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June 2, 2003

GeoInsight Project 2941-001

Frank Gardner
U.S. Environmental Protection Agency
1 Congress Street, Suite 1100-HBR
Boston, Massachusetts 02114-2023

RE: First Progress Report
Administrative Order on Consent for Removal Action
Wells G&H Superfund Site
Olympia Nominee Trust Property
60 Olympia Avenue
Woburn, Massachusetts
CERCLA Docket # 01-2003-0023

Dear Mr. Gardner:

GeoInsight, Inc. (GeoInsight) prepared this progress report to summarize activities completed at 60 Olympia Avenue in Woburn, Massachusetts. Refer to Figure 1 for the location of the Site. This progress report was prepared in accordance with the March 17, 2003 U.S. EPA Administrative Order on Consent for Removal Action (CERCLA Docket No. 01-2003-0023; the "Order"). The progress report was prepared by GeoInsight, Inc. (GeoInsight) on behalf of Olympia Nominee Trust, the current owner of the 60 Olympia Avenue property (the "Property").

The following information summarizes activities and deliverables for the Olympia Property during the first progress report period. The information is presented as two categories: 1) information associated with the surface soil areas impacted by polychlorinated biphenyls (PCBs) and poly-cyclic aromatic hydrocarbons (PAH); and 2) information associated with subsurface soil and ground water impacted by trichloroethylene (TCE). The locations of these areas are shown on Figure 2.

PCB-Impacted and PAH-Impacted Soil – Removal Action

- April 10, 2003 - GeoInsight completed pre-Work Plan surface soil sampling in the PCB and PAH areas (soil samples CPS-1 through CPS-16 and SPS-1 through SPS-8). Analytical data are summarized on Tables 1 and 2. Soil sample locations are illustrated on Figures 3 and 4.

SEMS Doc ID 100023598

- April 11, 2003 – GeoInsight submitted a permit application to the Massachusetts Water Resources Authority (MWRA) to access work areas adjacent to the MWRA sewer easement.

- April 16, 2003 – GeoInsight submitted a draft PCB Work Plan and Health and Safety Plan to the EPA for review. The Work Plan was submitted 30 days after the effective date of the Administrative Order.

- April 22, 2003 – GeoInsight collected additional surface soil samples (soil samples SPS-17 through SPS-24) to delineate the PCB-impacted surface soil. Analytical data are summarized on Table 1 and results are presented on Figure 3.

- April 25, 2003 – EPA approved the PCB Work Plan. As part of this approval, EPA approved GeoInsight's laboratory and soil removal subcontractors.

- GeoInsight anticipates that the MWRA will issue a permit during the week of May 26, 2003 and that the soil removal project will be initiated during the week of June 2, 2003.

TCE-Impacted Soil – Assessment and Remedial Planning

- April 22, 2003 – GeoInsight collected ground water samples from three monitoring wells (MW-13, MW-14S and OL-2) as part of an investigation to evaluate potential leaks in the sewer line. Analytical data are summarized on Table 3.

- April 25 and 28, 2003 - GeoInsight advanced soil borings at six locations to evaluate subsurface stratigraphy and collect soil and ground water samples for laboratory analysis of VOCs, grain size, and total organic carbon content (TOC). The locations of the borings are illustrated on Figure 5.

- May 12, 2003 – Groundwater Analytical Inc. initiated a permanganate demand study of seven soil samples collected from various depths, locations, and geologic units within the TCE impacted area.

- At this time, GeoInsight anticipates that up to eight soil borings will be advanced adjacent to the sewer line to evaluate the magnitude and extent of VOCs in this area. This work is tentatively scheduled for June 5, 2003, dependent on the issuance of the MWRA permit.

Internal MWRA review of the permit application has delayed investigation activities in the vicinity of the sewer easement. In addition to obtaining additional information regarding the magnitude and extent of ground water impacts in the vicinity of the easement, soil samples will be collected for remedial action testing, including permanganate demand tests. The duration of these demand tests is typically 4 to 5 weeks.

Currently, the deadline for submitting a draft TCE-Work Plan is June 16, 2003. The MWRA sewer easement investigation activities (assuming that a permit is granted during the last week of

May 2003) will not be completed prior to the June 16, 2003 deadline. Consequently, GeoInsight will be submitting an extension request for the TCE Work Plan.

Please contact either of the undersigned if you have any questions or if you would like to discuss this project.

Sincerely,
GEOINSIGHT, INC.

Kevin D. Trainer, P.G., C.P.G., L.S.P.
Senior Project Geologist

Michael J. Webster, P.G., L.S.P.
Senior Associate

Attachments:

Figure 1	Site Locus
Figure 2	Site Plan
Figure 3	PCB-Impacted Area Sampling Locations
Figure 4	PAH-Impacted Area Sampling Locations
Figure 5	Soil Boring Locations Plan
Table 1	Summary of Soil Analytical Data – PCBs
Table 2	Summary of Soil Analytical Data – PAHs
Table 3	Summary of Ground Water Analytical Data – PAHs
Table 4	Summary of Ground Water Analytical Data – Geoprobe Sampling
Table 5	Summary of Soil Analytical Data – Geoprobe Sampling

Laboratory Analytical Data Reports

cc: Chub Whitten, Olympia Nominee Trust
David P. Rosenblatt, Esq., Burns & Levinson LLP

TABLE 1
SUMMARY OF SOIL ANALTYICAL DATA - PCBS
60 OLYMPIA AVENUE
WOBURN, MASSACHUSETTS

Sample I.D.	Sampling Date	Depth	Total PCBs	ROD Target Concentration
CPS-1	04/10/03	0-6"	**0.032**	1.04
CPS-2	04/10/03	0-6"	**0.050**	1.04
CPS-3	04/10/03	0-6"	**0.040**	1.04
CPS-4	04/10/03	0-6"	**0.860**	1.04
CPS-5	04/10/03	0-6"	**21.5**	1.04
CPS-5D	04/10/03	12"	**0.460**	1.04
CPS-6	04/10/03	0-6"	**7.40**	1.04
CPS-7	04/10/03	0-6"	ND(0.250)	1.04
CPS-7D	04/10/03	12"	ND(0.030)	1.04
CPS-7D (Lab Duplicate)	04/10/03	0-6"	ND(0.031)	1.04
CPS-8	04/10/03	0-6"	ND(0.030)	1.04
CPS-9	04/10/03	0-6"	**6.90**	1.04
CPS-10	04/10/03	0-6"	**3.90**	1.04
CPS-11D	04/10/03	9-12"	ND(0.034)	1.04
CPS-12	04/10/03	0-6"	ND(0.032)	1.04
CPS-13	04/10/03	0-6"	**26.5**	1.04
CPS-14	04/10/03	0-6"	**5.00**	1.04
CPS-14 (Lab Duplicate)	04/10/03	0-6"	**3.00**	1.04
CPS-15	04/10/03	0-6"	ND(0.250)	1.04
CPS-16	04/10/03	0-6"	ND(0.250)	1.04
CPS-17	04/22/03	---	ND(0.250)	1.04
CPS-18	04/22/03	---	ND(0.250)	1.04
CPS-19	04/22/03	---	ND(0.250)	1.04
CPS-20	04/22/03	---	ND(0.250)	1.04
CPS-21	04/22/03	---	ND(0.250)	1.04
CPS-22	04/22/03	---	ND(0.250)	1.04
CPS-23	04/22/03	---	ND(0.250)	1.04
CPS-24	04/22/03	---	ND(0.250)	1.04

Notes:
1. Values in micrograms per kilograms (mg/kg).
2. ND(x) = constituent not detected above practical quantiation limits noted in parentheses.
3. BOLD exceeds laboratory detection limits.
4. Shaded exceeds soil target concentrations specified in the 1989 Record of Decision (ROD).

TABLE 2
SUMMARY OF SOIL ANALTYICAL DATA - PAHs
60 OLYMPIA AVENUE
WOBURN, MASSACHUSETTS

Sample I.D. Sampling Date Constituent (PAHs)	SPS-1 04/10/03	SPS-2 04/10/03	SPS-3 04/10/03	SPS-4 04/10/03	SPS-5 04/10/03	SPS-6 04/10/03	SPS-7 04/10/03	SPS-8 04/10/03	**MCP Method 1 Standards** **S-1/GW-1**
Acenaphthylene	ND(0.130)	ND(0.111)	ND(0.118)	**0.380**	ND(0.100)	ND(0.115)	**0.260**	ND(0.122)	**100**
Anthracene	ND(0.130)	ND(0.111)	ND(0.118)	**0.390**	ND(0.100)	ND(0.115)	**0.180**	ND(0.122)	**1,000**
Benzo(a)anthracene	ND(0.130)	**0.160**	**0.410**	**0.930**	**0.160**	ND(0.115)	**0.520**	ND(0.122)	**0.7**
Benzo(b) fluoranthene	ND(0.130)	**0.260**	**0.580**	**1.10**	**0.250**	ND(0.115)	**0.810**	ND(0.122)	**0.7**
Benzo(k) fluoranthene	ND(0.130)	**0.150**	**0.350**	**0.750**	ND(0.100)	ND(0.115)	**0.510**	ND(0.122)	**7**
Benzo(g,h,i)perylene	ND(0.130)	ND(0.111)	**0.210**	**0.490**	ND(0.100)	ND(0.115)	**0.280**	ND(0.122)	**1,000**
Benzo(a)pyrene	ND(0.130)	**0.200**	**0.420**	**1.00**	**0.170**	ND(0.115)	**0.510**	ND(0.122)	**0.7**
Chrysene	ND(0.130)	**0.210**	**0.460**	**1.00**	**0.190**	ND(0.115)	**0.610**	ND(0.122)	**7**
Fluoranthene	**0.220**	**0.370**	**0.770**	**1.70**	**0.310**	**0.250**	**1.00**	**0.280**	**1,000**
Indeno(1,2,3-cd)pyrene	ND(0.130)	ND(0.111)	**0.190**	**0.470**	ND(0.100)	ND(0.115)	**0.280**	ND(0.122)	**0.7**
Phenanthrene	ND(0.130)	ND(0.111)	ND(0.118)	**0.240**	ND(0.100)	ND(0.115)	**0.150**	ND(0.122)	**700**
Pyrene	**0.200**	**0.300**	**0.710**	**1.70**	**0.250**	**0.200**	**0.930**	**0.230**	**700**

Notes:
1. Values in micrograms per kilograms (mg/kg).
2. ND(x) = constituent not detected above practical quantitation limits noted in parentheses.
3. BOLD exceeds laboratory detection limits.
4. Shaded exceeds lowest applicable MCP Method 1 Standard for soil.

TABLE 3
SUMMARY OF GROUND WATER ANALTYICAL DATA -VOCs
60 OLYMPIA AVENUE
WOBURN, MASSACHUSETTS

Sample I.D. Sampling Date Constituent	MW-013 4/22/03	MW-014S 4/22/03	OL-2 4/22/03	Record of Decision ARAR Based-Action Levels
VOCs				
Tetrachloroethene	**650**	**1**	**3**	5
Trichloroethene	**280**	**6**	**91**	5
cis 1,2-Dichloroethene	**780**	**61**	**4**	NA
Vinyl Chloride	ND(10)	**19**	ND(1)	2
1,1,1-Trichloroethane	ND(10)	ND(1)	ND(1)	NA
1,1-Dichloroethane	ND(10)	ND(1)	ND(1)	5
1,1-Dichloroethene	ND(10)	ND(1)	ND(1)	7
1,2-Dichloroethane	ND(10)	ND(1)	ND(1)	5
Chloroform	ND(10)	ND(1)	ND(1)	100
	No other VOCs detected above laboratory limits.			
Inorganics Chemistry				
Chloride	**110,000**	**93,000**	**270,000**	NA
Fluoride	ND(40)	ND(40)	ND(40)	NA
Ammonia (as Nitrogen)	**300**	**400**	**1,300**	NA
Nitrate (as Nitrogen)	**30**	**260**	ND(20)	NA
Fecal Coliform (per 100 ml)	ND(100)	ND(100)	ND(100)	NA

Notes:

1. All values in micrograms per liter (ug/L), except where noted.
2. ND(x) = constituent not detected above prqactical quanititation limits noted in parentheses.
3. BOLD exceeds laboratory detection limits.
4. Shaded exceeds concentrations specified in the 1989 Record of Decision (ROD).

TABLE 4
SUMMARY OF GROUND WATER ANALYTICAL DATA - GEOPROBE SAMPLING
60 OLYMPIA AVENUE
WOBURN, MASSACHUSETTS

Sample I.D. Sampling Date Depth: Constituent	GEO-SB-100(D) 4/28/03 6-8'	GEO-SB-100(C) 4/28/03 10-12'	GEO-SB-101(F) 4/28/03 9-11'	GEO-SB-101(E) 4/28/03 14-16'	GEO-SB-101(D) 4/28/03 17.5-19'	GEO-SB-102(D) 4/28/03 13-14.5'	GEO-SB-102(E) 4/28/03 18.5-20'	GEO-SB-103(D) 4/25/03 12.5-14'	GEO-SB-103(E) 4/25/03 16.5-18'
VOCs (ug/l)									
Tetrachloroethene	ND(500)	ND(2,500)	ND(500)	ND(1,000)	ND(100)	ND(10,000)	ND(250)	ND(0.5)	ND(0.5)
Trichloroethene	**21,000**	**140,000**	**28,000**	**47,000**	**4,700**	**670,000**	**15,000**	**5**	ND(0.5)
cis 1,2-Dichloroethene	ND(500)	ND(2,500)	ND(500)	ND(1,000)	ND(100)	ND(10,000)	ND(250)	ND(0.5)	ND(0.5)
Vinyl Chloride	ND(500)	ND(2,500)	ND(500)	ND(1,000)	ND(100)	ND(10,000)	ND(250)	ND(0.5)	ND(0.5)
1,1,1-Trichloroethane	ND(500)	ND(2,500)	ND(500)	ND(1,000)	ND(100)	ND(10,000)	ND(250)	ND(0.5)	ND(0.5)
1,1-Dichloroethane	ND(500)	ND(2,500)	ND(500)	ND(1,000)	ND(100)	ND(10,000)	ND(250)	ND(0.5)	ND(0.5)
1,1-Dichloroethene	ND(500)	ND(2,500)	ND(500)	ND(1,000)	ND(100)	ND(10,000)	ND(250)	ND(0.5)	ND(0.5)
1,2-Dichloroethane	ND(500)	ND(2,500)	ND(500)	ND(1,000)	ND(100)	ND(10,000)	ND(250)	ND(0.5)	ND(0.5)
Chloroform	ND(500)	ND(2,500)	ND(500)	ND(1,000)	ND(100)	ND(10,000)	ND(250)	ND(0.5)	ND(0.5)
No other VOCs detected above laboratory limits									

Notes:

1. Samples analyzed by EPA Method 8260B.
2. ND(x) = constituent not detected above practical quanititation limits noted in parentheses.
3. BOLD exceeds laboratory detection limits.
4. All values in ug/l.

TABLE 5
SUMMARY OF SOIL ANALYTICAL DATA - GEOPROBE SAMPLING
60 OLYMPIA AVENUE
WOBURN, MASSACHUSETTS

Sample I.D.	GEO-SB-98	GEO-SB-100(A)	GEO-SB-100(B)	GEO-SB-101(A)	GEO-SB-101(B)	GEO-SB-101(C)	GEO-SB-102(A)	GEO-SB-102(C)	GEO-SB-102(B)	GEO-SB-103(A)	GEO-SB-103(B)	GEO-SB-103(C)
Sampling Date	4/25/03	4/28/03	4/28/03	4/28/03	4/28/03	4/28/03	4/25/03	4/25/03	4/25/03	4/25/03	4/25/03	4/25/03
Depth:	6'	7'	11'	10'	15'	18'	13'	19'	14.5'	4.5'	13'	17'
Constituent												
VOCs (ug/kg)												
Tetrachloroethene	ND(380)	ND(620)	ND(1,300)	ND(310)	ND(680)	ND(560)	ND(260)	ND(1,400)	ND(4,800)	ND(9)	ND(10)	ND(10)
Trichloroethene	ND(380)	**14,000**	**23,000**	**740**	**8,800**	**7,700**	**760**	**13,000**	**120,000**	**16**	ND(10)	ND(10)
cis 1,2-Dichloroethene	ND(380)	ND(620)	ND(1,300)	ND(310)	ND(680)	ND(560)	ND(260)	ND(1,400)	ND(4,800)	ND(9)	ND(10)	ND(10)
Vinyl Chloride	ND(770)	ND(1,200)	ND(2,600)	ND(620)	ND(1,400)	ND(1,100)	ND(520)	ND(2,800)	ND(9,600)	ND(18)	ND(20)	ND(20)
1,1,1-Trichloroethane	ND(380)	ND(620)	ND(1,300)	ND(310)	ND(680)	ND(560)	ND(260)	ND(1,400)	ND(4,800)	ND(9)	ND(10)	ND(10)
1,1-Dichloroethane	ND(380)	ND(620)	ND(1,300)	ND(310)	ND(680)	ND(560)	ND(260)	ND(1,400)	ND(4,800)	ND(9)	ND(10)	ND(10)
1,1-Dichloroethene	ND(380)	ND(620)	ND(1,300)	ND(310)	ND(680)	ND(560)	ND(260)	ND(1,400)	ND(4,800)	ND(9)	ND(10)	ND(10)
1,2-Dichloroethane	ND(380)	ND(620)	ND(1,300)	ND(310)	ND(680)	ND(560)	ND(260)	ND(1,400)	ND(4,800)	ND(9)	ND(10)	ND(10)
Chloroform	ND(380)	ND(620)	ND(1,300)	ND(310)	ND(680)	ND(560)	ND(260)	ND(1,400)	ND(4,800)	ND(9)	ND(10)	ND(10)
	No other VOCs detected above laboratory limits.											
Inorganic Chemistry												
Total Organic Carbon (mg/kg)	**2,200**	**610**	ND(560)	ND(1,100)	ND(660)	ND(560)	ND(500)	**640**	ND(600)	NA	ND(490)	ND(510)

Notes:
1. Samples analyzed by EPA Method 8260B.
2. ND(x) = constituent not detected above practical quanititation limits noted in parentheses.
3. BOLD exceeds laboratory detection limits.

SOURCE:
WOBURN, MASSACHUSETTS, USGS QUAD.

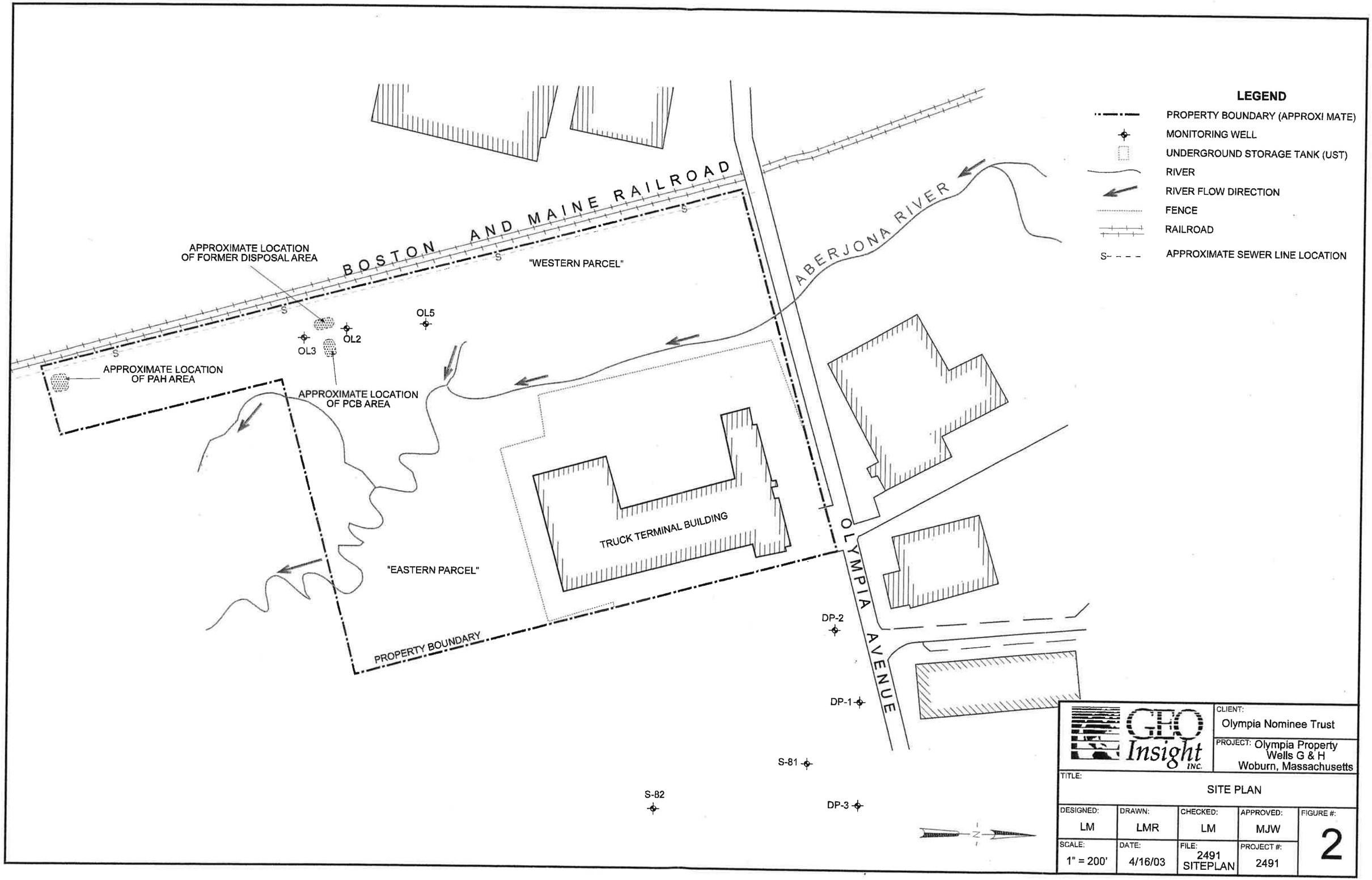
N

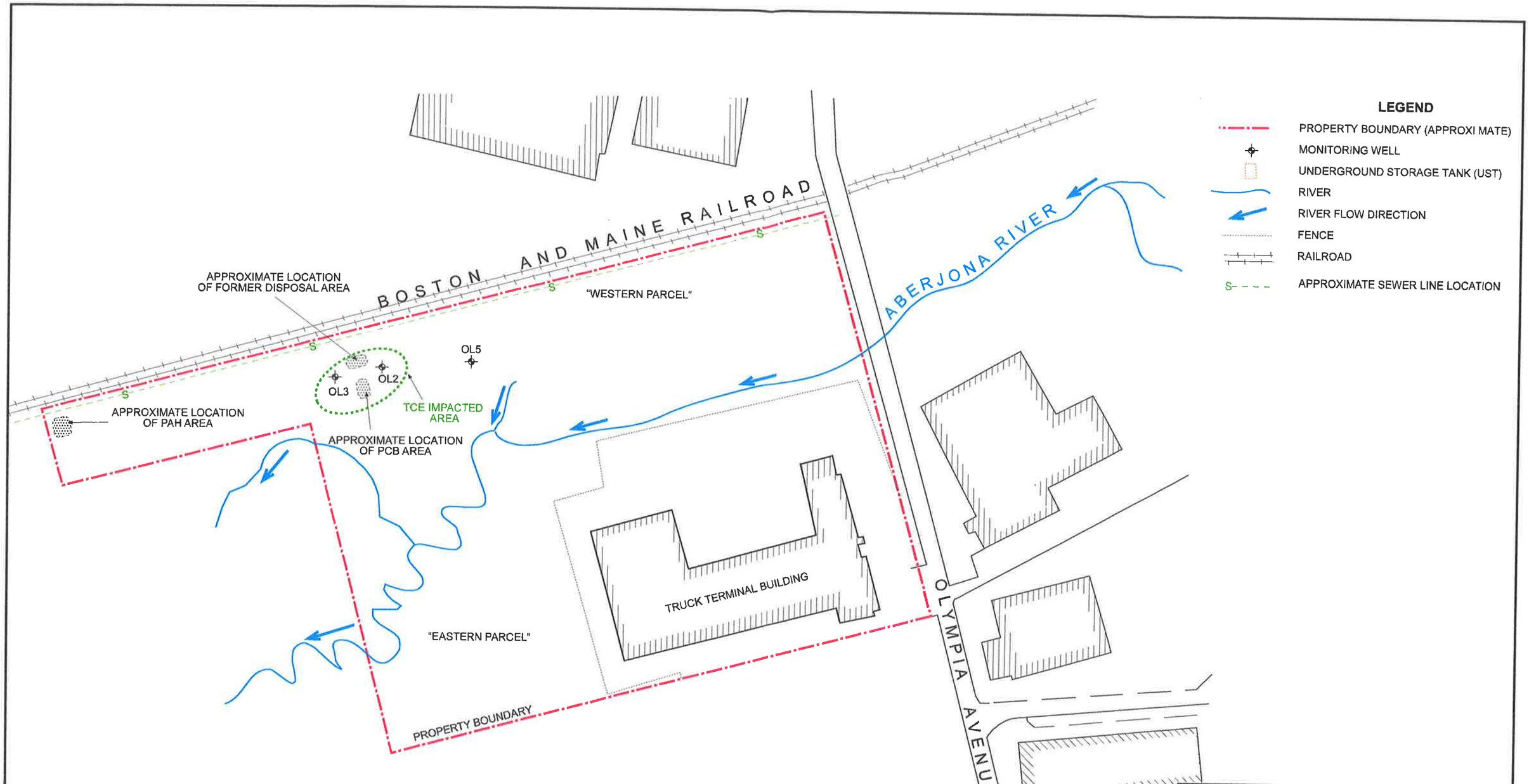
GEO Insight INC.

CLIENT:	OLYMPIA NOMINEE TRUST
PROJECT:	OLYMPIA PROPERTY, WOBURN MASSACHUSETTS

SITE LOCUS

DESIGNED:	DRAWN:	CHECKED:	APPROVED:	FIGURE:
LMR	LMR	MJW	MJW	1
SCALE: AS SHOWN	DATE: 8/14/02	FILE NO.: 2491SL	PROJECT NO: 2491-001	

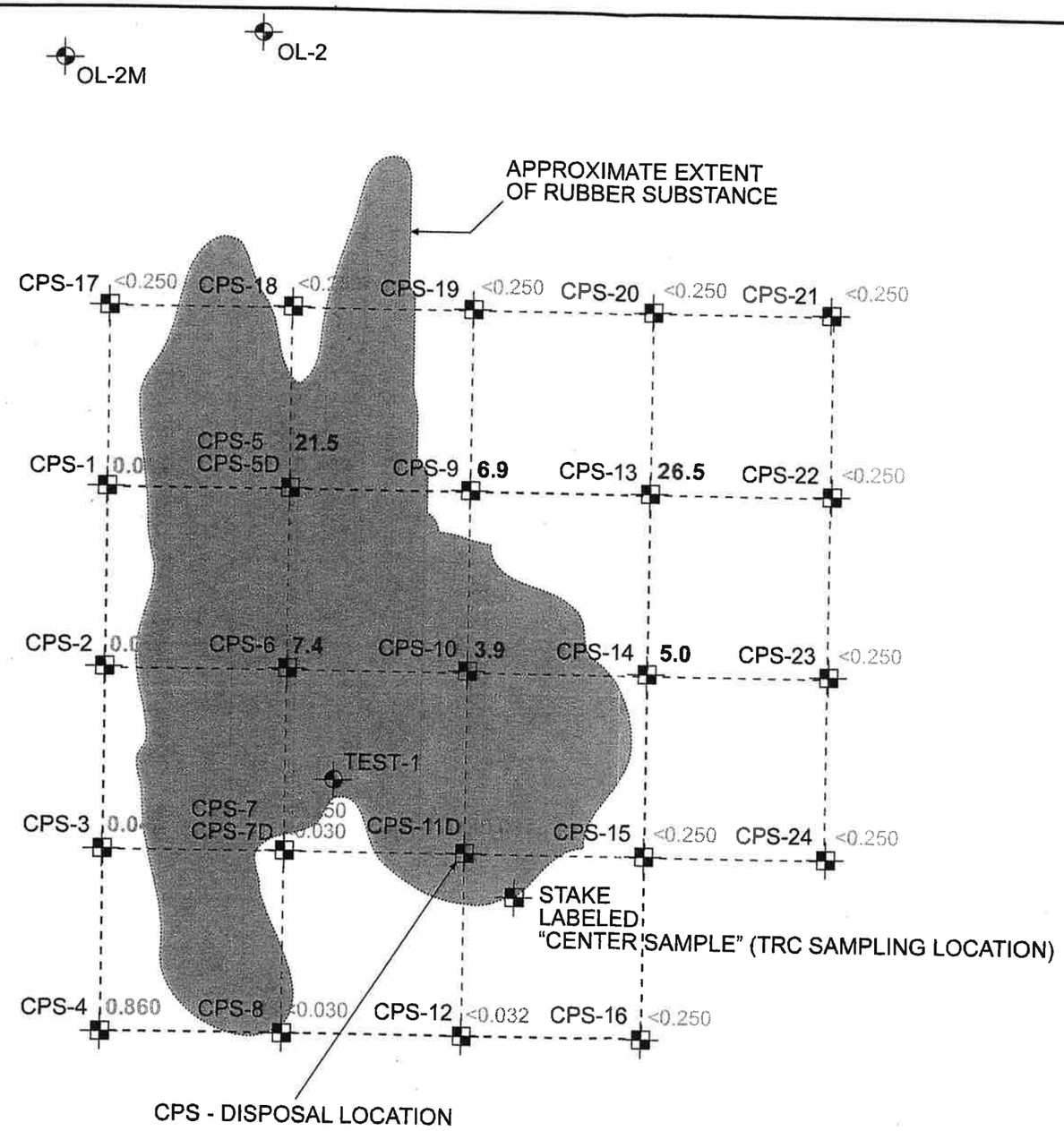

LEGEND
PROPERTY BOUNDARY (APPROXI MATE)
MONITORING WELL
UNDERGROUND STORAGE TANK (UST)
RIVER
RIVER FLOW DIRECTION
FENCE
RAILROAD
APPROXIMATE SEWER LINE LOCATION
BOSTON AND MAINE RAILROAD
ABERJONA RIVER
"WESTERN PARCEL"
APPROXIMATE LOCATION OF FORMER DISPOSAL AREA
APPROXIMATE LOCATION OF PAH AREA
APPROXIMATE LOCATION OF PCB AREA
OL5
OL2
OL3
TRUCK TERMINAL BUILDING
"EASTERN PARCEL"
PROPERTY BOUNDARY
OLYMPIA AVENUE
DP-2
DP-1
S-81
S-82
DP-3
N
GEO Insight INC.
CLIENT: Olympia Nominee Trust
PROJECT: Olympia Property Wells G & H Woburn, Massachusetts
TITLE: SITE PLAN
DESIGNED: LM
DRAWN: LMR
CHECKED: LM
APPROVED: MJW
FIGURE #: 2
SCALE: 1" = 200'
DATE: 4/16/03
FILE: 2491 SITEPLAN
PROJECT #: 2491



GHO Insight INC.

CLIENT:	Olympia Nominee Trust
PROJECT:	Olympia Property Wells G & H Woburn, Massachusetts
TITLE:	SITE PLAN

DESIGNED:	DRAWN:	CHECKED:	APPROVED:	FIGURE #:
LM	LMR	LM	MJW	2
SCALE: 1" = 200'	DATE: 6/16/03	FILE: 2491 SITEPLAN	PROJECT #: 2491	



LEGEND

- MONITORING WELL
- SOIL SAMPLE LOCATION
- EXTENT OF RUBBER SUBSTANCE
- SAMPLING GRID
- 0.460 — PCB CONCENTRATION BELOW ROD LEVEL (values in mg/kg)
- **6.9** — PCB CONCENTRATION ABOVE ROD LEVEL (values in mg/kg)

NORTH

0 5 10
Feet

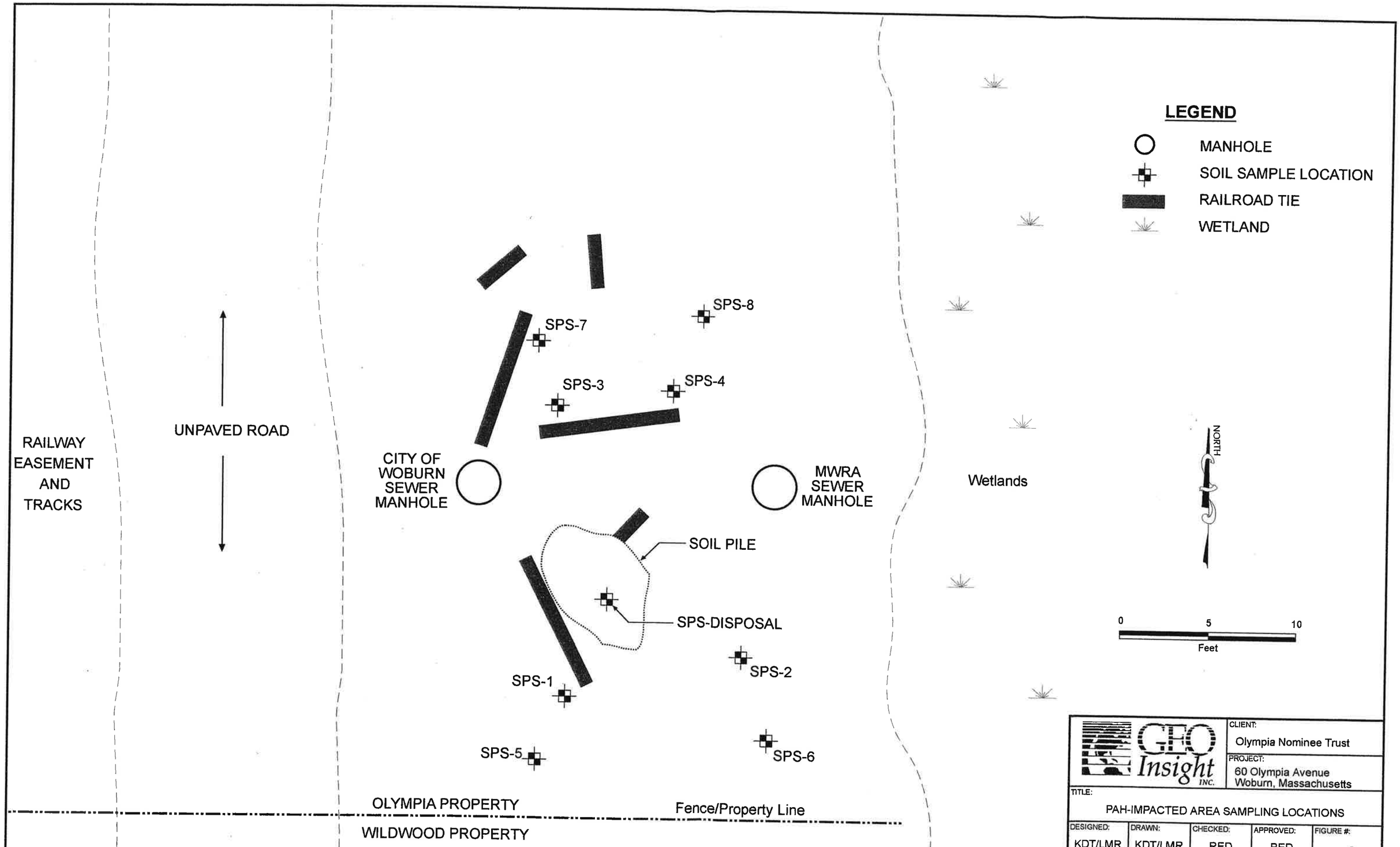
GHO Insight INC.

CLIENT: Olympia Nominee Trust

PROJECT: 60 Olympia Avenue Woburn, Massachusetts

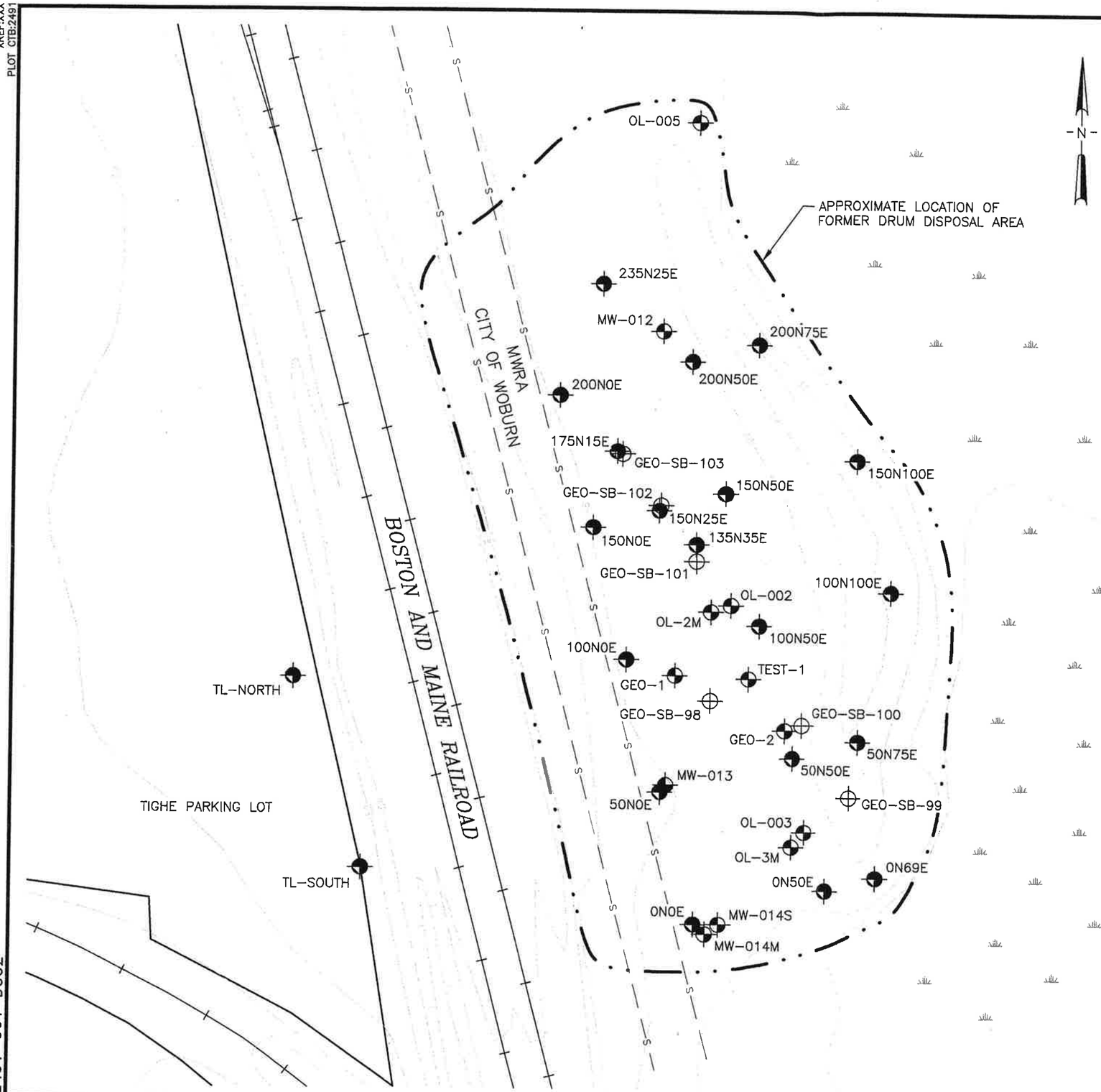
TITLE: PCB-IMPACTED AREA SAMPLING LOCATIONS

DESIGNED:	DRAWN:	CHECKED:	APPROVED:	FIGURE #:
KDT/LMR	KDT/LMR	RED	RED	3
SCALE: 1"=5'	DATE: 4/11/03	FILE: PCB Sampling	PROJECT #: 2491-001	



Note: The SPS-Disposal sample location was approximately the same position as EBASCO 1987 sample SS-04.

FILE NO:2491d002
XREF:XXX
PLOT CTB:2491



LEGEND

GEO-1	MONITORING WELL
SB-1	SOIL BORING
GEO-SB-100	SOIL BORING
—— S ——	SUBSURFACE SEWER LINES
	APPROXIMATE LOCATION OF WETLAND AREA
	GROUND SURFACE ELEVATION CONTOUR IN FEET

NOTES:

1. BASE PLAN DEVELOPED FROM TRC OF LOWELL, MASSACHUSETTS' DRAWING TITLED "MAXIMUM PID SOIL CONTAMINATION CONTOURS".

0 40 80
APPROX. SCALE IN FEET

GEO Insight INC.

CLIENT: OLYMPIA NOMINEE TRUST

PROJECT: 60 OLYMPIA AVENUE WOBURN, MASSACHUSETTS

TITLE: SOIL BORING LOCATION PLAN

DESIGNED:	DRAWN:	CHECKED:	APPROVED:	FIGURE NO.:
CAB	DLL	KDT	MJW	5
SCALE: 1" = 40'	DATE: 5/20/03	FILE NO.: 2491d002	PROJECT NO.: 2491-001	

2491-001 D002

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY
Massachusetts Certification # M-MA138
Rhode Island # 98 Maine # MA138
Florida # E87600 / 87562
New Hampshire # 2538
Connecticut # PH-0777
New York # 11393

ACCREDITED IN ACCORDANCE WITH nelac

GeoInsight, Inc.
319 Littleton Road
Westford, MA 01886

Attn: Kevin Trainer

Friday, April 18, 2003

Report Status:
- ☐ Final Report
- ☐ Re-issued Report
- ☐ Revised Report

Client Project Number: 2491

Location: 60 Olympia - Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested
AD78489	CPS-1	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78490	CPS-2	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78491	CPS-3	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78492	CPS-4	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78493	CPS-5	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78494	CPS-6	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78495	CPS-7	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78496	CPS-8	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78497	CPS-9	Polychlorinated Biphenyls by GC Ultrasonic Extraction

ENVIRONMENTAL ANALYSES
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Featuring
HANIBAL TECHNOLOGY

Client Project Number: 2491 **Location:** 60 Olympia - Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested
AD78497	CPS-9	% Solids
AD78498	CPS-10	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78499	CPS-11D	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78500	CPS-12	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78501	CPS-13	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78502	CPS-14	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids Duplicate PCBs by GC
AD78503	CPS-15	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78504	CPS-16	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78505	CPS-5D	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78506	CPS-7D	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids Duplicate PCBs by GC
AD78507	SPS-1	Ultrasonic Extraction % Solids PAHs by GC/MS
AD78508	SPS-2	Ultrasonic Extraction % Solids

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SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Client Project Number: 2491 **Location:** 60 Olympia - Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested
AD78508	SPS-2	PAHs by GC/MS
AD78509	SPS-3	Ultrasonic Extraction % Solids PAHs by GC/MS
AD78510	SPS-4	Ultrasonic Extraction % Solids PAHs by GC/MS
AD78511	SPS-5	Ultrasonic Extraction % Solids PAHs by GC/MS
AD78512	SPS-6	Ultrasonic Extraction % Solids PAHs by GC/MS
AD78513	SPS-7	Ultrasonic Extraction % Solids PAHs by GC/MS
AD78514	SPS-8	Ultrasonic Extraction % Solids PAHs by GC/MS

I attest that all information contained within this report has been reviewed for accuracy and checked against all quality control requirements outlined in each applicable method and meet the requirements of NELAC including any data obtained from a subcontract laboratory. Please note that all solid matrix sample results are calculated on a dry weight basis unless otherwise specified.

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Authorized by:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

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SPECTRUM ANALYTICAL, INC.

Laboratory Report

Location: 60 Olympia - Woburn, MA
Client: GEOINS

Client Project No: 2491
Submittal Date: 4/11/2003

Lab ID No: AD78489 **Client Id:** CPS-1 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1260	32	ug/Kg	32	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	97	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	70	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	87.3	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78490 **Client Id:** CPS-2 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1260	50	ug/Kg	31	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	79	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	59	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	91.9	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78491 **Client Id:** CPS-3 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1260	40	ug/Kg	28	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	107	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	81	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	92.4	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78492 **Client Id:** CPS-4 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1260	860	ug/Kg	32	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	85	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	86	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	91.5	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78493 **Client Id:** CPS-5 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1260	21,500	ug/Kg	250	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	68	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	90	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	94.1	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78494 **Client Id:** CPS-6 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1260	7,400	ug/Kg	250	4/16/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	88	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	64	ug/Kg	0.00	4/16/2003	TG	SW846 8082
% Solids	89.4	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78495 **Client Id:** CPS-7 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	90	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	90	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	92.3	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78496 **Client Id:** CPS-8 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	87	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	88	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	87.2	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78497 **Client Id:** CPS-9 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1260	6,900	ug/Kg	250	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	75	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	45	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	88.9	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78498 **Client Id:** CPS-10 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	35	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	35	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	35	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	35	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	35	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	35	4/15/2003	TG	SW846 8082
PCB-1260	3,900	ug/Kg	35	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	105	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	53	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	85.8	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78499 **Client Id:** CPS-11D **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	111	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	68	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	88.4	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78500 **Client Id:** CPS-12 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	62	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	95	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	87.0	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78501 **Client Id:** CPS-13 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1260	26,500	ug/Kg	250	4/16/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	81	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	67	ug/Kg	0.00	4/16/2003	TG	SW846 8082
% Solids	92.8	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78502 **Client Id:** CPS-14 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Duplicate PCBs by GC						
PCB-1016	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1260	5,000	ug/Kg	250	4/16/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	90	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	52	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1260	3,000	ug/Kg	250	4/16/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	81	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	55	ug/Kg	0.00	4/16/2003	TG	SW846 8082
% Solids	85.0	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78503 **Client Id:** CPS-15 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	88	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	65	ug/Kg	0.00	4/16/2003	TG	SW846 8082
% Solids	88.1	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78504 **Client Id:** CPS-16 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	89	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	43	ug/Kg	0.00	4/16/2003	TG	SW846 8082
% Solids	85.1	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78505 **Client Id:** CPS-5D **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1260	460	ug/Kg	28	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	74	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	74	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	95.6	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78506 **Client Id:** CPS-7D **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Duplicate PCBs by GC						
PCB-1016	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	71	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	102	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	72	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	51	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	87.1	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78507 **Client Id:** SPS-1 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Acenaphthylene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Anthracene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Fluoranthene	220	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Pyrene	200	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Benzo (a) anthracene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Chrysene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Benzo (a) pyrene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	70	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	78	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
% Solids	81.9	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78508 **Client Id:** SPS-2 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Acenaphthylene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Anthracene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Fluoranthene	370	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Pyrene	300	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Benzo (a) anthracene	160	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Chrysene	210	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	260	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	150	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Benzo (a) pyrene	200	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	77	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	82	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
% Solids	66.9	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78509 **Client Id:** SPS-3 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Acenaphthylene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Anthracene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Fluoranthene	770	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Pyrene	710	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Benzo (a) anthracene	410	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Chrysene	460	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	580	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	350	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Benzo (a) pyrene	420	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	190	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	210	ug/Kg	118	4/15/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	68	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	80	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
% Solids	69.7	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78510 **Client Id:** SPS-4 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Acenaphthylene	380	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Phenanthrene	240	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Anthracene	390	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Fluoranthene	1,700	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Pyrene	1,700	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Benzo (a) anthracene	930	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Chrysene	1,000	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	1,100	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	750	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Benzo (a) pyrene	1,000	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	470	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	490	ug/Kg	118	4/15/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	71	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	82	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
% Solids	71.3	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78511 **Client Id:** SPS-5 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Acenaphthylene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Anthracene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Fluoranthene	310	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Pyrene	250	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Benzo (a) anthracene	160	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Chrysene	190	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	250	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Benzo (a) pyrene	170	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	72	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	81	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
% Solids	78.0	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78512 **Client Id:** SPS-6 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Acenaphthylene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Anthracene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Fluoranthene	250	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Pyrene	200	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Benzo (a) anthracene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Chrysene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Benzo (a) pyrene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	69	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	76	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
% Solids	75.5	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78513 **Client Id:** SPS-7 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	105	4/15/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	105	4/15/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Acenaphthylene	260	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Phenanthrene	150	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Anthracene	180	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Fluoranthene	1,000	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Pyrene	930	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Benzo (a) anthracene	520	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Chrysene	610	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	810	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	510	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Benzo (a) pyrene	510	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	280	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	280	ug/Kg	105	4/15/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	64	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	72	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
% Solids	77.1	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78514 **Client Id:** SPS-8 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Acenaphthylene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Anthracene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Fluoranthene	280	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Pyrene	230	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Benzo (a) anthracene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Chrysene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Benzo (a) pyrene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	69	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	79	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
% Solids	74.0	%		4/14/2003	BH	SM2540 B Mod.

Reviewed by:

Quality Service/Quality Assurance Depts.

Validated by:

President/Laboratory Director

4/17/2003

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EPA 600/4-79-020	Method for the Chemical Analysis of Water and Wastes
EPA 600/4-82-057	Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater
EPA 600/4-85/056	Choosing Cost-Effective QA/QC Programs for Chemical Analysis
EPA 600/4-88/039	Method for the Determination of Organic Compounds in Drinking Water
CT ETPH	Analysis of Extractable Total Petroleum Hydrocarbons (ETPH)
MADEP EPH	Method for the Determination of Extractable Petroleum Hydrocarbons (EPH)
MADEP VPH	Method for the Determination of Volatile Petroleum Hydrocarbons (VPH)
QAMS 004/80	Guidelines and Specifications for Preparing Quality Assurance Program Plans, USEPA Office of Monitoring System and Quality Assurance
GC-D-52-77	Oil Spill Identification System

Acronyms & Abbreviations

AA	Atomic Absorption	MS	Matrix Spike
ASTM	American Society for Testing and Materials	MSD	Matrix Spike Duplicate
BOD	Biological Oxygen Demand	NTU	Nephelometric Turbidity Units
°C	degree(s) Celsius	PAHs	Polynuclear Aromatic Hydrocarbons
COD	Chemical Oxygen Demand	PCBs	Polychlorinated Biphenyls
CMR	Code of Massachusetts Regulations	PID	Photo Ionization Detector
DEP	Department of Environmental Protection	PQL	Practical Quantitation Limit
DI	De-ionized	R	Recovery (%R: Percent Recovery)
DO	Dissolved Oxygen	RSD	Relative Standard Deviation
EPA	Environmental Protection Agency	SM	Standard Method
EPH	Extractable Petroleum Hydrocarbons	SR	Surrogate Recovery (%SR)
FID	Flame Ionization Detector	SW	Solid Waste
GC	Gas Chromatograph	THM	Trihalomethane(s)
GC / MS	Gas Chromatograph / Mass Spectrometer	TOC	Total Organic Carbon
ICP	Inductively Coupled Plasma	TOX	Total Organic Halogen
Id	Identification	TPH	Total Petroleum Hydrocarbons
MCL	Maximum Contaminant Level	VOC	Volatile Organic Compound
MDL	Minimum Detection Limit	VPH	Volatile Petroleum Hydrocarbons

04140944 (m)

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CHAIN OF CUSTODY RECORD

Special Handling:
☐ Standard TAT - 7 to 10 business days
☒ Rush TAT - Date Needed: 4/16/03
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- All samples are disposed of after 60 days unless otherwise instructed.

INO#23040515 Page 1 of 3

Report To: GEOINSIGHT
319 LITTLETON RD
WESTFORD, MA 01886

Project Mgr.: KEVIN TRAINER

Invoice To: GEOINSIGHT
319 LITTLETON RD
WESTFORD, MA 01886

P.O. No.: 2491 RQN: 4054

Project No.: 2491
Site Name: 60 OLYMPIA
Location: WOBURN State: MA
Sampler(s): KDT

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9=____ 10=____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=____ X2=____ X3=____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		PCB'S 8082								Notes:
78489	CPS-1	4/10/03	11:10	G	SO			1				X								
78490	CPS-2		11:22	G	SO			1				X								
78491	CPS-3		11:30	G	SO			1				X								
78492	CPS-4		11:32	G	SO			1				X								
78493	CPS-5		12:00	G	SO			1				X								
78494	CPS-6		12:22	G	SO			1				X								
78495	CPS-7		12:30	G	SO			1				X								
78496	CPS-8		12:35	G	SO			1				X								
78497	CPS-9		12:55	G	SO			1				X								
78498	CPS-10		1:00	G	SO			1				X								

Relinquished by:	Received by:	Date:	Time:
[signature]	E. Gendron	4/11/03	11:10
[signature]	[signature]	4-11-03	1548

☐ Fax results when available to (978) 692-1115
☐ E-mail results when available to ____
Condition upon Receipt: ☐ Iced ☐ Ambient ☐ 3.5°C

Fridge

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04140944

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CHAIN OF CUSTODY RECORD

Page 2 of 3

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☒ Rush TAT - Date Needed: 4/16/03
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- All samples are disposed of after 60 days unless otherwise instructed.

Report To: SAME

Project Mgr.:

Invoice To: SAME

P.O. No.: RQN:

Project No.: 2491
Site Name: 60 OLYMPIA
Location: WOBURN State: MA
Sampler(s): KDT

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9=____ 10=____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=____ X2=____ X3=____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		PCB'S 8082								Notes:
AD 78499	CPS-11D	4/10/03	1:10	G	SO			1				X								
78500	CPS-12	↓	1:20	G	SO			1				X								
78501	CPS-13		1:30	G	SO			1				X								
78502	CPS-14		1:35	G	SO			1				X								
78503	CPS-15		1:40	G	SO			1				X								
78504	CPS-16		1:43	G	SO			1				X								
78505	CPS-5D		1:50	G	SO			1				X								
78506	CPS-7D		2:00	G	SO			1				X								

Relinquished by:	Received by:	Date:	Time:
[signature]	E M Gundron	4/11/03	11:10
E Sr G	[signature]	4-11-03	1540

☐ Fax results when available to (978) 692-1115
☐ E-mail results when available to ____
Condition upon Receipt: ☐ Iced ☐ Ambient ☐ 3.5°C

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CHAIN OF CUSTODY RECORD

Page 3 of 3

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
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Report To: SAME

Project Mgr.:

Invoice To: SAME

P.O. No.: RQN:

Project No.: 2491
Site Name: 60 OLYMPIA
Location: WOBURN State: MA
Sampler(s): KDT

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9= 10=

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= X2= X3=

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	PAH'S 8270								Notes:
AND 785087	SPS-1	4/10/03	3:05	6	SO			1			X								
78588	SPS-2		3:15	6	SO			1			X								
785089	SPS-3		3:30	6	SO			1			X								
785109	SPS-4		3:35	6	SO			1			X								
785110	SPS-5		3:40	6	SO			1			X								
785 12	SPS-6		3:50	6	SO			1			X								
785 13	SPS-7		4:00	6	SO			1			X								
785 14	SPS-8		4:10	6	SO			1			X								

Relinquished by:	Received by:	Date:	Time:
[signature]	E. Gendron	4/11/03	11:10
EMM	MTW	4-11-03	1545

☐ Fax results when available to (978) 692-1115
☐ E-mail results when available to
Condition upon Receipt: ☐ Iced ☐ Ambient ☐ 3.5 °C

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Massachusetts Certification # M-MA138
Rhode Island # 98 Maine # MA138
Florida # E87600 / 87562
New Hampshire # 2538
Connecticut # PH-0777
New York # 11393

GeoInsight, Inc.
319 Littleton Road
Westford, MA 01886

Attn: Kevin Trainer

Monday, April 28, 2003

Report Status:
- ☑ Final Report
- ☐ Re-issued Report
- ☐ Revised Report

Client Project Number: 2491

Location: 60 Olympia - Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested
AD80955	CPS-23	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD80956	CPS-20	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD80957	CPS-24	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD80958	CPS-19	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD80959	CPS-21	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD80960	CPS-17	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD80961	CPS-18	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD80962	CPS-22	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids Duplicate PCBs by GC

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SPECTRUM ANALYTICAL, INC.
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Client Project Number: 2491 **Location:** 60 Olympia - Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested

I attest that all information contained within this report has been reviewed for accuracy and checked against all quality control requirements outlined in each applicable method and meet the requirements of NELAC including any data obtained from a subcontract laboratory. Please note that all solid matrix sample results are calculated on a dry weight basis unless otherwise specified.

This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

Authorized by:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

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SPECTRUM ANALYTICAL, INC.

Laboratory Report

Location: 60 Olympia - Woburn, MA
Client: GEOINSIGHT

Client Project No: 2491
Submittal Date: 4/23/2003

Lab ID No: AD80955 **Client Id:** CPS-23 **Collection Date:** 4/22/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/25/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	66	ug/Kg	0.00	4/25/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	102	ug/Kg	0.00	4/25/2003	TG	SW846 8082
% Solids	87.7	%		4/24/2003	BH	SM2540 B Mod.

Lab ID No: AD80956 **Client Id:** CPS-20 **Collection Date:** 4/22/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/25/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	41	ug/Kg	0.00	4/25/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	111	ug/Kg	0.00	4/25/2003	TG	SW846 8082
% Solids	74.5	%		4/24/2003	BH	SM2540 B Mod.

Lab ID No: AD80957 **Client Id:** CPS-24 **Collection Date:** 4/22/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/25/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	61	ug/Kg	0.00	4/25/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	62	ug/Kg	0.00	4/25/2003	TG	SW846 8082
% Solids	96.2	%		4/24/2003	BH	SM2540 B Mod.

Lab ID No: AD80958 **Client Id:** CPS-19 **Collection Date:** 4/22/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/25/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	55	ug/Kg	0.00	4/25/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	55	ug/Kg	0.00	4/25/2003	TG	SW846 8082
% Solids	77.3	%		4/24/2003	BH	SM2540 B Mod.

Lab ID No: AD80959 **Client Id:** CPS-21 **Collection Date:** 4/22/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/25/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	62	ug/Kg	0.00	4/25/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	72	ug/Kg	0.00	4/25/2003	TG	SW846 8082
% Solids	80.6	%		4/24/2003	BH	SM2540 B Mod.

Lab ID No: AD80960 **Client Id:** CPS-17 **Collection Date:** 4/22/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/25/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	63	ug/Kg	0.00	4/25/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	54	ug/Kg	0.00	4/25/2003	TG	SW846 8082
% Solids	83.3	%		4/24/2003	BH	SM2540 B Mod.

Lab ID No: AD80961 **Client Id:** CPS-18 **Collection Date:** 4/22/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/25/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	67	ug/Kg	0.00	4/25/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	57	ug/Kg	0.00	4/25/2003	TG	SW846 8082
% Solids	84.5	%		4/24/2003	BH	SM2540 B Mod.

Lab ID No: AD80962 **Client Id:** CPS-22 **Collection Date:** 4/22/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/25/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Duplicate PCBs by GC						
PCB-1016	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	66	ug/Kg	0.00	4/25/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	55	ug/Kg	0.00	4/25/2003	TG	SW846 8082
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	58	ug/Kg	0.00	4/25/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	56	ug/Kg	0.00	4/25/2003	TG	SW846 8082
% Solids	79.5	%		4/24/2003	BH	SM2540 B Mod.

Reviewed by:

Quality Service/Quality Assurance Depts.

Validated by:

President/Laboratory Director

4/28/2003

SPECTRUM ANALYTICAL, INC.
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HANIBAL TECHNOLOGY

Laboratory Report Supplement
References

SW 846	Test Methods for Evaluating Solid Waste. Third edition, 1998
40 CFR 136	Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act
40 CFR 141	National Primary Drinking Water Regulations
40 CFR 143	National Secondary Drinking Water Regulations
40 CFR 160	Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), Good Laboratory Practice Standards
APHA-AWWA-WPCF	Standard Methods for the Examination of Water and Wastewater. 19th edition, 1995
ASTM D 3328	Standard Methods for the Comparison of Waterborne Petroleum Oils by Gas Chromatography
EPA 540/G-87/003	Data Quality Objectives for Remediation Response Activities, Development Process
EPA 600/4-79-012	Quality Assurance Handbook for Analytical Quality Control in Water and Wastewater Laboratories
EPA 600/4-79-019	Handbook for Analytical Quality Control in Water and Wastewater Laboratories
EPA 600/4-79-020	Method for the Chemical Analysis of Water and Wastes
EPA 600/4-82-057	Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater
EPA 600/4-85/056	Choosing Cost-Effective QA/QC Programs for Chemical Analysis
EPA 600/4-88/039	Method for the Determination of Organic Compounds in Drinking Water
CT ETPH	Analysis of Extractable Total Petroleum Hydrocarbons (ETPH)
MADEP EPH	Method for the Determination of Extractable Petroleum Hydrocarbons (EPH)
MADEP VPH	Method for the Determination of Volatile Petroleum Hydrocarbons (VPH)
QAMS 004/80	Guidelines and Specifications for Preparing Quality Assurance Program Plans, USEPA Office of Monitoring System and Quality Assurance
GC-D-52-77	Oil Spill Identification System

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CMR	Code of Massachusetts Regulations
DEP	Department of Environmental Protection
DI	De-ionized
DO	Dissolved Oxygen
EPA	Environmental Protection Agency
EPH	Extractable Petroleum Hydrocarbons
FID	Flame Ionization Detector
GC	Gas Chromatograph
GC / MS	Gas Chromatograph / Mass Spectrometer
ICP	Inductively Coupled Plasma
Id	Identification
MCL	Maximum Contaminant Level
MDL	Minimum Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NTU	Nephelometric Turbidity Units
PAHs	Polynuclear Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PID	Photo Ionization Detector
PQL	Practical Quantitation Limit
R	Recovery (%R: Percent Recovery)
RSD	Relative Standard Deviation
SM	Standard Method
SR	Surrogate Recovery (%SR)
SW	Solid Waste
THM	Trihalomethane(s)
TOC	Total Organic Carbon
TOX	Total Organic Halogen
TPH	Total Petroleum Hydrocarbons
VOC	Volatile Organic Compound
VPH	Volatile Petroleum Hydrocarbons

04240917

SPECTRUM ANALYTICAL, INC.
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CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☐ Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- All samples are disposed of after 60 days unless otherwise instructed.

Report To: GEOINSIGHT INC.
319 LITTLETON RD
WESTFORD MA 01886

Project Mgr.: KEVIN TRAINOR

Invoice To: SAME
23041022
P.O. No.: 2491 RQN: 4054

Project No.: 2491
Site Name: 60 OLYMPIA
Location: WOBURN State: MA
Sampler(s): KT

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9=_____ 10=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	PCB 8082								Notes:
80955	CPS-23	4/22/03	10:40	G	SO			1			X								see attached approval
80956	CPS-20		10:10	G	SO			1			X								
80957	CPS-24		10:45	G	SO			1			X								
80958	CPS-19		10:00	G	SO			1			X								
80959	CPS-21		10:25	G	SO			1			X								
80960	CPS-17		9:40	G	SO			1			X								
80961	CPS-18		9:50	G	SO			1			X								
80962	CPS-22		10:35	G	SO			1			X								

☑ Fax results when available to (978) 692-1115
☐ E-mail results when available to _____
Condition upon Receipt: ☐ Iced ☐ Ambient ☐ 5 °C

Relinquished by:	Received by:	Date:	Time:
Jared Sherman	Bergeron	4-23-03	11:30 AM
Bergeron	Jeremy Lunt	4/23/03	15:21

Ref.

Lis - Please tabulate
Thanks
- Kevin

GROUNDWATER ANALYTICAL

Groundwater Analytical, Inc.
P.O. Box 1200
228 Main Street
Buzzards Bay, MA 02532

Telephone (508) 759-4441
FAX (508) 759-4475
www.groundwateranalytical.com

April 30, 2003

Mr. Kevin Trainer
GeoInsight, Inc.
319 Littleton Rd.
Suite 105
Westford, MA 01886

LABORATORY REPORT

Project:	**60 Olympia/2491**
Lab ID:	**60331**
Received:	**04-23-03**

Dear Kevin:

Enclosed are the analytical results for the above referenced project. The project was processed for Priority turnaround.

This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of our state certifications.

The analytical results contained in this report meet all applicable NELAC standards, except as may be specifically noted, or described in the project narrative. This report may only be used or reproduced in its entirety.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,

Jonathan R. Sanford
President

JRS/pcl
Enclosures

GROUNDWATER ANALYTICAL

Sample Receipt Report

Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**
Lab ID: **60331**

Delivery: **GWA Courier**
Airbill: **n/a**
Lab Receipt: **04-23-03**

Temperature: **2.0'C**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID	Matrix	Sampled	Method	Notes
60331-1	MW-014S	Aqueous	4/22/03 12:05	EPA 8260B TCL Volatile Organics	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship
C269238	40 mL VOA Vial	Industrial	BX7101	HCl	R-3173F	03-14-03	03-24-03
C269250	40 mL VOA Vial	Industrial	BX7101	HCl	R-3173F	03-14-03	03-24-03
C269226	40 mL VOA Vial	Industrial	BX7101	HCl	R-3173F	03-14-03	03-24-03

Lab ID	Field ID	Matrix	Sampled	Method	Notes
60331-2	MW-013	Aqueous	4/22/03 12:55	EPA 8260B TCL Volatile Organics	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship
C269274	40 mL VOA Vial	Industrial	BX7101	HCl	R-3173F	03-14-03	03-24-03
C269286	40 mL VOA Vial	Industrial	BX7101	HCl	R-3173F	03-14-03	03-24-03
C269262	40 mL VOA Vial	Industrial	BX7101	HCl	R-3173F	03-14-03	03-24-03

Lab ID	Field ID	Matrix	Sampled	Method	Notes
60331-3	OL-2	Aqueous	4/22/03 13:35	EPA 8260B TCL Volatile Organics	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship
C269269	40 mL VOA Vial	Industrial	BX7101	HCl	R-3173F	03-14-03	03-24-03
C269280	40 mL VOA Vial	Industrial	BX7101	HCl	R-3173F	03-14-03	03-24-03
C269281	40 mL VOA Vial	Industrial	BX7101	HCl	R-3173F	03-14-03	03-24-03

Lab ID	Field ID	Matrix	Sampled	Method	Notes
60331-4	MW-014S	Aqueous	4/22/03 12:05	EPA 9056 Chloride EPA 9214 Fluoride SM 4500-NO3 F Nitrate	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship
C097930	500 mL Plastic	Proline	BX543	None	n/a	n/a	n/a

Lab ID	Field ID	Matrix	Sampled	Method	Notes
60331-5	MW-013	Aqueous	4/22/03 12:55	EPA 9056 Chloride EPA 9214 Fluoride SM 4500-NO3 F Nitrate	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship
C097927	500 mL Plastic	Proline	BX543	None	n/a	n/a	n/a

Lab ID	Field ID	Matrix	Sampled	Method	Notes
60331-6	OL-2	Aqueous	4/22/03 13:35	EPA 9056 Chloride EPA 9214 Fluoride SM 4500-NO3 F Nitrate	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship
C260170	250 mL Plastic	Proline	BX5483	None	n/a	n/a	11-27-02
C263026	250 mL Plastic	Proline	BX6729	None	n/a	n/a	02-06-03

Lab ID	Field ID	Matrix	Sampled	Method	Notes
60331-7	MW-014S	Aqueous	4/22/03 12:05	SM 4500-NH3 BG Ammonia	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship
C260451	250 mL Plastic	Proline	BX5482	H2SO4	R-3484E	10-04-02	10-23-02

Lab ID	Field ID	Matrix	Sampled	Method	Notes
60331-8	MW-013	Aqueous	4/22/03 12:55	SM 4500-NH3 BG Ammonia	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship
C260409	250 mL Plastic	Proline	BX5482	H2SO4	R-3484E	10-04-02	10-23-02

GROUNDWATER ANALYTICAL

Sample Receipt Report (Continued)

Project:	60 Olympia/2491	Delivery:	GWA Courier	Temperature:	2.0°C
Client:	GeoInsight, Inc.	Airbill:	n/a	Chain of Custody:	Present
Lab ID:	60331	Lab Receipt:	04-23-03	Custody Seal(s):	n/a

Lab ID	Field ID	Matrix	Sampled	Method	Notes
60331-9	OL-2	Aqueous	4/22/03 13:35	SM 4500-NH3 BG Ammonia	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship
C260450	250 mL Plastic	Proline	BX5482	H2SO4	R-3484E	10-04-02	10-23-02

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	MW-014S	Laboratory ID:	60331-01
Project:	60 Olympia/2491	QC Batch ID:	VM4-2575-W
Client:	GeoInsight, Inc.	Sampled:	04-22-03
Container:	40 mL VOA Vial	Received:	04-23-03
Preservation:	HCl / Cool	Analyzed:	04-27-03
Matrix:	Aqueous	Dilution Factor:	2

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	1
75-01-4	Vinyl Chloride	19	ug/L	1
74-83-9	Bromomethane	BRL	ug/L	1
75-00-3	Chloroethane	BRL	ug/L	1
75-35-4	1,1-Dichloroethene	BRL	ug/L	1
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	10
75-09-2	Methylene Chloride	BRL	ug/L	5
156-60-5	*trans*-1,2-Dichloroethene	BRL	ug/L	1
1634-04-4	Methyl *tert*-butyl Ether (MTBE)◊	BRL	ug/L	1
75-34-3	1,1-Dichloroethane	BRL	ug/L	1
156-59-2	*cis*-1,2-Dichloroethene	61	ug/L	1
78-93-3	2-Butanone (MEK)	BRL	ug/L	10
67-66-3	Chloroform	BRL	ug/L	1
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	1
56-23-5	Carbon Tetrachloride	BRL	ug/L	1
71-43-2	Benzene	BRL	ug/L	1
107-06-2	1,2-Dichloroethane	BRL	ug/L	1
79-01-6	Trichloroethene	6	ug/L	1
78-87-5	1,2-Dichloropropane	BRL	ug/L	1
75-27-4	Bromodichloromethane	BRL	ug/L	1
10061-01-5	*cis*-1,3-Dichloropropene	BRL	ug/L	1
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	10
108-88-3	Toluene	BRL	ug/L	1
10061-02-6	*trans*-1,3-Dichloropropene	BRL	ug/L	1
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	1
127-18-4	Tetrachloroethene	1	ug/L	1
591-78-6	2-Hexanone	BRL	ug/L	10
124-48-1	Dibromochloromethane	BRL	ug/L	1
108-90-7	Chlorobenzene	BRL	ug/L	1
100-41-4	Ethylbenzene	BRL	ug/L	1
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	BRL	ug/L	1
95-47-6	*ortho*-Xylene	BRL	ug/L	1
100-42-5	Styrene	BRL	ug/L	1
75-25-2	Bromoform	BRL	ug/L	1
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	1

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	99 %	86 - 118 %
1,2-Dichloroethane-d_4	99 %	80 - 120 %
Toluene-d_8	98 %	88 - 110 %
4-Bromofluorobenzene	108 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

◊ Indicates additional target analyte.

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	MW-013	Laboratory ID:	60331-02
Project:	60 Olympia/2491	QC Batch ID:	VM4-2574-W
Client:	GeoInsight, Inc.	Sampled:	04-22-03
Container:	40 mL VOA Vial	Received:	04-23-03
Preservation:	HCl / Cool	Analyzed:	04-26-03
Matrix:	Aqueous	Dilution Factor:	20

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	10
75-01-4	Vinyl Chloride	BRL	ug/L	10
74-83-9	Bromomethane	BRL	ug/L	10
75-00-3	Chloroethane	BRL	ug/L	10
75-35-4	1,1-Dichloroethene	BRL	ug/L	10
67-64-1	Acetone	BRL	ug/L	200
75-15-0	Carbon Disulfide	BRL	ug/L	100
75-09-2	Methylene Chloride	BRL	ug/L	50
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/L	10
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/L	10
75-34-3	1,1-Dichloroethane	BRL	ug/L	10
156-59-2	*cis*- 1,2-Dichloroethene	780	ug/L	10
78-93-3	2-Butanone (MEK)	BRL	ug/L	100
67-66-3	Chloroform	BRL	ug/L	10
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	10
56-23-5	Carbon Tetrachloride	BRL	ug/L	10
71-43-2	Benzene	BRL	ug/L	10
107-06-2	1,2-Dichloroethane	BRL	ug/L	10
79-01-6	Trichloroethene	280	ug/L	10
78-87-5	1,2-Dichloropropane	BRL	ug/L	10
75-27-4	Bromodichloromethane	BRL	ug/L	10
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/L	10
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	100
108-88-3	Toluene	BRL	ug/L	10
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/L	10
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	10
127-18-4	Tetrachloroethene	650	ug/L	10
591-78-6	2-Hexanone	BRL	ug/L	100
124-48-1	Dibromochloromethane	BRL	ug/L	10
108-90-7	Chlorobenzene	BRL	ug/L	10
100-41-4	Ethylbenzene	BRL	ug/L	10
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/L	10
95-47-6	*ortho*- Xylene	BRL	ug/L	10
100-42-5	Styrene	BRL	ug/L	10
75-25-2	Bromoform	BRL	ug/L	10
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	10

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	97 %	86 - 118 %
1,2-Dichloroethane-d_4	96 %	80 - 120 %
Toluene-d_8	97 %	88 - 110 %
4-Bromofluorobenzene	109 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

◊ Indicates additional target analyte.

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	OL-2	Laboratory ID:	60331-03
Project:	60 Olympia/2491	QC Batch ID:	VM4-2574-W
Client:	Geoinsight, Inc.	Sampled:	04-22-03
Container:	40 mL VOA Vial	Received:	04-23-03
Preservation:	HCl / Cool	Analyzed:	04-26-03
Matrix:	Aqueous	Dilution Factor:	2

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	1
75-01-4	Vinyl Chloride	BRL	ug/L	1
74-83-9	Bromomethane	BRL	ug/L	1
75-00-3	Chloroethane	BRL	ug/L	1
75-35-4	1,1-Dichloroethene	BRL	ug/L	1
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	10
75-09-2	Methylene Chloride	BRL	ug/L	5
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/L	1
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/L	1
75-34-3	1,1-Dichloroethane	BRL	ug/L	1
156-59-2	*cis*- 1,2-Dichloroethene	4	ug/L	1
78-93-3	2-Butanone (MEK)	BRL	ug/L	10
67-66-3	Chloroform	BRL	ug/L	1
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	1
56-23-5	Carbon Tetrachloride	BRL	ug/L	1
71-43-2	Benzene	BRL	ug/L	1
107-06-2	1,2-Dichloroethane	BRL	ug/L	1
79-01-6	Trichloroethene	91	ug/L	1
78-87-5	1,2-Dichloropropane	BRL	ug/L	1
75-27-4	Bromodichloromethane	BRL	ug/L	1
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/L	1
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	10
108-88-3	Toluene	BRL	ug/L	1
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/L	1
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	1
127-18-4	Tetrachloroethene	3	ug/L	1
591-78-6	2-Hexanone	BRL	ug/L	10
124-48-1	Dibromochloromethane	BRL	ug/L	1
108-90-7	Chlorobenzene	BRL	ug/L	1
100-41-4	Ethylbenzene	BRL	ug/L	1
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/L	1
95-47-6	*ortho*- Xylene	BRL	ug/L	1
100-42-5	Styrene	BRL	ug/L	1
75-25-2	Bromoform	BRL	ug/L	1
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	1

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	99 %	86 - 118 %
1,2-Dichloroethane-d_4	100 %	80 - 120 %
Toluene-d_8	98 %	88 - 110 %
4-Bromofluorobenzene	107 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

◊ Indicates additional target analyte.

GROUNDWATER ANALYTICAL

Inorganic Chemistry

Field ID: **MW-014S**
Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**

Matrix: **Aqueous**
Received: **04-23-03**

Lab ID: **60331-04** Sampled: **04-22-03 12:05** Container: **500 mL Plastic** Preservation: **Cool**

Analyte	Result	Units	Reporting Limit	Analyzed	QC Batch	Method
Chloride	93	mg/L	6	04-24-03	CL-0330-W	EPA 9056
Fluoride	BRL	mg/L	0.04	04-25-03	FL-0331-W	EPA 9214
Nitrate (as Nitrogen)	0.26	mg/L	0.02	04-24-03 09:30	NI-1751-W	SM 4500-NO3 F

Lab ID: **60331-07** Sampled: **04-22-03 12:05** Container: **250 mL Plastic** Preservation: **H2SO4/Cool**

Analyte	Result	Units	Reporting Limit	Analyzed	QC Batch	Method
Ammonia (as Nitrogen)	0.4	mg/L	0.2	04-28-03	AM-1146-W	SM 4500-NH3 BG

Method References: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020, Revised (1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100, (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Eighteenth Edition (1992).

Report Notations: BRL Indicates result, if any, is below reporting limit for analyte. Reporting limit is the lowest value that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

Inorganic Chemistry

Field ID: **MW-013**
Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**

Matrix: **Aqueous**
Received: **04-23-03**

Lab ID: **60331-05** Sampled: **04-22-03 12:55** Container: **500 mL Plastic** Preservation: **Cool**

Analyte	Result	Units	Reporting Limit	Analyzed	QC Batch	Method
Chloride	**110**	mg/L	6	04-24-03	CL-0330-W	EPA 9056
Fluoride	BRL	mg/L	0.04	04-25-03	FL-0331-W	EPA 9214
Nitrate (as Nitrogen)	**0.03**	mg/L	0.02	04-24-03 09:28	NI-1751-W	SM 4500-NO3 F

Lab ID: **60331-08** Sampled: **04-22-03 12:55** Container: **250 mL Plastic** Preservation: **H2SO4/Cool**

Analyte	Result	Units	Reporting Limit	Analyzed	QC Batch	Method
Ammonia (as Nitrogen)	**0.3**	mg/L	0.2	04-28-03	AM-1146-W	SM 4500-NH3 BG

Method References: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020, Revised (1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100, (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Eighteenth Edition (1992).

Report Notations: BRL Indicates result, if any, is below reporting limit for analyte. Reporting limit is the lowest value that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

Inorganic Chemistry

Field ID: **OL-2**
Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**

Matrix: **Aqueous**
Received: **04-23-03**

Lab ID: **60331-06** Sampled: **04-22-03 13:35** Container: **250 mL Plastic** Preservation: **Cool**

Analyte	Result	Units	Reporting Limit	Analyzed	QC Batch	Method
Chloride	270	mg/L	6	04-24-03	CL-0330-W	EPA 9056
Fluoride	BRL	mg/L	0.04	04-25-03	FL-0331-W	EPA 9214
Nitrate (as Nitrogen)	BRL	mg/L	0.02	04-24-03 09:32	NI-1751-W	SM 4500-NO3 F

Lab ID: **60331-09** Sampled: **04-22-03 13:35** Container: **250 mL Plastic** Preservation: **H2SO4/Cool**

Analyte	Result	Units	Reporting Limit	Analyzed	QC Batch	Method
Ammonia (as Nitrogen)	1.3	mg/L	0.2	04-28-03	AM-1146-W	SM 4500-NH3 BG

Method References: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020, Revised (1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100, (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Eighteenth Edition (1992).

Report Notations: BRL Indicates result, if any, is below reporting limit for analyte. Reporting limit is the lowest value that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

Project Narrative

Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**

Lab ID: **60331**
Received: **04-23-03 18:30**

A. Documentation and Client Communication

The following documentation discrepancies, and client changes or amendments were noted for this project:

1. No discrepancies, changes, or amendments were noted.

B. Method Non-Conformances

The following method non-conformances were noted for this project:

1. No method non-conformances were noted.

APR-30-2003 17:16 4 99% P.12

GROUNDWATER ANALYTICAL

228 Main Street, P.O. Box 1200
Buzzards Bay, MA 02532
Telephone (508) 759-4441 • FAX (508) 759-4475
www.groundwateranalytical.com

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

№ 070066

Project Name: 60 OLYMPIA	Firm: GEOINSIGHT
Project Number: 2491	Address: 319 LITTLETON RD
Sampler Name: JS/KT	City / State / Zip: WESTFORD, MA 01886
Project Manager: KT	Telephone: 978-692-1114

INSTRUCTIONS: Use separate line for each container (except replicates).

TURNAROUND

- ☐ STANDARD (10 Business Days)
- ☒ PRIORITY (5 Business Days)
- ☐ RUSH (RAN- _____) (Rush requires Rush Authorization Number)
- ☒ Please Email to: [illegible]
- ☒ Please FAX to: 978 692-1115

BILLING

- ☐ Purchase Order No.: _____
- ☐ Third Party Billing: _____
- ☐ GWA Quote: _____

ANALYSIS REQUEST

Sampling Date	Time	Sample Identification	Matrix: Groundwater	Drinking Water	Wastewater	Soil	Other Solid	Oil/Organic Liquid	Type: Composite	Grab	Container(s): Number	40ml VOA Vial	60ml/2 oz Glass	120ml/4 oz Amber Glass	250ml/8 oz Glass	500ml/16 oz Glass	1L/32 oz Amber Glass	250ml/8 oz Plastic	500ml/16 oz Plastic	1L/32 oz Plastic	120ml Sterile	Preservation: HCl	HNO3	H2SO4	NaOH	Methanol	Sodium Bisulfate	Ice	Filtered: YES	NO	Laboratory Number (Lab Use Only)	Volatiles	Semivolatiles	Pest/Herb/PCBs Extractable	Vol.	Metals	Petroleum Hydrocarbon Ext. TPH	Vol. TPH	Haz. Waste	General Chemistry	Other
4/22	12:05	MW-014S	X							X	5	3						1	1			X		X				X		Y	1 4 7	X								X	X	
4/22	12:35	MW-013	X							X	5	3						1	1			X		X				X		X	2 5 8	X								X	X	
4/22	1:35	OL-2	X							X	6	3						3				X		X				X		X	3 6 4	X								X	X	

REMARKS / SPECIAL INSTRUCTIONS

DATA QUALITY OBJECTIVES

Regulatory Program

State	Standard	Deliverables
☐ CT	☐ MCP GW-1/S-1	☐ PWS Form
☐ ME	☐ MCP GW-2/S-1	☐ _____
☐ MA	☐ NY STARS	☐ _____
☐ NH	☐ Drinking Water	
☐ NY	☐ Wastewater	
☐ RI	☐ Waste Disposal	
☐ VT	☐ Dredge Material	
☐ ___	☐ _____	

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. **Each MS, MSD and Sample Duplicate requires an additional sample aliquot.**

Project Specific QC Required
- ☐ Sample Duplicate
- ☐ Matrix Spike
- ☐ Matrix Spike Duplicate

Selection of QC Sample
- ☐ Please use sample: _____

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

Relinquished by Sampler:	Date	Time	Received by:	Receipt Temperature:
[signature]	4/23/03	3:45	[signature]	☒ Ice ☐ Refrigerated 2-4°C Recommended 2
Relinquished by: [signature]	4/25/03	1830	Received by: [signature]	Container Count: 1 ice
Relinquished by:	Date	Time	Received by Laboratory:	Shipping/Airbill Number:

Method of Shipment: ☐ GWA Courier ☐ Express Mail ☐ Federal Express ☐ UPS ☐ Hand ☐ _____

Custody Seal Number:

GROUNDWATER ANALYTICAL

Groundwater Analytical, Inc.
P.O. Box 1200
228 Main Street
Buzzards Bay, MA 02532

Telephone (508) 759-4441
FAX (508) 759-4475
www.groundwateranalytical.com

May 7, 2003

Mr. Kevin Trainer
GeoInsight, Inc.
319 Littleton Rd.
Suite 105
Westford, MA 01886

LABORATORY REPORT

Project: **60 Olympia/2491**
Lab ID: **60611**
Received: **04-30-03**

Dear Kevin:

Enclosed are the analytical results for the above referenced project. The project was processed for Priority turnaround.

This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of our state certifications.

The analytical results contained in this report meet all applicable NELAC standards, except as may be specifically noted, or described in the project narrative. This report may only be used or reproduced in its entirety.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,

Eric H. Jensen
Operations Manager

EHJ/pcl
Enclosures

GROUNDWATER ANALYTICAL

Sample Receipt Report

Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**
Lab ID: **60611**

Delivery: **GWA Courier**
Airbill: **n/a**
Lab Receipt: **04-30-03**

Temperature: **3.0'C**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-1	GEO-SB-101D		Aqueous	4/28/03 11:05	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C247089	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		
C247101	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		
C247113	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-2	GEO-SB-101E		Aqueous	4/28/03 11:30	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C247117	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		
C247129	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		
C247141	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-3	GEO-SB-101F		Aqueous	4/28/03 11:55	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C247120	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		
C247132	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		
C247144	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-4	GEO-SB-100C		Aqueous	4/28/03 13:45	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C247088	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		
C247100	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		
C247106	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-5	GEO-SB-100D		Aqueous	4/28/03 14:00	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C247118	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		
C247142	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		
C247130	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-6	GEO-SB-103D		Aqueous	4/25/03 12:30	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C247099	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		
C247111	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		
C247087	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-7	GEO-SB-103E		Aqueous	4/25/03 13:00	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C269251	40 mL VOA Vial	Industrial	BX7101	HCl	R-3173F	03-14-03	03-24-03		
C269287	40 mL VOA Vial	Industrial	BX7101	HCl	R-3173F	03-14-03	03-24-03		
C269239	40 mL VOA Vial	Industrial	BX7101	HCl	R-3173F	03-14-03	03-24-03		

GROUNDWATER ANALYTICAL

Sample Receipt Report (Continued)

Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**
Lab ID: **60611**

Delivery: **GWA Courier**
Airbill: **n/a**
Lab Receipt: **04-30-03**

Temperature: **3.0'C**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-8	GEO-SB-102D		Aqueous	4/25/03 14:52	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C247091	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		
C247103	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		
C247115	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-9	GEO-SB-102E		Aqueous	4/25/03 15:30	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C247128	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		
C247140	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		
C247116	40 mL VOA Vial	Industrial	BX7380	HCl	R-3173F	03-27-03	04-04-03		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-10	GEO-SB-101A		Soil	4/28/03 9:50	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C288973	40 mL VOA Vial	n/a	n/a	Methanol	n/a	n/a	n/a		
C288972	40 mL VOA Vial	n/a	n/a	NaHSO4	n/a	n/a	n/a		
C288971	40 mL VOA Vial	n/a	n/a	NaHSO4	n/a	n/a	n/a		
C288970	40 mL VOA Vial	n/a	n/a	NaHSO4	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-11	GEO-SB-101B		Soil	4/28/03 10:10	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C087441	40 mL VOA Vial	Industrial	BX1545	Methanol	R-3245AU	12-20-01	04-04-02		
C019374	40 mL VOA Vial	Industrial	BX2800	NaHSO4	R-3170C	03-13-02	04-04-02		
C019373	40 mL VOA Vial	Industrial	BX2800	NaHSO4	R-3170C	03-13-02	04-04-02		
C019372	40 mL VOA Vial	Industrial	BX2800	NaHSO4	R-3170C	03-13-02	04-04-02		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-12	GEO-SB-101C		Soil	4/28/03 10:45	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C079253	40 mL VOA Vial	Industrial	BX2778	Methanol	R-3306V	02-22-02	07-24-02		
C124995	40 mL VOA Vial	Industrial	BX4064	NaHSO4	R-3356B	06-17-02	07-24-02		
C124999	40 mL VOA Vial	Industrial	BX4064	NaHSO4	R-3356B	06-17-02	07-24-02		
C124996	40 mL VOA Vial	Industrial	BX4064	NaHSO4	R-3356B	06-17-02	07-24-02		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-13	GEO-SB-100A		Soil	4/28/03 13:15	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C087453	40 mL VOA Vial	Industrial	BX1545	Methanol	R-3245AU	12-20-01	04-04-02		
C019390	40 mL VOA Vial	Industrial	BX2800	NaHSO4	R-3170C	03-13-02	04-04-02		
C019391	40 mL VOA Vial	Industrial	BX2800	NaHSO4	R-3170C	03-13-02	04-04-02		
C019392	40 mL VOA Vial	Industrial	BX2800	NaHSO4	R-3170C	03-13-02	04-04-02		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-14	GEO-SB-100B		Soil	4/28/03 13:30	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C079300	40 mL VOA Vial	Industrial	BX2778	Methanol	R-3306V	02-22-02	07-24-02		
C126020	40 mL VOA Vial	Industrial	BX4064	NaHSO4	R-3356B	06-17-02	07-24-02		
C126021	40 mL VOA Vial	Industrial	BX4064	NaHSO4	R-3356B	06-17-02	07-24-02		
C126019	40 mL VOA Vial	Industrial	BX4064	NaHSO4	R-3356B	06-17-02	07-24-02		

GROUNDWATER ANALYTICAL

Sample Receipt Report (Continued)

Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**
Lab ID: **60611**

Delivery: **GWA Courier**
Airbill: **n/a**
Lab Receipt: **04-30-03**

Temperature: **3.0'C**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-15	GEO-SB-103A		Soil	4/25/03 10:50	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C288992	40 mL VOA Vial	n/a	n/a	NaHSO4	n/a	n/a	n/a		
C288991	40 mL VOA Vial	n/a	n/a	NaHSO4	n/a	n/a	n/a		
C288990	40 mL VOA Vial	n/a	n/a	NaHSO4	n/a	n/a	n/a		
C288989	40 mL VOA Vial	n/a	n/a	Methanol	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-16	GEO-SB-103B		Soil	4/25/03 11:30	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C079294	40 mL VOA Vial	Industrial	BX2778	Methanol	R-3306V	02-22-02	07-24-02		
C124991	40 mL VOA Vial	Industrial	BX4064	NaHSO4	R-3356B	06-17-02	07-24-02		
C124989	40 mL VOA Vial	Industrial	BX4064	NaHSO4	R-3356B	06-17-02	07-24-02		
C124990	40 mL VOA Vial	Industrial	BX4064	NaHSO4	R-3356B	06-17-02	07-24-02		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-17	GEO-SB-103C		Soil	4/25/03 11:53	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C124988	40 mL VOA Vial	Industrial	BX4064	NaHSO4	R-3356B	06-17-02	07-24-02		
C124987	40 mL VOA Vial	Industrial	BX4064	NaHSO4	R-3356B	06-17-02	07-24-02		
C124986	40 mL VOA Vial	Industrial	BX4064	NaHSO4	R-3356B	06-17-02	07-24-02		
C079289	40 mL VOA Vial	Industrial	BX2778	Methanol	R-3306V	02-22-02	07-24-02		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-18	GEO-SB-102A		Soil	4/25/03 13:58	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C288982	40 mL VOA Vial	n/a	n/a	NaHSO4	n/a	n/a	n/a		
C288981	40 mL VOA Vial	n/a	n/a	NaHSO4	n/a	n/a	n/a		
C288980	40 mL VOA Vial	n/a	n/a	Methanol	n/a	n/a	n/a		
C288978	40 mL VOA Vial	n/a	n/a	NaHSO4	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-19	GEO-SB-102B		Soil	4/25/03 14:10	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C288987	40 mL VOA Vial	n/a	n/a	NaHSO4	n/a	n/a	n/a		
C288986	40 mL VOA Vial	n/a	n/a	Methanol	n/a	n/a	n/a		
C288983	40 mL VOA Vial	n/a	n/a	NaHSO4	n/a	n/a	n/a		
C288985	40 mL VOA Vial	n/a	n/a	NaHSO4	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-20	GEO-SB-102C		Soil	4/25/03 14:23	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C005920	40 mL VOA Vial	Industrial	BX2421	Methanol	R-3245V	01-30-02	06-10-02		
C108686	40 mL VOA Vial	Industrial	BX3588	NaHSO4	R-3356B	05-29-02	06-10-02		
C108685	40 mL VOA Vial	Industrial	BX3588	NaHSO4	R-3356B	05-29-02	06-10-02		
C108330	40 mL VOA Vial	Industrial	BX3586	NaHSO4	R-3356B	05-29-02	06-10-02		

GROUNDWATER ANALYTICAL

Sample Receipt Report (Continued)

Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**
Lab ID: **60611**

Delivery: **GWA Courier**
Airbill: **n/a**
Lab Receipt: **04-30-03**

Temperature: **3.0'C**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-21	GEO-SB-98		Soil	4/28/03 15:50	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C288977	40 mL VOA Vial	n/a	n/a	NaHSO4	n/a	n/a	n/a		
C288975	40 mL VOA Vial	n/a	n/a	NaHSO4	n/a	n/a	n/a		
C288976	40 mL VOA Vial	n/a	n/a	Methanol	n/a	n/a	n/a		
C288974	40 mL VOA Vial	n/a	n/a	NaHSO4	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-22	GEO-SB-101A		Soil	4/28/03 9:50	EPA 9060 Mod Total Organic Carbon				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C237164	250 mL Glass	Proline	BX7563	None	n/a	n/a	04-23-03		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-23	GEO-SB-101B		Soil	4/28/03 10:10	EPA 9060 Mod Total Organic Carbon				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C237166	250 mL Glass	Proline	BX7563	None	n/a	n/a	04-23-03		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-24	GEO-SB-101C		Soil	4/28/03 10:45	EPA 9060 Mod Total Organic Carbon				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C237161	250 mL Glass	Proline	BX7563	None	n/a	n/a	04-23-03		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-25	GEO-SB-100A		Soil	4/28/03 13:15	EPA 9060 Mod Total Organic Carbon				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C237162	250 mL Glass	Proline	BX7563	None	n/a	n/a	04-23-03		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-26	GEO-SB-100B		Soil	4/28/03 13:30	EPA 9060 Mod Total Organic Carbon				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C237163	250 mL Glass	Proline	BX7563	None	n/a	n/a	04-23-03		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-27	GEO-SB-103B		Soil	4/25/03 11:30	EPA 9060 Mod Total Organic Carbon				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C237807	250 mL Glass	Proline	BX7508	None	n/a	n/a	04-23-03		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-28	GEO-SB-103C		Soil	4/25/03 11:53	EPA 9060 Mod Total Organic Carbon				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C237806	250 mL Glass	Proline	BX7508	None	n/a	n/a	04-23-03		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-29	GEO-SB-102A		Soil	4/25/03 13:58	EPA 9060 Mod Total Organic Carbon				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C237812	250 mL Glass	Proline	BX7508	None	n/a	n/a	04-23-03		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-30	GEO-SB-102B		Soil	4/25/03 14:10	EPA 9060 Mod Total Organic Carbon				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C237815	250 mL Glass	Proline	BX7508	None	n/a	n/a	04-23-03		

GROUNDWATER ANALYTICAL

Sample Receipt Report (Continued)

Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**
Lab ID: **60611**

Delivery: **GWA Courier**
Airbill: **n/a**
Lab Receipt: **04-30-03**

Temperature: **3.0'C**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-31	GEO-SB-102C		Soil	4/25/03 14:23	EPA 9060 Mod Total Organic Carbon				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C237813	250 mL Glass	Proline	BX7508	None	n/a	n/a	04-23-03		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
60611-32	GEO-SB-98		Soil	4/28/03 15:50	EPA 9060 Mod Total Organic Carbon				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C237170	250 mL Glass	Proline	BX7562	None	n/a	n/a	04-23-03		

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-101D**	Laboratory ID:	**60611-01**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM5-2519-W**
Client:	**GeoInsight, Inc.**	Sampled:	**04-28-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**HCl / Cool**	Analyzed:	**05-05-03**
Matrix:	**Aqueous**	Dilution Factor:	**200**

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	100
75-01-4	Vinyl Chloride	BRL	ug/L	100
74-83-9	Bromomethane	BRL	ug/L	100
75-00-3	Chloroethane	BRL	ug/L	100
75-35-4	1,1-Dichloroethene	BRL	ug/L	100
67-64-1	Acetone	BRL	ug/L	2,000
75-15-0	Carbon Disulfide	BRL	ug/L	1,000
75-09-2	Methylene Chloride	BRL	ug/L	500
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/L	100
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/L	100
75-34-3	1,1-Dichloroethane	BRL	ug/L	100
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/L	100
78-93-3	2-Butanone (MEK)	BRL	ug/L	1,000
67-66-3	Chloroform	BRL	ug/L	100
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	100
56-23-5	Carbon Tetrachloride	BRL	ug/L	100
71-43-2	Benzene	BRL	ug/L	100
107-06-2	1,2-Dichloroethane	BRL	ug/L	100
79-01-6	Trichloroethene	**4,700**	ug/L	100
78-87-5	1,2-Dichloropropane	BRL	ug/L	100
75-27-4	Bromodichloromethane	BRL	ug/L	100
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/L	100
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	1,000
108-88-3	Toluene	BRL	ug/L	100
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/L	100
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	100
127-18-4	Tetrachloroethene	BRL	ug/L	100
591-78-6	2-Hexanone	BRL	ug/L	1,000
124-48-1	Dibromochloromethane	BRL	ug/L	100
108-90-7	Chlorobenzene	BRL	ug/L	100
100-41-4	Ethylbenzene	BRL	ug/L	100
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/L	100
95-47-6	*ortho*- Xylene	BRL	ug/L	100
100-42-5	Styrene	BRL	ug/L	100
75-25-2	Bromoform	BRL	ug/L	100
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	100

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**95 %**	86 - 118 %
1,2-Dichloroethane-d_4	**93 %**	80 - 120 %
Toluene-d_8	**98 %**	88 - 110 %
4-Bromofluorobenzene	**99 %**	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

◊ Indicates additional target analyte.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-101E**	Laboratory ID:	**60611-02**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM5-2519-W**
Client:	**GeoInsight, Inc.**	Sampled:	**04-28-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**HCl / Cool**	Analyzed:	**05-05-03**
Matrix:	**Aqueous**	Dilution Factor:	**2,000**

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	1,000
75-01-4	Vinyl Chloride	BRL	ug/L	1,000
74-83-9	Bromomethane	BRL	ug/L	1,000
75-00-3	Chloroethane	BRL	ug/L	1,000
75-35-4	1,1-Dichloroethene	BRL	ug/L	1,000
67-64-1	Acetone	BRL	ug/L	20,000
75-15-0	Carbon Disulfide	BRL	ug/L	10,000
75-09-2	Methylene Chloride	BRL	ug/L	5,000
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/L	1,000
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/L	1,000
75-34-3	1,1-Dichloroethane	BRL	ug/L	1,000
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/L	1,000
78-93-3	2-Butanone (MEK)	BRL	ug/L	10,000
67-66-3	Chloroform	BRL	ug/L	1,000
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	1,000
56-23-5	Carbon Tetrachloride	BRL	ug/L	1,000
71-43-2	Benzene	BRL	ug/L	1,000
107-06-2	1,2-Dichloroethane	BRL	ug/L	1,000
79-01-6	Trichloroethene	**47,000**	ug/L	1,000
78-87-5	1,2-Dichloropropane	BRL	ug/L	1,000
75-27-4	Bromodichloromethane	BRL	ug/L	1,000
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/L	1,000
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	10,000
108-88-3	Toluene	BRL	ug/L	1,000
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/L	1,000
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	1,000
127-18-4	Tetrachloroethene	BRL	ug/L	1,000
591-78-6	2-Hexanone	BRL	ug/L	10,000
124-48-1	Dibromochloromethane	BRL	ug/L	1,000
108-90-7	Chlorobenzene	BRL	ug/L	1,000
100-41-4	Ethylbenzene	BRL	ug/L	1,000
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/L	1,000
95-47-6	*ortho*- Xylene	BRL	ug/L	1,000
100-42-5	Styrene	BRL	ug/L	1,000
75-25-2	Bromoform	BRL	ug/L	1,000
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	1,000

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**106 %**	86 - 118 %
1,2-Dichloroethane-d_4	**104 %**	80 - 120 %
Toluene-d_8	**108 %**	88 - 110 %
4-Bromofluorobenzene	**111 %**	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

◊ Indicates additional target analyte.

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-101F**	Laboratory ID:	**60611-03**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM5-2519-W**
Client:	**GeoInsight, Inc.**	Sampled:	**04-28-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**HCl / Cool**	Analyzed:	**05-05-03**
Matrix:	**Aqueous**	Dilution Factor:	**1,000**

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	500
75-01-4	Vinyl Chloride	BRL	ug/L	500
74-83-9	Bromomethane	BRL	ug/L	500
75-00-3	Chloroethane	BRL	ug/L	500
75-35-4	1,1-Dichloroethene	BRL	ug/L	500
67-64-1	Acetone	BRL	ug/L	10,000
75-15-0	Carbon Disulfide	BRL	ug/L	5,000
75-09-2	Methylene Chloride	BRL	ug/L	2,500
156-60-5	*trans*-1,2-Dichloroethene	BRL	ug/L	500
1634-04-4	Methyl *tert*-butyl Ether (MTBE) ◊	BRL	ug/L	500
75-34-3	1,1-Dichloroethane	BRL	ug/L	500
156-59-2	*cis*-1,2-Dichloroethene	BRL	ug/L	500
78-93-3	2-Butanone (MEK)	BRL	ug/L	5,000
67-66-3	Chloroform	BRL	ug/L	500
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	500
56-23-5	Carbon Tetrachloride	BRL	ug/L	500
71-43-2	Benzene	BRL	ug/L	500
107-06-2	1,2-Dichloroethane	BRL	ug/L	500
79-01-6	Trichloroethene	**28,000**	ug/L	500
78-87-5	1,2-Dichloropropane	BRL	ug/L	500
75-27-4	Bromodichloromethane	BRL	ug/L	500
10061-01-5	*cis*-1,3-Dichloropropene	BRL	ug/L	500
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5,000
108-88-3	Toluene	BRL	ug/L	500
10061-02-6	*trans*-1,3-Dichloropropene	BRL	ug/L	500
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	500
127-18-4	Tetrachloroethene	BRL	ug/L	500
591-78-6	2-Hexanone	BRL	ug/L	5,000
124-48-1	Dibromochloromethane	BRL	ug/L	500
108-90-7	Chlorobenzene	BRL	ug/L	500
100-41-4	Ethylbenzene	BRL	ug/L	500
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	BRL	ug/L	500
95-47-6	*ortho*-Xylene	BRL	ug/L	500
100-42-5	Styrene	BRL	ug/L	500
75-25-2	Bromoform	BRL	ug/L	500
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	500

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**89 %**	86 - 118 %
1,2-Dichloroethane-d_4	**90 %**	80 - 120 %
Toluene-d_8	**91 %**	88 - 110 %
4-Bromofluorobenzene	**93 %**	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

◊ Indicates additional target analyte.

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-100C**	Laboratory ID:	**60611-04**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM5-2519-W**
Client:	**GeoInsight, Inc.**	Sampled:	**04-28-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**HCl / Cool**	Analyzed:	**05-05-03**
Matrix:	**Aqueous**	Dilution Factor:	**5,000**

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	2,500
75-01-4	Vinyl Chloride	BRL	ug/L	2,500
74-83-9	Bromomethane	BRL	ug/L	2,500
75-00-3	Chloroethane	BRL	ug/L	2,500
75-35-4	1,1-Dichloroethene	BRL	ug/L	2,500
67-64-1	Acetone	BRL	ug/L	50,000
75-15-0	Carbon Disulfide	BRL	ug/L	25,000
75-09-2	Methylene Chloride	BRL	ug/L	13,000
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/L	2,500
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/L	2,500
75-34-3	1,1-Dichloroethane	BRL	ug/L	2,500
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/L	2,500
78-93-3	2-Butanone (MEK)	BRL	ug/L	25,000
67-66-3	Chloroform	BRL	ug/L	2,500
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	2,500
56-23-5	Carbon Tetrachloride	BRL	ug/L	2,500
71-43-2	Benzene	BRL	ug/L	2,500
107-06-2	1,2-Dichloroethane	BRL	ug/L	2,500
79-01-6	Trichloroethene	**140,000**	ug/L	2,500
78-87-5	1,2-Dichloropropane	BRL	ug/L	2,500
75-27-4	Bromodichloromethane	BRL	ug/L	2,500
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/L	2,500
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	25,000
108-88-3	Toluene	BRL	ug/L	2,500
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/L	2,500
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	2,500
127-18-4	Tetrachloroethene	BRL	ug/L	2,500
591-78-6	2-Hexanone	BRL	ug/L	25,000
124-48-1	Dibromochloromethane	BRL	ug/L	2,500
108-90-7	Chlorobenzene	BRL	ug/L	2,500
100-41-4	Ethylbenzene	BRL	ug/L	2,500
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/L	2,500
95-47-6	*ortho*- Xylene	BRL	ug/L	2,500
100-42-5	Styrene	BRL	ug/L	2,500
75-25-2	Bromoform	BRL	ug/L	2,500
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	2,500

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**107 %**	86 - 118 %
1,2-Dichloroethane-d_4	**105 %**	80 - 120 %
Toluene-d_8	**108 %**	88 - 110 %
4-Bromofluorobenzene	**113 %**	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

◊ Indicates additional target analyte.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-100D**	Laboratory ID:	**60611-05**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM5-2519-W**
Client:	**GeoInsight, Inc.**	Sampled:	**04-28-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**HCl / Cool**	Analyzed:	**05-05-03**
Matrix:	**Aqueous**	Dilution Factor:	**1,000**

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	500
75-01-4	Vinyl Chloride	BRL	ug/L	500
74-83-9	Bromomethane	BRL	ug/L	500
75-00-3	Chloroethane	BRL	ug/L	500
75-35-4	1,1-Dichloroethene	BRL	ug/L	500
67-64-1	Acetone	BRL	ug/L	10,000
75-15-0	Carbon Disulfide	BRL	ug/L	5,000
75-09-2	Methylene Chloride	BRL	ug/L	2,500
156-60-5	*trans*-1,2-Dichloroethene	BRL	ug/L	500
1634-04-4	Methyl *tert*-butyl Ether (MTBE)◊	BRL	ug/L	500
75-34-3	1,1-Dichloroethane	BRL	ug/L	500
156-59-2	*cis*-1,2-Dichloroethene	BRL	ug/L	500
78-93-3	2-Butanone (MEK)	BRL	ug/L	5,000
67-66-3	Chloroform	BRL	ug/L	500
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	500
56-23-5	Carbon Tetrachloride	BRL	ug/L	500
71-43-2	Benzene	BRL	ug/L	500
107-06-2	1,2-Dichloroethane	BRL	ug/L	500
79-01-6	Trichloroethene	**21,000**	ug/L	500
78-87-5	1,2-Dichloropropane	BRL	ug/L	500
75-27-4	Bromodichloromethane	BRL	ug/L	500
10061-01-5	*cis*-1,3-Dichloropropene	BRL	ug/L	500
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5,000
108-88-3	Toluene	BRL	ug/L	500
10061-02-6	*trans*-1,3-Dichloropropene	BRL	ug/L	500
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	500
127-18-4	Tetrachloroethene	BRL	ug/L	500
591-78-6	2-Hexanone	BRL	ug/L	5,000
124-48-1	Dibromochloromethane	BRL	ug/L	500
108-90-7	Chlorobenzene	BRL	ug/L	500
100-41-4	Ethylbenzene	BRL	ug/L	500
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	BRL	ug/L	500
95-47-6	*ortho*-Xylene	BRL	ug/L	500
100-42-5	Styrene	BRL	ug/L	500
75-25-2	Bromoform	BRL	ug/L	500
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	500

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**88 %**	86 - 118 %
1,2-Dichloroethane-d_4	**86 %**	80 - 120 %
Toluene-d_8	**90 %**	88 - 110 %
4-Bromofluorobenzene	**93 %**	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

◊ Indicates additional target analyte.

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-103D**	Laboratory ID:	**60611-06**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM4-2592-W**
Client:	**GeoInsight, Inc.**	Sampled:	**04-25-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**HCl / Cool**	Analyzed:	**05-08-03**
Matrix:	**Aqueous**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	10
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	5	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/L	0.5
95-47-6	*ortho*- Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	99 %	86 - 118 %
1,2-Dichloroethane-d_4	98 %	80 - 120 %
Toluene-d_8	100 %	88 - 110 %
4-Bromofluorobenzene	115 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

◊ Indicates additional target analyte.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-103E**	Laboratory ID:	**60611-07**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM5-2521-W**
Client:	**GeoInsight, Inc.**	Sampled:	**04-25-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**HCl / Cool**	Analyzed:	**05-06-03**
Matrix:	**Aqueous**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	10
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	*trans*-1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl *tert*-butyl Ether (MTBE) ◊	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	*cis*-1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	*cis*-1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	*trans*-1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	BRL	ug/L	0.5
95-47-6	*ortho*-Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**88 %**	86 - 118 %
1,2-Dichloroethane-d_4	**89 %**	80 - 120 %
Toluene-d_8	**90 %**	88 - 110 %
4-Bromofluorobenzene	**95 %**	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

◊ Indicates additional target analyte.

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-102D**	Laboratory ID:	**60611-08**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM5-2521-W**
Client:	**GeoInsight, Inc.**	Sampled:	**04-25-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**HCl / Cool**	Analyzed:	**05-06-03**
Matrix:	**Aqueous**	Dilution Factor:	**20,000**

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	10,000
75-01-4	Vinyl Chloride	BRL	ug/L	10,000
74-83-9	Bromomethane	BRL	ug/L	10,000
75-00-3	Chloroethane	BRL	ug/L	10,000
75-35-4	1,1-Dichloroethene	BRL	ug/L	10,000
67-64-1	Acetone	BRL	ug/L	200,000
75-15-0	Carbon Disulfide	BRL	ug/L	100,000
75-09-2	Methylene Chloride	BRL	ug/L	50,000
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/L	10,000
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/L	10,000
75-34-3	1,1-Dichloroethane	BRL	ug/L	10,000
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/L	10,000
78-93-3	2-Butanone (MEK)	BRL	ug/L	100,000
67-66-3	Chloroform	BRL	ug/L	10,000
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	10,000
56-23-5	Carbon Tetrachloride	BRL	ug/L	10,000
71-43-2	Benzene	BRL	ug/L	10,000
107-06-2	1,2-Dichloroethane	BRL	ug/L	10,000
79-01-6	Trichloroethene	**670,000**	ug/L	10,000
78-87-5	1,2-Dichloropropane	BRL	ug/L	10,000
75-27-4	Bromodichloromethane	BRL	ug/L	10,000
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/L	10,000
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	100,000
108-88-3	Toluene	BRL	ug/L	10,000
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/L	10,000
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	10,000
127-18-4	Tetrachloroethene	BRL	ug/L	10,000
591-78-6	2-Hexanone	BRL	ug/L	100,000
124-48-1	Dibromochloromethane	BRL	ug/L	10,000
108-90-7	Chlorobenzene	BRL	ug/L	10,000
100-41-4	Ethylbenzene	BRL	ug/L	10,000
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/L	10,000
95-47-6	*ortho*- Xylene	BRL	ug/L	10,000
100-42-5	Styrene	BRL	ug/L	10,000
75-25-2	Bromoform	BRL	ug/L	10,000
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	10,000

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**93 %**	86 - 118 %
1,2-Dichloroethane-d_4	**92 %**	80 - 120 %
Toluene-d_8	**96 %**	88 - 110 %
4-Bromofluorobenzene	**103 %**	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations:
BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.
◊ Indicates additional target analyte.

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-102E**	Laboratory ID:	**60611-09**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM5-2520-W**
Client:	**GeoInsight, Inc.**	Sampled:	**04-25-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**HCl / Cool**	Analyzed:	**05-06-03**
Matrix:	**Aqueous**	Dilution Factor:	**500**

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	250
75-01-4	Vinyl Chloride	BRL	ug/L	250
74-83-9	Bromomethane	BRL	ug/L	250
75-00-3	Chloroethane	BRL	ug/L	250
75-35-4	1,1-Dichloroethene	BRL	ug/L	250
67-64-1	Acetone	BRL	ug/L	5,000
75-15-0	Carbon Disulfide	BRL	ug/L	2,500
75-09-2	Methylene Chloride	BRL	ug/L	1,300
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/L	250
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/L	250
75-34-3	1,1-Dichloroethane	BRL	ug/L	250
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/L	250
78-93-3	2-Butanone (MEK)	BRL	ug/L	2,500
67-66-3	Chloroform	BRL	ug/L	250
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	250
56-23-5	Carbon Tetrachloride	BRL	ug/L	250
71-43-2	Benzene	BRL	ug/L	250
107-06-2	1,2-Dichloroethane	BRL	ug/L	250
79-01-6	Trichloroethene	**15,000**	ug/L	250
78-87-5	1,2-Dichloropropane	BRL	ug/L	250
75-27-4	Bromodichloromethane	BRL	ug/L	250
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/L	250
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	2,500
108-88-3	Toluene	BRL	ug/L	250
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/L	250
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	250
127-18-4	Tetrachloroethene	BRL	ug/L	250
591-78-6	2-Hexanone	BRL	ug/L	2,500
124-48-1	Dibromochloromethane	BRL	ug/L	250
108-90-7	Chlorobenzene	BRL	ug/L	250
100-41-4	Ethylbenzene	BRL	ug/L	250
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/L	250
95-47-6	*ortho*- Xylene	BRL	ug/L	250
100-42-5	Styrene	BRL	ug/L	250
75-25-2	Bromoform	BRL	ug/L	250
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	250

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**86 %**	86 - 118 %
1,2-Dichloroethane-d_4	**90 %**	80 - 120 %
Toluene-d_8	**88 %**	88 - 110 %
4-Bromofluorobenzene	**95 %**	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations:
BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.
◊ Indicates additional target analyte.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-101A**	Laboratory ID:	**60611-10**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM1-1326-E**
Client:	**GeoInsight, Inc.**	Sampled:	**04-28-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**Methanol / Cool**	Analyzed:	**05-03-03**
Matrix:	**Soil**	Dilution Factor:	**1**
% Moisture:	**11**		

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/Kg	620
75-01-4	Vinyl Chloride	BRL	ug/Kg	620
74-83-9	Bromomethane	BRL	ug/Kg	620
75-00-3	Chloroethane	BRL	ug/Kg	620
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	310
67-64-1	Acetone	BRL	ug/Kg	3,100
75-15-0	Carbon Disulfide	BRL	ug/Kg	3,100
75-09-2	Methylene Chloride	BRL	ug/Kg	1,200
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/Kg	310
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/Kg	310
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	310
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/Kg	310
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	3,100
67-66-3	Chloroform	BRL	ug/Kg	310
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	310
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	310
71-43-2	Benzene	BRL	ug/Kg	310
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	310
79-01-6	Trichloroethene	**740**	ug/Kg	310
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	310
75-27-4	Bromodichloromethane	BRL	ug/Kg	310
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/Kg	310
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	3,100
108-88-3	Toluene	BRL	ug/Kg	310
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/Kg	310
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	310
127-18-4	Tetrachloroethene	BRL	ug/Kg	310
591-78-6	2-Hexanone	BRL	ug/Kg	3,100
124-48-1	Dibromochloromethane	BRL	ug/Kg	310
108-90-7	Chlorobenzene	BRL	ug/Kg	310
100-41-4	Ethylbenzene	BRL	ug/Kg	310
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/Kg	310
95-47-6	*ortho*- Xylene	BRL	ug/Kg	310
100-42-5	Styrene	BRL	ug/Kg	310
75-25-2	Bromoform	BRL	ug/Kg	310
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	310

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**110 %**	80 - 120 %
1,2-Dichloroethane-d_4	**110 %**	80 - 120 %
Toluene-d_8	**84 %**	81 - 117 %
4-Bromofluorobenzene	**92 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis. Analysis performed utilizing methanol extraction technique.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-101B**	Laboratory ID:	**60611-11**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM1-1326-E**
Client:	**GeoInsight, Inc.**	Sampled:	**04-28-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**Methanol / Cool**	Analyzed:	**05-03-03**
Matrix:	**Soil**	Dilution Factor:	**2**
% Moisture:	**23**		

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/Kg	1,400
75-01-4	Vinyl Chloride	BRL	ug/Kg	1,400
74-83-9	Bromomethane	BRL	ug/Kg	1,400
75-00-3	Chloroethane	BRL	ug/Kg	1,400
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	680
67-64-1	Acetone	BRL	ug/Kg	6,800
75-15-0	Carbon Disulfide	BRL	ug/Kg	6,800
75-09-2	Methylene Chloride	BRL	ug/Kg	2,700
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/Kg	680
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/Kg	680
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	680
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/Kg	680
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	6,800
67-66-3	Chloroform	BRL	ug/Kg	680
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	680
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	680
71-43-2	Benzene	BRL	ug/Kg	680
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	680
79-01-6	Trichloroethene	**8,800**	ug/Kg	680
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	680
75-27-4	Bromodichloromethane	BRL	ug/Kg	680
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/Kg	680
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	6,800
108-88-3	Toluene	BRL	ug/Kg	680
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/Kg	680
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	680
127-18-4	Tetrachloroethene	BRL	ug/Kg	680
591-78-6	2-Hexanone	BRL	ug/Kg	6,800
124-48-1	Dibromochloromethane	BRL	ug/Kg	680
108-90-7	Chlorobenzene	BRL	ug/Kg	680
100-41-4	Ethylbenzene	BRL	ug/Kg	680
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/Kg	680
95-47-6	*ortho*- Xylene	BRL	ug/Kg	680
100-42-5	Styrene	BRL	ug/Kg	680
75-25-2	Bromoform	BRL	ug/Kg	680
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	680

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**108 %**	80 - 120 %
1,2-Dichloroethane-d_4	**109 %**	80 - 120 %
Toluene-d_8	**88 %**	81 - 117 %
4-Bromofluorobenzene	**108 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis. Analysis performed utilizing methanol extraction technique.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-101C**	Laboratory ID:	**60611-12**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM1-1326-E**
Client:	**GeoInsight, Inc.**	Sampled:	**04-28-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**Methanol / Cool**	Analyzed:	**05-03-03**
Matrix:	**Soil**	Dilution Factor:	**2**
% Moisture:	**24**		

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/Kg	1,100
75-01-4	Vinyl Chloride	BRL	ug/Kg	1,100
74-83-9	Bromomethane	BRL	ug/Kg	1,100
75-00-3	Chloroethane	BRL	ug/Kg	1,100
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	560
67-64-1	Acetone	BRL	ug/Kg	5,600
75-15-0	Carbon Disulfide	BRL	ug/Kg	5,600
75-09-2	Methylene Chloride	BRL	ug/Kg	2,300
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/Kg	560
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/Kg	560
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	560
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/Kg	560
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	5,600
67-66-3	Chloroform	BRL	ug/Kg	560
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	560
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	560
71-43-2	Benzene	BRL	ug/Kg	560
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	560
79-01-6	Trichloroethene	**7,700**	ug/Kg	560
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	560
75-27-4	Bromodichloromethane	BRL	ug/Kg	560
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/Kg	560
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	5,600
108-88-3	Toluene	BRL	ug/Kg	560
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/Kg	560
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	560
127-18-4	Tetrachloroethene	BRL	ug/Kg	560
591-78-6	2-Hexanone	BRL	ug/Kg	5,600
124-48-1	Dibromochloromethane	BRL	ug/Kg	560
108-90-7	Chlorobenzene	BRL	ug/Kg	560
100-41-4	Ethylbenzene	BRL	ug/Kg	560
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/Kg	560
95-47-6	*ortho*- Xylene	BRL	ug/Kg	560
100-42-5	Styrene	BRL	ug/Kg	560
75-25-2	Bromoform	BRL	ug/Kg	560
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	560

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**107 %**	80 - 120 %
1,2-Dichloroethane-d_4	**110 %**	80 - 120 %
Toluene-d_8	**82 %**	81 - 117 %
4-Bromofluorobenzene	**109 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis. Analysis performed utilizing methanol extraction technique.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-100A**	Laboratory ID:	**60611-13**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM1-1326-E**
Client:	**GeoInsight, Inc.**	Sampled:	**04-28-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**Methanol / Cool**	Analyzed:	**05-03-03**
Matrix:	**Soil**	Dilution Factor:	**2**
% Moisture:	**20**		

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/Kg	1,200
75-01-4	Vinyl Chloride	BRL	ug/Kg	1,200
74-83-9	Bromomethane	BRL	ug/Kg	1,200
75-00-3	Chloroethane	BRL	ug/Kg	1,200
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	620
67-64-1	Acetone	BRL	ug/Kg	6,200
75-15-0	Carbon Disulfide	BRL	ug/Kg	6,200
75-09-2	Methylene Chloride	BRL	ug/Kg	2,500
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/Kg	620
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/Kg	620
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	620
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/Kg	620
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	6,200
67-66-3	Chloroform	BRL	ug/Kg	620
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	620
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	620
71-43-2	Benzene	BRL	ug/Kg	620
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	620
79-01-6	Trichloroethene	**14,000**	ug/Kg	620
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	620
75-27-4	Bromodichloromethane	BRL	ug/Kg	620
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/Kg	620
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	6,200
108-88-3	Toluene	BRL	ug/Kg	620
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/Kg	620
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	620
127-18-4	Tetrachloroethene	BRL	ug/Kg	620
591-78-6	2-Hexanone	BRL	ug/Kg	6,200
124-48-1	Dibromochloromethane	BRL	ug/Kg	620
108-90-7	Chlorobenzene	BRL	ug/Kg	620
100-41-4	Ethylbenzene	BRL	ug/Kg	620
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/Kg	620
95-47-6	*ortho*- Xylene	BRL	ug/Kg	620
100-42-5	Styrene	BRL	ug/Kg	620
75-25-2	Bromoform	BRL	ug/Kg	620
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	620

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**108 %**	80 - 120 %
1,2-Dichloroethane-d_4	**105 %**	80 - 120 %
Toluene-d_8	**84 %**	81 - 117 %
4-Bromofluorobenzene	**104 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis. Analysis performed utilizing methanol extraction technique.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-100B**	Laboratory ID:	**60611-14**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM1-1326-E**
Client:	**GeoInsight, Inc.**	Sampled:	**04-28-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**Methanol / Cool**	Analyzed:	**05-03-03**
Matrix:	**Soil**	Dilution Factor:	**4**
% Moisture:	**24**		

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/Kg	2,600
75-01-4	Vinyl Chloride	BRL	ug/Kg	2,600
74-83-9	Bromomethane	BRL	ug/Kg	2,600
75-00-3	Chloroethane	BRL	ug/Kg	2,600
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	1,300
67-64-1	Acetone	BRL	ug/Kg	13,000
75-15-0	Carbon Disulfide	BRL	ug/Kg	13,000
75-09-2	Methylene Chloride	BRL	ug/Kg	5,200
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/Kg	1,300
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/Kg	1,300
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	1,300
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/Kg	1,300
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	13,000
67-66-3	Chloroform	BRL	ug/Kg	1,300
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	1,300
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	1,300
71-43-2	Benzene	BRL	ug/Kg	1,300
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	1,300
79-01-6	Trichloroethene	**23,000**	ug/Kg	1,300
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	1,300
75-27-4	Bromodichloromethane	BRL	ug/Kg	1,300
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/Kg	1,300
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	13,000
108-88-3	Toluene	BRL	ug/Kg	1,300
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/Kg	1,300
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	1,300
127-18-4	Tetrachloroethene	BRL	ug/Kg	1,300
591-78-6	2-Hexanone	BRL	ug/Kg	13,000
124-48-1	Dibromochloromethane	BRL	ug/Kg	1,300
108-90-7	Chlorobenzene	BRL	ug/Kg	1,300
100-41-4	Ethylbenzene	BRL	ug/Kg	1,300
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/Kg	1,300
95-47-6	*ortho*- Xylene	BRL	ug/Kg	1,300
100-42-5	Styrene	BRL	ug/Kg	1,300
75-25-2	Bromoform	BRL	ug/Kg	1,300
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	1,300

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**107 %**	80 - 120 %
1,2-Dichloroethane-d_4	**105 %**	80 - 120 %
Toluene-d_8	**103 %**	81 - 117 %
4-Bromofluorobenzene	**106 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis. Analysis performed utilizing methanol extraction technique.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-103A**	Laboratory ID:	**60611-15**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM1-1325-S**
Client:	**GeoInsight, Inc.**	Sampled:	**04-25-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**NaHSO4 / Cool**	Analyzed:	**05-02-03**
Matrix:	**Soil**	Dilution Factor:	**1**
% Moisture:	**10**		

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/Kg	18
75-01-4	Vinyl Chloride	BRL	ug/Kg	18
74-83-9	Bromomethane	BRL	ug/Kg	18
75-00-3	Chloroethane	BRL	ug/Kg	18
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	9
67-64-1	Acetone	BRL	ug/Kg	360
75-15-0	Carbon Disulfide	BRL	ug/Kg	91
75-09-2	Methylene Chloride	BRL	ug/Kg	91
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/Kg	9
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/Kg	9
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	9
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/Kg	9
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	91
67-66-3	Chloroform	BRL	ug/Kg	9
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	9
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	9
71-43-2	Benzene	BRL	ug/Kg	9
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	9
79-01-6	Trichloroethene	**16**	ug/Kg	9
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	9
75-27-4	Bromodichloromethane	BRL	ug/Kg	9
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/Kg	9
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	91
108-88-3	Toluene	BRL	ug/Kg	9
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/Kg	9
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	9
127-18-4	Tetrachloroethene	BRL	ug/Kg	9
591-78-6	2-Hexanone	BRL	ug/Kg	91
124-48-1	Dibromochloromethane	BRL	ug/Kg	9
108-90-7	Chlorobenzene	BRL	ug/Kg	9
100-41-4	Ethylbenzene	BRL	ug/Kg	9
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/Kg	9
95-47-6	*ortho*- Xylene	BRL	ug/Kg	9
100-42-5	Styrene	BRL	ug/Kg	9
75-25-2	Bromoform	BRL	ug/Kg	9
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	9

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**110 %**	80 - 120 %
1,2-Dichloroethane-d_4	**92 %**	80 - 120 %
Toluene-d_8	**97 %**	81 - 117 %
4-Bromofluorobenzene	**106 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-103B**	Laboratory ID:	**60611-16**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM1-1325-S**
Client:	**GeoInsight, Inc.**	Sampled:	**04-25-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**NaHSO4 / Cool**	Analyzed:	**05-02-03**
Matrix:	**Soil**	Dilution Factor:	**1**
% Moisture:	**13**		

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/Kg	20
75-01-4	Vinyl Chloride	BRL	ug/Kg	20
74-83-9	Bromomethane	BRL	ug/Kg	20
75-00-3	Chloroethane	BRL	ug/Kg	20
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	10
67-64-1	Acetone	BRL	ug/Kg	410
75-15-0	Carbon Disulfide	BRL	ug/Kg	100
75-09-2	Methylene Chloride	BRL	ug/Kg	100
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/Kg	10
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/Kg	10
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	10
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/Kg	10
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	100
67-66-3	Chloroform	BRL	ug/Kg	10
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	10
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	10
71-43-2	Benzene	BRL	ug/Kg	10
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	10
79-01-6	Trichloroethene	BRL	ug/Kg	10
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	10
75-27-4	Bromodichloromethane	BRL	ug/Kg	10
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/Kg	10
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	100
108-88-3	Toluene	BRL	ug/Kg	10
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/Kg	10
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	10
127-18-4	Tetrachloroethene	BRL	ug/Kg	10
591-78-6	2-Hexanone	BRL	ug/Kg	100
124-48-1	Dibromochloromethane	BRL	ug/Kg	10
108-90-7	Chlorobenzene	BRL	ug/Kg	10
100-41-4	Ethylbenzene	BRL	ug/Kg	10
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/Kg	10
95-47-6	*ortho*- Xylene	BRL	ug/Kg	10
100-42-5	Styrene	BRL	ug/Kg	10
75-25-2	Bromoform	BRL	ug/Kg	10
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	10

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**109 %**	80 - 120 %
1,2-Dichloroethane-d_4	**108 %**	80 - 120 %
Toluene-d_8	**84 %**	81 - 117 %
4-Bromofluorobenzene	**100 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-103C**	Laboratory ID:	**60611-17**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM1-1325-S**
Client:	**GeoInsight, Inc.**	Sampled:	**04-25-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**NaHSO4 / Cool**	Analyzed:	**05-02-03**
Matrix:	**Soil**	Dilution Factor:	**1**
% Moisture:	**11**		

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/Kg	20
75-01-4	Vinyl Chloride	BRL	ug/Kg	20
74-83-9	Bromomethane	BRL	ug/Kg	20
75-00-3	Chloroethane	BRL	ug/Kg	20
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	10
67-64-1	Acetone	BRL	ug/Kg	390
75-15-0	Carbon Disulfide	BRL	ug/Kg	98
75-09-2	Methylene Chloride	BRL	ug/Kg	98
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/Kg	10
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/Kg	10
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	10
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/Kg	10
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	98
67-66-3	Chloroform	BRL	ug/Kg	10
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	10
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	10
71-43-2	Benzene	BRL	ug/Kg	10
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	10
79-01-6	Trichloroethene	BRL	ug/Kg	10
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	10
75-27-4	Bromodichloromethane	BRL	ug/Kg	10
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/Kg	10
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	98
108-88-3	Toluene	BRL	ug/Kg	10
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/Kg	10
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	10
127-18-4	Tetrachloroethene	BRL	ug/Kg	10
591-78-6	2-Hexanone	BRL	ug/Kg	98
124-48-1	Dibromochloromethane	BRL	ug/Kg	10
108-90-7	Chlorobenzene	BRL	ug/Kg	10
100-41-4	Ethylbenzene	BRL	ug/Kg	10
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/Kg	10
95-47-6	*ortho*- Xylene	BRL	ug/Kg	10
100-42-5	Styrene	BRL	ug/Kg	10
75-25-2	Bromoform	BRL	ug/Kg	10
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	10

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**109 %**	80 - 120 %
1,2-Dichloroethane-d_4	**116 %**	80 - 120 %
Toluene-d_8	**82 %**	81 - 117 %
4-Bromofluorobenzene	**105 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-102A**	Laboratory ID:	**60611-18**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM1-1326-E**
Client:	**GeoInsight, Inc.**	Sampled:	**04-25-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**Methanol / Cool**	Analyzed:	**05-03-03**
Matrix:	**Soil**	Dilution Factor:	**1**
% Moisture:	**16**		

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/Kg	520
75-01-4	Vinyl Chloride	BRL	ug/Kg	520
74-83-9	Bromomethane	BRL	ug/Kg	520
75-00-3	Chloroethane	BRL	ug/Kg	520
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	260
67-64-1	Acetone	BRL	ug/Kg	2,600
75-15-0	Carbon Disulfide	BRL	ug/Kg	2,600
75-09-2	Methylene Chloride	BRL	ug/Kg	1,000
156-60-5	*trans*-1,2-Dichloroethene	BRL	ug/Kg	260
1634-04-4	Methyl *tert*-butyl Ether (MTBE)◊	BRL	ug/Kg	260
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	260
156-59-2	*cis*-1,2-Dichloroethene	BRL	ug/Kg	260
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	2,600
67-66-3	Chloroform	BRL	ug/Kg	260
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	260
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	260
71-43-2	Benzene	BRL	ug/Kg	260
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	260
79-01-6	Trichloroethene	**760**	ug/Kg	260
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	260
75-27-4	Bromodichloromethane	BRL	ug/Kg	260
10061-01-5	*cis*-1,3-Dichloropropene	BRL	ug/Kg	260
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	2,600
108-88-3	Toluene	BRL	ug/Kg	260
10061-02-6	*trans*-1,3-Dichloropropene	BRL	ug/Kg	260
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	260
127-18-4	Tetrachloroethene	BRL	ug/Kg	260
591-78-6	2-Hexanone	BRL	ug/Kg	2,600
124-48-1	Dibromochloromethane	BRL	ug/Kg	260
108-90-7	Chlorobenzene	BRL	ug/Kg	260
100-41-4	Ethylbenzene	BRL	ug/Kg	260
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	BRL	ug/Kg	260
95-47-6	*ortho*-Xylene	BRL	ug/Kg	260
100-42-5	Styrene	BRL	ug/Kg	260
75-25-2	Bromoform	BRL	ug/Kg	260
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	260

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**104 %**	80 - 120 %
1,2-Dichloroethane-d_4	**105 %**	80 - 120 %
Toluene-d_8	**100 %**	81 - 117 %
4-Bromofluorobenzene	**99 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis. Analysis performed utilizing methanol extraction technique.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-102B**	Laboratory ID:	**60611-19**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM1-1329-E**
Client:	**GeoInsight, Inc.**	Sampled:	**04-25-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**Methanol / Cool**	Analyzed:	**05-07-03**
Matrix:	**Soil**	Dilution Factor:	**10**
% Moisture:	**26**		

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/Kg	9,600
75-01-4	Vinyl Chloride	BRL	ug/Kg	9,600
74-83-9	Bromomethane	BRL	ug/Kg	9,600
75-00-3	Chloroethane	BRL	ug/Kg	9,600
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	4,800
67-64-1	Acetone	BRL	ug/Kg	48,000
75-15-0	Carbon Disulfide	BRL	ug/Kg	48,000
75-09-2	Methylene Chloride	BRL	ug/Kg	19,000
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/Kg	4,800
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/Kg	4,800
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	4,800
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/Kg	4,800
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	48,000
67-66-3	Chloroform	BRL	ug/Kg	4,800
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	4,800
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	4,800
71-43-2	Benzene	BRL	ug/Kg	4,800
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	4,800
79-01-6	Trichloroethene	**120,000**	ug/Kg	4,800
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	4,800
75-27-4	Bromodichloromethane	BRL	ug/Kg	4,800
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/Kg	4,800
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	48,000
108-88-3	Toluene	BRL	ug/Kg	4,800
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/Kg	4,800
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	4,800
127-18-4	Tetrachloroethene	BRL	ug/Kg	4,800
591-78-6	2-Hexanone	BRL	ug/Kg	48,000
124-48-1	Dibromochloromethane	BRL	ug/Kg	4,800
108-90-7	Chlorobenzene	BRL	ug/Kg	4,800
100-41-4	Ethylbenzene	BRL	ug/Kg	4,800
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/Kg	4,800
95-47-6	*ortho*- Xylene	BRL	ug/Kg	4,800
100-42-5	Styrene	BRL	ug/Kg	4,800
75-25-2	Bromoform	BRL	ug/Kg	4,800
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	4,800

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**115 %**	80 - 120 %
1,2-Dichloroethane-d_4	**106 %**	80 - 120 %
Toluene-d_8	**83 %**	81 - 117 %
4-Bromofluorobenzene	**98 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis. Analysis performed utilizing methanol extraction technique.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-102C**	Laboratory ID:	**60611-20**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM1-1326-E**
Client:	**GeoInsight, Inc.**	Sampled:	**04-25-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**Methanol / Cool**	Analyzed:	**05-03-03**
Matrix:	**Soil**	Dilution Factor:	**4**
% Moisture:	**26**		

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/Kg	2,800
75-01-4	Vinyl Chloride	BRL	ug/Kg	2,800
74-83-9	Bromomethane	BRL	ug/Kg	2,800
75-00-3	Chloroethane	BRL	ug/Kg	2,800
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	1,400
67-64-1	Acetone	BRL	ug/Kg	14,000
75-15-0	Carbon Disulfide	BRL	ug/Kg	14,000
75-09-2	Methylene Chloride	BRL	ug/Kg	5,500
156-60-5	*trans*-1,2-Dichloroethene	BRL	ug/Kg	1,400
1634-04-4	Methyl *tert*-butyl Ether (MTBE) ◊	BRL	ug/Kg	1,400
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	1,400
156-59-2	*cis*-1,2-Dichloroethene	BRL	ug/Kg	1,400
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	14,000
67-66-3	Chloroform	BRL	ug/Kg	1,400
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	1,400
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	1,400
71-43-2	Benzene	BRL	ug/Kg	1,400
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	1,400
79-01-6	Trichloroethene	**13,000**	ug/Kg	1,400
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	1,400
75-27-4	Bromodichloromethane	BRL	ug/Kg	1,400
10061-01-5	*cis*-1,3-Dichloropropene	BRL	ug/Kg	1,400
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	14,000
108-88-3	Toluene	BRL	ug/Kg	1,400
10061-02-6	*trans*-1,3-Dichloropropene	BRL	ug/Kg	1,400
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	1,400
127-18-4	Tetrachloroethene	BRL	ug/Kg	1,400
591-78-6	2-Hexanone	BRL	ug/Kg	14,000
124-48-1	Dibromochloromethane	BRL	ug/Kg	1,400
108-90-7	Chlorobenzene	BRL	ug/Kg	1,400
100-41-4	Ethylbenzene	BRL	ug/Kg	1,400
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	BRL	ug/Kg	1,400
95-47-6	*ortho*-Xylene	BRL	ug/Kg	1,400
100-42-5	Styrene	BRL	ug/Kg	1,400
75-25-2	Bromoform	BRL	ug/Kg	1,400
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	1,400

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**108 %**	80 - 120 %
1,2-Dichloroethane-d_4	**107 %**	80 - 120 %
Toluene-d_8	**82 %**	81 - 117 %
4-Bromofluorobenzene	**107 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis. Analysis performed utilizing methanol extraction technique.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**GEO-SB-98**	Laboratory ID:	**60611-21**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM1-1328-E**
Client:	**GeoInsight, Inc.**	Sampled:	**04-28-03**
Container:	**40 mL VOA Vial**	Received:	**04-30-03**
Preservation:	**Methanol / Cool**	Analyzed:	**05-06-03**
Matrix:	**Soil**	Dilution Factor:	**1**
% Moisture:	**16**		

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/Kg	770
75-01-4	Vinyl Chloride	BRL	ug/Kg	770
74-83-9	Bromomethane	BRL	ug/Kg	770
75-00-3	Chloroethane	BRL	ug/Kg	770
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	380
67-64-1	Acetone	BRL	ug/Kg	3,800
75-15-0	Carbon Disulfide	BRL	ug/Kg	3,800
75-09-2	Methylene Chloride	BRL	ug/Kg	1,500
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/Kg	380
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/Kg	380
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	380
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/Kg	380
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	3,800
67-66-3	Chloroform	BRL	ug/Kg	380
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	380
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	380
71-43-2	Benzene	BRL	ug/Kg	380
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	380
79-01-6	Trichloroethene	BRL	ug/Kg	380
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	380
75-27-4	Bromodichloromethane	BRL	ug/Kg	380
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/Kg	380
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	3,800
108-88-3	Toluene	BRL	ug/Kg	380
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/Kg	380
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	380
127-18-4	Tetrachloroethene	BRL	ug/Kg	380
591-78-6	2-Hexanone	BRL	ug/Kg	3,800
124-48-1	Dibromochloromethane	BRL	ug/Kg	380
108-90-7	Chlorobenzene	BRL	ug/Kg	380
100-41-4	Ethylbenzene	BRL	ug/Kg	380
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/Kg	380
95-47-6	*ortho*- Xylene	BRL	ug/Kg	380
100-42-5	Styrene	BRL	ug/Kg	380
75-25-2	Bromoform	BRL	ug/Kg	380
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	380

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**108 %**	80 - 120 %
1,2-Dichloroethane-d_4	**116 %**	80 - 120 %
Toluene-d_8	**85 %**	81 - 117 %
4-Bromofluorobenzene	**104 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis. Analysis performed utilizing methanol extraction technique.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Inorganic Chemistry

Field ID: **GEO-SB-101A**
Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**

Matrix: **Soil**
Received: **04-30-03**

Lab ID: **60611-22** Sampled: **04-28-03 09:50** Container: **250 mL Glass** Preservation: **Cool**

Analyte	Result	Units	Reporting Limit	Analyzed	QC Batch	Method
Organic Carbon, Total	BRL	mg/Kg	1,100	05-05-03	TOC-0199-S	EPA 9060 Mod

Method References: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020, Revised (1983), Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100, (1993), Standard Methods for the Examination of Water and Wastewater, APHA Eighteenth Edition (1992), Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996), and Agriculture Handbook 60, U.S. Department of Agriculture. Results are reported on a dry weight basis.

Report Notations: BRL Indicates result, if any, is below reporting limit for analyte. Reporting limit is the lowest value that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Inorganic Chemistry

Field ID: **GEO-SB-101B**
Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**

Matrix: **Soil**
Received: **04-30-03**

Lab ID: **60611-23** Sampled: **04-28-03 10:10** Container: **250 mL Glass** Preservation: **Cool**

Analyte	Result	Units	Reporting Limit	Analyzed	QC Batch	Method
Organic Carbon, Total	BRL	mg/Kg	660	05-05-03	TOC-0199-S	EPA 9060 Mod

Method References: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020, Revised (1983), Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100, (1993), Standard Methods for the Examination of Water and Wastewater, APHA Eighteenth Edition (1992), Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996), and Agriculture Handbook 60, U.S. Department of Agriculture. Results are reported on a dry weight basis.

Report Notations: BRL Indicates result, if any, is below reporting limit for analyte. Reporting limit is the lowest value that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Inorganic Chemistry

Field ID: **GEO-SB-101C**
Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**

Matrix: **Soil**
Received: **04-30-03**

Lab ID: **60611-24** Sampled: **04-28-03 10:45** Container: **250 mL Glass** Preservation: **Cool**

Analyte	Result	Units	Reporting Limit	Analyzed	QC Batch	Method
Organic Carbon, Total	BRL	mg/Kg	560	05-05-03	TOC-0199-S	EPA 9060 Mod

Method References: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020, Revised (1983), Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100, (1993), Standard Methods for the Examination of Water and Wastewater, APHA Eighteenth Edition (1992), Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996), and Agriculture Handbook 60, U.S. Department of Agriculture. Results are reported on a dry weight basis.

Report Notations: BRL Indicates result, if any, is below reporting limit for analyte. Reporting limit is the lowest value that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Inorganic Chemistry

Field ID: **GEO-SB-100A**
Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**

Matrix: **Soil**
Received: **04-30-03**

Lab ID: **60611-25** Sampled: **04-28-03 13:15** Container: **250 mL Glass** Preservation: **Cool**

Analyte	Result	Units	Reporting Limit	Analyzed	QC Batch	Method
Organic Carbon, Total	**610**	mg/Kg	530	05-05-03	TOC-0199-S	EPA 9060 Mod

Method References: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020, Revised (1983), Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100, (1993), Standard Methods for the Examination of Water and Wastewater, APHA Eighteenth Edition (1992), Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996), and Agriculture Handbook 60, U.S. Department of Agriculture. Results are reported on a dry weight basis.

Report Notations: BRL Indicates result, if any, is below reporting limit for analyte. Reporting limit is the lowest value that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Inorganic Chemistry

Field ID: **GEO-SB-100B**
Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**

Matrix: **Soil**
Received: **04-30-03**

Lab ID: **60611-26** Sampled: **04-28-03 13:30** Container: **250 mL Glass** Preservation: **Cool**

Analyte	Result	Units	Reporting Limit	Analyzed	QC Batch	Method
Organic Carbon, Total	BRL	mg/Kg	560	05-05-03	TOC-0199-S	EPA 9060 Mod

Method References: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020, Revised (1983), Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100, (1993), Standard Methods for the Examination of Water and Wastewater, APHA Eighteenth Edition (1992), Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996), and Agriculture Handbook 60, U.S. Department of Agriculture. Results are reported on a dry weight basis.

Report Notations: BRL Indicates result, if any, is below reporting limit for analyte. Reporting limit is the lowest value that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Inorganic Chemistry

Field ID: **GEO-SB-103B**
Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**

Matrix: **Soil**
Received: **04-30-03**

Lab ID: **60611-27** Sampled: **04-25-03 11:30** Container: **250 mL Glass** Preservation: **Cool**

Analyte	Result	Units	Reporting Limit	Analyzed	QC Batch	Method
Organic Carbon, Total	BRL	mg/Kg	490	05-05-03	TOC-0199-S	EPA 9060 Mod

Method References: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020, Revised (1983), Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100, (1993), Standard Methods for the Examination of Water and Wastewater, APHA Eighteenth Edition (1992), Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996), and Agriculture Handbook 60, U.S. Department of Agriculture. Results are reported on a dry weight basis.

Report Notations: BRL Indicates result, if any, is below reporting limit for analyte. Reporting limit is the lowest value that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

Inorganic Chemistry

Field ID: **GEO-SB-103C**
Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**

Matrix: **Soil**
Received: **04-30-03**

Lab ID: **60611-28** Sampled: **04-25-03 11:53** Container: **250 mL Glass** Preservation: **Cool**

Analyte	Result	Units	Reporting Limit	Analyzed	QC Batch	Method
Organic Carbon, Total	BRL	mg/Kg	510	05-05-03	TOC-0199-S	EPA 9060 Mod

Method References: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020, Revised (1983), Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100, (1993), Standard Methods for the Examination of Water and Wastewater, APHA Eighteenth Edition (1992), Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996), and Agriculture Handbook 60, U.S. Department of Agriculture. Results are reported on a dry weight basis.

Report Notations: BRL Indicates result, if any, is below reporting limit for analyte. Reporting limit is the lowest value that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Inorganic Chemistry

Field ID: **GEO-SB-102A**
Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**

Matrix: **Soil**
Received: **04-30-03**

Lab ID: **60611-29** Sampled: **04-25-03 13:58** Container: **250 mL Glass** Preservation: **Cool**

Analyte	Result	Units	Reporting Limit	Analyzed	QC Batch	Method
Organic Carbon, Total	BRL	mg/Kg	500	05-05-03	TOC-0199-S	EPA 9060 Mod

Method References: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020, Revised (1983), Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100, (1993), Standard Methods for the Examination of Water and Wastewater, APHA Eighteenth Edition (1992), Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996), and Agriculture Handbook 60, U.S. Department of Agriculture. Results are reported on a dry weight basis.

Report Notations: BRL Indicates result, if any, is below reporting limit for analyte. Reporting limit is the lowest value that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Inorganic Chemistry

Field ID: **GEO-SB-102B**
Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**

Matrix: **Soil**
Received: **04-30-03**

Lab ID: **60611-32** Sampled: **04-28-03 14:10** Container: **250 mL Glass** Preservation: **Cool**

Analyte	Result	Units	Reporting Limit	Analyzed	QC Batch	Method
Organic Carbon, Total	BRL	mg/Kg	600	05-06-03	TOC-0200-S	EPA 9060 Mod

Method References: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020, Revised (1983), Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100, (1993), Standard Methods for the Examination of Water and Wastewater, APHA Eighteenth Edition (1992), Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996), and Agriculture Handbook 60, U.S. Department of Agriculture. Results are reported on a dry weight basis.

Report Notations: BRL Indicates result, if any, is below reporting limit for analyte. Reporting limit is the lowest value that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

Inorganic Chemistry

Field ID: **GEO-SB-102C**
Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**

Matrix: **Soil**
Received: **04-30-03**

Lab ID: **60611-31** Sampled: **04-25-03 14:23** Container: **250 mL Glass** Preservation: **Cool**

Analyte	Result	Units	Reporting Limit	Analyzed	QC Batch	Method
Organic Carbon, Total	**640**	mg/Kg	620	05-06-03	TOC-0200-S	EPA 9060 Mod

Method References: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020, Revised (1983), Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100, (1993), Standard Methods for the Examination of Water and Wastewater, APHA Eighteenth Edition (1992), Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996), and Agriculture Handbook 60, U.S. Department of Agriculture. Results are reported on a dry weight basis.

Report Notations: BRL Indicates result, if any, is below reporting limit for analyte. Reporting limit is the lowest value that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Inorganic Chemistry

Field ID: **GEO-SB-98**
Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**

Matrix: **Soil**
Received: **04-30-03**

Lab ID: **60611-32** Sampled: **04-28-03 15:50** Container: **250 mL Glass** Preservation: **Cool**

Analyte	Result	Units	Reporting Limit	Analyzed	QC Batch	Method
Organic Carbon, Total	**2,200**	mg/Kg	520	05-06-03	TOC-0200-S	EPA 9060 Mod

Method References: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020, Revised (1983), Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100, (1993), Standard Methods for the Examination of Water and Wastewater, APHA Eighteenth Edition (1992), Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996), and Agriculture Handbook 60, U.S. Department of Agriculture. Results are reported on a dry weight basis.

Report Notations: BRL Indicates result, if any, is below reporting limit for analyte. Reporting limit is the lowest value that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Project Narrative

Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**

Lab ID: **60611**
Received: **04-30-03 18:30**

A. Documentation and Client Communication

The following documentation discrepancies, and client changes or amendments were noted for this project:

1. No discrepancies, changes, or amendments were noted.

B. Method Non-Conformances

The following method non-conformances were noted for this project:

1. No method non-conformances were noted.

GROUNDWATER ANALYTICAL

228 Main Street, P.O. Box 1200
Buzzards Bay, MA 02532
Telephone (508) 759-4441 • FAX (508) 759-4475
www.groundwateranalytical.com

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

№ 072658

Project Name: GO OLYMPIA	Firm: GEOINSIGHT
Project Number: 2491	Address: 319 LITTLETON RD
Sampler Name: JS	City / State / Zip: WESTFORD, MA 01886
Project Manager: KDT	Telephone: 978-692-1114

INSTRUCTIONS: Use separate line for each container (except replicates).

TURNAROUND

- ☐ STANDARD (10 Business Days)
- ☒ PRIORITY (5 Business Days)
- ☐ RUSH (RAN- _____)
  (Rush requires Rush Authorization Number)
- ☐ Please Email to: _____
- ☐ Please FAX to: _____

BILLING

- ☐ Purchase Order No.: _____
- ☐ Third Party Billing: _____
- ☐ GWA Quote: _____

ANALYSIS REQUEST

OPTIONS: ☐ TIC Search

SDWA: ☐ 524.2-MTBE

NPDES: ☐ 624

RCRA/21E: ☒ 8260B TCL+MTBE ☐ 8260B

Volatiles: ☐ 602+MTBE ☐ 601 ☐ 601/602+MTBE ☐ 8021B Aromatics ☐ 8021B Halocarbons ☐ 8021B ☐ 8270C ☐ 8270C PAHs only

Semivolatiles: ☐ Acid Only ☐ B/N Only ☐ TIC Search ☐ 525.2 ☐ 625 ☐ 625 PAHs only

Pest/Herb/PCBs Extractable: ☐ 505 ☐ 508 ☐ 608 Pesticides ☐ 608 PCBs ☐ 8081A Pesticides ☐ 8082 PCBs

Pest/Herb/PCBs Vol.: ☐ 531.1 ☐ 515.1 ☐ 504.1 EDB/DBCP ☐ 615 ☐ 8011 EDB/DBCP ☐ 8151A Herbicides

Metals: Specify For Water Samples ☐ Total ☐ Dissolved ☐ Lead and Copper ☐ 13 Priority Pollutant ☐ 8 RCRA ☐ 5 RCRA ☐ MA List Metals ☐ 23 TAL ☐ Specify:

Petroleum Hydrocarbon Ext. TPH: ☐ Diesel Range Organics (DRO) ☐ CT ETPH ☐ MA DEP EPH w/all targets ☐ EPH Carbon Ranges only ☐ Hydrocarbon Fingerprint (IUCrFM) by ASTM D3328-90-Mod.) ☐ TPH by IUCrFID (8100 Mod) Quantitative Only

Petroleum Hydrocarbon Vol. TPH: ☐ Gasoline Range Organics (GRO) ☐ MA DEP VPH w/all targets ☐ VPH Carbon ranges only

Haz. Waste: ☐ TCLP ☐ SPLP ☐ 8 Metals ☐ Pb only ☐ VOA ☐ Semi VOA ☐ Pesticides ☐ Herbicides ☐ Corrosivity (as pH) ☐ Reactivity ☐ Ignitability (as Flashpoint) ☐ Paint Filter ☐ MA Basic Disposal Criteria: 82608, TPH by GC, PCBs, 5 Metals, Corrosivity, Ignitability, Reactivity

General Chemistry: ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Fluoride ☐ Sulfate ☐ Dissolved Phosphorus ☐ Ammonia ☐ TKN ☐ Total Phosphorus ☐ Total N (as NO2/NO3/TKN) ☐ Oil & Grease ☐ COD ☒ TOC ☐ BOD ☐ TDS ☐ TSS ☐ TS ☐ Alkalinity ☐ Cyanide, Total ☐ Cyanide, Physiologically Available ☐ pH ☐ Dissolved Oxygen ☐ Turbidity

Other: ☐ Total Coliform ☐ Fecal Coliform ☐ HPC

Sampling DATE	TIME	SAMPLE IDENTIFICATION	Matrix: GROUNDWATER	DRINKING WATER	WASTEWATER	SOIL	OTHER SOLID	OIL/ORGANIC LIQUID	Type: COMPOSITE	GRAB	Container(s) NUMBER	40mL VOA Vial	60mL/2 oz Glass	120mL/4 oz Amber Glass	250mL/8 oz Glass	500mL/16 oz Glass	1L/32 oz Amber Glass	250mL/8 oz Plastic	500mL/16 oz Plastic	1L/32 oz Plastic	120mL Cassette	Preservation: HCl	HNO3	H2SO4	NaOH	Methanol	Sodium Bisulfate	ICE	Filtered: YES	NO	LABORATORY NUMBER (Lab Use Only)	RCRA/21E	Volatiles	Semivolatiles	Pest/Herb/PCBs	Metals	Petroleum Hydrocarbon	Haz. Waste	General Chemistry	Other
4/28	9:50	GEO-SB-101A				X				X	6	5			1										X	X	X		X	10 42		X									KMnO4 - DEMAND
	10:10	GEO-SB-101B				X				X	7	5			2										X	X	X		X	11 39 33		X									
	10:45	GEO-SB-101C				X				X	7	5			2										X	X	X		X	12 24 34		X									X
	11:05	GEO-SB-101D	X							X	3	3										X					X		X	1		X									X
	11:30	GEO-SB-101E	X							X	3	3										X					X		X	2		X									
	11:55	GEO-SB-101F	X							X	3	3										X					X		X	3		X									
	1:15	GEO-SB-100A				X				X	7	5			2										X	X	X		X	13 25 35		X									
	1:30	GEO-SB-100B				X				X	6	5			1										X	X	X		X	14 26		X									X
	1:45	GEO-SB-100C	X							X	3	3										X					X		X	4		X									
	2:00	GEO-SB-100D	X							X	3	3										X					X		X	5		X									
	3:00	GEO-SB-99A				X				X	1				1												X		X	~~15~~ 36											X
↓	3:00	GEO-SB-99B				X				X	1				1												X		X	~~16~~ 37											X

REMARKS / SPECIAL INSTRUCTIONS

DATA QUALITY OBJECTIVES

Regulatory Program

State	Standard	Deliverables
☐ CT	☐ MCP GW-1/S-1	☐ PWS Form
☐ ME	☐ MCP GW-2/S-1	☐ _____
☐ MA	☐ NY STARS	☐ _____
☐ NH	☐ Drinking Water	
☐ NY	☐ Wastewater	
☐ RI	☐ Waste Disposal	
☐ VT	☐ Dredge Material	
☐ ___	☐ _____	

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. **Each MS, MSD and Sample Duplicate requires an additional sample aliquot.**

Project Specific QC Required
- ☐ Sample Duplicate
- ☐ Matrix Spike
- ☐ Matrix Spike Duplicate

Selection of QC Sample
- ☐ Please use sample: _____

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

	Date	Time		
Relinquished by Sampler: [signature]	4/30/03	1240	Received by: [signature]	Receipt Temperature: ☐ Ice ☐ Refrigerated 2-6°C Recommended 3.0
Relinquished by: [signature]	4/30/03	2105	Received by: [signature]	Container Count:
Relinquished by: [signature]	4/30/03	1830	Received by Laboratory: [signature]	Shipping/Airbill Number:

Method of Shipment: ☐ GWA Courier ☐ Express Mail ☐ Federal Express ☐ UPS ☐ Hand ☐ _____

Custody Seal Number:

GROUNDWATER ANALYTICAL

228 Main Street, P.O. Box 1200
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Telephone (508) 759-4441 • FAX (508) 759-4475
www.groundwateranalytical.com

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

№ 072657

Project Name: 60 OLYMPIA
Firm: GEOINSIGHT
Project Number: 2491
Address: 319 LITTLETON RD
Sampler Name: JS
City / State / Zip: WESTFORD, MA 01866
Project Manager: KDT
Telephone: 978-692-1114

TURNAROUND

- ☐ STANDARD (10 Business Days)
- ☒ PRIORITY (5 Business Days)
- ☐ RUSH (RAN- _____)
  (Rush requires Rush Authorization Number)
- ☐ Please Email to: _____
- ☐ Please FAX to: _____

BILLING

- ☐ Purchase Order No.: _____
- ☐ Third Party Billing: _____
- ☐ GWA Quote: _____

ANALYSIS REQUEST

OPTIONS: Volatiles ☐ TIC Search; Semivolatiles ☐ Acid Only ☐ BNA Only ☐ TIC Search
SDWA: Volatiles ☐ 524.2+MTBE; Semivolatiles ☐ 525.2; Pest/Herb/PCBs Extractable ☐ 505 ☐ 508; Vol. ☐ 531.1 ☐ 515.1 ☐ 504.1 EDB/DBCP; Metals ☐ Lead and Copper
NPDES: Volatiles ☐ 624 ☐ 602+MTBE ☐ 601 ☐ 601/602+MTBE; Semivolatiles ☐ 625 ☐ 625 PAHs only; Pest/Herb/PCBs Extractable ☐ 608 Pesticides ☐ 608 PCBs; Vol. ☐ 615; Metals ☐ 13 Priority Pollutant
RCRA/21E: Volatiles ☐ 8260B TCL+MTBE ☐ 8260B; ☐ 8021B Aromatics ☐ 8021B Halocarbons ☐ 8021B; Semivolatiles ☐ 8270 ☐ 8270C PAHs only; Pest/Herb/PCBs Extractable ☐ 8081A Pesticides ☐ 8082 PCBs; Vol. ☐ 8151A Herbicides ☐ 8011 EDB/DBCP; Metals ☐ 14 RCRA ☐ 5 RCRA ☐ MA List Metals ☐ 23 TAL ☐ Specify:

Metals: Specify For Water Samples ☐ Total ☐ Dissolved

Petroleum Hydrocarbon Ext. TPH: ☐ TPH-HR ☐ Diesel Range Organics (DRO) ☐ CT ETPH ☐ MA DEP EPH w/all targets ☐ EPH Carbon Ranges only ☐ Hydrocarbon Fingerprint (GC/FID by ASTM D3328-90 Mod.) ☐ TPH by GC/FID (8100 Mod) Quantitative Only
Petroleum Hydrocarbon Vol. TPH: ☐ Gasoline Range Organics (GRO) ☐ MA DEP VPH w/all targets ☐ VPH Carbon ranges only
Haz. Waste: ☐ TCLP ☐ SPLP ☐ 14 Metals ☐ Pb only ☐ VOA ☐ Semi VOA ☐ Pesticides ☐ Herbicides ☐ Corrosivity (as pH) ☐ Reactivity ☐ Ignitability (as Flashpoint) ☐ Paint Filter ☐ MA Basic Disposal Criteria: 8260B, TPH by GC, PCBs, 5 Metals, Corrosivity, Ignitability, Reactivity
General Chemistry: ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Fluoride ☐ Sulfate ☐ Dissolved Phosphorus ☐ Ammonia ☐ TKN ☐ Total Phosphorus ☐ Total N (as NO2/NO3/TKN) ☐ Oil & Grease ☒ COD ☒ TOC ☐ BOD ☐ TDS ☐ TSS ☐ TS ☐ Alkalinity ☐ Cyanide, Total ☐ Cyanide, Physiologically Available ☐ pH ☐ Dissolved Oxygen ☐ Turbidity ☐ Total Coliform ☐ Fecal Coliform ☐ HPC
Other: KM 04 - DEMAND

Sampling DATE	TIME	SAMPLE IDENTIFICATION	Matrix: GROUNDWATER	DRINKING WATER	WASTEWATER	SOIL	OTHER SOLID	OIL/ORGANIC LIQUID	Type: COMPOSITE	GRAB	Container(s) NUMBER	40mL VOA Vial	60mL/2 oz Glass	120mL/4 oz Amber Glass	250mL/8 oz Glass	500mL/16 oz Glass	1L/32 oz Amber Glass	250mL/8 oz Plastic	500mL/16 oz Plastic	1L/32 oz Plastic	120mL Sterile	Preservation: HCl	HNO3	H2SO4	NaOH	Methanol	Sodium Bisulfate	ICE	Filtered: YES	NO	LABORATORY NUMBER (Lab Use Only)
4/25	10:50	GEO-SB-103A				X				X	6	5			1										X	X	X		X	620611 17,15,38
	11:30	GEO-SB-103B				X				X	6	5			1										X	X	X		X	18,16,27
	11:53	GEO-SB-103C				X				X	7	5			2										X	X	X		X	19,17,28,39
	12:30	GEO-SB-103D	X							X	3	3											X				X		X	6
	1:00	GEO-SB-103E	X							X	3	3											X				X		X	7
	1:50	GEO-SB-102A				X				X	6	5			1										X	X	X		X	26,18,29
	2:10	GEO-SB-102B				X				X	6	5			1										X	X	X		X	27,19,30
	2:23	GEO-SB-102C				X				X	7	5			2										X	X	X		X	28,20,31,40
	2:52	GEO-SB-102D	X							X	3	3											X				X		X	8
↓	3:30	GEO-SB-102E	X							X	3	3											X				X		X	9
28	3:50	GEO-SB-98				X				X	7	5			2										X	X	X		X	23,21,32,41

REMARKS / SPECIAL INSTRUCTIONS

INSTRUCTIONS: Use separate line for each container (except replicates).

DATA QUALITY OBJECTIVES

Regulatory Program

State	Standard	Deliverables
☐ CT	☐ MCP GW-1/S-1	☐ PWS Form
☐ ME	☐ MCP GW-2/S-1	☐ _____
☐ MA	☐ NY STARS	☐ _____
☐ NH	☐ Drinking Water	
☐ NY	☐ Wastewater	
☐ RI	☐ Waste Disposal	
☐ VT	☐ Dredge Material	
☐ ___	☐ _____	

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. **Each MS, MSD and Sample Duplicate requires an additional sample aliquot.**

Project Specific QC Required
- ☐ Sample Duplicate
- ☐ Matrix Spike
- ☐ Matrix Spike Duplicate

Selection of QC Sample
- ☐ Please use sample: _____

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

Relinquished by Sampler: Jared Sheehan	Date 4/30/03	Time 12:40	Received by: [signature]	Receipt Temperature: ☐ Ice ☐ Refrigerated 2-8°C Recommended 3.0
Relinquished by: [signature]	Date 4/30/03	Time 2:05	Received by: [signature]	Container Count:
Relinquished by: [signature]	Date 4/30/03	Time 1830	Received by Laboratory: [signature]	Shipping/Airbill Number:

Method of Shipment: ☐ GWA Courier ☐ Express Mail ☐ Federal Express ☐ UPS ☐ Hand ☐ _____

Custody Seal Number:

GROUNDWATER ANALYTICAL

Quality Assurance/Quality Control

A. Program Overview

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans,* US EPA QAMS-005/80 (1980), and *Test Methods for Evaluating Solid Waste,* US EPA, SW-846, Update III (1996).

Quality Control protocols include written Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. All samples, standards, blanks, laboratory control samples, matrix spikes and sample duplicates are spiked with internal standards and surrogate compounds. All instrument sequences begin with an initial calibration verification standard and a blank; and excepting GC/MS sequences, all sequences close with a continuing calibration standard. GC/MS systems are tuned to appropriate ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

B. Definitions

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples of the same matrix which are prepared together for the same analysis, using the same lots of reagents and the same techniques or manipulations, all within the same continuum of time, up to but not exceeding 24 hours.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target analytes representative of the method analytes. Accuracy is defined as the degree of agreement of the measured value with the true or expected value. Perent Recoveries for the Laboratory Control Samples are calculated to assess accuracy.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Surrogate Compounds are used to assess the effectiveness of an analytical method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to the target analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **EPA Method 8260B**
QC Batch ID: **VM5-2519-WL**
Matrix: **Aqueous**
Units: **ug/L**

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits
75-35-4	1,1-Dichloroethene	10	8	**82 %**	70 - 130 %
71-43-2	Benzene	10	9	**87 %**	70 - 130 %
79-01-6	Trichloroethene	10	9	**92 %**	70 - 130 %
108-88-3	Toluene	10	9	**90 %**	70 - 130 %
108-90-7	Chlorobenzene	10	9	**88 %**	70 - 130 %

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**98 %**	86 - 118 %
1,2-Dichloroethane-d_4	**102 %**	80 - 120 %
Toluene-d_8	**100 %**	88 - 110 %
4-Bromofluorobenzene	**100 %**	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8260B**
QC Batch ID: **VM5-2519-WB**
Matrix: **Aqueous**

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	10
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/L	0.5
95-47-6	*ortho*- Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**99 %**	86 - 118 %
1,2-Dichloroethane-d_4	**100 %**	80 - 120 %
Toluene-d_8	**100 %**	88 - 110 %
4-Bromofluorobenzene	**103 %**	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **EPA Method 8260B**
QC Batch ID: **VM5-2521-WL**
Matrix: **Aqueous**
Units: **ug/L**

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits
75-35-4	1,1-Dichloroethene	10	9	**85 %**	70 - 130 %
71-43-2	Benzene	10	9	**86 %**	70 - 130 %
79-01-6	Trichloroethene	10	9	**89 %**	70 - 130 %
108-88-3	Toluene	10	9	**89 %**	70 - 130 %
108-90-7	Chlorobenzene	10	9	**93 %**	70 - 130 %

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**87 %**	86 - 118 %
1,2-Dichloroethane-d_4	**88 %**	80 - 120 %
Toluene-d_8	**90 %**	88 - 110 %
4-Bromofluorobenzene	**92 %**	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8260B**
QC Batch ID: **VM5-2521-WB**
Matrix: **Aqueous**

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	10
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	*trans*-1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl *tert*-butyl Ether (MTBE) ◊	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	*cis*-1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	*cis*-1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	*trans*-1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	BRL	ug/L	0.5
95-47-6	*ortho*-Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**101 %**	86 - 118 %
1,2-Dichloroethane-d_4	**105 %**	80 - 120 %
Toluene-d_8	**104 %**	88 - 110 %
4-Bromofluorobenzene	**111 %**	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **EPA Method 8260B**
QC Batch ID: **VM5-2520-WL**
Matrix: **Aqueous**
Units: **ug/L**

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits
75-35-4	1,1-Dichloroethene	10	11	**112 %**	70 - 130 %
71-43-2	Benzene	10	11	**108 %**	70 - 130 %
79-01-6	Trichloroethene	10	11	**114 %**	70 - 130 %
108-88-3	Toluene	10	11	**109 %**	70 - 130 %
108-90-7	Chlorobenzene	10	11	**107 %**	70 - 130 %

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**100 %**	86 - 118 %
1,2-Dichloroethane-d_4	**104 %**	80 - 120 %
Toluene-d_8	**103 %**	88 - 110 %
4-Bromofluorobenzene	**99 %**	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8260B**
QC Batch ID: **VM5-2520-WB**
Matrix: **Aqueous**

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	10
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/L	0.5
95-47-6	*ortho*- Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**102 %**	86 - 118 %
1,2-Dichloroethane-d_4	**105 %**	80 - 120 %
Toluene-d_8	**104 %**	88 - 110 %
4-Bromofluorobenzene	**106 %**	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **EPA Method 8260B**
QC Batch ID: **VM1-1326-EL**
Matrix: **Soil**
Units: **ug/Kg**

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits
75-35-4	1,1-Dichloroethene	2,500	2,300	**92 %**	70 - 130 %
71-43-2	Benzene	2,500	2,400	**94 %**	70 - 130 %
79-01-6	Trichloroethene	2,500	2,500	**99 %**	70 - 130 %
108-88-3	Toluene	2,500	2,400	**94 %**	70 - 130 %
108-90-7	Chlorobenzene	2,500	2,200	**86 %**	70 - 130 %

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**110 %**	80 - 120 %
1,2-Dichloroethane-d_4	**108 %**	80 - 120 %
Toluene-d_8	**103 %**	81 - 117 %
4-Bromofluorobenzene	**100 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

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GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8260B**
QC Batch ID: **VM1-1326-EB**
Matrix: **Soil**

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/Kg	500
75-01-4	Vinyl Chloride	BRL	ug/Kg	500
74-83-9	Bromomethane	BRL	ug/Kg	500
75-00-3	Chloroethane	BRL	ug/Kg	500
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	250
67-64-1	Acetone	BRL	ug/Kg	2,500
75-15-0	Carbon Disulfide	BRL	ug/Kg	2,500
75-09-2	Methylene Chloride	BRL	ug/Kg	1,000
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/Kg	250
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/Kg	250
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	250
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/Kg	250
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	2,500
67-66-3	Chloroform	BRL	ug/Kg	250
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	250
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	250
71-43-2	Benzene	BRL	ug/Kg	250
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	250
79-01-6	Trichloroethene	BRL	ug/Kg	250
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	250
75-27-4	Bromodichloromethane	BRL	ug/Kg	250
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/Kg	250
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	2,500
108-88-3	Toluene	BRL	ug/Kg	250
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/Kg	250
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	250
127-18-4	Tetrachloroethene	BRL	ug/Kg	250
591-78-6	2-Hexanone	BRL	ug/Kg	2,500
124-48-1	Dibromochloromethane	BRL	ug/Kg	250
108-90-7	Chlorobenzene	BRL	ug/Kg	250
100-41-4	Ethylbenzene	BRL	ug/Kg	250
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/Kg	250
95-47-6	*ortho*- Xylene	BRL	ug/Kg	250
100-42-5	Styrene	BRL	ug/Kg	250
75-25-2	Bromoform	BRL	ug/Kg	250
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	250

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**110 %**	80 - 120 %
1,2-Dichloroethane-d_4	**107 %**	80 - 120 %
Toluene-d_8	**102 %**	81 - 117 %
4-Bromofluorobenzene	**101 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **EPA Method 8260B**
QC Batch ID: **VM1-1325-SL**
Matrix: **Soil**
Units: **ug/Kg**

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits
75-35-4	1,1-Dichloroethene	50	50	**100 %**	70 - 130 %
71-43-2	Benzene	50	46	**92 %**	70 - 130 %
79-01-6	Trichloroethene	50	50	**101 %**	70 - 130 %
108-88-3	Toluene	50	45	**90 %**	70 - 130 %
108-90-7	Chlorobenzene	50	51	**102 %**	70 - 130 %

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**87 %**	80 - 120 %
1,2-Dichloroethane-d_4	**100 %**	80 - 120 %
Toluene-d_8	**85 %**	81 - 117 %
4-Bromofluorobenzene	**86 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8260B**
QC Batch ID: **VM1-1325-SB**
Matrix: **Soil**

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/Kg	10
75-01-4	Vinyl Chloride	BRL	ug/Kg	10
74-83-9	Bromomethane	BRL	ug/Kg	10
75-00-3	Chloroethane	BRL	ug/Kg	10
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	5
67-64-1	Acetone	BRL	ug/Kg	200
75-15-0	Carbon Disulfide	BRL	ug/Kg	50
75-09-2	Methylene Chloride	BRL	ug/Kg	50
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/Kg	5
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/Kg	5
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	5
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/Kg	5
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	50
67-66-3	Chloroform	BRL	ug/Kg	5
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	5
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	5
71-43-2	Benzene	BRL	ug/Kg	5
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	5
79-01-6	Trichloroethene	BRL	ug/Kg	5
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	5
75-27-4	Bromodichloromethane	BRL	ug/Kg	5
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/Kg	5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	50
108-88-3	Toluene	BRL	ug/Kg	5
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/Kg	5
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	5
127-18-4	Tetrachloroethene	BRL	ug/Kg	5
591-78-6	2-Hexanone	BRL	ug/Kg	50
124-48-1	Dibromochloromethane	BRL	ug/Kg	5
108-90-7	Chlorobenzene	BRL	ug/Kg	5
100-41-4	Ethylbenzene	BRL	ug/Kg	5
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/Kg	5
95-47-6	*ortho*- Xylene	BRL	ug/Kg	5
100-42-5	Styrene	BRL	ug/Kg	5
75-25-2	Bromoform	BRL	ug/Kg	5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	5

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**110 %**	80 - 120 %
1,2-Dichloroethane-d_4	**84 %**	80 - 120 %
Toluene-d_8	**84 %**	81 - 117 %
4-Bromofluorobenzene	**112 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

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GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **EPA Method 8260B**
QC Batch ID: **VM4-2592-WL**
Matrix: **Aqueous**
Units: **ug/L**

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits
75-35-4	1,1-Dichloroethene	10	10	**97 %**	70 - 130 %
71-43-2	Benzene	10	10	**98 %**	70 - 130 %
79-01-6	Trichloroethene	10	10	**102 %**	70 - 130 %
108-88-3	Toluene	10	10	**97 %**	70 - 130 %
108-90-7	Chlorobenzene	10	10	**99 %**	70 - 130 %

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**102 %**	86 - 118 %
1,2-Dichloroethane-d_4	**104 %**	80 - 120 %
Toluene-d_8	**110 %**	88 - 110 %
4-Bromofluorobenzene	**113 %**	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8260B**
QC Batch ID: **VM4-2592-WB**
Matrix: **Aqueous**

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	10
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/L	0.5
95-47-6	*ortho*- Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**98 %**	86 - 118 %
1,2-Dichloroethane-d_4	**99 %**	80 - 120 %
Toluene-d_8	**108 %**	88 - 110 %
4-Bromofluorobenzene	**115 %**	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **EPA Method 8260B**
QC Batch ID: **VM1-1328-EL**
Matrix: **Soil**
Units: **ug/Kg**

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits
75-35-4	1,1-Dichloroethene	2,500	2,700	**106 %**	70 - 130 %
71-43-2	Benzene	2,500	2,600	**102 %**	70 - 130 %
79-01-6	Trichloroethene	2,500	2,800	**114 %**	70 - 130 %
108-88-3	Toluene	2,500	2,600	**103 %**	70 - 130 %
108-90-7	Chlorobenzene	2,500	2,800	**112 %**	70 - 130 %

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**102 %**	80 - 120 %
1,2-Dichloroethane-d_4	**103 %**	80 - 120 %
Toluene-d_8	**105 %**	81 - 117 %
4-Bromofluorobenzene	**103 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8260B**
QC Batch ID: **VM1-1328-EB**
Matrix: **Soil**

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/Kg	500
75-01-4	Vinyl Chloride	BRL	ug/Kg	500
74-83-9	Bromomethane	BRL	ug/Kg	500
75-00-3	Chloroethane	BRL	ug/Kg	500
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	250
67-64-1	Acetone	BRL	ug/Kg	2,500
75-15-0	Carbon Disulfide	BRL	ug/Kg	2,500
75-09-2	Methylene Chloride	BRL	ug/Kg	1,000
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/Kg	250
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/Kg	250
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	250
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/Kg	250
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	2,500
67-66-3	Chloroform	BRL	ug/Kg	250
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	250
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	250
71-43-2	Benzene	BRL	ug/Kg	250
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	250
79-01-6	Trichloroethene	BRL	ug/Kg	250
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	250
75-27-4	Bromodichloromethane	BRL	ug/Kg	250
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/Kg	250
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	2,500
108-88-3	Toluene	BRL	ug/Kg	250
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/Kg	250
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	250
127-18-4	Tetrachloroethene	BRL	ug/Kg	250
591-78-6	2-Hexanone	BRL	ug/Kg	2,500
124-48-1	Dibromochloromethane	BRL	ug/Kg	250
108-90-7	Chlorobenzene	BRL	ug/Kg	250
100-41-4	Ethylbenzene	BRL	ug/Kg	250
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/Kg	250
95-47-6	*ortho*- Xylene	BRL	ug/Kg	250
100-42-5	Styrene	BRL	ug/Kg	250
75-25-2	Bromoform	BRL	ug/Kg	250
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	250

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**108 %**	80 - 120 %
1,2-Dichloroethane-d_4	**111 %**	80 - 120 %
Toluene-d_8	**100 %**	81 - 117 %
4-Bromofluorobenzene	**109 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **EPA Method 8260B**
QC Batch ID: **VM1-1329-EL**
Matrix: **Soil**
Units: **ug/Kg**

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits
75-35-4	1,1-Dichloroethene	2,500	2,400	**96 %**	70 - 130 %
71-43-2	Benzene	2,500	2,300	**93 %**	70 - 130 %
79-01-6	Trichloroethene	2,500	2,500	**98 %**	70 - 130 %
108-88-3	Toluene	2,500	2,500	**98 %**	70 - 130 %
108-90-7	Chlorobenzene	2,500	2,700	**107 %**	70 - 130 %

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**102 %**	80 - 120 %
1,2-Dichloroethane-d_4	**96 %**	80 - 120 %
Toluene-d_8	**102 %**	81 - 117 %
4-Bromofluorobenzene	**116 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8260B**
QC Batch ID: **VM1-1329-EB**
Matrix: **Soil**

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/Kg	500
75-01-4	Vinyl Chloride	BRL	ug/Kg	500
74-83-9	Bromomethane	BRL	ug/Kg	500
75-00-3	Chloroethane	BRL	ug/Kg	500
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	250
67-64-1	Acetone	BRL	ug/Kg	2,500
75-15-0	Carbon Disulfide	BRL	ug/Kg	2,500
75-09-2	Methylene Chloride	BRL	ug/Kg	1,000
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/Kg	250
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/Kg	250
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	250
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/Kg	250
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	2,500
67-66-3	Chloroform	BRL	ug/Kg	250
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	250
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	250
71-43-2	Benzene	BRL	ug/Kg	250
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	250
79-01-6	Trichloroethene	BRL	ug/Kg	250
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	250
75-27-4	Bromodichloromethane	BRL	ug/Kg	250
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/Kg	250
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	2,500
108-88-3	Toluene	BRL	ug/Kg	250
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/Kg	250
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	250
127-18-4	Tetrachloroethene	BRL	ug/Kg	250
591-78-6	2-Hexanone	BRL	ug/Kg	2,500
124-48-1	Dibromochloromethane	BRL	ug/Kg	250
108-90-7	Chlorobenzene	BRL	ug/Kg	250
100-41-4	Ethylbenzene	BRL	ug/Kg	250
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/Kg	250
95-47-6	*ortho*- Xylene	BRL	ug/Kg	250
100-42-5	Styrene	BRL	ug/Kg	250
75-25-2	Bromoform	BRL	ug/Kg	250
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	250

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**119 %**	80 - 120 %
1,2-Dichloroethane-d_4	**119 %**	80 - 120 %
Toluene-d_8	**105 %**	81 - 117 %
4-Bromofluorobenzene	**115 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

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GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **Inorganic Chemistry**
Matrix: **Soil**

Analyte	Method	QC Batch	Units	Spiked	Measured	Recovery	QC Limits
Organic Carbon, Total	EPA 9060 Mod	TOC-0200-S	mg/Kg	1,000	990	**99 %**	80 - 120 %
Organic Carbon, Total	EPA 9060 Mod	TOC-0199-S	mg/Kg	1,000	1,000	**100 %**	80 - 120 %

Method References: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020, Revised (1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100, (1993), Standard Methods for the Examination of Water and Wastewater, APHA Eighteenth Edition (1992).Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III Results are reported on a dry weight basis.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **Inorganic Chemistry**
Matrix: **Soil**

Analyte	Result	Units	Reporting Limit	QC Batch	Method
Organic Carbon, Total	BRL	mg/Kg	100	TOC-0200-S	EPA 9060 Mod
Organic Carbon, Total	BRL	mg/Kg	100	TOC-0199-S	EPA 9060 Mod

Method References: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020, Revised (1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100, (1993), Standard Methods for the Examination of Water and Wastewater, APHA, Eighteent Edition (1992).Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Results are reported on a dry weight basis.

Report Notations: BRL Indicates result, if any, is below reporting limit for analyte. Reporting limit is the lowest value that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Certifications and Approvals

Groundwater Analytical maintains environmental laboratory certification in a variety of states. Copies of our current certificates may be obtained from our website:

http://www.groundwateranalytical.com/qualifications.htm

CONNECTICUT, Department of Health Services, PH-0586

Categories: Potable Water, Wastewater, Solid Waste and Soil
http://www.dph.state.ct.us/BRS/Environmental_Lab/OutStateLabList.htm

FLORIDA, Department of Health, Bureau of Laboratories, E87643

Categories: SDWA, CWA, RCRA/CERCLA
http://www.floridadep.org/labs/qa/dohforms.htm

MAINE, Department of Human Services, MA103

Categories: Drinking Water and Wastewater
http://www.state.me.us/dhs/eng/water/Compliance.htm

MASSACHUSETTS, Department of Environmental Protection, M-MA-103

Categories: Potable Water and Non-Potable Water
http://www.state.ma.us/dep/bspt/wes/files/certlabs.pdf

NEW HAMPSHIRE, Department of Environmental Services, 202703

Categories: Drinking Water and Wastewater
http://www.des.state.nh.us/asp/NHELAP/labsview.asp

NEW YORK, Department of Health, 11754

Categories: Potable Water, Non-Potable Water and Solid Waste
http://www.wadsworth.org/labcert/elap/comm.html

PENNSYLVANIA, Department of Environmental Protection, 68-665

Environmental Laboratory Registration (Non-drinking water and Non-wastewater)
http://www.dep.state.pa.us/Labs/Registered/

RHODE ISLAND, Department of Health, 54

Categories: Surface Water, Air, Wastewater, Potable Water, Sewage
http://www.healthri.org/labs/labsCT_MA.htm

U.S. Department of Agriculture, Soil Permit, S-53921

Foreign soil import permit

VERMONT, Department of Environmental Conservation, Water Supply Division

Category: Drinking Water
http://www.vermontdrinkingwater.org/wsops/labtable.PDF

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GeoTesting Express
1145 Mass Avenue - Boxborough, MA 01719
(978) 635-0424 - Fax (978) 635-0266

LETTER OF TRANSMITTAL

TO:

Ms. Christine Binger
Geo Insight
319 Littleton Road
Suite 100
Westford, MA 01886

DATE: 05/15/03	GTX NO: 4539
RE: 60 Olympia Project	
Pages (excluding transmittal): 11	

We are sending you ☑ Attached ☐ Under separate cover via _____ the following items:
☑ Test results ☐ Proposal ☑ Report ☐ Samples ☐ Specifications ☐ Invoice
☐ Copy of letter ☐ Change order
☐ Other

COPIES	DATE	DESCRIPTION
1	05/15/03	**May 2003 Laboratory Test Reports**
		1 Grain Size Analysis (ASTM D 422) – mechanical sieve portion only
		4 Grain Size Analyses (ASTM D 422) – with Hydrometer

THESE ITEMS ARE TRANSMITTED as checked below:
☐ For approval ☐ Approved as submitted ☐ Resubmit _____ Copies for approval
☑ For your use ☐ Approved as noted ☐ Submit _____ Copies for distribution
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☐ For review and comment
☐ For bids due _____, 20
☐ _____

REMARKS

_____
_____
_____

COPY TO _____

SIGNED _____

Joseph D. Tomei – Laboratory Manager

Geotechnical Test Report

60 Olympia Project
Woburn, MA

Prepared for:

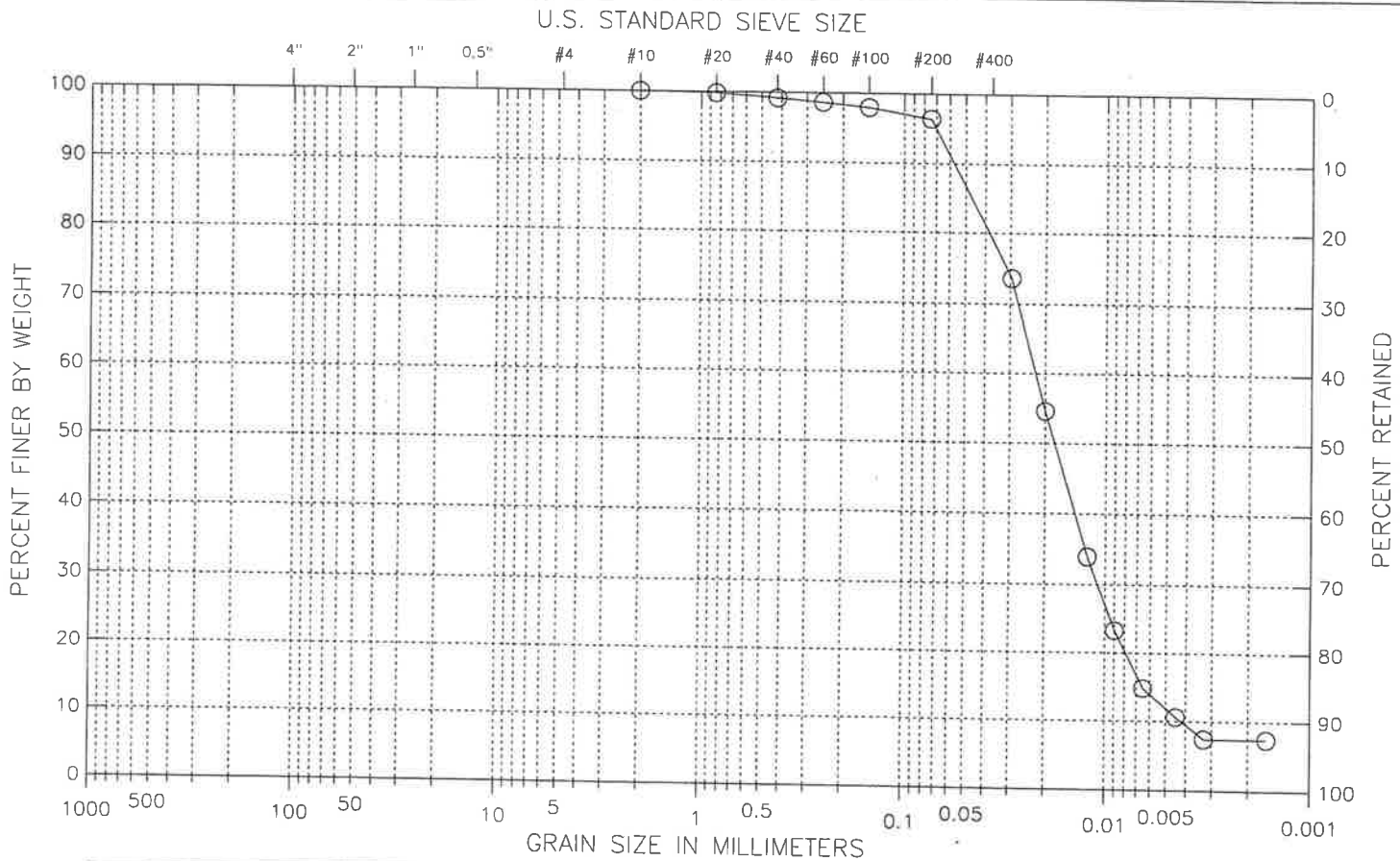
GeoInsight
Westford, MA

Prepared by:

GeoTesting Express, Inc.
Boxborough, MA

May 15, 2003

Boring No. : --- Sample No.: GEO-SB-100-7 Test Method ASTM D 422 Filename : SB1007	Project : 60 Olympia Project No.: GTX-4539 Location: Woburn, MA Date : Thu May 15 2003



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Classification :

Remarks :

Visual Description :
Moist, olive silt

Figure 1

GEOTECHNICAL LABORATORY TEST DATA

Project : 60 Olympia
Project No. : GTX-4539
Boring No. : ---
Sample No. : GEO-SB-100-7
Location : Woburn, MA
Soil Description : Moist, olive silt
Remarks : ---

Depth : 7 ft
Test Date : 05/14/03
Test Method : ASTM D 422

Filename : SB1007
Elevation : ---
Tested by : njh
Checked by : jdt

HYDROMETER

Hydrometer ID : 127630
Weight of air-dried soil = 45.07 gm
Specific Gravity = 2.7

Hydroscopic Moisture Content :
Weight of Wet Soil = 0 gm
Weight of Dry Soil = 0 gm
Moisture Content = 0

Elapsed Time (min)	Reading	Temperature (deg. C)	Corrected Reading	Particle Size (mm)	Percent Finer (%)	Adjusted Particle Size
2.00	40.00	20.50	34.75	0.030	74	0.030
5.00	31.00	20.50	25.75	0.020	55	0.020
15.00	21.00	21.00	16.00	0.012	34	0.012
30.00	16.00	21.00	11.00	0.009	23	0.009
60.00	12.00	21.00	7.00	0.006	15	0.006
127.00	10.00	21.50	5.00	0.004	11	0.004
240.00	8.50	22.00	3.50	0.003	7	0.003
980.00	8.50	21.50	3.50	0.002	7	0.002

FINE SIEVE SET

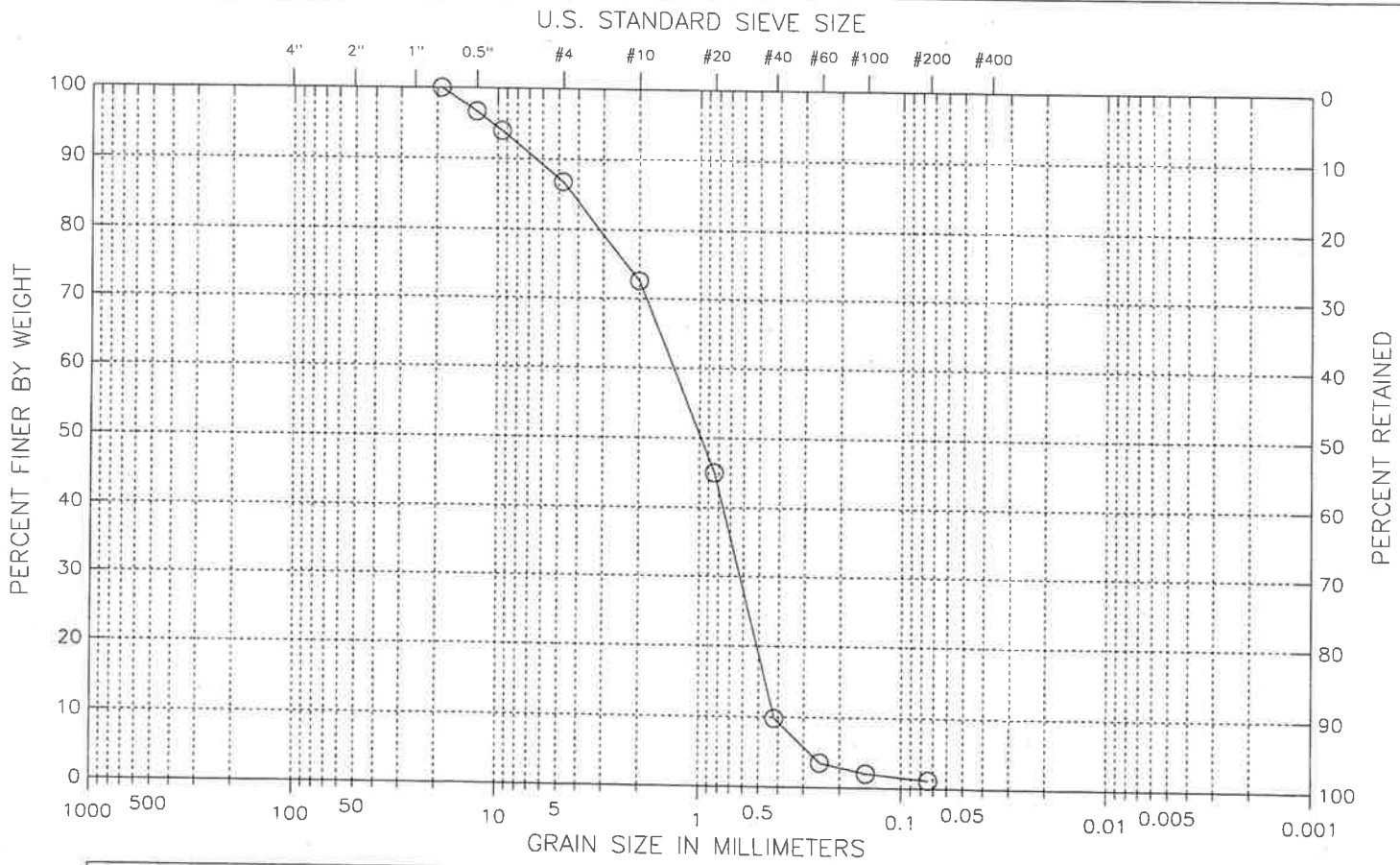
Sieve Mesh	Sieve Openings Inches	Millimeters	Weight Retained (gm)	Cumulative Weight Retained (gm)	Percent Finer (%)
#10	0.079	2.00	0.00	0.00	100
#20	0.033	0.84	0.08	0.08	100
#40	0.017	0.42	0.30	0.38	99
#60	0.010	0.25	0.26	0.64	99
#100	0.006	0.15	0.31	0.95	98
#200	0.003	0.07	0.73	1.68	96
Pan			45.07	46.75	0

Total Dry Weight of Sample = 149.48

D85 : 0.0467 mm
D60 : 0.0223 mm
D50 : 0.0180 mm
D30 : 0.0109 mm
D15 : 0.0065 mm
D10 : 0.0042 mm

Soil Classification
ASTM Group Symbol : N/A
ASTM Group Name : N/A
AASHTO Group Symbol : A-4(0)
AASHTO Group Name : Silty Soils

Boring No. : --- Sample No.: GEO-SB-101-4 Test Method ASTM D 422 Filename : SB1014	Project : 60 Olympia Project No.: GTX-4539 Location: Woburn, MA Date : Thu May 15 2003



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Classification :
(SP) Poorly graded sand
Visual Description :
Wet, dark yellowish brown sand

Remarks :

Figure 2

GEOTECHNICAL LABORATORY TEST DATA

Project : 60 Olympia
Project No. : GTX-4539
Boring No. : ---
Sample No. : GEO-SB-101-4
Location : Woburn, MA
Soil Description : Wet, dark yellowish brown sand
Remarks : ---

Depth : 4 ft
Test Date : 05/09/03
Test Method : ASTM D 422

Filename : SB1014
Elevation : ---
Tested by : njh
Checked by : jdt

FINE SIEVE SET

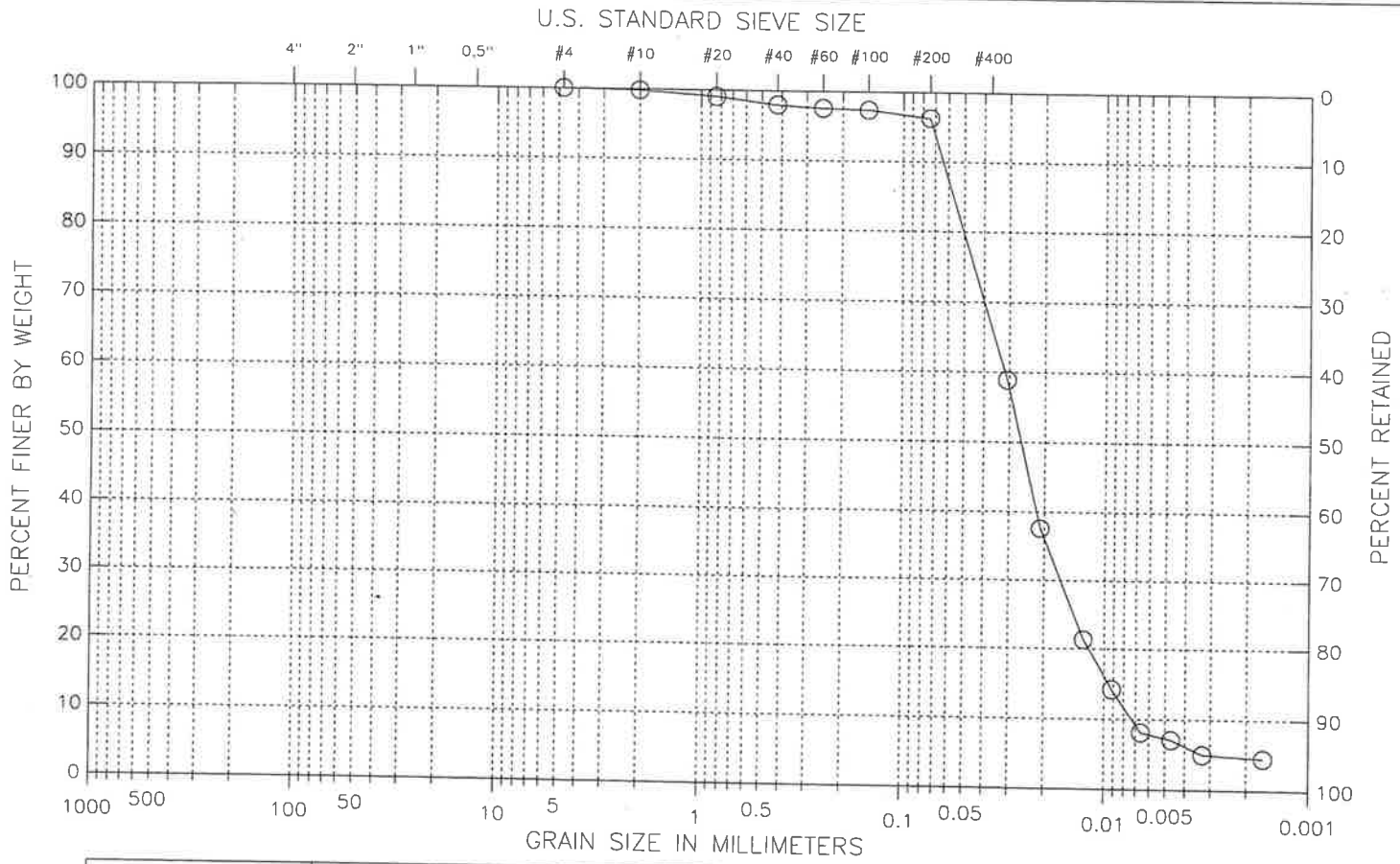
Sieve Mesh	Sieve Openings Inches	Sieve Openings Millimeters	Weight Retained (gm)	Cumulative Weight Retained (gm)	Percent Finer (%)
0.75"	0.748	19.00	0.00	0.00	100
0.5"	0.500	12.70	3.95	3.95	97
0.375"	0.374	9.51	3.24	7.19	94
#4	0.187	4.75	8.66	15.85	87
#10	0.079	2.00	17.06	32.91	73
#20	0.033	0.84	33.07	65.98	45
#40	0.017	0.42	42.23	108.21	10
#60	0.010	0.25	7.60	115.81	3
#100	0.006	0.15	1.73	117.54	2
#200	0.003	0.07	1.07	118.61	1
Pan			1.36	119.97	0

Total Dry Weight of Sample = 128.16

D85 : 4.2604 mm
D60 : 1.3474 mm
D50 : 0.9840 mm
D30 : 0.6256 mm
D15 : 0.4653 mm
D10 : 0.4216 mm

Soil Classification
ASTM Group Symbol : SP
ASTM Group Name : Poorly graded sand
AASHTO Group Symbol : A-1-b(0)
AASHTO Group Name : Stone Fragments, Gravel and Sand

Boring No. : --- Sample No.: GEO-SB-101-17 Test Method ASTM D 422 Filename : SB10117	Project : 60 Olympia Project No.: GTX-4539 Location: Woburn, MA Date : Thu May 15 2003



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Classification :

Remarks :

Visual Description :
Wet, olive silt

Figure 3

GEOTECHNICAL LABORATORY TEST DATA

Project : 60 Olympia
Project No. : GTX-4539
Boring No. : ---
Sample No. : GEO-SB-101-17
Location : Woburn, MA
Soil Description : Wet, olive silt
Remarks : ---

Depth : 17 ft
Test Date : 05/14/03
Test Method : ASTM D 422

Filename : SB10117
Elevation : ---
Tested by : njh
Checked by : jdt

HYDROMETER

Hydrometer ID : 127630
Weight of air-dried soil = 46.99 gm
Specific Gravity = 2.7

Hydroscopic Moisture Content :
Weight of Wet Soil = 0 gm
Weight of Dry Soil = 0 gm
Moisture Content = 0

Elapsed Time (min)	Reading	Temperature (deg. C)	Corrected Reading	Particle Size (mm)	Percent Finer (%)	Adjusted Particle Size
2.00	34.00	21.00	29.00	0.031	59	0.031
5.00	23.50	21.00	18.50	0.021	38	0.021
15.00	15.50	21.00	10.50	0.013	21	0.013
30.00	12.00	21.00	7.00	0.009	14	0.009
60.00	9.00	21.00	4.00	0.007	8	0.007
120.00	8.50	21.00	3.50	0.005	7	0.005
240.00	7.50	22.00	2.50	0.003	5	0.003
976.00	7.50	20.50	2.25	0.002	5	0.002

FINE SIEVE SET

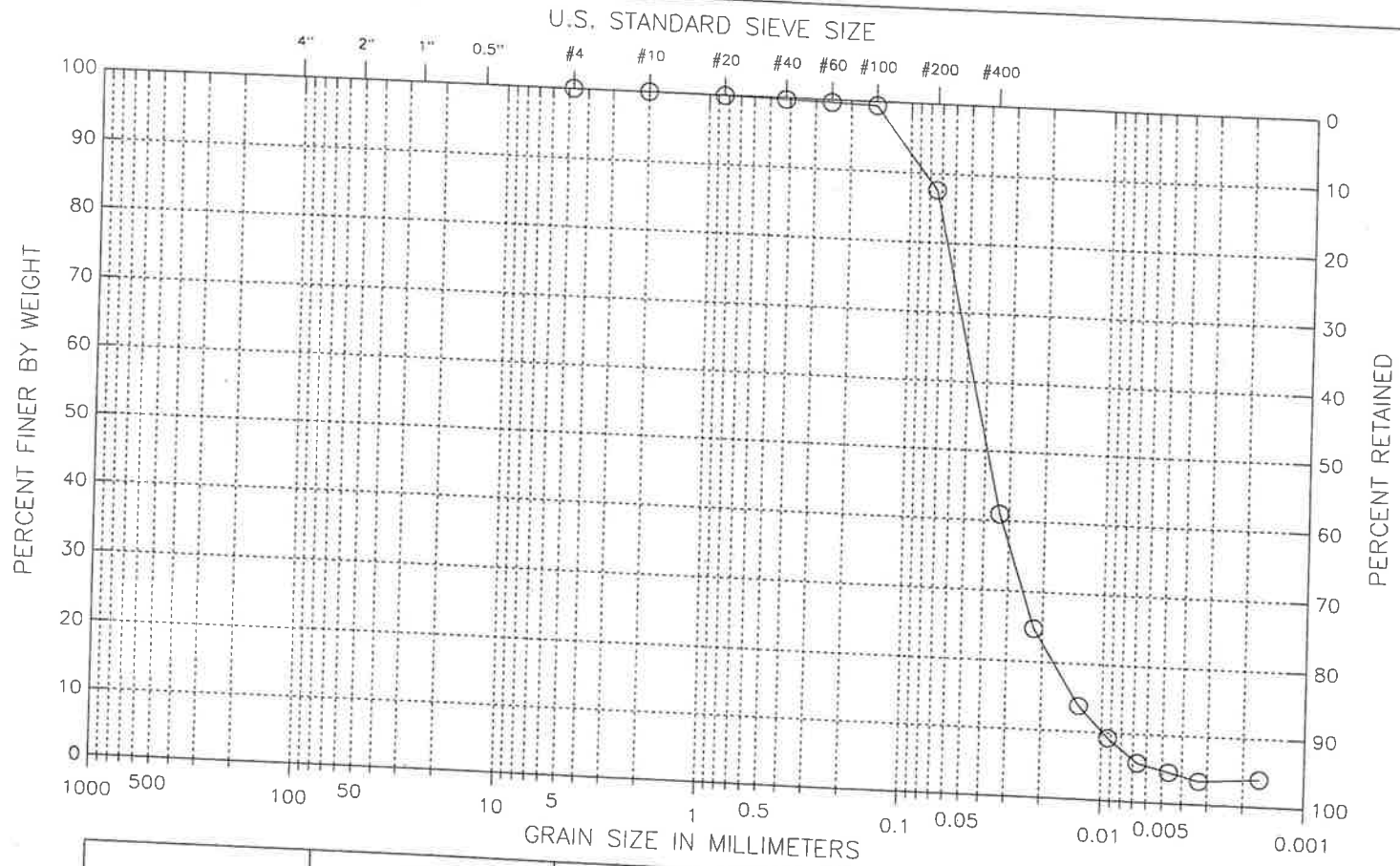
Sieve Mesh	Sieve Openings Inches	Sieve Openings Millimeters	Weight Retained (gm)	Cumulative Weight Retained (gm)	Percent Finer (%)
#4	0.187	4.75	0.00	0.00	100
#10	0.079	2.00	0.09	0.09	100
#20	0.033	0.84	0.36	0.45	99
#40	0.017	0.42	0.53	0.98	98
#60	0.010	0.25	0.19	1.17	98
#100	0.006	0.15	0.09	1.26	97
#200	0.003	0.07	0.55	1.81	96
Pan			46.99	48.80	0

Total Dry Weight of Sample = 155.51

D85 : 0.0568 mm
D60 : 0.0316 mm
D50 : 0.0262 mm
D30 : 0.0166 mm
D15 : 0.0095 mm
D10 : 0.0073 mm

Soil Classification
ASTM Group Symbol : N/A
ASTM Group Name : N/A
AASHTO Group Symbol : A-4(0)
AASHTO Group Name : Silty Soils

Boring No. : --- Sample No.: GEO-SB-101-18 Test Method ASTM D 422 Filename : SB10118	Project : 60 Olympia Project No.: GTX-4539 Location: Woburn, MA Date : Thu May 15 2003



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Classification :

Visual Description :
Moist, olive silt with sand

Remarks :

Figure 4

GEOTECHNICAL LABORATORY TEST DATA

Project : 60 Olympia
Project No. : GTX-4539
Boring No. : ---
Sample No. : GEO-SB-101-18
Location : Woburn, MA
Soil Description : Moist, olive silt with sand
Remarks : ---

Depth : 18 ft
Test Date : 05/14/03
Test Method : ASTM D 422

Filename : SB10118
Elevation : ---
Tested by : njh
Checked by : jdt

HYDROMETER

Hydrometer ID : 127630
Weight of air-dried soil = 37.66 gm
Specific Gravity = 2.7

Hydroscopic Moisture Content :
Weight of Wet Soil = 0 gm
Weight of Dry Soil = 0 gm
Moisture Content = 0

Elapsed Time (min)	Reading	Temperature (deg. C)	Corrected Reading	Particle Size (mm)	Percent Finer (%)	Adjusted Particle Size
2.00	23.00	20.50	17.75	0.033	41	0.033
5.00	16.00	20.50	10.75	0.022	25	0.022
15.00	11.00	21.00	6.00	0.013	14	0.013
30.00	9.00	21.00	4.00	0.009	9	0.009
60.00	7.50	21.00	2.50	0.007	6	0.007
122.00	7.00	21.50	2.00	0.005	5	0.005
240.00	6.50	22.00	1.50	0.003	3	0.003
979.00	7.00	20.50	1.75	0.002	4	0.002

FINE SIEVE SET

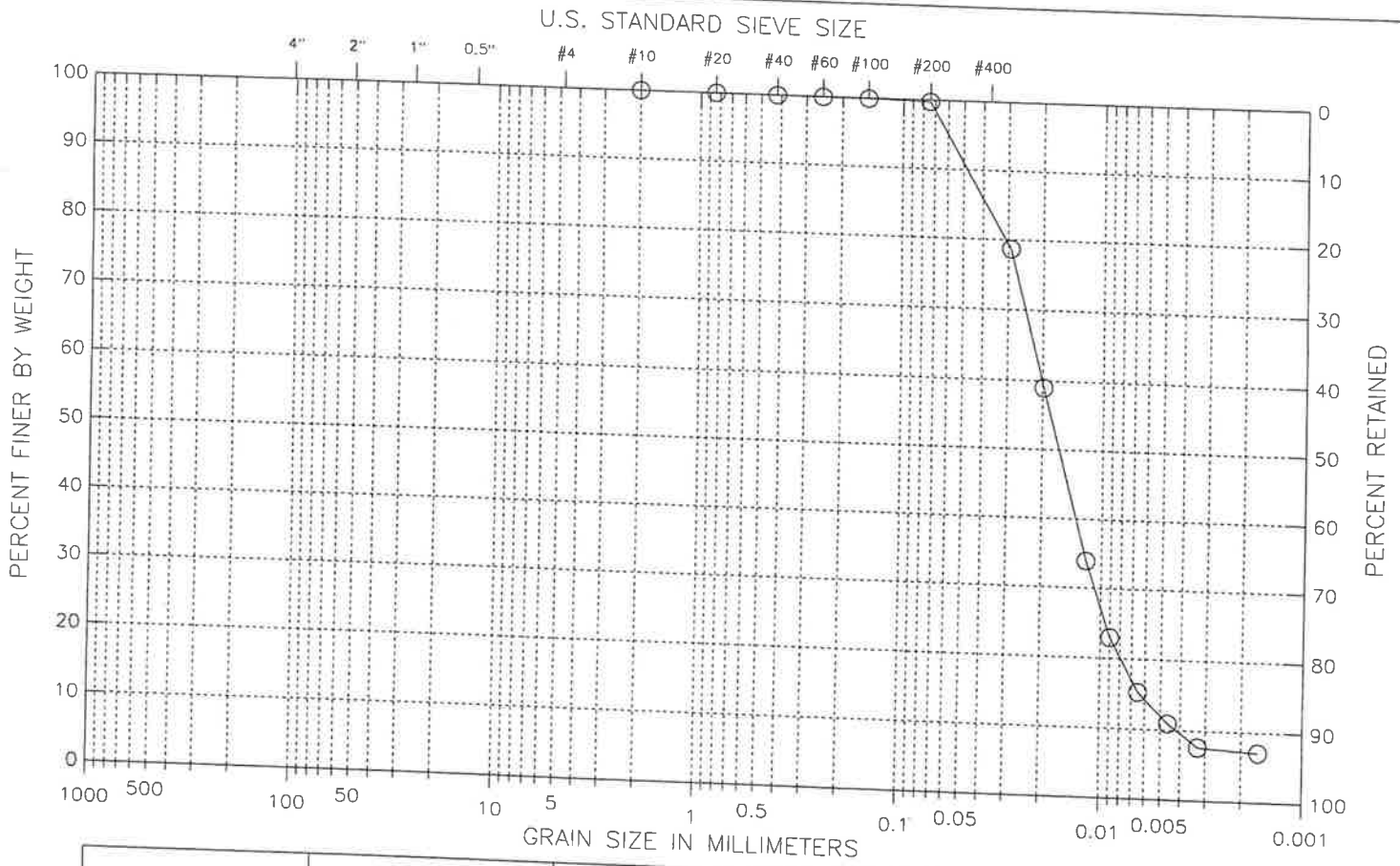
Sieve Mesh	Sieve Openings Inches	Sieve Openings Millimeters	Weight Retained (gm)	Cumulative Weight Retained (gm)	Percent Finer (%)
#4	0.187	4.75	0.00	0.00	100
#10	0.079	2.00	0.00	0.00	100
#20	0.033	0.84	0.04	0.04	100
#40	0.017	0.42	0.07	0.11	100
#60	0.010	0.25	0.05	0.16	100
#100	0.006	0.15	0.08	0.24	99
#200	0.003	0.07	5.10	5.34	88
Pan			37.66	43.00	0

Total Dry Weight of Sample = 160.99

D85 : 0.0708 mm
D60 : 0.0463 mm
D50 : 0.0390 mm
D30 : 0.0253 mm
D15 : 0.0138 mm
D10 : 0.0099 mm

Soil Classification
ASTM Group Symbol : N/A
ASTM Group Name : N/A
AASHTO Group Symbol : A-4(0)
AASHTO Group Name : Silty Soils

Boring No. : --- Sample No.: GEO-SB-101-20 Test Method ASTM D 422 Filename : SB10120	Project : 60 Olympia Project No.: GTX-4539 Location: Woburn, MA Date : Thu May 15 2003



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Classification :

Remarks :

Visual Description :
Moist, olive gray silt

Figure 5

GEOTECHNICAL LABORATORY TEST DATA

Project : 60 Olympia
Project No. : GTX-4539
Boring No. : ---
Sample No. : GEO-SB-101-20
Location : Woburn, MA
Soil Description : Moist, olive gray silt
Remarks : ---

Depth : 20 ft
Test Date : 05/14/03
Test Method : ASTM D 422

Filename : SB10120
Elevation : ---
Tested by : njh
Checked by : jdt

HYDROMETER

Hydrometer ID : 127630
Weight of air-dried soil = 45.22 gm
Specific Gravity = 2.7

Hydroscopic Moisture Content :
Weight of Wet Soil = 0 gm
Weight of Dry Soil = 0 gm
Moisture Content = 0

Elapsed Time (min)	Reading	Temperature (deg. C)	Corrected Reading	Particle Size (mm)	Percent Finer (%)	Adjusted Particle Size
2.00	41.00	21.00	36.00	0.029	79	0.029
5.00	32.00	21.00	27.00	0.020	59	0.020
16.00	20.50	21.00	15.50	0.012	34	0.012
30.00	15.50	21.00	10.50	0.009	23	0.009
60.00	12.00	21.00	7.00	0.006	15	0.006
120.00	10.00	21.50	5.00	0.005	11	0.005
240.00	8.50	22.00	3.50	0.003	8	0.003
977.00	8.50	20.50	3.25	0.002	7	0.002

FINE SIEVE SET

Sieve Mesh	Sieve Openings Inches	Sieve Openings Millimeters	Weight Retained (gm)	Cumulative Weight Retained (gm)	Percent Finer (%)
#10	0.079	2.00	0.00	0.00	100
#20	0.033	0.84	0.01	0.01	100
#40	0.017	0.42	0.01	0.02	100
#60	0.010	0.25	0.01	0.03	100
#100	0.006	0.15	0.01	0.04	100
#200	0.003	0.07	0.09	0.13	100
Pan			45.22	45.35	0

Total Dry Weight of Sample = 163.5

D85 : 0.0385 mm
D60 : 0.0201 mm
D50 : 0.0165 mm
D30 : 0.0108 mm
D15 : 0.0063 mm
D10 : 0.0042 mm

Soil Classification
ASTM Group Symbol : N/A
ASTM Group Name : N/A
AASHTO Group Symbol : A-4(0)
AASHTO Group Name : Silty Soils