volatiles, Pesticide and PCBs, Inorganics ~~filter~~ total and dissolved.

LABORATORY NAME AND LOCATION

Erco laboratory, Cambridge, Massachusetts

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associates
PROJECT NO. 16101Y
LOCATION Industri-Plex Woburn Mass.

WELL NUMBER OW-24A
DATE 6/4/90
WEATHER Partly Sunny, Windy
SAMPLED BY B. Thomas

TYPE OF WELL Monitoringwell
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	24.39	FT.
DEPTH TO WATER	4.24	FT.
WATER COLUMN	20.15	FT.
VOLUME OF WATER IN WELL	13.10	GAL.
VOLUME OF WATER TO REMOVE	39.30	GAL.
VOLUME REMOVED	48	GAL.

RATE OF PURGE 12 gpm (4 min)
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS
Split with NUS and GZA
pH meter not functioning

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
12:15		440 umho	14 °C	NA	NA	NA

NA - not applicable

TYPES OF SAMPLES COLLECTED
TCL - CLP

LABORATORY NAME AND LOCATION
Erco laboratory Cambridge Massachusetts

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associates
PROJECT NO. 16101Y
LOCATION Industri-Plex, Woburn, Mass.

WELL NUMBER OW-24B
DATE 6/4/90
WEATHER Partly Sunny, Windy
SAMPLED BY A. Thomas

TYPE OF WELL
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	Silt to 57.76	FT.
DEPTH TO WATER	4.12	FT.
WATER COLUMN	53.64	FT.
VOLUME OF WATER IN WELL	34.37	GAL.
VOLUME OF WATER TO REMOVE	104.61	GAL.
VOLUME REMOVED	106	GAL.

RATE OF PURGE ~~Continuous~~ 5 gpm (3 min); 1 gpm (6 min); 2 gpm (20 min); 3 gpm (15 min
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS

~~Turbid~~ Split with NUS + GZA
pH meter not functioning

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
11:25		400 umho	13°C	NM	NM	NM

NM- Not measured

TYPES OF SAMPLES COLLECTED

TCL-CLP

LABORATORY NAME AND LOCATION

Erco lab Cambridge, MA

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC.

WELL SAMPLING DATA FORM

CLIENT Golder Associates
PROJECT NO. 161014
LOCATION Industri-Plex, Woburn, MASS

WELL NUMBER OW-25A
DATE 6/5/90
WEATHER Partly Sunny
SAMPLED BY B. Thomas

TYPE OF WELL
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	23.00	FT.
DEPTH TO WATER	13.53	FT.
WATER COLUMN	9.47	FT.
VOLUME OF WATER IN WELL	6.16	GAL.
VOLUME OF WATER TO REMOVE	18.48	GAL.
VOLUME REMOVED	22.5	GAL.

RATE OF PURGE 7 1/2 gpm (3 min)
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
12:10	5.51	50.9 umhos	12°C	NM	NM	NM

Not measured

TYPES OF SAMPLES COLLECTED

TCL-CLP

LABORATORY NAME AND LOCATION

Erco lab Cambridge, MA

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associates
PROJECT NO. 16101Y
LOCATION Industri-Plex Site Woburn, Mass.

WELL NUMBER OW-25B
DATE 6/5/90
WEATHER Partly Sunny
SAMPLED BY B. Thomas

TYPE OF WELL
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	39.42	FT.
DEPTH TO WATER	12.94	FT.
WATER COLUMN	26.48	FT.
VOLUME OF WATER IN WELL	17.21	GAL.
VOLUME OF WATER TO REMOVE	51.63	GAL.
VOLUME REMOVED	55	GAL.

RATE OF PURGE 10 gpm (5½ min)
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
12:25	6.07	279 umho	13°C	NM	NM	NM

NM - Not Measured

TYPES OF SAMPLES COLLECTED

TCL-CLP

LABORATORY NAME AND LOCATION

Erco lab Cambridge, MA

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC.

WELL SAMPLING DATA FORM

CLIENT Golder Associates
PROJECT NO. 161014
LOCATION Industri-Plex Site, Woburn MA

WELL NUMBER OW-26A
DATE 6/5/90
WEATHER Partly Sunny
SAMPLED BY B. Thomas

TYPE OF WELL
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	25.10	FT.
DEPTH TO WATER	8.37	FT.
WATER COLUMN	16.73	FT.
VOLUME OF WATER IN WELL	10.87	GAL.
VOLUME OF WATER TO REMOVE	32.61	GAL.
VOLUME REMOVED	35	GAL.

RATE OF PURGE 10 gpm (3½ min)
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
15:30	6.87	301 umho	12°C	NM	NM	NM

NM- not measured

TYPES OF SAMPLES COLLECTED

TCL-CLP

LABORATORY NAME AND LOCATION

Erco lab, Cambridge, MA

ROUX Consulting Ground-water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Geller Associates
PROJECT NO. 16101Y
LOCATION Industri-Plex Site; Woburn, Mass

WELL NUMBER OW-26B
DATE 6/5/90
WEATHER Partly Sunny
SAMPLED BY B. Thomas

TYPE OF WELL
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	43.76	FT.
DEPTH TO WATER	8.19	FT.
WATER COLUMN	35.57	FT.
VOLUME OF WATER IN WELL	23.12	GAL.
VOLUME OF WATER TO REMOVE	69.36	GAL.
VOLUME REMOVED	72	GAL.

RATE OF PURGE 8 gpm (6 min); 6 gpm (4 min)
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
15:50	6.28	401 umh.	11°C	NM	NM	NM

Not measured

TYPES OF SAMPLES COLLECTED

TCL - CLP

LABORATORY NAME AND LOCATION

Erco lab, Cambridge MA

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT: Calder Associates
PROJECT NO.: 16101Y
LOCATION: Industri-Plex Site, Woburn, Mass.

WELL NUMBER: OW-27A
DATE: 6/5/90
WEATHER: Partly Sunny
SAMPLED BY: B. Thomas

TYPE OF WELL:
STORAGE TANK:
TIME OF START:
TIME OF FINISH:

DEPTH TO BOTTOM OF WELL	42.73	FT.
DEPTH TO WATER	17.17	FT.
WATER COLUMN	25.56	FT.
VOLUME OF WATER IN WELL	16.61	GAL.
VOLUME OF WATER TO REMOVE	49.83	GAL.
VOLUME REMOVED	60	GAL.

RATE OF PURGE: 10 gpm (3 min); 5 gpm (6 min)
METHOD OF PURGE: Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
11:00	6.53	1140 umho	12°C	NM	NM	NM

NM – Not Measured

TYPES OF SAMPLES COLLECTED

TCL-CLP

LABORATORY NAME AND LOCATION

Erco lab Cambridge, MA

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT: Golder Associates
PROJECT NO.: 16101Y
LOCATION: Industri-Plex Site, Woburn, Mass

WELL NUMBER: OW-27B
DATE: 6/5/90
WEATHER: Partly Sunny
SAMPLED BY: B. Thomas

TYPE OF WELL:
STORAGE TANK:
TIME OF START:
TIME OF FINISH:

DEPTH TO BOTTOM OF WELL	96.00	FT.
DEPTH TO WATER	18.56	FT.
WATER COLUMN	77.44	FT.
VOLUME OF WATER IN WELL	50.34	GAL.
VOLUME OF WATER TO REMOVE	151.02	GAL.
VOLUME REMOVED	154.5	GAL.

RATE OF PURGE: 7½ gpm (11 min); 6 gpm (12 min)
METHOD OF PURGE: Submersible Pump

PHYSICAL APPEARANCE/COMMENTS

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O_2
11:20	6.64	269 umho	11°C	NM	NM	NM

NM - not measured

TYPES OF SAMPLES COLLECTED

TCL-CLP

LABORATORY NAME AND LOCATION

Erco lab, Cambridge, MA

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associates
PROJECT NO. 161014
LOCATION Industri-Plex Site, Woburn, Mass.

WELL NUMBER OW-29
DATE 6/4/90
WEATHER Partly Sunny, Windy
SAMPLED BY B. Thomas

TYPE OF WELL
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	25.07	FT.
DEPTH TO WATER	5.11	FT.
WATER COLUMN	19.96	FT.
VOLUME OF WATER IN WELL	12.97	GAL.
VOLUME OF WATER TO REMOVE	38.91	GAL.
VOLUME REMOVED	45	GAL.

RATE OF PURGE 15 gpm (3 min)
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O_2
17:25		1200 umh.	14°C	NM	NM	NM

NM - Not Measured

TYPES OF SAMPLES COLLECTED

TCL-CLP

LABORATORY NAME AND LOCATION

Erco lab, Cambridge, MA

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associates
PROJECT NO. 161014
LOCATION Industri-Plex Site, Woburn, Mass.

WELL NUMBER OW-30A
DATE 6/5/90
WEATHER Partly Sunny
SAMPLED BY B. Thomas

TYPE OF WELL
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	20.72	FT.
DEPTH TO WATER	11.61	FT.
WATER COLUMN	9.11	FT.
VOLUME OF WATER IN WELL	5.92	GAL.
VOLUME OF WATER TO REMOVE	17.76	GAL.
VOLUME REMOVED	20	GAL.

RATE OF PURGE 5 gpm (4 min)
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O_2
15:30	6.61	505 umb.	13°C	NM	NM	NM

NM - Not Measured

TYPES OF SAMPLES COLLECTED

TCL - CLP

LABORATORY NAME AND LOCATION

Erco lab, Cambridge, MA

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associates
PROJECT NO. 161014
LOCATION Industri-Plex, Woburn Mass.

WELL NUMBER OW-30B
DATE 6/5/90
WEATHER Partly Sunny
SAMPLED BY B. Thomas

TYPE OF WELL
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	60.33	FT.
DEPTH TO WATER	11.44	FT.
WATER COLUMN	48.89	FT.
VOLUME OF WATER IN WELL	31.78	GAL.
VOLUME OF WATER TO REMOVE	95.34	GAL.
VOLUME REMOVED	96.00	GAL.

RATE OF PURGE 7½ gpm (4 min) - 5 gpm (5 min)
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
16:05	7.13	564 umhos	12°C	NM	NM	NM

NM - Not Measured

TYPES OF SAMPLES COLLECTED

TCL analysis volatile organic compounds, Semi volatiles Pesticide and PCB's, Inorganics, total and dissolved.

LABORATORY NAME AND LOCATION

Erco laboratory Cambridge, Massachusetts

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT: Golder Associates
PROJECT NO.: 161017
LOCATION: Industri-Plex, Woburn Mass.

WELL NUMBER: OW-31
DATE: 6/6/90
WEATHER: Cloudy, humid
SAMPLED BY: B. Thomas

TYPE OF WELL:
STORAGE TANK:
TIME OF START:
TIME OF FINISH:

DEPTH TO BOTTOM OF WELL	17.05	FT.
DEPTH TO WATER	4.06	FT.
WATER COLUMN	12.99	FT.
VOLUME OF WATER IN WELL	8.44	GAL.
VOLUME OF WATER TO REMOVE	~~25~~ 25.32	GAL.
VOLUME REMOVED	26	GAL.

RATE OF PURGE: 1 gpm
METHOD OF PURGE: Bailer

PHYSICAL APPEARANCE/COMMENTS

- Water blackish-greenish, strong odor, effervescent
- Split with NUS

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
1230	7.67	1560 umho	11°C	NM	NM	NM

NM-Not Measured

TYPES OF SAMPLES COLLECTED

TCL-CLP

LABORATORY NAME AND LOCATION

Erco lab, Cambridge, MA

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC.

WELL SAMPLING DATA FORM

CLIENT: Golder Associates
PROJECT NO.: 161017
LOCATION: Industri-Plex Site, Woburn Mass.

WELL NUMBER: OW-32
DATE: 6/6/90
WEATHER: Cloudy, humid
SAMPLED BY: B. Thomas

TYPE OF WELL:
STORAGE TANK:
TIME OF START:
TIME OF FINISH:

DEPTH TO BOTTOM OF WELL	11.25	FT.
DEPTH TO WATER	4.61	FT.
WATER COLUMN	6.64	FT.
VOLUME OF WATER IN WELL	4.32	GAL.
VOLUME OF WATER TO REMOVE	12.96	GAL.
VOLUME REMOVED	13 ~~36~~	GAL.

RATE OF PURGE: 1 gpm
METHOD OF PURGE: Bailer

PHYSICAL APPEARANCE/COMMENTS

~~Water black, effervescent, strong odor~~
turbid, brown, odorous

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O_2
10:25	7.51	1770 umho	12°C	NM	NM	NM

NM - Not Measured

TYPES OF SAMPLES COLLECTED

TCL-CLP

LABORATORY NAME AND LOCATION

Ercolab, Cambridge, MA

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT: Golder Associates
PROJECT NO.: 16101Y
LOCATION: Industri-Plex Site - Woburn Mass

WELL NUMBER: OW-33A
DATE: 6/4/90
WEATHER: Partly Sunny, Windy
SAMPLED BY: B. Thomas

TYPE OF WELL:
STORAGE TANK:
TIME OF START:
TIME OF FINISH:

DEPTH TO BOTTOM OF WELL	46.79	FT.
DEPTH TO WATER	4.76	FT.
WATER COLUMN	42.03	FT.
VOLUME OF WATER IN WELL	27.32	GAL.
VOLUME OF WATER TO REMOVE	81.96	GAL.
VOLUME REMOVED	100	GAL.

RATE OF PURGE: 10 gpm (10 min)
METHOD OF PURGE: Centrifugal

PHYSICAL APPEARANCE/COMMENTS

Split with NUS and GZA

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
14:00		7 mmho	12°C	NM	NM	NM

NM - Not Measured

TYPES OF SAMPLES COLLECTED

TCL - CLP

LABORATORY NAME AND LOCATION

Erco lab, Cambridge, MA

ROUX Consulting Ground-water Geologists
ROUX ASSOCIATES INC.

WELL SAMPLING DATA FORM

CLIENT Golder Associates
PROJECT NO. 16101Y
LOCATION Industri-Plex Site, Woburn, Mass

WELL NUMBER OW-33B
DATE 6/4/90
WEATHER Partly Sunny, Windy
SAMPLED BY B. Thomas

TYPE OF WELL
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	86.13	FT.
DEPTH TO WATER	4.85	FT.
WATER COLUMN	81.28	FT.
VOLUME OF WATER IN WELL	52.83	GAL.
VOLUME OF WATER TO REMOVE	158.79	GAL.
VOLUME REMOVED	157.5	GAL.

RATE OF PURGE 7½ gpm (15 min); 5 gpm (9 min)
METHOD OF PURGE Submersible Pump

PHYSICAL APPEARANCE/COMMENTS

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
15:30		360 umho	11 °C	NM	NM	NM

NM – Not Measured

TYPES OF SAMPLES COLLECTED
TCL - CLP

LABORATORY NAME AND LOCATION
Erco lab Cambridge, MA

APPENDIX E

Well Sampling Forms
Phase 2

ROUX Consulting Ground-Water Geologists ROUX ASSOCIATES INC.

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-9
DATE 10/18/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 4" PVC Monitoring Well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	128.94	FT.
DEPTH TO WATER	9.90	FT.
WATER COLUMN	119.04	FT.
VOLUME OF WATER IN WELL	~~238~~ 175.	GAL.
VOLUME OF WATER TO REMOVE	~~237~~ 525	GAL.
VOLUME REMOVED	300 allowed to recover	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS
Brown color, not turbid

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O^2
11:15	6.13	1020 uMHO	9°C	None	N.M	N-M

TYPES OF SAMPLES COLLECTED
TCL Volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION
Radian Corporation Sacramento CA

*N.M – Not Measured

ROUX Consulting Ground-Water Geologists ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-10
DATE 10/16/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 4" PVC monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	32.20	FT.
DEPTH TO WATER	4.30	FT.
WATER COLUMN	27.90	FT.
VOLUME OF WATER IN WELL	18.13	GAL.
VOLUME OF WATER TO REMOVE	54.39	GAL.
VOLUME REMOVED	60 gallons	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O^2
16:20	6.02	420	12°C	Clear	N.M	N.M

TYPES OF SAMPLES COLLECTED
TCL volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION
Radian Corporation Sacramento CA

*N.M – Not Measured

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-11
DATE 10/16/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 4" PVC monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	42.30	FT.
DEPTH TO WATER	3.80	FT.
WATER COLUMN	38.50	FT.
VOLUME OF WATER IN WELL	25	GAL.
VOLUME OF WATER TO REMOVE	75	GAL.
VOLUME REMOVED	77 gallons	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS
Clear, slightly turbid

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O_2
15:55	6.33	360 umHO	11°C	Slight		

TYPES OF SAMPLES COLLECTED
TCL Volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION
Radian Corporation Sacramento CA

* N.M – Not Measured

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-12
DATE 10/15/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 4" PVC Monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	51.75	FT.
DEPTH TO WATER	6.60	FT.
WATER COLUMN	45.15	FT.
VOLUME OF WATER IN WELL	29.35	GAL.
VOLUME OF WATER TO REMOVE	88.00	GAL.
VOLUME REMOVED	100	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS
Black color, not turbid, effervescent, odorous

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O_2
15:45	8.19	5800 uMHO	12°C	clear	N.M	N.M

TYPES OF SAMPLES COLLECTED
TCL Volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION
Radian Corporation Sacramento CA

* N.M – Not Measured

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-13
DATE 10/15/90
WEATHER
SAMPLED BY B. Thomas R. Crowell

TYPE OF WELL 4" PVC monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	32.02	FT.
DEPTH TO WATER	3.49	FT.
WATER COLUMN	28.53	FT.
VOLUME OF WATER IN WELL	18.54	GAL.
VOLUME OF WATER TO REMOVE	55.60	GAL.
VOLUME REMOVED	60	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal pump

PHYSICAL APPEARANCE/COMMENTS

Clear, slightly turbid, odorous

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	* Eh	* O_2
15:30	7.58	755 uMHOs	18°C	slight	N.M.	N.M.

TYPES OF SAMPLES COLLECTED

TCL - Volatile Organic Compounds
TAL - Dissolved and total metals

LABORATORY NAME AND LOCATION

Radian Corporation Sacramento, CA.

* N.M. - Not Measured

ROUX ASSOCIATES, INC.

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-16
DATE 10/18/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 4" PVC Monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	37.02	FT.
DEPTH TO WATER	3.78	FT.
WATER COLUMN	33.24	FT.
VOLUME OF WATER IN WELL	21.60	GAL.
VOLUME OF WATER TO REMOVE	~~24.80~~ 64.8	GAL.
VOLUME REMOVED	66.5 gallons	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS

Brown color, not turbid odorous,
* groundwater and HCl preservative produces effervescence.
VOC samples are unpreserved

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O_2
12:50	6.88	16990 uMHO	13°C	None	N-M	N-M

TYPES OF SAMPLES COLLECTED

TCL Volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION

Radian Corporation Sacramento CA

* N.M – Not Measured

ROUX Consulting Ground-Water Geologists ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-17
DATE 10/16/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 4" PVC monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL 27.10 FT.
DEPTH TO WATER 5.62 FT.
WATER COLUMN 21.48 FT.
VOLUME OF WATER IN WELL 14 GAL.
VOLUME OF WATER TO REMOVE 42 GAL.
VOLUME REMOVED 45 GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS

Brown color, slightly turbid, effervescent, odorous.

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O^2
12:10	6.95	470uMHO	1PC	Slight	N.M.	N.M.

TYPES OF SAMPLES COLLECTED

TCL Volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION

Radian Corporation Sacramento CA

* N.M – Not Measured

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-18
DATE 10/16/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 6" PVC Monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	55.51	FT.
DEPTH TO WATER	8.42	FT.
WATER COLUMN	47.09	FT.
VOLUME OF WATER IN WELL	69.22	GAL.
VOLUME OF WATER TO REMOVE	208	GAL.
VOLUME REMOVED	226	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal pump

PHYSICAL APPEARANCE/COMMENTS
Clear, not turbid

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O^2
11:37	5.48	966	11°C	None	N.M	N.M

TYPES OF SAMPLES COLLECTED
TCL Volatile organic Compounds
TAL Dissolved and total metals

LABORATORY NAME AND LOCATION
Radian Corporation Sacramento CA

* N.M – Not Measured

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-18A
DATE 10/16/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 4" PVC monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	15.97	FT.
DEPTH TO WATER	7.78	FT.
WATER COLUMN	8.19	FT.
VOLUME OF WATER IN WELL	5.32	GAL.
VOLUME OF WATER TO REMOVE	15.96	GAL.
VOLUME REMOVED	32.5 gallon	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS
Clear, slightly turbid

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O_2
11:49	5.83	590 uMHO	13°C	slight	N.M	N.M

TYPES OF SAMPLES COLLECTED
TCL Volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION
Radian Corporation Sacramento CA

*N.M – Not Measured

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-19
DATE 10/16/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 6" PVC Monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL 68.59 FT.
DEPTH TO WATER 3.21 FT.
WATER COLUMN 63.38 FT.
VOLUME OF WATER IN WELL ~~41.20~~ 93.17 GAL.
VOLUME OF WATER TO REMOVE ~~123.60~~ 279.51 GAL.
VOLUME REMOVED 325 gallons GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS
Clear, not turbid

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O^2
11:10	5.83	460 uMHO	13°C	None	N.M	N.M

TYPES OF SAMPLES COLLECTED
TCL Volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION
Radian Corporation, Sacramento, CA.

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-19A
DATE 10/16/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 4" PVC monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	39.72	FT.
DEPTH TO WATER	3.43	FT.
WATER COLUMN	36.29	FT.
VOLUME OF WATER IN WELL	23.60	GAL.
VOLUME OF WATER TO REMOVE	70.80	GAL.
VOLUME REMOVED	200 gallons	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS
Clear slightly turbid

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O_2
11:20	6.32	250 uMHO	13°C	Slight	N.M	N.M.

TYPES OF SAMPLES COLLECTED
TCL Volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION
Radian Corporation Sacramento CA

*N.M – Not Measured

HOUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-21
DATE 10/18/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 4" PVC Monitoring Well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	17.56	FT.
DEPTH TO WATER	5.06	FT.
WATER COLUMN	12.50	FT.
VOLUME OF WATER IN WELL	8.12	GAL.
VOLUME OF WATER TO REMOVE	24.36	GAL.
VOLUME REMOVED	25 gallons	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O^2
12:15	5.87	340 µMHO	14°C		N.M	N.M

TYPES OF SAMPLES COLLECTED

TCL Volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION

Radian Corporation Sacramento CA

*N.M – Not Measured

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-22
DATE 10/17/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 4" PVC Monitoring Well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL _____ FT.
DEPTH TO WATER _____ FT.
WATER COLUMN _____ FT.
VOLUME OF WATER IN WELL _____ GAL.
VOLUME OF WATER TO REMOVE _____ GAL.
VOLUME REMOVED 14 gallons GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS
Brown color, slightly turbid

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O_2
13:50	6.15	2100 uMHO	14°C	Slight	N.M	N.M

TYPES OF SAMPLES COLLECTED
TCL Volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION
Radian Corporation Sacramento CA

* N.M – Not Measured

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC.

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-24A
DATE 10/16/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 4" PVC monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	24.38	FT.
DEPTH TO WATER	4.13	FT.
WATER COLUMN	20.25	FT.
VOLUME OF WATER IN WELL	13.16	GAL.
VOLUME OF WATER TO REMOVE	39.48	GAL.
VOLUME REMOVED	45	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS
clear, not turbid

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O_2
14:21	5.74	410 uMHO	15°C	None	N.M	N.M

TYPES OF SAMPLES COLLECTED
TCL Volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION
Radian Corporation Sacramento CA

* N.M – Not Measured

ROUX Consulting Ground-Water Geologists ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-24B
DATE 10/16/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 4" PVC monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	58.27	FT.
DEPTH TO WATER	3.99	FT.
WATER COLUMN	54.28	FT.
VOLUME OF WATER IN WELL	35.28	GAL.
VOLUME OF WATER TO REMOVE	105.84	GAL.
VOLUME REMOVED	110 gallons	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS
Clear, not turbid

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O_2
14:00	6.00	540 uMHO	14°C	None	N.M	N.M

TYPES OF SAMPLES COLLECTED
TCL Volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION
Radian Corporation Sacramento CA

* N.M – Not Measured

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-28
DATE 10/17/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 4" PVC Monitoring Well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	11.63	FT.
DEPTH TO WATER	9.30	FT.
WATER COLUMN	2.33	FT.
VOLUME OF WATER IN WELL	1.51	GAL.
VOLUME OF WATER TO REMOVE	4.53	GAL.
VOLUME REMOVED	5 gallons	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS
Clear not turbid

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O^2
	5.78	80 uMHO	N.M.	Clear	N.M	N.M

TYPES OF SAMPLES COLLECTED
TCL Volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION
Radian Corporation Sacramento CA

*N.M – Not Measured

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-30A
DATE 10/17/90
WEATHER
SAMPLED BY R. Thomas, R. Crowell

TYPE OF WELL 4" PVC Monitoring Wel
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	20.72	FT.
DEPTH TO WATER	11.86	FT.
WATER COLUMN	8.86	FT.
VOLUME OF WATER IN WELL	5.76	GAL.
VOLUME OF WATER TO REMOVE	17.28	GAL.
VOLUME REMOVED	21	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS

Clear not turbid

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O_2
15:15	pH/COND meter not functioning		13°	none	N.M	N.M

TYPES OF SAMPLES COLLECTED

TCL Volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION

Radian Corporation Sacramento CA

*N.M – Not Measured

ROUX Consulting Ground-Water Geologists ROUX ASSOCIATES INC.

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-30B
DATE 10/17/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 4" PVC Monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	60.27	FT.
DEPTH TO WATER	11.61	FT.
WATER COLUMN	48.66	FT.
VOLUME OF WATER IN WELL	31.63	GAL.
VOLUME OF WATER TO REMOVE	94.89	GAL.
VOLUME REMOVED	100 gallon	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS
Clear not turbid

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O_2
15:00	pH/COND meter not functioning		13°C	none	N.M	N.M.

TYPES OF SAMPLES COLLECTED
TCL volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION
Radian Corporation Sacramento CA

* N.M – Not Measured

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-31
DATE 10/18/90
WEATHER
SAMPLED BY B. Thomas R. Crowell

TYPE OF WELL 4" PVC monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	17.05'	FT.
DEPTH TO WATER	4.05'	FT.
WATER COLUMN	13.00	FT.
VOLUME OF WATER IN WELL	9.5	GAL.
VOLUME OF WATER TO REMOVE	28.5	GAL.
VOLUME REMOVED	31 gallons	GAL.

RATE OF PURGE
METHOD OF PURGE ~~Pump~~ bailed with teflon bailer

PHYSICAL APPEARANCE/COMMENTS

Green-black color, odorous, slightly effervescent.

HCl preservative reacts with groundwater, bottles are not ~~on~~ preserved with HCl

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O^2
13:45	6.61	5370 umHO	13°C		N.M	N.M.

TYPES OF SAMPLES COLLECTED

TCL Volatile Organic Compound
TAL Dissolved and total Metals

LABORATORY NAME AND LOCATION

Radian Corporation, Sacramento, CA.

ROUX Consulting Ground-Water Geologists ROUX ASSOCIATES INC.

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-32
DATE 10/17/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 4" PVC monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	11.27	FT.
DEPTH TO WATER	4.51	FT.
WATER COLUMN	6.76	FT.
VOLUME OF WATER IN WELL	4.39	GAL.
VOLUME OF WATER TO REMOVE	13.2	GAL.
VOLUME REMOVED	14	GAL.

RATE OF PURGE
METHOD OF PURGE ~~Centrifugal Pump~~ Bailed by hand with teflon bailer.

PHYSICAL APPEARANCE/COMMENTS

Brown color, not turbid, odorous.

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O_2
14:15	pH/Cond meter not functioning		12°C	None	N.M.	N.M

TYPES OF SAMPLES COLLECTED

TCL volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION

Radian Corporation Sacramento CA

* N.M – Not Measured

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-36
DATE 10/18/90
WEATHER
SAMPLED BY R. Thomas, R. Crowell

TYPE OF WELL 4" PVC Monitoring Well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	15.72	FT.
DEPTH TO WATER	4.45	FT.
WATER COLUMN	11.27	FT.
VOLUME OF WATER IN WELL	7.32	GAL.
VOLUME OF WATER TO REMOVE	22	GAL.
VOLUME REMOVED	25 gallons	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS
Slightly turbid

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O_2
13:22	6.86	1250	15°C	Slight	N.M	N.M

TYPES OF SAMPLES COLLECTED
TCL Volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION
Radian Corporation Sacramento CA

*N.M – Not Measured

ROUX Consulting Ground-Water Geologists ROUX ASSOCIATES INC.

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-37
DATE 10/18/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 4" PVC Monitoring Well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	18.20	FT.
DEPTH TO WATER	4.44	FT.
WATER COLUMN	13.76	FT.
VOLUME OF WATER IN WELL	8.94	GAL.
VOLUME OF WATER TO REMOVE	26.83	GAL.
VOLUME REMOVED	30 gallons	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS

Clear, not turbid

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O^2
13:10	6.09	600 uMHO	13°C	None	N.M	N.M.

TYPES OF SAMPLES COLLECTED

TCL Volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION

Radian Corporation Sacramento CA

* N.M – Not Measured

ROUX Consulting Ground-Water Geologists ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-38
DATE 10/17/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 4" PVC monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	16.85	FT.
DEPTH TO WATER	5.42	FT.
WATER COLUMN	11.43	FT.
VOLUME OF WATER IN WELL	7.43	GAL.
VOLUME OF WATER TO REMOVE	22.29	GAL.
VOLUME REMOVED	23 gallons	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS
Brown slightly turbid

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O^2
16:05	5.78	780	15°C	slight	N.M	N.M

TYPES OF SAMPLES COLLECTED
TCL Volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION
Radian Corporation Sacramento CA

*N.M – Not Measured

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-39
DATE 10/15/90
WEATHER
SAMPLED BY B. Thomas R. Crowell

TYPE OF WELL 4" PVC Monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	17.54	FT.
DEPTH TO WATER	9.37	FT.
WATER COLUMN	8.17	FT.
VOLUME OF WATER IN WELL	5.31	GAL.
VOLUME OF WATER TO REMOVE	15.9	GAL.
VOLUME REMOVED	17 gallons	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal pump

PHYSICAL APPEARANCE/COMMENTS
Black color slightly turbid, odorous.

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
14:40	6.72	1150 uMHO	13°C	Slight	NM	NM

TYPES OF SAMPLES COLLECTED
TCL Volatile Organic Compounds
TAL Dissolved and total metals

LABORATORY NAME AND LOCATION
Radian Corporation, Sacramento, CA

N.M. - not measured

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-40
DATE 10/15/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 4" Monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	20.08	FT.
DEPTH TO WATER	11.93	FT.
WATER COLUMN	8.15	FT.
VOLUME OF WATER IN WELL	5.30	GAL.
VOLUME OF WATER TO REMOVE	Purged 15.9	GAL.
VOLUME REMOVED	Approximately 20	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS

Brown, color slightly turbid.

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
14:25	6.80	1980 uMHOs	12°C	Slight	NM	NM

TYPES OF SAMPLES COLLECTED

TCL Volatile Organic Compounds
TAL Dissolved and total metals

LABORATORY NAME AND LOCATION

Radian laboratory, Sacromento CA

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16191
LOCATION Woburn MA

WELL NUMBER OW-41
DATE 10/15/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 4" PVC Monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	15.86	FT.
DEPTH TO WATER	7.22	FT.
WATER COLUMN	8.64	FT.
VOLUME OF WATER IN WELL	5.62	GAL.
VOLUME OF WATER TO REMOVE	16.90	GAL.
VOLUME REMOVED	18 gallons	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS
Grey color, slight odor

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
15:10	7.48	1608 uMHO	14°	Clear	N.M	N.M.

TYPES OF SAMPLES COLLECTED
TCL Volatile organic compound
TAL Dissolved and total metals

LABORATORY NAME AND LOCATION
Radian Corporation, Sacramento CA

* N.M — not measured

ROUX ASSOCIATES INC

WELL SAMPLING DATA FORM

CLIENT Golder Associate
PROJECT NO. 16101
LOCATION Woburn MA

WELL NUMBER OW-42
DATE 10/15/90
WEATHER
SAMPLED BY B. Thomas, R. Crowell

TYPE OF WELL 4" PVC monitoring well
STORAGE TANK
TIME OF START
TIME OF FINISH

DEPTH TO BOTTOM OF WELL	36.69	FT.
DEPTH TO WATER	16.59	FT.
WATER COLUMN	20.10	FT.
VOLUME OF WATER IN WELL	13.06	GAL.
VOLUME OF WATER TO REMOVE	39.18	GAL.
VOLUME REMOVED	60 gallons	GAL.

RATE OF PURGE
METHOD OF PURGE Centrifugal Pump

PHYSICAL APPEARANCE/COMMENTS

Brown color slightly turbid odorous

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	*Eh	*O_2
16:35	8.21	3360 uMHO	9°C	Slight	N.M	N.M.

TYPES OF SAMPLES COLLECTED

TCL Volatile Organic Compounds
TAL Dissolved and Total Metals

LABORATORY NAME AND LOCATION

Radian Corporation Sacramento CA

* N.M – Not Measured

APPENDIX F

Chain-of-Custody Forms
Phase 1 and Phase 2

APPENDIX F

Chain-of-Custody Forms
Phase 1

ROUX

CHAIN OF CUSTODY

Consulting Ground-Water Geologists & Engineers
ROUX ASSOCIATES INC
775 PARK AVENUE
SUITE 255
HUNTINGTON, NEW YORK 11743

Project Name: PRE-DESIGN INVESTIGATION

Project Number: 16101Y

Project Location: Industri-Plex Site, Woburn Massachusetts

Sampler(s): Brian Thomas, Larry McTiernan

ANALYSES

Sample Designation/Location	Date Collected	Time Collected	TCL semi-volatiles in 1 liter amber glass bottle. Unpreserved. Chilled.	TCL pesticides and PCBs in 1 liter amber glass bottle. Unpreserved. Chilled.	TAL metals in 1 liter poly bottle. Preserved with nitric acid. Chilled	TAL dissolved metals in 500 ml poly bottle. Field filtered. Preserved with nitric acid. Chilled.	TCL volatile organic compounds in 40 ml glass vial. Preserved with HCl. Chilled.		TOTAL BOTTLES	NOTES
G1PUB213	6-4-90	1110	1	6-4-90 RC					1	
G1PUB215U	6-4-90	1110			1				1	
G1PUB215F	6-4-90	1110				1			1	
G1PUB214	6-4-90	1110		1					1	
G1PUB212	6-4-90	1110					3		3	
G124A215F	6-4-90	1125				1			1	
G124A214	6-4-90	1125		1					1	18 Total Bottles
G124A213	6-4-90	1125	1						1	
G124A212	6-4-90	1125					3		3	
G124A215U	6-4-90	1125			1				1	
G124B215F	6-4-90	1215				1			1	
G124B214	6-4-90	1215		1					1	
G124B215U	6-4-90	1215			1				1	
G124B213	6-4-90	1215	1						1	

Relinquished by:(Signature)	For	Date	Time	Received by:(Signature)	For	Date	Time
[signature]	Roux	6/4/90	19:19	Marcia Motta	Enseco	6/4/90	19:21
Relinquished by:(Signature)	For	Date	Time	Received by:(Signature)	For	Date	Time
Relinquished by:(Signature)	For	Date	Time	Received by:(Signature)	For	Date	Time

Delivery Method: Hand Delivered

Comments:

ROUX

CHAIN OF CUSTODY

Consulting Ground-Water Geologists & Engineers
ROUX ASSOCIATES INC

775 PARK AVENUE
SUITE 255
HUNTINGTON, NEW YORK 11743

ANALYSES

Project Name: PRE-DESIGN INVESTIGATION

Project Number: 16101Y

Project Location: Industri-Plex Site, Waburn Massachusetts

Sampler(s): Brian Thomas, Larry McTiernan

Sample Designation/Location	Date Collected	Time Collected	TCL Volatile organic compounds in 40 ml glass vial. Preserved with HCl. Chilled.						TOTAL BOTTLES	NOTES
G124B212	6-4-90	1215	3						3	
G133A212 MSD	6-4-90	1400	3						3	
G133A212 MS	6-4-90	1400	3						3	
G133A212	6-4-90	1400	3						3	
G133B212	6-4-90	1530	3						3	17 total bottles
TRIP BLANK 6339	6-4-90		2						2	

Relinquished by:(Signature)	For	Date	Time	Received by:(Signature)	For	Date	Time
Brian Thomas	ROUX	6/4/90	19:19	Marcia Motta	Enviro	6/4/90	19:19
Relinquished by:(Signature)	For	Date	Time	Received by:(Signature)	For	Date	Time
Relinquished by:(Signature)	For	Date	Time	Received by:(Signature)	For	Date	Time

Delivery Method: Hand Delivered

Comments:

Enseco-Erco Laboratory
205 Alewife Brook Parkway
Cambridge, Massachusetts 02138
617/661-3111 Fax: 617/354-5258

CHAIN OF CUSTODY 006406 1 of 6 No. 02460

Attn: _____

Enseco Client _____
Project Pre-Design Investigation
~~Sampling Co.~~ Project #16101Y
Sampling Site Industri-Plex Site, Woburn, Mass.
Team Leader Brian Thomas
Larry McTiernan

SAMPLE SAFE™ CONDITIONS

1. Packed by _____ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: _____
4. Sealed for Shipping by: _____
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until _____
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
6-4-90	17:25	6129214	Water	1	TCL Pesticides and PCB's in 1-liter amber glass bottle; unpreserved; chilled.	
6-4-90	17:25	6129213	Water	1	TCL Semi-Volatiles in 1-liter amber glass bottle; Unpreserved; chilled.	
6-4-90	17:25	6129215U	Water	1	TAL metals in 1-liter Poly bottle; Preserved with Nitric Acid; Chilled.	
6-4-90	17:25	6129215F	Water	1	TAL dissolved metals in 500-mL Poly bottle; Field-filtered; Preserved with Nitric Acid; chilled.	14 bottles total
6-4-90	17:25	6129212	Water	3	TCL Volatile organic compounds in 40-mL glass vial; Preserved with HCL; chilled.	
6-4-90	18:25	6134214	Water	1	TCL Pesticides and PCB's in 1-liter amber glass bottle; Unpreserved; Chilled.	
6-4-90	18:25	6134213	Water	1	TCL Semi-Volatiles in 1-liter glass bottle; Unpreserved; Chilled.	
6-4-90	18:25	6134215U	Water	1	TAL metals in 1-liter Poly bottle; Preserved with Nitric Acid; Chilled.	
6-4-90	18:25	6134215F	Water	1	TAL dissolved metals in 500mL Poly bottle; Field-filtered; Preserved with Nitric Acid; chilled.	
6-4-90	18:25	6134212	Water	3	TCL Volatile organic compounds in 40-mL glass vial; Preserved with HCL; chilled.	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	6/5/90	8:10
2	Flux			
3	6/5/90 20:10			

SHIPPING DETAILS

Delivered to Shipper by: _____
Method of Shipment: _____ Airbill # _____
Received for Lab: Esco Signed: A. Huvaug Date/Time 6/6/90 1:00
Enseco Project No. _____

Enseco-Erco Laboratory
205 Alewife Brook Parkway
Cambridge, Massachusetts 02138
617/661-3111 Fax: 617/354-5258

CHAIN OF CUSTODY 206406 2 of 6 No. 6525

Attn:

Enseco Client
Project Pre-Design Investigation
~~Sampling Co.~~ Project #16101Y
Sampling Site Industri-Plex Site, Woburn, Mass.
Team Leader Brian Thomas
Larry McTiernan

SAMPLE SAFE™ CONDITIONS

1. Packed by: Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents:
4. Sealed for Shipping by:
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
6-5-90	10:05	6123 214	Water	1	TCL Pesticides and PCB's in 1-liter amber glass bottle; Unpreserved; Chilled.	
6-5-90	10:05	6123 213	Water	1	TCL Semi-Volatiles in 1-liter amber glass bottle; Unpreserved; Chilled.	
6-5-90	10:05	6123215U	Water	1	TAL metals in 1-liter poly bottle; Preserved with Nitric Acid; Chilled.	
6-5-90	10:05	6123 215F	Water	1	TAL dissolved metals in 500-ml poly bottle; field-filtered; Preserved with Nitric Acid; Chilled	14 bottles total
6-5-90	10:05	6123 212	Water	3	TCL Volatile organic compounds in 40-ml glass vial; Preserved with HCl; Chilled.	
6-5-90	11:00	6127A 214	Water	1	TCL Pesticides and PCB's in 1-liter amber glass bottle; Unpreserved; Chilled.	
6-5-90	11:00	6127A 213	Water	1	TCL Semi-Volatiles in 1-liter amber glass bottle; Unpreserved; Chilled.	
6-5-90	11:00	6127A215U	Water	1	TAL metals in 1-liter poly bottle; Preserved with Nitric Acid; Chilled.	
6-5-90	11:00	6127A 215F	Water	1	TAL dissolved metals in 500-ml poly bottle; field-filtered; Preserved with Nitric Acid; Chilled.	
6-5-90	11:00	6127A 212	Water	3	TCL Volatile organic compounds in 40-ml glass vial; Preserved with HCl; Chilled.	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (Signed)	Received by: (signed)	Date	Time
1	[illegible]	Karen Stevens	6/5/90	8:10 PM
2	[illegible]			
3	6/5/90 20:10			

SHIPPING DETAILS

Delivered to Shipper by:
Method of Shipment: Airbill #
Received for Lab: Signed: Date/Time 6/8/90 1:00
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

Enseco-Erco Laboratory
205 Alewife Brook Parkway
Cambridge, Massachusetts 02138
617/661-3111 Fax: 617/354-5258

CHAIN OF CUSTODY

006406 3 of 6 No. 6511

SAMPLE SAFE™ CONDITIONS

1. Packed by _____ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: _____
4. Sealed for Shipping by: _____
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until _____
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Attn: _____

Enseco Client _____
Project Pre-Design Investigation
~~Sampling Co.~~ Project #16101Y
Sampling Site Industri-Plex Site, Woburn, Mass.
Team Leader Brian Thomas
Larry McTiernan

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
6-5-90	11:20	G127B 214	Water	1	TCL Pesticides and PCB's in 1-liter amber glass bottle; Unpreserved; Chilled.	
6-5-90	11:20	G127B 213	Water	1	TCL Semi-Volatiles in 1-liter amber glass bottle; Unpreserved; Chilled.	
6-5-90	11:20	G127B 215U	Water	1	TAL metals in 1-liter poly bottle; Preserved with Nitric Acid; Chilled.	
6-5-90	11:20	G127B215F	Water	1	TAL dissolved metals in 500-ml poly bottle; field-filtered; Preserved with nitric acid; Chilled.	14 bottles total
6-5-90	11:20	G127B 212	Water	3	TCL Volatile organic compounds in 40-ml glass vial; Preserved with HCl; Chilled.	
6-5-90	12:10	G125A 214	Water	1	TCL Pesticides and PCB's in 1-liter amber glass bottle; Unpreserved; Chilled.	
6-5-90	12:10	G125A 213	Water	1	TCL Semi-Volatiles in 1-liter amber glass bottle; Unpreserved; Chilled.	
6-5-90	12:10	G125A215U	Water	1	TAL metals in 1-liter poly bottle; Preserved with Nitric Acid; Chilled.	
6-5-90	12:10	G125A215F	Water	1	TAL dissolved metals in 500-ml poly bottle; field-filtered; Preserved with Nitric Acid; Chilled.	
6-5-90	12:10	G125A212	Water	3	TCL Volatile organic compounds in 40-ml glass vial; Preserved with HCl; Chilled.	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	6/5/90	810pm
2	LOUX			
3	6/5/90 20:10			

SHIPPING DETAILS

Delivered to Shipper by: _____
Method of Shipment: _____ Airbill # _____
Received for Lab: [signature] Signed: [signature] Date/Time 6/6/90 1:00
Enseco Project No. _____

White and Pink Copies to Lab

Enseco-Erco Laboratory

205 Alewife Brook Parkway
Cambridge, Massachusetts 02138
617/661-3111 Fax: 617/354-5258

CHAIN OF CUSTODY

006406 4 of 6 No. 6510

Attn: _____

Enseco Client _____
Project Pro-Design Investigation
~~Sampling Co.~~ Project #161017
Sampling Site Industri-Plex Site
Team Leader Brian Thomas
Larry McTiernan

SAMPLE SAFE™ CONDITIONS

1. Packed by: _____ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: _____
4. Sealed for Shipping by: _____
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until _____
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
6-5-90	12:25	G125B214	Water	1	TCL Pesticides and PCB's in 1-liter amber glass bottle; Unpreserved; Chilled.	
6-5-90	12:25	G125B213	Water	1	TCL Semi-Volatiles in 1-liter amber glass bottle; Unpreserved; Chilled.	
6-5-90	12:25	G125B215U	Water	1	TAL Metals in 1-liter poly bottle; Preserved with Nitric Acid; Chilled.	6-5-90 LMT
6-5-90	12:25	G125B215F	Water	1	TAL dissolved metals in 500-ml poly bottle; field-filtered; Preserved with Nitric Acid; Chilled.	13 ~~14~~ bottles total
6-5-90	12:25	G125B212	Water	3	TCL Volatile organic compounds in 40-ml glass vial; Preserved with HCl; Chilled.	
6-5-90	09:00	Field Blank A 214	Water	1	TCL Pesticides and PCB's in 1-liter amber glass bottle; Unpreserved; Chilled	
6-5-90	09:00	Field Blank A 213	Water	1	TCL Semi-Volatiles in 1-liter amber glass bottle; Unpreserved; Chilled.	
6-5-90	09:00	Field Blank A 215U	Water	1	TAL Metals in 500-ml poly bottle; Preserved with Nitric acid; Chilled.	
6-5-90	09:00	Field Blank A 215F	Water	1	TAL dissolved metals in 500-ml poly bottle; field-filtered; Preserved with Nitric Acid; Chilled.	
6-5-90	09:00	Field Blank A 212	Water	~~3~~ 2 6-5-90 LMT	TCL Volatile organic compounds in 40-ml glass vial; Preserved with HCl; Chilled.	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	Kevin Stevens	6/5/90	8:10 p.m.
2	LOVX			
3	6/5/90 20:10			

SHIPPING DETAILS

Delivered to Shipper by: _____
Method of Shipment: _____ Airbill # _____
Received for Lab: Erco Signed: A Huvoins Date/Time 6/6/90 1:10
Enseco Project No. _____

Enseco-Erco Laboratory
205 Alewife Brook Parkway
Cambridge, Massachusetts 02138
617/661-3111 Fax: 617/354-5258

CHAIN OF CUSTODY

006406 5 of 6 No. 01269

Attn: _____

Enseco Client _____
Project Pre-Design Investigation
~~Sampling Co.~~ Project #16101Y
Sampling Site Industri-Plex Site, Woburn, Mass
Team Leader Brian Thomas
Larry McTiernan

SAMPLE SAFE™ CONDITIONS

1. Packed by: _____ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: _____
4. Sealed for Shipping by: _____
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until _____
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
6-5-90	15:30	G130A 214	Water	1	TCL Pesticides and PCB's in 1-liter amber glass bottle; Unpreserved; Chilled.	
6-5-90	15:30	G130A 213	Water	1	TCL Semi-volatiles in 1-liter amber glass bottle; Unpreserved. Chilled.	
6-5-90	15:30	G130A 215	Water	1	TAL metals in 1-liter poly bottle; Preserved with Nitric Acid; Chilled.	14 bottles total
6-5-90	15:30	G130A 215F	Water	1	TAL dissolved metals in 500-ml poly bottle; Field-filtered; Preserved with Nitric Acid; Chilled.	
6-5-90	15:30	G130A 212	Water	3	TCL volatile organic compounds in 40-ml glass vial; Preserved with HCl; Chilled.	
6-5-90	16:05	G130B 214	Water	1	TCL Pesticides and PCB's in 1-liter amber glass bottle; Unpreserved; Chilled.	
6-5-90	16:05	G130B 213	Water	1	TCL Semi-volatiles in 1-liter amber glass bottle; Unpreserved; Chilled.	
6-5-90	16:05	G130B 215	Water	1	TAL metals in 1-liter poly bottle; Preserved with Nitric Acid; Chilled.	
6-5-90	16:05	G130B 215F	Water	1	TAL dissolved metals in 500-ml poly bottle; Field-filtered; Preserved with Nitric Acid; Chilled.	
6-5-90	16:05	G130B 212	Water	3	TCL Volatile organic compounds in 40-ml glass vial; Preserved with HCl; Chilled.	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	Brian Thomas	Kevin Strong	6/5/90	8:10 pm
2	Roux			
3	6/5/90 20:10			

SHIPPING DETAILS

Delivered to Shipper by: _____
Method of Shipment: _____ Airbill # _____
Received for Lab: QCW Signed: [illegible] Date/Time 6/6/90
Enseco Project No. _____

White and Pink Copies to Lab Yellow to Sender

Enseco-Erco Laboratory

205 Alewife Brook Parkway
Cambridge, Massachusetts 02138
617/661-3111 Fax: 617/354-5258

CHAIN OF CUSTODY

D064406 6 of 6 No. 6512

Attn: _____

Enseco Client _____
Project Pre-design Investigation
~~Sampling Co.~~ Project #16101Y
Sampling Site Industri-Plex Site, Woburn, Mass.
Team Leader Brian Thomas
Gary McTiernan

SAMPLE SAFE™ CONDITIONS

1. Packed by: _____ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: _____
4. Sealed for Shipping by: _____
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until _____
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
6-5-90	16:30	G135214	Water	1	TCL Pesticides and PCB's in 1-liter amber glass bottle; Unpreserved; Chilled	
6-5-90	16:30	G135213	Water	1	TCL Semi-Volatiles in 1-liter amber glass bottle; Unpreserved; Chilled.	
6-5-90	16:30	G135215	Water	1	TAL metals in 1-liter poly bottle; Preserved with Nitric Acid; Chilled.	11 bottles total
6-5-90	16:30	G135215F	Water	1	TAL dissolved metals in 500-ml bottle; field-filtered; Preserved with Nitric Acid; Chilled.	
6-5-90	16:30	G135212	Water	3	TCL volatile organic compounds in 40-ml glass vial; preserved with HCl; Chilled.	
6-5-90	19:00	Trip blank A	Water	2		
6-5-90	19:00	Trip blank B	Water	2		

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	Karen Stevens	6/5/90	8:10 p.m.
2	Roux			
3	6/5/90 20:10			

SHIPPING DETAILS

Delivered to Shipper by: _____
Method of Shipment: _____ Airbill # _____
Received for Lab: Erco Signed: A. Bunning Date/Time 6/6/90 1:00
Enseco Project No. _____

White and Pink Copies to Lab

APPENDIX F

Chain-of-Custody Forms
Phase 2

5070161

ROUX

CHAIN OF CUSTODY

№ 107 Y

Consulting Ground-Water Geologists & Engineers
ROUX ASSOCIATES INC
775 PARK AVENUE, SUITE 255
HUNTINGTON, NEW YORK 11743
(516) 673-7200 FAX. (516) 673-7216

ANALYSES

PROJECT NAME: Industri Plex Site
PROJECT NUMBER: 161017
PROJECT LOCATION: Industri Plex Site Woburn MA
SAMPLER(S): B. Thomas R. Crowell

SAMPLE DESIGNATION/LOCATION	DATE COLLECTED	TIME COLLECTED	TCL volatile organic compound in 40ml glass vial preserved w/ HCl chilled w/ ice	TAL Metals in liter poly bottle preserved with HNO3 chilled	TAL Metals in liter poly bottle, filtered preserved with HNO3 chilled				TOTAL BOTTLES	NOTES
G112222	10/15/90	15:45	2						2	
G112225F	10/15/90	15:45		1					1	
G112225U	10/15/90	15:45			1				1	
G134222	10/15/90	14:40	2						2	
G134225F	10/15/90	14:40		1					1	
G134225U	10/15/90	14:40			1				1	
G142222	10/15/90	16:35	2						2	
G142225F	10/15/90	16:35		1					1	
G142225U	10/15/90	16:35			1				1	
Field Blank A222	10/15/90	14:00	2						2	
Field Blank A225F	10/15/90	14:00		1					1	
Field Blank A225U	10/15/90	14:00			1				1	

RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
[signature]	Roux	10/15/90	17:30				
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
				[signature]		~~6/14/90~~ 10/16/90	930

DELIVERY METHOD: Federal Express Airbill # 2683053072

COMMENTS: Please sign and return to Roux Associates Inc.

ROUX

CHAIN OF CUSTODY

№ 106 Y

Consulting Ground-Water Geologists & Engineers
ROUX ASSOCIATES INC
775 PARK AVENUE, SUITE 255
HUNTINGTON, NEW YORK 11743
(516) 673-7200 FAX. (516) 673-7216

PROJECT NAME: Industri Plex Site (PDI)
PROJECT NUMBER: 16101 Y
PROJECT LOCATION: Industri Plex Site Woburn, MA
SAMPLER(S): B. Thomas R. Crowell

ANALYSES

SAMPLE DESIGNATION/LOCATION	DATE COLLECTED	TIME COLLECTED	TCL Volatile organic compound in 40ml glass vial, preserved with HCl chilled	TAL Metals in 1 liter poly bottle, preserved with HNO3; chilled; unfiltered	TAL Metals in 1 liter poly bottle; filtered preserved with HNO3 chilled				TOTAL BOTTLES	NOTES
G140222	10/15/90	14:25	2						2	
G140225F	10/15/90	14:25		1					1	33 bottles total in Cooler
G140225U	10/15/90	14:25			1				1	
G141222	10/15/90	15:10	2						2	
G141225F	10/15/90	15:10		1					1	
G141225U	10/15/90	15:10			1				1	
G139222	10/15/90	14:40	2						2	
G139225F	10/15/90	14:40		1					1	
G139225U	10/15/90	14:40			1				1	
G113222	10/15/90	15:30	2						2	
G113225F	10/15/90	15:30		1					1	
G113225U	10/15/90	15:30			1				1	
Trip Blank A	10/15/90	17:30	1						1	

RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
[signature]	Roux	10/15/90	17:30				
				[signature]		~~6/15/90~~ 10/16/90	930

DELIVERY METHOD: Federal Express #8683053072

COMMENTS: Please Sign and return to Roux Associates

ROUX

CHAIN OF CUSTODY

№ 118 Y

Consulting Ground-Water Geologists & Engineers
ROUX ASSOCIATES INC
775 PARK AVENUE, SUITE 255
HUNTINGTON, NEW YORK 11743
(516) 673-7200 FAX. (516) 673-7216

ANALYSES — PAGE OF

PROJECT NAME: Industriplex Site (PDI)
PROJECT NUMBER: 16101Y
PROJECT LOCATION: Industriplex Site Woburn MA
SAMPLER(S): B. Thomas R. Crowell

SAMPLE DESIGNATION/LOCATION	DATE COLLECTED	TIME COLLECTED	Pt Volatile Organics Surfactants Cyanide w/ HCl preserved w/ ice	Ta Metals in 1 liter poly bottle preserved with HNO3, unfiltered chilled	TAT metals in 1 liter poly bottle filtered preserved w/ HNO3 chilled				TOTAL BOTTLES	NOTES
G118222	10/16/90	11:37	2						2	
G118A222	10/16/90	11:49	2						2	
G118225F	10/16/90	11:37			1				1	
G118A225F	10/16/90	11:49			1				1	
G118A225U	10/16/90	11:49		1					1	
G118225U	10/16/90	11:37		1					1	
G119222	10/16/90	11:10	2						2	
G119225F	10/16/90	11:10			1				1	
G119225U	10/16/90	11:10		1					1	
G119A222	10/16/90	11:20	2						2	
G119A225F	10/16/90	11:20			1				1	
G119A225U	10/16/90	11:20		1					1	
G124A222	10/16/90	14:21	2						2	
G124A225F	10/16/90	14:21			1				1	

RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	Received RELINQUISHED BY: (SIGNATURE)	FOR Radian Corp	DATE 10/12/90	TIME 1030

DELIVERY METHOD: Federal Express # 7074118866

COMMENTS: 3°C Please sign and return to Roux Associates

W10074

ROUX

CHAIN OF CUSTODY

№ 115 Y

Consulting Ground-Water Geologists & Engineers
ROUX ASSOCIATES INC
775 PARK AVENUE, SUITE 255
HUNTINGTON, NEW YORK 11743
(516) 673-7200 FAX. (516) 673-7216

ANALYSES — PAGE OF

PROJECT NAME: Industri Plex Site (PDI)
PROJECT NUMBER: 16101Y
PROJECT LOCATION: Industri Plex Site Woburn MA
SAMPLER(S): Rob Crowell B. Thomas

SAMPLE DESIGNATION/LOCATION	DATE COLLECTED	TIME COLLECTED	TCL Volatile Organic Compounds in 40ml glass vial preserved with HCl chilled	TAL Metals in 1 liter poly bottle preserved with HNO3 unfiltered	TAL metals in 1 liter poly bottle, filtered preserved with HNO3 chilled				TOTAL BOTTLES	NOTES
G124A225U	10/16/90	14:21		1					1	
G124B225F	10/16/90	14:00			1				1	
G124B222	10/16/90	14:00	2						2	Total Bottles
G124B225U	10/16/90	14:00		1					1	24 in cooler

RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
[signature]	Roux Assoc	10/16/90	17:30	Received [signature]	Radian Corp	10/17/90	1030

DELIVERY METHOD: Federal Express #7074118866

COMMENTS: 50c
Please Sign and return to Roux Associates

0010074

ROUX

CHAIN OF CUSTODY

№ 116 Y

Consulting Ground-Water Geologists & Engineers
ROUX ASSOCIATES INC
775 PARK AVENUE, SUITE 255
HUNTINGTON, NEW YORK 11743
(516) 673-7200 FAX. (516) 673-7216

ANALYSES

PROJECT NAME: Industri Plex Site (PDI)

PROJECT NUMBER: 16101Y

PROJECT LOCATION: Industri Plex Site Woburn MA

SAMPLER(S): B. Thomas R. Crowell

SAMPLE DESIGNATION/LOCATION	DATE COLLECTED	TIME COLLECTED	TCL Volatile Organic Compound in 40ml glass vial preserved with HCl chilled	TAL Metals in 1 liter Poly bottle preserved with HNO_3 chilled	TAL metals in 1 liter Poly bottle filtered preserved with HNO_3 chilled				TOTAL BOTTLES	NOTES
G110222	10/16/90	16:20	2						2	
G110225F	10/16/90	16:20		1					1	
G110225U	10/16/90	16:20			1				1	
G111222	10/16/90	15:55	2						2	
G111225F	10/16/90	15:55		1					1	
G111225U	10/16/90	15:55			1				1	
G117222	10/16/90	12:10	2						2	2x40ml w/bubbles
G117225F	10/16/90	12:10		1					1	
G117225U	10/16/90	12:10			1				1	
G1MS222	10/16/90	12:10	2						2	2x40ml w/bubbles
G1MS225F	10/16/90	12:10		1					1	
G1MS225U	10/16/90	12:10			1				1	
Trip Blank B	10/16/90		1						1	

RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
[signature]	Roux	10/16/90	17:30	Received [signature]	Radian Corp	10/17/90	1030

DELIVERY METHOD: Federal Express

COMMENTS: 5°C See above
Please sign and return to Roux Associates

ROUX

CHAIN OF CUSTODY

№ 119 Y

Consulting Ground-Water Geologists & Engineers
ROUX ASSOCIATES INC
775 PARK AVENUE, SUITE 255
HUNTINGTON, NEW YORK 11743
(516) 673-7200 FAX. (516) 673-7216

ANALYSES

PROJECT NAME: Industri Plex Site

PROJECT NUMBER: 16101Y

PROJECT LOCATION: Industri Plex Site Woburn MA

SAMPLER(S): B. Thomas R Crowell

SAMPLE DESIGNATION/LOCATION	DATE COLLECTED	TIME COLLECTED	TCL volatile organic compound in 40 ml glass vial preserved with HCl chilled	TAL metals in 1 liter poly bottle preserved with HNO_3 chilled	TAL metals in 1 liter poly bottle filtered preserved with HNO_3 chilled				TOTAL BOTTLES	NOTES
G1 MSD 222	10/16/90	12:10	2						2	2x 40ml w/bubbles
G1 MSD 225F	10/16/90	12:10		1					1	21 Bottles Total in Cooler
G1 MSD 225U	10/16/90	12:10			1				1	

RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
Bill Thomas	Roux	10/16/90	17:30	Received [signature]	Radian Corp	10/17/90	1030

DELIVERY METHOD: Federal Express

COMMENTS: 5°C See above
Please sign and return to Roux Associates

ROUX

CHAIN OF CUSTODY

№ 111 Y

Consulting Ground-Water Geologists & Engineers
ROUX ASSOCIATES INC
775 PARK AVENUE, SUITE 255
HUNTINGTON, NEW YORK 11743
(516) 673-7200 FAX. (516) 673-7216

PROJECT NAME: Industri Plex Site
PROJECT NUMBER: 06101Y
PROJECT LOCATION: Industri Plex Site Woburn MA
SAMPLER(S): B. Thomas R. Crowell

ANALYSES

SAMPLE DESIGNATION/LOCATION	DATE COLLECTED	TIME COLLECTED	TCL volatile organic compounds in 40ml glass vial preserved with HCl chilled	TAL metals in 1 liter poly bottle filtered preserved with HNO3 chilled	TAL metals in 1 liter poly bottle unfiltered preserved with HNO3 chilled				TOTAL BOTTLES	NOTES
G122222	10/17/90	13:50	2						2	
G122225F	10/17/90	13:50		1					1	
G122225U	10/17/90	13:50			1				1	
G1MS222	10/17/90	13:50	2						2	
G1MS225F	10/17/90	13:50		1					1	
G1MS225U	10/17/90	13:50			1				1	
G1MSD222	10/17/90	13:50	2						2	
G1MSD225F	10/17/90	13:50		1					1	
G1MSD225U	10/17/90	13:50			1				1	
G1FieldBlankB222	10/17/90	13:15	2						2	
G1FieldBlankB225F	10/17/90	13:15		1					1	
G1FieldBlankB225U	10/17/90	13:15			1				1	

RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
[signature]	Roux Assoc.	10/17/90	17:30				
				Recieved by ~~RELINQUISHED BY~~: (SIGNATURE)	FOR	DATE	TIME
				[signature]	RADIAN	10/18/90	11:00am

DELIVERY METHOD: Federal Express #7074118914

COMMENTS: 6°C Please Sign and Send to Roux Associates Inc

ROUX

CHAIN OF CUSTODY

№ 112 Y

Consulting Ground-Water Geologists & Engineers
ROUX ASSOCIATES INC
775 PARK AVENUE, SUITE 255
HUNTINGTON, NEW YORK 11743
(516) 673-7200 FAX. (516) 673-7216

PROJECT NAME: Industri Plex Site
PROJECT NUMBER: 16101Y
PROJECT LOCATION: Industri Plex Site Woburn MA
SAMPLER(S): B. Thomas R. Crowell

ANALYSES

SAMPLE DESIGNATION/LOCATION	DATE COLLECTED	TIME COLLECTED	TCL Volatile organic compound in 40 ml glass vial preserved with HCl chilled	TAL Metals in 1 liter Poly bottle filtered preserved with HNO3 chilled	TAL Metals in 1 liter Poly bottle preserved with HNO3, chilled				TOTAL BOTTLES	NOTES
G1 28 222	10/17/90	16:25	2						2	
G1 28 225F	10/17/90	16:25		1					1	
G1 28 225U	10/17/90	16:25			1				1	21 Bottles Total in Cooler
Trip Blank C	10/17/90		1						1	
	10/17/90									
	10/17/90									
	10/17/90									
	10/17/90									

RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
[signature]	Roux Assoc	10/17/90	17:30				
				Recieved ~~RELINQUISHED BY:~~ (SIGNATURE)	FOR	DATE	TIME
				[signature]	RADIAN	10/18/90	11:00am

DELIVERY METHOD: Federal Express 7074118914

COMMENTS: 6°C Please sign and send to Roux Associate Inc

ROUX

CHAIN OF CUSTODY

№ 110 Y

Consulting Ground-Water Geologists & Engineers
ROUX ASSOCIATES INC
775 PARK AVENUE, SUITE 255
HUNTINGTON, NEW YORK 11743
(516) 673-7200 FAX. (516) 673-7216

ANALYSES

PROJECT NAME: Industri Plex Site
PROJECT NUMBER: 061017
PROJECT LOCATION: Industri Plex Site Woburn MA
SAMPLER(S): B. Thomas R. Crowell

SAMPLE DESIGNATION/LOCATION	DATE COLLECTED	TIME COLLECTED	TCL Volatile organic compound in 40 ml glass vial, preserved with HCl, chilled	TAL Metals in 1 liter polybottle filtered preserved with HNO3 chilled	TAL Metals in 1 liter polybottle preserved with HNO3 unfiltered chilled				TOTAL BOTTLES	NOTES
G130A222	10/17/90	15:15	2						2	
G130A225F	10/17/90	15:15		1					1	
G130A225U	10/17/90	15:15			1				1	
G130B222	10/17/90	15:00	2						2	
G130B225F	10/17/90	15:00		1					1	
G130B225U	10/17/90	15:00			1				1	
G132222	10/17/90	14:15	2						2	
G132225F	10/17/90	14:15		1					1	
G132225U	10/17/90	14:15			1				1	
G135222	10/17/90	16:20	2						2	2x ml VOA w/ bubbles
G135225F	10/17/90	16:20		1					1	
G135225U	10/17/90	16:20			1				1	

RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
[signature]	Roux Assoc	10/17/90	17:30				
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	~~RELINQUISHED BY:~~ Recieved by (SIGNATURE)	FOR	DATE	TIME
				[signature]	RADIAN	10/18/90	11:00

DELIVERY METHOD: Federal Express # 7074118914

COMMENTS: 6°C
Please sign and deliver to Roux Associates Inc

G135225U is Label on container as G135222U
logged in per C-O-C

ROUX

CHAIN OF CUSTODY

№ 113 Y

Consulting Ground-Water Geologists & Engineers
ROUX ASSOCIATES INC
775 PARK AVENUE, SUITE 255
HUNTINGTON, NEW YORK 11743
(516) 673-7200 FAX. (516) 673-7216

ANALYSES

PROJECT NAME: Industri Plex Site
PROJECT NUMBER: 06101Y
PROJECT LOCATION: Industri Plex Site Woburn MA
SAMPLER(S): B. Thomas R. Crowell

SAMPLE DESIGNATION/LOCATION	DATE COLLECTED	TIME COLLECTED	TCL volatile organic compound in 40ml glass vial preserved with HCl chilled	TAL metals in 1 liter poly bottle filtered preserved with HNO3 chilled	TAL metals in 1 liter poly bottle preserved with HNO3 + unfiltered chilled				TOTAL BOTTLES	NOTES
G138222	10/17/90	16:05	2						2	
G138225F	10/17/90	16:05		1					1	20 Bottles Total in Cooler
G138225U	10/17/90	16:05			1				1	

RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
Brian Thomas	Roux Assoc	10/17/90	17:30				
				Recieved ~~RELINQUISHED BY:~~ (SIGNATURE)	FOR PADIAN	10/18/90	11:00am

DELIVERY METHOD: Federal Express #7074118914

COMMENTS: 6°C Please Sign and send to Roux Associate Inc

ROUX

CHAIN OF CUSTODY

№ 120 Y

Consulting Ground-Water Geologists & Engineers
ROUX ASSOCIATES INC
775 PARK AVENUE, SUITE 255
HUNTINGTON, NEW YORK 11743
(516) 673-7200 FAX. (516) 673-7216

ANALYSES

PROJECT NAME: Industri Plex Site

PROJECT NUMBER: 16101Y

PROJECT LOCATION: IndustriPlex Site Woburn MA

SAMPLER(S): B. Thomas R. Crowell

SAMPLE DESIGNATION/LOCATION	DATE COLLECTED	TIME COLLECTED	TCL volatile organic compound in 40 ml glass vial preserved with HCl chilled	TAL metals in 1 liter polybottle preserved with HNO3 chilled	TAL metals in 1 liter polybottle filtered preserved with HNO3 chilled				TOTAL BOTTLES	NOTES
G109 222	10/18/90	11:15	2						2	
G109225F	10/18/90	11:15			1				1	
G109225U	10/18/90	11:15		1					1	
~~G109~~ G131222*	10/18/90	13:45	2						2	Not preserved with HCl
G131225F	10/18/90	13:45			1				1	
G131225U	10/18/90	13:45		1					1	
G2TW1D 222	10/18/90	15:50	2						2	
G2TW1D225F	10/18/90	15:50			1				1	
G2TW1D225U	10/18/90	15:50		1					1	
G2TW3D222	10/18/90	15:00	2						2	
G2TW3D225F	10/18/90	15:00			1				1	
G2TW3D225U	10/18/90	15:00		1					1	

RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
[signature]	Roux Assoc	10/18/90	17:30				
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
				[signature]			
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RECEIVED BY: (SIGNATURE)	FOR	DATE	TIME
				[signature]	RADIAN	10/19/90	11:00am

DELIVERY METHOD: Fedex Express Airbill #6033293674

COMMENTS: Please sign and return to Roux Associates. 5°C

* TCL Volatile bottles unpreserved due to reaction with water

ROUX

CHAIN OF CUSTODY

№ 117 Y

Consulting Ground-Water Geologists & Engineers
ROUX ASSOCIATES INC
775 PARK AVENUE, SUITE 255
HUNTINGTON, NEW YORK 11743
(516) 673-7200 FAX. (516) 673-7216

PAGE 2 OF 2

PROJECT NAME: Industri Plex Site
PROJECT NUMBER: 16101Y
PROJECT LOCATION: Industri Plex Site Woburn MA
SAMPLER(S): B. Thomas R. Crowell

ANALYSES

SAMPLE DESIGNATION/LOCATION	DATE COLLECTED	TIME COLLECTED	TCL volatile organic compounds in 40ml glass vial preserved with HCl + chilled	DAL metals in 1 liter polybottle preserved with HNO_3 + unfiltered chilled	TAL metals in 1 liter polybottle preserved with HNO_3 chilled				TOTAL BOTTLES	NOTES
G2 PumpingWell 222	10/18/90	15:30	2						2	
G2 PumpingWell 225F	10/18/90	15:30			1				1	
G2 PumpingWell 225U	10/18/90	15:30		1					1	20 Bottles Total in Cooler

RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
[signature]	Roux Assoc	10/18/90	17:30				
				Recieved ~~RELINQUISHED~~ BY: (SIGNATURE)	FOR	DATE	TIME
				[signature]	RADIAN	10/19/90	11:00am

DELIVERY METHOD: Airbill #6033293674 Federal Express

COMMENTS: Please Sign and return to Roux Associates

5°C

ROUX

CHAIN OF CUSTODY

№ 114 Y

Consulting Ground-Water Geologists & Engineers
ROUX ASSOCIATES INC
775 PARK AVENUE, SUITE 255
HUNTINGTON, NEW YORK 11743
(516) 673-7200 FAX. (516) 673-7216

ANALYSES PAGE OF

PROJECT NAME: IndustriPlex Site
PROJECT NUMBER: 16101Y
PROJECT LOCATION: IndustriPlex Site Woburn MA
SAMPLER(S): B Thomas R. Crowell

SAMPLE DESIGNATION/LOCATION	DATE COLLECTED	TIME COLLECTED	TCL Volatile Organic Compound Glass vial preserved with HCl chilled	TAL metals in 1 liter poly bottle preserved with HNO3 chilled	TAL metals in 1 liter poly bottle preserved with HNO3 unchilled				TOTAL BOTTLES	NOTES
G136222	10/18/90	13:22	2						2	
G136225F	10/18/90	13:22		1					1	
G136225U	10/18/90	13:22			1				1	
G137222	10/18/90	13:10	2						2	
G137225F	10/18/90	13:10		1					1	
G137225U	10/18/90	13:10			1				1	
G116222*	10/18/90	12:50	2						2	not preserved with HCl
G116225F	10/18/90	12:50		1					1	
G116225U	10/18/90	12:50			1				1	17 Bottles Total in Cooler
G121222	10/18/90	12:15	2						2	
G121225F	10/18/90	12:15		1					1	
G121225U	10/18/90	12:15			1				1	
Trip Blank D	10/18/90		1						1	

RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
[signature]	ROUX	10/18/90	17:30				
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
				Received			
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE) [signature]	FOR RADIAN	DATE 10/19/90	TIME 11:00am

DELIVERY METHOD: Airbill # 6033293674 Federal Express

COMMENTS: Please Sign and return. 5°C

*TCL Volatile Organic Compound vials not preserved with HCl due to reaction with water

ROUX

CHAIN OF CUSTODY

№ 120 Y

Consulting Ground-Water Geologists & Engineers
ROUX ASSOCIATES INC
775 PARK AVENUE, SUITE 255
HUNTINGTON, NEW YORK 11743
(516) 673-7200 FAX. (516) 673-7216

ANALYSES

PROJECT NAME: Industri Plex Site

PROJECT NUMBER: 16101Y

PROJECT LOCATION: IndustriPlex Site Woburn MA

SAMPLER(S): B. Thomas R. Crowell

SAMPLE DESIGNATION/LOCATION	DATE COLLECTED	TIME COLLECTED	TCL volatile organic compound in 40 ml glass vial preserved with HCl chilled	TAL metals in 1 liter Poly bottle preserved with HNO3 unfiltered chilled	TAL metals in 1 liter poly bottle filtered preserved with HNO3 chilled				TOTAL BOTTLES	NOTES
G109 222	10/18/90	11:15	2						2	
G109225F	10/18/90	11:15			1				1	
G109225U	10/18/90	11:15		1					1	
~~G109~~ G131222*	10/18/90	13:45	2						2	Not preserved with HCl
G131225F	10/18/90	13:45			1				1	
G131225U	10/18/90	13:45		1					1	
G2TW1D222	10/18/90	15:50	2						2	
G2TW1D225F	10/18/90	15:50			1				1	
G2TW1D225U	10/18/90	15:50		1					1	
G2TW3D222	10/18/90	15:00	2						2	
G2TW3D225F	10/18/90	15:00			1				1	
G2TW3D225U	10/18/90	15:00		1					1	

RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
[signature]	Roux Assoc	10/18/90	17:30				
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME
				Received			
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	~~RELINQUISHED~~ BY: (SIGNATURE) [signature]	FOR RADIAN	DATE 10/19/90	TIME 11:00am

DELIVERY METHOD: Air bill #6033293674 Federal Express

COMMENTS: Please sign and return to Roux Associates 5°C

* TCL Volatile bottles unpreserved due to reaction with water

RADIAN CORPORATION

Chain of Custody Record

Airbill # 6033293755

PROJECT: Industri Plex Site PDI

SITE: Industri Plex Site

COLLECTED BY (Signature): [signature]

S011044,045

FIELD SAMPLE I.D.	SAMPLE MATRIX	DATE/TIME	NO. OF CONTAINERS	TCL Volatile organic compound in 40ml vial preserved with HCl		TAL Metals in 1 liter poly bottle filtered and preserved with HNO3 chilled			TAL Metals in 1 liter poly bottle preserved with HNO3 unfiltered chilled			REMARKS	SAM ID NO. (for lab use only)
G135232	Aqueous	11/7/90 14:55	2	✓								Not preserved with HCl	
G138232	Aqueous	11/7/90 14:55	2	✓								Not preserved with HCl	
G2TW1D232	Aqueous	11/7/90 15:30	2	✓									
G2TW1D235F	Aqueous	11/7/90 15:30	1			✓							
G2TW1D235U	Aqueous	11/7/90 15:30	1						✓				
G2TW3D232	Aqueous	11/7/90 15:50	2	✓									
G2TW3D235F	Aqueous	11/7/90 15:50	1			✓							
G2TW3D235U	Aqueous	11/7/90 15:50	1						✓				
Trip Blank E	Aqueous	11/7/90	1										

REMARKS: Samples G135232 and G138232 are unpreserved. Please sign C-O-C.

RELINQUISHED BY:	DATE	TIME
[signature]	11/7/90	17:30

RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME

LAB USE ONLY

RECEIVED FOR LABORATORY BY:	DATE	TIME	AIRBILL NO.	OPENED BY:	DATE	TIME	TEMP°C	SEAL #	CONDITION
[signature]	11/8/90	10:35	6033293755	[signature]	11/8/90	11:50	5	—	intact

REMARKS:

4-88-30337

RADIAN CORPORATION

Chain of Custody Record

Airbill# 6033293755

PROJECT: Industri Plex Site PDI

SITE: Industri Plex Site

COLLECTED BY (Signature): [signature]

S011045

FIELD SAMPLE I.D.	SAMPLE MATRIX	DATE/TIME	NO. OF CONTAINERS	TCL volatile organic compound in 40 ml glass via preserved with HCl			TAL metals in 1 liter polybottle filtered preserved with HNO3 chilled			TAL metals in 1 liter polybottle preserved with HNO3 unfiltered chilled		REMARKS	SAM ID NO. (for lab use only)
G2100232	Aqueous	11/7/90 15:45	2	✓									
G2100235F	Aqueous	11/7/90 15:45	1				✓						
G2100235U	Aqueous	11/7/90 15:45	1							✓			
G2 PumpWell232	Aqueous	11/7/90 15:20	2	✓								Total of 35 bottles in Cooler	ID on sample is 222 not 232
G2 PumpWell235F	Aqueous	11/7/90 15:20	1				✓						
G2 PumpWell235U	Aqueous	11/7/90 15:20	1							✓			
G2 FieldBlank 232	Aqueous	11/7/90 14:44	2	✓								ID on sample is 222 not 232	
G2 Field blank235F	Aqueous	11/7/90 14:44	1				✓						
G2 Field blank235U	Aqueous	11/7/90 14:44	1							✓			

REMARKS: Please Sign and return to Roux Associate

RELINQUISHED BY:	DATE	TIME
[signature]	11/7/90	17:30

RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME

LAB USE ONLY

RECEIVED FOR LABORATORY BY:	DATE	TIME	AIRBILL NO.	OPENED BY:	DATE	TIME	TEMP °C	SEAL #	CONDITION
[signature]	11/8/90	1045	6033293755	[signature]	11/8/90	1150	5	—	intact

REMARKS:

4-88-30337

APPENDIX G

PDI Work Plan Standard
Operation Procedures

ATTACHMENT 2

Roux Associates Standard Operating Procedures

CONTENTS
STANDARD OPERATING PROCEDURES

MEASURING WATER TEMPERATURE

1.0 CALIBRATION 1

2.0 PROCEDURE 1

MEASURING THE pH WATER SAMPLES

1.0 CALIBRATION 2

2.0 PROCEDURE 2

MEASURING WATER LEVELS WITH A STEEL TAPE

1.0 PROCEDURE 3

MEASURING WATER LEVELS USING AN M-SCOPE

1.0 PROCEDURE 4

MEASURING THE CONDUCTIVITY OF WATER

1.0 CALIBRATION 5

2.0 PROCEDURE 5

DECONTAMINATION OF FIELD EQUIPMENT

1.0 PROCEDURE FOR DRILLING EQUIPMENT 6

2.0 PROCEDURE FOR SEDIMENT-SAMPLING EQUIPMENT 6

3.0 PROCEDURE FOR WATER SAMPLING EQUIPMENT 7

CONTENTS
STANDARD OPERATING PROCEDURES (continued)

GROUND-WATER MONITORING WELL DRILLING, FORMATION SAMPLING, CONSTRUCTION AND DEVELOPMENT

1.0 DESCRIPTION OF DRILLING TECHNIQUE 8

2.0 PROCEDURE FOR FORMATION SAMPLING 8

3.0 DESCRIPTION OF MONITORING WELL CONSTRUCTION 8

4.0 DESCRIPTION OF WELL DEVELOPMENT 10

ROCK CORING AND FORMATION SAMPLING

1.0 PURPOSE 11

2.0 DRILLING TECHNIQUE 11

3.0 DECONTAMINATION 11

4.0 PROCEDURE 12

SAMPLING GROUND-WATER MONITORING WELLS

1.0 MATERIALS AND EQUIPMENT 14

2.0 PROCEDURE 15

FILTRATION OF WATER SAMPLES FOR DISSOLVED METALS ANALYSES

1.0 PURPOSE 18

2.0 MATERIALS/EQUIPMENT 18

3.0 DECONTAMINATION 19

4.0 PROCEDURE 19

CONTENTS
STANDARD OPERATING PROCEDURES (continued)

QUALITY CONTROL

1.0 RESPONSIBILITY 21

2.0 QUALITY CONTROL SAMPLES 21

FIGURES

Following Page

1. Geologic Well Log 8
2. Well Construction Diagram 8

STANDARD OPERATING PROCEDURE FOR MEASURING WATER TEMPERATURE

1.0 CALIBRATION

1.1 Calibration of thermometers will be performed before entering the field and checked upon return to the office.

1.2 Thermometers will be calibrated against a National Bureau of Standards (NBS) - traceable thermometer.

1.3 The thermometer must read within 1° - 1.5° C of the NBS - traceable thermometer. If the thermometer does not read within this range and the thermometer cannot be calibrated, then it will not be used for temperature measurements and will be disposed of in an appropriate manner. If the thermometer does not read within this range and the thermometer can be calibrated, then the thermometer will be calibrated to the NBS- traceable thermometer.

1.4 The following information is documented in the calibration logbook at the time of calibration:

a. Date
b. Thermometer Identification
c. Initials
d. Calibration Data

2.0 PROCEDURE

2.1 The thermometer is immersed in water until the temperature equilibrates. The temperature is read in Celsius (° C).

2.2 Temperature data are recorded in the field notebook, and initialed and dated.

STANDARD OPERATING PROCEDURE FOR MEASURING THE pH OF WATER SAMPLES

1.0 CALIBRATION

1.1 Calibration of the pH meter is to be performed prior to its use each day at the end of the day, and at least every four hours.

1.2 Re-calibration must occur if: (1) the pH of the samples being measured is outside the previous calibration range, or (2) the battery is replaced.

1.3 Two buffer calibrations bracketing the expected pH range of samples are to be performed prior to the meters use each day. Three pH buffers (4.0, 7.0, and 10.0) are read after standardization at pH of 7.0 to evaluate the linearity and electrodes. The samples and buffers are to be measured at the same temperature.

1.4 The following information is documented in the calibration logbook at the time of calibration:

a. Date.
b. pH meter identification.
c. Initials.
d. Calibration results using pH standards.

2.0 PROCEDURE

2.1 The pH electrode must be kept moist.

2.2 The electrodes must be carefully rinsed with deionized water before each measurement.

2.3 The electrodes of a Cole-Parmer meter must be immersed half of their length in a water sample and stirred briefly until the pH reading equilibrates. The bulb electrode of a Lakewood meter must be covered with sample water. The pH reading will equilibrate.

2.4 Follow manufacturer's operating instructions.

2.5 The pH readings are documented in the field notebook, and initialed and dated.

2.6 The electrodes are rinsed with deionized/distilled water and the unit stored properly. The electrodes are not to be stored in tap water or deionized/distilled water.

STANDARD OPERATING PROCEDURE FOR MEASURING WATER LEVELS WITH A STEEL TAPE

1.0 PROCEDURE

1.1 The steel tape must be pre-cleaned (decontaminated) using a non-phosphate, laboratory-grade solution and distilled/deionized water.

1.2 If the well is being sounded (depth measured), then lower the tape to the bottom of the well and measure its length.

1.3 If a water-level measurement is to be taken, then apply chalk (e.g., carpenter's chalk) to the bottom few feet of the tape and lower it into the water. Hold the top of the tape at an even foot-increment at the measuring point, roll up the tape, and note the cut (i.e., the mark between the dry and wet chalk).

1.4 Measurements will be taken to the nearest 0.01 foot.

1.5 All pertinent data will be recorded in the field notebook, and initialed and dated.

STANDARD OPERATING PROCEDURE FOR MEASURING WATER LEVELS USING AN M-SCOPE

1.0 PROCEDURE

1.1 The probe of the m-scope must be pre-cleaned (decontaminated) using a non-phosphate, laboratory-grade solution and distilled/deionized water before use. The wire should be rinsed with distilled water.

1.2 The manufacturer's model should be noted because some have switches, lights, beepers, or a combination of the above. If a test switch is available, test the light or beeper prior to use.

1.3 The water-level measurement is taken by lowering the probe into the well until the instrument-specific detection method (e.g., light, beeper, or both) is activated by contacting the water. Avoid lowering the probe below the water surface.

1.4 Measurements will be taken accurately and to the nearest 0.01 foot to the top of the inner casing.

1.5 The depth to water from the measuring point (top of the inner casing), the stickup of the outer protective casing and inner PVC casing, will be documented in the field notebook and initialed and dated.

STANDARD OPERATING PROCEDURE FOR MEASURING THE CONDUCTIVITY OF WATER SAMPLES

1.0 CALIBRATION

1.1 Calibration is in accordance with the manufacturer's specific directions, and the following information is documented in the calibration logbook:

a. Date.
b. Conductivity meter identification.
c. Calibration results.
d. Initials.

1.2 Calibration is performed at the beginning and end of the day, and at least every four hours.

2.0 PROCEDURE

2.1 The probe is immersed in a water sample until the meter equilibrates.

2.2 In reading the conductivity meter scale, one or more of the following may have to be considered:

a. The reading may have to be multiplied appropriately (e.g., the reading is expressed in x1, x10, x100 scales).

b. If the conductivity meter is not capable of compensating for temperature differences, then note that the conductance measurements are not temperature compensated and document the temperatures of the standards and samples.

c. If the conductivity meter can be compensated for temperature, then adjust the temperature control before reading the conductance measurement.

2.3 Conductivity measurements and any other relevant information are recorded in the field notebook, and initialed and dated.

STANDARD OPERATING PROCEDURE FOR DECONTAMINATION OF FIELD EQUIPMENT

1.0 PROCEDURE FOR DRILLING EQUIPMENT

The following is a decontamination procedure for drilling equipment. Any variation from this method will be documented on an appropriate field form or notebook.

1.1 The rig and all associated equipment will be thoroughly cleaned with a high pressure hot water wash before and upon arriving at the test site.

1.2 The augers, drilling casings, rods, samplers, tools, rig, and any piece of equipment that can come in contact (directly or indirectly) with the soil, will be high pressure hot water washed on site prior to set up for drilling to ensure proper decontamination.

1.3 The same high pressure hot water wash procedures will be followed between boreholes (at a fixed on-site location if appropriate) and before leaving the site at the end of the study.

1.4 All on-site high pressure hot water washing (decontamination) activities will be monitored by the field hydrogeologist. Washing should be performed at the decontamination pad in order to collect the rinsate.

2.0 PROCEDURE FOR SEDIMENT-SAMPLING EQUIPMENT

The following is the decontamination procedure for sediment sampling equipment (e.g., split spoons).

2.1 Wear disposable gloves while cleaning equipment to avoid contamination and change gloves as needed.

2.2 High pressure hot water wash the split-spoon sampler or rinse with potable water.

2.3 Prepare a non-phosphate, laboratory grade detergent solution and distilled or deionized water in a bucket.

2.4 Disassemble the split-spoon sampler and immerse all parts and other sampling equipment in the solution.

2.5 Scrub all equipment in the bucket with a brush to remove any adhering particles.

2.6 Rinse with potable water.

2.7 Rinse all equipment with distilled or deionized water.

2.8 Rinse all equipment with methanol (to remove volatile organic compounds).

2.9 Allow to dry.

2.10 Rinse all equipment with distilled or deionized water.

2.11 Place clean equipment on a clean plastic (e.g., polyethylene) sheet with the outer surface (which do not contact the sample) facing down.

2.12 Reassemble the cleaned split-spoon sampler.

2.13 Transfer the sampler to the driller (or helper) making sure that this individual is also wearing clean gloves, or wrap the equipment with a suitable material (e.g., plastic bag, aluminum foil).

3.0 PROCEDURE FOR WATER SAMPLING EQUIPMENT

The following is the decontamination procedure for water sampling equipment (e.g., bailers).

3.1 Wear disposable gloves while cleaning bailer to avoid contamination and change gloves as needed.

3.2 Prepare a non-phosphate, laboratory grade detergent solution and distilled water in a bucket.

3.3 Disassemble bailer (if applicable) and scrub each part with the detergent and water using a brush.

3.4 Rinse with potable water.

3.5 Rinse bailer with distilled or deionized water and reassemble bailer.

3.6 Rinse bailer with 10% nitric acid (to remove metals).

3.7 Rinse bailer with distilled or deionized water.

3.8 Rinse bailer with hexane (to remove pesticides/PCBs).

3.9 Allow to air dry.

3.10 Rinse bailer with distilled or deionized water.

3.11 Rinse bailer with methanol (to remove volatile organic compounds).

3.12 Allow to air dry.

3.13 Rinse with distilled or deionized water.

3.14 Collect all rinsate in a container for disposal of by the Industri-Plex Site Remedial Trust.

STANDARD OPERATING PROCEDURE FOR GROUND-WATER MONITORING WELL DRILLING, FORMATION SAMPLING, AND CONSTRUCTION DEVELOPMENT

1.0 DESCRIPTION OF DRILLING TECHNIQUE

1.1 Roux Associates has chosen to drill the ground-water monitoring wells using the hollow-stem auger. This drilling method is rapid and extremely effective in most cohesive sediments but less so in loose sandy material.

2.0 PROCEDURE FOR FORMATION SAMPLING

2.1 Intact formation sampling will be implemented using split-spoon samplers. (Formation samples will be retained in appropriate size (e.g., one-pint or half-pint) jars for physical descriptions and potential physical and chemical analysis. The labeled jars and tubes will be stored in a safe place to avoid breakage, agitation, and freezing. Intact formation samples will be collected at specified intervals (e.g., every 5 foot increment below land surface) and at each major change in subsurface materials. Hydrogeologic information will be recorded on a Geologic Log form (Figure 1).

2.2 Disturbed formation samples (drill cuttings) will be examined continuously throughout the entire depth of the borehole. Borehole cuttings will be described from the circulating auger flights which lift cuttings to land surface.

2.3 The soil cores from the wells drilled at the site will be used for confirmatory lithologic identification.

2.4 Before collecting and retaining soil and/or sediments collected with the split-spoon sampler, the top several inches will be removed from the sampler and discarded to eliminate any sediment that may have caved into the bottom of the borehole.

2.5 Sediment sampling equipment such as split-spoon samples, spatulas, etc. will be decontaminated according to the standard protocols.

3.0 DESCRIPTION OF MONITORING WELL CONSTRUCTION

3.1 The installation of each monitoring well will begin immediately after borehole completion. In cases of unscheduled delays, such as personal injury, equipment breakdowns or sudden inclement weather, installation will be resumed as soon as practical. The drill rig will be secured to prevent accidental injuries and the hole will be covered to prevent contamination or injuries.

3.2 The monitoring well will be constructed of 4-inch diameter PVC casing and screen. A generalized well construction diagram will be included (Figure 2).

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. _____ Date _____
Project _____
Client _____
Page _____ Of _____
Logged By _____
Well No. _____
Loc. _____
M.P. Elevation _____
Drilling Started _____ Ended _____
Driller _____
Type Of Rig _____

WELL DATA

Hole Diam. (in.) _____
Final Depth (ft.) _____
Casing Diam. (in.) _____
Casing Length (ft.) _____
Screen Setting (ft.) _____
Screen Slot & Type _____
Well Status _____

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type _____
Hammer _____ lb.
Fall _____ in.

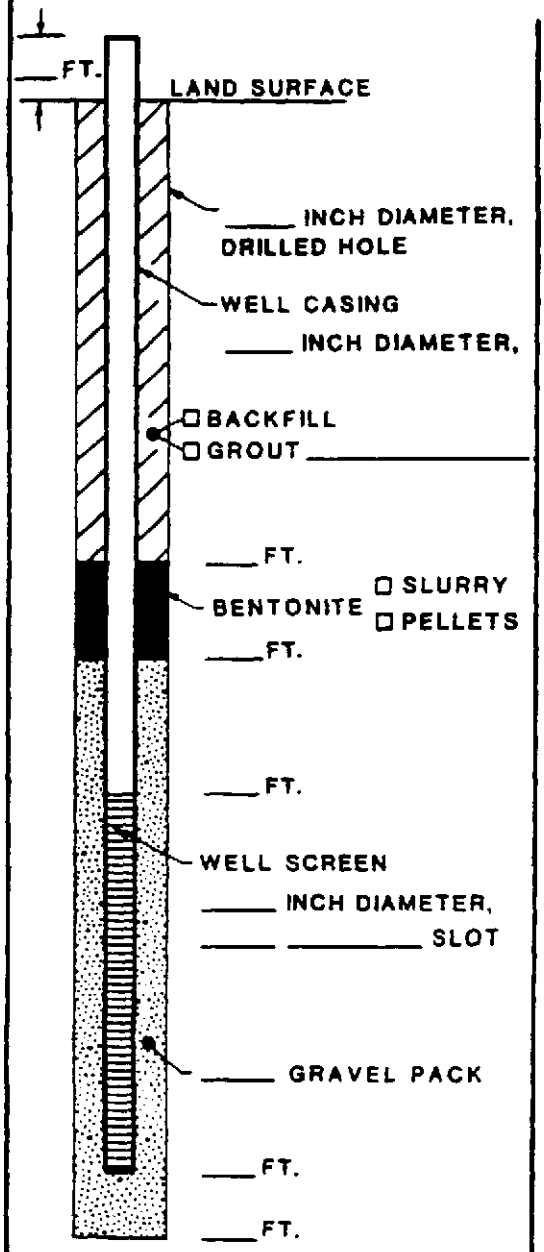
DEVELOPMENT

Hnu	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME _____ NUMBER _____
WELL NO. _____ PERMIT NO. _____
TOWN/CITY _____
COUNTY _____ STATE _____
LAND-SURFACE ELEVATION AND DATUM _____ FEET ☐ SURVEYED ☐ ESTIMATED
INSTALLATION DATE(S) _____
DRILLING METHOD _____
DRILLING CONTRACTOR _____
DRILLING FLUID _____

DEVELOPMENT TECHNIQUE(S) AND DATE(S)

FLUID LOSS DURING DRILLING _____ GALLONS
WATER REMOVED DURING DEVELOPMENT _____ GALLONS
STATIC DEPTH TO WATER _____ FEET BELOW M.P.
PUMPING DEPTH TO WATER _____ FEET BELOW M.P.
PUMPING DURATION _____ HOURS
YIELD _____ GPM _____ DATE _____
SPECIFIC CAPACITY _____ GPM/FT.
WELL PURPOSE _____

REMARKS _____

HYDROGEOLOGIST _____

3.3 Monitoring wells in unconsolidated formations will be set as follows:

a. The screen and casing will be lowered into the borehole to the appropriate depth.

b. A gravel pack (quartz sand) is filled in around the screen at least two feet above the screened interval (to allow for potential settlement during subsequent development).

c. Bentonite grout will be placed on top of the sand to five feet below grade.

d. A locking steel protective casing or curb box is set over the well and cemented in place. The protective case, or curb box is designed to prevent water from ponding at the top of the well or directly entering the well.

3.4 Each well will be properly identified with the appropriate information (e.g., local well number, state and/or permit number, etc. The top of the well casing will serve as the measuring point for ground-water level measurements. The inside PVC casing will be surveyed to the nearest $\pm$ 0.01 foot relative to a datum (e.g., mean sea level) by a professional, state-licensed surveyor. The location and elevation of the top of the inside PVC casing will be surveyed by a state licensed surveyor to an accuracy of $\pm$1.0 and $\pm$0.01 foot, respectively.

3.5 Each well will have a well construction log showing the casing placement and materials used to fill the annular space between the well casing and borehole. The appropriate log will show the depths of each casing material and discuss the geologic variability at the borehole. A description of the surface soils and unsaturated zone materials down to and including the water table is required.

The following information, if applicable, will be included on the well log:

a. Project number.
b. Date and initials of scientist documenting the well information.
c. Date/time of construction.
d. Well location.
e. Well/permit number.
f. Borehole diameter and depth.
g. Well depth.
h. Casing material.
i. Screen material.
j. Screen slot size/length.
k. Gravel pack/type size (depths from ____ to ____).
l. Sand pack (depths from ____ to ____).
m. Bentonite pellets (depths from ____ to ____).
n. Bentonite slurry (depths from ____ to ____).
o. Cement/grout (depths from ____ to ____).
p. Ground-surface elevation.
q. Well height above/depth below land surface.
r. Depth ground water encountered.

4.0 DESCRIPTION OF WELL DEVELOPMENT

4.1 Before a newly constructed well can be used for water-quality sampling, it must be developed. Well development refers to the procedure used to clear the well and formation around the screen of fine-grained materials (sands, silts, and clays) produced during drilling or naturally occurring in the formation. Well development continues until the well responds to water-level changes in the formation (i.e., a good hydraulic connection is established between the well and formation and the well produces clear, sediment-free water to the extent practical).

4.2 Well development may include one or more of the following techniques.

a. Bailing.
b. Pumping (centrifugal or submersible).
c. Surging (mechanical).
d. A combination of the above.

4.3 A one-pint sample of the last water removed during development will be obtained and inspected by the field hydrogeologist for relative clarity to determine whether development is complete. Well development procedures will be documented in the field notebook.

4.4 Dispersing agents, acids, disinfectants, or other additives will not be used during development nor will they be introduced into the well at any other time. During development, water will be removed form the entire column of water standing in the well (e.g., by periodically lowering and raising the pump intake). Well development will include the rinsing of the interior well casing above the water column in the well using only water from that well.

STANDARD OPERATING PROCEDURE FOR ROCK CORING AND FORMATION SAMPLING

1.0 PURPOSE

The purpose for this standard operating procedure (SOP) is to describe the considerations and procedures, and to establish the guidelines for coring (drilling) and formation sampling activities in consolidated (bedrock) formations.

2.0 DRILLING TECHNIQUE

There are several coring (drilling) techniques available which include diamond core bits, carbide core bits, and sawtooth core bits. The objective of the coring are:

a. Collection of a three-foot core characteristic of the upper part of the consolidated formation(s).

b. Identification of the lithology for the development of a detailed geologic log of the formations penetrated to confirm auger refusal.

3.0 DECONTAMINATION

The following is a decontamination procedure for coring (drilling) equipment.

3.1 The rig and all associated equipment must be properly decontaminated before arriving at the test site.

3.2 The core barrels, bits, drive pipe, drilling casings, rods, samplers, tools, rig, and any piece of equipment that can come in contact (directly or indirectly) with subsurface materials, will be cleaned with a high pressure hot water wash prior to set up for drilling to ensure proper decontamination.

3.3 Any drilling fluid circulating equipment (e.g., pumps, hoses) will be flushed with a non-phosphate, laboratory-grade detergent and potable water solution, followed by a flush (rinse) with potable water. The exterior of this equipment should also be steam cleaned or washed with the detergent solution and rinsed with potable water. This will ensure proper internal and external decontamination.

3.4 The same hot water wash cleaning, and flushing and rinsing procedures will be followed between boreholes (at a fixed on-site location[s], if appropriate) and before leaving the site at the end of the study.

3.5 All on-site decontamination activities will be monitored and documented by a member(s) of the staff of Roux Associates, Inc. (Roux Associates).

4.0 PROCEDURE

4.1 Document all coring-related activities (e.g., starting, stopping, footage, problems, decontamination, etc.) on the Daily Log form (Figure 1) or in the field notebook. Record dates and times of activities, and name of Roux Associates personnel providing oversight.

4.2 Begin coring activities when consolidated materials are evidenced when the soil boring is terminated due to auger refusal.

4.3 Ensure that core borings are made through appropriate size casing (e.g., 4-inch diameter) which has been driven and seated into the top of the consolidated formation to prevent seepage into the borehole from the overburden, and that the core barrel is in efficient operating condition.

4.4 Monitor and record drill fluid mix, speed of rotation, down pressure on the core barrel, pressure on the drill fluid, and length of an individual core run during drilling.

4.5 Pay particular attention to the advancement of the boring in order that the top of the weathered portion of consolidated formation (rock) and the top of the competent portion of rock are carefully indicated in the log.

4.6 Confirm that the drill rods and core barrel are straight, or discontinue drilling.

4.7 Maintain a continuous dialogue with the driller to track and keep informed of all drilling/coring activities (e.g., the speed of the drill and drilling pressure, amount and pressure of water, length of core run) to secure maximum core recovery.

4.8 Pay attention that blockage of the core barrel is not occurring. If blockage occurs, then the barrel must be removed from the boring, the core removed, and the coring stopped until care has been taken to assure that the core barrel and bit are in satisfactory operating condition.

4.9 Make sure that the first core run does not exceed 3 feet (1 meter) and that <u>no</u> grinding of the core occurs.

4.10 Ream the boring with flush joint casing to a point below broken or open formation (rock) if soft or broken formations are encountered that cause pieces of rock to fall into the boring and result in unsatisfactory coring or <u>if</u> voids are encountered that restrict the continued downward progress of the boring.

4.11 Remove the rock core from the core barrel immediately upon recovery and place it in the core box. Core removal and placement should be done with extreme care. Make sure that the driller-supplied core boxes are well-constructed wooden boxes with longitudinal spacers the height of the box to provide separate rows for the cores.

4.12 Place spacer blocks between each core run to separate runs. Additionally, if portions of the core run have not been recovered, then a partition must be placed and permanently secured immediately above the spacer block at the end of a core run showing the length of core lost.

4.13 Label core boxes with an indelible marker on each end and on the inside and outside of the lid. Labeling of the inside must include the project number and name, boring number, and depths from which core was recovered. The exterior of the box must include the project number and name, boring number, box sequence, and depths covered.

4.14 Record geologic information on the Geologic Log form.

4.15 Place only one boring in a core box and do not transfer core samples between boxes (unless a problem develops, e.g., box cracks or breaks, etc.). If transferring is unavoidable, then exercise extreme caution in moving the core and verify that the corebox is labeled properly (as discussed above).

4.16 Photograph all core boxes, with a scale reference, as soon as possible, and especially if the boxes are to be removed from the site. The photographs must clearly show the core, the printed on the inside of the box and taken from a consistent distance.

4.17 Handle and ship core boxes carefully to minimize disturbance of the core.

STANDARD OPERATING PROCEDURE
FOR SAMPLING GROUND-WATER MONITORING WELLS

1.0 MATERIALS AND EQUIPMENT

1.1 The following items may be required for monitoring well sampling and data collection:

a. Appropriate bailer(s) for test substances.
b. Non-absorbent cord (e.g., polypropylene).
c. Pre-measured plastic bucket(s).
d. Plastic sheets.
e. m-scope
f. Tape measure (steel - tenth of a foot measurement increments) and chalk.
g. Pen knife.
h. Field forms/Field notebook.
i. Well location map.
j. Cleaning agents (detergent, distilled or deionized water, potable water).
k. Pump (if purging required) and associated materials such as:

   1. Teflon tape.
   2. Appropriate tubing (e.g., polyethylene) if using peristaltic pump.
   3. Portable generator if using submersible pump.

l. Water Well Handbook.
m. Calculator.
n. Hard hat (if required on location).
o. pH meter.
p. Conductivity meter.
q. Thermometer.
r. Paper towels, clean rags.
s. Black pen and pencil.
t. Wet ice and/or blue packs.
u. Sample jars, codes, and labels.
v. Electrical tape.
w. Pipe wrench.
x. Screwdriver, hammer.
y. Cooler(s).
z. Water jugs.
aa. Disposable gloves
bb. Well keys.
cc. Masking and packing tape.
dd. Water-proof marker.
ee. Well sampling form(s).
ff. Non-phosphate, laboratory-grade detergent.
gg. Distilled/deionized water.
hh. Chain-of-custody form(s).
ii. Custody seal(s).
jj. Extra batteries (meters, thermometer).
kk. Buffer/calibration solutions.

2.0 PROCEDURE

2.1 Once the wells are in place, and properly developed, ground-water samples will be taken for water-quality analyses.

2.2 Make sure all equipment is decontaminated, cleaned, and calibrated before use and document daily activities in the field notebook.

2.3 Document well identification and pre-sampling information in the field notebook as needed.

2.4 Inspect the protective casing of the well and note any items of concern such as a missing lock or bent casing. Complete the Well Inspection Checklist.

2.5 Place plastic sheeting around the well to protect sampling equipment from potential contamination.

2.6 Remove the well cap or plug and clean the top of the well off with a clean rag. Place the cap or plug on plastic.

2.7 Measure the depth to water using an electronic probe (m-scope) or steel tape and chalk. Document in the field notebook.

2.8 Measure the depth of the well with the steel tape or obtain from construction diagram. Calculate and record the volume of water in the well in the field notebook.

2.9 Prior to sampling, the well should be pumped or bailed to remove a minimum of three casing volumes if the recharge rate is adequate to accomplish this within a reasonable amount of time. The well should not be pumped or bailed dry. If the well produces little water, at least one well volume must be purged. The well will be sampled after the water level has stabilized.

2.10 Record the temperature, pH, conductivity, and physical appearance of the water in the field notebook (e.g., color, turbidity, odor, etc.) as it is pumped or bailed, a minimum of three times.

2.11 If the bailer has not been decontaminated, decontaminate it according to the procedures described previously. If the bailer has been decontaminated, flush it several times with distilled/deionized water, and collect and discard (in an appropriate manner) three bails of well water before collecting the sample.

2.12 Using a non-absorbent cord (e.g., polypropylene), lower the bailer into the well.

2.13 Quality-control samples will be used to monitor sampling and laboratory performance and will include replicates, and blanks, spikes.

a. Replicate analysis is done to check on samples reproducibility. The procedure to be used for taking replicate samples follows. If samples are

collected for volatile organic compound (VOC) analysis, then the water from the bailer will be distributed first to fill one VOC container and then to fill the second VOC container. Adequate water will be available to fill both of the bottles completely before they are capped. A replicate sample will be collected every 20 samples at a minimum.

b. Trip blank analysis is performed to detect if contamination has occurred during field handling, shipment, or in the laboratory. A trip blank is a container that is filled with distilled/deionized water in the laboratory, and travels unopened with the sample bottles. It is opened in the laboratory and analyzed along with the field samples for the constituent of interest.

c. Equipment blank analysis provides a check on sampling procedures. An equipment blank is made with distilled/deionized water by exposing it to the sampling processes (e.g., bailer). The clean water will be poured into the bailer (which has been decontaminated and is ready for sampling) and then into the sampling container. A field blank will be collected every 20 samples at a minimum.

d. A matrix spike, which is performed in the laboratory, is a check on the laboratory's ability to recover the matrix. Spikes of standard compounds may be added to samples in the laboratory to determine if the ground-water constituents are interfering with test substance identification or quantification. Such analyses may also point to systematic errors and lack of sensitivity of analytical equipment. A matrix spike and replicate matrix spike will be collected every 20 samples at a minimum.

2.14 Place samples in the pre-labeled containers and store on ice (wet ice or blue packs).

2.15 After sample collection is complete, measure and record the temperature, conductivity, pH, and physical appearance of the water, and record in the field notebook.

2.16 Wipe the well cap with a clean rag, replace the well cap and protective cover (if present). Lock the protective cap.

2.17 Verify that each sample is placed in an individual "zip-lock" bag, wrapped with "bubble wrap," and placed in its appropriate container (holder) in the cooler, and that the cooler has sufficient ice (wet ice or blue packs) to preserve the samples for transportation to the laboratory.

2.18 Complete the Chain-of-Custody forms. One copy of the Chain-of-Custody form is retained. Secure the cooler with sufficient packing tape and a Custody Seal. Forward the samples via overnight (express) mail or hand deliver to the designated laboratory preferably within 24 hours but no later than 48 hours after sampling. Notify the laboratory that samples have been shipped, and make special arrangements if Saturday delivery is necessary.

2.19 Decontaminate bailers, hoses, and pumps as discussed in the decontamination section. Wrap decontaminated equipment with a suitable material (e.g., aluminum foil). Discard the cord, rags, gloves, etc. in a manner consistent with the Health and Safety Plan.

STANDARD OPERATING PROCEDURE FOR FILTRATION OF WATER SAMPLES FOR DISSOLVED METALS ANALYSES

1.0 PURPOSE

The purpose for this standard operating procedure (SOP) is to describe the considerations and procedures for the field filtration of water samples for dissolved metals analyses prior to sample preservation. Filtering is implemented when the water sample originates from a medium-grained to fine-grained porous geologic formation that contains suspended fine-grained materials (fines) that cannot be prohibited from entering the water sample by well development or well design. Since fines are not always distinctly visible in a water sample, all water samples will undergo filtration.

It should be noted that filtration of water for metals analyses has been a standard practice with the United States Geological Survey (USGS) for many years. Within this framework, filtration refers to the filtering of water either directly or at the end of a filtration series through a 0.45 micrometer (micron) membrane filter (i.e., the presence of a large quantity of fines may require the prefiltering of the sample with a larger-size[s] membrane filter[s] prior to the 0.45 micron filter to avoid clogging the 0.45 micron filter using an exorbitant amount of time to filter).

Filtration will be done as soon as possible after a water sample is collected, preferably at the same time that the water is produced. The filtering equipment and membrane will be suitable for the intended analysis.

2.0 MATERIALS/EQUIPMENT

2.1 In order to field filter water samples, specific equipment and materials will be required. The equipment and materials needed for field filtering will include the following:

a. Non-phosphate, laboratory-grade detergent.
b. Distilled/Deionized water.
c. Potable water.
d. Roux Associates field forms (e.g., Daily Log, Sampling, etc.)/field book.
e. Filtration apparatus (e.g., Gelman apparatus, Buchner funnel, etc.), filters, pre-filters.
f. Placticware (e.g., pre-measured buckets, beakers, flasks, funnels).
g. Teflon™ tape.
h. Vacuum pump (e.g., manual/hand-operated or electric).
i. Appropriate tubing.
j. Disposable gloves.
k. Sample jars with appropriate preservative (e.g., Nitric acid) and labels.

3.0 DECONTAMINATION

3.1 Decontamination procedures for filtering equipment follow:

a. Wear disposable gloves while cleaning filtering equipment to avoid contamination and change gloves as needed.

b. Prepare a non-phosphate, laboratory-grade detergent solution and distilled or deionized water in a bucket.

c. Remove vacuum tubing from flask.

d. Remove filter membrane from funnel.

e. Disassemble filtering apparatus (flask and funnel) and scrub each piece of equipment with a brush and solution.

f. Rinse with potable water.

g. Rinse with copious amounts of distilled or deionized water.

h. Rinse with dilute, trace-metal analysis-grade Nitric Acid triple rinse with distilled water.

i. Air dry.

j. Wrap equipment with a suitable material (e.g., clean plastic bag, aluminum foil).

4.0 PROCEDURE

4.1 Ensure that the filtering equipment is properly decontaminated before use.

4.2 Assemble the filtering apparatus (funnel and flask), and connect the vacuum pump.

4.3 Place a clean (new) 0.45-micron pore-size filter in the funnel. Use larger, pore-size filters if prefiltering is required (i.e., if suspended sediment is present that would quickly clog the 0.45-micron filter and prevent continuous filtration).

4.4 Obtain the water sample using an appropriate, decontaminated sample-collection device (e.g., bailer, pump jar).

4.5 Pass the unpreserved water sample through the prefilter, if needed, and the 0.45-micron filter into the flask. Apply a vacuum using the vacuum pump, if needed, to facilitate filtering.

4.6 Transfer the filtered water sample to the appropriate, pre-labeled sample container containing the preservative (e.g., Nitric Acid) being careful not to overfill the container and dilute the preservative.

4.7 Follow standard operating procedures for sample documentation, shipping, and tracking (i.e., record keeping) as defined in the FSP and QAPjP.

4.8 Decontaminate the filtering equipment that came in contact with the water sample.

STANDARD OPERATING PROCEDURE FOR QUALITY CONTROL

1.0 RESPONSIBILITY

1.1 The project hydrogeologist will verify the integrity of the well and ensure that all wells are constructed to specification, are adequately developed, and sampled using the appropriate equipment to properly collect the samples needed to meet study objectives. The project hydrogeologist will verify that all sampling, equipment is properly decontaminated according to the standard procedures, that all samples are properly handled and packaged to avoid possible cross contamination or breakage and that the standard shipping procedures (i.e., Chain-of-Custody forms, Custody Seals, etc.) and deadlines are met.

1.2 All field work will be done by or under the direct supervision of an experienced project hydrogeologist from Roux Associates, Inc. The project manager or project hydrogeologist, and Quality Assurance Unit (QAU) officer will be present for critical phases of the study, inspection of site activities, procedural review, and communication with field hydrogeologist and client personnel.

2.0 QUALITY CONTROL SAMPLES

2.1 Samples taken for analysis of compounds may require the use of quality control samples to monitor sampling activities and laboratory performance. Types of quality control samples may include replicate, trip blank, field (equipment) blank. and matrix spike. A discussion pertaining to each quality control sample follows:

1. Replicate - Replicate sample analysis is done to check on the reproducibility of results either with respect to the sampler or the laboratory. Replicate samples are aliquots from a sample in a common container. A replicate sample will be collected every 20 samples at a *minimum*.

   If samples are collected for volatile organic compound (VOC) analysis, then the water from the bailer or pump will be distributed first to fill one VOC container and then to fill the second VOC container. Adequate water should be available to fill the bottles completely before they are capped. If the water is insufficient to fill all the bottles at once, then incrementally fill each bottle with water from two or more bailer volumes or pump cycles.

   In the case of wells that recover slowly and produce insufficient water to fill all the replicate sample containers, the containers should be filled incrementally and kept on ice in the cooler in between filling periods.

2. Trip Blank - A trip blank sample is a sample bottle that is filled with "clean" (e.g., distilled/deionized) water in the laboratory, and travels unopened with the sample bottles. It is opened in the laboratory and analyzed along with the field samples for the constituent(s) of interest (e.g., test substance, etc.). Analysis of trip blanks is performed to detect if contamination has occurred during field handling, shipment, or in the laboratory.

3. Equipment and Field Blanks - An equipment blank sample is collected to check on the sampling procedures implemented in the field. An equipment blank is made with "clean" (e.g., distilled/deionized) water by exposing it to sampling processes (i.e., the clean water must pass through the actual sampling equipment) For example, if samples are being collected with a bailer, the equipment blank would be made by pouring the clean water into a bailer which has been decontaminated and is ready for sampling, and then pouring from the bailer into the sample containers. If a metals equipment blank is to be made, the sample must be filtered. One equipment blank would be incorporated into the sampling program every 20 samples at a minimum and analyzed for the identical suite of constituents as the samples.

   Often an equipment blank is made just before sampling the last well each day to check for accumulated cross contamination. However, it may also be made before sampling a background well or between sampling events during the day. A field blank might be made at a location where ambient air quality is poor, to check for atmospheric interference.

2. Matrix Spike - Spikes of compounds may be added to samples in the laboratory to determine if the ground-water matrix is interfering with constituent identification or quantification. Such analyses may also point to systematic errors and lack of sensitivity of analytical equipment. That is, a matrix spike, which is performed in the laboratory, provides a check of the laboratory's ability to recover the matrix. A spike matrix and replicate spike matrix will be analyzed for every 20 samples by the laboratory at a minimum.

APPENDIX H

Golder Associates Inc.
Data Validation Documentation
Phase 1 and Phase 2

APPENDIX H

Golder Associates Inc.
Data Validation Documentation
Phase 1

Golder Associates Inc.
CONSULTING ENGINEERS

July 18, 1990 Project No.: 893-6255.6

Roux Associates, Inc.
The Huntington Atrium
775 Park Avenue
Huntington, New York 11743

RE: CASES 6257, 6404, AND 6439
ENSECO-ERCO LABORATORIES
INDUSTRI-PLEX SITE, WOBURN, MASSACHUSETTS

ATT: William Sarni
Vice President

Gentlemen:

Golder Associates, Inc. has performed a validation of the organic and inorganic analytical data from groundwater samples collected June 4 through June 6, 1990 at the Industri-Plex Site in Woburn, Massachusetts. This data will be used in PDI Task GW-1 to delineate the groundwater plume. Twenty-five samples were analyzed for volatile organics, and twenty-two samples were analyzed for semivolatiles, pesticide/PCBs, total metals, and dissolved metals. These analyses were performed by Enseco-Erco of Cambridge, Massachusetts. U.S. EPA Region I Laboratory Data Validation Functional Guidelines for Evaluating Organic Analyses (February 1, 1988 and modified November 1, 1988), and Region I Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses (June 13, 1988 and modified February 1989) were followed.

Samples were collected from the following observation wells:

G129	G130A	G133A
G123	G130B	G133B
G127A	G126A	G1PUB
G127B	G126B	G124A
G125A	G131	G124B
G125B	G132	

Two field duplicates were collected and labelled G134 (duplicate of G129) and G135 (duplicate of G130A). A matrix spike and a matrix spike duplicate were collected from G133A. Three trip blanks and two field blanks were also analyzed with these samples for quality control (QC)

purposes. The organic data was evaluated based on the following parameters:

* - data completeness
* - holding times
* - GC/MS tuning
  - calibration
  - blanks
  - surrogate recoveries
  - matrix spike/matrix spike duplicate
* - field duplicates
* - internal standard performance
* - pesticide instrument performance
* - compound identification
* - compound quantitation

The inorganic data was evaluated based on the following parameters:

* - data completeness
* - holding times
  - calibration verification
  - laboratory and field blank analyses
  - ICP interference check sample results
* - matrix spike recoveries
* - laboratory and field duplicates
* - laboratory control sample results
  - furnace atomic absorption results
* - serial dilution results
* - detection limit results
* - sample results

* All criteria were met for this parameter.

ORGANICS

Calibration

Volatiles

The percent relative standard deviation (% RSD) for 2-Hexanone was greater than 30% (but less than 50%) for the initial calibration verification (ICV) on June 12, 1990. The percent differences (%D) for the following compounds were greater than 25% (but less than 50%) for the continuing calibration verifications (CCV) on the following dates:

June 11, 1990	Carbon disulfide
	Bromomethane
June 12, 1990	Bromomethane
	Chloroethane
	Acetone

June 15, 1990	Acetone
	2-Butanone
	Carbon tetrachloride
	4-Methyl-2-pentanone
	2-Hexanone
June 18, 1990	Chloroethane
	2-Butanone

Region I guidelines direct all positive results to be estimated. However, the above compounds were not detected in any of the associated samples.

Semivolatiles

The % RSD for 2-Fluorophenol was greater than 30% (but less than 50%) for the ICV on May 17, 1990. The %D for the following compounds was greater than 25% (but less than 50%) for the CCVs on the following dates:

June 8, 1990	Benzoic acid
	4-Chloroaniline
	3,3'-Dichlorobenzidine
June 10, 1990	4-Chloroaniline
	2,4-Dinitrophenol
June 11, 1990	N-nitroso-di-n-propylamine
	Benzoic acid
June 12, 1990	Benzoic acid
June 15, 1990	Nitrobenzene
	4-Chloroaniline
	Benzo (b) fluoranthene
	Benzo (k) fluoranthene

The %D was greater than 50% for 3,3'-Dichlorobenzidine on June 15, 1990. The above compounds were not detected in any of the associated samples. Region I guidelines direct all non-detects to be estimated if the % D is greater than 50%. The CCV on June 15, 1990 affected the dilution analysis of G127A.

Blanks

The pesticide/PCB and semivolatile blanks contained no contaminants. The volatile blanks contained the following contaminants:

Compound	Maximum Concentration ug/l	Action Level ug/l
Methylene chloride	16	160
Acetone	19	190
Chloroform	23	115

Region I guidelines direct the following actions:

- if the concentration is less than the CRQL, report the CRQL followed by a U;
- if the concentration is greater than the CRQL but less than the action level, report the concentration followed by a U;
- if the concentration is greater than the action level, report the concentration unqualified.

Surrogate Recoveries

The volatile and semivolatile surrogates were all within QC limits. The pesticide/PCB surrogate recovery for dibutylchlorendate was 0 for G127B and G131. The laboratory reported that the surrogate had been diluted out.

Region I directs positive results to be estimated and non-detects to be rejected if surrogate recoveries are less than 10%.

Matrix Spike/Matrix Spike Duplicate

The semivolatile and pesticide/PCB percent recoveries (%R) and relative percent difference (RPDs) were within QC limits. The volatile spike compound 1,1-Dichloroethene had an RPD of 32%, exceeding its control limit of 14%.

Region I guidelines direct positive results for any compound that does not meet the RPD criteria to be estimated.

INORGANICS

Calibration Verification

The %R for potassium was slightly below the QC limits for CCV4 and CCV5 (89.3% and 88.3%, respectively) on June 28, 1990. This affected the dissolved metals results for samples G131, G132, G126A, G126B, and Field Blank B.

Region I guidelines direct that all potassium results for the affected samples be estimated.

Laboratory and Field Blank Analyses

The total metals blanks contained the following contaminants:

Compound	Maximum Concentration ug/l	Action Level ug/l
Iron	37.2	186
Sodium	723	3615
Aluminum	71.8	359
Barium	3.4	17
Calcium	292	1460
Copper	6.4	32
Manganese	1.5	7.5
Zinc	15.2	76
Selenium	2.2	11

The dissolved metals blanks contained the following contaminants:

Compound	Maximum Concentration ug/l	Action Level ug/l
Iron	64.4	322
Calcium	649	3245
Aluminum	107	535
Sodium	3140	15700
Barium	12.0	60
Magnesium	107	535
Manganese	13.0	65
Zinc	11.5	57.5

Region I guidelines direct the following blank actions:

- if the concentration is greater than the IDL but less than the action level, report the concentration followed by a U;
- if the sample concentration is greater than the action level, report the concentration unqualified.

ICP Interference Check Sample (ICS) Results

The following samples and analytes were affected by Calcium interferences:

positive interference:

total Manganese	G123, GI31, G132
total Sodium	G123, GI3I, GI32
dissolved Manganese	G132
dissolved Sodium	GI32

negative interference:

total Zinc	G123, G131, G132
total Silver	G123, G131, G132
dissolved Zinc	G132
dissolved silver	G132

Region I guidelines direct positive results for the listed samples and analytes to be estimated. Also, if a negative interference is present, non-detects should be estimated.

Furnace Atomic Absorption Results

The method of standard additions (MSA) was applied to sample G123 ~~for total Lead analysis~~. Although the method was performed twice, the correlation coefficient was less than 0.995 both times.

Region I guidelines direct sample results to be estimated if the correlation coefficient is less than 0.995.

The Region I validation worksheets are attached for your information. If you have any further questions, please contact Elizabeth Auda at 609-273-1110.

Very truly yours,

GOLDER ASSOCIATES INC.

Mary C. Bourcier

Mary C. Bourcier
Chemist

Kenneth R. Moser

Kenneth R. Moser
Associate

Attachments

cc: Elizabeth M. Auda/Golder (w/out attachments)
Robert Glazier/Golder (w/out attachments)
Lori Anne Hendel/Golder (w/attachments)
Brian Thomas/Roux Associates (w/attachments)

MCB/KRM/d

APPENDIX H

Golder Associates Inc.
Data Validation Documentation
Phase 2 - Organic Narrative

INDUSTRI-PLEX SITE
PRE-DESIGN INVESTIGATION TASK GW-1 PHASE II

CLP Data Validation Narrative

1.0 INTRODUCTION

Golder Associates, Inc. (Golder) has performed a data validation of the Organic analytical data from the Phase II sampling of the observation wells collected from October 15 through 18, 1990 and November 7, 1990 at the Industri-Plex Site in Woburn, Massachusetts. These samples were part of the Pre-Design Investigation (PDI) Task GW-1 (Plume Delineation) at the Site. The samples were analyzed for the Volatile Organic Target Compound List (TCL) in accordance with the Contract Laboratory Program (CLP) Organic Statement of Work (SOW) dated 2/88. The analyses were performed by Radian-Sacramento (referred to as the Laboratory) of Sacramento, California. Samples were collected from twenty-seven (27) primary locations. Two (2) locations were sampled in duplicate yielding two (2) Field Duplicate samples. Extra sample volume was collected from two (2) of the primary locations in order to obtain sufficient sample volumes to perform the analysis of the Matrix Spike/Matrix Spike Duplicate (MS/MSD) pairs. The Sample Identification Numbers are explained in Table 1. The sample points are summarized in Table 2.

The sampler noted that several samples collected were effervescent. These samples are G112222, G113222, G116222, G117222, G131222, G134222 and G139222. Additionally, due to the extreme effervescence observed for samples G116222 and G131222, these two samples were not preserved with HCl.

A sample was collected from observation well OW-38 on October 17, 1990 and assigned a sample ID of G138222. The Field Duplicate collected at the same time was assigned the sample ID G135222. The volatile portion of sample G135222 was lost in the laboratory when the septum did not seal properly and the sample leaked from the vial. As the second VOA vial had already been used during sample screening, there was insufficient sample to perform analysis. Consequently, the analysis of samples G135222 and G138222 were cancelled and arrangements were made to have observation well OW-38 resampled. Resampling occurred on November 7, 1990. A primary sample and a Field Duplicate were collected and assigned sample ID numbers G138232 and G135232, respectively.

Sample point G134222 is the Field Duplicate for sample G139222. Sample G135232 is the Field Duplicate for sample G138232.

Data Validation was performed in accordance with the U.S. Environmental Protection Agency (USEPA) Region I Laboratory Data Validation Functional Guidelines for Evaluating Organic Analyses (February 1, 1988 and modified November 1, 1988). In addition, the Data Validation criteria from the Quality Assurance Project Plan (QAPjP) for the Industri-Plex PDI were followed. When differing guidelines were encountered, the data validator used the more conservative (stricter) guideline. Data qualifiers are defined in Table 3.

2.0 ORGANIC DATA

The data was evaluated based upon the following parameters:

* data completeness
* holding times
* GC/MS tuning
  calibration
  blanks
* surrogate recoveries
  matrix spike/matrix spike duplicate
* field duplicates
* internal standard performance
* compound identification
* compound quantitation

* - All criteria were met for this parameter.

2.1 Data Completeness

The Laboratory produced two reports containing data from this task. All required deliverables were received from the Laboratory.

2.2 Holding Times

All samples were analyzed within the required holding time for the Volatile fraction.

2.3 GC/MS Tuning

The gas chromatograph/mass spectrometer (GC/MS) tuning performance results were all within USEPA Region I guidelines.

2.4 Calibration

The USEPA Region I guidelines specify that certain criteria must be achieved during the instrument calibration for Volatile and Semi-volatile compounds. These criteria stipulate that: 1) the average and daily response factors (RRF) for each volatile and semi-volatile target analyte must be equal to or greater than 0.05; 2) the percent relative standard deviation (%RSD) for each volatile and semi-volatile target analyte in the initial calibration must be less than or equal to 30%; and 3) the percent difference (%D) for each volatile and semi-volatile target analyte in the continuing (daily) calibration must be less than or equal to 25%.

2.4.1 Volatiles

The Percent Difference (%D) for 1,1,2,2-Tetrachloroethane in the continuing calibration analyzed on October 25, 1990 was greater than 50%. The non-detected results for this compound in samples G112222, G112222DL, G113222, G134222, G139222, G140222, G141222 and G113222MSD required qualification as estimated quantitation limits.

The Percent Difference (%D) for Acetone in the continuing calibration analyzed on October 25, 1990 was greater than 25%. The positive results for this compound in samples G112222, G112222DL, G134222, G139222 and G141222 required qualification as estimated values.

The Percent Difference (%D) for Acetone in the continuing calibration analyzed on October 26, 1990 was greater than 25%. The positive results for this compound in samples G134222DL, G142222 and G1FBA222 required qualification as estimated values.

The Percent Difference (%D) for Vinyl Acetate in the continuing calibration analyzed on November 9, 1990 was greater than 50%. The non-detected results for this compound in samples G135232, G138232 and G1TBE232 required qualification as estimated quantitation limits.

2.5 Blanks

In evaluating the contaminants in the laboratory method blanks, the data validator applied the appropriate action levels (as specified in the USEPA Region I Data Validation Guidelines) to only those samples to which a particular blank applied. In evaluating the contaminants in the field blanks and the trip blanks, the data validator applied the appropriate action levels for both field blanks and all trip blanks to all of the samples collected for this event.

Action levels for method blanks were applied on an individual sample batch basis.

Please note that sample volumes and dilution factors have been taken into consideration when applying the appropriate blank action levels to the samples.

2.5.1 Volatiles

Acetone was detected in the Volatile laboratory method blank (VBLK2) at a concentration which was greater than the Contract Required Quantitation Limit (CRQL). This compound is considered a common laboratory contaminant; the action level determined for this compound was 10 times the highest concentration found in any of the associated blanks. This compound was detected in samples G1FBA222 and G142222 at concentrations which were greater than the CRQL but less than the action level. The results for this compound required qualification as undetected at the concentrations originally reported. Acetone was detected in sample G134222DL at a concentration which was greater than the CRQL and the action level. The result for this compound did not require qualification and remained as originally reported.

Methylene Chloride was detected in the Volatile analysis of the field blank G1FBA222 at a concentration which was greater than the Contract Required Quantitation Limit (CRQL). This compound is considered a common laboratory contaminant; the action level determined for this compound was 10 times the highest concentration found in any of the associated blanks. This compound was detected in samples G134222, G134222DL and G139222 at concentrations which were less than the CRQL and the action level. The results for this compound required qualification as undetected at the CRQL.

2.6 Surrogate Recoveries

The surrogate recoveries from the Volatile analyses of these samples were within the Contract Required Recovery ranges specified in the Statement of Work and the Quality Assurance Project Plan.

2.7 Matrix Spike/Matrix Spike Duplicate

Three primary samples (G113222, G117222 and G122222) were used for Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis. Sample G113222 was not designated for MS/MSD analysis by the sampler; it was determined by the Laboratory that an additional MS/MSD was required to meet analytical batch QC requirements and the analyst chose to use this sample.

The Matrix Spike (MS) and Matrix Spike Duplicate (MSD) recoveries from the Volatile analyses of spiked aliquots of samples G113222 and G122222 were within the Contract Required Recovery ranges specified in the Statement of Work and the Quality Assurance Project Plan.

The MS/MSD recoveries of Benzene for G117222 were less than the Contract Required Recovery range (CRR) specified on the Form III for the analysis of the Volatile Matrix Spike/Matrix Spike Duplicate (MS/MSD). Additionally, the Relative Percent Difference (RPD) for Benzene was greater than the QC Limit specified by the Statement of Work. These recoveries may be attributed to the concentration of Benzene present in the unspiked sample (180 ug/l). The positive result for this compound present in sample G117222 required qualification as an estimated value.

2.8 Field Duplicates

Two (2) field duplicate samples G134222 (duplicate of G139222) and G135232 (duplicate of G138232) were collected and analyzed with this set of samples. Region I guidelines specify that the Relative Percent Difference (RPD) for each compound detected in water must be less than 30%.

2.8.1 Volatiles

The Relative Percent Difference (%RPD) criterion of less than 30% for aqueous Field Duplicates was achieved for the analysis of G138232 and G135232.

The Field Duplicate G134222 was initially analyzed undiluted; Acetone was present in the sample at a concentration which exceeded the calibration range. Consequently, the sample was re-analyzed at a 1:2 dilution (G134222DL). Sample G139222 was initially analyzed at a 1:2 dilution. The Relative Percent Difference (%RPD) criterion of less than 30% for aqueous Field Duplicates was achieved for the analysis of G139222 and G134222DL.

2.9 Internal Standard Performance

The Internal Standard Performance criteria for Volatile analysis were met for all of the samples and associated Quality Control samples.

2.10 Compound Identification

The USEPA Statement of Work and the Region I guidelines specify that certain criteria must be satisfied in order to positively identify a peak as a Target Compound. For the identification of Volatile target compounds, the criteria are:

1) the target compound peak in the sample chromatogram must elute within ±0.06 Relative Retention Time (RRT) units of the RRT of that compound in the daily calibration standard; and

2) the mass spectrum of the compound in the sample must correlate with the mass spectrum of that compound in a current laboratory-generated standard such that:

   - all ions present in the standard mass spectrum at a relative intensity greater than 10% must be present in the sample spectrum;
   - the relative intensities of these ions must agree within ±20% between the standard and sample spectra; and
   - ions greater than 10% in the sample spectrum but not present in the standard spectrum must be explained.

   If all of the above criteria could not be satisfied, but in the technical judgement of the mass spectral interpretation specialist the identification of the compound is correct, the Laboratory is instructed to report the compound.

The identification of Volatile target compounds has been checked for all samples. Where there were questions concerning the identification of compounds, the data validator contacted the Laboratory. The compounds in question were checked by a Senior GC/MS analyst. In most cases, the compound identification was verified. In a few cases, it was determined that a compound had been identified incorrectly; consequently, the Laboratory submitted corrected results for these samples. All corrected documentation and revised forms were integrated into the correct section of the appropriate data package.

2.11 Compound Quantitation

It is standard practice by the Laboratory not to report target compounds at concentrations less than 1 ppb.

Agency approval of the Remedial Design Work Plan was conditional based upon modification of the benzene/toluene plume defined in Section 4.2.1.1. The modification states that "The plume boundary will be defined as the area where either benzene is detected at all using an analytical method with a detection limit below 5 ppb or toluene is detected at or above the level of 2000 ppb.".

The PDI Task GW-1 Phase I Plume Delineation report by Roux Associates (August 1990) included a section titled "Proposed Phase 2 PDI Program". This section stated that "...six Phase 2 monitoring well clusters and selected Phase 1 PDI and RI wells will be sampled and TCL VOC/TAL analyses performed to further refine our understanding of the extent of the benzene/toluene "hot spots". The detection limit for benzene will be 2 ppb to confirm the previous Phase 1 analyses and further define the boundaries of the plume."

Golder worked with the Laboratory to choose an analytical method such that the detection limit for benzene would be 2 ppb or less. The Laboratory performed the analysis for Volatile Organic compounds using the method as described in the CLP Organic Statement of Work (2/88). Using this methodology, the Laboratory was able to achieve an Instrument Detection Limit (IDL) of 1.4 ppb for Benzene for an undiluted analysis. It should be noted that the Laboratory has reported the Contract Required Quantitation Limit (CRQL) of 5 ppb for Benzene (as required by the Statement of Work) although a lower detection limit is achieved. The Laboratory endeavored to analyze each sample at the least possible dilution in order to minimize the Benzene detection limit. This endeavor was successful except where noted below.

Sample G112222 required re-analysis at a 1:2 dilution due to the presence of Benzene at a concentration which exceeded the calibration range. The analytical results for G112222 and G112222DL were provided in the data package.

Sample G134222 required re-analysis at a 1:2 dilution due to the presence of Acetone at a concentration which exceeded the calibration range. The analytical results for G134222 and G134222DL were provided in the data package.

G139222 was initially analyzed at a 1:2 dilution due to the elevated concentration of Acetone present in the sample. The detection limit of Benzene in this diluted analysis was 2.8 ppb. The analyst did not attempt to re-analyze the sample undiluted due to the elevated concentration of Acetone present in the sample. It should be noted that G134222 is the Field Duplicate for this sample and was analyzed undiluted; Benzene was not detected. Therefore, it can be stated that the sample from observation well 39 (OW-39) did not contain Benzene at a concentration of 1.4 ppb or greater.

G116222 was initially analyzed at a 1:200 dilution due to the elevated concentration of Toluene present in the sample.

G131222 was initially analyzed at a 1:320 dilution due to the elevated concentration of Benzene present in the sample.

TABLE 1

Sample Point Identification Numbers

The Sample Point Identification Number is designated as described for the example given below.

G119A222

The first two characters (G1) indicate the Pre-Design Investigation (PDI) task (GW-1);

The third through fifth characters (19A) indicate the observation well sample number within that task (TBA,TBB,TBC,TBD,TBE = trip blanks; FBA,FBB = field blanks); in some cases, the well sample number may be indicated by a two digit number (e.g., 22 indicates well OW-22);

The sixth character (2) indicates the matrix type (1 = solid, 2 = liquid);

The seventh character (2) indicates the sampling round number; and

The eighth character (2) indicates the analysis type (2 = TCL Volatiles).

When the suffix -DL has been appended to the end of a sample point identification number, it indicates that the Laboratory has performed a dilution analysis of the sample and the data has been reported from that analysis.

When the suffix -MS or -MSD has been appended to the end of a sample point identification number, it indicates that the Laboratory has performed a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) analysis on an aliquot of the sample.

TABLE 2

CLP Sample Point Identifications for PDI Task GW-1 Phase II Samples

Sample Point ID	Radian-SAC ID
G109222	S01019405A
G110222	S01017401A
G111222	S01017402A
G112222	S01016101A
G112222DL	S01016101A
G113222	S01016104A
G113222MS	S01016104A
G113222MSD	S01016104C
G116222	S01019403A
G117222	S01017403A
G117222MS	S01017404A
G117222MSD	S01017406A
G118222	S01017407A
G118A222	S01017439A
G119222	S01017408A
G119A222	S01017409A
G121222	S01019404A
G122222	S01017907A
G122222MS	S01017908A
G122222MSD	S01017909A
G124A222	S01017410A
G124B222	S01017411A
G128222	S01017906A
G130A222	S01017901A
G130B222	S01017902A
G131222	S01019406A
G132222	S01017903A
G134222	S01016106A
G134222DL	S01016106A
G135232	S01104401A
G136222	S01019401A
G137222	S01019402A
G138232	S01104402A
G139222	S01016103A
G140222	S01016105A
G141222	S01016102A
G142222	S01016107A
G1FBA222	S01016108A
G1FBB222	S01017910A
G1TBA222	S01016125A
G1TBB222	S01017405A
G1TBC222	S01017911A
G1TBD222	S01019410A
G1TBE232	S01104403A

TABLE 3

Data Qualifiers

A - The data is acceptable (quantitative).

J - The associated numerical value is an estimated quantity (qualitative).

R - Reject data due to quality control criteria. The data are unusable (compound may or may not be present). Resampling and/or re-analysis is necessary for verification.

U - The compound was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.

UJ - The compound was analyzed for but was not detected. The sample quantitation limit is an estimated quantity.

APPENDIX H

Golder Associates Inc.
Data Validation Documentation
Phase 2 - Inorganic Narrative

INDUSTRI-PLEX SITE
PRE-DESIGN INVESTIGATION TASK GW-1 PHASE II

CLP Data Validation Narrative

1.0 INTRODUCTION

Golder Associates, Inc. (Golder) has performed a data validation of the Inorganic analytical data from the Phase II sampling of the observation wells collected from October 15 through 18, 1990 at the Industri-Plex Site in Woburn, Massachusetts. These samples were part of the Pre-Design Investigation (PDI) Task GW-1 (Plume Delineation) at the Site. The samples were analyzed for the Metals portion of the Inorganic Target Analyte List (TAL) in accordance with the Contract Laboratory Program (CLP) Inorganic Statement of Work (SOW) dated 7/88. The analyses were performed by Radian-Sacramento (referred to as the Laboratory) of Sacramento, California. Both filtered and unfiltered samples were collected from twenty-seven (27) primary locations. Two (2) locations were sampled in duplicate yielding four (4) Field Duplicate samples (2 filtered and 2 unfiltered). Extra sample volume was collected from two (2) of the primary locations in order to obtain sufficient sample volumes to perform the analysis of the Matrix Spike/Matrix Spike Duplicate (MS/MSD) pairs. The Sample Identification Numbers are explained in Table 1. The sample points are summarized in Table 2.

The sampler noted that several samples collected were effervescent. These samples are G112225F, G112225U, G113225F, G113225U, G116225F, G116225U, G117225F, G117225U, G131225F, G131225U, G134225F, G134225U, G139225F and G139225U.

Sample point G134225F is the Field Duplicate for sample G139225F. Sample point G134225U is the Field Duplicate for sample G139225U. Sample G135225F is the Field Duplicate for sample G138225F. Sample G135225U is the Field Duplicate for sample G138225U.

Data Validation was performed in accordance with the U.S. Environmental Protection Agency (USEPA) Region I Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses (June 13, 1988 and modified February 1989). In addition, the Data Validation criteria from the Quality Assurance Project Plan (QAPjP) for the Industri-Plex PDI were followed. When differing guidelines were encountered, the data validator used the more conservative (stricter) guideline. Data qualifiers are defined in Table 3.

2.0 INORGANIC DATA

The data was evaluated based upon the following parameters:

* data completeness
* holding times
  calibration verification
  blanks
  ICP interference check sample
  matrix spike recoveries
  laboratory and field duplicates
* laboratory control sample
  furnace atomic absorption results
* serial dilution results
* detection limit results
* sample results.

* - All criteria were met for this parameter.

2.1 Data Completeness

The Laboratory produced four reports containing data from this task. All required hardcopy deliverables were received from the Laboratory.

2.2 Holding Times

All samples were prepared and analyzed for Arsenic, Thallium, Selenium, Lead, Mercury and ICP metals within the required holding time.

2.3 Calibration Verification

The CRDL standard for ICP and AA metals must be analyzed to ensure linearity at the Instrument Detection Limit (IDL) as described on page E-6 of the Inorganic Statement of Work (7/88 SOW). If the recovery of any analyte is not within ±20%, results near the Contract Required Detection Limit (CRDL) are questionable. In this case, the Region I Guidelines specify that positive results less than three times the CRDL (3xCRDL) are to be qualified as estimated values (J) and non-detected results are to be qualified as estimated quantitation limits (UJ).

The following recoveries did not meet the ±20% criteria:

Cadmium analyzed in the ICAP sequence on 12/01/90;
Copper analyzed in the ICAP sequence on 12/01/90;
Copper analyzed in the ICAP sequence on 12/02/90;
Copper analyzed in the ICAP sequence on 12/03/90;
Copper analyzed in the ICAP sequence on 12/05/90;

Lead analyzed in the GFAA sequence on 11/19/90;
Mercury analyzed in the Automated Cold Vapor sequence on 11/05/90;
Mercury analyzed in the Automated Cold Vapor sequence on 11/13/90;
Nickel analyzed in the ICAP sequence on 11/30/90; and
Zinc analyzed in the ICAP sequence on 11/21/90.

Positive results less than 3xCRDL for these analytes in the samples analyzed in these sequences required qualification as estimated values (J). Non-detected results for these analytes in the samples analyzed in these sequences required qualification as estimated quantitation limits (UJ).

2.4 Blanks

In evaluating the contaminants in the laboratory preparation blanks (PBW), the Initial Calibration Blanks (ICB), and the Continuing Calibration Blanks (CCB), the data validator determined the appropriate action levels (as specified in the USEPA Region I Data Validation Guidelines) from the associated blank having the highest level of contamination and applied these action levels to all of the associated samples within the analytical sequence. In evaluating the contaminants in the field blanks, the data validator applied the results from the filtered field blanks to the filtered samples and the results from the unfiltered field blanks to the unfiltered samples. When the same contaminant was present in the field blank as in the preparation and/or analysis blanks, the highest level of contamination was used to determine the action level.

Please note that sample volumes and dilution factors have been taken into consideration when applying the appropriate blank action levels to the samples.

Upon review of the data for G1FBA225F, it was noted that the concentrations detected for the ICAP metals were greater than those detected in the unfiltered field blank (G1FBA225U) and much higher than would be expected for a Field Blank. The data validator had both the samplers and the Laboratory personnel review the field notes, chain-of-custody documents, bottles and preparation and analysis logs in order to determine if a sample misidentification could have occurred. The Laboratory determined that the analyst inadvertently spiked the field blank with target analytes during the preparation for ICAP analysis. The Laboratory re-prepared the field blank for ICAP analysis on December 12, 1990 and "screened" the digestate on the first available ICAP sequence. The results of the "screen" analysis confirmed the fact that the field blank had been spiked during the original preparation. The redigested field blank will be analyzed on the first

available CLP ICAP sequence and the results provided to Golder. Due to the urgency in providing validated and qualified data to Roux Associates, the data validator could not wait for the results of the CLP analysis of the redigested field blank. The results of the filtered samples were qualified using one field blank (G1FBB225F) instead of two. The data validator believes that the results for G1FBB225F and the Preparation Blank and Calibration blanks are representative of the levels of contaminants which may have influenced sample results. Upon receipt of the data package for the redigested field blank from the Laboratory, the data validator will review the results to ensure that no additional contaminants were detected and that the appropriate action levels were used.

Various contaminants were determined to be present in the blanks analyzed with the filtered samples collected on October 15, 1990. Potassium and Antimony were detected in the laboratory blanks at negative absorbances thereby causing sample results which may have been negatively influenced. The non-detected results for these analytes in these filtered samples required qualification as estimated detection limits. The positive results for these analytes in these filtered samples required qualification as estimated values. Lead, Barium, Beryllium, Calcium, Cobalt, Copper, Iron, Magnesium, Manganese, Sodium, Zinc and Cadmium were detected at various concentrations in the blanks. Action levels were determined for each analyte. Positive results in the filtered samples greater than the Instrument Detection Limit (IDL) but less than the action levels required qualification as undetected at the concentrations originally reported.

Various contaminants were determined to be present in the blanks analyzed with the unfiltered samples collected on October 15, 1990. Potassium and Antimony were detected in the laboratory blanks at negative absorbances thereby causing sample results which may have been negatively influenced. The non-detected results for these analytes in these unfiltered samples required qualification as estimated detection limits. The positive results for these analytes in these unfiltered samples required qualification as estimated values. Lead, Barium, Calcium, Cobalt, Copper, Iron, Manganese, Sodium, Zinc and Cadmium were detected at various concentrations in the blanks. Action levels were determined for each analyte. Positive results in the unfiltered samples greater than the Instrument Detection Limit (IDL) but less than the action levels required qualification as undetected at the concentrations originally reported.

Various contaminants were determined to be present in the blanks analyzed with the filtered samples collected on October 16, 1990. Potassium was detected in the laboratory blanks at negative absorbances thereby causing sample results which may have been negatively influenced. The non-detected results for this analyte in these filtered samples required qualification as estimated detection limits. The positive results for this analyte in these filtered samples required qualification as estimated values. Lead, Barium, Beryllium, Calcium, Cobalt, Copper, Iron, Magnesium, Manganese, Sodium, Zinc, Chromium and Cadmium were detected at various concentrations in the blanks. Action levels were determined for each analyte. Positive results in the filtered samples greater than the Instrument Detection Limit (IDL) but less than the action levels required qualification as undetected at the concentrations originally reported.

Various contaminants were determined to be present in the blanks analyzed with the unfiltered samples collected on October 16, 1990. Potassium was detected in the laboratory blanks at negative absorbances thereby causing sample results which may have been negatively influenced. The non-detected results for this analyte in these unfiltered samples required qualification as estimated detection limits. The positive results for this analyte in these unfiltered samples required qualification as estimated values. Lead, Aluminum, Barium, Beryllium, Calcium, Cobalt, Chromium, Copper, Iron, Magnesium, Manganese, Sodium, Zinc and Cadmium were detected at various concentrations in the blanks. Action levels were determined for each analyte. Positive results in the unfiltered samples greater than the Instrument Detection Limit (IDL) but less than the action levels required qualification as undetected at the concentrations originally reported.

Various contaminants were determined to be present in the blanks analyzed with the filtered samples collected on October 17, 1990. Barium, Beryllium, Calcium, Cobalt, Copper, Iron, Magnesium, Manganese, Potassium, Sodium, Zinc, Chromium and Cadmium were detected at various concentrations in the blanks. Action levels were determined for each analyte. Positive results in the filtered samples greater than the Instrument Detection Limit (IDL) but less than the action levels required qualification as undetected at the concentrations originally reported.

Various contaminants were determined to be present in the blanks analyzed with the unfiltered samples collected on October 17, 1990. Lead, Barium, Beryllium, Calcium, Cobalt, Chromium, Copper, Iron, Manganese, Potassium, Sodium, Zinc and Cadmium were detected at various concentrations in the blanks. Action levels were determined for each analyte. Positive results in the unfiltered samples greater than the Instrument Detection Limit (IDL) but less than the action levels required qualification as undetected at the concentrations originally reported.

Various contaminants were determined to be present in the blanks analyzed with the filtered samples collected on October 18, 1990. Potassium and Cadmium were detected in the laboratory blanks at negative absorbances thereby causing sample results which may have been negatively influenced. The non-detected results for these analytes in these filtered samples required qualification as estimated detection limits. The positive results for these analytes in these filtered samples required qualification as estimated values. Lead, Barium, Beryllium, Calcium, Cobalt, Copper, Iron, Magnesium, Manganese, Sodium and Zinc were detected at various concentrations in the blanks. Action levels were determined for each analyte. Positive results in the filtered samples greater than the Instrument Detection Limit (IDL) but less than the action levels required qualification as undetected at the concentrations originally reported.

Various contaminants were determined to be present in the blanks analyzed with the unfiltered samples collected on October 18, 1990. Potassium and Cadmium were detected in the laboratory blanks at negative absorbances thereby causing sample results which may have been negatively influenced. The non-detected results for these analytes in these unfiltered samples required qualification as estimated detection limits. The positive results for these analytes in these unfiltered samples required qualification as estimated values. Lead, Barium, Beryllium, Calcium, Cobalt, Copper, Iron, Manganese, Sodium and Zinc were detected at various concentrations in the blanks. Action levels were determined for each analyte. Positive results in the unfiltered samples greater than the Instrument Detection Limit (IDL) but less than the action levels required qualification as undetected at the concentrations originally reported.

2.5 ICP Interference Check Sample

The concentrations of Calcium in samples G140225F, G140225U, G112225F, G112225U, G122225F, G122225U, G132225U, G131225F and G131225U were greater than 50% of the respective levels in the Interference Check Samples. Calcium concentrations at these levels may cause an interference with Magnesium. The suspected Magnesium interference was less than two times the CRDL (2xCRDL) and/or less than 10% of the reported Magnesium concentration. Therefore qualification of the Magnesium results in these samples was not required.

2.6 Matrix Spike Recoveries

Six (6) primary samples (G113225U, G117225F, G117225U, G122225F, G122225U and G140225F) were used for Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis. There were several analytes which did not meet the Contract Required Recovery criteria as specified in the Statement of Work and the Quality Assurance Project Plan. The actions resulting from the assessment of the MS/MSD data for filtered samples apply to all of the filtered samples for this task. The actions resulting from the assessment of the MS/MSD data for unfiltered samples apply to all of the unfiltered samples for this task.

Samples G113225U and G140225F were not designated for MS/MSD analysis by the sampler; it was determined by the Laboratory that additional MS/MSD samples were required to meet analytical batch QC requirements and the analysts chose to use these samples.

The MS recoveries of Chromium and Manganese for G113225U and Chromium for G122225U and the MSD recoveries of Aluminum and Manganese for G122225U were greater than 125%. The MS/MSD recoveries of Copper and Lead for G117225U were less than 75% but greater than 30%. The MS recoveries of Aluminum, Copper, Lead and Silver for G122225U and the MSD recoveries of Selenium for G113225U and Copper, Lead and Silver for G122225U were less than 75% but greater than 30%. The positive results for Selenium, Copper, Lead, Aluminum, Silver, Chromium and Manganese in the unfiltered samples required qualification as estimated values (J). The non-detected results for Selenium, Copper, Lead, Aluminum and Silver in the unfiltered samples required qualification as estimated quantitation limits (UJ).

The MS/MSD recoveries of Copper and Lead for G117225F were less than 75% but greater than 30%. The positive results for Copper and Lead in the filtered samples required qualification as estimated values (J). The non-detected results for Copper and Lead in the filtered samples required qualification as estimated quantitation limits (UJ).

2.7 Duplicates

2.7.1 Laboratory Duplicates

The MS/MSD samples were used as Laboratory Duplicate samples. There were several analytes which did not meet the Relative Percent Difference (%RPD) criterion as specified in the Region I Guidelines. The actions resulting from the assessment of the Laboratory Duplicate data for filtered samples apply to all of the filtered samples for this task. The actions resulting from the assessment of the Laboratory Duplicate data for unfiltered samples apply to all of the unfiltered samples for this task.

The ±20% RPD criterion was not achieved for Aluminum, Chromium, Manganese, Nickel and Zinc for sample G122225U. These analytes were present in the MS/MSD samples at concentrations greater than five times the CRDL (5xCRDL). All positive results for these analytes greater than the IDL in the unfiltered samples required qualification as estimated values (J).

2.7.2 Field Duplicates

Two primary sample locations were sampled in duplicate yielding four Field Duplicate samples (G134225F, G134225U, G135225F and G135225U). Samples G134225F and G134225U are duplicates of G139225F and G139225U. Samples G135225F and G135225U are duplicates of G138225F and G138225U.

The concentration of Chromium in G138225F differed by more than two times the CRDL (2xCRDL) from the concentration of Chromium in the duplicate. Therefore, the positive results for this analyte in the filtered samples required qualification as estimated values (J). The non-detected results for this analyte in the filtered samples required qualification as estimated quantitation limits. (UJ).

The concentrations of Copper and Zinc in G139225U differed by more than two times the CRDL (2xCRDL) from the concentrations of Copper and Zinc in the duplicate. The concentration of Zinc in G138225U differed by more than two times the CRDL (2xCRDL) from the concentration of Zinc in the duplicate. Therefore, the positive results for these analytes in the filtered samples required qualification as estimated values (J). The non-detected results for these analytes in the filtered samples required qualification as estimated quantitation limits. (UJ).

The ±30% RPD criterion was not achieved for Aluminum, Iron and Lead for sample G138225U. These analytes were present in the sample at concentrations greater than five times the CRDL (5xCRDL). All positive results for these analytes greater than the IDL in the unfiltered samples required qualification as estimated values (J).

2.8 Laboratory Control Sample

The aqueous Laboratory Control Sample (LCS) was prepared and analyzed for the target analytes in each batch of samples. The recovery of each analyte was within the EPA control limits of ±20% for the aqueous Laboratory Control Sample.

2.9 Furnace Atomic Absorption Results

Arsenic analysis by Graphite Furnace Atomic Absorption (GFAA) was performed for all samples. The post digestion spike recoveries for G110225F and G140225F did not meet the 85%-115% criteria. The non-detected results for this analyte in these samples required qualification as estimated quantitation limits.

Selenium analysis by Graphite Furnace Atomic Absorption (GFAA) was performed for all samples. The post digestion spike recoveries for G1FBA225U, G112225F, G112225U, G113225F, G113225U, G134225F, G134225U, G139225U, G141225U, G142225F, G142225U, G110225F, G118A225F, G135225F, G135225U, G122225U, G138225F, G138225U, G136225F, G136225U, G116225F, G116225U, G131225F and G109225U did not meet the 85%-115% criteria. The positive results for this analyte required qualification as estimated values. The non-detected results for this analyte required qualification as estimated detection limits.

The post digestion spike recovery for G131225U in the analysis for Selenium was less than 30%. The sample was re-analyzed at a 1:2 dilution. The post digestion spike recovery for the dilution analysis was 96%. The result from the dilution analysis was reported.

Sample G140225U required analysis for Selenium using the Method of Standard Addition (MSA). All criteria for MSA analysis were achieved.

Thallium analysis by Graphite Furnace Atomic Absorption (GFAA) was performed for all samples. The post digestion spike recoveries for G1FBA225U, G113225F, G113225U, G134225F, G134225U, G139225U, G140225F, G140225U, G141225F, G141225U, G142225F, G142225U, G110225U, G117225F, G117225U, G118225F, G118225U, G124B225F, G128225U, G136225F, G116225F, G116225U and G131225F did not meet the 85%-115% criteria.

The positive results for this analyte required qualification as estimated values. The non-detected results for this analyte required qualification as estimated detection limits.

Lead analysis by Graphite Furnace Atomic Absorption (GFAA) was performed for all samples. The post digestion spike recoveries for G1FBA225U, G112225F, G112225U, G110225F, G110225U, G111225F, G111225U, G117225F, G117225U, G118A225U, G118225F, G118225U, G119225F, G119225U, G119A225U, G124B225F, G130A225F, G130A225U, G132225F, G132225U, G135225F, G138225F, G122225U, G128225U, G136225U, G109225F, G109225U, G131225F and G131225U did not meet the 85%-115% criteria. The positive results for this analyte required qualification as estimated values. The non-detected results for this analyte required qualification as estimated detection limits.

The post digestion spike recovery for G122225F in the analysis for Lead was less than 30%. The sample was re-analyzed at a 1:2 dilution. The post digestion spike recovery for the dilution analysis was 31%. The result from the diluted analysis was reported and the non-detected result required qualification as an estimated quantitation limit.

Samples G135225U and G138225U required analysis for Lead using the Method of Standard Addition (MSA). All criteria for MSA analysis were achieved.

2.10 Serial Dilution Results

Serial dilutions were performed on samples which had a minimum of one ICP analyte with a concentration greater than 50 times the Instrument Detection Limit (IDL). In all cases, the results from the dilution analysis were within 15% of the results from the undiluted analysis.

2.11 Detection Limit Results

All criteria for Instrument Detection Limits and Reporting Requirements were met by the Laboratory.

2.12 Sample Results

All sample results were within the linear range for ICP analysis and within the calibration range for Graphite Furnace Atomic Absorption analysis and Mercury analysis.

TABLE 1

Sample Point Identification Numbers

The Sample Point Identification Number is designated as described for the example given below.

G119A225F

The first two characters (G1) indicate the Pre-Design Investigation (PDI) task (GW-1);

The third through fifth characters (19A) indicate the observation well sample number within that task (FBA,FBB = field blanks); in some cases, the well sample number may be indicated by a two digit number (e.g., 22 indicates well OW-22);

The sixth character (2) indicates the matrix type (1 = solid, 2 = liquid);

The seventh character (2) indicates the sampling round number;

The eighth character (2) indicates the analysis type (5 = TAL Metals); and

The ninth character (F) indicates that the sample was filtered (U = unfiltered).

When the suffix -MS or -MSD has been appended to the end of a sample point identification number, it indicates that the Laboratory has performed a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) analysis on an aliquot of the sample.

TABLE 2

CLP Sample Point Identifications for PDI Task GW-1 Phase II Samples

Sample Point ID	Radian-SAC ID
G109225F	S01019416A
G109225U	S01019426A
G110225F	S01017414A
G110225U	S01017415A
G111225F	S01017416A
G111225U	S01017417A
G112225F	S01016117A
G112225U	S01016118A
G113225F	S01016115A
G113225U	S01016116A
G113225UMS	S01016116A
G113225UMSD	S01016116A
G116225F	S01019414A
G116225U	S01019424A
G117225F	S01017418A
G117225FMS	S01017420A-S
G117225FMSD	S01017422A-S
G117225U	S01017419A
G117225UMS	S01017421A-S
G117225UMSD	S01017423A-S
G118225F	S01017424A
G118225U	S01017427A
G118A225F	S01017425A
G118A225U	S01017426A
G119225F	S01017428A
G119225U	S01017429A
G119A225F	S01017430A
G119A225U	S01017431A
G121225F	S01019417A
G121225U	S01019427A
G122225F	S01017920A
G122225FMS	S01017921A-S
G122225FMSD	S01017922A-S
G122225U	S01017931A
G122225UMS	S01017932A-S
G122225UMSD	S01017933A-S
G124A225F	S01017432A
G124A225U	S01017433A
G124B225F	S01017434A
G124B225U	S01017435A
G128225F	S01017919A
G128225U	S01017930A
G130A225F	S01017914A
G130A225U	S01017925A

TABLE 2 (continued)

CLP Sample Point Identifications for PDI Task GW-1 Phase II Samples

Sample Point ID	Radian-SAC ID
G130B225F	S01017915A
G130B225U	S01017926A
G131225F	S01019417A
G131225U	S01019427A
G132225F	S01017916A
G132225U	S01017927A
G134225F	S01016123A
G134225U	S01016124A
G135225F	S01017917A
G135225U	S01017928A
G136225F	S01019412A
G136225U	S01019422A
G137225F	S01019413A
G137225U	S01019423A
G138225F	S01017918A
G138225U	S01017929A
G139225F	S01016113A
G139225U	S01016114A
G140225F	S01016109A
G140225FMS	S01016109A
G140225FMSD	S01016109A
G140225U	S01016110A
G141225F	S01016111A
G141225U	S01016112A
G142225F	S01016119A
G142225U	S01016120A
G1FBA225F	S01016121A
G1FBA225U	S01016122A
G1FBB225F	S01017923A
G1FBB225U	S01017934A

TABLE 3

Data Qualifiers

A - The data is acceptable (quantitative).

J - The associated numerical value is an estimated quantity (qualitative).

R - Reject data due to quality control criteria. The data are unusable (compound may or may not be present). Resampling and/or re-analysis is necessary for verification.

U - The compound was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.

UJ - The compound was analyzed for but was not detected. The sample quantitation limit is an estimated quantity.

APPENDIX I

Ground-Water/Surface Water
Investigation Plan
Ground-Water Quality Data

APPENDIX I

Ground-Water/Surface Water
Investigation Plan
Ground-Water Quality Data

Volatile Organic Compounds

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-1

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/20/90
Acetone, ug/L	10.0	< 10.0 U
Benzene, ug/L	5.0	< 5.0 U
Bromodichloromethane, ug/L	5.0	< 5.0 U
Bromoform, ug/L	5.0	< 5.0 U
Bromomethane, ug/L	10.0	< 10.0 U
2-Butanone, ug/L	10.0	< 10.0 U
Carbon disulfide, ug/L	5.0	< 5.0 U
Carbon tetrachloride, ug/L	5.0	< 5.0 U
Chlorobenzene, ug/L	5.0	25.0 A
Chloroethane, ug/L	10.0	3.0 J
2-Chloroethylvinyl ether, ug/L	5.0	< 5.0 U
Chloroform, ug/L	5.0	< 5.0 U
Chloromethane, ug/L	10.0	1.0 J
Dibromochloromethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethane, ug/L	5.0	< 5.0 U
1,2-Dichloroethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethene, ug/L	5.0	< 5.0 U
trans-1,2-Dichloroethene, ug/L	5.0	< 5.0 U
1,2-Dichloropropane, ug/L	5.0	< 5.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
Ethylbenzene, ug/L	5.0	< 5.0 U
2-Hexanone, ug/L	5.0	< 5.0 U
Methylene chloride, ug/L	5.0	5.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 10.0 U
Styrene, ug/L	5.0	< 5.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 5.0 U
Tetrachloroethene, ug/L	10.0	< 10.0 U
Toluene, ug/L	5.0	< 5.0 U
1,1,1-Trichloroethane, ug/L	5.0	< 5.0 U
1,1,2-Trichloroethane, ug/L	5.0	< 5.0 U
Trichloroethene, ug/L	5.0	< 5.0 U
Vinyl acetate, ug/L	10.0	< 10.0 U
Vinyl chloride, ug/L	10.0	< 10.0 U
Xylenes, total, ug/L	5.0	< 5.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-1A

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/19/90
Acetone, ug/L	10.0	< 10.0 U
Benzene, ug/L	5.0	< 5.0 U
Bromodichloromethane, ug/L	5.0	< 5.0 U
Bromoform, ug/L	5.0	< 5.0 U
Bromomethane, ug/L	10.0	< 10.0 U
2-Butanone, ug/L	10.0	< 10.0 U
Carbon disulfide, ug/L	5.0	< 5.0 U
Carbon tetrachloride, ug/L	5.0	< 5.0 U
Chlorobenzene, ug/L	5.0	< 5.0 U
Chloroethane, ug/L	10.0	< 10.0 U
2-Chloroethylvinyl ether, ug/L	5.0	< 5.0 U
Chloroform, ug/L	5.0	< 5.0 U
Chloromethane, ug/L	10.0	2.0 R
Dibromochloromethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethane, ug/L	5.0	< 5.0 U
1,2-Dichloroethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethene, ug/L	5.0	< 5.0 U
trans-1,2-Dichloroethene, ug/L	5.0	< 5.0 U
1,2-Dichloropropane, ug/L	5.0	< 5.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
Ethylbenzene, ug/L	5.0	< 5.0 U
2-Hexanone, ug/L	5.0	< 5.0 U
Methylene chloride, ug/L	5.0	3.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 10.0 U
Styrene, ug/L	5.0	< 5.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 5.0 U
Tetrachloroethene, ug/L	10.0	< 10.0 U
Toluene, ug/L	5.0	< 5.0 U
1,1,1-Trichloroethane, ug/L	5.0	< 5.0 U
1,1,2-Trichloroethane, ug/L	5.0	< 5.0 U
Trichloroethene, ug/L	5.0	< 5.0 U
Vinyl acetate, ug/L	10.0	< 10.0 U
Vinyl chloride, ug/L	10.0	< 10.0 U
Xylenes, total, ug/L	5.0	< 5.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-4

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/19/90
Acetone, ug/L	10.0	6.0 J
Benzene, ug/L	5.0	< 5.0 U
Bromodichloromethane, ug/L	5.0	< 5.0 U
Bromoform, ug/L	5.0	< 5.0 U
Bromomethane, ug/L	10.0	< 10.0 U
2-Butanone, ug/L	10.0	< 10.0 U
Carbon disulfide, ug/L	5.0	< 5.0 U
Carbon tetrachloride, ug/L	5.0	< 5.0 U
Chlorobenzene, ug/L	5.0	< 5.0 U
Chloroethane, ug/L	10.0	< 10.0 U
2-Chloroethylvinyl ether, ug/L	5.0	< 5.0 U
Chloroform, ug/L	5.0	< 5.0 U
Chloromethane, ug/L	10.0	< 10.0 U
Dibromochloromethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethane, ug/L	5.0	< 5.0 U
1,2-Dichloroethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethene, ug/L	5.0	< 5.0 U
trans-1,2-Dichloroethene, ug/L	5.0	< 5.0 U
1,2-Dichloropropane, ug/L	5.0	< 5.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
Ethylbenzene, ug/L	5.0	< 5.0 U
2-Hexanone, ug/L	5.0	< 5.0 U
Methylene chloride, ug/L	5.0	12.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 10.0 U
Styrene, ug/L	5.0	< 5.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 5.0 U
Tetrachloroethene, ug/L	10.0	< 10.0 U
Toluene, ug/L	5.0	< 5.0 U
1,1,1-Trichloroethane, ug/L	5.0	< 5.0 U
1,1,2-Trichloroethane, ug/L	5.0	< 5.0 U
Trichloroethene, ug/L	5.0	< 5.0 U
Vinyl acetate, ug/L	10.0	< 10.0 U
Vinyl chloride, ug/L	10.0	< 10.0 U
Xylenes, total, ug/L	5.0	< 5.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-6

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/16/90
Acetone, ug/L	10.0	< 10.0 R
Benzene, ug/L	5.0	< 5.0 U
Bromodichloromethane, ug/L	5.0	< 5.0 U
Bromoform, ug/L	5.0	< 5.0 U
Bromomethane, ug/L	10.0	< 10.0 U
2-Butanone, ug/L	10.0	< 10.0 U
Carbon disulfide, ug/L	5.0	< 5.0 U
Carbon tetrachloride, ug/L	5.0	< 5.0 U
Chlorobenzene, ug/L	5.0	< 5.0 U
Chloroethane, ug/L	10.0	< 10.0 U
2-Chloroethylvinyl ether, ug/L	5.0	< 5.0 U
Chloroform, ug/L	5.0	< 5.0 U
Chloromethane, ug/L	10.0	< 10.0 U
Dibromochloromethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethane, ug/L	5.0	< 5.0 U
1,2-Dichloroethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethene, ug/L	5.0	< 5.0 U
trans-1,2-Dichloroethene, ug/L	5.0	< 5.0 U
1,2-Dichloropropane, ug/L	5.0	< 5.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
Ethylbenzene, ug/L	5.0	< 5.0 U
2-Hexanone, ug/L	5.0	< 5.0 U
Methylene chloride, ug/L	5.0	13.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 10.0 U
Styrene, ug/L	5.0	< 5.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 5.0 U
Tetrachloroethene, ug/L	10.0	< 10.0 U
Toluene, ug/L	5.0	< 5.0 U
1,1,1-Trichloroethane, ug/L	5.0	3.0 J
1,1,2-Trichloroethane, ug/L	5.0	< 5.0 U
Trichloroethene, ug/L	5.0	< 5.0 U
Vinyl acetate, ug/L	10.0	< 10.0 U
Vinyl chloride, ug/L	10.0	< 10.0 U
Xylenes, total, ug/L	5.0	< 5.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-7

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	04/25/90	04/25/90 Replicate
Acetone, ug/L	10.0	< 10.0 U	< 10.0 U
Benzene, ug/L	5.0	< 5.0 U	< 5.0 U
Bromodichloromethane, ug/L	5.0	< 5.0 U	< 5.0 U
Bromoform, ug/L	5.0	< 5.0 U	< 5.0 U
Bromomethane, ug/L	10.0	< 10.0 U	< 10.0 U
2-Butanone, ug/L	10.0	< 10.0 U	< 10.0 U
Carbon disulfide, ug/L	5.0	< 5.0 U	< 5.0 U
Carbon tetrachloride, ug/L	5.0	< 5.0 U	< 5.0 U
Chlorobenzene, ug/L	5.0	< 5.0 U	< 5.0 U
Chloroethane, ug/L	10.0	< 10.0 U	< 10.0 U
Chloroform, ug/L	5.0	< 5.0 U	< 5.0 U
Chloromethane, ug/L	10.0	< 10.0 U	< 10.0 U
Dibromochloromethane, ug/L	5.0	< 5.0 U	< 5.0 U
1,1-Dichloroethane, ug/L	5.0	6.0 A	6.0 A
1,2-Dichloroethane, ug/L	5.0	< 5.0 U	< 5.0 U
1,1-Dichloroethene, ug/L	5.0	3.0 A	< 5.0 U
1,2-Dichloroethene, total, ug/L	5.0	2.0 A	2.0 A
1,2-Dichloropropane, ug/L	5.0	< 5.0 U	< 5.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 5.0 U	< 5.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 5.0 U	< 5.0 U
Ethylbenzene, ug/L	5.0	< 5.0 U	< 5.0 U
2-Hexanone, ug/L	10.0	< 10.0 U	< 10.0 U
Methylene chloride, ug/L	5.0	21.0 R	19.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 10.0 U	< 10.0 U
Styrene, ug/L	5.0	< 5.0 U	< 5.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 5.0 U	< 5.0 U
Tetrachloroethene, ug/L	5.0	< 5.0 U	< 5.0 U
Toluene, ug/L	5.0	< 5.0 U	< 5.0 U
1,1,1-Trichloroethane, ug/L	5.0	15.0 A	15.0 A
1,1,2-Trichloroethane, ug/L	5.0	< 5.0 U	< 5.0 U
Trichloroethene, ug/L	5.0	36.0 A	35.0 A
Vinyl acetate, ug/L	10.0	< 10.0 U	< 10.0 U
Vinyl chloride, ug/L	10.0	< 10.0 U	< 10.0 U
Xylenes, total, ug/L	5.0	< 5.0 U	< 5.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-9

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/19/90
Acetone, ug/L	10.0	< 10.0 U
Benzene, ug/L	5.0	< 5.0 U
Bromodichloromethane, ug/L	5.0	< 5.0 U
Bromoform, ug/L	5.0	< 5.0 U
Bromomethane, ug/L	10.0	< 10.0 U
2-Butanone, ug/L	10.0	< 10.0 U
Carbon disulfide, ug/L	5.0	< 5.0 U
Carbon tetrachloride, ug/L	5.0	< 5.0 U
Chlorobenzene, ug/L	5.0	< 5.0 U
Chloroethane, ug/L	10.0	< 10.0 U
2-Chloroethylvinyl ether, ug/L	5.0	< 5.0 U
Chloroform, ug/L	5.0	< 5.0 U
Chloromethane, ug/L	10.0	< 10.0 U
Dibromochloromethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethane, ug/L	5.0	< 5.0 U
1,2-Dichloroethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethene, ug/L	5.0	< 5.0 U
trans-1,2-Dichloroethene, ug/L	5.0	< 5.0 U
1,2-Dichloropropane, ug/L	5.0	< 5.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
Ethylbenzene, ug/L	5.0	< 5.0 U
2-Hexanone, ug/L	5.0	< 5.0 U
Methylene chloride, ug/L	5.0	13.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 10.0 U
Styrene, ug/L	5.0	< 5.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 5.0 U
Tetrachloroethene, ug/L	10.0	< 10.0 U
Toluene, ug/L	5.0	< 5.0 U
1,1,1-Trichloroethane, ug/L	5.0	< 5.0 U
1,1,2-Trichloroethane, ug/L	5.0	< 5.0 U
Trichloroethene, ug/L	5.0	< 5.0 U
Vinyl acetate, ug/L	10.0	< 10.0 U
Vinyl chloride, ug/L	10.0	< 10.0 U
Xylenes, total, ug/L	5.0	< 5.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-10

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/20/90
Acetone, ug/L	10.0	< 10.0 U
Benzene, ug/L	5.0	< 5.0 U
Bromodichloromethane, ug/L	5.0	< 5.0 U
Bromoform, ug/L	5.0	< 5.0 U
Bromomethane, ug/L	10.0	< 10.0 U
2-Butanone, ug/L	10.0	< 10.0 U
Carbon disulfide, ug/L	5.0	< 5.0 U
Carbon tetrachloride, ug/L	5.0	< 5.0 U
Chlorobenzene, ug/L	5.0	< 5.0 U
Chloroethane, ug/L	10.0	< 10.0 U
2-Chloroethylvinyl ether, ug/L	5.0	< 5.0 U
Chloroform, ug/L	5.0	< 5.0 U
Chloromethane, ug/L	10.0	< 10.0 U
Dibromochloromethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethane, ug/L	5.0	< 5.0 U
1,2-Dichloroethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethene, ug/L	5.0	< 5.0 U
trans-1,2-Dichloroethene, ug/L	5.0	< 5.0 U
1,2-Dichloropropane, ug/L	5.0	< 5.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
Ethylbenzene, ug/L	5.0	< 5.0 U
2-Hexanone, ug/L	5.0	< 5.0 U
Methylene chloride, ug/L	5.0	1.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 10.0 U
Styrene, ug/L	5.0	< 5.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 5.0 U
Tetrachloroethene, ug/L	10.0	< 10.0 U
Toluene, ug/L	5.0	< 5.0 U
1,1,1-Trichloroethane, ug/L	5.0	< 5.0 U
1,1,2-Trichloroethane, ug/L	5.0	< 5.0 U
Trichloroethene, ug/L	5.0	< 5.0 U
Vinyl acetate, ug/L	10.0	< 10.0 U
Vinyl chloride, ug/L	10.0	< 10.0 U
Xylenes, total, ug/L	5.0	< 5.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-11

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/20/90
Acetone, ug/L	10.0	< 10.0 U
Benzene, ug/L	5.0	< 5.0 U
Bromodichloromethane, ug/L	5.0	< 5.0 U
Bromoform, ug/L	5.0	< 5.0 U
Bromomethane, ug/L	10.0	< 10.0 U
2-Butanone, ug/L	10.0	< 10.0 U
Carbon disulfide, ug/L	5.0	< 5.0 U
Carbon tetrachloride, ug/L	5.0	< 5.0 U
Chlorobenzene, ug/L	5.0	< 5.0 U
Chloroethane, ug/L	10.0	< 10.0 U
2-Chloroethylvinyl ether, ug/L	5.0	< 5.0 U
Chloroform, ug/L	5.0	< 5.0 U
Chloromethane, ug/L	10.0	< 10.0 U
Dibromochloromethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethane, ug/L	5.0	< 5.0 U
1,2-Dichloroethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethene, ug/L	5.0	< 5.0 U
trans-1,2-Dichloroethene, ug/L	5.0	< 5.0 U
1,2-Dichloropropane, ug/L	5.0	< 5.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
Ethylbenzene, ug/L	5.0	< 5.0 U
2-Hexanone, ug/L	5.0	< 5.0 U
Methylene chloride, ug/L	5.0	2.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 10.0 U
Styrene, ug/L	5.0	< 5.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 5.0 U
Tetrachloroethene, ug/L	10.0	< 10.0 U
Toluene, ug/L	5.0	1.0 R
1,1,1-Trichloroethane, ug/L	5.0	< 5.0 U
1,1,2-Trichloroethane, ug/L	5.0	< 5.0 U
Trichloroethene, ug/L	5.0	< 5.0 U
Vinyl acetate, ug/L	10.0	< 10.0 U
Vinyl chloride, ug/L	10.0	< 10.0 U
Xylenes, total, ug/L	5.0	< 5.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-12

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/15/90
Acetone, ug/L	10.0	16.0 R
Benzene, ug/L	5.0	46.0 A
Bromodichloromethane, ug/L	5.0	< 5.0 U
Bromoform, ug/L	5.0	< 5.0 U
Bromomethane, ug/L	10.0	< 10.0 U
2-Butanone, ug/L	10.0	< 10.0 U
Carbon disulfide, ug/L	5.0	< 5.0 U
Carbon tetrachloride, ug/L	5.0	< 5.0 U
Chlorobenzene, ug/L	5.0	< 5.0 U
Chloroethane, ug/L	10.0	< 10.0 U
2-Chloroethylvinyl ether, ug/L	5.0	< 5.0 U
Chloroform, ug/L	5.0	< 5.0 U
Chloromethane, ug/L	10.0	< 10.0 U
Dibromochloromethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethane, ug/L	5.0	< 5.0 U
1,2-Dichloroethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethene, ug/L	5.0	< 5.0 U
trans-1,2-Dichloroethene, ug/L	5.0	< 5.0 U
1,2-Dichloropropane, ug/L	5.0	< 5.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
Ethylbenzene, ug/L	5.0	< 5.0 U
2-Hexanone, ug/L	5.0	< 5.0 U
Methylene chloride, ug/L	5.0	8.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 10.0 U
Styrene, ug/L	5.0	< 5.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 5.0 U
Tetrachloroethene, ug/L	10.0	< 10.0 U
Toluene, ug/L	5.0	4.0 J
1,1,1-Trichloroethane, ug/L	5.0	< 5.0 U
1,1,2-Trichloroethane, ug/L	5.0	< 5.0 U
Trichloroethene, ug/L	5.0	< 5.0 U
Vinyl acetate, ug/L	10.0	< 10.0 U
Vinyl chloride, ug/L	10.0	< 10.0 U
Xylenes, total, ug/L	5.0	< 5.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-13

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/19/90	03/19/90 Replicate
Acetone, ug/L	10.0	< 10.0 U	5.0 J
Benzene, ug/L	5.0	4.0 J	4.0 J
Bromodichloromethane, ug/L	5.0	< 5.0 U	< 5.0 U
Bromoform, ug/L	5.0	< 5.0 U	< 5.0 U
Bromomethane, ug/L	10.0	< 10.0 U	< 10.0 U
2-Butanone, ug/L	10.0	< 10.0 U	< 10.0 U
Carbon disulfide, ug/L	5.0	< 5.0 U	< 5.0 U
Carbon tetrachloride, ug/L	5.0	< 5.0 U	< 5.0 U
Chlorobenzene, ug/L	5.0	< 5.0 U	< 5.0 U
Chloroethane, ug/L	10.0	< 10.0 U	< 10.0 U
2-Chloroethylvinyl ether, ug/L	5.0	< 5.0 U	< 5.0 U
Chloroform, ug/L	5.0	< 5.0 U	< 5.0 U
Chloromethane, ug/L	10.0	< 10.0 U	< 10.0 U
Dibromochloromethane, ug/L	5.0	< 5.0 U	< 5.0 U
1,1-Dichloroethane, ug/L	5.0	< 5.0 U	< 5.0 U
1,2-Dichloroethane, ug/L	5.0	< 5.0 U	< 5.0 U
1,1-Dichloroethene, ug/L	5.0	< 5.0 U	< 5.0 U
trans-1,2-Dichloroethene, ug/L	5.0	< 5.0 U	< 5.0 U
1,2-Dichloropropane, ug/L	5.0	< 5.0 U	< 5.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 5.0 U	< 5.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 5.0 U	< 5.0 U
Ethylbenzene, ug/L	5.0	< 5.0 U	< 5.0 U
2-Hexanone, ug/L	5.0	< 5.0 U	< 5.0 U
Methylene chloride, ug/L	5.0	< 5.0 UJ	< 5.0 UJ
4-Methyl-2-pentanone, ug/L	10.0	< 10.0 U	< 10.0 U
Styrene, ug/L	5.0	< 5.0 U	< 5.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 5.0 U	< 5.0 U
Tetrachloroethene, ug/L	10.0	< 10.0 U	< 10.0 U
Toluene, ug/L	5.0	< 5.0 U	< 5.0 U
1,1,1-Trichloroethane, ug/L	5.0	< 5.0 U	< 5.0 U
1,1,2-Trichloroethane, ug/L	5.0	< 5.0 U	< 5.0 U
Trichloroethene, ug/L	5.0	< 5.0 U	< 5.0 U
Vinyl acetate, ug/L	10.0	< 10.0 U	< 10.0 U
Vinyl chloride, ug/L	10.0	< 10.0 U	< 10.0 U
Xylenes, total, ug/L	5.0	< 5.0 U	< 5.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-14

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/15/90
Acetone, ug/L	10.0	< 10.0 UJ
Benzene, ug/L	5.0	< 5.0 U
Bromodichloromethane, ug/L	5.0	< 5.0 U
Bromoform, ug/L	5.0	< 5.0 U
Bromomethane, ug/L	10.0	< 10.0 U
2-Butanone, ug/L	10.0	< 10.0 U
Carbon disulfide, ug/L	5.0	< 5.0 U
Carbon tetrachloride, ug/L	5.0	< 5.0 U
Chlorobenzene, ug/L	5.0	< 5.0 U
Chloroethane, ug/L	10.0	< 10.0 U
2-Chloroethylvinyl ether, ug/L	5.0	< 5.0 U
Chloroform, ug/L	5.0	< 5.0 U
Chloromethane, ug/L	10.0	< 10.0 U
Dibromochloromethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethane, ug/L	5.0	< 5.0 U
1,2-Dichloroethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethene, ug/L	5.0	< 5.0 U
trans-1,2-Dichloroethene, ug/L	5.0	< 5.0 U
1,2-Dichloropropane, ug/L	5.0	< 5.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
Ethylbenzene, ug/L	5.0	< 5.0 U
2-Hexanone, ug/L	5.0	< 5.0 U
Methylene chloride, ug/L	5.0	7.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 10.0 U
Styrene, ug/L	5.0	< 5.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 5.0 U
Tetrachloroethene, ug/L	10.0	< 10.0 U
Toluene, ug/L	5.0	< 5.0 U
1,1,1-Trichloroethane, ug/L	5.0	< 5.0 U
1,1,2-Trichloroethane, ug/L	5.0	< 5.0 U
Trichloroethene, ug/L	5.0	< 5.0 U
Vinyl acetate, ug/L	10.0	< 10.0 U
Vinyl chloride, ug/L	10.0	< 10.0 U
Xylenes, total, ug/L	5.0	< 5.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-15

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/19/90
Acetone, ug/L	10.0	< 10.0 U
Benzene, ug/L	5.0	< 5.0 U
Bromodichloromethane, ug/L	5.0	< 5.0 U
Bromoform, ug/L	5.0	< 5.0 U
Bromomethane, ug/L	10.0	< 10.0 U
2-Butanone, ug/L	10.0	< 10.0 U
Carbon disulfide, ug/L	5.0	< 5.0 U
Carbon tetrachloride, ug/L	5.0	< 5.0 U
Chlorobenzene, ug/L	5.0	< 5.0 U
Chloroethane, ug/L	10.0	< 10.0 U
2-Chloroethylvinyl ether, ug/L	5.0	< 5.0 U
Chloroform, ug/L	5.0	< 5.0 U
Chloromethane, ug/L	10.0	< 10.0 U
Dibromochloromethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethane, ug/L	5.0	< 5.0 U
1,2-Dichloroethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethene, ug/L	5.0	< 5.0 U
trans-1,2-Dichloroethene, ug/L	5.0	< 5.0 U
1,2-Dichloropropane, ug/L	5.0	< 5.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
Ethylbenzene, ug/L	5.0	< 5.0 U
2-Hexanone, ug/L	5.0	< 5.0 U
Methylene chloride, ug/L	5.0	6.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 10.0 U
Styrene, ug/L	5.0	< 5.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 5.0 U
Tetrachloroethene, ug/L	10.0	< 10.0 U
Toluene, ug/L	5.0	< 5.0 U
1,1,1-Trichloroethane, ug/L	5.0	< 5.0 U
1,1,2-Trichloroethane, ug/L	5.0	< 5.0 U
Trichloroethene, ug/L	5.0	< 5.0 U
Vinyl acetate, ug/L	10.0	< 10.0 U
Vinyl chloride, ug/L	10.0	< 10.0 U
Xylenes, total, ug/L	5.0	< 5.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-16

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/20/90
Acetone, ug/L	10.0	37000.0 R
Benzene, ug/L	5.0	< 2500.0 UJ
Bromodichloromethane, ug/L	5.0	< 2500.0 U
Bromoform, ug/L	5.0	< 2500.0 U
Bromomethane, ug/L	10.0	< 5000.0 U
2-Butanone, ug/L	10.0	< 5000.0 U
Carbon disulfide, ug/L	5.0	< 2500.0 U
Carbon tetrachloride, ug/L	5.0	< 2500.0 U
Chlorobenzene, ug/L	5.0	< 2500.0 U
Chloroethane, ug/L	10.0	< 5000.0 U
2-Chloroethylvinyl ether, ug/L	5.0	< 2500.0 U
Chloroform, ug/L	5.0	< 2500.0 U
Chloromethane, ug/L	10.0	< 5000.0 U
Dibromochloromethane, ug/L	5.0	< 2500.0 U
1,1-Dichloroethane, ug/L	5.0	< 2500.0 U
1,2-Dichloroethane, ug/L	5.0	< 2500.0 U
1,1-Dichloroethene, ug/L	5.0	< 2500.0 U
trans-1,2-Dichloroethene, ug/L	5.0	< 2500.0 U
1,2-Dichloropropane, ug/L	5.0	< 2500.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 2500.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 2500.0 U
Ethylbenzene, ug/L	5.0	< 2500.0 UJ
2-Hexanone, ug/L	5.0	< 2500.0 U
Methylene chloride, ug/L	5.0	780.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 5000.0 U
Styrene, ug/L	5.0	< 2500.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 2500.0 U
Tetrachloroethene, ug/L	10.0	< 5000.0 U
Toluene, ug/L	5.0	29000.0 J
1,1,1-Trichloroethane, ug/L	5.0	< 2500.0 U
1,1,2-Trichloroethane, ug/L	5.0	< 2500.0 U
Trichloroethene, ug/L	5.0	< 2500.0 U
Vinyl acetate, ug/L	10.0	< 5000.0 U
Vinyl chloride, ug/L	10.0	< 5000.0 U
Xylenes, total, ug/L	5.0	< 2500.0 UJ

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-17

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/15/90	04/25/90
Acetone, ug/L	10.0	< 250.0 UJ	< 50.0 U
Benzene, ug/L	5.0	2000.0 J	660.0 A
Bromodichloromethane, ug/L	5.0	< 130.0 U	< 25.0 U
Bromoform, ug/L	5.0	< 130.0 U	< 25.0 U
Bromomethane, ug/L	10.0	< 250.0 U	< 50.0 U
2-Butanone, ug/L	10.0	< 250.0 U	< 50.0 U
Carbon disulfide, ug/L	5.0	< 130.0 U	< 25.0 U
Carbon tetrachloride, ug/L	5.0	< 130.0 U	< 25.0 U
Chlorobenzene, ug/L	5.0	< 130.0 U	< 25.0 U
Chloroethane, ug/L	10.0	< 250.0 U	< 50.0 U
2-Chloroethylvinyl ether, ug/L	5.0	< 130.0 U	-
Chloroform, ug/L	5.0	< 130.0 U	< 25.0 U
Chloromethane, ug/L	10.0	< 250.0 U	< 50.0 U
Dibromochloromethane, ug/L	5.0	< 130.0 U	< 25.0 U
1,1-Dichloroethane, ug/L	5.0	< 130.0 U	< 25.0 U
1,2-Dichloroethane, ug/L	5.0	< 130.0 U	< 25.0 U
1,1-Dichloroethene, ug/L	5.0	< 130.0 U	< 25.0 U
1,2-Dichloroethene, total, ug/L	5.0	-	< 25.0 U
trans-1,2-Dichloroethene, ug/L	5.0	< 130.0 U	-
1,2-Dichloropropane, ug/L	5.0	< 130.0 U	< 25.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 130.0 U	< 25.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 130.0 U	< 25.0 U
Ethylbenzene, ug/L	5.0	< 130.0 UJ	< 25.0 U
2-Hexanone, ug/L	10.0	< 130.0 U	< 50.0 U
Methylene chloride, ug/L	5.0	160.0 R	96.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 250.0 U	< 50.0 U
Styrene, ug/L	5.0	< 130.0 U	< 25.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 130.0 U	< 25.0 U
Tetrachloroethene, ug/L	5.0	< 250.0 U	< 25.0 U
Toluene, ug/L	5.0	< 130.0 UJ	< 25.0 U
1,1,1-Trichloroethane, ug/L	5.0	< 130.0 U	< 25.0 U
1,1,2-Trichloroethane, ug/L	5.0	< 130.0 U	< 25.0 U
Trichloroethene, ug/L	5.0	< 130.0 U	< 25.0 U
Vinyl acetate, ug/L	10.0	< 250.0 U	< 50.0 U
Vinyl chloride, ug/L	10.0	< 250.0 U	< 50.0 U
Xylenes, total, ug/L	5.0	< 130.0 UJ	13.0 J

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-18

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/15/90
Acetone, ug/L	10.0	6.0 R
Benzene, ug/L	5.0	< 5.0 U
Bromodichloromethane, ug/L	5.0	< 5.0 U
Bromoform, ug/L	5.0	< 5.0 U
Bromomethane, ug/L	10.0	< 10.0 U
2-Butanone, ug/L	10.0	< 10.0 U
Carbon disulfide, ug/L	5.0	< 5.0 U
Carbon tetrachloride, ug/L	5.0	< 5.0 U
Chlorobenzene, ug/L	5.0	< 5.0 U
Chloroethane, ug/L	10.0	< 10.0 U
2-Chloroethylvinyl ether, ug/L	5.0	< 5.0 U
Chloroform, ug/L	5.0	< 5.0 U
Chloromethane, ug/L	10.0	< 10.0 U
Dibromochloromethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethane, ug/L	5.0	2.0 J
1,2-Dichloroethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethene, ug/L	5.0	< 5.0 U
trans-1,2-Dichloroethene, ug/L	5.0	< 5.0 U
1,2-Dichloropropane, ug/L	5.0	< 5.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
Ethylbenzene, ug/L	5.0	< 5.0 U
2-Hexanone, ug/L	5.0	< 5.0 U
Methylene chloride, ug/L	5.0	5.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 10.0 U
Styrene, ug/L	5.0	< 5.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 5.0 U
Tetrachloroethene, ug/L	10.0	< 10.0 U
Toluene, ug/L	5.0	< 5.0 U
1,1,1-Trichloroethane, ug/L	5.0	< 5.0 U
1,1,2-Trichloroethane, ug/L	5.0	< 5.0 U
Trichloroethene, ug/L	5.0	< 5.0 U
Vinyl acetate, ug/L	10.0	< 10.0 U
Vinyl chloride, ug/L	10.0	< 10.0 U
Xylenes, total, ug/L	5.0	< 5.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-18A

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/15/90
Acetone, ug/L	10.0	< 10.0 U
Benzene, ug/L	5.0	< 5.0 U
Bromodichloromethane, ug/L	5.0	< 5.0 U
Bromoform, ug/L	5.0	< 5.0 U
Bromomethane, ug/L	10.0	< 10.0 U
2-Butanone, ug/L	10.0	< 10.0 U
Carbon disulfide, ug/L	5.0	< 5.0 U
Carbon tetrachloride, ug/L	5.0	< 5.0 U
Chlorobenzene, ug/L	5.0	< 5.0 U
Chloroethane, ug/L	10.0	< 10.0 U
2-Chloroethylvinyl ether, ug/L	5.0	< 5.0 U
Chloroform, ug/L	5.0	< 5.0 U
Chloromethane, ug/L	10.0	< 10.0 U
Dibromochloromethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethane, ug/L	5.0	2.0 J
1,2-Dichloroethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethene, ug/L	5.0	< 5.0 U
trans-1,2-Dichloroethene, ug/L	5.0	< 5.0 U
1,2-Dichloropropane, ug/L	5.0	< 5.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
Ethylbenzene, ug/L	5.0	< 5.0 U
2-Hexanone, ug/L	5.0	< 5.0 U
Methylene chloride, ug/L	5.0	9.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 10.0 U
Styrene, ug/L	5.0	< 5.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 5.0 U
Tetrachloroethene, ug/L	10.0	< 10.0 U
Toluene, ug/L	5.0	< 5.0 U
1,1,1-Trichloroethane, ug/L	5.0	< 5.0 U
1,1,2-Trichloroethane, ug/L	5.0	< 5.0 U
Trichloroethene, ug/L	5.0	< 5.0 U
Vinyl acetate, ug/L	10.0	< 10.0 U
Vinyl chloride, ug/L	10.0	< 10.0 U
Xylenes, total, ug/L	5.0	< 5.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-19

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/16/90
Acetone, ug/L	10.0	6.0 R
Benzene, ug/L	5.0	< 5.0 U
Bromodichloromethane, ug/L	5.0	< 5.0 U
Bromoform, ug/L	5.0	< 5.0 U
Bromomethane, ug/L	10.0	< 10.0 U
2-Butanone, ug/L	10.0	< 10.0 U
Carbon disulfide, ug/L	5.0	< 5.0 U
Carbon tetrachloride, ug/L	5.0	< 5.0 U
Chlorobenzene, ug/L	5.0	< 5.0 U
Chloroethane, ug/L	10.0	< 10.0 U
2-Chloroethylvinyl ether, ug/L	5.0	< 5.0 U
Chloroform, ug/L	5.0	< 5.0 U
Chloromethane, ug/L	10.0	< 10.0 U
Dibromochloromethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethane, ug/L	5.0	< 5.0 U
1,2-Dichloroethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethene, ug/L	5.0	< 5.0 U
trans-1,2-Dichloroethene, ug/L	5.0	< 5.0 U
1,2-Dichloropropane, ug/L	5.0	< 5.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
Ethylbenzene, ug/L	5.0	< 5.0 U
2-Hexanone, ug/L	5.0	< 5.0 U
Methylene chloride, ug/L	5.0	6.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 10.0 U
Styrene, ug/L	5.0	< 5.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 5.0 U
Tetrachloroethene, ug/L	10.0	< 10.0 U
Toluene, ug/L	5.0	< 5.0 U
1,1,1-Trichloroethane, ug/L	5.0	< 5.0 U
1,1,2-Trichloroethane, ug/L	5.0	< 5.0 U
Trichloroethene, ug/L	5.0	1.0 J
Vinyl acetate, ug/L	10.0	< 10.0 U
Vinyl chloride, ug/L	10.0	< 10.0 U
Xylenes, total, ug/L	5.0	< 5.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-19A

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/16/90
Acetone, ug/L	10.0	11.0 R
Benzene, ug/L	5.0	< 5.0 U
Bromodichloromethane, ug/L	5.0	< 5.0 U
Bromoform, ug/L	5.0	< 5.0 U
Bromomethane, ug/L	10.0	< 10.0 U
2-Butanone, ug/L	10.0	< 10.0 U
Carbon disulfide, ug/L	5.0	< 5.0 U
Carbon tetrachloride, ug/L	5.0	< 5.0 U
Chlorobenzene, ug/L	5.0	< 5.0 U
Chloroethane, ug/L	10.0	< 10.0 U
2-Chloroethylvinyl ether, ug/L	5.0	< 5.0 U
Chloroform, ug/L	5.0	< 5.0 U
Chloromethane, ug/L	10.0	< 10.0 U
Dibromochloromethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethane, ug/L	5.0	< 5.0 U
1,2-Dichloroethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethene, ug/L	5.0	< 5.0 U
trans-1,2-Dichloroethene, ug/L	5.0	< 5.0 U
1,2-Dichloropropane, ug/L	5.0	< 5.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
Ethylbenzene, ug/L	5.0	< 5.0 U
2-Hexanone, ug/L	5.0	< 5.0 U
Methylene chloride, ug/L	5.0	5.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 10.0 U
Styrene, ug/L	5.0	< 5.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 5.0 U
Tetrachloroethene, ug/L	10.0	< 10.0 U
Toluene, ug/L	5.0	< 5.0 U
1,1,1-Trichloroethane, ug/L	5.0	< 5.0 U
1,1,2-Trichloroethane, ug/L	5.0	< 5.0 U
Trichloroethene, ug/L	5.0	< 5.0 U
Vinyl acetate, ug/L	10.0	< 10.0 U
Vinyl chloride, ug/L	10.0	< 10.0 U
Xylenes, total, ug/L	5.0	< 5.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix 1. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-20

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/16/90
Acetone, ug/L	10.0	9.0 R
Benzene, ug/L	5.0	< 5.0 U
Bromodichloromethane, ug/L	5.0	< 5.0 U
Bromoform, ug/L	5.0	< 5.0 U
Bromomethane, ug/L	10.0	< 10.0 U
2-Butanone, ug/L	10.0	< 10.0 U
Carbon disulfide, ug/L	5.0	< 5.0 U
Carbon tetrachloride, ug/L	5.0	< 5.0 U
Chlorobenzene, ug/L	5.0	< 5.0 U
Chloroethane, ug/L	10.0	< 10.0 U
2-Chloroethylvinyl ether, ug/L	5.0	< 5.0 U
Chloroform, ug/L	5.0	< 5.0 U
Chloromethane, ug/L	10.0	< 10.0 U
Dibromochloromethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethane, ug/L	5.0	5.0 A
1,2-Dichloroethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethene, ug/L	5.0	< 5.0 U
trans-1,2-Dichloroethene, ug/L	5.0	28.0 A
1,2-Dichloropropane, ug/L	5.0	< 5.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
Ethylbenzene, ug/L	5.0	< 5.0 U
2-Hexanone, ug/L	5.0	< 5.0 U
Methylene chloride, ug/L	5.0	5.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 10.0 U
Styrene, ug/L	5.0	< 5.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 5.0 U
Tetrachloroethene, ug/L	10.0	< 10.0 U
Toluene, ug/L	5.0	3.0 J
1,1,1-Trichloroethane, ug/L	5.0	< 5.0 U
1,1,2-Trichloroethane, ug/L	5.0	< 5.0 U
Trichloroethene, ug/L	5.0	< 5.0 U
Vinyl acetate, ug/L	10.0	< 10.0 U
Vinyl chloride, ug/L	10.0	< 10.0 U
Xylenes, total, ug/L	5.0	3.0 J

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-21

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/21/90	03/21/90 Replicate
Acetone, ug/L	10.0	2.0 R	1.0 R
Benzene, ug/L	5.0	< 5.0 U	< 5.0 U
Bromodichloromethane, ug/L	5.0	< 5.0 U	< 5.0 U
Bromoform, ug/L	5.0	< 5.0 U	< 5.0 U
Bromomethane, ug/L	10.0	< 10.0 U	< 10.0 U
2-Butanone, ug/L	10.0	< 10.0 U	< 10.0 U
Carbon disulfide, ug/L	5.0	< 5.0 U	< 5.0 U
Carbon tetrachloride, ug/L	5.0	< 5.0 U	< 5.0 U
Chlorobenzene, ug/L	5.0	< 5.0 U	< 5.0 U
Chloroethane, ug/L	10.0	< 10.0 U	< 10.0 U
2-Chloroethylvinyl ether, ug/L	5.0	< 5.0 U	< 5.0 U
Chloroform, ug/L	5.0	2.0 J	2.0 J
Chloromethane, ug/L	10.0	1.0 R	< 10.0 U
Dibromochloromethane, ug/L	5.0	< 5.0 U	< 5.0 U
1,1-Dichloroethane, ug/L	5.0	< 5.0 U	< 5.0 U
1,2-Dichloroethane, ug/L	5.0	< 5.0 U	< 5.0 U
1,1-Dichloroethene, ug/L	5.0	< 5.0 U	< 5.0 U
trans-1,2-Dichloroethene, ug/L	5.0	< 5.0 U	< 5.0 U
1,2-Dichloropropane, ug/L	5.0	< 5.0 U	< 5.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 5.0 U	< 5.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 5.0 U	< 5.0 U
Ethylbenzene, ug/L	5.0	< 5.0 U	< 5.0 U
2-Hexanone, ug/L	5.0	< 5.0 U	< 5.0 U
Methylene chloride, ug/L	5.0	2.0 R	3.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 10.0 U	< 10.0 U
Styrene, ug/L	5.0	< 5.0 U	< 5.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 5.0 U	< 5.0 U
Tetrachloroethene, ug/L	10.0	< 10.0 U	< 10.0 U
Toluene, ug/L	5.0	8.0 J	< 5.0 U
1,1,1-Trichloroethane, ug/L	5.0	< 5.0 U	< 5.0 U
1,1,2-Trichloroethane, ug/L	5.0	< 5.0 U	< 5.0 U
Trichloroethene, ug/L	5.0	< 5.0 U	< 5.0 U
Vinyl acetate, ug/L	10.0	< 10.0 U	< 10.0 U
Vinyl chloride, ug/L	10.0	< 10.0 U	< 10.0 U
Xylenes, total, ug/L	5.0	< 5.0 U	< 5.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-22

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/21/90
Acetone, ug/L	10.0	< 10.0 R
Benzene, ug/L	5.0	< 5.0 U
Bromodichloromethane, ug/L	5.0	< 5.0 U
Bromoform, ug/L	5.0	< 5.0 U
Bromomethane, ug/L	10.0	< 10.0 U
2-Butanone, ug/L	10.0	< 10.0 U
Carbon disulfide, ug/L	5.0	< 5.0 U
Carbon tetrachloride, ug/L	5.0	< 5.0 U
Chlorobenzene, ug/L	5.0	< 5.0 U
Chloroethane, ug/L	10.0	< 10.0 U
2-Chloroethylvinyl ether, ug/L	5.0	< 5.0 U
Chloroform, ug/L	5.0	6.0 A
Chloromethane, ug/L	10.0	< 10.0 U
Dibromochloromethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethane, ug/L	5.0	< 5.0 U
1,2-Dichloroethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethene, ug/L	5.0	< 5.0 U
trans-1,2-Dichloroethene, ug/L	5.0	< 5.0 U
1,2-Dichloropropane, ug/L	5.0	< 5.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
Ethylbenzene, ug/L	5.0	< 5.0 U
2-Hexanone, ug/L	5.0	< 5.0 U
Methylene chloride, ug/L	5.0	< 5.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 10.0 U
Styrene, ug/L	5.0	< 5.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 5.0 U
Tetrachloroethene, ug/L	10.0	< 10.0 U
Toluene, ug/L	5.0	1.0 A
1,1,1-Trichloroethane, ug/L	5.0	< 5.0 U
1,1,2-Trichloroethane, ug/L	5.0	< 5.0 U
Trichloroethene, ug/L	5.0	< 5.0 U
Vinyl acetate, ug/L	10.0	< 10.0 U
Vinyl chloride, ug/L	10.0	< 10.0 U
Xylenes, total, ug/L	5.0	< 5.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-28

Chemical Compound Class: Volatile Organic Compounds

Chemical Parameter	CRQL	03/22/90
Acetone, ug/L	10.0	9.0 R
Benzene, ug/L	5.0	< 5.0 U
Bromodichloromethane, ug/L	5.0	< 5.0 U
Bromoform, ug/L	5.0	< 5.0 U
Bromomethane, ug/L	10.0	< 10.0 U
2-Butanone, ug/L	10.0	< 10.0 U
Carbon disulfide, ug/L	5.0	< 5.0 U
Carbon tetrachloride, ug/L	5.0	< 5.0 U
Chlorobenzene, ug/L	5.0	< 5.0 U
Chloroethane, ug/L	10.0	< 10.0 U
2-Chloroethylvinyl ether, ug/L	5.0	< 5.0 U
Chloroform, ug/L	5.0	2.0 J
Chloromethane, ug/L	10.0	< 10.0 U
Dibromochloromethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethane, ug/L	5.0	< 5.0 U
1,2-Dichloroethane, ug/L	5.0	< 5.0 U
1,1-Dichloroethene, ug/L	5.0	< 5.0 U
trans-1,2-Dichloroethene, ug/L	5.0	< 5.0 U
1,2-Dichloropropane, ug/L	5.0	< 5.0 U
cis-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
trans-1,3-Dichloropropene, ug/L	5.0	< 5.0 U
Ethylbenzene, ug/L	5.0	< 5.0 U
2-Hexanone, ug/L	5.0	< 5.0 U
Methylene chloride, ug/L	5.0	2.0 R
4-Methyl-2-pentanone, ug/L	10.0	< 10.0 U
Styrene, ug/L	5.0	< 5.0 U
1,1,2,2-Tetrachloroethane, ug/L	5.0	< 5.0 U
Tetrachloroethene, ug/L	10.0	< 10.0 U
Toluene, ug/L	5.0	38.0 A
1,1,1-Trichloroethane, ug/L	5.0	< 5.0 U
1,1,2-Trichloroethane, ug/L	5.0	< 5.0 U
Trichloroethene, ug/L	5.0	< 5.0 U
Vinyl acetate, ug/L	10.0	< 10.0 U
Vinyl chloride, ug/L	10.0	< 10.0 U
Xylenes, total, ug/L	5.0	< 5.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

APPENDIX I

Ground-Water/Surface Water
Investigation Plan
Ground-Water Quality Data

Semi-Volatile Organic Compounds

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-1

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/20/90
Acenaphthene, ug/L	10.0	< 10.0 U
Acenaphthylene, ug/L	10.0	< 10.0 U
Anthracene, ug/L	10.0	< 10.0 U
Benzo (a) anthracene, ug/L	10.0	< 10.0 U
Benzo (a) pyrene, ug/L	10.0	< 10.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 10.0 UJ
Benzo (g,h,i) perylene, ug/L	10.0	< 10.0 U
Benzoic acid, ug/L	50.0	< 50.0 U
Benzo (k) fluoranthene, ug/L	10.0	< 10.0 UJ
Benzyl alcohol, ug/L	10.0	4.0 J
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 10.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	< 10.0 U
4-Bromophenyl-phenylether, ug/L	10.0	< 10.0 U
Butylbenzylphthalate, ug/L	10.0	< 10.0 U
4-Chloroaniline, ug/L	10.0	< 10.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 10.0 U
2-Chloronaphthalene, ug/L	10.0	< 10.0 U
2-Chlorophenol, ug/L	10.0	< 10.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 10.0 U
Chrysene, ug/L	10.0	< 10.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 10.0 U
Dibenzofuran, ug/L	10.0	< 10.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 10.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 20.0 U
2,4-Dichlorophenol, ug/L	10.0	< 10.0 U
Diethylphthalate, ug/L	10.0	< 10.0 U
2,4-Dimethylphenol, ug/L	10.0	< 10.0 U
Dimethyl phthalate, ug/L	10.0	< 10.0 U
Di-n-butylphthalate, ug/L	10.0	< 10.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 50.0 U
2,4-Dinitrophenol, ug/L	50.0	< 50.0 UJ
2,4-Dinitrotoluene, ug/L	10.0	< 10.0 U
2,6-Dinitrotoluene, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-1

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/20/90
Di-n-octyl phthalate, ug/L	10.0	< 10.0 U
Fluoranthene, ug/L	10.0	< 10.0 U
Fluorene, ug/L	10.0	< 10.0 U
Hexachlorobenzene, ug/L	10.0	< 10.0 U
Hexachlorobutadiene, ug/L	10.0	< 10.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 10.0 U
Hexachloroethane, ug/L	10.0	< 10.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 10.0 U
Isophorone, ug/L	10.0	< 10.0 U
2-Methylnaphthalene, ug/L	10.0	< 10.0 U
2-Methylphenol, ug/L	10.0	< 10.0 U
4-Methylphenol, ug/L	10.0	< 10.0 U
Naphthalene, ug/L	10.0	< 10.0 U
2-Nitroaniline, ug/L	50.0	< 50.0 U
3-Nitroaniline, ug/L	50.0	< 50.0 U
4-Nitroaniline, ug/L	50.0	< 50.0 UJ
Nitrobenzene, ug/L	10.0	< 10.0 UJ
2-Nitrophenol, ug/L	10.0	< 10.0 U
4-Nitrophenol, ug/L	50.0	< 50.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 10.0 U
N-Nitrosodiphenylamine, ug/L	10.0	< 10.0 U
Pentachlorophenol, ug/L	50.0	< 50.0 U
Phenanthrene, ug/L	10.0	< 10.0 U
Phenol, ug/L	10.0	< 10.0 U
Pyrene, ug/L	10.0	< 10.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 10.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 50.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-1A

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/19/90
Acenaphthene, ug/L	10.0	< 10.0 U
Acenaphthylene, ug/L	10.0	< 10.0 U
Anthracene, ug/L	10.0	< 10.0 U
Benzo (a) anthracene, ug/L	10.0	< 10.0 U
Benzo (a) pyrene, ug/L	10.0	< 10.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 10.0 U
Benzo (g,h,i) perylene, ug/L	10.0	< 10.0 U
Benzoic acid, ug/L	50.0	< 50.0 U
Benzo (k) fluoranthene, ug/L	10.0	< 10.0 U
Benzyl alcohol, ug/L	10.0	< 10.0 U
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 10.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	4.0 J
4-Bromophenyl-phenylether, ug/L	10.0	< 10.0 U
Butylbenzylphthalate, ug/L	10.0	< 10.0 U
4-Chloroaniline, ug/L	10.0	< 10.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 10.0 U
2-Chloronaphthalene, ug/L	10.0	< 10.0 U
2-Chlorophenol, ug/L	10.0	< 10.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 10.0 U
Chrysene, ug/L	10.0	< 10.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 10.0 U
Dibenzofuran, ug/L	10.0	< 10.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 10.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 20.0 UJ
2,4-Dichlorophenol, ug/L	10.0	< 10.0 U
Diethylphthalate, ug/L	10.0	< 10.0 U
2,4-Dimethylphenol, ug/L	10.0	< 10.0 U
Dimethyl phthalate, ug/L	10.0	< 10.0 U
Di-n-butylphthalate, ug/L	10.0	< 10.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 50.0 U
2,4-Dinitrophenol, ug/L	50.0	< 50.0 U
2,4-Dinitrotoluene, ug/L	10.0	< 10.0 U
2,6-Dinitrotoluene, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-1A

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/19/90
Di-n-octyl phthalate, ug/L	10.0	< 10.0 U
Fluoranthene, ug/L	10.0	< 10.0 U
Fluorene, ug/L	10.0	< 10.0 U
Hexachlorobenzene, ug/L	10.0	< 10.0 U
Hexachlorobutadiene, ug/L	10.0	< 10.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 10.0 U
Hexachloroethane, ug/L	10.0	< 10.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 10.0 U
Isophorone, ug/L	10.0	< 10.0 U
2-Methylnaphthalene, ug/L	10.0	< 10.0 U
2-Methylphenol, ug/L	10.0	< 10.0 U
4-Methylphenol, ug/L	10.0	< 10.0 U
Naphthalene, ug/L	10.0	< 10.0 U
2-Nitroaniline, ug/L	50.0	< 50.0 U
3-Nitroaniline, ug/L	50.0	< 50.0 U
4-Nitroaniline, ug/L	50.0	< 50.0 UJ
Nitrobenzene, ug/L	10.0	< 10.0 U
2-Nitrophenol, ug/L	10.0	< 10.0 U
4-Nitrophenol, ug/L	50.0	< 50.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 10.0 U
N-Nitrosodiphenylamine, ug/L	10.0	< 10.0 U
Pentachlorophenol, ug/L	50.0	< 50.0 U
Phenanthrene, ug/L	10.0	< 10.0 U
Phenol, ug/L	10.0	< 10.0 U
Pyrene, ug/L	10.0	< 10.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 10.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 50.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-4

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/19/90
Acenaphthene, ug/L	10.0	< 10.0 U
Acenaphthylene, ug/L	10.0	< 10.0 U
Anthracene, ug/L	10.0	< 10.0 U
Benzo (a) anthracene, ug/L	10.0	< 10.0 U
Benzo (a) pyrene, ug/L	10.0	< 10.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 10.0 U
Benzo (g,h,i) perylene, ug/L	10.0	< 10.0 U
Benzoic acid, ug/L	50.0	< 50.0 U
Benzo (k) fluoranthene, ug/L	10.0	< 10.0 U
Benzyl alcohol, ug/L	10.0	< 10.0 U
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 10.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	4.0 J
4-Bromophenyl-phenylether, ug/L	10.0	< 10.0 U
Butylbenzylphthalate, ug/L	10.0	< 10.0 U
4-Chloroaniline, ug/L	10.0	< 10.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 10.0 U
2-Chloronaphthalene, ug/L	10.0	< 10.0 U
2-Chlorophenol, ug/L	10.0	< 10.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 10.0 U
Chrysene, ug/L	10.0	< 10.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 10.0 U
Dibenzofuran, ug/L	10.0	< 10.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 10.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 20.0 UJ
2,4-Dichlorophenol, ug/L	10.0	< 10.0 U
Diethylphthalate, ug/L	10.0	< 10.0 U
2,4-Dimethylphenol, ug/L	10.0	< 10.0 U
Dimethyl phthalate, ug/L	10.0	< 10.0 U
Di-n-butylphthalate, ug/L	10.0	< 10.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 50.0 U
2,4-Dinitrophenol, ug/L	50.0	< 50.0 U
2,4-Dinitrotoluene, ug/L	10.0	< 10.0 U
2,6-Dinitrotoluene, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-4

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/19/90
Di-n-octyl phthalate, ug/L	10.0	< 10.0 U
Fluoranthene, ug/L	10.0	< 10.0 U
Fluorene, ug/L	10.0	< 10.0 U
Hexachlorobenzene, ug/L	10.0	< 10.0 U
Hexachlorobutadiene, ug/L	10.0	< 10.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 10.0 U
Hexachloroethane, ug/L	10.0	< 10.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 10.0 U
Isophorone, ug/L	10.0	< 10.0 U
2-Methylnaphthalene, ug/L	10.0	< 10.0 U
2-Methylphenol, ug/L	10.0	< 10.0 U
4-Methylphenol, ug/L	10.0	< 10.0 U
Naphthalene, ug/L	10.0	< 10.0 U
2-Nitroaniline, ug/L	50.0	< 50.0 U
3-Nitroaniline, ug/L	50.0	< 50.0 U
4-Nitroaniline, ug/L	50.0	< 50.0 UJ
Nitrobenzene, ug/L	10.0	< 10.0 U
2-Nitrophenol, ug/L	10.0	< 10.0 U
4-Nitrophenol, ug/L	50.0	< 50.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 10.0 U
N-Nitrosodiphenylamine, ug/L	10.0	< 10.0 U
Pentachlorophenol, ug/L	50.0	< 50.0 U
Phenanthrene, ug/L	10.0	< 10.0 U
Phenol, ug/L	10.0	< 10.0 U
Pyrene, ug/L	10.0	< 10.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 10.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 50.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-6

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/16/90
Acenaphthene, ug/L	10.0	< 13.0 U
Acenaphthylene, ug/L	10.0	< 13.0 U
Anthracene, ug/L	10.0	< 13.0 U
Benzo (a) anthracene, ug/L	10.0	< 13.0 U
Benzo (a) pyrene, ug/L	10.0	< 13.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 13.0 U
Benzo (g,h,i) perylene, ug/L	10.0	< 13.0 U
Benzoic acid, ug/L	50.0	< 63.0 UJ
Benzo (k) fluoranthene, ug/L	10.0	< 13.0 U
Benzyl alcohol, ug/L	10.0	< 13.0 U
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 13.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 13.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 13.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	< 13.0 U
4-Bromophenyl-phenylether, ug/L	10.0	< 13.0 U
Butylbenzylphthalate, ug/L	10.0	< 13.0 U
4-Chloroaniline, ug/L	10.0	< 13.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 13.0 U
2-Chloronaphthalene, ug/L	10.0	< 13.0 U
2-Chlorophenol, ug/L	10.0	< 13.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 13.0 U
Chrysene, ug/L	10.0	< 13.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 13.0 U
Dibenzofuran, ug/L	10.0	< 13.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 13.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 13.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 13.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 25.0 U
2,4-Dichlorophenol, ug/L	10.0	< 13.0 U
Diethylphthalate, ug/L	10.0	< 13.0 U
2,4-Dimethylphenol, ug/L	10.0	< 13.0 U
Dimethyl phthalate, ug/L	10.0	< 13.0 U
Di-n-butylphthalate, ug/L	10.0	< 13.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 63.0 U
2,4-Dinitrophenol, ug/L	50.0	< 63.0 U
2,4-Dinitrotoluene, ug/L	10.0	< 13.0 U
2,6-Dinitrotoluene, ug/L	10.0	< 13.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-6

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/16/90
Di-n-octyl phthalate, ug/L	10.0	< 13.0 U
Fluoranthene, ug/L	10.0	< 13.0 U
Fluorene, ug/L	10.0	< 13.0 U
Hexachlorobenzene, ug/L	10.0	< 13.0 U
Hexachlorobutadiene, ug/L	10.0	< 13.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 13.0 U
Hexachloroethane, ug/L	10.0	< 13.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 13.0 U
Isophorone, ug/L	10.0	< 13.0 U
2-Methylnaphthalene, ug/L	10.0	< 13.0 U
2-Methylphenol, ug/L	10.0	< 13.0 U
4-Methylphenol, ug/L	10.0	< 13.0 U
Naphthalene, ug/L	10.0	< 13.0 U
2-Nitroaniline, ug/L	50.0	< 63.0 U
3-Nitroaniline, ug/L	50.0	< 63.0 U
4-Nitroaniline, ug/L	50.0	< 63.0 UJ
Nitrobenzene, ug/L	10.0	< 13.0 U
2-Nitrophenol, ug/L	10.0	< 13.0 U
4-Nitrophenol, ug/L	50.0	< 63.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 13.0 U
N-Nitrosodiphenylamine, ug/L	10.0	< 13.0 U
Pentachlorophenol, ug/L	50.0	< 63.0 U
Phenanthrene, ug/L	10.0	< 13.0 U
Phenol, ug/L	10.0	< 13.0 U
Pyrene, ug/L	10.0	< 13.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 13.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 63.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 13.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-7

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	04/25/90	04/25/90 Replicate
Acenaphthene, ug/L	10.0	< 10.0 U	< 10.0 U
Acenaphthylene, ug/L	10.0	< 10.0 U	< 10.0 U
Anthracene, ug/L	10.0	< 10.0 U	< 10.0 U
Benzo (a) anthracene, ug/L	10.0	< 10.0 U	< 10.0 U
Benzo (a) pyrene, ug/L	10.0	< 10.0 U	< 10.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 10.0 U	< 10.0 U
Benzo (g,h,i) perylene, ug/L	10.0	< 10.0 U	< 10.0 U
Benzoic acid, ug/L	50.0	< 50.0 U	< 50.0 U
Benzo (k) fluoranthene, ug/L	10.0	< 10.0 U	< 10.0 U
Benzyl alcohol, ug/L	10.0	< 10.0 U	< 10.0 U
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 10.0 U	< 10.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 10.0 U	< 10.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 10.0 U	< 10.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	< 10.0 U	< 10.0 U
4-Bromophenyl-phenylether, ug/L	10.0	< 10.0 U	< 10.0 U
Butylbenzylphthalate, ug/L	10.0	< 10.0 U	< 10.0 U
4-Chloroaniline, ug/L	10.0	< 10.0 U	< 10.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 10.0 U	< 10.0 U
2-Chloronaphthalene, ug/L	10.0	< 10.0 U	< 10.0 U
2-Chlorophenol, ug/L	10.0	< 10.0 U	< 10.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 10.0 U	< 10.0 U
Chrysene, ug/L	10.0	< 10.0 U	< 10.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 10.0 U	< 10.0 U
Dibenzofuran, ug/L	10.0	< 10.0 U	< 10.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 10.0 U	< 10.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 10.0 U	< 10.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 10.0 U	< 10.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 20.0 U	< 20.0 U
2,4-Dichlorophenol, ug/L	10.0	< 10.0 U	< 10.0 U
Diethylphthalate, ug/L	10.0	< 10.0 U	< 10.0 U
2,4-Dimethylphenol, ug/L	10.0	< 10.0 U	< 10.0 U
Dimethyl phthalate, ug/L	10.0	< 10.0 U	< 10.0 U
Di-n-butylphthalate, ug/L	10.0	< 10.0 U	< 10.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 50.0 U	< 50.0 U
2,4-Dinitrophenol, ug/L	50.0	< 50.0 U	< 50.0 U
2,4-Dinitrotoluene, ug/L	10.0	< 10.0 U	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-7

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	04/25/90	04/25/90 Replicate
2,6-Dinitrotoluene, ug/L	10.0	< 10.0 U	< 10.0 U
Di-n-octyl phthalate, ug/L	10.0	< 10.0 U	< 10.0 U
Fluoranthene, ug/L	10.0	< 10.0 U	< 10.0 U
Fluorene, ug/L	10.0	< 10.0 U	< 10.0 U
Hexachlorobenzene, ug/L	10.0	< 10.0 U	< 10.0 U
Hexachlorobutadiene, ug/L	10.0	< 10.0 U	< 10.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 10.0 U	< 10.0 U
Hexachloroethane, ug/L	10.0	< 10.0 U	< 10.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 10.0 U	< 10.0 U
Isophorone, ug/L	10.0	< 10.0 U	< 10.0 U
2-Methylnaphthalene, ug/L	10.0	< 10.0 U	< 10.0 U
2-Methylphenol, ug/L	10.0	< 10.0 U	< 10.0 U
4-Methylphenol, ug/L	10.0	< 10.0 U	< 10.0 U
Naphthalene, ug/L	10.0	< 10.0 U	< 10.0 U
2-Nitroaniline, ug/L	50.0	< 50.0 U	< 50.0 U
3-Nitroaniline, ug/L	50.0	< 50.0 U	< 50.0 U
4-Nitroaniline, ug/L	50.0	< 50.0 U	< 50.0 U
Nitrobenzene, ug/L	10.0	< 10.0 U	< 10.0 U
2-Nitrophenol, ug/L	10.0	< 10.0 U	< 10.0 U
4-Nitrophenol, ug/L	50.0	< 50.0 UJ	< 50.0 UJ
N-Nitroso-di-n-propylamine, ug/L	10.0	< 10.0 U	< 10.0 U
N-Nitrosodiphenylamine, ug/L	10.0	< 10.0 U	< 10.0 U
Pentachlorophenol, ug/L	50.0	< 50.0 U	< 50.0 U
Phenanthrene, ug/L	10.0	< 10.0 U	< 10.0 U
Phenol, ug/L	10.0	< 10.0 U	< 10.0 U
Pyrene, ug/L	10.0	< 10.0 U	< 10.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 10.0 U	< 10.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 50.0 U	< 50.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 10.0 U	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-9

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/19/90
Acenaphthene, ug/L	10.0	< 10.0 U
Acenaphthylene, ug/L	10.0	< 10.0 U
Anthracene, ug/L	10.0	< 10.0 U
Benzo (a) anthracene, ug/L	10.0	< 10.0 U
Benzo (a) pyrene, ug/L	10.0	< 10.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 10.0 U
Benzo (g,h,i) perylene, ug/L	10.0	< 10.0 U
Benzoic acid, ug/L	50.0	< 50.0 U
Benzo (k) fluoranthene, ug/L	10.0	< 10.0 U
Benzyl alcohol, ug/L	10.0	< 10.0 U
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 10.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	< 10.0 U
4-Bromophenyl-phenylether, ug/L	10.0	< 10.0 U
Butylbenzylphthalate, ug/L	10.0	< 10.0 U
4-Chloroaniline, ug/L	10.0	< 10.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 10.0 U
2-Chloronaphthalene, ug/L	10.0	< 10.0 U
2-Chlorophenol, ug/L	10.0	< 10.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 10.0 U
Chrysene, ug/L	10.0	< 10.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 10.0 U
Dibenzofuran, ug/L	10.0	< 10.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 10.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 20.0 UJ
2,4-Dichlorophenol, ug/L	10.0	< 10.0 U
Diethylphthalate, ug/L	10.0	< 10.0 U
2,4-Dimethylphenol, ug/L	10.0	< 10.0 U
Dimethyl phthalate, ug/L	10.0	< 10.0 U
Di-n-butylphthalate, ug/L	10.0	< 10.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 50.0 U
2,4-Dinitrophenol, ug/L	50.0	< 50.0 U
2,4-Dinitrotoluene, ug/L	10.0	< 10.0 U
2,6-Dinitrotoluene, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-9

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/19/90
Di-n-octyl phthalate, ug/L	10.0	< 10.0 U
Fluoranthene, ug/L	10.0	< 10.0 U
Fluorene, ug/L	10.0	< 10.0 U
Hexachlorobenzene, ug/L	10.0	< 10.0 U
Hexachlorobutadiene, ug/L	10.0	< 10.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 10.0 U
Hexachloroethane, ug/L	10.0	< 10.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 10.0 U
Isophorone, ug/L	10.0	< 10.0 U
2-Methylnaphthalene, ug/L	10.0	< 10.0 U
2-Methylphenol, ug/L	10.0	< 10.0 U
4-Methylphenol, ug/L	10.0	< 10.0 U
Naphthalene, ug/L	10.0	< 10.0 U
2-Nitroaniline, ug/L	50.0	< 50.0 U
3-Nitroaniline, ug/L	50.0	< 50.0 U
4-Nitroaniline, ug/L	50.0	< 50.0 UJ
Nitrobenzene, ug/L	10.0	< 10.0 U
2-Nitrophenol, ug/L	10.0	< 10.0 U
4-Nitrophenol, ug/L	50.0	< 50.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 10.0 U
N-Nitrosodiphenylamine, ug/L	10.0	< 10.0 U
Pentachlorophenol, ug/L	50.0	< 50.0 U
Phenanthrene, ug/L	10.0	< 10.0 U
Phenol, ug/L	10.0	< 10.0 U
Pyrene, ug/L	10.0	< 10.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 10.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 50.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-10

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/20/90
Acenaphthene, ug/L	10.0	< 10.0 U
Acenaphthylene, ug/L	10.0	< 10.0 U
Anthracene, ug/L	10.0	< 10.0 U
Benzo (a) anthracene, ug/L	10.0	< 10.0 U
Benzo (a) pyrene, ug/L	10.0	< 10.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 10.0 UJ
Benzo (g,h,i) perylene, ug/L	10.0	< 10.0 U
Benzoic acid, ug/L	50.0	< 50.0 U
Benzo (k) fluoranthene, ug/L	10.0	< 10.0 U
Benzyl alcohol, ug/L	10.0	< 10.0 U
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 10.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	3.0 J
4-Bromophenyl-phenylether, ug/L	10.0	< 10.0 U
Butylbenzylphthalate, ug/L	10.0	< 10.0 U
4-Chloroaniline, ug/L	10.0	< 10.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 10.0 U
2-Chloronaphthalene, ug/L	10.0	< 10.0 U
2-Chlorophenol, ug/L	10.0	< 10.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 10.0 U
Chrysene, ug/L	10.0	< 10.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 10.0 U
Dibenzofuran, ug/L	10.0	< 10.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 10.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 20.0 U
2,4-Dichlorophenol, ug/L	10.0	< 10.0 U
Diethylphthalate, ug/L	10.0	< 10.0 U
2,4-Dimethylphenol, ug/L	10.0	< 10.0 U
Dimethyl phthalate, ug/L	10.0	< 10.0 U
Di-n-butylphthalate, ug/L	10.0	< 10.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 50.0 U
2,4-Dinitrophenol, ug/L	50.0	< 50.0 UJ
2,4-Dinitrotoluene, ug/L	10.0	< 10.0 U
2,6-Dinitrotoluene, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-10

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/20/90
Di-n-octyl phthalate, ug/L	10.0	< 10.0 U
Fluoranthene, ug/L	10.0	< 10.0 U
Fluorene, ug/L	10.0	< 10.0 U
Hexachlorobenzene, ug/L	10.0	< 10.0 U
Hexachlorobutadiene, ug/L	10.0	< 10.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 10.0 U
Hexachloroethane, ug/L	10.0	< 10.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 10.0 U
Isophorone, ug/L	10.0	< 10.0 U
2-Methylnaphthalene, ug/L	10.0	< 10.0 U
2-Methylphenol, ug/L	10.0	< 10.0 U
4-Methylphenol, ug/L	10.0	< 10.0 U
Naphthalene, ug/L	10.0	< 10.0 U
2-Nitroaniline, ug/L	50.0	< 50.0 U
3-Nitroaniline, ug/L	50.0	< 50.0 U
4-Nitroaniline, ug/L	50.0	< 50.0 UJ
Nitrobenzene, ug/L	10.0	< 10.0 UJ
2-Nitrophenol, ug/L	10.0	< 10.0 U
4-Nitrophenol, ug/L	50.0	< 50.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 10.0 U
N-Nitrosodiphenylamine, ug/L	10.0	< 10.0 U
Pentachlorophenol, ug/L	50.0	< 50.0 U
Phenanthrene, ug/L	10.0	< 10.0 U
Phenol, ug/L	10.0	< 10.0 U
Pyrene, ug/L	10.0	< 10.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 10.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 50.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-11

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/20/90
Acenaphthene, ug/L	10.0	< 10.0 U
Acenaphthylene, ug/L	10.0	< 10.0 U
Anthracene, ug/L	10.0	< 10.0 U
Benzo (a) anthracene, ug/L	10.0	< 10.0 U
Benzo (a) pyrene, ug/L	10.0	< 10.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 10.0 UJ
Benzo (g,h,i) perylene, ug/L	10.0	< 10.0 U
Benzoic acid, ug/L	50.0	< 50.0 U
Benzo (k) fluoranthene, ug/L	10.0	< 10.0 U
Benzyl alcohol, ug/L	10.0	< 10.0 U
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 10.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	< 10.0 U
4-Bromophenyl-phenylether, ug/L	10.0	< 10.0 U
Butylbenzylphthalate, ug/L	10.0	< 10.0 U
4-Chloroaniline, ug/L	10.0	< 10.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 10.0 U
2-Chloronaphthalene, ug/L	10.0	< 10.0 U
2-Chlorophenol, ug/L	10.0	< 10.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 10.0 U
Chrysene, ug/L	10.0	< 10.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 10.0 U
Dibenzofuran, ug/L	10.0	< 10.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 10.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 20.0 U
2,4-Dichlorophenol, ug/L	10.0	< 10.0 U
Diethylphthalate, ug/L	10.0	< 10.0 U
2,4-Dimethylphenol, ug/L	10.0	< 10.0 U
Dimethyl phthalate, ug/L	10.0	< 10.0 U
Di-n-butylphthalate, ug/L	10.0	< 10.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 50.0 U
2,4-Dinitrophenol, ug/L	50.0	< 50.0 UJ
2,4-Dinitrotoluene, ug/L	10.0	< 10.0 U
2,6-Dinitrotoluene, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-11

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/20/90
Di-n-octyl phthalate, ug/L	10.0	< 10.0 U
Fluoranthene, ug/L	10.0	< 10.0 U
Fluorene, ug/L	10.0	< 10.0 U
Hexachlorobenzene, ug/L	10.0	< 10.0 U
Hexachlorobutadiene, ug/L	10.0	< 10.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 10.0 U
Hexachloroethane, ug/L	10.0	< 10.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 10.0 U
Isophorone, ug/L	10.0	< 10.0 U
2-Methylnaphthalene, ug/L	10.0	< 10.0 U
2-Methylphenol, ug/L	10.0	< 10.0 U
4-Methylphenol, ug/L	10.0	< 10.0 U
Naphthalene, ug/L	10.0	< 10.0 U
2-Nitroaniline, ug/L	50.0	< 50.0 U
3-Nitroaniline, ug/L	50.0	< 50.0 U
4-Nitroaniline, ug/L	50.0	< 50.0 UJ
Nitrobenzene, ug/L	10.0	< 10.0 UJ
2-Nitrophenol, ug/L	10.0	< 10.0 U
4-Nitrophenol, ug/L	50.0	< 50.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 10.0 U
N-Nitrosodiphenylamine, ug/L	10.0	2.0 J
Pentachlorophenol, ug/L	50.0	< 50.0 U
Phenanthrene, ug/L	10.0	< 10.0 U
Phenol, ug/L	10.0	< 10.0 U
Pyrene, ug/L	10.0	< 10.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 10.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 50.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-12

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/15/90
Acenaphthene, ug/L	10.0	< 10.0 U
Acenaphthylene, ug/L	10.0	< 10.0 U
Anthracene, ug/L	10.0	< 10.0 U
Benzo (a) anthracene, ug/L	10.0	< 10.0 U
Benzo (a) pyrene, ug/L	10.0	< 10.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 10.0 U
Benzo (g,h,i) perylene, ug/L	10.0	< 10.0 U
Benzoic acid, ug/L	50.0	58.0 R
Benzo (k) fluoranthene, ug/L	10.0	< 10.0 U
Benzyl alcohol, ug/L	10.0	< 10.0 U
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 10.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	< 10.0 U
4-Bromophenyl-phenylether, ug/L	10.0	< 10.0 U
Butylbenzylphthalate, ug/L	10.0	< 10.0 U
4-Chloroaniline, ug/L	10.0	< 10.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 10.0 U
2-Chloronaphthalene, ug/L	10.0	< 10.0 U
2-Chlorophenol, ug/L	10.0	< 10.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 10.0 U
Chrysene, ug/L	10.0	< 10.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 10.0 U
Dibenzofuran, ug/L	10.0	< 10.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 10.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 20.0 U
2,4-Dichlorophenol, ug/L	10.0	< 10.0 U
Diethylphthalate, ug/L	10.0	< 10.0 U
2,4-Dimethylphenol, ug/L	10.0	< 10.0 U
Dimethyl phthalate, ug/L	10.0	< 10.0 U
Di-n-butylphthalate, ug/L	10.0	< 10.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 50.0 U
2,4-Dinitrophenol, ug/L	50.0	< 50.0 UJ
2,4-Dinitrotoluene, ug/L	10.0	< 10.0 U
2,6-Dinitrotoluene, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-12

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/15/90
Di-n-octyl phthalate, ug/L	10.0	< 10.0 U
Fluoranthene, ug/L	10.0	< 10.0 U
Fluorene, ug/L	10.0	< 10.0 U
Hexachlorobenzene, ug/L	10.0	< 10.0 U
Hexachlorobutadiene, ug/L	10.0	< 10.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 10.0 U
Hexachloroethane, ug/L	10.0	< 10.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 10.0 U
Isophorone, ug/L	10.0	< 10.0 U
2-Methylnaphthalene, ug/L	10.0	< 10.0 U
2-Methylphenol, ug/L	10.0	< 10.0 U
4-Methylphenol, ug/L	10.0	< 10.0 U
Naphthalene, ug/L	10.0	< 10.0 U
2-Nitroaniline, ug/L	50.0	< 50.0 U
3-Nitroaniline, ug/L	50.0	< 50.0 U
4-Nitroaniline, ug/L	50.0	< 50.0 UJ
Nitrobenzene, ug/L	10.0	< 10.0 U
2-Nitrophenol, ug/L	10.0	< 10.0 U
4-Nitrophenol, ug/L	50.0	< 50.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 10.0 U
N-Nitrosodiphenylamine, ug/L	10.0	3.0 J
Pentachlorophenol, ug/L	50.0	< 50.0 U
Phenanthrene, ug/L	10.0	< 10.0 U
Phenol, ug/L	10.0	3.0 J
Pyrene, ug/L	10.0	< 10.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 10.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 50.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-13

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/19/90	03/19/90 Replicate
Acenaphthene, ug/L	10.0	< 10.0 U	< 10.0 U
Acenaphthylene, ug/L	10.0	< 10.0 U	< 10.0 U
Anthracene, ug/L	10.0	< 10.0 U	< 10.0 U
Benzo (a) anthracene, ug/L	10.0	< 10.0 U	< 10.0 U
Benzo (a) pyrene, ug/L	10.0	< 10.0 U	< 10.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 10.0 U	< 10.0 U
Benzo (g,h,i) perylene, ug/L	10.0	< 10.0 U	< 10.0 U
Benzoic acid, ug/L	50.0	< 50.0 U	< 50.0 U
Benzo (k) fluoranthene, ug/L	10.0	< 10.0 U	< 10.0 U
Benzyl alcohol, ug/L	10.0	< 10.0 U	< 10.0 U
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 10.0 U	< 10.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 10.0 U	< 10.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 10.0 U	< 10.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	< 10.0 U	7.0 J
4-Bromophenyl-phenylether, ug/L	10.0	< 10.0 U	< 10.0 U
Butylbenzylphthalate, ug/L	10.0	< 10.0 U	< 10.0 U
4-Chloroaniline, ug/L	10.0	< 10.0 U	< 10.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 10.0 U	< 10.0 U
2-Chloronaphthalene, ug/L	10.0	< 10.0 U	< 10.0 U
2-Chlorophenol, ug/L	10.0	< 10.0 U	< 10.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 10.0 U	< 10.0 U
Chrysene, ug/L	10.0	< 10.0 U	< 10.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 10.0 U	< 10.0 U
Dibenzofuran, ug/L	10.0	< 10.0 U	< 10.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 10.0 U	< 10.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 10.0 U	< 10.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 10.0 U	< 10.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 20.0 U	< 20.0 UJ
2,4-Dichlorophenol, ug/L	10.0	< 10.0 U	< 10.0 U
Diethylphthalate, ug/L	10.0	< 10.0 U	< 10.0 U
2,4-Dimethylphenol, ug/L	10.0	< 10.0 U	< 10.0 U
Dimethyl phthalate, ug/L	10.0	< 10.0 U	< 10.0 U
Di-n-butylphthalate, ug/L	10.0	< 10.0 U	< 10.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 50.0 U	< 50.0 U
2,4-Dinitrophenol, ug/L	50.0	< 50.0 U	< 50.0 U
2,4-Dinitrotoluene, ug/L	10.0	< 10.0 U	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-13

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/19/90	03/19/90 Replicate
2,6-Dinitrotoluene, ug/L	10.0	< 10.0 U	< 10.0 U
Di-n-octyl phthalate, ug/L	10.0	< 10.0 U	< 10.0 U
Fluoranthene, ug/L	10.0	< 10.0 U	< 10.0 U
Fluorene, ug/L	10.0	< 10.0 U	< 10.0 U
Hexachlorobenzene, ug/L	10.0	< 10.0 U	< 10.0 U
Hexachlorobutadiene, ug/L	10.0	< 10.0 U	< 10.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 10.0 U	< 10.0 U
Hexachloroethane, ug/L	10.0	< 10.0 U	< 10.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 10.0 U	< 10.0 U
Isophorone, ug/L	10.0	< 10.0 U	< 10.0 U
2-Methylnaphthalene, ug/L	10.0	< 10.0 U	< 10.0 U
2-Methylphenol, ug/L	10.0	< 10.0 U	< 10.0 U
4-Methylphenol, ug/L	10.0	< 10.0 U	< 10.0 U
Naphthalene, ug/L	10.0	< 10.0 U	< 10.0 U
2-Nitroaniline, ug/L	50.0	< 50.0 U	< 50.0 U
3-Nitroaniline, ug/L	50.0	< 50.0 U	< 50.0 U
4-Nitroaniline, ug/L	50.0	< 50.0 UJ	< 50.0 UJ
Nitrobenzene, ug/L	10.0	< 10.0 U	< 10.0 U
2-Nitrophenol, ug/L	10.0	< 10.0 U	< 10.0 U
4-Nitrophenol, ug/L	50.0	< 50.0 U	< 50.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 10.0 U	< 10.0 U
N-Nitrosodiphenylamine, ug/L	10.0	< 10.0 U	< 10.0 U
Pentachlorophenol, ug/L	50.0	< 50.0 U	< 50.0 U
Phenanthrene, ug/L	10.0	< 10.0 U	< 10.0 U
Phenol, ug/L	10.0	< 10.0 U	< 10.0 U
Pyrene, ug/L	10.0	< 10.0 U	< 10.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 10.0 U	< 10.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 50.0 U	< 50.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 10.0 U	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-14

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/15/90
Acenaphthene, ug/L	10.0	< 10.0 U
Acenaphthylene, ug/L	10.0	< 10.0 U
Anthracene, ug/L	10.0	< 10.0 U
Benzo (a) anthracene, ug/L	10.0	< 10.0 U
Benzo (a) pyrene, ug/L	10.0	< 10.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 10.0 U
Benzo (g,h,i) perylene, ug/L	10.0	< 10.0 U
Benzoic acid, ug/L	50.0	< 50.0 UJ
Benzo (k) fluoranthene, ug/L	10.0	< 10.0 U
Benzyl alcohol, ug/L	10.0	< 10.0 U
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 10.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	< 10.0 U
4-Bromophenyl-phenylether, ug/L	10.0	< 10.0 U
Butylbenzylphthalate, ug/L	10.0	< 10.0 U
4-Chloroaniline, ug/L	10.0	< 10.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 10.0 U
2-Chloronaphthalene, ug/L	10.0	< 10.0 U
2-Chlorophenol, ug/L	10.0	< 10.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 10.0 U
Chrysene, ug/L	10.0	< 10.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 10.0 U
Dibenzofuran, ug/L	10.0	< 10.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 10.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 20.0 U
2,4-Dichlorophenol, ug/L	10.0	< 10.0 U
Diethylphthalate, ug/L	10.0	< 10.0 U
2,4-Dimethylphenol, ug/L	10.0	< 10.0 U
Dimethyl phthalate, ug/L	10.0	< 10.0 U
Di-n-butylphthalate, ug/L	10.0	< 10.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 50.0 U
2,4-Dinitrophenol, ug/L	50.0	< 50.0 UJ
2,4-Dinitrotoluene, ug/L	10.0	< 10.0 U
2,6-Dinitrotoluene, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-14

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/15/90
Di-n-octyl phthalate, ug/L	10.0	< 10.0 U
Fluoranthene, ug/L	10.0	< 10.0 U
Fluorene, ug/L	10.0	< 10.0 U
Hexachlorobenzene, ug/L	10.0	< 10.0 U
Hexachlorobutadiene, ug/L	10.0	< 10.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 10.0 U
Hexachloroethane, ug/L	10.0	< 10.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 10.0 U
Isophorone, ug/L	10.0	< 10.0 U
2-Methylnaphthalene, ug/L	10.0	< 10.0 U
2-Methylphenol, ug/L	10.0	< 10.0 U
4-Methylphenol, ug/L	10.0	< 10.0 U
Naphthalene, ug/L	10.0	< 10.0 U
2-Nitroaniline, ug/L	50.0	< 50.0 U
3-Nitroaniline, ug/L	50.0	< 50.0 U
4-Nitroaniline, ug/L	50.0	< 50.0 UJ
Nitrobenzene, ug/L	10.0	< 10.0 U
2-Nitrophenol, ug/L	10.0	< 10.0 U
4-Nitrophenol, ug/L	50.0	< 50.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 10.0 U
N-Nitrosodiphenylamine, ug/L	10.0	< 10.0 U
Pentachlorophenol, ug/L	50.0	< 50.0 U
Phenanthrene, ug/L	10.0	< 10.0 U
Phenol, ug/L	10.0	< 10.0 U
Pyrene, ug/L	10.0	< 10.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 10.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 50.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-15

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/19/90
Acenaphthene, ug/L	10.0	< 10.0 U
Acenaphthylene, ug/L	10.0	< 10.0 U
Anthracene, ug/L	10.0	< 10.0 U
Benzo (a) anthracene, ug/L	10.0	< 10.0 U
Benzo (a) pyrene, ug/L	10.0	< 10.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 10.0 U
Benzo (g,h,i) perylene, ug/L	10.0	< 10.0 U
Benzoic acid, ug/L	50.0	< 50.0 U
Benzo (k) fluoranthene, ug/L	10.0	< 10.0 U
Benzyl alcohol, ug/L	10.0	< 10.0 U
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 10.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	< 10.0 U
4-Bromophenyl-phenylether, ug/L	10.0	< 10.0 U
Butylbenzylphthalate, ug/L	10.0	< 10.0 U
4-Chloroaniline, ug/L	10.0	< 10.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 10.0 U
2-Chloronaphthalene, ug/L	10.0	< 10.0 U
2-Chlorophenol, ug/L	10.0	< 10.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 10.0 U
Chrysene, ug/L	10.0	< 10.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 10.0 U
Dibenzofuran, ug/L	10.0	< 10.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 10.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 20.0 UJ
2,4-Dichlorophenol, ug/L	10.0	< 10.0 U
Diethylphthalate, ug/L	10.0	< 10.0 U
2,4-Dimethylphenol, ug/L	10.0	< 10.0 U
Dimethyl phthalate, ug/L	10.0	< 10.0 U
Di-n-butylphthalate, ug/L	10.0	< 10.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 50.0 U
2,4-Dinitrophenol, ug/L	50.0	< 50.0 U
2,4-Dinitrotoluene, ug/L	10.0	< 10.0 U
2,6-Dinitrotoluene, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-15

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/19/90
Di-n-octyl phthalate, ug/L	10.0	< 10.0 U
Fluoranthene, ug/L	10.0	< 10.0 U
Fluorene, ug/L	10.0	< 10.0 U
Hexachlorobenzene, ug/L	10.0	< 10.0 U
Hexachlorobutadiene, ug/L	10.0	< 10.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 10.0 U
Hexachloroethane, ug/L	10.0	< 10.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 10.0 U
Isophorone, ug/L	10.0	< 10.0 U
2-Methylnaphthalene, ug/L	10.0	< 10.0 U
2-Methylphenol, ug/L	10.0	< 10.0 U
4-Methylphenol, ug/L	10.0	< 10.0 U
Naphthalene, ug/L	10.0	< 10.0 U
2-Nitroaniline, ug/L	50.0	< 50.0 U
3-Nitroaniline, ug/L	50.0	< 50.0 U
4-Nitroaniline, ug/L	50.0	< 50.0 UJ
Nitrobenzene, ug/L	10.0	< 10.0 U
2-Nitrophenol, ug/L	10.0	< 10.0 U
4-Nitrophenol, ug/L	50.0	< 50.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 10.0 U
N-Nitrosodiphenylamine, ug/L	10.0	< 10.0 U
Pentachlorophenol, ug/L	50.0	< 50.0 U
Phenanthrene, ug/L	10.0	< 10.0 U
Phenol, ug/L	10.0	< 10.0 U
Pyrene, ug/L	10.0	< 10.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 10.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 50.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-16

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/20/90
Acenaphthene, ug/L	10.0	< 200.0 U
Acenaphthylene, ug/L	10.0	< 200.0 U
Anthracene, ug/L	10.0	< 200.0 U
Benzo (a) anthracene, ug/L	10.0	< 200.0 U
Benzo (a) pyrene, ug/L	10.0	< 200.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 200.0 UJ
Benzo (g,h,i) perylene, ug/L	10.0	< 200.0 U
Benzoic acid, ug/L	50.0	2000.0 J
Benzo (k) fluoranthene, ug/L	10.0	< 200.0 UJ
Benzyl alcohol, ug/L	10.0	< 200.0 UJ
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 200.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 200.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 200.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	64.0 A
4-Bromophenyl-phenylether, ug/L	10.0	< 200.0 U
Butylbenzylphthalate, ug/L	10.0	< 200.0 U
4-Chloroaniline, ug/L	10.0	< 200.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 200.0 U
2-Chloronaphthalene, ug/L	10.0	< 200.0 U
2-Chlorophenol, ug/L	10.0	< 200.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 200.0 U
Chrysene, ug/L	10.0	< 200.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 200.0 U
Dibenzofuran, ug/L	10.0	< 200.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 200.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 200.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 200.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 400.0 U
2,4-Dichlorophenol, ug/L	10.0	< 200.0 U
Diethylphthalate, ug/L	10.0	< 200.0 U
2,4-Dimethylphenol, ug/L	10.0	< 200.0 UJ
Dimethyl phthalate, ug/L	10.0	< 200.0 U
Di-n-butylphthalate, ug/L	10.0	< 200.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 1000.0 U
2,4-Dinitrophenol, ug/L	50.0	< 1000.0 UJ
2,4-Dinitrotoluene, ug/L	10.0	< 200.0 U
2,6-Dinitrotoluene, ug/L	10.0	< 200.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-16

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/20/90
Di-n-octyl phthalate, ug/L	10.0	< 200.0 U
Fluoranthene, ug/L	10.0	< 200.0 U
Fluorene, ug/L	10.0	< 200.0 U
Hexachlorobenzene, ug/L	10.0	< 200.0 U
Hexachlorobutadiene, ug/L	10.0	< 200.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 200.0 U
Hexachloroethane, ug/L	10.0	< 200.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 200.0 U
Isophorone, ug/L	10.0	< 200.0 UJ
2-Methylnaphthalene, ug/L	10.0	< 200.0 U
2-Methylphenol, ug/L	10.0	< 200.0 U
4-Methylphenol, ug/L	10.0	3400.0 A
Naphthalene, ug/L	10.0	< 200.0 UJ
2-Nitroaniline, ug/L	50.0	< 1000.0 U
3-Nitroaniline, ug/L	50.0	< 1000.0 U
4-Nitroaniline, ug/L	50.0	< 1000.0 UJ
Nitrobenzene, ug/L	10.0	< 200.0 U
2-Nitrophenol, ug/L	10.0	< 200.0 U
4-Nitrophenol, ug/L	50.0	< 1000.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 200.0 U
N-Nitrosodiphenylamine, ug/L	10.0	< 200.0 U
Pentachlorophenol, ug/L	50.0	< 1000.0 U
Phenanthrene, ug/L	10.0	< 200.0 U
Phenol, ug/L	10.0	130.0 A
Pyrene, ug/L	10.0	< 200.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 200.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 1000.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 200.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-17

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/15/90
Acenaphthene, ug/L	10.0	< 10.0 U
Acenaphthylene, ug/L	10.0	< 10.0 U
Anthracene, ug/L	10.0	< 10.0 U
Benzo (a) anthracene, ug/L	10.0	< 10.0 U
Benzo (a) pyrene, ug/L	10.0	< 10.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 10.0 U
Benzo (g,h,i) perylene, ug/L	10.0	< 10.0 U
Benzoic acid, ug/L	50.0	< 50.0 UJ
Benzo (k) fluoranthene, ug/L	10.0	< 10.0 U
Benzyl alcohol, ug/L	10.0	< 10.0 U
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 10.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	< 10.0 U
4-Bromophenyl-phenylether, ug/L	10.0	< 10.0 U
Butylbenzylphthalate, ug/L	10.0	< 10.0 U
4-Chloroaniline, ug/L	10.0	< 10.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 10.0 U
2-Chloronaphthalene, ug/L	10.0	< 10.0 U
2-Chlorophenol, ug/L	10.0	< 10.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 10.0 U
Chrysene, ug/L	10.0	< 10.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 10.0 U
Dibenzofuran, ug/L	10.0	< 10.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 10.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 20.0 U
2,4-Dichlorophenol, ug/L	10.0	< 10.0 U
Diethylphthalate, ug/L	10.0	< 10.0 U
2,4-Dimethylphenol, ug/L	10.0	< 10.0 U
Dimethyl phthalate, ug/L	10.0	< 10.0 U
Di-n-butylphthalate, ug/L	10.0	< 10.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 50.0 U
2,4-Dinitrophenol, ug/L	50.0	< 50.0 UJ
2,4-Dinitrotoluene, ug/L	10.0	< 10.0 U
2,6-Dinitrotoluene, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-17

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/15/90
Di-n-octyl phthalate, ug/L	10.0	< 10.0 U
Fluoranthene, ug/L	10.0	< 10.0 U
Fluorene, ug/L	10.0	< 10.0 U
Hexachlorobenzene, ug/L	10.0	< 10.0 U
Hexachlorobutadiene, ug/L	10.0	< 10.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 10.0 U
Hexachloroethane, ug/L	10.0	< 10.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 10.0 U
Isophorone, ug/L	10.0	< 10.0 U
2-Methylnaphthalene, ug/L	10.0	< 10.0 U
2-Methylphenol, ug/L	10.0	< 10.0 U
4-Methylphenol, ug/L	10.0	< 10.0 U
Naphthalene, ug/L	10.0	< 10.0 U
2-Nitroaniline, ug/L	50.0	< 50.0 U
3-Nitroaniline, ug/L	50.0	< 50.0 UJ
4-Nitroaniline, ug/L	50.0	< 50.0 UJ
Nitrobenzene, ug/L	10.0	< 10.0 U
2-Nitrophenol, ug/L	10.0	< 10.0 U
4-Nitrophenol, ug/L	50.0	< 50.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 10.0 U
N-Nitrosodiphenylamine, ug/L	10.0	< 10.0 U
Pentachlorophenol, ug/L	50.0	< 50.0 U
Phenanthrene, ug/L	10.0	< 10.0 U
Phenol, ug/L	10.0	6.0 J
Pyrene, ug/L	10.0	< 10.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 10.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 50.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-18

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/15/90
Acenaphthene, ug/L	10.0	< 13.0 U
Acenaphthylene, ug/L	10.0	< 13.0 U
Anthracene, ug/L	10.0	< 13.0 U
Benzo (a) anthracene, ug/L	10.0	< 13.0 U
Benzo (a) pyrene, ug/L	10.0	< 13.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 13.0 U
Benzo (g,h,i) perylene, ug/L	10.0	< 13.0 U
Benzoic acid, ug/L	50.0	< 63.0 UJ
Benzo (k) fluoranthene, ug/L	10.0	< 13.0 U
Benzyl alcohol, ug/L	10.0	< 13.0 U
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 13.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 13.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 13.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	< 13.0 U
4-Bromophenyl-phenylether, ug/L	10.0	< 13.0 U
Butylbenzylphthalate, ug/L	10.0	< 13.0 U
4-Chloroaniline, ug/L	10.0	< 13.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 13.0 U
2-Chloronaphthalene, ug/L	10.0	< 13.0 U
2-Chlorophenol, ug/L	10.0	< 13.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 13.0 U
Chrysene, ug/L	10.0	< 13.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 13.0 U
Dibenzofuran, ug/L	10.0	< 13.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 13.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 13.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 13.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 25.0 U
2,4-Dichlorophenol, ug/L	10.0	< 13.0 U
Diethylphthalate, ug/L	10.0	< 13.0 U
2,4-Dimethylphenol, ug/L	10.0	< 13.0 U
Dimethyl phthalate, ug/L	10.0	< 13.0 U
Di-n-butylphthalate, ug/L	10.0	< 13.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 63.0 U
2,4-Dinitrophenol, ug/L	50.0	< 63.0 UJ
2,4-Dinitrotoluene, ug/L	10.0	< 13.0 U
2,6-Dinitrotoluene, ug/L	10.0	< 13.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-18

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/15/90
Di-n-octyl phthalate, ug/L	10.0	< 13.0 U
Fluoranthene, ug/L	10.0	< 13.0 U
Fluorene, ug/L	10.0	< 13.0 U
Hexachlorobenzene, ug/L	10.0	< 13.0 U
Hexachlorobutadiene, ug/L	10.0	< 13.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 13.0 U
Hexachloroethane, ug/L	10.0	< 13.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 13.0 U
Isophorone, ug/L	10.0	< 13.0 U
2-Methylnaphthalene, ug/L	10.0	< 13.0 U
2-Methylphenol, ug/L	10.0	< 13.0 U
4-Methylphenol, ug/L	10.0	< 13.0 U
Naphthalene, ug/L	10.0	< 13.0 U
2-Nitroaniline, ug/L	50.0	< 63.0 U
3-Nitroaniline, ug/L	50.0	< 63.0 UJ
4-Nitroaniline, ug/L	50.0	< 63.0 UJ
Nitrobenzene, ug/L	10.0	< 13.0 U
2-Nitrophenol, ug/L	10.0	< 13.0 U
4-Nitrophenol, ug/L	50.0	< 63.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 13.0 U
N-Nitrosodiphenylamine, ug/L	10.0	< 13.0 U
Pentachlorophenol, ug/L	50.0	< 63.0 U
Phenanthrene, ug/L	10.0	< 13.0 U
Phenol, ug/L	10.0	< 13.0 U
Pyrene, ug/L	10.0	< 13.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 13.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 63.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 13.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix 1. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-18A

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/15/90
Acenaphthene, ug/L	10.0	< 10.0 U
Acenaphthylene, ug/L	10.0	< 10.0 U
Anthracene, ug/L	10.0	< 10.0 U
Benzo (a) anthracene, ug/L	10.0	< 10.0 U
Benzo (a) pyrene, ug/L	10.0	< 10.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 10.0 U
Benzo (g,h,i) perylene, ug/L	10.0	< 10.0 U
Benzoic acid, ug/L	50.0	< 50.0 UJ
Benzo (k) fluoranthene, ug/L	10.0	< 10.0 U
Benzyl alcohol, ug/L	10.0	< 10.0 U
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 10.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	< 10.0 U
4-Bromophenyl-phenylether, ug/L	10.0	< 10.0 U
Butylbenzylphthalate, ug/L	10.0	< 10.0 U
4-Chloroaniline, ug/L	10.0	< 10.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 10.0 U
2-Chloronaphthalene, ug/L	10.0	< 10.0 U
2-Chlorophenol, ug/L	10.0	< 10.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 10.0 U
Chrysene, ug/L	10.0	< 10.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 10.0 U
Dibenzofuran, ug/L	10.0	< 10.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 10.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 20.0 U
2,4-Dichlorophenol, ug/L	10.0	< 10.0 U
Diethylphthalate, ug/L	10.0	< 10.0 U
2,4-Dimethylphenol, ug/L	10.0	< 10.0 U
Dimethyl phthalate, ug/L	10.0	< 10.0 U
Di-n-butylphthalate, ug/L	10.0	< 10.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 50.0 U
2,4-Dinitrophenol, ug/L	50.0	< 50.0 UJ
2,4-Dinitrotoluene, ug/L	10.0	< 10.0 U
2,6-Dinitrotoluene, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-18A

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/15/90
Di-n-octyl phthalate, ug/L	10.0	< 10.0 U
Fluoranthene, ug/L	10.0	< 10.0 U
Fluorene, ug/L	10.0	< 10.0 U
Hexachlorobenzene, ug/L	10.0	< 10.0 U
Hexachlorobutadiene, ug/L	10.0	< 10.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 10.0 U
Hexachloroethane, ug/L	10.0	< 10.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 10.0 U
Isophorone, ug/L	10.0	< 10.0 U
2-Methylnaphthalene, ug/L	10.0	< 10.0 U
2-Methylphenol, ug/L	10.0	< 10.0 U
4-Methylphenol, ug/L	10.0	< 10.0 U
Naphthalene, ug/L	10.0	< 10.0 U
2-Nitroaniline, ug/L	50.0	< 50.0 U
3-Nitroaniline, ug/L	50.0	< 50.0 UJ
4-Nitroaniline, ug/L	50.0	< 50.0 UJ
Nitrobenzene, ug/L	10.0	< 10.0 U
2-Nitrophenol, ug/L	10.0	< 10.0 U
4-Nitrophenol, ug/L	50.0	< 50.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 10.0 U
N-Nitrosodiphenylamine, ug/L	10.0	< 10.0 U
Pentachlorophenol, ug/L	50.0	< 50.0 U
Phenanthrene, ug/L	10.0	< 10.0 U
Phenol, ug/L	10.0	< 10.0 U
Pyrene, ug/L	10.0	< 10.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 10.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 50.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-19

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/16/90
Acenaphthene, ug/L	10.0	< 10.0 U
Acenaphthylene, ug/L	10.0	< 10.0 U
Anthracene, ug/L	10.0	< 10.0 U
Benzo (a) anthracene, ug/L	10.0	< 10.0 U
Benzo (a) pyrene, ug/L	10.0	< 10.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 10.0 U
Benzo (g,h,i) perylene, ug/L	10.0	< 10.0 U
Benzoic acid, ug/L	50.0	< 50.0 UJ
Benzo (k) fluoranthene, ug/L	10.0	< 10.0 U
Benzyl alcohol, ug/L	10.0	< 10.0 U
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 10.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	< 10.0 U
4-Bromophenyl-phenylether, ug/L	10.0	< 10.0 U
Butylbenzylphthalate, ug/L	10.0	< 10.0 U
4-Chloroaniline, ug/L	10.0	< 10.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 10.0 U
2-Chloronaphthalene, ug/L	10.0	< 10.0 U
2-Chlorophenol, ug/L	10.0	< 10.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 10.0 U
Chrysene, ug/L	10.0	< 10.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 10.0 U
Dibenzofuran, ug/L	10.0	< 10.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 10.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 20.0 U
2,4-Dichlorophenol, ug/L	10.0	< 10.0 U
Diethylphthalate, ug/L	10.0	< 10.0 U
2,4-Dimethylphenol, ug/L	10.0	< 10.0 U
Dimethyl phthalate, ug/L	10.0	< 10.0 U
Di-n-butylphthalate, ug/L	10.0	< 10.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 50.0 U
2,4-Dinitrophenol, ug/L	50.0	< 50.0 UJ
2,4-Dinitrotoluene, ug/L	10.0	< 10.0 U
2,6-Dinitrotoluene, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-19

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/16/90
Di-n-octyl phthalate, ug/L	10.0	< 10.0 U
Fluoranthene, ug/L	10.0	< 10.0 U
Fluorene, ug/L	10.0	< 10.0 U
Hexachlorobenzene, ug/L	10.0	< 10.0 U
Hexachlorobutadiene, ug/L	10.0	< 10.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 10.0 U
Hexachloroethane, ug/L	10.0	< 10.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 10.0 U
Isophorone, ug/L	10.0	< 10.0 U
2-Methylnaphthalene, ug/L	10.0	< 10.0 U
2-Methylphenol, ug/L	10.0	< 10.0 U
4-Methylphenol, ug/L	10.0	< 10.0 U
Naphthalene, ug/L	10.0	< 10.0 U
2-Nitroaniline, ug/L	50.0	< 50.0 U
3-Nitroaniline, ug/L	50.0	< 50.0 U
4-Nitroaniline, ug/L	50.0	< 50.0 UJ
Nitrobenzene, ug/L	10.0	< 10.0 U
2-Nitrophenol, ug/L	10.0	< 10.0 U
4-Nitrophenol, ug/L	50.0	< 50.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 10.0 U
N-Nitrosodiphenylamine, ug/L	10.0	< 10.0 U
Pentachlorophenol, ug/L	50.0	< 50.0 U
Phenanthrene, ug/L	10.0	< 10.0 U
Phenol, ug/L	10.0	< 10.0 U
Pyrene, ug/L	10.0	< 10.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 10.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 50.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-19A

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/16/90
Acenaphthene, ug/L	10.0	< 10.0 U
Acenaphthylene, ug/L	10.0	< 10.0 U
Anthracene, ug/L	10.0	< 10.0 U
Benzo (a) anthracene, ug/L	10.0	< 10.0 U
Benzo (a) pyrene, ug/L	10.0	< 10.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 10.0 U
Benzo (g,h,i) perylene, ug/L	10.0	< 10.0 U
Benzoic acid, ug/L	50.0	< 50.0 UJ
Benzo (k) fluoranthene, ug/L	10.0	< 10.0 U
Benzyl alcohol, ug/L	10.0	< 10.0 U
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 10.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	< 10.0 U
4-Bromophenyl-phenylether, ug/L	10.0	< 10.0 U
Butylbenzylphthalate, ug/L	10.0	< 10.0 U
4-Chloroaniline, ug/L	10.0	< 10.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 10.0 U
2-Chloronaphthalene, ug/L	10.0	< 10.0 U
2-Chlorophenol, ug/L	10.0	< 10.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 10.0 U
Chrysene, ug/L	10.0	< 10.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 10.0 U
Dibenzofuran, ug/L	10.0	< 10.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 10.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 20.0 U
2,4-Dichlorophenol, ug/L	10.0	< 10.0 U
Diethylphthalate, ug/L	10.0	< 10.0 U
2,4-Dimethylphenol, ug/L	10.0	< 10.0 U
Dimethyl phthalate, ug/L	10.0	< 10.0 U
Di-n-butylphthalate, ug/L	10.0	< 10.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 50.0 U
2,4-Dinitrophenol, ug/L	50.0	< 50.0 UJ
2,4-Dinitrotoluene, ug/L	10.0	< 10.0 U
2,6-Dinitrotoluene, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-19A

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/16/90
Di-n-octyl phthalate, ug/L	10.0	< 10.0 U
Fluoranthene, ug/L	10.0	< 10.0 U
Fluorene, ug/L	10.0	< 10.0 U
Hexachlorobenzene, ug/L	10.0	< 10.0 U
Hexachlorobutadiene, ug/L	10.0	< 10.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 10.0 U
Hexachloroethane, ug/L	10.0	< 10.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 10.0 U
Isophorone, ug/L	10.0	< 10.0 U
2-Methylnaphthalene, ug/L	10.0	< 10.0 U
2-Methylphenol, ug/L	10.0	< 10.0 U
4-Methylphenol, ug/L	10.0	< 10.0 U
Naphthalene, ug/L	10.0	< 10.0 U
2-Nitroaniline, ug/L	50.0	< 50.0 U
3-Nitroaniline, ug/L	50.0	< 50.0 U
4-Nitroaniline, ug/L	50.0	< 50.0 UJ
Nitrobenzene, ug/L	10.0	< 10.0 U
2-Nitrophenol, ug/L	10.0	< 10.0 U
4-Nitrophenol, ug/L	50.0	< 50.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 10.0 U
N-Nitrosodiphenylamine, ug/L	10.0	< 10.0 U
Pentachlorophenol, ug/L	50.0	< 50.0 U
Phenanthrene, ug/L	10.0	< 10.0 U
Phenol, ug/L	10.0	< 10.0 U
Pyrene, ug/L	10.0	< 10.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 10.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 50.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-20

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/16/90
Acenaphthene, ug/L	10.0	< 10.0 U
Acenaphthylene, ug/L	10.0	< 10.0 U
Anthracene, ug/L	10.0	< 10.0 U
Benzo (a) anthracene, ug/L	10.0	< 10.0 U
Benzo (a) pyrene, ug/L	10.0	< 10.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 10.0 U
Benzo (g,h,i) perylene, ug/L	10.0	< 10.0 U
Benzoic acid, ug/L	50.0	< 50.0 U
Benzo (k) fluoranthene, ug/L	10.0	< 10.0 U
Benzyl alcohol, ug/L	10.0	< 10.0 U
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 10.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	< 10.0 U
4-Bromophenyl-phenylether, ug/L	10.0	< 10.0 U
Butylbenzylphthalate, ug/L	10.0	< 10.0 U
4-Chloroaniline, ug/L	10.0	< 10.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 10.0 U
2-Chloronaphthalene, ug/L	10.0	< 10.0 U
2-Chlorophenol, ug/L	10.0	< 10.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 10.0 U
Chrysene, ug/L	10.0	< 10.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 10.0 U
Dibenzofuran, ug/L	10.0	< 10.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 10.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 20.0 U
2,4-Dichlorophenol, ug/L	10.0	< 10.0 U
Diethylphthalate, ug/L	10.0	< 10.0 U
2,4-Dimethylphenol, ug/L	10.0	< 10.0 U
Dimethyl phthalate, ug/L	10.0	< 10.0 U
Di-n-butylphthalate, ug/L	10.0	< 10.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 50.0 U
2,4-Dinitrophenol, ug/L	50.0	< 50.0 UJ
2,4-Dinitrotoluene, ug/L	10.0	< 10.0 U
2,6-Dinitrotoluene, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-20

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/16/90
Di-n-octyl phthalate, ug/L	10.0	< 10.0 U
Fluoranthene, ug/L	10.0	< 10.0 U
Fluorene, ug/L	10.0	< 10.0 U
Hexachlorobenzene, ug/L	10.0	< 10.0 U
Hexachlorobutadiene, ug/L	10.0	< 10.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 10.0 U
Hexachloroethane, ug/L	10.0	< 10.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 10.0 U
Isophorone, ug/L	10.0	< 10.0 U
2-Methylnaphthalene, ug/L	10.0	< 10.0 U
2-Methylphenol, ug/L	10.0	< 10.0 U
4-Methylphenol, ug/L	10.0	< 10.0 U
Naphthalene, ug/L	10.0	< 10.0 U
2-Nitroaniline, ug/L	50.0	< 50.0 U
3-Nitroaniline, ug/L	50.0	< 50.0 U
4-Nitroaniline, ug/L	50.0	< 50.0 UJ
Nitrobenzene, ug/L	10.0	< 10.0 U
2-Nitrophenol, ug/L	10.0	< 10.0 U
4-Nitrophenol, ug/L	50.0	< 50.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 10.0 U
N-Nitrosodiphenylamine, ug/L	10.0	< 10.0 U
Pentachlorophenol, ug/L	50.0	< 50.0 U
Phenanthrene, ug/L	10.0	< 10.0 U
Phenol, ug/L	10.0	< 10.0 U
Pyrene, ug/L	10.0	< 10.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 10.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 50.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-21

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/21/90	03/21/90 Replicate
Acenaphthene, ug/L	10.0	< 10.0 U	< 10.0 U
Acenaphthylene, ug/L	10.0	< 10.0 U	< 10.0 U
Anthracene, ug/L	10.0	< 10.0 U	< 10.0 U
Benzo (a) anthracene, ug/L	10.0	< 10.0 U	< 10.0 U
Benzo (a) pyrene, ug/L	10.0	< 10.0 U	< 10.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 10.0 U	< 10.0 U
Benzo (g,h,i) perylene, ug/L	10.0	< 10.0 U	< 10.0 U
Benzoic acid, ug/L	50.0	< 50.0 U	< 50.0 U
Benzo (k) fluoranthene, ug/L	10.0	< 10.0 U	< 10.0 U
Benzyl alcohol, ug/L	10.0	< 10.0 U	< 10.0 U
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 10.0 U	< 10.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 10.0 U	< 10.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 10.0 U	< 10.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	< 10.0 U	< 10.0 U
4-Bromophenyl-phenylether, ug/L	10.0	< 10.0 U	< 10.0 U
Butylbenzylphthalate, ug/L	10.0	< 10.0 U	< 10.0 U
4-Chloroaniline, ug/L	10.0	< 10.0 U	< 10.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 10.0 U	< 10.0 U
2-Chloronaphthalene, ug/L	10.0	< 10.0 U	< 10.0 U
2-Chlorophenol, ug/L	10.0	< 10.0 U	< 10.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 10.0 U	< 10.0 U
Chrysene, ug/L	10.0	< 10.0 U	< 10.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 10.0 U	< 10.0 U
Dibenzofuran, ug/L	10.0	< 10.0 U	< 10.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 10.0 U	< 10.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 10.0 U	< 10.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 10.0 U	< 10.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 20.0 U	< 20.0 U
2,4-Dichlorophenol, ug/L	10.0	< 10.0 U	< 10.0 U
Diethylphthalate, ug/L	10.0	< 10.0 U	< 10.0 U
2,4-Dimethylphenol, ug/L	10.0	< 10.0 U	< 10.0 U
Dimethyl phthalate, ug/L	10.0	< 10.0 U	< 10.0 U
Di-n-butylphthalate, ug/L	10.0	< 10.0 U	< 10.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 50.0 U	< 50.0 U
2,4-Dinitrophenol, ug/L	50.0	< 50.0 UJ	< 50.0 U
2,4-Dinitrotoluene, ug/L	10.0	< 10.0 U	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-21

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/21/90	03/21/90 Replicate
2,6-Dinitrotoluene, ug/L	10.0	< 10.0 U	< 10.0 U
Di-n-octyl phthalate, ug/L	10.0	< 10.0 U	< 10.0 U
Fluoranthene, ug/L	10.0	< 10.0 U	< 10.0 U
Fluorene, ug/L	10.0	< 10.0 U	< 10.0 U
Hexachlorobenzene, ug/L	10.0	< 10.0 U	< 10.0 U
Hexachlorobutadiene, ug/L	10.0	< 10.0 U	< 10.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 10.0 U	< 10.0 U
Hexachloroethane, ug/L	10.0	< 10.0 U	< 10.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 10.0 U	< 10.0 U
Isophorone, ug/L	10.0	< 10.0 U	< 10.0 U
2-Methylnaphthalene, ug/L	10.0	< 10.0 U	< 10.0 U
2-Methylphenol, ug/L	10.0	< 10.0 U	< 10.0 U
4-Methylphenol, ug/L	10.0	< 10.0 U	< 10.0 U
Naphthalene, ug/L	10.0	< 10.0 U	< 10.0 U
2-Nitroaniline, ug/L	50.0	< 50.0 U	< 50.0 U
3-Nitroaniline, ug/L	50.0	< 50.0 U	< 50.0 U
4-Nitroaniline, ug/L	50.0	< 50.0 UJ	< 50.0 UJ
Nitrobenzene, ug/L	10.0	< 10.0 U	< 10.0 U
2-Nitrophenol, ug/L	10.0	< 10.0 U	< 10.0 U
4-Nitrophenol, ug/L	50.0	< 50.0 U	< 50.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 10.0 U	< 10.0 U
N-Nitrosodiphenylamine, ug/L	10.0	< 10.0 U	< 10.0 U
Pentachlorophenol, ug/L	50.0	< 50.0 U	< 50.0 U
Phenanthrene, ug/L	10.0	< 10.0 U	< 10.0 U
Phenol, ug/L	10.0	< 10.0 U	< 10.0 U
Pyrene, ug/L	10.0	< 10.0 U	< 10.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 10.0 U	< 10.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 50.0 U	< 50.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 10.0 U	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-22

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/21/90
Acenaphthene, ug/L	10.0	< 10.0 U
Acenaphthylene, ug/L	10.0	< 10.0 U
Anthracene, ug/L	10.0	< 10.0 U
Benzo (a) anthracene, ug/L	10.0	< 10.0 U
Benzo (a) pyrene, ug/L	10.0	< 10.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 10.0 U
Benzo (g,h,i) perylene, ug/L	10.0	< 10.0 U
Benzoic acid, ug/L	50.0	< 50.0 U
Benzo (k) fluoranthene, ug/L	10.0	< 10.0 U
Benzyl alcohol, ug/L	10.0	< 10.0 U
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 10.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	< 10.0 U
4-Bromophenyl-phenylether, ug/L	10.0	< 10.0 U
Butylbenzylphthalate, ug/L	10.0	< 10.0 U
4-Chloroaniline, ug/L	10.0	< 10.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 10.0 U
2-Chloronaphthalene, ug/L	10.0	< 10.0 U
2-Chlorophenol, ug/L	10.0	< 10.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 10.0 U
Chrysene, ug/L	10.0	< 10.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 10.0 U
Dibenzofuran, ug/L	10.0	< 10.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 10.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 20.0 U
2,4-Dichlorophenol, ug/L	10.0	< 10.0 U
Diethylphthalate, ug/L	10.0	< 10.0 U
2,4-Dimethylphenol, ug/L	10.0	< 10.0 U
Dimethyl phthalate, ug/L	10.0	< 10.0 U
Di-n-butylphthalate, ug/L	10.0	< 10.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 50.0 U
2,4-Dinitrophenol, ug/L	50.0	< 50.0 UJ
2,4-Dinitrotoluene, ug/L	10.0	< 10.0 U
2,6-Dinitrotoluene, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-22

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/21/90
Di-n-octyl phthalate, ug/L	10.0	< 10.0 U
Fluoranthene, ug/L	10.0	< 10.0 U
Fluorene, ug/L	10.0	< 10.0 U
Hexachlorobenzene, ug/L	10.0	< 10.0 U
Hexachlorobutadiene, ug/L	10.0	< 10.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 10.0 U
Hexachloroethane, ug/L	10.0	< 10.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 10.0 U
Isophorone, ug/L	10.0	< 10.0 U
2-Methylnaphthalene, ug/L	10.0	< 10.0 U
2-Methylphenol, ug/L	10.0	< 10.0 U
4-Methylphenol, ug/L	10.0	< 10.0 U
Naphthalene, ug/L	10.0	< 10.0 U
2-Nitroaniline, ug/L	50.0	< 50.0 U
3-Nitroaniline, ug/L	50.0	< 50.0 U
4-Nitroaniline, ug/L	50.0	< 50.0 UJ
Nitrobenzene, ug/L	10.0	< 10.0 U
2-Nitrophenol, ug/L	10.0	< 10.0 U
4-Nitrophenol, ug/L	50.0	< 50.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 10.0 U
N-Nitrosodiphenylamine, ug/L	10.0	< 10.0 U
Pentachlorophenol, ug/L	50.0	< 50.0 U
Phenanthrene, ug/L	10.0	< 10.0 U
Phenol, ug/L	10.0	< 10.0 U
Pyrene, ug/L	10.0	< 10.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 10.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 50.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-28

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/22/90
Acenaphthene, ug/L	10.0	< 10.0 U
Acenaphthylene, ug/L	10.0	< 10.0 U
Anthracene, ug/L	10.0	< 10.0 U
Benzo (a) anthracene, ug/L	10.0	< 10.0 U
Benzo (a) pyrene, ug/L	10.0	< 10.0 U
Benzo (b) fluoranthene, ug/L	10.0	< 10.0 U
Benzo (g,h,i) perylene, ug/L	10.0	< 10.0 U
Benzoic acid, ug/L	50.0	< 50.0 U
Benzo (k) fluoranthene, ug/L	10.0	< 10.0 U
Benzyl alcohol, ug/L	10.0	< 10.0 U
Bis (2-Chloroethoxy) methane, ug/L	10.0	< 10.0 U
Bis (2-Chloroethyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Chloroisopropyl) ether, ug/L	10.0	< 10.0 U
Bis (2-Ethylhexyl) phthalate, ug/L	10.0	< 10.0 U
4-Bromophenyl-phenylether, ug/L	10.0	< 10.0 U
Butylbenzylphthalate, ug/L	10.0	< 10.0 U
4-Chloroaniline, ug/L	10.0	< 10.0 U
4-Chloro-3-methylphenol, ug/L	10.0	< 10.0 U
2-Chloronaphthalene, ug/L	10.0	< 10.0 U
2-Chlorophenol, ug/L	10.0	< 10.0 U
4-Chlorophenyl-phenylether, ug/L	10.0	< 10.0 U
Chrysene, ug/L	10.0	< 10.0 U
Dibenzo (a,h) anthracene, ug/L	10.0	< 10.0 U
Dibenzofuran, ug/L	10.0	< 10.0 U
1,2-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,3-Dichlorobenzene, ug/L	10.0	< 10.0 U
1,4-Dichlorobenzene, ug/L	10.0	< 10.0 U
3,3'-Dichlorobenzidine, ug/L	20.0	< 20.0 U
2,4-Dichlorophenol, ug/L	10.0	< 10.0 U
Diethylphthalate, ug/L	10.0	< 10.0 U
2,4-Dimethylphenol, ug/L	10.0	< 10.0 U
Dimethyl phthalate, ug/L	10.0	< 10.0 U
Di-n-butylphthalate, ug/L	10.0	< 10.0 U
4,6-Dinitro-2-methylphenol, ug/L	50.0	< 50.0 U
2,4-Dinitrophenol, ug/L	50.0	< 50.0 UJ
2,4-Dinitrotoluene, ug/L	10.0	< 10.0 U
2,6-Dinitrotoluene, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-28

Chemical Compound Class: Semi-Volatile Organic Compounds

Chemical Parameter	CRQL	03/22/90
Di-n-octyl phthalate, ug/L	10.0	< 10.0 U
Fluoranthene, ug/L	10.0	< 10.0 U
Fluorene, ug/L	10.0	< 10.0 U
Hexachlorobenzene, ug/L	10.0	< 10.0 U
Hexachlorobutadiene, ug/L	10.0	< 10.0 U
Hexachlorocyclopentadiene, ug/L	10.0	< 10.0 U
Hexachloroethane, ug/L	10.0	< 10.0 U
Indeno (1,2,3-cd) pyrene, ug/L	10.0	< 10.0 U
Isophorone, ug/L	10.0	< 10.0 U
2-Methylnaphthalene, ug/L	10.0	< 10.0 U
2-Methylphenol, ug/L	10.0	< 10.0 U
4-Methylphenol, ug/L	10.0	< 10.0 U
Naphthalene, ug/L	10.0	< 10.0 U
2-Nitroaniline, ug/L	50.0	< 50.0 U
3-Nitroaniline, ug/L	50.0	< 50.0 U
4-Nitroaniline, ug/L	50.0	< 50.0 UJ
Nitrobenzene, ug/L	10.0	< 10.0 U
2-Nitrophenol, ug/L	10.0	< 10.0 U
4-Nitrophenol, ug/L	50.0	< 50.0 U
N-Nitroso-di-n-propylamine, ug/L	10.0	< 10.0 U
N-Nitrosodiphenylamine, ug/L	10.0	< 10.0 U
Pentachlorophenol, ug/L	50.0	< 50.0 U
Phenanthrene, ug/L	10.0	< 10.0 U
Phenol, ug/L	10.0	< 10.0 U
Pyrene, ug/L	10.0	< 10.0 U
1,2,4-Trichlorobenzene, ug/L	10.0	< 10.0 U
2,4,5-Trichlorophenol, ug/L	50.0	< 50.0 U
2,4,6-Trichlorophenol, ug/L	10.0	< 10.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

APPENDIX I

Ground-Water/Surface Water
Investigation Plan
Ground-Water Quality Data

Pesticides and Poly-Chlorinated Biphenyls

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-1

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	03/20/90
Aldrin, ug/L	0.05	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U
Chlordane, ug/L	0.05	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U
Endrin ketone, ug/L	0.05	< 0.05 U
Heptachlor, ug/L	0.05	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	03/20/90
Aroclor-1016, ug/L	0.5	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-1A

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	03/19/90
Aldrin, ug/L	0.05	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U
Chlordane, ug/L	0.05	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U
Endrin ketone, ug/L	0.05	< 0.05 U
Heptachlor, ug/L	0.05	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	03/19/90
Aroclor-1016, ug/L	0.5	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-4

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	03/19/90
Aldrin, ug/L	0.05	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U
Chlordane, ug/L	0.05	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U
Endrin ketone, ug/L	0.05	< 0.05 U
Heptachlor, ug/L	0.05	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	03/19/90
Aroclor-1016, ug/L	0.5	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-6

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	03/16/90
Aldrin, ug/L	0.05	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U
Chlordane, ug/L	0.05	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U
Endrin ketone, ug/L	0.05	< 0.05 U
Heptachlor, ug/L	0.05	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	03/16/90
Aroclor-1016, ug/L	0.5	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-7

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	04/25/90	04/25/90 Replicate
Aldrin, ug/L	0.05	< 0.05 U	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U	< 0.05 U
alpha-Chlordane, ug/L	0.05	< 0.05 U	< 0.05 U
gamma-Chlordane, ug/L	0.05	< 0.05 U	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U	< 0.1 U
Endrin ketone, ug/L	0.1	< 0.1 U	< 0.1 U
Heptachlor, ug/L	0.05	< 0.05 U	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	04/25/90	04/25/90 Replicate
Aroclor-1016, ug/L	0.5	< 0.5 U	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-9

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	03/19/90
Aldrin, ug/L	0.05	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U
Chlordane, ug/L	0.05	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U
Endrin ketone, ug/L	0.05	< 0.05 U
Heptachlor, ug/L	0.05	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	03/19/90
Aroclor-1016, ug/L	0.5	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-10

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	03/20/90
Aldrin, ug/L	0.05	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U
Chlordane, ug/L	0.05	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U
Endrin ketone, ug/L	0.05	< 0.05 U
Heptachlor, ug/L	0.05	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	03/20/90
Aroclor-1016, ug/L	0.5	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-11

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	03/20/90
Aldrin, ug/L	0.05	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U
Chlordane, ug/L	0.05	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U
Endrin ketone, ug/L	0.05	< 0.05 U
Heptachlor, ug/L	0.05	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	03/20/90
Aroclor-1016, ug/L	0.5	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-12

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	03/15/90
Aldrin, ug/L	0.05	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U
Chlordane, ug/L	0.05	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U
Endrin ketone, ug/L	0.05	< 0.05 U
Heptachlor, ug/L	0.05	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	03/15/90
Aroclor-1016, ug/L	0.5	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-13

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	03/19/90	03/19/90 Replicate
Aldrin, ug/L	0.05	< 0.05 U	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U	< 0.05 U
Chlordane, ug/L	0.05	< 0.05 U	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U	< 0.1 U
Endrin ketone, ug/L	0.05	< 0.05 U	< 0.05 U
Heptachlor, ug/L	0.05	< 0.05 U	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	03/19/90	03/19/90 Replicate
Aroclor-1016, ug/L	0.5	< 0.5 U	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-14

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	03/15/90
Aldrin, ug/L	0.05	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U
Chlordane, ug/L	0.05	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U
Endrin ketone, ug/L	0.05	< 0.05 U
Heptachlor, ug/L	0.05	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	03/15/90
Aroclor-1016, ug/L	0.5	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-15

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	03/19/90
Aldrin, ug/L	0.05	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U
Chlordane, ug/L	0.05	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U
Endrin ketone, ug/L	0.05	< 0.05 U
Heptachlor, ug/L	0.05	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	03/19/90
Aroclor-1016, ug/L	0.5	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-16

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	03/20/90
Aldrin, ug/L	0.05	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U
Chlordane, ug/L	0.05	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U
Endrin ketone, ug/L	0.05	< 0.05 U
Heptachlor, ug/L	0.05	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	03/20/90
Aroclor-1016, ug/L	0.5	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-17

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	03/15/90
Aldrin, ug/L	0.05	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U
Chlordane, ug/L	0.05	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U
Endrin ketone, ug/L	0.05	< 0.05 U
Heptachlor, ug/L	0.05	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	03/15/90
Aroclor-1016, ug/L	0.5	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-18

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	03/15/90
Aldrin, ug/L	0.05	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U
Chlordane, ug/L	0.05	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U
Endrin ketone, ug/L	0.05	< 0.05 U
Heptachlor, ug/L	0.05	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	03/15/90
Aroclor-1016, ug/L	0.5	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-18A

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	03/15/90
Aldrin, ug/L	0.05	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U
Chlordane, ug/L	0.05	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U
Endrin ketone, ug/L	0.05	< 0.05 U
Heptachlor, ug/L	0.05	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	03/15/90
Aroclor-1016, ug/L	0.5	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-19

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	03/16/90
Aldrin, ug/L	0.05	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U
Chlordane, ug/L	0.05	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U
Endrin ketone, ug/L	0.05	< 0.05 U
Heptachlor, ug/L	0.05	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	03/16/90
Aroclor-1016, ug/L	0.5	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-19A

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	03/16/90
Aldrin, ug/L	0.05	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U
Chlordane, ug/L	0.05	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U
Endrin ketone, ug/L	0.05	< 0.05 U
Heptachlor, ug/L	0.05	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	03/16/90
Aroclor-1016, ug/L	0.5	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-20

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	03/16/90
Aldrin, ug/L	0.05	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U
Chlordane, ug/L	0.05	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U
Endrin ketone, ug/L	0.05	< 0.05 U
Heptachlor, ug/L	0.05	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	03/16/90
Aroclor-1016, ug/L	0.5	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-21

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	03/21/90	03/21/90 Replicate
Aldrin, ug/L	0.05	< 0.05 U	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U	< 0.05 U
Chlordane, ug/L	0.05	< 0.05 U	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U	< 0.1 U
Endrin ketone, ug/L	0.05	< 0.05 U	< 0.05 U
Heptachlor, ug/L	0.05	< 0.05 U	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	03/21/90	03/21/90 Replicate
Aroclor-1016, ug/L	0.5	< 0.5 U	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-22

Chemical Compound Class: Pesticide Compounds

Chemical Parameter	CRQL	03/21/90
Aldrin, ug/L	0.05	< 0.05 U
alpha-BHC, ug/L	0.05	< 0.05 U
beta-BHC, ug/L	0.05	< 0.05 U
delta-BHC, ug/L	0.05	< 0.05 U
gamma-BHC (Lindane), ug/L	0.05	< 0.05 U
Chlordane, ug/L	0.05	< 0.05 U
4,4'-DDD, ug/L	0.1	< 0.1 U
4,4'-DDE, ug/L	0.1	< 0.1 U
4,4'-DDT, ug/L	0.1	< 0.1 U
Dieldrin, ug/L	0.1	< 0.1 U
Endosulfan I, ug/L	0.05	< 0.05 U
Endosulfan II, ug/L	0.1	< 0.1 U
Endosulfan sulfate, ug/L	0.1	< 0.1 U
Endrin, ug/L	0.1	< 0.1 U
Endrin ketone, ug/L	0.05	< 0.05 U
Heptachlor, ug/L	0.05	< 0.05 U
Heptachlor epoxide, ug/L	0.05	< 0.05 U
Methoxychlor, ug/L	0.05	< 0.05 U
Toxaphene, ug/L	1.0	< 1.0 U

Chemical Compound Class: Poly-Chlorinated Biphenyls

Chemical Parameter	CRQL	03/21/90
Aroclor-1016, ug/L	0.5	< 0.5 U
Aroclor-1221, ug/L	0.5	< 0.5 U
Aroclor-1232, ug/L	0.5	< 0.5 U
Aroclor-1242, ug/L	0.5	< 0.5 U
Aroclor-1248, ug/L	0.5	< 0.5 U
Aroclor-1254, ug/L	1.0	< 1.0 U
Aroclor-1260, ug/L	1.0	< 1.0 U

Explanation

CRQL Contract Required Quantitation Limit

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

APPENDIX I

Ground-Water/Surface Water
Investigation Plan
Ground-Water Quality Data

Dissolved Metals

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-1

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/20/90	08/17/90
Aluminum, dissolved, mg/L	0.2	0.399 A (0.027)	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, dissolved, mg/L	0.01	< 0.002 U (0.002)	< 0.002 U (0.002)
Barium, dissolved, mg/L	0.2	0.0367 J (0.002)	0.0089 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, dissolved, mg/L	5.0	156.0 J (0.02)	-
Chromium, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Cobalt, dissolved, mg/L	0.05	< 0.007 U (0.007)	-
Copper, dissolved, mg/L	0.025	< 0.006 U (0.006)	-
Iron, dissolved, mg/L	0.1	0.151 A (0.003)	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, dissolved, mg/L	5.0	24.6 J (0.037)	-
Manganese, dissolved, mg/L	0.015	1.33 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, dissolved, mg/L	5.0	3.22 A (0.9)	-
Selenium, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	51.1 J (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	< 0.029 U (0.028)	-
Vanadium, dissolved, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, dissolved, mg/L	0.02	0.0446 R (0.008)	0.0082 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-1A

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/19/90	08/16/90
Aluminum, dissolved, mg/L	0.2	5.01 A (0.027)	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, dissolved, mg/L	0.01	< 0.002 U (0.002)	< 0.002 U (0.002)
Barium, dissolved, mg/L	0.2	0.0208 J (0.002)	0.0072 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, dissolved, mg/L	5.0	22.8 J (0.02)	-
Chromium, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Cobalt, dissolved, mg/L	0.05	< 0.007 U (0.007)	-
Copper, dissolved, mg/L	0.025	0.0115 A (0.006)	-
Iron, dissolved, mg/L	0.1	< 0.02 U (0.003)	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, dissolved, mg/L	5.0	6.12 J (0.037)	-
Manganese, dissolved, mg/L	0.015	0.0014 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	0.02 A (0.012)	-
Potassium, dissolved, mg/L	5.0	6.44 A (0.9)	-
Selenium, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	11.6 J (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, dissolved, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, dissolved, mg/L	0.02	0.0728 R (0.008)	0.0254 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-4

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/19/90	08/15/90
Aluminum, dissolved, mg/L	0.2	< 0.027 U (0.027)	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, dissolved, mg/L	0.01	< 0.002 U (0.002)	< 0.002 U (0.002)
Barium, dissolved, mg/L	0.2	0.0918 J (0.002)	0.0107 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, dissolved, mg/L	5.0	42.5 J (0.02)	-
Chromium, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Cobalt, dissolved, mg/L	0.05	< 0.007 U (0.007)	-
Copper, dissolved, mg/L	0.025	< 0.006 U (0.006)	-
Iron, dissolved, mg/L	0.1	< 0.02 U (0.003)	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, dissolved, mg/L	5.0	4.96 J (0.037)	-
Manganese, dissolved, mg/L	0.015	0.0202 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, dissolved, mg/L	5.0	2.35 A (0.9)	-
Selenium, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	123.0 J (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, dissolved, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, dissolved, mg/L	0.02	0.0271 R (0.008)	0.0072 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-6

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/16/90	08/14/90
Aluminum, dissolved, mg/L	0.2	< 0.027 U (0.027)	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, dissolved, mg/L	0.01	< 0.002 U (0.002)	< 0.002 U (0.002)
Barium, dissolved, mg/L	0.2	0.0596 J (0.002)	0.0138 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, dissolved, mg/L	5.0	37.5 J (0.02)	-
Chromium, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Cobalt, dissolved, mg/L	0.05	< 0.007 U (0.007)	-
Copper, dissolved, mg/L	0.025	< 0.006 U (0.006)	-
Iron, dissolved, mg/L	0.1	< 0.1 U (0.003)	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, dissolved, mg/L	5.0	11.0 J (0.037)	-
Manganese, dissolved, mg/L	0.015	0.0012 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, dissolved, mg/L	5.0	2.88 A (0.9)	-
Selenium, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	41.4 J (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, dissolved, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, dissolved, mg/L	0.02	0.0232 R (0.008)	0.012 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-7

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	04/25/90	04/25/90 Replicate	08/14/90
Aluminum, dissolved, mg/L	0.2	0.0604 J (0.027)	< 0.027 UJ (0.027)	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	< 0.037 U (0.037)	-
Arsenic, dissolved, mg/L	0.01	< 0.002 U (0.002)	< 0.002 U (0.002)	< 0.002 U (0.002)
Barium, dissolved, mg/L	0.2	0.175 J (0.002)	0.074 J (0.002)	0.0184 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	< 0.005 U (0.005)	< 0.005 U (0.005)	-
Calcium, dissolved, mg/L	5.0	41.0 A (0.02)	40.2 A (0.02)	-
Chromium, dissolved, mg/L	0.01	< 0.003 U (0.003)	< 0.003 U (0.003)	-
Cobalt, dissolved, mg/L	0.05	< 0.007 U (0.007)	< 0.007 U (0.007)	-
Copper, dissolved, mg/L	0.025	< 0.006 U (0.006)	< 0.006 U (0.006)	-
Iron, dissolved, mg/L	0.1	0.172 A (0.003)	0.175 A (0.003)	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	< 0.002 U (0.002)	-
Magnesium, dissolved, mg/L	5.0	10.1 A (0.037)	9.85 A (0.037)	-
Manganese, dissolved, mg/L	0.015	0.316 A (0.001)	0.305 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	< 0.012 U (0.012)	< 0.012 U (0.012)	-
Potassium, dissolved, mg/L	5.0	2.82 A (0.9)	2.6 A (0.9)	-
Selenium, dissolved, mg/L	0.005	< 0.002 U (0.002)	< 0.002 U (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	27.4 A (0.038)	26.4 A (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	< 0.028 UJ (0.028)	< 0.028 UJ (0.028)	-
Vanadium, dissolved, mg/L	0.05	< 0.006 U (0.006)	< 0.006 U (0.006)	-
Zinc, dissolved, mg/L	0.02	0.124 R (0.008)	0.0415 R (0.008)	0.0207 J (0.006)

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-9

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/19/90	08/17/90
Aluminum, dissolved, mg/L	0.2	< 0.027 U (0.027)	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, dissolved, mg/L	0.01	0.0028 A (0.002)	0.0046 J (0.002)
Barium, dissolved, mg/L	0.2	0.0191 J (0.002)	0.0089 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, dissolved, mg/L	5.0	141.0 J (0.02)	-
Chromium, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Cobalt, dissolved, mg/L	0.05	< 0.007 U (0.007)	-
Copper, dissolved, mg/L	0.025	< 0.006 U (0.006)	-
Iron, dissolved, mg/L	0.1	0.032 J (0.003)	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, dissolved, mg/L	5.0	15.1 J (0.037)	-
Manganese, dissolved, mg/L	0.015	0.115 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, dissolved, mg/L	5.0	2.87 A (0.9)	-
Selenium, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	232.0 J (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, dissolved, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, dissolved, mg/L	0.02	0.0421 R (0.008)	< 0.006 U (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-10

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/20/90	08/15/90
Aluminum, dissolved, mg/L	0.2	0.14 A (0.027)	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, dissolved, mg/L	0.01	< 0.002 U (0.002)	< 0.002 U (0.002)
Barium, dissolved, mg/L	0.2	0.0513 J (0.002)	0.036 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	0.0088 A (0.005)	-
Calcium, dissolved, mg/L	5.0	10.6 J (0.02)	-
Chromium, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Cobalt, dissolved, mg/L	0.05	< 0.007 U (0.007)	-
Copper, dissolved, mg/L	0.025	0.321 A (0.006)	-
Iron, dissolved, mg/L	0.1	0.0169 R (0.003)	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, dissolved, mg/L	5.0	1.7 J (0.037)	-
Manganese, dissolved, mg/L	0.015	0.0591 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, dissolved, mg/L	5.0	1.84 A (0.9)	-
Selenium, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	25.8 J (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, dissolved, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, dissolved, mg/L	0.02	3.18 R (0.008)	0.231 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-11

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/20/90	08/15/90
Aluminum, dissolved, mg/L	0.2	0.158 A (0.027)	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, dissolved, mg/L	0.01	0.162 A (0.002)	0.198 J (0.002)
Barium, dissolved, mg/L	0.2	0.0499 J (0.002)	0.0422 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, dissolved, mg/L	5.0	38.9 J (0.02)	-
Chromium, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Cobalt, dissolved, mg/L	0.05	< 0.007 U (0.007)	-
Copper, dissolved, mg/L	0.025	< 0.006 U (0.006)	-
Iron, dissolved, mg/L	0.1	12.0 J (0.003)	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, dissolved, mg/L	5.0	2.97 J (0.037)	-
Manganese, dissolved, mg/L	0.015	0.423 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, dissolved, mg/L	5.0	2.58 A (0.9)	-
Selenium, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	14.6 J (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, dissolved, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, dissolved, mg/L	0.02	0.913 R (0.008)	1.6 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-12

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/15/90	08/15/90
Aluminum, dissolved, mg/L	0.2	< 0.027 U (0.027)	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, dissolved, mg/L	0.01	0.422 A (0.002)	0.0364 J (0.002)
Barium, dissolved, mg/L	0.2	0.101 J (0.002)	0.04 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, dissolved, mg/L	5.0	491.0 J (0.02)	-
Chromium, dissolved, mg/L	0.01	0.0355 A (0.003)	-
Cobalt, dissolved, mg/L	0.05	< 0.007 U (0.007)	-
Copper, dissolved, mg/L	0.025	< 0.006 U (0.006)	-
Iron, dissolved, mg/L	0.1	5.13 J (0.003)	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, dissolved, mg/L	5.0	108.0 J (0.037)	-
Manganese, dissolved, mg/L	0.015	0.4 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, dissolved, mg/L	5.0	9.18 A (0.9)	-
Selenium, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	150.0 J (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, dissolved, mg/L	0.05	0.0224 A (0.006)	-
Zinc, dissolved, mg/L	0.02	0.0463 R (0.008)	0.009 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-13

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/19/90	03/19/90 Replicate	08/15/90
Aluminum, dissolved, mg/L	0.2	< 0.027 U (0.027)	< 0.027 U (0.027)	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	< 0.037 U (0.037)	-
Arsenic, dissolved, mg/L	0.01	0.0206 A (0.002)	0.0204 A (0.002)	0.0435 J (0.002)
Barium, dissolved, mg/L	0.2	0.0666 J (0.002)	0.0632 J (0.002)	0.0219 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	< 0.005 U (0.005)	< 0.005 U (0.005)	-
Calcium, dissolved, mg/L	5.0	88.9 J (0.02)	88.8 J (0.02)	-
Chromium, dissolved, mg/L	0.01	< 0.003 U (0.003)	< 0.003 U (0.003)	-
Cobalt, dissolved, mg/L	0.05	< 0.007 U (0.007)	< 0.007 U (0.007)	-
Copper, dissolved, mg/L	0.025	< 0.006 U (0.006)	< 0.006 U (0.006)	-
Iron, dissolved, mg/L	0.1	3.08 J (0.003)	3.35 J (0.003)	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	< 0.002 U (0.002)	-
Magnesium, dissolved, mg/L	5.0	11.3 J (0.037)	10.9 J (0.037)	-
Manganese, dissolved, mg/L	0.015	1.76 A (0.001)	1.78 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	< 0.012 U (0.012)	< 0.012 U (0.012)	-
Potassium, dissolved, mg/L	5.0	6.36 A (0.9)	6.38 A (0.9)	-
Selenium, dissolved, mg/L	0.005	< 0.002 U (0.002)	< 0.002 U (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	21.9 J (0.038)	20.9 J (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	< 0.028 U (0.028)	< 0.028 U (0.028)	-
Vanadium, dissolved, mg/L	0.05	< 0.006 U (0.006)	< 0.006 U (0.006)	-
Zinc, dissolved, mg/L	0.02	0.0389 R (0.008)	0.0483 R (0.008)	0.0076 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-14

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/15/90	08/16/90
Aluminum, dissolved, mg/L	0.2	< 0.027 U (0.027)	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, dissolved, mg/L	0.01	0.0075 A (0.002)	0.0041 J (0.002)
Barium, dissolved, mg/L	0.2	0.028 J (0.002)	0.0311 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	0.0055 A (0.005)	-
Calcium, dissolved, mg/L	5.0	87.9 J (0.02)	-
Chromium, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Cobalt, dissolved, mg/L	0.05	0.0103 A (0.007)	-
Copper, dissolved, mg/L	0.025	0.0176 A (0.006)	-
Iron, dissolved, mg/L	0.1	0.628 J (0.003)	-
Lead, dissolved, mg/L	0.005	0.0163 A (0.002)	-
Magnesium, dissolved, mg/L	5.0	5.17 J (0.037)	-
Manganese, dissolved, mg/L	0.015	0.0474 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, dissolved, mg/L	5.0	3.11 A (0.9)	-
Selenium, dissolved, mg/L	0.005	0.0352 A (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	12.7 J (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, dissolved, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, dissolved, mg/L	0.02	2.11 R (0.008)	1.61 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-15

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/19/90	08/16/90
Aluminum, dissolved, mg/L	0.2	< 0.027 U (0.027)	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, dissolved, mg/L	0.01	< 0.002 U (0.002)	< 0.002 U (0.002)
Barium, dissolved, mg/L	0.2	0.0696 J (0.002)	0.0291 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, dissolved, mg/L	5.0	11.7 J (0.02)	-
Chromium, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Cobalt, dissolved, mg/L	0.05	< 0.007 U (0.007)	-
Copper, dissolved, mg/L	0.025	< 0.006 U (0.006)	-
Iron, dissolved, mg/L	0.1	0.0422 J (0.003)	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, dissolved, mg/L	5.0	2.53 J (0.037)	-
Manganese, dissolved, mg/L	0.015	0.0773 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, dissolved, mg/L	5.0	1.52 A (0.9)	-
Selenium, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	68.7 J (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, dissolved, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, dissolved, mg/L	0.02	0.0266 R (0.008)	0.0172 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-16

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/20/90	08/17/90
Aluminum, dissolved, mg/L	0.2	< 0.027 U (0.027)	-
Antimony, dissolved, mg/L	0.06	0.0439 A (0.037)	-
Arsenic, dissolved, mg/L	0.01	2.86 A (0.002)	2.4 J (0.002)
Barium, dissolved, mg/L	0.2	0.245 J (0.002)	0.194 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, dissolved, mg/L	5.0	13.9 J (0.02)	-
Chromium, dissolved, mg/L	0.01	0.138 A (0.003)	-
Cobalt, dissolved, mg/L	0.05	< 0.007 U (0.007)	-
Copper, dissolved, mg/L	0.025	< 0.006 U (0.006)	-
Iron, dissolved, mg/L	0.1	0.87 J (0.003)	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, dissolved, mg/L	5.0	193.0 J (0.037)	-
Manganese, dissolved, mg/L	0.015	0.0076 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	0.541 A (0.012)	-
Potassium, dissolved, mg/L	5.0	69.1 A (0.9)	-
Selenium, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	142.0 J (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	0.059 A (0.028)	-
Vanadium, dissolved, mg/L	0.05	0.183 A (0.006)	-
Zinc, dissolved, mg/L	0.02	0.0979 R (0.008)	< 0.006 U (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-17

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/15/90	08/14/90
Aluminum, dissolved, mg/L	0.2	< 0.027 U (0.027)	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, dissolved, mg/L	0.01	0.164 A (0.002)	0.083 J (0.002)
Barium, dissolved, mg/L	0.2	0.0519 J (0.002)	0.023 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, dissolved, mg/L	5.0	236.0 J (0.02)	-
Chromium, dissolved, mg/L	0.01	0.0265 A (0.003)	-
Cobalt, dissolved, mg/L	0.05	< 0.007 U (0.007)	-
Copper, dissolved, mg/L	0.025	< 0.006 U (0.006)	-
Iron, dissolved, mg/L	0.1	0.831 J (0.003)	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, dissolved, mg/L	5.0	70.8 J (0.037)	-
Manganese, dissolved, mg/L	0.015	0.436 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, dissolved, mg/L	5.0	261.0 A (0.9)	-
Selenium, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	663.0 J (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, dissolved, mg/L	0.05	0.0134 A (0.006)	-
Zinc, dissolved, mg/L	0.02	0.0785 R (0.008)	0.0632 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-18

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/15/90	08/15/90
Aluminum, dissolved, mg/L	0.2	< 0.027 U (0.027)	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, dissolved, mg/L	0.01	< 0.002 U (0.002)	0.0031 J (0.002)
Barium, dissolved, mg/L	0.2	0.196 J (0.002)	0.0179 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	0.0252 A (0.005)	-
Calcium, dissolved, mg/L	5.0	83.3 J (0.02)	-
Chromium, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Cobalt, dissolved, mg/L	0.05	0.0168 A (0.007)	-
Copper, dissolved, mg/L	0.025	0.122 A (0.006)	-
Iron, dissolved, mg/L	0.1	0.577 J (0.003)	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, dissolved, mg/L	5.0	8.58 J (0.037)	-
Manganese, dissolved, mg/L	0.015	0.736 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	0.0133 A (0.012)	-
Potassium, dissolved, mg/L	5.0	6.07 A (0.9)	-
Selenium, dissolved, mg/L	0.005	0.002 A (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	63.1 J (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, dissolved, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, dissolved, mg/L	0.02	8.0 R (0.008)	8.99 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-18A

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/15/90	08/14/90
Aluminum, dissolved, mg/L	0.2	< 0.027 U (0.027)	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, dissolved, mg/L	0.01	< 0.002 U (0.002)	< 0.002 U (0.002)
Barium, dissolved, mg/L	0.2	0.046 J (0.002)	0.0245 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	0.0205 A (0.005)	-
Calcium, dissolved, mg/L	5.0	122.0 J (0.02)	-
Chromium, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Cobalt, dissolved, mg/L	0.05	0.0191 A (0.007)	-
Copper, dissolved, mg/L	0.025	0.0351 A (0.006)	-
Iron, dissolved, mg/L	0.1	0.0427 J (0.003)	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, dissolved, mg/L	5.0	9.49 J (0.037)	-
Manganese, dissolved, mg/L	0.015	0.671 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	0.0182 A (0.012)	-
Potassium, dissolved, mg/L	5.0	5.66 A (0.9)	-
Selenium, dissolved, mg/L	0.005	0.0056 A (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	42.2 J (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, dissolved, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, dissolved, mg/L	0.02	7.22 R (0.008)	4.13 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-19

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/16/90	08/14/90
Aluminum, dissolved, mg/L	0.2	< 0.027 U (0.027)	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, dissolved, mg/L	0.01	< 0.002 U (0.002)	< 0.002 U (0.002)
Barium, dissolved, mg/L	0.2	0.13 J (0.002)	0.0268 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, dissolved, mg/L	5.0	20.9 J (0.02)	-
Chromium, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Cobalt, dissolved, mg/L	0.05	0.0126 A (0.007)	-
Copper, dissolved, mg/L	0.025	< 0.006 U (0.006)	-
Iron, dissolved, mg/L	0.1	< 0.1 U (0.003)	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, dissolved, mg/L	5.0	4.71 J (0.037)	-
Manganese, dissolved, mg/L	0.015	1.06 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, dissolved, mg/L	5.0	4.31 A (0.9)	-
Selenium, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	46.5 J (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, dissolved, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, dissolved, mg/L	0.02	0.437 R (0.008)	0.444 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-19A

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/16/90	08/14/90
Aluminum, dissolved, mg/L	0.2	< 0.027 U (0.027)	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, dissolved, mg/L	0.01	0.0177 A (0.002)	0.0224 J (0.002)
Barium, dissolved, mg/L	0.2	0.0453 J (0.002)	0.0184 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, dissolved, mg/L	5.0	25.7 J (0.02)	-
Chromium, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Cobalt, dissolved, mg/L	0.05	0.0259 A (0.007)	-
Copper, dissolved, mg/L	0.025	< 0.006 U (0.006)	-
Iron, dissolved, mg/L	0.1	1.16 A (0.003)	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, dissolved, mg/L	5.0	4.78 J (0.037)	-
Manganese, dissolved, mg/L	0.015	1.23 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, dissolved, mg/L	5.0	4.11 A (0.9)	-
Selenium, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	27.6 J (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, dissolved, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, dissolved, mg/L	0.02	0.219 R (0.008)	0.166 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-20

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/16/90	08/14/90	08/14/90 Replicate
Aluminum, dissolved, mg/L	0.2	< 0.027 U (0.027)	-	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	-	-
Arsenic, dissolved, mg/L	0.01	< 0.002 U (0.002)	0.0068 J (0.002)	0.0071 J (0.002)
Barium, dissolved, mg/L	0.2	0.042 J (0.002)	0.0127 A (0.001)	0.0121 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	-	-
Cadmium, dissolved, mg/L	0.005	< 0.005 U (0.005)	-	-
Calcium, dissolved, mg/L	5.0	47.2 J (0.02)	-	-
Chromium, dissolved, mg/L	0.01	< 0.003 U (0.003)	-	-
Cobalt, dissolved, mg/L	0.05	< 0.007 U (0.007)	-	-
Copper, dissolved, mg/L	0.025	< 0.006 U (0.006)	-	-
Iron, dissolved, mg/L	0.1	0.412 J (0.003)	-	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	-	-
Magnesium, dissolved, mg/L	5.0	11.3 J (0.037)	-	-
Manganese, dissolved, mg/L	0.015	0.109 A (0.001)	-	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	-	-
Nickel, dissolved, mg/L	0.04	< 0.012 U (0.012)	-	-
Potassium, dissolved, mg/L	5.0	3.29 A (0.9)	-	-
Selenium, dissolved, mg/L	0.005	< 0.002 U (0.002)	-	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	-	-
Sodium, dissolved, mg/L	5.0	22.7 J (0.038)	-	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	-	-
Tin, dissolved, mg/L	N/R	< 0.028 U (0.028)	-	-
Vanadium, dissolved, mg/L	0.05	< 0.006 U (0.006)	-	-
Zinc, dissolved, mg/L	0.02	0.051 R (0.008)	0.0067 J (0.006)	0.0126 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-21

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/21/90	03/21/90 Replicate	08/15/90
Aluminum, dissolved, mg/L	0.2	< 0.027 U (0.027)	< 0.027 U (0.027)	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	< 0.037 U (0.037)	-
Arsenic, dissolved, mg/L	0.01	< 0.002 U (0.002)	< 0.002 U (0.002)	0.004 J (0.002)
Barium, dissolved, mg/L	0.2	0.0427 J (0.002)	0.0578 J (0.002)	0.0208 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	< 0.005 U (0.005)	< 0.005 U (0.005)	-
Calcium, dissolved, mg/L	5.0	48.5 J (0.02)	48.0 J (0.02)	-
Chromium, dissolved, mg/L	0.01	< 0.003 U (0.003)	< 0.003 U (0.003)	-
Cobalt, dissolved, mg/L	0.05	< 0.007 U (0.007)	< 0.007 U (0.007)	-
Copper, dissolved, mg/L	0.025	< 0.006 U (0.006)	< 0.006 U (0.006)	-
Iron, dissolved, mg/L	0.1	0.152 J (0.003)	0.131 J (0.003)	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	< 0.002 U (0.002)	-
Magnesium, dissolved, mg/L	5.0	6.74 J (0.037)	6.65 J (0.037)	-
Manganese, dissolved, mg/L	0.015	1.51 A (0.001)	1.46 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	< 0.012 U (0.012)	< 0.012 U (0.012)	-
Potassium, dissolved, mg/L	5.0	2.42 A (0.9)	2.36 A (0.9)	-
Selenium, dissolved, mg/L	0.005	< 0.002 U (0.002)	< 0.002 U (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	10.2 J (0.038)	13.5 J (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	< 0.028 U (0.028)	< 0.028 U (0.028)	-
Vanadium, dissolved, mg/L	0.05	< 0.006 U (0.006)	< 0.006 U (0.006)	-
Zinc, dissolved, mg/L	0.02	0.0319 R (0.008)	0.121 R (0.008)	0.0157 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-21

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	08/15/90 Replicate
Aluminum, dissolved, mg/L	0.2	-
Antimony, dissolved, mg/L	0.06	-
Arsenic, dissolved, mg/L	0.01	0.0028 J (0.002)
Barium, dissolved, mg/L	0.2	0.0236 A (0.001)
Beryllium, dissolved, mg/L	0.005	-
Cadmium, dissolved, mg/L	0.005	-
Calcium, dissolved, mg/L	5.0	-
Chromium, dissolved, mg/L	0.01	-
Cobalt, dissolved, mg/L	0.05	-
Copper, dissolved, mg/L	0.025	-
Iron, dissolved, mg/L	0.1	-
Lead, dissolved, mg/L	0.005	-
Magnesium, dissolved, mg/L	5.0	-
Manganese, dissolved, mg/L	0.015	-
Mercury, dissolved, ug/L	0.2	-
Nickel, dissolved, mg/L	0.04	-
Potassium, dissolved, mg/L	5.0	-
Selenium, dissolved, mg/L	0.005	-
Silver, dissolved, mg/L	0.01	-
Sodium, dissolved, mg/L	5.0	-
Thallium, dissolved, mg/L	0.01	-
Tin, dissolved, mg/L	N/R	-
Vanadium, dissolved, mg/L	0.05	-
Zinc, dissolved, mg/L	0.02	0.0378 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-22

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/21/90	08/17/90
Aluminum, dissolved, mg/L	0.2	< 0.027 U (0.027)	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, dissolved, mg/L	0.01	0.0044 A (0.002)	< 0.002 U (0.002)
Barium, dissolved, mg/L	0.2	0.196 J (0.002)	0.0722 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, dissolved, mg/L	5.0	198.0 J (0.02)	-
Chromium, dissolved, mg/L	0.01	0.0042 A (0.003)	-
Cobalt, dissolved, mg/L	0.05	< 0.007 U (0.007)	-
Copper, dissolved, mg/L	0.025	< 0.006 U (0.006)	-
Iron, dissolved, mg/L	0.1	6.32 J (0.003)	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, dissolved, mg/L	5.0	52.1 J (0.037)	-
Manganese, dissolved, mg/L	0.015	3.02 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, dissolved, mg/L	5.0	10.5 A (0.9)	-
Selenium, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	26.4 J (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, dissolved, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, dissolved, mg/L	0.02	0.0457 R (0.008)	0.025 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-28

Chemical Compound Class: Dissolved Metals

Chemical Parameter	CRDL	03/21/90	08/15/90
Aluminum, dissolved, mg/L	0.2	< 0.027 U (0.027)	-
Antimony, dissolved, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, dissolved, mg/L	0.01	< 0.002 U (0.002)	< 0.002 U (0.002)
Barium, dissolved, mg/L	0.2	0.0916 J (0.002)	0.0075 A (0.001)
Beryllium, dissolved, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, dissolved, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, dissolved, mg/L	5.0	18.1 J (0.02)	-
Chromium, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Cobalt, dissolved, mg/L	0.05	< 0.007 U (0.007)	-
Copper, dissolved, mg/L	0.025	< 0.006 U (0.006)	-
Iron, dissolved, mg/L	0.1	0.0137 J (0.003)	-
Lead, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, dissolved, mg/L	5.0	3.26 J (0.037)	-
Manganese, dissolved, mg/L	0.015	0.45 A (0.001)	-
Mercury, dissolved, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, dissolved, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, dissolved, mg/L	5.0	4.99 A (0.9)	-
Selenium, dissolved, mg/L	0.005	< 0.002 U (0.002)	-
Silver, dissolved, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, dissolved, mg/L	5.0	23.8 J (0.038)	-
Thallium, dissolved, mg/L	0.01	< 0.004 U (0.004)	-
Tin, dissolved, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, dissolved, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, dissolved, mg/L	0.02	0.0287 R (0.008)	0.0151 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

APPENDIX I

Ground-Water/Surface Water
Investigation Plan
Ground-Water Quality Data

Total Metals

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-1

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/20/90	08/17/90
Aluminum, total, mg/L	0.2	0.54 A (0.027)	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, total, mg/L	0.01	< 0.002 U (0.002)	< 0.002 U (0.002)
Barium, total, mg/L	0.2	0.0116 A (0.002)	0.0072 A (0.001)
Beryllium, total, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, total, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, total, mg/L	5.0	162.0 A (0.02)	-
Chromium, total, mg/L	0.01	< 0.003 U (0.003)	-
Cobalt, total, mg/L	0.05	< 0.007 U (0.007)	-
Copper, total, mg/L	0.025	0.0093 A (0.006)	-
Iron, total, mg/L	0.1	0.716 A (0.003)	-
Lead, total, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, total, mg/L	5.0	25.3 A (0.037)	-
Manganese, total, mg/L	0.015	1.4 A (0.001)	-
Mercury, total, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, total, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, total, mg/L	5.0	4.44 A (0.9)	-
Selenium, total, mg/L	0.005	< 0.002 U (0.002)	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, total, mg/L	5.0	50.4 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, total, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, total, mg/L	0.02	< 0.02 UJ (0.008)	0.0164 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-1A

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/19/90	08/16/90
Aluminum, total, mg/L	0.2	7.15 A (0.027)	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, total, mg/L	0.01	< 0.002 U (0.002)	< 0.002 U (0.002)
Barium, total, mg/L	0.2	0.0219 A (0.002)	0.0098 A (0.001)
Beryllium, total, mg/L	0.005	0.001 A (0.001)	-
Cadmium, total, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, total, mg/L	5.0	24.2 A (0.02)	-
Chromium, total, mg/L	0.01	0.0062 A (0.003)	-
Cobalt, total, mg/L	0.05	0.0478 A (0.007)	-
Copper, total, mg/L	0.025	0.0401 A (0.006)	-
Iron, total, mg/L	0.1	2.25 A (0.003)	-
Lead, total, mg/L	0.005	0.0034 A (0.002)	-
Magnesium, total, mg/L	5.0	6.53 A (0.037)	-
Manganese, total, mg/L	0.015	2.61 A (0.001)	-
Mercury, total, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, total, mg/L	0.04	0.0719 A (0.012)	-
Potassium, total, mg/L	5.0	7.22 A (0.9)	-
Selenium, total, mg/L	0.005	< 0.002 U (0.002)	-
Silver, total, mg/L	0.01	0.571 A (0.003)	-
Sodium, total, mg/L	5.0	8.79 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, total, mg/L	0.05	0.006 A (0.006)	-
Zinc, total, mg/L	0.02	0.0931 J (0.008)	0.027 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-4

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/19/90	08/15/90
Aluminum, total, mg/L	0.2	0.0443 A (0.027)	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, total, mg/L	0.01	< 0.002 U (0.002)	< 0.002 U (0.002)
Barium, total, mg/L	0.2	0.0169 A (0.002)	0.0093 A (0.001)
Beryllium, total, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, total, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, total, mg/L	5.0	38.3 A (0.02)	-
Chromium, total, mg/L	0.01	0.0046 A (0.003)	-
Cobalt, total, mg/L	0.05	< 0.007 U (0.007)	-
Copper, total, mg/L	0.025	< 0.006 U (0.006)	-
Iron, total, mg/L	0.1	30.7 A (0.003)	-
Lead, total, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, total, mg/L	5.0	4.39 A (0.037)	-
Manganese, total, mg/L	0.015	0.0925 A (0.001)	-
Mercury, total, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, total, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, total, mg/L	5.0	2.67 A (0.9)	-
Selenium, total, mg/L	0.005	0.002 A (0.002)	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, total, mg/L	5.0	105.0 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, total, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, total, mg/L	0.02	< 0.02 UJ (0.008)	0.0263 A (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-6

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/16/90	08/14/90
Aluminum, total, mg/L	0.2	3.81 A (0.027)	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, total, mg/L	0.01	0.0043 A (0.002)	< 0.002 U (0.002)
Barium, total, mg/L	0.2	0.0263 A (0.002)	0.0192 A (0.001)
Beryllium, total, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, total, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, total, mg/L	5.0	36.6 A (0.02)	-
Chromium, total, mg/L	0.01	0.0061 A (0.003)	-
Cobalt, total, mg/L	0.05	0.0093 A (0.007)	-
Copper, total, mg/L	0.025	0.0167 A (0.006)	-
Iron, total, mg/L	0.1	5.32 A (0.003)	-
Lead, total, mg/L	0.005	0.0041 A (0.002)	-
Magnesium, total, mg/L	5.0	11.4 A (0.037)	-
Manganese, total, mg/L	0.015	0.273 A (0.001)	-
Mercury, total, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, total, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, total, mg/L	5.0	3.25 A (0.9)	-
Selenium, total, mg/L	0.005	< 0.002 U (0.002)	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, total, mg/L	5.0	34.4 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, total, mg/L	0.05	0.008 A (0.006)	-
Zinc, total, mg/L	0.02	0.044 R (0.008)	0.0205 A (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-7

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	04/25/90	04/25/90 Replicate	08/14/90
Aluminum, total, mg/L	0.2	0.273 A (0.027)	0.117 R (0.027)	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	< 0.037 U (0.037)	-
Arsenic, total, mg/L	0.01	0.0435 J (0.002)	0.0297 J (0.002)	0.0069 A (0.002)
Barium, total, mg/L	0.2	0.024 A (0.002)	0.0221 A (0.002)	0.0177 A (0.001)
Beryllium, total, mg/L	0.005	< 0.001 U (0.001)	< 0.001 U (0.001)	-
Cadmium, total, mg/L	0.005	< 0.005 U (0.005)	< 0.005 U (0.005)	-
Calcium, total, mg/L	5.0	39.9 A (0.02)	40.1 A (0.02)	-
Chromium, total, mg/L	0.01	0.0033 A (0.003)	< 0.003 U (0.003)	-
Cobalt, total, mg/L	0.05	< 0.007 U (0.007)	< 0.007 U (0.007)	-
Copper, total, mg/L	0.025	0.0065 A (0.006)	< 0.006 U (0.006)	-
Iron, total, mg/L	0.1	8.15 J (0.003)	5.54 J (0.003)	-
Lead, total, mg/L	0.005	0.0037 J (0.002)	< 0.002 UJ (0.002)	-
Magnesium, total, mg/L	5.0	9.93 A (0.037)	9.93 A (0.037)	-
Manganese, total, mg/L	0.015	0.322 A (0.001)	0.322 A (0.001)	-
Mercury, total, ug/L	0.2	< 0.2 U (0.2)	< 0.2 U (0.2)	-
Nickel, total, mg/L	0.04	0.0357 R (0.012)	0.012 R (0.012)	-
Potassium, total, mg/L	5.0	2.88 J (0.9)	2.49 J (0.9)	-
Selenium, total, mg/L	0.005	< 0.002 U (0.002)	< 0.002 U (0.002)	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	< 0.003 U (0.003)	-
Sodium, total, mg/L	5.0	26.7 A (0.038)	26.5 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.028 UJ (0.028)	< 0.028 UJ (0.028)	-
Vanadium, total, mg/L	0.05	< 0.006 U (0.006)	< 0.006 U (0.006)	-
Zinc, total, mg/L	0.02	0.0228 R (0.008)	0.0144 R (0.008)	0.0148 A (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-9

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/19/90	08/17/90
Aluminum, total, mg/L	0.2	0.686 A (0.027)	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, total, mg/L	0.01	0.103 A (0.002)	0.022 A (0.002)
Barium, total, mg/L	0.2	0.0132 A (0.002)	0.0087 A (0.001)
Beryllium, total, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, total, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, total, mg/L	5.0	139.0 A (0.02)	-
Chromium, total, mg/L	0.01	0.0034 A (0.003)	-
Cobalt, total, mg/L	0.05	< 0.007 U (0.007)	-
Copper, total, mg/L	0.025	0.0153 A (0.006)	-
Iron, total, mg/L	0.1	66.3 A (0.003)	-
Lead, total, mg/L	0.005	0.0035 A (0.002)	-
Magnesium, total, mg/L	5.0	14.8 A (0.037)	-
Manganese, total, mg/L	0.015	0.389 A (0.001)	-
Mercury, total, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, total, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, total, mg/L	5.0	3.33 A (0.9)	-
Selenium, total, mg/L	0.005	< 0.002 U (0.002)	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, total, mg/L	5.0	17.5 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, total, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, total, mg/L	0.02	0.0331 R (0.008)	0.0185 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-10

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/20/90	08/15/90
Aluminum, total, mg/L	0.2	4.79 A (0.027)	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, total, mg/L	0.01	0.0383 A (0.002)	0.0021 A (0.002)
Barium, total, mg/L	0.2	0.0493 A (0.002)	0.0506 A (0.001)
Beryllium, total, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, total, mg/L	0.005	0.0065 A (0.005)	-
Calcium, total, mg/L	5.0	10.4 A (0.02)	-
Chromium, total, mg/L	0.01	< 0.003 U (0.003)	-
Cobalt, total, mg/L	0.05	< 0.007 U (0.007)	-
Copper, total, mg/L	0.025	0.45 A (0.006)	-
Iron, total, mg/L	0.1	1.08 A (0.003)	-
Lead, total, mg/L	0.005	0.0064 A (0.002)	-
Magnesium, total, mg/L	5.0	1.77 A (0.037)	-
Manganese, total, mg/L	0.015	0.0666 A (0.001)	-
Mercury, total, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, total, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, total, mg/L	5.0	2.37 A (0.9)	-
Selenium, total, mg/L	0.005	< 0.002 U (0.002)	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, total, mg/L	5.0	22.3 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, total, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, total, mg/L	0.02	3.1 J (0.008)	0.264 A (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-11

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/20/90	08/15/90
Aluminum, total, mg/L	0.2	0.704 A (0.027)	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, total, mg/L	0.01	0.19 A (0.002)	0.204 A (0.002)
Barium, total, mg/L	0.2	0.043 A (0.002)	0.0456 A (0.001)
Beryllium, total, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, total, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, total, mg/L	5.0	37.1 A (0.02)	-
Chromium, total, mg/L	0.01	0.0055 A (0.003)	-
Cobalt, total, mg/L	0.05	< 0.007 U (0.007)	-
Copper, total, mg/L	0.025	0.0171 A (0.006)	-
Iron, total, mg/L	0.1	17.6 A (0.003)	-
Lead, total, mg/L	0.005	0.017 A (0.002)	-
Magnesium, total, mg/L	5.0	2.75 A (0.037)	-
Manganese, total, mg/L	0.015	0.367 A (0.001)	-
Mercury, total, ug/L	0.2	0.4 A (0.2)	-
Nickel, total, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, total, mg/L	5.0	3.02 A (0.9)	-
Selenium, total, mg/L	0.005	0.0026 A (0.002)	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, total, mg/L	5.0	9.96 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, total, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, total, mg/L	0.02	1.46 J (0.008)	1.64 A (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-12

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/15/90	08/15/90
Aluminum, total, mg/L	0.2	< 0.027 U (0.027)	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, total, mg/L	0.01	0.344 A (0.002)	0.0605 A (0.002)
Barium, total, mg/L	0.2	0.0676 A (0.002)	0.0415 A (0.001)
Beryllium, total, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, total, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, total, mg/L	5.0	517.0 A (0.02)	-
Chromium, total, mg/L	0.01	0.0389 A (0.003)	-
Cobalt, total, mg/L	0.05	< 0.007 U (0.007)	-
Copper, total, mg/L	0.025	< 0.006 U (0.006)	-
Iron, total, mg/L	0.1	13.9 A (0.003)	-
Lead, total, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, total, mg/L	5.0	107.0 A (0.037)	-
Manganese, total, mg/L	0.015	0.469 A (0.001)	-
Mercury, total, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, total, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, total, mg/L	5.0	8.66 A (0.9)	-
Selenium, total, mg/L	0.005	< 0.002 U (0.002)	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, total, mg/L	5.0	130.0 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, total, mg/L	0.05	0.0168 A (0.006)	-
Zinc, total, mg/L	0.02	0.0317 R (0.008)	0.0204 A (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-13

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/19/90	03/19/90 Replicate	08/15/90
Aluminum, total, mg/L	0.2	0.127 A (0.027)	0.0565 A (0.027)	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	< 0.037 U (0.037)	-
Arsenic, total, mg/L	0.01	0.0301 A (0.002)	0.0254 A (0.002)	0.0534 A (0.002)
Barium, total, mg/L	0.2	0.0327 A (0.002)	0.0286 A (0.002)	0.0276 A (0.001)
Beryllium, total, mg/L	0.005	< 0.001 U (0.001)	< 0.001 U (0.001)	-
Cadmium, total, mg/L	0.005	< 0.005 U (0.005)	< 0.005 U (0.005)	-
Calcium, total, mg/L	5.0	98.1 A (0.02)	88.2 A (0.02)	-
Chromium, total, mg/L	0.01	0.0047 A (0.003)	< 0.003 U (0.003)	-
Cobalt, total, mg/L	0.05	< 0.007 U (0.007)	< 0.007 U (0.007)	-
Copper, total, mg/L	0.025	< 0.006 U (0.006)	< 0.006 U (0.006)	-
Iron, total, mg/L	0.1	16.5 A (0.003)	14.8 A (0.003)	-
Lead, total, mg/L	0.005	< 0.002 U (0.002)	< 0.002 U (0.002)	-
Magnesium, total, mg/L	5.0	11.5 A (0.037)	11.2 A (0.037)	-
Manganese, total, mg/L	0.015	2.02 A (0.001)	1.73 A (0.001)	-
Mercury, total, ug/L	0.2	< 0.2 U (0.2)	< 0.2 U (0.2)	-
Nickel, total, mg/L	0.04	< 0.012 U (0.012)	< 0.012 U (0.012)	-
Potassium, total, mg/L	5.0	7.22 A (0.9)	6.16 A (0.9)	-
Selenium, total, mg/L	0.005	< 0.002 U (0.002)	< 0.002 U (0.002)	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	< 0.003 U (0.003)	-
Sodium, total, mg/L	5.0	18.6 A (0.038)	19.8 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.028 U (0.028)	< 0.028 U (0.028)	-
Vanadium, total, mg/L	0.05	< 0.006 U (0.006)	< 0.006 U (0.006)	-
Zinc, total, mg/L	0.02	0.246 J (0.008)	0.133 A (0.008)	0.0667 A (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-14

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/15/90	08/16/90
Aluminum, total, mg/L	0.2	0.242 A (0.027)	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, total, mg/L	0.01	0.124 A (0.002)	0.0154 A (0.002)
Barium, total, mg/L	0.2	0.0194 A (0.002)	0.0291 A (0.001)
Beryllium, total, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, total, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, total, mg/L	5.0	81.3 A (0.02)	-
Chromium, total, mg/L	0.01	0.0063 A (0.003)	-
Cobalt, total, mg/L	0.05	0.0085 A (0.007)	-
Copper, total, mg/L	0.025	0.0807 A (0.006)	-
Iron, total, mg/L	0.1	21.6 A (0.003)	-
Lead, total, mg/L	0.005	0.299 A (0.002)	-
Magnesium, total, mg/L	5.0	4.75 A (0.037)	-
Manganese, total, mg/L	0.015	0.0437 A (0.001)	-
Mercury, total, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, total, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, total, mg/L	5.0	3.47 A (0.9)	-
Selenium, total, mg/L	0.005	0.0505 A (0.002)	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, total, mg/L	5.0	11.8 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, total, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, total, mg/L	0.02	1.91 J (0.008)	1.51 A (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-15

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/19/90	08/16/90
Aluminum, total, mg/L	0.2	0.432 A (0.027)	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, total, mg/L	0.01	< 0.002 U (0.002)	< 0.002 U (0.002)
Barium, total, mg/L	0.2	0.0315 A (0.002)	0.0361 A (0.001)
Beryllium, total, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, total, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, total, mg/L	5.0	13.3 A (0.02)	-
Chromium, total, mg/L	0.01	< 0.003 U (0.003)	-
Cobalt, total, mg/L	0.05	< 0.007 U (0.007)	-
Copper, total, mg/L	0.025	0.0088 A (0.006)	-
Iron, total, mg/L	0.1	2.14 A (0.003)	-
Lead, total, mg/L	0.005	0.0106 A (0.002)	-
Magnesium, total, mg/L	5.0	3.04 A (0.037)	-
Manganese, total, mg/L	0.015	0.124 A (0.001)	-
Mercury, total, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, total, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, total, mg/L	5.0	2.46 A (0.9)	-
Selenium, total, mg/L	0.005	< 0.002 U (0.002)	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, total, mg/L	5.0	73.9 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, total, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, total, mg/L	0.02	0.0203 A (0.008)	0.0131 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-16

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/20/90	08/17/90
Aluminum, total, mg/L	0.2	0.871 A (0.027)	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, total, mg/L	0.01	2.25 A (0.002)	2.35 A (0.002)
Barium, total, mg/L	0.2	0.38 A (0.002)	0.319 A (0.001)
Beryllium, total, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, total, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, total, mg/L	5.0	14.5 A (0.02)	-
Chromium, total, mg/L	0.01	0.16 A (0.003)	-
Cobalt, total, mg/L	0.05	0.0081 A (0.007)	-
Copper, total, mg/L	0.025	0.0128 A (0.006)	-
Iron, total, mg/L	0.1	6.71 A (0.003)	-
Lead, total, mg/L	0.005	0.0058 A (0.002)	-
Magnesium, total, mg/L	5.0	206.0 A (0.037)	-
Manganese, total, mg/L	0.015	0.0271 A (0.001)	-
Mercury, total, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, total, mg/L	0.04	0.0454 A (0.012)	-
Potassium, total, mg/L	5.0	72.6 A (0.9)	-
Selenium, total, mg/L	0.005	< 0.002 U (0.002)	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, total, mg/L	5.0	131.0 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, total, mg/L	0.05	0.192 A (0.006)	-
Zinc, total, mg/L	0.02	0.021 R (0.008)	0.0319 A (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-17

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/15/90	08/14/90
Aluminum, total, mg/L	0.2	0.122 A (0.027)	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, total, mg/L	0.01	0.146 A (0.002)	0.184 A (0.002)
Barium, total, mg/L	0.2	0.0513 A (0.002)	0.0505 A (0.001)
Beryllium, total, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, total, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, total, mg/L	5.0	251.0 A (0.02)	-
Chromium, total, mg/L	0.01	0.0381 A (0.003)	-
Cobalt, total, mg/L	0.05	0.0109 A (0.007)	-
Copper, total, mg/L	0.025	0.0071 A (0.006)	-
Iron, total, mg/L	0.1	16.0 A (0.003)	-
Lead, total, mg/L	0.005	< 0.002 U (0.002)	-
Magnesium, total, mg/L	5.0	75.9 A (0.037)	-
Manganese, total, mg/L	0.015	0.485 A (0.001)	-
Mercury, total, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, total, mg/L	0.04	0.0247 A (0.012)	-
Potassium, total, mg/L	5.0	31.3 A (0.9)	-
Selenium, total, mg/L	0.005	< 0.002 U (0.002)	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, total, mg/L	5.0	757.0 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, total, mg/L	0.05	0.0259 A (0.006)	-
Zinc, total, mg/L	0.02	0.0545 R (0.008)	0.221 A (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-18

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/15/90	08/15/90
Aluminum, total, mg/L	0.2	0.092 A (0.027)	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, total, mg/L	0.01	0.0033 A (0.002)	0.0049 A (0.002)
Barium, total, mg/L	0.2	0.0189 A (0.002)	0.0151 A (0.001)
Beryllium, total, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, total, mg/L	0.005	0.0274 A (0.005)	-
Calcium, total, mg/L	5.0	84.3 A (0.02)	-
Chromium, total, mg/L	0.01	< 0.003 U (0.003)	-
Cobalt, total, mg/L	0.05	0.0183 A (0.007)	-
Copper, total, mg/L	0.025	0.158 A (0.006)	-
Iron, total, mg/L	0.1	0.836 A (0.003)	-
Lead, total, mg/L	0.005	0.002 A (0.002)	-
Magnesium, total, mg/L	5.0	8.66 A (0.037)	-
Manganese, total, mg/L	0.015	0.767 A (0.001)	-
Mercury, total, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, total, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, total, mg/L	5.0	6.67 A (0.9)	-
Selenium, total, mg/L	0.005	< 0.002 U (0.002)	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, total, mg/L	5.0	66.1 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, total, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, total, mg/L	0.02	8.04 J (0.008)	8.43 A (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-18A

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/15/90	08/14/90
Aluminum, total, mg/L	0.2	0.749 A (0.027)	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, total, mg/L	0.01	0.0097 A (0.002)	< 0.002 U (0.002)
Barium, total, mg/L	0.2	0.0205 A (0.002)	0.0452 A (0.001)
Beryllium, total, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, total, mg/L	0.005	0.0203 A (0.005)	-
Calcium, total, mg/L	5.0	116.0 A (0.02)	-
Chromium, total, mg/L	0.01	0.0047 A (0.003)	-
Cobalt, total, mg/L	0.05	0.0195 A (0.007)	-
Copper, total, mg/L	0.025	0.145 A (0.006)	-
Iron, total, mg/L	0.1	11.6 A (0.003)	-
Lead, total, mg/L	0.005	0.0135 A (0.002)	-
Magnesium, total, mg/L	5.0	9.48 A (0.037)	-
Manganese, total, mg/L	0.015	0.665 A (0.001)	-
Mercury, total, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, total, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, total, mg/L	5.0	5.39 A (0.9)	-
Selenium, total, mg/L	0.005	0.0056 A (0.002)	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, total, mg/L	5.0	33.3 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, total, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, total, mg/L	0.02	7.87 J (0.008)	0.239 A (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-19

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/16/90	08/14/90
Aluminum, total, mg/L	0.2	0.124 A (0.027)	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, total, mg/L	0.01	0.0039 A (0.002)	< 0.002 U (0.002)
Barium, total, mg/L	0.2	0.0287 A (0.002)	0.0215 A (0.001)
Beryllium, total, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, total, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, total, mg/L	5.0	20.9 A (0.02)	-
Chromium, total, mg/L	0.01	< 0.003 U (0.003)	-
Cobalt, total, mg/L	0.05	0.0487 A (0.007)	-
Copper, total, mg/L	0.025	0.0094 A (0.006)	-
Iron, total, mg/L	0.1	1.41 A (0.003)	-
Lead, total, mg/L	0.005	0.0197 A (0.002)	-
Magnesium, total, mg/L	5.0	4.68 A (0.037)	-
Manganese, total, mg/L	0.015	1.74 A (0.001)	-
Mercury, total, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, total, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, total, mg/L	5.0	4.81 A (0.9)	-
Selenium, total, mg/L	0.005	< 0.002 U (0.002)	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, total, mg/L	5.0	46.6 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, total, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, total, mg/L	0.02	0.381 J (0.008)	0.26 A (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-19A

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/16/90	08/14/90
Aluminum, total, mg/L	0.2	0.53 A (0.027)	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, total, mg/L	0.01	0.115 A (0.002)	0.0348 A (0.002)
Barium, total, mg/L	0.2	0.0321 A (0.002)	0.0209 A (0.001)
Beryllium, total, mg/L	0.005	< 0.001 U (0.001)	-
Cadmium, total, mg/L	0.005	0.0128 A (0.005)	-
Calcium, total, mg/L	5.0	26.4 A (0.02)	-
Chromium, total, mg/L	0.01	0.0064 A (0.003)	-
Cobalt, total, mg/L	0.05	0.0324 A (0.007)	-
Copper, total, mg/L	0.025	0.0133 A (0.006)	-
Iron, total, mg/L	0.1	9.58 A (0.003)	-
Lead, total, mg/L	0.005	0.0046 A (0.002)	-
Magnesium, total, mg/L	5.0	4.98 A (0.037)	-
Manganese, total, mg/L	0.015	1.29 A (0.001)	-
Mercury, total, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, total, mg/L	0.04	< 0.012 U (0.012)	-
Potassium, total, mg/L	5.0	4.71 A (0.9)	-
Selenium, total, mg/L	0.005	< 0.002 U (0.002)	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, total, mg/L	5.0	23.5 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, total, mg/L	0.05	< 0.006 U (0.006)	-
Zinc, total, mg/L	0.02	0.421 J (0.008)	0.199 A (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-20

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/16/90	08/14/90	08/14/90 Replicate
Aluminum, total, mg/L	0.2	0.609 A (0.027)	-	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	-	-
Arsenic, total, mg/L	0.01	0.0044 A (0.002)	0.0064 A (0.002)	0.0058 A (0.002)
Barium, total, mg/L	0.2	0.0184 A (0.002)	0.0145 A (0.001)	0.0148 A (0.001)
Beryllium, total, mg/L	0.005	< 0.001 U (0.001)	-	-
Cadmium, total, mg/L	0.005	< 0.005 U (0.005)	-	-
Calcium, total, mg/L	5.0	49.7 A (0.02)	-	-
Chromium, total, mg/L	0.01	0.0031 A (0.003)	-	-
Cobalt, total, mg/L	0.05	< 0.007 U (0.007)	-	-
Copper, total, mg/L	0.025	0.0081 A (0.006)	-	-
Iron, total, mg/L	0.1	2.1 A (0.003)	-	-
Lead, total, mg/L	0.005	0.0085 A (0.002)	-	-
Magnesium, total, mg/L	5.0	11.7 A (0.037)	-	-
Manganese, total, mg/L	0.015	0.128 A (0.001)	-	-
Mercury, total, ug/L	0.2	< 0.2 U (0.2)	-	-
Nickel, total, mg/L	0.04	< 0.012 U (0.012)	-	-
Potassium, total, mg/L	5.0	3.87 A (0.9)	-	-
Selenium, total, mg/L	0.005	< 0.002 U (0.002)	-	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	-	-
Sodium, total, mg/L	5.0	17.9 A (0.038)	-	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	-	-
Tin, total, mg/L	N/R	< 0.028 U (0.028)	-	-
Vanadium, total, mg/L	0.05	< 0.006 U (0.006)	-	-
Zinc, total, mg/L	0.02	0.187 J (0.008)	0.015 A (0.006)	0.0138 A (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-21

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/21/90	03/21/90 Replicate	08/15/90
Aluminum, total, mg/L	0.2	3.05 A (0.027)	2.68 A (0.027)	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	< 0.037 U (0.037)	-
Arsenic, total, mg/L	0.01	0.0033 A (0.002)	0.0027 A (0.002)	0.0053 A (0.002)
Barium, total, mg/L	0.2	0.0338 A (0.002)	0.0325 A (0.002)	0.0229 A (0.001)
Beryllium, total, mg/L	0.005	< 0.001 U (0.001)	< 0.001 U (0.001)	-
Cadmium, total, mg/L	0.005	< 0.005 U (0.005)	< 0.005 U (0.005)	-
Calcium, total, mg/L	5.0	45.3 A (0.02)	46.5 A (0.02)	-
Chromium, total, mg/L	0.01	0.0067 A (0.003)	0.0046 A (0.003)	-
Cobalt, total, mg/L	0.05	< 0.007 U (0.007)	< 0.007 U (0.007)	-
Copper, total, mg/L	0.025	0.0121 A (0.006)	0.0089 A (0.006)	-
Iron, total, mg/L	0.1	3.01 A (0.003)	2.54 A (0.003)	-
Lead, total, mg/L	0.005	0.0032 A (0.002)	0.0028 A (0.002)	-
Magnesium, total, mg/L	5.0	6.83 A (0.037)	6.85 A (0.037)	-
Manganese, total, mg/L	0.015	1.44 A (0.001)	1.46 A (0.001)	-
Mercury, total, ug/L	0.2	< 0.2 U (0.2)	< 0.2 U (0.2)	-
Nickel, total, mg/L	0.04	< 0.012 U (0.012)	< 0.012 U (0.012)	-
Potassium, total, mg/L	5.0	2.84 A (0.9)	2.75 A (0.9)	-
Selenium, total, mg/L	0.005	< 0.002 U (0.002)	< 0.002 U (0.002)	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	< 0.003 U (0.003)	-
Sodium, total, mg/L	5.0	9.51 A (0.038)	9.67 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.028 U (0.028)	< 0.028 U (0.028)	-
Vanadium, total, mg/L	0.05	< 0.006 U (0.006)	< 0.006 U (0.006)	-
Zinc, total, mg/L	0.02	0.0217 R (0.008)	0.0166 R (0.008)	0.0268 A (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-21

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	08/15/90 Replicate
Aluminum, total, mg/L	0.2	-
Antimony, total, mg/L	0.06	-
Arsenic, total, mg/L	0.01	0.0048 A (0.002)
Barium, total, mg/L	0.2	0.0249 A (0.001)
Beryllium, total, mg/L	0.005	-
Cadmium, total, mg/L	0.005	-
Calcium, total, mg/L	5.0	-
Chromium, total, mg/L	0.01	-
Cobalt, total, mg/L	0.05	-
Copper, total, mg/L	0.025	-
Iron, total, mg/L	0.1	-
Lead, total, mg/L	0.005	-
Magnesium, total, mg/L	5.0	-
Manganese, total, mg/L	0.015	-
Mercury, total, ug/L	0.2	-
Nickel, total, mg/L	0.04	-
Potassium, total, mg/L	5.0	-
Selenium, total, mg/L	0.005	-
Silver, total, mg/L	0.01	-
Sodium, total, mg/L	5.0	-
Thallium, total, mg/L	0.01	-
Tin, total, mg/L	N/R	-
Vanadium, total, mg/L	0.05	-
Zinc, total, mg/L	0.02	0.0257 A (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-22

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/21/90	08/17/90
Aluminum, total, mg/L	0.2	40.8 A (0.027)	-
Antimony, total, mg/L	0.06	< 0.037 U (0.037)	-
Arsenic, total, mg/L	0.01	0.0227 A (0.002)	< 0.002 U (0.002)
Barium, total, mg/L	0.2	0.276 A (0.002)	0.0769 A (0.001)
Beryllium, total, mg/L	0.005	0.0011 A (0.001)	-
Cadmium, total, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, total, mg/L	5.0	197.0 A (0.02)	-
Chromium, total, mg/L	0.01	0.153 A (0.003)	-
Cobalt, total, mg/L	0.05	0.0404 A (0.007)	-
Copper, total, mg/L	0.025	0.191 A (0.006)	-
Iron, total, mg/L	0.1	50.2 A (0.003)	-
Lead, total, mg/L	0.005	0.0445 A (0.002)	-
Magnesium, total, mg/L	5.0	63.5 A (0.037)	-
Manganese, total, mg/L	0.015	3.48 A (0.001)	-
Mercury, total, ug/L	0.2	< 0.2 U (0.2)	-
Nickel, total, mg/L	0.04	0.0666 A (0.012)	-
Potassium, total, mg/L	5.0	18.3 A (0.9)	-
Selenium, total, mg/L	0.005	< 0.002 U (0.002)	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, total, mg/L	5.0	27.5 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.028 U (0.028)	-
Vanadium, total, mg/L	0.05	0.0709 A (0.006)	-
Zinc, total, mg/L	0.02	0.135 J (0.008)	0.0501 J (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-28

Chemical Compound Class: Total Metals

Chemical Parameter	CRDL	03/21/90	08/15/90
Aluminum, total, mg/L	0.2	224.0 A (0.027)	-
Antimony, total, mg/L	0.06	< 0.074 U (0.037)	-
Arsenic, total, mg/L	0.01	0.067 A (0.002)	< 0.002 U (0.002)
Barium, total, mg/L	0.2	0.729 A (0.002)	0.018 A (0.001)
Beryllium, total, mg/L	0.005	0.0088 A (0.001)	-
Cadmium, total, mg/L	0.005	< 0.005 U (0.005)	-
Calcium, total, mg/L	5.0	60.7 A (0.02)	-
Chromium, total, mg/L	0.01	0.326 A (0.003)	-
Cobalt, total, mg/L	0.05	0.157 A (0.007)	-
Copper, total, mg/L	0.025	0.447 A (0.006)	-
Iron, total, mg/L	0.1	226.0 A (0.003)	-
Lead, total, mg/L	0.005	0.162 A (0.002)	-
Magnesium, total, mg/L	5.0	75.9 A (0.037)	-
Manganese, total, mg/L	0.015	3.92 A (0.001)	-
Mercury, total, ug/L	0.2	0.3 A (0.2)	-
Nickel, total, mg/L	0.04	0.261 A (0.012)	-
Potassium, total, mg/L	5.0	38.4 A (0.9)	-
Selenium, total, mg/L	0.005	< 0.002 U (0.002)	-
Silver, total, mg/L	0.01	< 0.003 U (0.003)	-
Sodium, total, mg/L	5.0	26.9 A (0.038)	-
Thallium, total, mg/L	0.01	< 0.004 U (0.004)	-
Tin, total, mg/L	N/R	< 0.056 U (0.028)	-
Vanadium, total, mg/L	0.05	0.37 A (0.006)	-
Zinc, total, mg/L	0.02	0.821 J (0.008)	0.0325 A (0.006)

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

APPENDIX I

Ground-Water/Surface Water
Investigation Plan
Ground-Water Quality Data

Total Speciated Metals
and
Total Organometallic Compounds

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-1

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/20/90	08/17/90
Arsenic (III), total, mg/L	< 0.005 U (0.005)	-
Arsenic (V), total, mg/L	< 0.005 U (0.005)	-
Chromium, hexavalent, total, mg/L	< 0.01 U (0.1)	< 0.01 U (0.01)
Iron (II), total, mg/L	2.6 J (0.05)	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	-
Mercury (II), total, ug/L	< 0.2 U (0.2)	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/20/90	08/17/90
Di-methyl mercury, total, ug/L	50.0 R (N/R)	-
Ethyl mercury, total, ug/L	< 900.0 U (N/R)	-
Di-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-
Mono-methyl tin, total, mg/L	< 0.025 U (N/R)	-
Tri-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-1A

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/19/90	08/16/90
Arsenic (III), total, mg/L	< 0.005 U (0.005)	-
Arsenic (V), total, mg/L	< 0.005 U (0.005)	-
Chromium, hexavalent, total, mg/L	< 0.01 U (0.1)	< 0.01 U (0.01)
Iron (II), total, mg/L	< 0.05 UJ (0.05)	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	-
Mercury (II), total, ug/L	< 0.2 U (0.2)	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/19/90	08/16/90
Di-methyl mercury, total, ug/L	< 5.0 R (N/R)	-
Ethyl mercury, total, ug/L	< 700.0 U (N/R)	-
Di-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-
Mono-methyl tin, total, mg/L	< 0.025 U (N/R)	-
Tri-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-4

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/19/90	08/15/90
Arsenic (III), total, mg/L	< 0.005 U (0.005)	-
Arsenic (V), total, mg/L	< 0.005 U (0.005)	-
Chromium, hexavalent, total, mg/L	< 0.01 U (0.1)	< 0.01 U (0.01)
Iron (II), total, mg/L	3.5 J (0.05)	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	-
Mercury (II), total, ug/L	< 0.2 U (0.2)	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/19/90	08/15/90
Di-methyl mercury, total, ug/L	88.0 R (N/R)	-
Ethyl mercury, total, ug/L	< 700.0 U (N/R)	-
Di-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-
Mono-methyl tin, total, mg/L	< 0.025 U (N/R)	-
Tri-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-6

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/16/90	08/14/90
Arsenic (III), total, mg/L	< 0.005 U (0.005)	-
Arsenic (V), total, mg/L	< 0.005 U (0.005)	-
Chromium, hexavalent, total, mg/L	< 0.01 R (0.1)	< 0.01 U (0.01)
Iron (II), total, mg/L	0.088 J (0.05)	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	-
Mercury (II), total, ug/L	< 0.2 U (0.2)	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/16/90	08/14/90
Di-methyl mercury, total, ug/L	67.0 R (N/R)	-
Ethyl mercury, total, ug/L	< 900.0 U (N/R)	-
Di-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-
Mono-methyl tin, total, mg/L	< 0.025 U (N/R)	-
Tri-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-7

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	04/25/90	04/25/90 Replicate	08/14/90
Arsenic (III), total, mg/L	< 0.005 U (0.005)	< 0.005 U (0.005)	-
Arsenic (V), total, mg/L	< 0.005 U (0.005)	< 0.005 U (0.005)	-
Chromium, hexavalent, total, mg/L	< 0.01 U (0.01)	< 0.01 U (0.01)	< 0.01 U (0.01)
Iron (II), total, mg/L	0.3 A (0.05)	0.33 A (0.05)	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	< 0.6 UJ (0.6)	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	< 0.2 U (0.2)	-
Mercury (II), total, ug/L	< 0.2 U (0.2)	< 0.2 U (0.2)	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	04/25/90	04/25/90 Replicate	08/14/90
Di-methyl mercury, total, ug/L	90.0 R (N/R)	68.0 R (N/R)	-
Ethyl mercury, total, ug/L	< 70.0 U (N/R)	< 100.0 U (N/R)	-
Di-methyl tin, total, mg/L	< 0.05 UJ (N/R)	< 0.05 UJ (N/R)	-
Mono-methyl tin, total, mg/L	< 0.025 U (N/R)	< 0.025 U (N/R)	-
Tri-methyl tin, total, mg/L	< 0.05 UJ (N/R)	< 0.05 UJ (N/R)	-

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-9

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/19/90	08/17/90
Arsenic (III), total, mg/L	< 0.005 U (0.005)	-
Arsenic (V), total, mg/L	< 0.005 U (0.005)	-
Chromium, hexavalent, total, mg/L	< 0.01 U (0.1)	< 0.01 U (0.01)
Iron (II), total, mg/L	18.0 J (0.05)	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	-
Mercury (II), total, ug/L	< 0.2 U (0.2)	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/19/90	08/17/90
Di-methyl mercury, total, ug/L	37.0 R (N/R)	-
Ethyl mercury, total, ug/L	< 400.0 U (N/R)	-
Di-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-
Mono-methyl tin, total, mg/L	< 0.025 U (N/R)	-
Tri-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-10

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/20/90	08/15/90
Arsenic (III), total, mg/L	< 0.005 U (0.005)	-
Arsenic (V), total, mg/L	< 0.005 U (0.005)	-
Chromium, hexavalent, total, mg/L	< 0.01 U (0.1)	< 0.01 U (0.01)
Iron (II), total, mg/L	0.34 J (0.05)	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	-
Mercury (II), total, ug/L	< 0.2 U (0.2)	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/20/90	08/15/90
Ethyl mercury, total, ug/L	< 500.0 U (N/R)	-
Di-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-
Mono-methyl tin, total, mg/L	< 0.025 U (N/R)	-
Tri-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-11

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/20/90	04/25/90	08/15/90
Arsenic (III), total, mg/L	< 0.005 U (0.005)	-	-
Arsenic (V), total, mg/L	0.046 A (0.005)	-	-
Chromium, hexavalent, total, mg/L	< 0.01 U (0.1)	-	< 0.01 U (0.01)
Iron (II), total, mg/L	8.4 J (0.05)	-	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	-	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	-	-
Mercury (II), total, ug/L	< 0.2 U (0.2)	-	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/20/90	04/25/90	08/15/90
Di-methyl mercury, total, ug/L	43.0 R (N/R)	-	-
Ethyl mercury, total, ug/L	< 800.0 U (N/R)	-	-
Di-methyl tin, total, mg/L	-	< 0.05 UJ (N/R)	-
Mono-methyl tin, total, mg/L	-	< 0.025 UJ (N/R)	-
Tri-methyl tin, total, mg/L	-	< 0.05 UJ (N/R)	-

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-12

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/15/90	04/25/90	08/15/90
Arsenic (III), total, mg/L	< 0.005 U (0.005)	-	-
Arsenic (V), total, mg/L	0.45 A (0.005)	-	-
Chromium, hexavalent, total, mg/L	< 0.01 U (0.1)	-	< 0.01 U (0.01)
Iron (II), total, mg/L	18.0 J (0.05)	-	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	-	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	-	-
Mercury (II), total, ug/L	< 1.0 U (0.2)	-	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/15/90	04/25/90	08/15/90
Di-methyl mercury, total, ug/L	27.0 R (N/R)	29.0 R (N/R)	-
Ethyl mercury, total, ug/L	-	< 90.0 U (N/R)	-
Di-methyl tin, total, mg/L	-	< 0.05 UJ (N/R)	-
Mono-methyl tin, total, mg/L	-	< 0.025 U (N/R)	-
Tri-methyl tin, total, mg/L	-	< 0.05 UJ (N/R)	-

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-13

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/19/90	03/19/90 Replicate	08/15/90
Arsenic (III), total, mg/L	< 0.005 U (0.005)	< 0.005 U (0.005)	-
Arsenic (V), total, mg/L	< 0.005 U (0.005)	< 0.005 U (0.005)	-
Chromium, hexavalent, total, mg/L	< 0.01 R (0.1)	< 0.01 U (0.1)	< 0.01 U (0.01)
Iron (II), total, mg/L	19.0 J (0.05)	11.0 J (0.05)	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	< 0.6 UJ (0.6)	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	< 0.2 U (0.2)	-
Mercury (II), total, ug/L	< 0.2 U (0.2)	< 0.2 U (0.2)	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/19/90	03/19/90 Replicate	08/15/90
Di-methyl mercury, total, ug/L	7.4 R (N/R)	620.0 R (N/R)	-
Ethyl mercury, total, ug/L	< 800.0 U (N/R)	< 400.0 U (N/R)	-
Di-methyl tin, total, mg/L	< 0.05 UJ (N/R)	< 0.05 UJ (N/R)	-
Mono-methyl tin, total, mg/L	< 0.025 U (N/R)	< 0.025 U (N/R)	-
Tri-methyl tin, total, mg/L	< 0.05 UJ (N/R)	< 0.05 UJ (N/R)	-

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-14

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/15/90	08/16/90
Arsenic (III), total, mg/L	< 0.005 U (0.005)	-
Arsenic (V), total, mg/L	< 0.005 U (0.005)	-
Chromium, hexavalent, total, mg/L	< 0.01 R (0.1)	< 0.01 U (0.01)
Iron (II), total, mg/L	1.4 J (0.05)	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	-
Mercury (II), total, ug/L	< 1.0 U (0.2)	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/15/90	08/16/90
Di-methyl mercury, total, ug/L	8.8 R (N/R)	-
Ethyl mercury, total, ug/L	< 600.0 U (N/R)	-
Di-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-
Mono-methyl tin, total, mg/L	< 0.025 U (N/R)	-
Tri-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-15

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/19/90	08/16/90
Arsenic (III), total, mg/L	< 0.005 U (0.005)	-
Arsenic (V), total, mg/L	< 0.005 U (0.005)	-
Chromium, hexavalent, total, mg/L	< 0.01 R (0.1)	< 0.01 U (0.01)
Iron (II), total, mg/L	0.27 J (0.05)	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	-
Mercury (II), total, ug/L	< 0.2 U (0.2)	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/19/90	08/16/90
Di-methyl mercury, total, ug/L	7.0 R (N/R)	-
Ethyl mercury, total, ug/L	< 900.0 U (N/R)	-
Di-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-
Mono-methyl tin, total, mg/L	< 0.025 U (N/R)	-
Tri-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-16

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/20/90	08/17/90
Arsenic (III), total, mg/L	0.53 A (0.005)	-
Arsenic (V), total, mg/L	0.62 A (0.005)	-
Chromium, hexavalent, total, mg/L	< 0.01 U (0.1)	< 0.01 U (0.01)
Iron (II), total, mg/L	5.3 J (0.05)	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	-
Mercury (II), total, ug/L	5.7 A (0.2)	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/20/90	08/17/90
Di-methyl mercury, total, ug/L	8.5 R (N/R)	-
Ethyl mercury, total, ug/L	< 500.0 U (N/R)	-
Di-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-
Mono-methyl tin, total, mg/L	< 0.025 U (N/R)	-
Tri-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-17

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/15/90	08/14/90
Arsenic (III), total, mg/L	< 0.005 U (0.005)	-
Arsenic (V), total, mg/L	0.048 A (0.005)	-
Chromium, hexavalent, total, mg/L	< 0.01 U (0.1)	< 0.01 U (0.01)
Iron (II), total, mg/L	1.8 J (0.05)	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	-
Mercury (II), total, ug/L	< 1.0 U (0.2)	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/15/90	08/14/90
Di-methyl mercury, total, ug/L	43.0 R (N/R)	-
Ethyl mercury, total, ug/L	< 600.0 U (N/R)	-
Di-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-
Mono-methyl tin, total, mg/L	< 0.025 U (N/R)	-
Tri-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-18

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/15/90	04/25/90	08/15/90
Arsenic (III), total, mg/L	< 0.005 U (0.005)	-	-
Arsenic (V), total, mg/L	< 0.005 U (0.005)	-	-
Chromium, hexavalent, total, mg/L	< 0.01 R (0.1)	-	< 0.01 U (0.01)
Iron (II), total, mg/L	0.83 J (0.05)	-	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	-	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	-	-
Mercury (II), total, ug/L	< 0.2 U (0.2)	-	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/15/90	04/25/90	08/15/90
Di-methyl mercury, total, ug/L	68.0 R (N/R)	21.0 R (N/R)	-
Ethyl mercury, total, ug/L	< 500.0 U (N/R)	< 50.0 U (N/R)	-
Di-methyl tin, total, mg/L	-	< 0.05 UJ (N/R)	-
Mono-methyl tin, total, mg/L	-	< 0.025 U (N/R)	-
Tri-methyl tin, total, mg/L	-	< 0.05 UJ (N/R)	-

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-18A

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/15/90	08/14/90
Arsenic (III), total, mg/L	< 0.005 U (0.005)	-
Arsenic (V), total, mg/L	< 0.005 U (0.005)	-
Chromium, hexavalent, total, mg/L	< 0.01 R (0.1)	< 0.01 U (0.01)
Iron (II), total, mg/L	0.8 J (0.05)	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	-
Mercury (II), total, ug/L	< 1.0 U (0.2)	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/15/90	08/14/90
Di-methyl mercury, total, ug/L	7.5 R (N/R)	-
Ethyl mercury, total, ug/L	< 400.0 U (N/R)	-
Di-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-
Mono-methyl tin, total, mg/L	< 0.025 U (N/R)	-
Tri-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-19

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/16/90	04/25/90	08/14/90
Arsenic (III), total, mg/L	< 0.005 U (0.005)	-	-
Arsenic (V), total, mg/L	< 0.005 U (0.005)	-	-
Chromium, hexavalent, total, mg/L	< 0.01 R (0.1)	-	< 0.01 U (0.01)
Iron (II), total, mg/L	< 0.05 UJ (0.05)	-	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	-	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	-	-
Mercury (II), total, ug/L	< 0.2 U (0.2)	-	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/16/90	04/25/90	08/14/90
Di-methyl mercury, total, ug/L	350.0 R (N/R)	< 5.0 R (N/R)	-
Ethyl mercury, total, ug/L	< 400.0 U (N/R)	< 100.0 U (N/R)	-
Di-methyl tin, total, mg/L	< 0.05 UJ (N/R)	< 0.05 UJ (N/R)	-
Mono-methyl tin, total, mg/L	< 0.025 U (N/R)	< 0.025 U (N/R)	-
Tri-methyl tin, total, mg/L	< 0.05 UJ (N/R)	< 0.05 UJ (N/R)	-

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-19A

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/16/90	08/14/90
Arsenic (III), total, mg/L	< 0.005 U (0.005)	-
Arsenic (V), total, mg/L	< 0.005 U (0.005)	-
Chromium, hexavalent, total, mg/L	< 0.01 R (0.1)	< 0.01 U (0.01)
Iron (II), total, mg/L	2.3 J (0.05)	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	-
Mercury (II), total, ug/L	< 0.2 U (0.2)	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/16/90	08/14/90
Di-methyl mercury, total, ug/L	6.9 R (N/R)	-
Ethyl mercury, total, ug/L	< 900.0 U (N/R)	-
Di-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-
Mono-methyl tin, total, mg/L	< 0.025 UJ (N/R)	-
Tri-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-20

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/16/90	04/25/90	08/14/90	08/14/90 Replicate
Arsenic (III), total, mg/L	< 0.005 U (0.005)	-	-	-
Arsenic (V), total, mg/L	< 0.005 U (0.005)	-	-	-
Chromium, hexavalent, total, mg/L	< 0.01 R (0.1)	-	< 0.01 U (0.01)	< 0.01 U (0.01)
Iron (II), total, mg/L	2.2 J (0.05)	-	-	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	-	-	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	-	-	-
Mercury (II), total, ug/L	< 0.2 U (0.2)	-	-	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/16/90	04/25/90	08/14/90	08/14/90 Replicate
Di-methyl mercury, total, ug/L	100.0 R (N/R)	53.0 R (N/R)	-	-
Ethyl mercury, total, ug/L	< 600.0 U (N/R)	< 100.0 U (N/R)	-	-
Di-methyl tin, total, mg/L	-	< 0.05 UJ (N/R)	-	-
Mono-methyl tin, total, mg/L	-	< 0.025 U (N/R)	-	-
Tri-methyl tin, total, mg/L	-	< 0.05 UJ (N/R)	-	-

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-21

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/21/90	03/21/90 Replicate	08/15/90	08/15/90 Replicate
Arsenic (III), total, mg/L	< 0.005 U (0.005)	< 0.005 U (0.005)	-	-
Arsenic (V), total, mg/L	< 0.005 U (0.005)	< 0.005 U (0.005)	-	-
Chromium, hexavalent, total, mg/L	< 0.01 U (0.1)	< 0.01 U (0.1)	< 0.01 U (0.01)	< 0.01 U (0.01)
Iron (II), total, mg/L	0.56 J (0.05)	< 0.05 UJ (0.05)	-	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	< 0.6 UJ (0.6)	-	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	< 0.2 U (0.2)	-	-
Mercury (II), total, ug/L	0.3 R (0.2)	< 0.2 U (0.2)	-	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/21/90	03/21/90 Replicate	08/15/90	08/15/90 Replicate
Di-methyl mercury, total, ug/L	96.0 R (N/R)	< 5.0 R (N/R)	-	-
Ethyl mercury, total, ug/L	< 600.0 U (N/R)	< 800.0 U (N/R)	-	-
Di-methyl tin, total, mg/L	< 0.05 UJ (N/R)	< 0.63 UJ (N/R)	-	-
Mono-methyl tin, total, mg/L	< 0.025 U (N/R)	< 0.31 U (N/R)	-	-
Tri-methyl tin, total, mg/L	< 0.05 UJ (N/R)	< 0.63 UJ (N/R)	-	-

Explanation

CRDL Contract Required Detection Limit

N/R Not Reported

\- Not Analyzed

Validation Codes

A Quantitative Data

J Qualitative Data

R Unusable Data

U Chemical Parameter Not Detected

UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-22

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/21/90	08/17/90
Arsenic (III), total, mg/L	< 0.005 U (0.005)	-
Arsenic (V), total, mg/L	< 0.005 U (0.005)	-
Chromium, hexavalent, total, mg/L	< 0.01 U (0.1)	< 0.01 U (0.01)
Iron (II), total, mg/L	12.0 J (0.05)	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	-
Mercury (II), total, ug/L	< 0.2 U (0.2)	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/21/90	08/17/90
Di-methyl mercury, total, ug/L	42.0 R (N/R)	-
Ethyl mercury, total, ug/L	< 700.0 U (N/R)	-
Di-methyl tin, total, mg/L	< 0.25 UJ (N/R)	-
Mono-methyl tin, total, mg/L	< 0.13 U (N/R)	-
Tri-methyl tin, total, mg/L	< 0.25 UJ (N/R)	-

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-28

Chemical Compound Class: Total Speciated Metals

Chemical Parameter	03/21/90	08/15/90
Arsenic (III), total, mg/L	< 0.005 U (0.005)	-
Arsenic (V), total, mg/L	< 0.005 U (0.005)	-
Chromium, hexavalent, total, mg/L	-	< 0.01 U (0.01)
Iron (II), total, mg/L	4.2 J (0.05)	-
Lead (II), total, mg/L	< 0.6 UJ (0.6)	-
Mercury (o), total, ug/L	< 0.2 U (0.2)	-
Mercury (II), total, ug/L	0.2 A (0.2)	-

Chemical Compound Class: Total Organometallic Compounds

Chemical Parameter	03/21/90	08/15/90
Di-methyl mercury, total, ug/L	1100.0 R (N/R)	-
Ethyl mercury, total, ug/L	< 700.0 U (N/R)	-
Di-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-
Mono-methyl tin, total, mg/L	< 0.025 U (N/R)	-
Tri-methyl tin, total, mg/L	< 0.05 UJ (N/R)	-

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

APPENDIX I

Ground-Water/Surface Water
Investigation Plan
Ground-Water Quality Data

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-1

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/20/90	08/17/90
Bicarbonate as $CaCO_3$, mg/L	463.0 A (1.0)	-
Carbonate as $CaCO_3$, mg/L	< 1.0 U (1.0)	-
Chloride, mg/L	67.7 A (5.0)	-
Hardness, mg/L	509.0 A (N/R)	-
Phosphorous, total, mg/L	1.5 R (0.04)	< 0.05 U (0.05)
Sulfate, mg/L	28.2 R (0.01)	27.6 A (5.0)
Sulfide, mg/L	0.004 R (0.004)	< 0.05 U (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/20/90	08/17/90
Hardness (filtered), mg/L	491.0 A (N/R)	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/20/90	08/17/90
Chemical oxygen demand, mg/L	33.4 A (20.0)	-
Total organic carbon, mg/L	6.9 R (20.5)	20.5 A (0.5)
Total suspended solids, mg/L	< 5.0 U (5.0)	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/20/90	08/17/90
Dissolved oxygen, field, mg/L	7.2 F (N/R)	2.8 F (N/R)
eH, field, mvolts	57.0 F (N/R)	-37.7 F (N/R)
pH, field, s.u.	6.67 F (0.01)	-
Specific conductance, field, umhos/cm	1210.0 F (N/R)	910.0 F (N/R)
Temperature, field, Celsius	10.0 F (0.1)	14.0 F (0.1)

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-1A

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/19/90	08/16/90
Bicarbonate as CaCO3, mg/L	54.9 A (1.0)	-
Carbonate as CaCO3, mg/L	< 1.0 U (1.0)	-
Chloride, mg/L	< 5.0 U (5.0)	-
Hardness, mg/L	87.3 A (N/R)	-
Phosphorous, total, mg/L	0.63 R (0.04)	0.13 A (0.05)
Sulfate, mg/L	19.75 R (0.01)	11.4 A (5.0)
Sulfide, mg/L	0.026 R (0.004)	< 0.05 U (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/19/90	08/16/90
Hardness (filtered), mg/L	82.1 A (N/R)	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/19/90	08/16/90
Chemical oxygen demand, mg/L	64.7 A (20.0)	-
Total organic carbon, mg/L	9.2 R (20.5)	12.5 A (0.5)
Total suspended solids, mg/L	27.0 A (5.0)	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/19/90	08/16/90
Dissolved oxygen, field, mg/L	4.8 F (N/R)	6.0 F (N/R)
eH, field, mvolts	104.7 F (N/R)	232.8 F (N/R)
pH, field, s.u.	6.56 F (0.01)	-
Specific conductance, field, umhos/cm	210.0 F (N/R)	290.0 F (N/R)
Temperature, field, Celsius	4.5 F (0.1)	18.0 F (0.1)

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-4

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/19/90	08/15/90
Bicarbonate as $CaCO_3$, mg/L	55.5 A (1.0)	-
Carbonate as $CaCO_3$, mg/L	< 1.0 U (1.0)	-
Chloride, mg/L	232.0 A (5.0)	-
Hardness, mg/L	114.0 A (N/R)	-
Phosphorous, total, mg/L	1.45 R (0.04)	< 0.05 U (0.05)
Sulfate, mg/L	9.83 R (0.01)	12.0 A (5.0)
Sulfide, mg/L	0.025 R (0.004)	< 0.05 U (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/19/90	08/15/90
Hardness (filtered), mg/L	118.0 A (N/R)	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/19/90	08/15/90
Chemical oxygen demand, mg/L	49.1 A (20.0)	-
Total organic carbon, mg/L	1.1 R (20.5)	0.82 A (0.5)
Total suspended solids, mg/L	55.5 A (5.0)	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/19/90	08/15/90
Dissolved oxygen, field, mg/L	0.08 F (N/R)	1.2 F (N/R)
eH, field, mvolts	30.4 F (N/R)	-53.2 F (N/R)
pH, field, s.u.	6.95 F (0.01)	-
Specific conductance, field, umhos/cm	960.0 F (N/R)	700.0 F (N/R)
Temperature, field, Celsius	9.0 F (0.1)	18.0 F (0.1)

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-6

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/16/90	08/14/90
Bicarbonate as $CaCO_3$, mg/L	42.4 J (1.0)	-
Carbonate as $CaCO_3$, mg/L	< 1.0 UJ (1.0)	-
Chloride, mg/L	86.9 A (5.0)	-
Hardness, mg/L	138.0 A (N/R)	-
Phosphorous, total, mg/L	1.05 R (0.04)	0.07 A (0.05)
Sulfate, mg/L	3.3 R (0.01)	26.9 A (5.0)
Sulfide, mg/L	0.014 R (0.004)	0.052 A (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/16/90	08/14/90
Hardness (filtered), mg/L	139.0 A (N/R)	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/16/90	08/14/90
Chemical oxygen demand, mg/L	< 20.0 U (20.0)	-
Total organic carbon, mg/L	1.2 R (20.5)	2.2 A (0.5)
Total suspended solids, mg/L	< 5.0 U (5.0)	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/16/90	08/14/90
Dissolved oxygen, field, mg/L	3.4 F (N/R)	6.4 F (N/R)
eH, field, mvolts	170.2 F (N/R)	195.8 F (N/R)
pH, field, s.u.	6.36 F (0.01)	-
Specific conductance, field, umhos/cm	540.0 F (N/R)	600.0 F (N/R)
Temperature, field, Celsius	7.5 F (0.1)	13.0 F (0.1)

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-7

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	04/25/90	04/25/90 Replicate	08/14/90
Bicarbonate as CaCO3, mg/L	55.1 R (5.0)	55.1 R (5.0)	-
Carbonate as CaCO3, mg/L	< 5.0 U (5.0)	< 5.0 U (5.0)	-
Chloride, mg/L	76.0 A (3.0)	73.0 A (3.0)	-
Hardness, mg/L	140.0 A (N/R)	141.0 A (N/R)	-
Phosphorous, total, mg/L	0.3 J (0.01)	0.21 J (0.01)	0.068 A (0.05)
Sulfate, mg/L	53.0 A (5.0)	51.0 A (5.0)	43.8 A (5.0)
Sulfide, mg/L	< 0.05 U (0.05)	< 0.05 U (0.05)	< 0.05 U (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	04/25/90	04/25/90 Replicate	08/14/90
Hardness (filtered), mg/L	144.0 A (N/R)	141.0 A (N/R)	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	04/25/90	04/25/90 Replicate	08/14/90
Chemical oxygen demand, mg/L	17.0 R (5.0)	23.0 R (5.0)	-
Total organic carbon, mg/L	3.0 A (2.0)	2.2 A (2.0)	5.5 A (0.5)
Total suspended solids, mg/L	26.0 A (1.0)	18.0 A (1.0)	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	04/25/90	04/25/90 Replicate	08/14/90
Dissolved oxygen, field, mg/L	1.1 F (N/R)	-	2.1 F (N/R)
eH, field, mvolts	227.7 F (N/R)	-	162.8 F (N/R)
pH, field, s.u.	6.17 F (0.01)	-	-
Specific conductance, field, umhos/cm	470.0 F (N/R)	-	470.0 F (N/R)
Temperature, field, Celsius	10.0 F (0.1)	-	18.0 F (0.1)

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-9

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/19/90	08/17/90
Bicarbonate as CaCO3, mg/L	30.0 A (1.0)	-
Carbonate as CaCO3, mg/L	< 1.0 U (1.0)	-
Chloride, mg/L	16.8 A (5.0)	-
Hardness, mg/L	408.0 A (N/R)	-
Phosphorous, total, mg/L	0.68 R (0.04)	< 0.05 U (0.05)
Sulfate, mg/L	451.25 R (0.01)	400.0 A (5.0)
Sulfide, mg/L	0.022 R (0.004)	< 0.05 U (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/19/90	08/17/90
Hardness (filtered), mg/L	414.0 A (N/R)	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/19/90	08/17/90
Chemical oxygen demand, mg/L	62.1 A (20.0)	-
Total organic carbon, mg/L	14.1 R (20.5)	29.2 A (0.5)
Total suspended solids, mg/L	222.0 A (5.0)	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/19/90	08/17/90
Dissolved oxygen, field, mg/L	0.6 F (N/R)	7.2 F (N/R)
eH, field, mvolts	-174.5 F (N/R)	164.8 F (N/R)
pH, field, s.u.	7.38 F (0.01)	-
Specific conductance, field, umhos/cm	920.0 F (N/R)	890.0 F (N/R)
Temperature, field, Celsius	11.0 F (0.1)	11.0 F (0.1)

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-10

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/20/90	08/15/90
Bicarbonate as $CaCO_3$, mg/L	5.4 A (1.0)	-
Carbonate as $CaCO_3$, mg/L	< 1.0 U (1.0)	-
Chloride, mg/L	39.1 A (5.0)	-
Hardness, mg/L	33.2 A (N/R)	-
Phosphorous, total, mg/L	0.88 R (0.04)	< 0.05 U (0.05)
Sulfate, mg/L	48.0 R (0.01)	14.1 A (5.0)
Sulfide, mg/L	0.018 R (0.004)	< 0.05 U (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/20/90	08/15/90
Hardness (filtered), mg/L	33.5 A (N/R)	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/20/90	08/15/90
Chemical oxygen demand, mg/L	23.0 A (20.0)	-
Total organic carbon, mg/L	4.3 R (20.5)	2.3 A (0.5)
Total suspended solids, mg/L	48.0 A (5.0)	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/20/90	08/15/90
Dissolved oxygen, field, mg/L	5.1 F (N/R)	8.8 F (N/R)
eH, field, mvolts	243.1 F (N/R)	307.6 F (N/R)
pH, field, s.u.	5.34 F (0.01)	-
Specific conductance, field, umhos/cm	220.0 F (N/R)	60.0 F (N/R)
Temperature, field, Celsius	8.0 F (0.1)	17.0 F (0.1)

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix 1. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-11

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/20/90	04/25/90	08/15/90
Bicarbonate as $CaCO_3$, mg/L	65.5 A (1.0)	-	-
Carbonate as $CaCO_3$, mg/L	< 1.0 U (1.0)	-	-
Chloride, mg/L	19.7 A (5.0)	-	-
Hardness, mg/L	104.0 A (N/R)	-	-
Phosphorous, total, mg/L	1.13 R (0.04)	-	0.14 A (0.05)
Sulfate, mg/L	111.13 R (0.01)	-	79.6 A (5.0)
Sulfide, mg/L	0.015 R (0.004)	-	< 0.05 U (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/20/90	04/25/90	08/15/90
Hardness (filtered), mg/L	109.0 A (N/R)	-	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/20/90	04/25/90	08/15/90
Chemical oxygen demand, mg/L	25.6 A (20.0)	-	-
Total organic carbon, mg/L	8.6 R (20.5)	-	12.7 A (0.5)
Total suspended solids, mg/L	35.0 A (5.0)	-	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/20/90	04/25/90	08/15/90
Dissolved oxygen, field, mg/L	0.8 F (N/R)	1.4 F (N/R)	2.9 F (N/R)
eH, field, mvolts	50.3 F (N/R)	54.2 F (N/R)	39.3 F (N/R)
pH, field, s.u.	6.39 F (0.01)	6.39 F (0.01)	-
Specific conductance, field, umhos/cm	340.0 F (N/R)	1310.0 F (N/R)	380.0 F (N/R)
Temperature, field, Celsius	7.0 F (0.1)	9.0 F (0.1)	15.0 F (0.1)

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-12

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/15/90	04/25/90	08/15/90
Bicarbonate as CaCO3, mg/L	935.0 A (1.0)	-	-
Carbonate as CaCO3, mg/L	< 1.0 U (1.0)	-	-
Chloride, mg/L	34.7 A (5.0)	-	-
Hardness, mg/L	1730.0 A (N/R)	-	-
Phosphorous, total, mg/L	1.5 R (0.04)	-	0.3 A (0.05)
Sulfate, mg/L	1246.5 R (0.01)	-	1780.0 A (5.0)
Sulfide, mg/L	0.008 R (0.004)	-	0.084 A (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/15/90	04/25/90	08/15/90
Hardness (filtered), mg/L	1670.0 A (N/R)	-	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/15/90	04/25/90	08/15/90
Chemical oxygen demand, mg/L	144.0 A (20.0)	-	-
Total organic carbon, mg/L	29.1 J (20.5)	-	40.0 A (0.5)
Total suspended solids, mg/L	55.0 A (5.0)	-	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/15/90	04/25/90	08/15/90
Dissolved oxygen, field, mg/L	0.2 F (N/R)	1.1 F (N/R)	2.8 F (N/R)
eH, field, mvolts	-91.7 F (N/R)	-54.9 F (N/R)	-56.1 F (N/R)
pH, field, s.u.	7.15 F (0.01)	6.79 F (0.01)	-
Specific conductance, field, umhos/cm	4200.0 F (N/R)	4090.0 F (N/R)	3610.0 F (N/R)
Temperature, field, Celsius	9.5 F (0.1)	10.0 F (0.1)	15.5 F (0.1)

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-13

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/19/90	03/19/90 Replicate	08/15/90
Bicarbonate as $CaCO_3$, mg/L	347.0 A (1.0)	351.0 A (1.0)	-
Carbonate as $CaCO_3$, mg/L	< 1.0 U (1.0)	< 1.0 U (1.0)	-
Chloride, mg/L	17.0 A (5.0)	20.8 A (5.0)	-
Hardness, mg/L	292.0 A (N/R)	266.0 A (N/R)	-
Phosphorous, total, mg/L	2.8 R (0.04)	1.48 R (0.04)	0.69 A (0.05)
Sulfate, mg/L	4.93 R (0.01)	53.98 R (0.01)	53.9 A (5.0)
Sulfide, mg/L	0.022 R (0.004)	0.017 R (0.004)	< 0.05 U (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/19/90	03/19/90 Replicate	08/15/90
Hardness (filtered), mg/L	268.0 A (N/R)	267.0 A (N/R)	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/19/90	03/19/90 Replicate	08/15/90
Chemical oxygen demand, mg/L	72.5 A (20.0)	33.4 A (20.0)	-
Total organic carbon, mg/L	7.0 A (20.5)	7.4 A (20.5)	13.3 A (0.5)
Total suspended solids, mg/L	40.5 A (5.0)	25.5 A (5.0)	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/19/90	03/19/90 Replicate	08/15/90
Dissolved oxygen, field, mg/L	0.6 F (N/R)	-	1.7 F (N/R)
eH, field, mvolts	-141.5 F (N/R)	-	-119.7 F (N/R)
pH, field, s.u.	7.02 F (0.01)	-	-
Specific conductance, field, umhos/cm	990.0 F (N/R)	-	950.0 F (N/R)
Temperature, field, Celsius	12.0 F (0.1)	-	22.0 F (0.1)

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-14

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/15/90	08/16/90
Bicarbonate as $CaCO_3$, mg/L	35.5 A (1.0)	-
Carbonate as $CaCO_3$, mg/L	< 1.0 U (1.0)	-
Chloride, mg/L	15.7 A (5.0)	-
Hardness, mg/L	223.0 A (N/R)	-
Phosphorous, total, mg/L	0.08 R (0.04)	< 0.05 U (0.05)
Sulfate, mg/L	6.2 R (0.01)	274.0 A (5.0)
Sulfide, mg/L	0.01 R (0.004)	< 0.05 U (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/15/90	08/16/90
Hardness (filtered), mg/L	241.0 A (N/R)	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/15/90	08/16/90
Chemical oxygen demand, mg/L	< 20.0 U (20.0)	-
Total organic carbon, mg/L	5.1 R (20.5)	10.0 A (0.5)
Total suspended solids, mg/L	51.0 A (5.0)	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/15/90	08/16/90
Dissolved oxygen, field, mg/L	2.6 F (N/R)	3.8 F (N/R)
eH, field, mvolts	178.4 F (N/R)	205.9 F (N/R)
pH, field, s.u.	5.87 F (0.01)	-
Specific conductance, field, umhos/cm	520.0 F (N/R)	620.0 F (N/R)
Temperature, field, Celsius	8.5 F (0.1)	15.0 F (0.1)

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-15

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/19/90	08/16/90
Bicarbonate as $CaCO_3$, mg/L	10.0 A (1.0)	-
Carbonate as $CaCO_3$, mg/L	< 1.0 U (1.0)	-
Chloride, mg/L	140.0 A (5.0)	-
Hardness, mg/L	45.7 A (N/R)	-
Phosphorous, total, mg/L	2.58 R (0.04)	0.066 A (0.05)
Sulfate, mg/L	12.93 R (0.01)	16.5 A (5.0)
Sulfide, mg/L	0.021 R (0.004)	< 0.05 U (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/19/90	08/16/90
Hardness (filtered), mg/L	39.6 A (N/R)	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/19/90	08/16/90
Chemical oxygen demand, mg/L	33.4 A (20.0)	-
Total organic carbon, mg/L	1.3 A (20.5)	1.5 A (0.5)
Total suspended solids, mg/L	18.5 A (5.0)	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/19/90	08/16/90
Dissolved oxygen, field, mg/L	2.0 F (N/R)	4.2 F (N/R)
eH, field, mvolts	137.5 F (N/R)	261.8 F (N/R)
pH, field, s.u.	6.07 F (0.01)	-
Specific conductance, field, umhos/cm	550.0 F (N/R)	790.0 F (N/R)
Temperature, field, Celsius	6.5 F (0.1)	15.0 F (0.1)

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-16

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/20/90	08/17/90
Bicarbonate as CaCO3, mg/L	11100.0 A (1.0)	-
Carbonate as CaCO3, mg/L	< 1.0 U (1.0)	-
Chloride, mg/L	146.0 A (5.0)	-
Hardness, mg/L	884.0 A (N/R)	-
Phosphorous, total, mg/L	9.98 A (0.04)	4.5 A (0.05)
Sulfate, mg/L	0.27 R (0.01)	< 5.0 U (5.0)
Sulfide, mg/L	0.113 J (0.004)	0.2 A (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/20/90	08/17/90
Hardness (filtered), mg/L	829.0 A (N/R)	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/20/90	08/17/90
Chemical oxygen demand, mg/L	1350.0 A (20.0)	-
Total organic carbon, mg/L	2770.0 J (20.5)	2730.0 A (0.5)
Total suspended solids, mg/L	136.0 A (5.0)	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/20/90	08/17/90
Dissolved oxygen, field, mg/L	0.4 F (N/R)	-
eH, field, mvolts	-59.2 F (N/R)	-
pH, field, s.u.	7.8 F (0.01)	-
Specific conductance, field, umhos/cm	17880.0 F (N/R)	-
Temperature, field, Celsius	9.0 F (0.1)	-

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-17

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/15/90	04/25/90	08/14/90
Bicarbonate as $CaCO_3$, mg/L	1460.0 A (1.0)	-	-
Carbonate as $CaCO_3$, mg/L	< 1.0 U (1.0)	-	-
Chloride, mg/L	144.0 A (5.0)	-	-
Hardness, mg/L	939.0 A (N/R)	-	-
Phosphorous, total, mg/L	1.7 R (0.04)	-	0.81 A (0.05)
Sulfate, mg/L	49.15 R (0.01)	-	902.0 A (5.0)
Sulfide, mg/L	0.029 R (0.004)	-	< 0.05 U (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/15/90	04/25/90	08/14/90
Hardness (filtered), mg/L	881.0 A (N/R)	-	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/15/90	04/25/90	08/14/90
Chemical oxygen demand, mg/L	454.0 A (20.0)	-	-
Total organic carbon, mg/L	160.0 J (20.5)	-	120.0 A (0.5)
Total suspended solids, mg/L	97.0 A (5.0)	-	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/15/90	04/25/90	08/14/90
Dissolved oxygen, field, mg/L	0.6 F (N/R)	0.2 F (N/R)	5.0 F (N/R)
eH, field, mvolts	-85.0 F (N/R)	-25.3 F (N/R)	-89.6 F (N/R)
pH, field, s.u.	7.01 F (0.01)	7.21 F (0.01)	-
Specific conductance, field, umhos/cm	5670.0 F (N/R)	4240.0 F (N/R)	4840.0 F (N/R)
Temperature, field, Celsius	9.5 F (0.1)	9.5 F (0.1)	16.0 F (0.1)

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-18

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/15/90	04/25/90	08/15/90
Bicarbonate as CaCO3, mg/L	29.6 A (1.0)	-	-
Carbonate as CaCO3, mg/L	< 1.0 U (1.0)	-	-
Chloride, mg/L	98.4 A (5.0)	-	-
Hardness, mg/L	246.0 A (N/R)	-	-
Phosphorous, total, mg/L	< 0.04 R (0.04)	-	< 0.05 U (0.05)
Sulfate, mg/L	155.45 R (0.01)	-	283.0 A (5.0)
Sulfide, mg/L	0.012 R (0.004)	-	< 0.05 U (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/15/90	04/25/90	08/15/90
Hardness (filtered), mg/L	243.0 A (N/R)	-	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/15/90	04/25/90	08/15/90
Chemical oxygen demand, mg/L	< 20.0 U (20.0)	-	-
Total organic carbon, mg/L	5.1 R (20.5)	-	14.6 A (0.5)
Total suspended solids, mg/L	7.0 A (5.0)	-	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/15/90	04/25/90	08/15/90
Dissolved oxygen, field, mg/L	0.9 F (N/R)	1.6 F (N/R)	4.0 F (N/R)
eH, field, mvolts	191.7 F (N/R)	207.0 F (N/R)	217.0 F (N/R)
pH, field, s.u.	5.65 F (0.01)	5.74 F (0.01)	-
Specific conductance, field, umhos/cm	1020.0 F (N/R)	1050.0 F (N/R)	940.0 F (N/R)
Temperature, field, Celsius	10.5 F (0.1)	9.0 F (0.1)	14.0 F (0.1)

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-18A

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/15/90	08/14/90
Bicarbonate as CaCO3, mg/L	67.8 A (1.0)	-
Carbonate as CaCO3, mg/L	< 1.0 U (1.0)	-
Chloride, mg/L	47.6 A (5.0)	-
Hardness, mg/L	329.0 A (N/R)	-
Phosphorous, total, mg/L	1.38 R (0.04)	< 0.05 U (0.05)
Sulfate, mg/L	181.0 R (0.01)	231.0 A (5.0)
Sulfide, mg/L	0.01 R (0.004)	0.12 A (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/15/90	08/14/90
Hardness (filtered), mg/L	344.0 A (N/R)	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/15/90	08/14/90
Chemical oxygen demand, mg/L	52.3 A (20.0)	-
Total organic carbon, mg/L	5.5 A (20.5)	13.4 A (0.5)
Total suspended solids, mg/L	44.0 A (5.0)	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/15/90	08/14/90
Dissolved oxygen, field, mg/L	0.7 F (N/R)	3.4 F (N/R)
eH, field, mvolts	207.0 F (N/R)	215.3 F (N/R)
pH, field, s.u.	6.27 F (0.01)	-
Specific conductance, field, umhos/cm	860.0 F (N/R)	810.0 F (N/R)
Temperature, field, Celsius	10.0 F (0.1)	16.0 F (0.1)

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-19

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/16/90	04/25/90	08/14/90
Bicarbonate as CaCO3, mg/L	16.5 R (1.0)	-	-
Carbonate as CaCO3, mg/L	< 1.0 UJ (1.0)	-	-
Chloride, mg/L	42.2 A (5.0)	-	-
Hardness, mg/L	71.4 A (N/R)	-	-
Phosphorous, total, mg/L	< 0.04 U (0.04)	-	< 0.05 U (0.05)
Sulfate, mg/L	18.35 R (0.01)	-	99.3 A (5.0)
Sulfide, mg/L	0.017 R (0.004)	-	0.055 A (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/16/90	04/25/90	08/14/90
Hardness (filtered), mg/L	71.6 A (N/R)	-	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/16/90	04/25/90	08/14/90
Chemical oxygen demand, mg/L	< 20.0 U (20.0)	-	-
Total organic carbon, mg/L	3.4 R (20.5)	-	3.9 A (0.5)
Total suspended solids, mg/L	10.0 A (5.0)	-	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/16/90	04/25/90	08/14/90
Dissolved oxygen, field, mg/L	0.8 F (N/R)	1.1 F (N/R)	3.0 F (N/R)
eH, field, mvolts	120.8 F (N/R)	228.7 F (N/R)	189.9 F (N/R)
pH, field, s.u.	6.01 F (0.01)	6.14 F (0.01)	-
Specific conductance, field, umhos/cm	440.0 F (N/R)	460.0 F (N/R)	450.0 F (N/R)
Temperature, field, Celsius	9.0 F (0.1)	10.0 F (0.1)	19.0 F (0.1)

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-19A

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/16/90	08/14/90
Bicarbonate as CaCO3, mg/L	59.8 J (1.0)	-
Carbonate as CaCO3, mg/L	< 1.0 UJ (1.0)	-
Chloride, mg/L	29.9 A (5.0)	-
Hardness, mg/L	86.4 A (N/R)	-
Phosphorous, total, mg/L	0.75 R (0.04)	0.055 A (0.05)
Sulfate, mg/L	7.75 R (0.01)	31.1 A (5.0)
Sulfide, mg/L	0.016 R (0.004)	0.055 A (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/16/90	08/14/90
Hardness (filtered), mg/L	83.8 A (N/R)	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/16/90	08/14/90
Chemical oxygen demand, mg/L	< 20.0 U (20.0)	-
Total organic carbon, mg/L	3.4 R (20.5)	9.7 A (0.5)
Total suspended solids, mg/L	32.0 A (5.0)	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/16/90	08/14/90
Dissolved oxygen, field, mg/L	0.6 F (N/R)	1.9 F (N/R)
eH, field, mvolts	78.7 F (N/R)	64.2 F (N/R)
pH, field, s.u.	6.47 F (0.01)	-
Specific conductance, field, umhos/cm	340.0 F (N/R)	310.0 F (N/R)
Temperature, field, Celsius	8.5 F (0.1)	18.0 F (0.1)

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-20

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/16/90	04/25/90	08/14/90	08/14/90 Replicate
Bicarbonate as CaCO3, mg/L	90.5 J (1.0)	-	-	-
Carbonate as CaCO3, mg/L	< 1.0 UJ (1.0)	-	-	-
Chloride, mg/L	48.6 A (5.0)	-	-	-
Hardness, mg/L	172.0 A (N/R)	-	-	-
Phosphorous, total, mg/L	2.8 R (0.04)	-	0.91 A (0.05)	0.19 A (0.05)
Sulfate, mg/L	160.93 R (0.01)	-	55.4 A (5.0)	55.4 A (5.0)
Sulfide, mg/L	0.019 R (0.004)	-	< 0.05 U (0.05)	< 0.05 U (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/16/90	04/25/90	08/14/90	08/14/90 Replicate
Hardness (filtered), mg/L	164.0 A (N/R)	-	-	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/16/90	04/25/90	08/14/90	08/14/90 Replicate
Chemical oxygen demand, mg/L	< 20.0 U (20.0)	-	-	-
Total organic carbon, mg/L	5.4 R (20.5)	-	2.1 A (0.5)	2.4 A (0.5)
Total suspended solids, mg/L	59.5 A (5.0)	-	-	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/16/90	04/25/90	08/14/90	08/14/90 Replicate
Dissolved oxygen, field, mg/L	1.0 F (N/R)	1.0 F (N/R)	1.9 F (N/R)	-
eH, field, mvolts	-164.0 F (N/R)	84.7 F (N/R)	-61.4 F (N/R)	-
pH, field, s.u.	6.83 F (0.01)	6.7 F (0.01)	-	-
Specific conductance, field, umhos/cm	420.0 F (N/R)	500.0 F (N/R)	460.0 F (N/R)	-
Temperature, field, Celsius	10.0 F (0.1)	8.0 F (0.1)	14.0 F (0.1)	-

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-21

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/21/90	03/21/90 Replicate	08/15/90	08/15/90 Replicate
Bicarbonate as $CaCO_3$, mg/L	118.0 A (1.0)	121.0 A (1.0)	-	-
Carbonate as $CaCO_3$, mg/L	< 1.0 U (1.0)	< 1.0 U (1.0)	-	-
Chloride, mg/L	10.9 A (5.0)	11.0 A (5.0)	-	-
Hardness, mg/L	0.141 A (N/R)	144.0 A (N/R)	-	-
Phosphorous, total, mg/L	3.9 R (0.04)	3.28 R (0.04)	0.064 A (0.05)	0.068 A (0.05)
Sulfate, mg/L	47.69 R (0.01)	49.83 R (0.01)	25.1 A (5.0)	18.4 A (5.0)
Sulfide, mg/L	0.007 R (0.004)	< 0.004 R (0.004)	< 0.05 U (0.05)	< 0.05 U (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/21/90	03/21/90 Replicate	08/15/90	08/15/90 Replicate
Hardness (filtered), mg/L	0.149 A (N/R)	126.0 A (N/R)	-	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/21/90	03/21/90 Replicate	08/15/90	08/15/90 Replicate
Chemical oxygen demand, mg/L	< 20.0 U (20.0)	24.4 A (20.0)	-	-
Total organic carbon, mg/L	4.7 R (20.5)	4.6 R (20.5)	9.8 A (0.5)	16.4 A (0.5)
Total suspended solids, mg/L	76.0 A (5.0)	84.0 A (5.0)	-	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/21/90	03/21/90 Replicate	08/15/90	08/15/90 Replicate
Dissolved oxygen, field, mg/L	2.2 F (N/R)	-	5.6 F (N/R)	-
eH, field, mvolts	113.0 F (N/R)	-	97.2 F (N/R)	-
pH, field, s.u.	5.95 F (0.01)	-	-	-
Specific conductance, field, umhos/cm	360.0 F (N/R)	-	320.0 F (N/R)	-
Temperature, field, Celsius	6.5 F (0.1)	-	20.0 F (0.1)	-

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-22

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/21/90	08/17/90
Bicarbonate as CaCO3, mg/L	321.0 A (1.0)	-
Carbonate as CaCO3, mg/L	< 1.0 U (1.0)	-
Chloride, mg/L	22.6 A (5.0)	-
Hardness, mg/L	753.0 A (N/R)	-
Phosphorous, total, mg/L	14.15 A (0.04)	0.053 A (0.05)
Sulfate, mg/L	565.0 R (0.01)	711.0 A (5.0)
Sulfide, mg/L	0.005 R (0.004)	< 0.05 U (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/21/90	08/17/90
Hardness (filtered), mg/L	709.0 A (N/R)	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/21/90	08/17/90
Chemical oxygen demand, mg/L	24.4 A (20.0)	-
Total organic carbon, mg/L	11.5 R (20.5)	15.3 A (0.5)
Total suspended solids, mg/L	1500.0 A (5.0)	-

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/21/90	08/17/90
Dissolved oxygen, field, mg/L	1.9 F (N/R)	3.1 F (N/R)
eH, field, mvolts	-25.6 F (N/R)	-
pH, field, s.u.	6.34 F (0.01)	-
Specific conductance, field, umhos/cm	1900.0 F (N/R)	1890.0 F (N/R)
Temperature, field, Celsius	6.5 F (0.1)	15.0 F (0.1)

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

Appendix I. Summary of Ground-Water Quality Data, Ground-Water/Surface-Water Investigation Plan, Industri-Plex Site Remedial Trust, Woburn, Massachusetts.

Monitoring Well: OW-28

Chemical Compound Class: Nonmetallic Inorganic Compounds (unfiltered)

Chemical Parameter	03/21/90	03/22/90	08/15/90
Bicarbonate as CaCO3, mg/L	29.5 A (1.0)	-	-
Hardness, mg/L	464.0 A (N/R)	-	-
Phosphorous, total, mg/L	9.0 A (0.04)	-	0.059 A (0.05)
Sulfate, mg/L	2.0 R (0.01)	-	12.5 A (5.0)
Sulfide, mg/L	0.06 R (0.004)	-	< 0.05 U (0.05)

Chemical Compound Class: Nonmetallic Inorganic Compounds (filtered)

Chemical Parameter	03/21/90	03/22/90	08/15/90
Hardness (filtered), mg/L	58.6 A (N/R)	-	-

Chemical Compound Class: Miscellaneous Compounds

Chemical Parameter	03/21/90	03/22/90	08/15/90
Total organic carbon, mg/L	8.4 R (20.5)	-	0.71 A (0.5)

Chemical Compound Class: Physical Measurements

Chemical Parameter	03/21/90	03/22/90	08/15/90
Dissolved oxygen, field, mg/L	-	6.0 F (N/R)	9.0 F (N/R)
eH, field, mvolts	-	111.2 F (N/R)	254.2 F (N/R)
pH, field, s.u.	-	6.6 F (0.01)	-
Specific conductance, field, umhos/cm	-	190.0 F (N/R)	90.0 F (N/R)
Temperature, field, Celsius	-	9.0 F (0.1)	18.0 F (0.1)

Explanation

CRDL Contract Required Detection Limit
N/R Not Reported
\- Not Analyzed

Validation Codes

A Quantitative Data
F Field Measurement
J Qualitative Data
R Unusable Data
U Chemical Parameter Not Detected
UJ Chemical Parameter Not Detected, Detection Level Estimated

Values in parentheses are the Instrument Detection Limits for the respective analyses

APPENDIX J

GZA Letter Report Titled
"Compilation of Subsurface Data,
Industri-Plex, Woburn, Massachusetts"

GOLDBERG·ZOINO & ASSOCIATES, INC.
CONSULTING ENGINEERS/GEOLOGISTS/ENVIRONMENTAL SCIENTISTS

320 Needham Street Newton Upper Falls, MA 02164
(617) 969-0050 FAX (617) 965-7769

December 14, 1990
File No. 12027-C,PC

Mr. William Sarni
Vice President
Roux Associates, Inc.
Blake Street Terrace
1860 Blake Street, Suite 110
Denver, Colorado 80202

Re: Compilation of Subsurface Data
Industri-plex Site
Woburn, Massachusetts

Dear Mr. Sarni:

In accordance with our proposal dated October 22, 1990 and the Subcontractor Agreement dated October 31, 1990, between Goldberg-Zoino & Associates, Inc. (Goldberg-Zoino) and Roux Associates, Inc. (Roux), Goldberg-Zoino has compiled subsurface data for the Industri-plex site and surrounding area in Woburn, Massachusetts. The data are presented as a series of maps and tables. This report describes the methods and procedures used to gather and compile the data.

SOURCES OF INFORMATION

Goldberg-Zoino gathered subsurface information from the following sources:

1. Logs and other information prepared by Roux Associates, as contained in a report entitled, "Pre-Design Investigation, Task GW-1, Plume Delineation, Phase I Interim Report, Industri-plex Site, Woburn, Massachusetts" (August 31, 1990). These data include the ATB (aquifer thickness boring), OW (observation well) and RB (recharge basin) series of explorations.

2. Publicly available reports and documents at the Massachusetts Department of Environmental Protection (DEP) Northeast Regional Office in Woburn. The public documents include both reports prepared by Goldberg-Zoino and by other consultants. A listing of the publicly available reports used by Goldberg-Zoino is attached.

3. Information in Goldberg-Zoino files. Goldberg-Zoino has conducted a number of studies at and in the vicinity of the Industri-plex site for private clients. Goldberg-Zoino reviewed data in approximately 18 of our files, representing over 100 subsurface explorations, during the preparation of the attached maps. Approximately half of these borings were conducted during geotechnical (foundation) studies; most of the remainder were conducted for environmental site assessment (real estate transaction) purposes.

   Note that, although we used the in-house (confidential) file information in the preparation of the attached contour plans, information which has not been made publicly available cannot be specifically presented herein, due to client confidentiality issues.

PROCEDURES

Goldberg-Zoino used an autocad base map supplied on diskette by Golder Associates. The base map included the locations of buildings, roads, and surface water bodies; spot elevation data, and ground surface contours. Goldberg-Zoino plotted the subsurface exploration locations on the base plan using a scale, or by printing a section of the base map at the scale of the additional drawing and overlaying the base map section on the drawing showing locations of the additional borings.

Information regarding depth to groundwater, depth to bedrock, and depth to glacial till (if encountered) was obtained from boring logs. These data are summarized in Table 1. In cases where the boring elevations had been surveyed by Goldberg-Zoino or others to NGVD during the course of the site study, these elevations were used to calculate the elevations of the water table, the top of glacial till (if encountered) and the top of the bedrock surface (if encountered). Where the borings had not been surveyed, or had been surveyed only to a relative datum, as is commonly the case for subsurface explorations conducted for real estate transaction site assessments, Goldberg-Zoino interpolated the ground surface elevation based on the spot elevations and contours on the base map provided by Golder. Interpolated ground surface elevations are designated as "+/-" on the attached table.

Elevation data (water table, bottom of outwash/top of till, and bedrock surface, if encountered) were plotted on the base maps and contoured using the contouring package "Surfer" by Golden Software, Inc. As noted above, portions of the contours are based on data from reports which are not in the public domain. In these cases, Goldberg-Zoino has not presented the locations of the borings or details of the subsurface materials encountered. The contour lines

are solid in the areas for which we have data (including data which is not specifically tabulated in this report or the attached tables); we have not contoured areas for which we have no data.

Goldberg-Zoino has produced four drawings as part of our current study, as summarized below:

1. contours of elevation of the top and bottom of the aquifer, with shading showing aquifer thickness;

2. Contours of water table elevation and bottom of aquifer elevation, with shading showing saturated thickness;

3. contours of elevation of the top of the aquifer and of the water table, with shading showing unsaturated thickness; and

4. Contours of bedrock elevation.

Goldberg-Zoino used the following procedures and assumptions in tabulating and plotting the data:

- "Refusals" were generally interpreted to have occurred at the bottom of aquifer/top of rock, unless information on the boring logs or review of logs of other subsurface explorations in the vicinity suggested that refusal occurred on some type of obstruction within the aquifer. Bedrock elevations determined from refusals are designated as "<=" on Table 1; depths to bedrock are indicated as ">=".

- Where the boring logs specifically indicate the presence of glacial till, we have assumed the top of till to be the bottom of the aquifer. We have generally not interpreted materials as till where not described as till on the boring logs, unless both the grain size distribution and density information indicate that till is indeed present. Note that soil samples from others' borings were not available to us for verification of classifications.

- Where borings were not extended to a depth sufficient to penetrate the stratum of interest (such as bedrock), the depth to that stratum is designated on the tables as greater than (>) the depth to the bottom of the boring. These data points were ont initially included in the data set for contouring. If the automatic contouring yielded a stratum elevation above the bottom of the boring (and thus a depth where the stratum was known not to exist), then that boring was included in the data set with a depth of one foot greater than the bottom of the boring. The new expanded data set was then recontoured.

If the initial automatic contouring yielded an elevation from the stratum below the bottom of the boring, then the data point was not added to the contouring data set.

- Groundwater elevation data used in the preparation of this report were gathered over a number of years and in a variety of seasons; thus they provide only general information on the configuration of the water table. Where data are available from Roux's July 17, 1990 water level measurement round, we have used these data in preparation of the contour plans to provide as consistent a set of measurements as possible. We have supplemented Roux's July 1990 information with data gathered at other times. The groundwater contours are intended to provide a general understanding of the water table configuration, and to aid in evaluating the thickness of saturated and unsaturated materials.

We trust the information presented in the attached maps and tables satisfies your current requirements. Please contact the undersigned if you have questions or require additional information.

Very truly yours,

GOLDBERG-ZOINO & ASSOCIATES, INC.

Charles A. Lindberg
Charles A. Lindberg
Project Reviewer

Sara R. Hanna
Sara R. Hanna
Senior Project Manager

Matthew J. Barvenik
Matthew J. Barvenik
Principal

SRH/MJB:pam
Attachments: List of References
Plans
Table

REFERENCES

GHR Engineering Associates, Inc., "Site Assessment Report, Property Located at 21 Cabot Road, Woburn, Massachusetts", New Bedford, Massachusetts, 1988.

Geotechnical Engineers, Inc., "21E Assessment, 11 Cabot Road, Woburn, Massachusetts", Winchester, Massachusetts, Project 86878, March 26, 1986.

Geotechnical Group, Inc., "Site Assessment, 19 Sixth Road, Woburn, Massachusetts", Needham, Massachusetts, File No. W208.

Goldberg-Zoino & Associates, Inc., "Hydrogeologic Study, Janpet Associates Property", Newton, Massachusetts, File A-2913, October 1981.

Goldberg-Zoino & Associates, Inc., "New Boston Street Site Investigation, Woburn, Massachusetts", Newton, Massachusetts, File A-3016, March, 1982.

Goldberg-Zoino & Associates, Inc., "Utility Line Assessment, Woburn, Massachusetts", Newton, Massachusetts, File A-3499, January, 1983.

Goldberg-Zoino & Associates, Inc., "Commerce Way Water Line Extension, Woburn, Massachusetts", Newton, Massachusetts, File A-3653, March 5, 1986.

Goldberg-Zoino & Associates, Inc., "Environmental Assessment/Remedial Studies, North Woburn Industrial Park, Woburn, Massachusetts", Newton, Massachusetts, File A-7107, April 30, 1986.

Goldberg-Zoino & Associates, Inc., "Remedial Studies, North Woburn Industrial Park, Woburn, Massachusetts", Newton, Massachusetts, File O-7107.1, January, 1988.

Goldberg-Zoino & Associates, Inc. "Groundwater Monitoring, North Woburn Industrial Park, Woburn, Massachusetts", Newton, Massachusetts, File O-7107.1, December 28, 1988.

Goldberg-Zoino & Associates, Inc., "Site Assessment Report, 3C Company, 181 New Boston Street, Woburn, Massachusetts", Newton, Massachusetts, File F-7177, January 9, 1986.

Goldberg-Zoino & Associates, Inc., "Additional Work, 3C Company, Woburn, Massachusetts", Newton, Massachusetts, File F-7177, June 26, 1986.

Haley & Aldrich, Inc., "Oil and Hazardous Materials Site Evaluation, 195 New Boston Street, Woburn, Massachusetts", Cambridge, Massachusetts, File 555538, June 19, 1985.

REFERENCES (CONT.)

Haley & Aldrich, Inc., "Oil and Hazardous Materials Site Evaluation, 3.75-acre Parcel, 8 Commonwealth Avenue, Woburn, Massachusetts", Cambridge, Massachusetts, File No. 555572, August 10, 1985.

Hidell-Eyster Technical Services, Inc., "Addendum to Environmental Site Assessment for Land Located at 11 Sixth Road, Woburn, Massachusetts", Accord, Massachusetts, Project #05-8682, August 11, 1986.

Hidell-Eyster Technical Services, Inc., "Environmental Site Assessment for Land Located at 167-171 Merrimack Street, Woburn, Massachusetts", Accord, Massachusetts, Project #05-8690, July 15, 1986.

Hidell-Eyster Technical Services, Inc., "Addendum to Environmental Site Assessment for Land Located at 167-171 Merrimack Street, Woburn, Massachusetts", Accord, Massachusetts, Project #05-8690, August 11, 1986.

IEP, Inc., "21-E Site Assessment, Globe Ticket Company, 166 New Boston Street, Woburn, MA 01801", Northborough, Massachusetts, File Winst-5, July 1985.

IEP, Inc., "Remedial Investigation, Globe Ticket Co. Site, Woburn, Massachusetts", Northborough, Massachusetts, File WINST-8, October 1986.

Normandeau Engineers, Inc., "Phase I Hydrogeologic Investigation Report, 22 North Maple Street, Woburn, Massachusetts", Concord, New Hampshire, File R-970008, June, 1988.

Job No. 12027

Table 1
Compilation of Subsurface Data

Job Title	Source and Report Date	Boring No.	Boring Depth	Well Screen Depth	Depth to Ground-water	Date Ground-Water Measured	Depth to Bedrock	Depth to Top of Till/ Bottom of Aquifer	ELEVATIONS: Ground Surface	ELEVATIONS: Ground-water	ELEVATIONS: Top of Rock	ELEVATIONS: Top of Till/ Bottom of Aquifer	Comments
North Woburn Industrial Park Sixth Road & Gill St.	GZA Job A-7107.0 4/86	GZA-1A	11	5-10	5.06	8/15/88	>11	>11	82.3	77.2	<71	<71	
		GZA-2	11	4-9	2.78	8/15/88	>11	>11	76.0	73.2	<65	<65	
		GZA-3	9	4-9	2.23	8/15/88	>9	>9	76.7	74.6	<68	<68	
		GZA-4	11 (R)	N.I.	-	-	>= 11	>= 11	-	-	-	-	
		GZA-5	17	10-15	6.20	8/15/88	>17	>17	75.3	69.1	<58	<58	
		GZA-6	12	5-10	4.34	8/15/88	>12	>12	79.4	75.1	<67	<67	
		GZA-7	10	5-10	3.07	8/15/88	>10	>10	75.7	72.6	<66	<66	
		GZA-8	10	5-10	3.5	12/23/85	>10	>10	77.9	74.4	<68	<68	
		GZA-9	10	5-10	2.95	12/23/85	>10	>10	-	-	-	-	
		GZA-10	10	5-10	5.48	8/15/88	>10	>10	76.5	71.0	<76	<76	
		GZA-11	10	5-10	4.20	8/15/88	>10	>10	75.7	71.5	<76	<76	
		GZA-12	12	5.7-10.7	3.09	8/15/88	>12	>12	78.4	75.3	<76	<76	
		GZA-13	31 (R)	5-10	2.58	8/15/88	<= 31	29	77.9	75.3	<= 47	49	Wells GZ-13 and GZ-14
		GZA-14	31 (R)	22.5-27.5	2.58	8/15/88	<= 31	29	77.9	75.3	<= 47	49	in same borehole
same as above	GZA Job 0-7107.1 1/88	OW-2	15	4.9-14.9	3.53	8/15/88	>15	>15	74.4	70.8	<59	<59	
		OW-3	15	4.8-14.8	3.85	8/15/88	>15	>15	75.1	71.3	<60	<60	
same as above	GZA Job 0-7107.1 12/88	GZ-9A	20.2	15-20	2.82	8/15/88	>20	12.9	74.3	71.5	<54	<54	
		GZ-9B	12	2-12	2.72	8/15/88	>12	>12	72.2	71.5	<62	<62	
		GZA-15	23	14-19	2.48	8/15/88	>23	>23	77.8	75.3	<55	<55	
		GZA-16	17	4.8-14.8	2.62	8/15/88	>17	13.5	74.2	70.5	<67	<67	

Table 1 (continued)

Job No. 12027

Job Title	Source and Report Date	Boring No.	Boring Depth	Well Screen Depth	Depth to Ground-water	Date Ground-Water Measured	Depth to Bedrock	Depth to Top of Till/ Bottom of Aquifer	ELEVATIONS: Ground Surface	ELEVATIONS: Ground-water	ELEVATIONS: Top of Rock	ELEVATIONS: Top of Till/ Bottom of Aquifer	Comments
11 Sixth Road	Nidell-Eyster 8/86	B-1	>= 12	?	+/- 12	?	>12	>12	+/- 71	+/- 59	<59	<59	
		B-2	>= 12				>12	>12	+/- 71	+/- 59	<59	<59	
19 Sixth Road	Geotechnical Group Job W208 8/85	B-1	6 (R)		Dry	08/14/85	>6	Gnd Surf.	+/- 81	<75	<75	+/- 81	Till and/or till fill at ground surface at B-1 and B-3; till encountered beneat fill at 15.5 ft. at B-2.
		B-2	21.5	10-20	16	08/15/85	>21.5	+/- 15	+/- 80	+/- 64	<59	75	
		B-3	12 (R)		Dry	08/15/85	>12	Gnd Surf.	+/- 80	<68	<68	+/- 80	
Commerce Way (Dundee Park)	GZA Job A-3653 3/86	GZ-1	12	6-11	5.5	01/14/86	>12	>12	+/- 68	62.5	<56	<56	
		GZ-2	2 (R)				>= 12	>= 12	+/- 67	<65	<= 65	<= 65	
		GZ-3	12	6-11	5.0	01/14/86	>12	>12	+/- 67	62	<55	<55	
		GZ-4	12	6-11	4.6	01/14/86	>12	>12	+/- 67	62.4	<55	<55	
		GZ-5	12	6-11	4.3	01/14/86	>12	>12	+/- 67	62.7	<55	<55	
		GZ-6	10	5-10	5.3	01/15/86	>10	>10	+/- 68	62.7	<58	<58	
		GZ-7	8.5 (R)	3.5-8.5	6.3	01/14/86	>= 8.5	>= 8.5	+/- 67	60.7	<= 58.	<= 58.5	
		GZ-8	7.5 (R)			01/14/86	>= 7.5	>= 7.5	+/- 67	<60	<= 59.	<= 59.5	

Table 1 (continued)

Job No. 12027

Job Title	Source and Report Date	Boring No.	Boring Depth	Well Screen Depth	Depth to Ground-water	Date Ground-Water Measured	Depth to Bedrock	Depth to Top of Till/ Bottom of Aquifer	ELEVATIONS: Ground Surface	ELEVATIONS: Ground-water	ELEVATIONS: Top of Rock	ELEVATIONS: Top of Till/ Bottom of Aquifer	Comments
Lot A-5	GZA Jobs	TP-2	10 (R)	5-10		03/23/81							
New Boston St.	A-3016/A-3653	TP-3	11		8.5	03/23/81	11	2.5					
(Dundee Park)	5/87	TP-4	12 (R)		Dry	03/23/81		7					
		TP-5	3.5 (R)		Dry	03/24/81	3	2					
		TP-6	12 (R)		?	03/24/81	12 ?	5					
		TP-12	14		Dry	03/26/81							
		TP-13	16.5	10-15	?	03/26/81							
		TP-34	3.5		13	11/09/83		3					
		TP-35	3.4		Dry	11/09/83		2					
		B-2	24 (R)	18-20	?	04/03/81	24.5	18.5	72.5		48.5	64.0	
		TP-100	9	NI	?	03/10/87	9 ?	0.5	82.3	77	73.3	81.8	
		TP-101	9	NI		03/10/87	9 ?	5	81.5		72.5	76.5	
		TP-102	4-6	NI		03/10/87	4-6	1	85.6		80	85	
		TP-103	6	NI		03/10/87	6	3.5	91.0		85	87	
		TP-104	8	NI		03/10/87	8	4	89.9		82	86	
		TP-105	6	NI	3	03/10/87	>6	>6	87.0	84	<81	<81	
		TP-106	8	NI		03/10/87	8	4	90.1		82	86	
		TP-107	6-8	NI		03/10/87	6-8	3	90.0		83	87	

Table 1 (continued)

Job No. 12027

Job Title	Source and Report Date	Boring No.	Boring Depth	Well Screen Depth	Depth to Ground-water	Date Ground-Water Measured	Depth to Bedrock	Depth to Top of Till/ Bottom of Aquifer	ELEVATIONS: Ground Surface	ELEVATIONS: Ground-water	ELEVATIONS: Top of Rock	ELEVATIONS: Top of Till/ Bottom of Aquifer	Comments
Janpet Associates (between New Boston St. & Atlantic Ave.)	GZA Job A-2913 10/81	2	21.6	NI	7.0	09/07/79	>21.6	13.5 ?	69.5	62.5	<47.9	56.0	Logged by Carr-Dee (not for GZA)
		3	15	NI	3.5	09/07/79	>15		68.8	65.3	<53.8	<53.8	
		4	13.5 (R)	NI	Dry	09/07/79	>= 13.5		77.1	<57.6	<= 57.	57.6	
		5	17	NI	3.5	09/10/79	>17		70.9	67.4	<53.9	<53.9	
		6	19	NI	5.0	09/07/79	>19		70.8	65.8	<52	<52	
		7	3 (R)	NI	Dry	09/10/79	>3		71.9	<68.9	<= 68.	<= 68.9	
		7A	17 (R)	NI	4	09/10/79	>= 17	14	71.9	67.9	<= 55	<= 55	
		8	10 (R)	NI	5	09/07/79	>= 10		71.8	66.8	<= 63	<= 62	
		9	10	NI	8	09/10/79	>10	3.5 ?	73.4	65.1	<= 65	<= 63	
		10	12	NI	2.5	04/17/80	>12						
		11	8	NI	0.5	04/17/80	>8						
		12	9	NI	6.5	04/17/80	>9						
		13	9.5	NI	4.7	04/17/80	>9.5						
		14	11	NI	3.0	04/17/80	>11						
		GZ-1	12.5 (R)	5-7.5	6.5	01/13/81	>= 12.5	6	71.9	65.4	<59.4	66	
		GZ-2	20.0 (R)	8.8-18.8	3.0	01/13/81	>= 20	19	68.4	65.4	<48.4	49	
		GZ-3	35	32.5-34.5	5.5	01/91/81	31	19	68.3	62.8	37	49	Cored rock
		GZ-4	20.0 (R)	4.65-6.65	8.15	01/16/81	>= 20	7.5	67.5	55.3	<47.5	60	
		GZ-5	16.5	11.2-13.8	12.45	01/14/81	>16.5	12.5	68.2	55.9	<51.7	55.7	
		GZ-6	45 (R)	29-39	11.7	01/19/81	>= 45	39	68.3	56.6	<23.3	29.3	
		B-2A	32	17-22	9.65	01/19/81	>32	>32	68.3	58.7	<36.3	<36.3	
		B-5A	23	NI	NM		>23	18					
		B-6A	23	6.4-11.4	5.4	01/19/81	>23	>23	69.9	64.5	<47	<47	
		B-9A	11.8 (R)	7.1-8.8	5.7	01/19/81	>= 11.8	4	68.5	62.8	<= 57	64.5	
		B-14A	11.0	10-13 ?	5.7	01/19/81	>11	>11	70.5	64.8	<59	<59	
		C-1	11.5		5.9	01/19/81	>11.5	>11.5					
		C-2	9.0	NI	6.1	01/19/81	>9	>9					

Table 1 (continued)

Job No. 12027

Job Title	Source and Report Date	Boring No.	Boring Depth	Well Screen Depth	Depth to Ground-water	Date Ground-Water Measured	Depth to Bedrock	Depth to Top of Till/ Bottom of Aquifer	ELEVATIONS				Comments
									Ground Surface	Ground-water	Top of Rock	Top of Till/ Bottom of Aquifer	
		C-3	6.5	NI	Dry	01/19/81	>6.5	>6.5					
		C-4	9.0	NI	Dry	01/19/81	>9	>9					
		C-5	9.0	NI	Dry	01/19/81	>9	>9					
		C-6	13.0	NI	Dry	01/19/81	>13	>13					

Table 1 (continued)

Job No. 12027

Job Title	Source and Report Date	Boring No.	Boring Depth	Well Screen Depth	Depth to Ground-water	Date Ground-Water Measured	Depth to Bedrock	Depth to Top of Till/ Bottom of Aquifer	ELEVATIONS: Ground Surface	ELEVATIONS: Ground-water	ELEVATIONS: Top of Rock	ELEVATIONS: Top of Till/ Bottom of Aquifer	Comments
New Boston St. Utility Line (Dundee Park)	GZA Job A-3499 1/83	GZ-1	29.8 (R)	24.5-29.5	9	11/09/81	29.5	29.5	+/- 69	+/-60	+/-39.	+/- 39.5	Project also included 17 shallow borings (WL-1 through WL-17) terminated in fill at depths of 2-3.5 feet; no water encountered. Boring GZ-4A terminated due to rain.
		GZ-2	9 (R)	NI	6	11/10/81	>= 9	>= 9	+/- 69.5	+/- 63.5	<= 60	<= 60	
		GZ-2A	12	NI	3	11/20/81	> 12	> 12	+/- 69.5	+/- 66.5	<58	< 58	
		GZ-3	24 (R)	18.7-23.7	3.1	11/10/81	24	24	+/- 69.5	+/- 66.4	+/-45.	+/- 45.5	
		GZ-4	20.5	NI	3.1	11/21/81	> 20	19	+/- 72	+/- 69	< 52	+/- 53	
		GZ-4A	1.25	NI									
		GZ-5	24.7 (R)	19.7-24.7	5.9	11/13/81	24.7	24.7	+/- 76.0	+/- 70	+/- 51	+/- 51	
		GZ-6	12.7 (R)	NI	6.5	11/16/81	12.7	12.5	+/- 77	+/- 70	+/- 65	+/- 65	
		GZ-7	2.0 (R)	NI	--	--	>2	--	+/- 78.0	<76	<76	<76	
		GZ-7A	2.0 (R)	NI	--	--	>2	--	+/- 78.0	<76	<76	<76	
		GZ-7B	10.5	3-8	5.6	11/17/81	10.5	8	+/- 78.0	+/- 72	+/- 68	+/- 70	
		GZ-8	6.3 (R)	1.1-6.1	4	11/17/81	6.3	6.3	+/- 77.0	+/- 73	+/- 71	+/- 71	
		GZ-9	4.0 (R)	NI	2.5	11/19/81	4	4	+/- 79.0	+/- 76.5	+/- 75	+/- 75	
		GZ-10	11.5	NI	Dry	09/24/82	>11.5	4.5	+/- 69.7	<58	<58	--	
		GZ-11	15	9.9-14.9	6.5	09/28/82	> 15	> 15	+/- 72.5	+/- 66	< 58	< 58	
		GZ-12	11	6-11	6.2	09/28/82	> 11	> 11	+/- 72.0	+/- 66	< 61	< 61	
		GZ-1A	17	3-13	7.4	09/28/82	> 17	> 17	+/- 68.0	+/- 60	< 51	< 51	
21 Cabot Road	GHR Job 384400 11/88	MW-1	17	7-17	5.74	10/24/88	>17	>17	+/- 58	+/- 52	<41	<41	
		MW-2	17	7-17	6.29	10/24/88	>17	>17	+/- 58	+/- 52	<41	<41	
		MW-3	17	7-17	7.67	10/24/88	>17	>17	+/- 60	+/- 52	<43	<43	
		MW-4	12	7-12	3.86	10/24/88	>12	>12	+/- 56	+/- 52	<44	<44	
11 Cabot Road Gorchev Photo	GEI Job 86878 03/86	B-101	19	7-17	7.5	02/25/85	>19	>19	+/- 60	+/- 52	<43	<43	
		B-102	18	6-16	6.0	02/26/86	>18	>18	+/- 60	+/- 54	<44	<44	
		B-103	19	7-17	7.0	02/25/86	>19	>19	+/- 60	+/- 53	<43	<43	
		B-1	20.5	--	5-6	06/25/81	>20.5	>20.5	58.25	+/- 53	<38	<38	Boring logs appended to GEI

Table 1 (continued)

Job No. 12027

Job Title	Source and Report Date	Boring No.	Boring Depth	Well Screen Depth	Depth to Ground-water	Date Ground-Water Measured	Depth to Bedrock	Depth to Top of Till/ Bottom of Aquifer	ELEVATIONS: Ground Surface	ELEVATIONS: Ground-water	ELEVATIONS: Top of Rock	ELEVATIONS: Top of Till/ Bottom of Aquifer	Comments
		B-2	16.5	--	5-6	06/25/81	>16.5	>16.5	58.0	+/- 52-5	<41.5	<41.5	report. Elevations estimate
		B-3	16.5	--	5-6	06/25/81	>16.5	>16.5	59.0	+/- 53-5	<42.5	<42.5	from topography. According
		B-4	16	--	5-6	06/25/81	>16	>16	59.0	+/- 53-5	<43	<43	GEI, locations not provided.
		B-5	20	--	5-6	06/25/81	>20	>20	58.5	+/-52.5	<38.5	<38.5	
		B-6	6 (R)	--	5-6	06/25/81	>6	>6	59.0	+/- 53	<53	<53	Obstruction noted on log B-6
		B-7	16.5	--	5-6	06/25/81	>16.5	>16.5	59.0	+/- 53-5	<42.5	<42.5	
		B-8	15.5	--	5-6	06/25/81	>15.5	>15.5	58.75	+/- 53-5	<43.25	<43.25	
		B-9	16	--	5-6	06/25/81	>16	>16	59.0	+/- 53-5	<43	<43	

Table 1 (continued)

Job No. 12027

Job Title	Source and Report Date	Boring No.	Boring Depth	Well Screen Depth	Depth to Ground-water	Date Ground-Water Measured	Depth to Bedrock	Depth to Top of Till/ Bottom of Aquifer	ELEVATIONS: Ground Surface	ELEVATIONS: Ground-water	ELEVATIONS: Top of Rock	ELEVATIONS: Top of Till/ Bottom of Aquifer	Comments
22 North Maple St.	Normandeau	MW-1S	14	3-13	6	10/01/87	<14	<12	+/- 65	+/- 59	<51	<51	Report notes that till was
	Engineers Inc.	MW-1D	31.5	19.5-24.5	6	04/21/88	<31.5	+/- 25	+/- 65	+/- 59	<34	+/- 40	encountered at all three dee
	Job R-970008	MW-2	15	2.5-12.5	6	10/01/87	>15	>15	+/- 64	+/- 58	<49	<49	borings (MW-1D, MW-6D, and
		MW-3	12	4-9	6	10/01/87	>12	>12	+/- 66	+/- 59	<53	<53	MW-9D); exact depth of top
		MW-4	10	3-8	6	10/02/87	>10	>10	+/- 65	+/- 59	<56	<56	of till not noted on logs.
		MW-5	10	3-8	6	10/02/87	>10	>10	+/- 66	+/- 60	<56	<56	
		MW-6S	10	3-8	6	10/02/87	>10	>10	+/- 66	+/- 60	<56	<56	
		MW-6D	41.5	25-35	6	04/19/88	>41.5	+/- 33	+/- 66	+/- 60	<25	+/-33	
		MW-7	10	3-8	6	10/02/87	>10	>10	+/- 66	+/- 60	<56	<56	
		MW-8	13	3-13	+/- 5-6	04/19/88	>13	>13	+/- 67	+/- 60	<53	<53	
		MW-9S	16.5	3-13	6.5	04/20/88	>16	+/- 25	+/- 66	+/- 60	<50	+/- 41	
		MW-9D	27	22-25	6.5	04/21/88	>27	>27 (?)	+/- 66	+/- 60	<39	<39	
167-173 Merrimack St	Hidell-Eyster	B-1	>= 5	?	5		>= 5		+/- 66	+/- 61	<= 61	<= 61	
	Job 5-8690	B-2	7 (R)	?	> 7 (?)		>= 7		+/- 66	+/- 59	<= 59	<= 59	
Winn Trucking	Haley &	B-1	15	3-13	6.2	05/29/85	> 15	> 15	+/- 62	+/- 56	< 47	< 47	N&A report indicates
195 New Boston St.	Aldrich	B-2	13	3-13	7.2	05/29/85	> 13	> 13	+/- 62	+/- 55	< 49	< 49	elevation +/- 60
	Job 555538	B-3	15	3-13	6.5	05/29/85	> 15	> 15	+/- 62	+/- 55.5	< 47	< 47	
	6/85	B-4	15	3-13	9.2	05/29/85	> 15	> 15	+/- 64	+/- 54.2	< 49	< 49	
		B-5	14	--	8	04/30/85	> 14	> 14	+/- 62	+/- 54	< 48	< 48	
		B-6	10	--	6	04/30/85	> 10	> 10	+/- 63	+/- 57	< 53	< 53	
		B-7	9	--	6	04/30/85	> 9	> 9	+/- 63	+/- 57	< 54	< 54	
		B-8	10	--	7	04/30/85	> 10	> 10	+/- 63	+/- 56	< 53	< 53	
		B-9	9	--	7	04/30/85	> 9	> 9	+/- 63	+/- 56	< 54	< 54	

Table 1 (continued)

Job No. 12027

Job Title	Source and Report Date	Boring No.	Boring Depth	Well Screen Depth	Depth to Ground-water	Date Ground-Water Measured	Depth to Bedrock	Depth to Top of Till/ Bottom of Aquifer	ELEVATIONS: Ground surface	ELEVATIONS: Ground-water	ELEVATIONS: Top of Rock	ELEVATIONS: Top of Till/ Bottom of Aquifer	Comments
New Boston St. Sheehy Properties	GZA Job A-3016 3/82	B-1	15.5 (R)	9-11.5	1	04/02/81	>= 15.5		74	73	<= 59	<59	Project also included 13 test pits
		B-2	24 (R)	18-20	NM	04/02/81	>= 24	18.5		--			
		B-3	16.5 (R)	8.5-11.6	NM	04/02/81	>= 16.5	14	71	--	<= 55	57	
181 New Boston St. (3C)	GZA Job F-7177 8/16	GZA-1	17	10-15	10.65	12/17/85	>17	>17	+/- 64.3	+/- 53.7	<47	<47	
		GZA-2A	22	14-19	10.32	12/17/85	>22	>22	+/- 69.7	+/- 56.4	<47	<47	
		GZA-3	21.2	15-20	14.95	12/17/85	>21.2	>21.2	+/- 67.9	+/- 52.9	<47	<47	
		GZA-3A	53.7 (R)	43.7-53.7	14.22	6/13/86	>= 53.7	>= 53.7	+/- 67.2	+/- 53.0	<= 13.	<= 13.5	
		GZA-4	16.5	10-15	8.35	12/17/85	>16.5	>16.5	+/- 69.0	+/- 60.7	<53	<53	
		GZA-5	17	10-15	10.40	12/17/85	>17	>17	+/- 65.4	+/- 55.0	<48	<48	
		GZA-6	20	15-20	10.35	12/17/85	>20	>20	+/- 66.4	+/- 56.0	<46	<46	
		GZA-7	19	8.5-18.5	13.60	12/17/85	>19	>19	+/- 66.9	+/- 53.3	<48	<48	
		GZA-8	22	9-19	13.35	12/17/85	>22	>22	+/- 67.2	+/- 53.8	<45	<45	
		GZA-9	19	8.5-18.5	11.05	12/17/85	>15	>15	+/- 64.2	+/- 53.1	<48	<48	

Table 1 (continued)

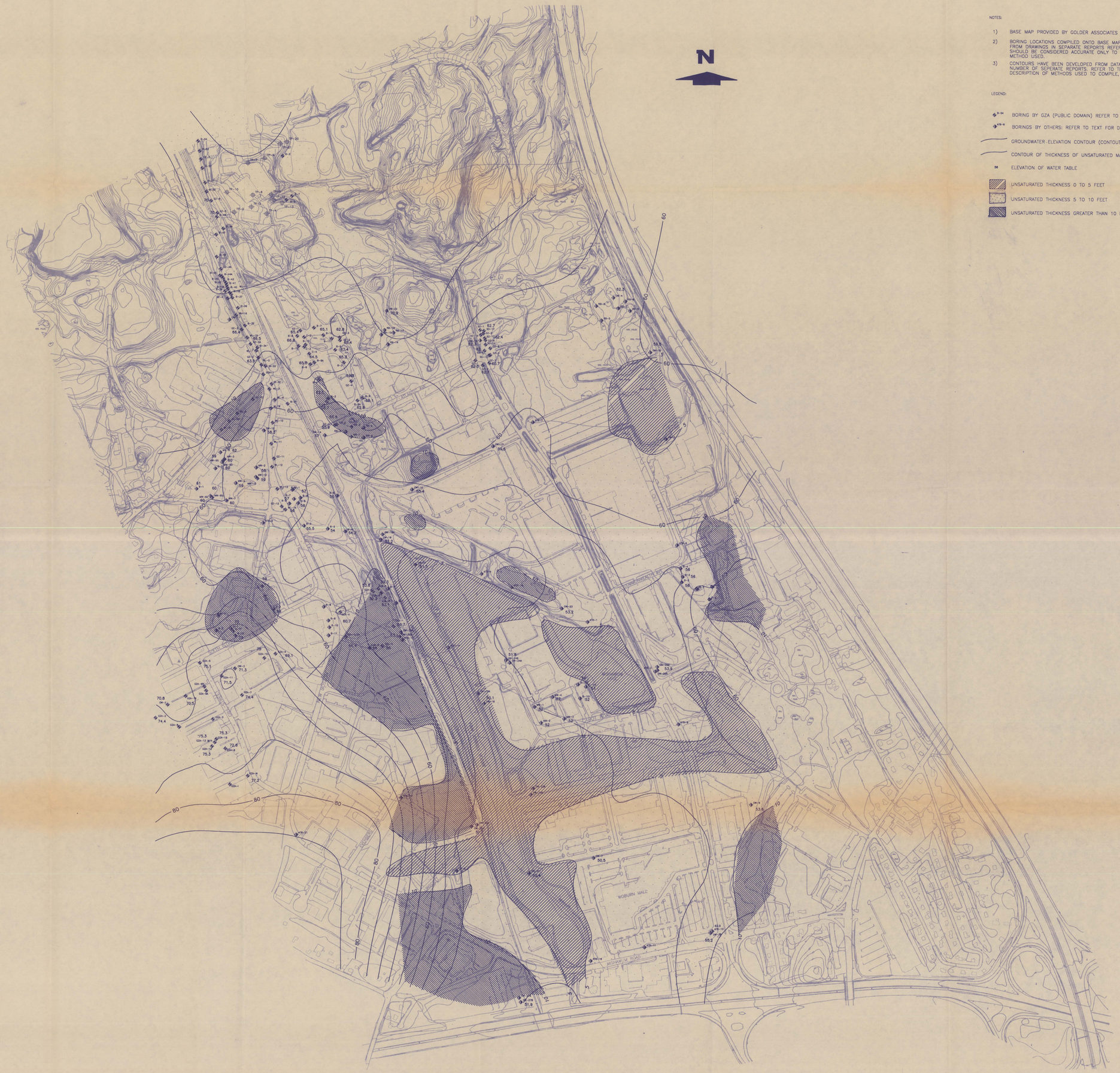
Job No. 12027

Job Title	Source and Report Date	Boring No.	Boring Depth	Well Screen Depth	Depth to Ground-water	Date Ground-Water Measured	Depth to Bedrock	Depth to Top of Till/ Bottom of Aquifer	ELEVATIONS: Ground Surface	ELEVATIONS: Ground-water	ELEVATIONS: Top of Rock	ELEVATIONS: Top of Till/ Bottom of Aquifer	Comments
8 Commonwealth Ave. Chomerics	Haley & Aldrich Job 555572 8/85	B-1	12		10	04/12/85	>12	>12	+/- 69	+/- 59	<57	<57	Strata logged by driller
		B-2	15	1.5-11.5	8	04/12/85	>15	>15	+/- 64	+/- 56	<49	<49	
		B-3	12		4.5	04/12/85	>12	>12	+/- 66	+/- 61	<54	<54	
		B-4	14	6.5-12	8	05/16/85	>14	>14	+/- 64	+/- 56	<50	<50	
		B-5	14	4.0-9.5	8	05/16/85	>14	>14	+/- 64	+/- 56	<50	<50	
		B-6	12	4.0-9.5	6	05/16/85	>12	>12	+/- 70	+/- 64	<58	<58	
166 New Boston St. Globe Ticket Co.	IEP 10/86	B-8	8 (R)		Dry hole	09/05/86	>= 8	>= 8	+/- 72	<64	<= 64	<= 64	
		B-9	8.2 (R)		Dry hole	09/05/86	>= 8	>= 8	+/- 72	<64	<= 64	<= 64	
		B-10	16 (R)	5-15	Dry hole	09/05/86	>= 16	>= 16	+/- 72	<56	<= 56	<= 56	
		B-11	7.5 (R)		Dry hole	09/05/86	>= 7.5	>= 7.5	+/- 72	<64	<= 64	<= 64	

NOTES: TABLE 1

1. Refer to text for complete report citations.

2. A ">=" symbol indicates that the depth to the layer of interest (bedrock or top of till/bottom of aquifer) was greater than or equal to the depth indicated. This rotation is used for borings which were terminated at refusal. Elevations of these surfaces are designated as "< =" (less than or equal to the elevation indicated).



NOTES:

1) BASE MAP PROVIDED BY GOLDER ASSOCIATES INC. 1990, SCALE 1" = 200'.

2) BORING LOCATIONS COMPILED ONTO BASE MAP BY SCALING OR TRACING FROM DRAWINGS IN SEPARATE REPORTS REFERENCED IN TEXT. LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

3) CONTOURS HAVE BEEN DEVELOPED FROM DATA GATHERED FROM A NUMBER OF SEPERATE REPORTS. REFER TO TEXT FOR INFORMATION AND DESCRIPTION OF METHODS USED TO COMPILE, INTERPRET AND PLOT DATA.

LEGEND:

- BORING BY GZA (PUBLIC DOMAIN) REFER TO TEXT FOR DETAILS
- BORINGS BY OTHERS; REFER TO TEXT FOR DETAILS
- GROUNDWATER ELEVATION CONTOUR (CONTOUT INTERVAL 4')
- CONTOUR OF THICKNESS OF UNSATURATED MATERIAL (CONTOUR INTERVAL 5')
- 56 ELEVATION OF WATER TABLE
- UNSATURATED THICKNESS 0 TO 5 FEET
- UNSATURATED THICKNESS 5 TO 10 FEET
- UNSATURATED THICKNESS GREATER THAN 10 FEET

DESIGNED BY: S.H. DRAWN BY: L.R.
CHECKED BY: SCALE: 1" = 300'
REVIEWED BY: M.B. DATE: DECEMBER, 1990

GOLDBERG–ZOINO & ASSOCIATES, INC.
CONSULTING ENGINEERS/GEOLOGISTS/ENVIRONMENTAL SCIENTISTS

REV. No.	DESCRIPTION	BY	DATE

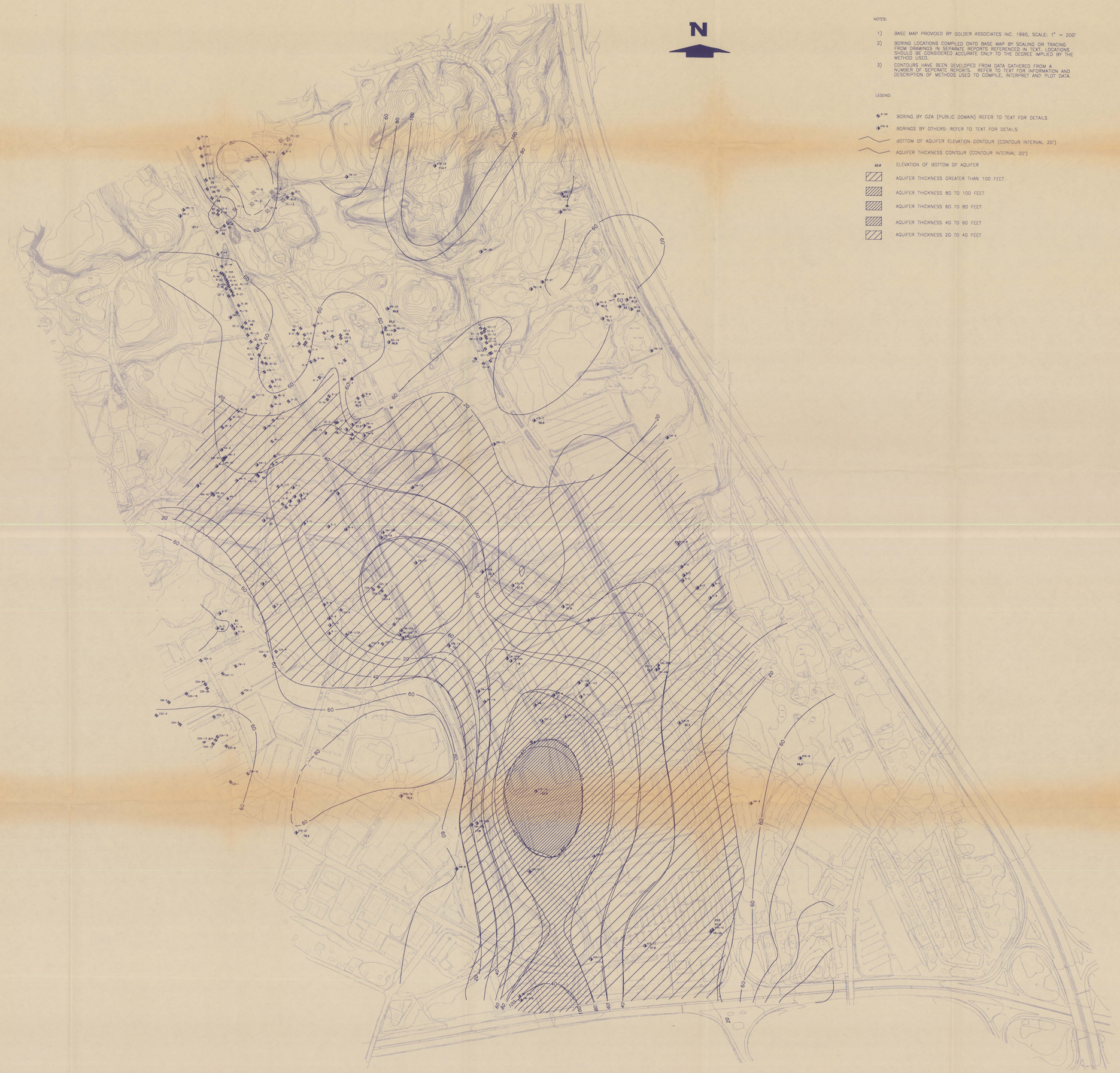
SCALE IN FEET
0' 300' 600' 1200'

INDUSTRI–PLEX SITE
WOBURN, MASS

CONTOURS OF GROUNDWATER ELEVATION

PROJECT NO. 12027

FIGURE No. 1



NOTES:

1) BASE MAP PROVIDED BY GOLDER ASSOCIATES INC. 1990, SCALE: 1" = 200'

2) BORING LOCATIONS COMPILED ONTO BASE MAP BY SCALING OR TRACING FROM DRAWINGS IN SEPARATE REPORTS REFERENCED IN TEXT. LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

3) CONTOURS HAVE BEEN DEVELOPED FROM DATA GATHERED FROM A NUMBER OF SEPERATE REPORTS. REFER TO TEXT FOR INFORMATION AND DESCRIPTION OF METHODS USED TO COMPILE, INTERPRET AND PLOT DATA.

LEGEND:

- B-34 — BORING BY GZA (PUBLIC DOMAIN) REFER TO TEXT FOR DETAILS
- CTP-6 — BORINGS BY OTHERS: REFER TO TEXT FOR DETAILS
- BOTTOM OF AQUIFER ELEVATION CONTOUR (CONTOUR INTERVAL 20')
- AQUIFER THICKNESS CONTOUR (CONTOUR INTERVAL 20')
- 62.8 — ELEVATION OF BOTTOM OF AQUIFER
- AQUIFER THICKNESS GREATER THAN 100 FEET
- AQUIFER THICKNESS 80 TO 100 FEET
- AQUIFER THICKNESS 60 TO 80 FEET
- AQUIFER THICKNESS 40 TO 60 FEET
- AQUIFER THICKNESS 20 TO 40 FEET

DESIGNED BY: S.H. DRAWN BY: L.R.
CHECKED BY: SCALE: 1" = 300'
REVIEWED BY: M.B. DATE: DECEMBER, 1990

GOLDBERG–ZOINO & ASSOCIATES, INC.
CONSULTING ENGINEERS/GEOLOGISTS/ENVIRONMENTAL SCIENTISTS

REV. No.	DESCRIPTION	BY	DATE

SCALE IN FEET
0' 300' 600' 1200'

INDUSTRI-PLEX SITE
WOBURN, MASS

CONTOURS OF BOTTOM OF AQUIFER / AQUIFER THICKNESS

PROJECT NO. 12027

FIGURE No. 2

NOTES:

1) BASE MAP PROVIDED BY GOLDER ASSOCIATES INC. 1990, SCALE: 1" = 200'

2) BORING LOCATIONS COMPILED ONTO BASE MAP BY SCALING OR TRACING FROM DRAWINGS IN SEPARATE REPORTS REFERENCED IN TEXT. LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

3) CONTOURS HAVE BEEN DEVELOPED FROM DATA GATHERED FROM A NUMBER OF SEPERATE REPORTS. REFER TO TEXT FOR INFORMATION AND DESCRIPTION OF METHODS USED TO COMPILE, INTERPRET AND PLOT DATA.

LEGEND:

- BORING BY GZA (PUBLIC DOMAIN) REFER TO TEXT FOR DETAILS
- BORINGS BY OTHERS; REFER TO TEXT FOR DETAILS
- BOTTOM OF AQUIFER ELEVATION CONTOUR (CONTOUR INTERVAL 20')
- SATURATED THICKNESS CONTOUR (CONTOUR INTERVAL 20')
- GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL 4')
- ELEVATION OF BOTTOM OF AQUIFER
- SATURATED THICKNESS GREATER THAN 80 FEET
- SATURATED THICKNESS 60 TO 80 FEET
- SATURATED THICKNESS 40 TO 60 FEET
- SATURATED THICKNESS 20 TO 40 FEET

DESIGNED BY: S.H. DRAWN BY: L.R.
CHECKED BY: SCALE: 1" = 300'
REVIEWED BY: M.B. DATE: DECEMBER, 1990

GOLDBERG-ZOINO & ASSOCIATES, INC.
CONSULTING ENGINEERS/GEOLOGISTS/ENVIRONMENTAL SCIENTISTS

REV. No.	DESCRIPTION	BY	DATE

SCALE IN FEET
0' 300' 600' 1200'

INDUSTRI-PLEX SITE
WOBURN, MASS

CONTOURS OF BOTTOM OF AQUIFER / SATURATED THICKNESS

PROJECT NO.
12027

FIGURE No.

NOTES:

1) BASE MAP PROVIDED BY GOLDER ASSOCIATES INC. 1990, SCALE: 1" = 200'.

2) BORING LOCATIONS COMPILED ONTO BASE MAP BY SCALING OR TRACING FROM DRAWINGS IN SEPARATE REPORTS REFERENCED IN TEXT. LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

3) CONTOURS HAVE BEEN DEVELOPED FROM DATA GATHERED FROM A NUMBER OF SEPERATE REPORTS. REFER TO TEXT FOR INFORMATION AND DESCRIPTION OF METHODS USED TO COMPILE, INTERPRET AND PLOT DATA.

LEGEND:

- BORING BY GZA (PUBLIC DOMAIN) REFER TO TEXT FOR DETAILS
- BORINGS BY OTHERS: REFER TO TEXT FOR DETAILS
- CONTOURS OF BEDROCK ELEVATION (CONTOUR INTERVAL 20')
- ELEVATION OF BEDROCK SURFACE

GZA

GOLDBERG-ZOINO & ASSOCIATES, INC.
CONSULTING ENGINEERS/GEOLOGISTS/ENVIRONMENTAL SCIENTISTS

SCALE IN FEET: 0' 300' 600' 1200'

CONTOURS OF BEDROCK ELEVATION

INDUSTRI-PLEX SITE
WOBURN, MASS

PROJECT NO. 12027

No.	DESCRIPTION	BY	DATE

DESIGNED BY: S.H. DRAWN BY: L.R.
CHECKED BY: SCALE: 1" = 300'
REVIEWED BY: M.B. DATE: DECEMBER, 1990