GROUNDWATER ANALYTICAL

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October 3, 2005

Mr. Kevin Trainer
GeoInsight, Inc.
5 Lan Drive
Second Floor
Westford, MA 01886

LABORATORY REPORT

Project: **Buzzards Bay/3871-02**
Lab ID: **87519**
Received: **09-16-05**

Dear Kevin:

Enclosed are the analytical results for the above referenced project. The project was processed for Standard 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/smd
Enclosures

GROUNDWATER ANALYTICAL

Sample Receipt Report

Project: **Buzzards Bay/3871-02**
Client: **GeoInsight, Inc.**
Lab ID: **87519**

Delivery: **GWA Courier**
Airbill: **n/a**
Lab Receipt: **09-16-05**

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

Lab ID	Field ID		Matrix	Sampled	Method				Notes
87519-1	W1F02-P2-SUB-08		Soil	9/14/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668682	120 mL Amber Glass	Industrial	BX17917	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
87519-2	W1F02-P2-SUB-07		Soil	9/14/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668673	120 mL Amber Glass	Industrial	BX17917	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
87519-3	W1F02-P2-SUB-06		Soil	9/14/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668672	120 mL Amber Glass	Industrial	BX17917	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
87519-4	W1F02-P2-UIT-02		Soil	9/14/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668675	120 mL Amber Glass	Industrial	BX17917	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
87519-5	W1F02-P2-LIT-02		Soil	9/14/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668619	120 mL Amber Glass	Industrial	BX17916	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
87519-6	W1F02-P2-UIT-01		Soil	9/14/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668670	120 mL Amber Glass	Industrial	BX17917	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
87519-7	W1F02-P2-LIT-01		Soil	9/14/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668666	120 mL Amber Glass	Industrial	BX17917	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
87519-8	W1F02-P2-SUB-02		Soil	9/14/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668681	120 mL Amber Glass	Industrial	BX17917	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
87519-9	W1C02-P2-SUB-02		Soil	9/13/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668683	120 mL Amber Glass	Industrial	BX17917	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
87519-10	W1C02-P2-SUB-02 MS		Soil	9/13/05 0:00	MA DEP EPH				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668167	120 mL Amber Glass	Industrial	BX17912	None	n/a	n/a	n/a		

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Sample Receipt Report (Continued)

Project: **Buzzards Bay/3871-02**
Client: **GeoInsight, Inc.**
Lab ID: **87519**

Delivery: **GWA Courier**
Airbill: **n/a**
Lab Receipt: **09-16-05**

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

Lab ID	Field ID		Matrix	Sampled	Method				Notes
87519-11	W1C02-P2-SUB-02 MS		Soil	9/13/05 0:00	PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668623	120 mL Amber Glass	Industrial	BX17916	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
87519-12	W1C02-P2-SUB-02 MSD		Soil	9/13/05 0:00	MA DEP EPH				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668662	120 mL Amber Glass	Industrial	BX17917	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
87519-13	W1C02-P2-SUB-02 MSD		Soil	9/13/05 0:00	PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668668	120 mL Amber Glass	Industrial	BX17917	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
87519-14	W1C02-P2-SUB-01		Soil	9/13/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668330	120 mL Amber Glass	Industrial	BX17922	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
87519-15	W1F02-P2-SUB-05		Soil	9/13/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668173	120 mL Amber Glass	Industrial	BX17912	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
87519-16	W1F02-P2-SUB-04		Soil	9/13/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668680	120 mL Amber Glass	Industrial	BX17917	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
87519-17	W1F02-P2-SUB-01		Soil	9/14/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668621	120 mL Amber Glass	Industrial	BX17916	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
87519-18	W1F02-P2-M-01		Soil	9/14/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668678	120 mL Amber Glass	Industrial	BX17917	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
87519-19	DDD-P2-05		Soil	9/14/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668615	120 mL Amber Glass	Industrial	BX17916	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
87519-20	W1F02-P2-SUB-03		Soil	9/13/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668676	120 mL Amber Glass	Industrial	BX17917	None	n/a	n/a	n/a		

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Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**W1F02-P2-SUB-08**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-01**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**09-16-05 19:16**	Sample Weight:	**15 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed (AL):	**09-29-05 06:01**	% Solids:	**81**
Analyzed (AR):	**09-29-05 06:45**	Aliphatic Dilution Factor:	**1**
Analyst:	**MM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	37
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	37
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	37
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	37

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.3	2.6	**79 %**	40 - 140 %
	2-Bromonaphthalene	3.3	2.5	**77 %**	40 - 140 %
Extraction:	Chloro-octadecane	3.3	2.5	**77 %**	40 - 140 %
	ortho-Terphenyl	3.3	2.8	**86 %**	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed? Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved? Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1? No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. 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 size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W1F02-P2-SUB-08**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-01**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**09-16-05 19:16**	Sample Volume:	**15 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed:	**09-29-05 12:41**	Percent Solids:	**81**
Analyst:	**CMM**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	17
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	17
208-96-8	Acenaphthylene	BRL		ug/Kg	17
83-32-9	Acenaphthene	BRL		ug/Kg	17
86-73-7	Fluorene	BRL		ug/Kg	17
85-01-8	Phenanthrene	BRL		ug/Kg	17
120-12-7	Anthracene	BRL		ug/Kg	17
206-44-0	Fluoranthene	BRL		ug/Kg	17
129-00-0	Pyrene	BRL		ug/Kg	17
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	17
218-01-9	Chrysene	BRL		ug/Kg	17
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	17
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	17
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	17
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	17
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	17
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	17

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,300	2,600	**81** %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. 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 size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**W1F02-P2-SUB-07**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-02**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**09-16-05 19:16**	Sample Weight:	**15 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed (AL):	**09-29-05 07:29**	% Solids:	**81**
Analyzed (AR):	**09-29-05 08:14**	Aliphatic Dilution Factor:	**1**
Analyst:	**MM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	36
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	36
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	36
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	36

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.2	2.3	**70 %**	40 - 140 %
	2-Bromonaphthalene	3.2	2.3	**72 %**	40 - 140 %
Extraction:	Chloro-octadecane	3.2	2.5	**76 %**	40 - 140 %
	ortho-Terphenyl	3.2	2.4	**74 %**	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

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† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W1F02-P2-SUB-07**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-02**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**09-16-05 19:16**	Sample Volume:	**15 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed:	**09-29-05 13:20**	Percent Solids:	**81**
Analyst:	**CMM**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	17
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	17
208-96-8	Acenaphthylene	BRL		ug/Kg	17
83-32-9	Acenaphthene	BRL		ug/Kg	17
86-73-7	Fluorene	BRL		ug/Kg	17
85-01-8	Phenanthrene	BRL		ug/Kg	17
120-12-7	Anthracene	BRL		ug/Kg	17
206-44-0	Fluoranthene	BRL		ug/Kg	17
129-00-0	Pyrene	BRL		ug/Kg	17
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	17
218-01-9	Chrysene	BRL		ug/Kg	17
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	17
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	17
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	17
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	17
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	17
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	17

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,200	2,400	75 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. 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 size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**W1F02-P2-SUB-06**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-03**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**09-16-05 19:16**	Sample Weight:	**16 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed (AL):	**09-29-05 15:24**	% Solids:	**83**
Analyzed (AR):	**09-29-05 16:08**	Aliphatic Dilution Factor:	**1**
Analyst:	**MM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	35
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	35
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	35
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	35

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.1	2.5	**80 %**	40 - 140 %
	2-Bromonaphthalene	3.1	2.4	**79 %**	40 - 140 %
Extraction:	Chloro-octadecane	3.1	2.7	**87 %**	40 - 140 %
	ortho -Terphenyl	3.1	2.4	**79 %**	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. 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 size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W1F02-P2-SUB-06**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-03**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**09-16-05 19:16**	Sample Volume:	**16 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed:	**09-29-05 14:00**	Percent Solids:	**83**
Analyst:	**CMM**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	17
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	17
208-96-8	Acenaphthylene	BRL		ug/Kg	17
83-32-9	Acenaphthene	BRL		ug/Kg	17
86-73-7	Fluorene	BRL		ug/Kg	17
85-01-8	Phenanthrene	BRL		ug/Kg	17
120-12-7	Anthracene	BRL		ug/Kg	17
206-44-0	Fluoranthene	BRL		ug/Kg	17
129-00-0	Pyrene	BRL		ug/Kg	17
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	17
218-01-9	Chrysene	BRL		ug/Kg	17
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	17
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	17
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	17
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	17
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	17
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	17

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,100	2,500	79 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. 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 size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**W1F02-P2-UIT-02**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-04**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**09-16-05 19:16**	Sample Weight:	**16 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed (AL):	**09-29-05 16:53**	% Solids:	**93**
Analyzed (AR):	**09-29-05 17:37**	Aliphatic Dilution Factor:	**1**
Analyst:	**MM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	31
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	31
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	31
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	31

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	2.7	2.1	**76** %	40 - 140 %
	2-Bromonaphthalene	2.7	2.0	**75** %	40 - 140 %
Extraction:	Chloro-octadecane	2.7	2.4	**86** %	40 - 140 %
	ortho-Terphenyl	2.7	2.3	**83** %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. 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 size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W1F02-P2-UIT-02**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-04**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**09-16-05 19:16**	Sample Volume:	**16 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed:	**09-29-05 14:39**	Percent Solids:	**93**
Analyst:	**CMM**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	17
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	17
208-96-8	Acenaphthylene	BRL		ug/Kg	17
83-32-9	Acenaphthene	BRL		ug/Kg	17
86-73-7	Fluorene	BRL		ug/Kg	17
85-01-8	Phenanthrene	BRL		ug/Kg	17
120-12-7	Anthracene	BRL		ug/Kg	17
206-44-0	Fluoranthene	BRL		ug/Kg	17
129-00-0	Pyrene	BRL		ug/Kg	17
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	17
218-01-9	Chrysene	BRL		ug/Kg	17
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	17
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	17
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	17
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	17
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	17
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	17

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	2,700	2,100	78 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. 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 size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**W1F02-P2-LIT-02**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-05**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**09-16-05 19:16**	Sample Weight:	**16 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed (AL):	**09-29-05 18:21**	% Solids:	**89**
Analyzed (AR):	**09-29-05 19:05**	Aliphatic Dilution Factor:	**1**
Analyst:	**MM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	32
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	32
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	32
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	32

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	2.9	2.3	**79 %**	40 - 140 %
	2-Bromonaphthalene	2.9	2.4	**82 %**	40 - 140 %
Extraction:	Chloro-octadecane	2.9	2.3	**80 %**	40 - 140 %
	ortho-Terphenyl	2.9	2.3	**81 %**	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed? Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved? Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1? No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. 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 size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W1F02-P2-LIT-02**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-05**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**09-16-05 19:16**	Sample Volume:	**16 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed:	**09-29-05 15:18**	Percent Solids:	**89**
Analyst:	**CMM**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	17
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	17
208-96-8	Acenaphthylene	BRL		ug/Kg	17
83-32-9	Acenaphthene	BRL		ug/Kg	17
86-73-7	Fluorene	BRL		ug/Kg	17
85-01-8	Phenanthrene	BRL		ug/Kg	17
120-12-7	Anthracene	BRL		ug/Kg	17
206-44-0	Fluoranthene	BRL		ug/Kg	17
129-00-0	Pyrene	BRL		ug/Kg	17
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	17
218-01-9	Chrysene	BRL		ug/Kg	17
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	17
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	17
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	17
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	17
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	17
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	17

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	2,900	2,200	75 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. 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 size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**W1F02-P2-UIT-01**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-06**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**09-16-05 19:16**	Sample Weight:	**16 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed (AL):	**09-29-05 19:50**	% Solids:	**95**
Analyzed (AR):	**09-29-05 20:34**	Aliphatic Dilution Factor:	**1**
Analyst:	**MM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	30
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	30
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	30
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	30

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	2.7	2.1	**78** %	40 - 140 %
	2-Bromonaphthalene	2.7	2.0	**74** %	40 - 140 %
Extraction:	Chloro-octadecane	2.7	2.2	**83** %	40 - 140 %
	ortho-Terphenyl	2.7	2.1	**79** %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. 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 size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W1F02-P2-UIT-01**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-06**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**09-16-05 19:16**	Sample Volume:	**16 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed:	**09-29-05 15:58**	Percent Solids:	**95**
Analyst:	**CMM**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	17
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	17
208-96-8	Acenaphthylene	BRL		ug/Kg	17
83-32-9	Acenaphthene	BRL		ug/Kg	17
86-73-7	Fluorene	BRL		ug/Kg	17
85-01-8	Phenanthrene	BRL		ug/Kg	17
120-12-7	Anthracene	BRL		ug/Kg	17
206-44-0	Fluoranthene	BRL		ug/Kg	17
129-00-0	Pyrene	BRL		ug/Kg	17
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	17
218-01-9	Chrysene	BRL		ug/Kg	17
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	17
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	17
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	17
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	17
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	17
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	17

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	2,700	2,000	75 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. 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 size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**W1F02-P2-LIT-01**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-07**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**09-16-05 19:16**	Sample Weight:	**16 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed (AL):	**09-29-05 21:18**	% Solids:	**85**
Analyzed (AR):	**09-29-05 22:02**	Aliphatic Dilution Factor:	**1**
Analyst:	**MM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	34
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	34
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	34
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	34

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.0	2.3	**77 %**	40 - 140 %
	2-Bromonaphthalene	3.0	2.4	**78 %**	40 - 140 %
Extraction:	Chloro-octadecane	3.0	2.5	**81 %**	40 - 140 %
	ortho-Terphenyl	3.0	2.5	**83 %**	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed? Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved? Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1? No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. 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 size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W1F02-P2-LIT-01**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-07**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**09-16-05 19:16**	Sample Volume:	**16 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed:	**09-29-05 16:37**	Percent Solids:	**85**
Analyst:	**CMM**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	17
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	17
208-96-8	Acenaphthylene	BRL		ug/Kg	17
83-32-9	Acenaphthene	BRL		ug/Kg	17
86-73-7	Fluorene	BRL		ug/Kg	17
85-01-8	Phenanthrene	BRL		ug/Kg	17
120-12-7	Anthracene	BRL		ug/Kg	17
206-44-0	Fluoranthene	BRL		ug/Kg	17
129-00-0	Pyrene	BRL		ug/Kg	17
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	17
218-01-9	Chrysene	BRL		ug/Kg	17
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	17
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	17
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	17
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	17
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	17
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	17

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,000	2,300	75 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. 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 size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**W1F02-P2-SUB-02**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-08**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**09-16-05 19:16**	Sample Weight:	**15 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed (AL):	**09-29-05 23:31**	% Solids:	**83**
Analyzed (AR):	**09-30-05 00:15**	Aliphatic Dilution Factor:	**1**
Analyst:	**MM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	36
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	36
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	36
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	36

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.2	2.4	**74 %**	40 - 140 %
	2-Bromonaphthalene	3.2	2.5	**78 %**	40 - 140 %
Extraction:	Chloro-octadecane	3.2	2.4	**75 %**	40 - 140 %
	ortho-Terphenyl	3.2	2.4	**76 %**	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed? Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved? Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1? No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. 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 size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W1F02-P2-SUB-02**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-08**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**09-16-05 19:16**	Sample Volume:	**15 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed:	**09-29-05 17:16**	Percent Solids:	**83**
Analyst:	**CMM**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	17
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	17
208-96-8	Acenaphthylene	BRL		ug/Kg	17
83-32-9	Acenaphthene	BRL		ug/Kg	17
86-73-7	Fluorene	BRL		ug/Kg	17
85-01-8	Phenanthrene	BRL		ug/Kg	17
120-12-7	Anthracene	BRL		ug/Kg	17
206-44-0	Fluoranthene	BRL		ug/Kg	17
129-00-0	Pyrene	BRL		ug/Kg	17
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	17
218-01-9	Chrysene	BRL		ug/Kg	17
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	17
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	17
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	17
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	17
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	17
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	17

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,200	2,300	74 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. 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 size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**W1C02-P2-SUB-02**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-09**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-13-05 00:00**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**09-16-05 19:16**	Sample Weight:	**15 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed (AL):	**09-30-05 00:59**	% Solids:	**76**
Analyzed (AR):	**09-30-05 01:43**	Aliphatic Dilution Factor:	**1**
Analyst:	**MM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	39
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	39
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	39
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	39

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.5	2.3	**66 %**	40 - 140 %
	2-Bromonaphthalene	3.5	2.3	**66 %**	40 - 140 %
Extraction:	Chloro-octadecane	3.5	2.9	**83 %**	40 - 140 %
	ortho-Terphenyl	3.5	2.4	**69 %**	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. 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 size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

Matrix Spike and Matrix Spike Duplicate
MA DEP Extractable Petroleum Hydrocarbons by GC/FID

			Parent Sample	Matrix Spike	Spike Duplicate
Field ID:	W1C02-P2-SUB-02	Laboratory ID:	87519-09	87519-10	87519-12
Project:	Buzzards Bay/3871-02	Sampled:	09-13-05 00:00	09-13-05 00:00	09-13-05 00:00
Client:	GeoInsight, Inc.	Received:	09-16-05 19:16	09-16-05 19:16	09-16-05 19:16
Matrix:	Soil	Extracted:	09-28-05 10:00	09-28-05 10:00	09-15-05 22:00
Container:	250 mL Glass	Analyzed (AL):	03-30-05 00:59	09-30-05 02:28	09-30-05 05:24
Preservation:	Cool	Analyzed (AR):	03-30-05 01:43	09-30-05 03:12	09-30-05 06:08
		Analyst:	MM	MM	MM
		QC Batch ID:	EP-2159-M	EP-2159-M	EP-2159-M
		Instrument ID:	GC-9 Agilent 6890	GC-9 Agilent 6890	GC-9 Agilent 6890
		Sample Weight:	15 g	15 g	16 g
		Final Volume:	1 mL	1 mL	1 mL
		% Solids:	76	76	76
		Aliphatic Dilution Factor:	1	1	1
		Aromatic Dilution Factor:	1	1	1

CAS Number	Analyte	Unspiked Sample (mg/Kg)	MS Spiked (mg/Kg)	MS Measured (mg/Kg)	MS Recovery	MSD Spiked (mg/Kg)	MSD Measured (mg/Kg)	MSD Recovery	RPD	QC Limits	
										Spike	RPD
111-84-2	*n*-Nonane (C_9)	BRL	4.3	2.2	52 %	4.2	2.3	54 %	4 %	40 - 140%	50 %
124-18-5	*n*-Decane (C_{10})	BRL	4.3	2.7	63 %	4.2	2.7	65 %	5 %	40 - 140%	50 %
112-40-3	*n*-Dodecane (C_{12})	BRL	4.3	2.7	64 %	4.2	2.8	68 %	6 %	40 - 140%	50 %
629-59-4	*n*-Tetradecane (C_{14})	BRL	4.3	2.8	64 %	4.2	2.8	68 %	6 %	40 - 140%	50 %
544-76-3	*n*-Hexadecane (C_{16})	BRL	4.3	2.9	67 %	4.2	2.9	70 %	4 %	40 - 140%	50 %
593-45-3	*n*-Octadecane (C_{18})	BRL	4.3	3.3	76 %	4.2	3.2	75 %	4 %	40 - 140%	50 %
n/a	*n*-C9 to *n*-C18 Group	BRL	26	17	65 %	25	17	68 %	1 %	40 - 140%	50 %
629-92-5	*n*-Nonadecane (C_{19})	BRL	4.3	3.4	79 %	4.2	3.2	78 %	2 %	40 - 140%	50 %
112-95-8	*n*-Eicosane (C_{20})	BRL	4.3	3.3	76 %	4.2	3.1	75 %	2 %	40 - 140%	50 %
629-97-0	*n*-Docosane (C_{22})	BRL	4.3	3.3	76 %	4.2	3.2	76 %	1 %	40 - 140%	50 %
646-31-1	*n*-Tetracosane (C_{24})	BRL	4.3	3.2	74 %	4.2	3.0	72 %	2 %	40 - 140%	50 %
630-01-3	*n*-Hexacosane (C_{26})	BRL	4.3	3.1	72 %	4.2	3.0	71 %	2 %	40 - 140%	50 %
630-02-4	*n*-Octacosane (C_{28})	BRL	4.3	3.1	72 %	4.2	3.0	71 %	2 %	40 - 140%	50 %
638-68-6	*n*-Triacontane (C_{30})	BRL	4.3	3.1	71 %	4.2	2.9	70 %	2 %	40 - 140%	50 %
630-06-8	*n*-Hexatriacontane (C_{36})	BRL	4.3	2.7	62 %	4.2	2.5	61 %	2 %	40 - 140%	50 %
n/a	*n*-C19 to *n*-C36 Group	BRL	34	25	74 %	34	24	71 %	2 %	40 - 140%	50 %
91-20-3	Naphthalene	BRL	4.3	2.3	53 %	4.2	2.6	62 %	16 %	40 - 140%	50 %
91-57-6	2-Methylnaphthalene	BRL	4.3	2.4	56 %	4.2	2.7	66 %	16 %	40 - 140%	50 %
208-96-8	Acenaphthylene	BRL	4.3	2.7	62 %	4.2	3.0	72 %	15 %	40 - 140%	50 %
83-32-9	Acenaphthene	BRL	4.3	2.5	59 %	4.2	2.8	68 %	15 %	40 - 140%	50 %
86-73-7	Fluorene	BRL	4.3	2.7	63 %	4.2	3.1	74 %	16 %	40 - 140%	50 %
85-01-8	Phenanthrene	BRL	4.3	3.0	70 %	4.2	3.3	80 %	14 %	40 - 140%	50 %
120-12-7	Anthracene	BRL	4.3	3.3	77 %	4.2	3.6	86 %	12 %	40 - 140%	50 %
206-44-0	Fluoranthene	BRL	4.3	3.4	79 %	4.2	3.7	89 %	12 %	40 - 140%	50 %
129-00-0	Pyrene	BRL	4.3	3.3	78 %	4.2	3.7	88 %	12 %	40 - 140%	50 %
56-55-3	Benzo[a]anthracene	BRL	4.3	3.5	81 %	4.2	3.6	86 %	6 %	40 - 140%	50 %
218-01-9	Chrysene	BRL	4.3	3.3	77 %	4.2	3.5	84 %	9 %	40 - 140%	50 %
205-99-2	Benzo[b]fluoranthene	BRL	4.3	3.2	75 %	4.2	3.5	85 %	12 %	40 - 140%	50 %
207-08-9	Benzo[k]fluoranthene	BRL	4.3	3.1	73 %	4.2	3.3	79 %	8 %	40 - 140%	50 %
50-32-8	Benzo[a]pyrene	BRL	4.3	3.1	73 %	4.2	3.4	81 %	10 %	40 - 140%	50 %
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL	4.3	3.1	73 %	4.2	3.4	81 %	11 %	40 - 140%	50 %
53-70-3	Dibenzo[a,h]anthracene	BRL	4.3	3.3	77 %	4.2	3.5	83 %	8 %	40 - 140%	50 %
191-24-2	Benzo[g,h,i]perylene	BRL	4.3	3.1	71 %	4.2	3.3	80 %	10 %	40 - 140%	50 %
n/a	PAH Group	BRL	73	51	70 %	71	56	79 %	12 %	40 - 140%	50 %

QC Surrogate Compound		Surrogate Recovery								QC Limits
Fractionation:	2-Fluorobiphenyl	66%	3.4	2.3	67%	3.3	2.5	74%		40 - 140 %
	2-Bromonaphthalene	66%	3.4	2.5	72%	3.3	2.5	75%		40 - 140 %
Extraction:	Chloro-octadecane	83%	3.4	2.6	75%	3.3	2.4	73%		40 - 140 %
	ortho-Terphenyl	69%	3.4	2.4	71%	3.3	2.7	81%		40 - 140 %

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (1998).
Sample extraction performed by microwave accelerated solvent extraction. 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 size and dilution.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W1C02-P2-SUB-02**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-09**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-13-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**09-16-05 19:16**	Sample Volume:	**15 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed:	**09-29-05 17:55**	Percent Solids:	**76**
Analyst:	**CMM**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	17
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	17
208-96-8	Acenaphthylene	BRL		ug/Kg	17
83-32-9	Acenaphthene	BRL		ug/Kg	17
86-73-7	Fluorene	BRL		ug/Kg	17
85-01-8	Phenanthrene	BRL		ug/Kg	17
120-12-7	Anthracene	BRL		ug/Kg	17
206-44-0	Fluoranthene	BRL		ug/Kg	17
129-00-0	Pyrene	BRL		ug/Kg	17
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	17
218-01-9	Chrysene	BRL		ug/Kg	17
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	17
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	17
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	17
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	17
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	17
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	17

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,500	2,200	**64 %**	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. 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 size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**W1C02-P2-SUB-01**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-14**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-13-05 00:00**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**09-16-05 19:16**	Sample Weight:	**15 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed (AL):	**09-29-05 16:46**	% Solids:	**74**
Analyzed (AR):	**09-29-05 17:31**	Aliphatic Dilution Factor:	**1**
Analyst:	**MM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	40
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	40
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	40
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	40

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.6	3.0	**85** %	40 - 140 %
	2-Bromonaphthalene	3.6	2.9	**81** %	40 - 140 %
Extraction:	Chloro-octadecane	3.6	2.8	**77** %	40 - 140 %
	ortho-Terphenyl	3.6	3.1	**87** %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. 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 size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W1C02-P2-SUB-01**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-14**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-13-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**09-16-05 19:16**	Sample Volume:	**15 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed:	**09-29-05 18:34**	Percent Solids:	**74**
Analyst:	**CMM**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	17
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	17
208-96-8	Acenaphthylene	BRL		ug/Kg	17
83-32-9	Acenaphthene	BRL		ug/Kg	17
86-73-7	Fluorene	BRL		ug/Kg	17
85-01-8	Phenanthrene	BRL		ug/Kg	17
120-12-7	Anthracene	BRL		ug/Kg	17
206-44-0	Fluoranthene	BRL		ug/Kg	17
129-00-0	Pyrene	BRL		ug/Kg	17
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	17
218-01-9	Chrysene	BRL		ug/Kg	17
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	17
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	17
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	17
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	17
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	17
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	17

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,600	2,700	**74** %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. 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 size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**W1F02-P2-SUB-05**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-15**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-13-05 00:00**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**09-16-05 19:16**	Sample Weight:	**16 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed (AL):	**09-29-05 18:15**	% Solids:	**84**
Analyzed (AR):	**09-29-05 18:59**	Aliphatic Dilution Factor:	**1**
Analyst:	**MM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	34
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	34
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	34
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	34

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.0	2.5	**82 %**	40 - 140 %
	2-Bromonaphthalene	3.0	2.5	**82 %**	40 - 140 %
Extraction:	Chloro-octadecane	3.0	2.3	**75 %**	40 - 140 %
	ortho-Terphenyl	3.0	2.3	**76 %**	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed? Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved? Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1? No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. 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 size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W1F02-P2-SUB-05**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-15**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-13-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**09-16-05 19:16**	Sample Volume:	**16 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed:	**09-29-05 19:13**	Percent Solids:	**84**
Analyst:	**CMM**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	17
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	17
208-96-8	Acenaphthylene	BRL		ug/Kg	17
83-32-9	Acenaphthene	BRL		ug/Kg	17
86-73-7	Fluorene	BRL		ug/Kg	17
85-01-8	Phenanthrene	BRL		ug/Kg	17
120-12-7	Anthracene	BRL		ug/Kg	17
206-44-0	Fluoranthene	BRL		ug/Kg	17
129-00-0	Pyrene	BRL		ug/Kg	17
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	17
218-01-9	Chrysene	BRL		ug/Kg	17
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	17
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	17
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	17
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	17
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	17
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	17

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,000	2,000	**64** %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. 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 size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**W1F02-P2-SUB-04**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-16**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-13-05 00:00**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**09-16-05 19:16**	Sample Weight:	**16 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed (AL):	**09-29-05 19:43**	% Solids:	**80**
Analyzed (AR):	**09-29-05 20:28**	Aliphatic Dilution Factor:	**1**
Analyst:	**MM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	36
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	36
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	36
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	36

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.2	2.7	**83 %**	40 - 140 %
	2-Bromonaphthalene	3.2	2.7	**86 %**	40 - 140 %
Extraction:	Chloro-octadecane	3.2	2.5	**77 %**	40 - 140 %
	ortho-Terphenyl	3.2	2.6	**80 %**	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed? Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved? Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1? No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. 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 size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W1F02-P2-SUB-04**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-16**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-13-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**09-16-05 19:16**	Sample Volume:	**16 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed:	**09-30-05 15:58**	Percent Solids:	**80**
Analyst:	**CMM**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	17
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	17
208-96-8	Acenaphthylene	BRL		ug/Kg	17
83-32-9	Acenaphthene	BRL		ug/Kg	17
86-73-7	Fluorene	BRL		ug/Kg	17
85-01-8	Phenanthrene	BRL		ug/Kg	17
120-12-7	Anthracene	BRL		ug/Kg	17
206-44-0	Fluoranthene	BRL		ug/Kg	17
129-00-0	Pyrene	BRL		ug/Kg	17
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	17
218-01-9	Chrysene	BRL		ug/Kg	17
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	17
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	17
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	17
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	17
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	17
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	17

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,200	2,200	**68** %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. 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 size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**W1F02-P2-SUB-01**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-17**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**09-16-05 19:16**	Sample Weight:	**15 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed (AL):	**09-29-05 21:12**	% Solids:	**76**
Analyzed (AR):	**09-29-05 21:56**	Aliphatic Dilution Factor:	**1**
Analyst:	**MM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	38
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	38
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	38
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	38

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.4	2.8	**83** %	40 - 140 %
	2-Bromonaphthalene	3.4	2.9	**84** %	40 - 140 %
Extraction:	Chloro-octadecane	3.4	2.8	**83** %	40 - 140 %
	ortho-Terphenyl	3.4	2.9	**85** %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. 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 size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W1F02-P2-SUB-01**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-17**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**09-16-05 19:16**	Sample Volume:	**15 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed:	**09-30-05 16:38**	Percent Solids:	**76**
Analyst:	**CMM**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	17
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	17
208-96-8	Acenaphthylene	BRL		ug/Kg	17
83-32-9	Acenaphthene	BRL		ug/Kg	17
86-73-7	Fluorene	BRL		ug/Kg	17
85-01-8	Phenanthrene	BRL		ug/Kg	17
120-12-7	Anthracene	BRL		ug/Kg	17
206-44-0	Fluoranthene	BRL		ug/Kg	17
129-00-0	Pyrene	9	j	ug/Kg	17
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	17
218-01-9	Chrysene	BRL		ug/Kg	17
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	17
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	17
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	17
193-39-5	Indeno[1,2,3-c,d]pyrene	10	j	ug/Kg	17
53-70-3	Dibenzo[a,h]anthracene	14		ug/Kg	17
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	17

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,400	2,500	73 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. 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 size and dilution.
j Indicates an estimated value detected below the reporting limit for the analyte.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**W1F02-P2-M-01**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-18**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**09-16-05 19:16**	Sample Weight:	**16 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed (AL):	**09-29-05 23:25**	% Solids:	**58**
Analyzed (AR):	**09-30-05 00:09**	Aliphatic Dilution Factor:	**1**
Analyst:	**MM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	50
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	50
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	50
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	50

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	4.4	3.5	**80** %	40 - 140 %
	2-Bromonaphthalene	4.4	3.7	**84** %	40 - 140 %
Extraction:	Chloro-octadecane	4.4	3.2	**72** %	40 - 140 %
	ortho-Terphenyl	4.4	3.2	**72** %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. 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 size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W1F02-P2-M-01**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-18**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**09-16-05 19:16**	Sample Volume:	**16 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed:	**09-30-05 17:17**	Percent Solids:	**58**
Analyst:	**CMM**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	17
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	17
208-96-8	Acenaphthylene	BRL		ug/Kg	17
83-32-9	Acenaphthene	BRL		ug/Kg	17
86-73-7	Fluorene	BRL		ug/Kg	17
85-01-8	Phenanthrene	**10**	j	ug/Kg	17
120-12-7	Anthracene	BRL		ug/Kg	17
206-44-0	Fluoranthene	**23**		ug/Kg	17
129-00-0	Pyrene	**19**		ug/Kg	17
56-55-3	Benzo[a]anthracene	**10**	j	ug/Kg	17
218-01-9	Chrysene	**10**	j	ug/Kg	17
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	17
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	17
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	17
193-39-5	Indeno[1,2,3-c,d]pyrene	**15**	j	ug/Kg	17
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	17
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	17

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	4,400	2,600	**60** %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. 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 size and dilution.
j Indicates an estimated value detected below the reporting limit for the analyte.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	DDD-P2-05	Matrix:	Soil
Project:	Buzzards Bay/3871-02	Container:	120 mL Amber Glass
Client:	GeoInsight, Inc.	Preservation:	Cool
Laboratory ID:	87519-19	QC Batch ID:	EP-2159-M
Sampled:	09-14-05 00:00	Instrument ID:	GC-9 Agilent 6890
Received:	09-16-05 19:16	Sample Weight:	15 g
Extracted:	09-28-05 10:00	Final Volume:	1 mL
Analyzed (AL):	09-30-05 00:53	% Solids:	61
Analyzed (AR):	09-30-05 01:37	Aliphatic Dilution Factor:	1
Analyst:	MM	Aromatic Dilution Factor:	1

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	48
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	48
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	48
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	48

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	4.3	3.4	80 %	40 - 140 %
	2-Bromonaphthalene	4.3	3.5	82 %	40 - 140 %
Extraction:	Chloro-octadecane	4.3	2.5	57 %	40 - 140 %
	ortho-Terphenyl	4.3	2.6	62 %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed? Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved? Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1? No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004). Sample extraction performed by microwave accelerated solvent extraction technique. 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 size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**DDD-P2-05**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-19**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-14-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**09-16-05 19:16**	Sample Volume:	**15 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed:	**09-30-05 17:56**	Percent Solids:	**61**
Analyst:	**CMM**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	17
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	17
208-96-8	Acenaphthylene	BRL		ug/Kg	17
83-32-9	Acenaphthene	BRL		ug/Kg	17
86-73-7	Fluorene	BRL		ug/Kg	17
85-01-8	Phenanthrene	BRL		ug/Kg	17
120-12-7	Anthracene	BRL		ug/Kg	17
206-44-0	Fluoranthene	BRL		ug/Kg	17
129-00-0	Pyrene	BRL		ug/Kg	17
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	17
218-01-9	Chrysene	BRL		ug/Kg	17
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	17
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	17
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	17
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	17
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	17
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	17

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	4,300	2,200	**50** %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. 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 size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**W1F02-P2-SUB-03**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-20**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-13-05 00:00**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**09-16-05 19:16**	Sample Weight:	**16 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed (AL):	**09-30-05 02:22**	% Solids:	**83**
Analyzed (AR):	**09-30-05 03:06**	Aliphatic Dilution Factor:	**1**
Analyst:	**MM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	35
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	35
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	35
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	35

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.1	2.5	**82** %	40 - 140 %
	2-Bromonaphthalene	3.1	2.5	**80** %	40 - 140 %
Extraction:	Chloro-octadecane	3.1	2.5	**81** %	40 - 140 %
	ortho-Terphenyl	3.1	2.6	**83** %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. 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 size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W1F02-P2-SUB-03**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-02**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**87519-20**	QC Batch ID:	**EP-2159-M**
Sampled:	**09-13-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**09-16-05 19:16**	Sample Volume:	**16 g**
Extracted:	**09-28-05 10:00**	Final Volume:	**1 mL**
Analyzed:	**09-30-05 18:36**	Percent Solids:	**83**
Analyst:	**CMM**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	17
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	17
208-96-8	Acenaphthylene	BRL		ug/Kg	17
83-32-9	Acenaphthene	BRL		ug/Kg	17
86-73-7	Fluorene	BRL		ug/Kg	17
85-01-8	Phenanthrene	BRL		ug/Kg	17
120-12-7	Anthracene	BRL		ug/Kg	17
206-44-0	Fluoranthene	BRL		ug/Kg	17
129-00-0	Pyrene	BRL		ug/Kg	17
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	17
218-01-9	Chrysene	BRL		ug/Kg	17
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	17
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	17
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	17
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	17
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	17
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	17

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,100	2,100	**68** %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. 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 size and dilution.

GROUNDWATER ANALYTICAL

Project Narrative

Project:	**Buzzards Bay/3871-02**	Lab ID:	**87519**
Client:	**GeoInsight, Inc.**	Received:	**09-16-05 19:16**

A. Documentation and Client Communication

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

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

B. Method Modifications, Non-Conformances and Observations

The sample(s) in this project were analyzed by the references analytical method(s), and no method modifications, non-conformances or analytical issues were noted, except as indicated below:

1. MA DEP EPH Note: Samples 87519-01 through -20. Polynuclear aromatic hydrocarbon (PAH) target analytes were identified and quantified by GC/MS-SIM, in accordance with the method provision for alternate determinative methodologies. GC/MS-SIM was used to achieve low quantification limits necessary for regulatory compliance. Target analytes were determined utilizing the same sample extract used for carbon range determination by GC/FID.

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CHAIN-OF-CUSTODY RECORD AND WORK ORDER

№ 084663

Project Name: Buzzards Bay
Firm: GeoInsight
Project Number: 3871-002
Address: 5 Lan Drive
Sampler Name: KZ/LC/AW
City / State / Zip: Westford, MA 01886
Project Manager: Kevin Trainer
Telephone: 978 692-1114

TURNAROUND

- [X] STANDARD (10 Business Days)
- [ ] PRIORITY (5 Business Days)
- [ ] RUSH (RAN-________) (Rush requires Rush Authorization Number)
- [X] Please Email to: ktrainer@geoinc.com
- [ ] Please FAX to:

BILLING

- [ ] Purchase Order No.:
- [ ] Third Party Billing:
- [ ] GWA Quote:

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

ANALYSIS REQUEST

Sampling Time	Sample Identification	Matrix	Type	Container(s)	Preservation	Filtered	Laboratory Number (Lab Use Only)	Analysis
8:35	WIF02-P2-SUB-08A	Soil/Sediment	Grab	250mL/8 oz Glass	Ice	No	87519 – 1	8270C PAHs only (SIM); MA DEP EPH w/all targets
8:40	WIF02-P2-SUB-08B	Soil/Sediment	Grab	250mL/8 oz Glass	Ice	No	1	8270C PAHs only (SIM); MA DEP EPH w/all targets
8:45	WIF02-P2-SUB-08C	Soil/Sediment	Grab	250mL/8 oz Glass	Ice	No	1	8270C PAHs only (SIM); MA DEP EPH w/all targets
9:00	WIF02-P2-SUB-07A	Soil/Sediment	Grab	250mL/8 oz Glass	Ice	No	2	8270C PAHs only (SIM); MA DEP EPH w/all targets
9:05	WIF02-P2-SUB-07B	Soil/Sediment	Grab	250mL/8 oz Glass	Ice	No	2	8270C PAHs only (SIM); MA DEP EPH w/all targets
9:10	WIF02-P2-SUB-07C	Soil/Sediment	Grab	250mL/8 oz Glass	Ice	No	2	8270C PAHs only (SIM); MA DEP EPH w/all targets
9:25	WIF02-P2-SUB-06A	Soil/Sediment	Grab	250mL/8 oz Glass	Ice	No	3	8270C PAHs only (SIM); MA DEP EPH w/all targets
9:30	WIF02-P2-SUB-06B	Soil/Sediment	Grab	250mL/8 oz Glass	Ice	No	3	8270C PAHs only (SIM); MA DEP EPH w/all targets
9:35	WIF02-P2-SUB-06C	Soil/Sediment	Grab	250mL/8 oz Glass	Ice	No	3	8270C PAHs only (SIM); MA DEP EPH w/all targets
10:00	WIF02-P2-UIT-02A	Soil/Sediment	Grab	250mL/8 oz Glass	Ice	No	4	8270C PAHs only (SIM); MA DEP EPH w/all targets
10:03	WIF02-P2-UIT-02B	Soil/Sediment	Grab	250mL/8 oz Glass	Ice	No	4	8270C PAHs only (SIM); MA DEP EPH w/all targets
10:10	WIF02-P2-UIT-02C	Soil/Sediment	Grab	250mL/8 oz Glass	Ice	No	4	8270C PAHs only (SIM); MA DEP EPH w/all targets

REMARKS / SPECIAL INSTRUCTIONS

Composite the A, B, + C sample aliquots. After compositing, freeze the A, B + C aliquots remaining soil - send to B+B Labs for storage on dry ice.
PAH analyzed by 8270 w/(SIM) Selected Ion Monitoring

DATA QUALITY OBJECTIVES

Regulatory Program

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

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	Date	Time	Received by
Sampler: [signature]	9/16/05	1425	[signature]
[signature]	9/16/05	1516	
			Laboratory: [signature]

Receipt Temperature: Refrigerated 2 (2-6°C Recommended)
Container Count:
Shipping/Airbill Number:
Custody Seal Number:

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

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

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

№ 084654

Project Name: Buzzards Bay	Firm: GeoInsight
Project Number: 3871-002	Address: 5 Lan Drive
Sampler Name: KZ/LC/AW	City / State / Zip: Westford, MA 01886
Project Manager: Kevin Trainer	Telephone: (978) 692-1114

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

TURNAROUND

- [X] STANDARD (10 Business Days)
- [ ] PRIORITY (5 Business Days)
- [ ] RUSH (RAN- ______) (Rush requires Rush Authorization Number)
- [X] Please Email to: PDF to ktrainer@geoinsight.com
- [ ] Please FAX to:

BILLING

- [ ] Purchase Order No.:
- [ ] Third Party Billing:
- [ ] GWA Quote:

Sampling

Time	Sample Identification	Matrix	Type	Container(s)	Preservation	Filtered	Laboratory Number (Lab Use Only)	Analysis Request
10:20	WIF02-P2-LIT-02A	Soil (Sediment)	Grab, 1	250mL/8 oz Glass	Ice	No	87S9 / 5	8270C PAHs only SIM; MA DEP EPH wall targets
10:15	WIF02-P2-LIT-02B	↓	↓	↓	↓	↓	5	↓
10:13	WIF02-P2-LIT-02C	↓	↓	↓	↓	↓	5	↓
10:35	WIF02-P2-UIT-01A	↓	↓	↓	↓	↓	6	↓
10:38	WIF02-P2-UIT-01B	↓	↓	↓	↓	↓	6	↓
10:40	WIF02-P2-UIT-01C	↓	↓	↓	↓	↓	6	↓
10:42	WIF02-P2-LIT-01A	↓	↓	↓	↓	↓	7	↓
10:45	WIF02-P2-LIT-01B	↓	↓	↓	↓	↓	7	↓
10:47	WIF02-P2-LIT-01C	↓	↓	↓	↓	↓	7	↓
10:53	WIF02-P2-SUB-02A	↓	↓	↓	↓	↓	8	↓
10:55	WIF02-P2-SUB-02B	↓	↓	↓	↓	↓	8	↓
11:00	WIF02-P2-SUB-02C	↓	↓	↓	↓	↓	8	↓

Matrix options: Groundwater, Drinking Water, Wastewater, Soil, Other Solid, Oil/Organic Liquid. Type: Composite, Grab, Number. Containers: 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, HNO_3, H_2SO_4, NaOH, Methanol, Sodium Bisulfate, Ice. Filtered: Yes, No.

ANALYSIS REQUEST: Volatiles, Semivolatiles, Pest/Herb/PCBs (Extractable, Vol.), Metals, Petroleum Hydrocarbon (Ext. TPH, Vol. TPH), Haz. Waste, General Chemistry, Other. Options rows: OPTIONS, SDWA, NPDES, RCRA/21E.

REMARKS / SPECIAL INSTRUCTIONS

Composite the A, B, + C sample pods.
After compositing, freeze the A, B, +C aliquots remaining soil.
Send to B+B labs for archiving on dry ice.
PAH analyzed by 8270 w/(SIM) added Ion Monitoring.

DATA QUALITY OBJECTIVES

Regulatory Program

State	Standard	Deliverables
☐ CT	[X] MCP GW-1/S-1	☐ PWS Form
☐ ME	[X] MCP GW-2/S-2	☐ MWRA
[X] 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	Date	Time	Received by
Sampler: [signature]	9/16/05	1428	[signature]
[signature]	9/16/05	1516	
			Received by Laboratory: [signature]

Receipt Temperature: 2 ☐ Ice ☐ Refrigerated 2-6 C Recommended
Container Count:
Shipping/Airbill Number:
Custody Seal Number:

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

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CHAIN-OF-CUSTODY RECORD AND WORK ORDER

№ 084695

Project Name: BUZZARDS BAY
Firm: GeoInsight
Project Number: 3871-002
Address: 5 LAN DRIVE
Sampler Name: KZ/AW
City / State / Zip: Westford, MA 01880
Project Manager: KEVIN TRAINER
Telephone: 978-692-1114

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

TURNAROUND

- [x] STANDARD (10 Business Days)
- [ ] PRIORITY (5 Business Days)
- [ ] RUSH (RAN-________) (Rush requires Rush Authorization Number)
- [x] Please Email to: PDF to Kdtrainer@geoinc.com
- [ ] Please FAX to:

BILLING

- [ ] Purchase Order No.:
- [ ] Third Party Billing:
- [ ] GWA Quote:

ANALYSIS REQUEST

Sampling Time	Sample Identification	Matrix	Type	Container(s)	Preservation	Filtered	Laboratory Number (Lab Use Only) 8759	8270C PAHs only SIM	MA DEP EPH wall targets / EPH Carbon Ranges only	Other
9:25	WIC02-P2-SUB-02A	Soil/Sediment X	Grab X	40mL VOA Vial; 250mL/8 oz Glass X						MS/MSD
9:30	WIC02-P2-SUB-02B	↓	↓	↓	ICE X	NO X	9,10,11	X	X	X
9:35	WIC02-P2-SUB-02C	↓	↓	↓	↓	↓	12,13	↓	↓	X
10:20	WIC02-P2-SUB-01A	↓	↓	↓	↓	↓		↓	↓	X
10:25	WIC02-P2-SUB-01B	↓	↓	↓	↓	↓	14	↓	↓	
10:30	WIC02-P2-SUB-01C	↓	↓	↓	↓	↓		↓	↓	
14:10	WIF02-P2-SUB-05A	↓	↓	↓	↓	↓		↓	↓	
14:15	WIF02-P2-SUB-05B	↓	↓	↓	↓	↓	15	↓	↓	
14:17	WIF02-P2-SUB-05C	↓	↓	↓	↓	↓		↓	↓	
14:25	WIF02-P2-SUB-04A	↓	↓	↓	↓	↓		↓	↓	
14:30	WIF02-P2-SUB-04B	↓	↓	↓	↓	↓	16	↓	↓	
14:35	WIF02-P2-SUB-04C	↓	↓	↓ (12)	↓	↓		↓	↓	

REMARKS / SPECIAL INSTRUCTIONS

Composite the A,B,+C sample aliquots,
After compositing, freeze the A,B +C aliquots remaining soil - send to B+B Labs for archiving on dry ice.
+ analyzed by 8270 w/(SIM) Selected Ion Monitoring.

DATA QUALITY OBJECTIVES

Regulatory Program

State: [ ] CT [ ] ME [x] MA [ ] NH [ ] NY [ ] RI [ ] VT [ ]
Standard: [x] MCP GW-1/S-1 [x] MCP GW-2/S-2 [ ] NY STARS [ ] Drinking Water [ ] Wastewater [ ] Waste Disposal [ ] Dredge Material [ ]
Deliverables: [ ] PWS Form [ ] MWRA [ ]

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
- [x] Matrix Spike
- [x] Matrix Spike Duplicate

Selection of QC Sample:
- [x] Please use sample: composite of: WIC02-P2-SUB-02A, WIC02-P2-SUB-02B, WIC02-P2-SUB-02C

CHAIN-OF-CUSTODY RECORD

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

Relinquished by	Date	Time	Received by
Relinquished by Sampler: [signature]	9/16/05	1425	[signature]
Relinquished by: [signature]	9/16/05	1916	Received by:
Relinquished by:			Received by Laboratory: [signature]

Receipt Temperature: ☐ Ice ☐ Refrigerated 2-6 C Recommended 2
Container Count:
Shipping/Airbill Number:
Custody Seal Number:

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

GROUNDWATER ANALYTICAL

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Buzzards Bay, MA 02532
Telephone (508) 759-4441 • FAX (508) 759-4475
www.groundwateranalytical.com

CHAIN-OF-CUSTODY AND WORK ORDER

Nº 084655

Project Name: BUZZARDS BAY
Project Number: 3871 - 002
Sampler: CZ/LC/AW
Project Manager: KEVIN TRAINER
Firm: GeoInsight
Address: 5 LAN DRIVE
City / State / Zip: Westford, MA 01886
Telephone: (978) 692-1114

TURNAROUND

- [X] STANDARD (10 Business Days)
- [ ] PRIORITY (5 Business Days)
- [ ] RUSH (RAN- _____)
  (Rush requires Rush Authorization Number)
- [X] Please Email to: PDF to ktrainer@geoinc.com
- [ ] Please FAX to: _____

BILLING

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

ANALYSIS REQUEST

OPTIONS: [ ] TIC Search
SDWA: [ ] 524.2/MTBE; [ ] 525.2; [ ] 504.1 EDB/DBCP
NPDES: [ ] 624; [ ] 602+MTBE; [ ] 625; [ ] 608 Pesticides; [ ] 608 PCBs; [ ] 13 Priority Pollutant
RCRA/21E: [ ] 8260B TCL-MTBE; [ ] 8260B NH PETROLEUM; [ ] 8260B; [ ] 8021B Aromatics; [ ] 8021B Halocarbons; [ ] 8021B; [ ] 8270C; [ ] 8081A Pesticides; [ ] 8082 PCBs; [ ] 8151A Herbicides; [ ] 8011 EDB/DBCP; [ ] 8 RCRA; [ ] 5 RCRA; [ ] MA List Metals; [ ] 23 TAL; [ ] Specify:

Volatiles: [ ] TIC Search
Semivolatiles: [ ] Acid Only; [ ] B/N Only; [ ] TIC Search; [X] 8270C PAHs only (SIM)
Pest/Herb/PCBs Extractable: [ ] 505; [ ] 508; [ ] 531.1; [ ] 515.1; [ ] 625 PAHs only
Pest/Herb/PCBs Vol.: [ ] 504.1 EDB/DBCP
Metals: Specify For Water Samples [ ] Lead and Copper; [ ] Total; [ ] Dissolved
Petroleum Hydrocarbon Ext. TPH: [ ] MA DEP EPH w/all targets; [ ] EPH w/4 PAHs; [ ] Hydrocarbon Fingerprint (GC/FID by ASTM D3328-00-Mod.); [ ] TPH by GC/FID (8015B Mod) Quantitative Only; [ ] Gasoline Range Organics (GRO); [ ] MA DEP VPH w/all targets; [ ] VPH Carbon ranges only
Petroleum Hydrocarbon Vol. TPH: [ ] TCLP; [ ] SPLP; [ ] 8 Metals; [ ] Pb only; [ ] VOA; [ ] Semi VOA; [ ] Pesticides; [ ] Herbicides
Haz. Waste: [ ] Corrosivity (as pH); [ ] Reactivity; [ ] Ignitability (as Flashpoint); [ ] Paint Filter; [ ] MA Base 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 NH3/NO3/TKN); [ ] Oil & Grease; [ ] COD; [ ] TOC; [ ] BOD; [ ] TDS; [ ] TSS; [ ] Alkalinity; [ ] Cyanide, Total; [ ] Cyanide, Physiologically Available; [ ] pH; [ ] Dissolved Oxygen; [ ] Turbidity; [ ] Total Coliform; [ ] Fecal Coliform; [ ] HPC
Other

Sampling TIME	SAMPLE IDENTIFICATION	Matrix	Type	Container(s)	Preservation	Filtered	LABORATORY NUMBER (Lab Use Only)
11:05	WIFD2-P2-SUB-01A	SOIL/Sediment	COMPOSITE / GRAB	NUMBER; 250mL/8 oz Glass			8751
11:10	WIFD2-P2-SUB-01B	SOIL/Sediment	COMPOSITE / GRAB	NUMBER; 250mL/8 oz Glass			17
11:15	WIFD2-P2-SUB-01C	SOIL/Sediment	COMPOSITE / GRAB	NUMBER; 250mL/8 oz Glass			
11:20	WIFD2-P2-M-01A	SOIL/Sediment	COMPOSITE / GRAB	NUMBER; 250mL/8 oz Glass			18
11:18	WIFD2-P2-M-01B	SOIL/Sediment	COMPOSITE / GRAB	NUMBER; 250mL/8 oz Glass			
11:25	WIFD2-P2-M-01C	SOIL/Sediment	COMPOSITE / GRAB	NUMBER; 250mL/8 oz Glass			
~~10:22~~	~~DDD-01A~~						
~~10:31~~	~~DDD-01B~~ (12)						
10:17	DDD-01C	SOIL/Sediment	COMPOSITE / GRAB	NUMBER; 250mL/8 oz Glass			
01:40	DDD-P2-05A	SOIL/Sediment	COMPOSITE / GRAB	NUMBER; 250mL/8 oz Glass			
01:42	DDD-P2-05B	SOIL/Sediment	COMPOSITE / GRAB	NUMBER; 250mL/8 oz Glass			19
01:44	DDD-P2-05C	SOIL/Sediment	COMPOSITE / GRAB	NUMBER; 250mL/8 oz Glass			

REMARKS / SPECIAL INSTRUCTIONS

mposite A, B, & C sample
iquots.

ter compositing, freeze the
, & C aliquots remaining soil -
send to B & B Labs for
rying on dry ice.
TH analyzed by 8270 w/ SIM
ded Ion Monitoring.

DATA QUALITY OBJECTIVES

Regulatory Program

State	Standard	Deliverables
[ ] CT	[X] MCP GW-1/S-1	[ ] PWS Form
[ ] ME	[X] MCP GW-2/S-2	[ ] MWRA
[X] 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:	9/16/05	1425	Received by:	Receipt Temperature: [ ] Ice [ ] Refrigerated 2 2-6 C Recommended
Relinquished by:	9/16/05	1916	Received by:	Container Count: 54
Relinquished by:			Received by Laboratory:	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
Buzzards Bay, MA 02532
Telephone (508) 759-4441 • FAX (508) 759-4475
www.groundwateranalytical.com

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

Nº 084696

Project Name: BUZZARDS BAY
Project Number: 3871-002
Sampler Name: KZ/AW
Project Manager: KEVIN TRAINER

Firm: GeoInsight
Address: 5 LAN DRIVE
City / State / Zip: WESTFORD, MA 01886
Telephone: (978) 692-1114

TURNAROUND

- [X] STANDARD (10 Business Days)
- [ ] PRIORITY (5 Business Days)
- [ ] RUSH (RAN- _____)
  (Rush requires Rush Authorization Number)
- [X] Please Email to: PDF to KdTrainer@geoinc.com
- [ ] Please FAX to: _____

BILLING

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

ANALYSIS REQUEST

OPTIONS: Volatiles: [ ] TIC Search
SDWA: [ ] 524.2-MTBE
NPDES: [ ] 624
RCRA/TE: [ ] 8260B TCL-MTBE; [ ] 8260B NH PETROLEUM; [ ] 8260B

Volatiles: [ ] 602-MTBE; [ ] 601; [ ] 8021B Aromatics; [ ] 8021B Halocarbons; [ ] 8021B; [ ] 601/602-MTBE
Semivolatiles: [ ] Acid Only; [ ] B/N Only; [ ] TIC Search; [ ] 525.2; [ ] 625; [ ] 625 PAHs only; [X] 8270C PAHs only SIM; [ ] 8081A Pesticides; [ ] 8082 PCBs; [ ] 8151A Herbicides; [ ] 8011 EDB/DBCP; [ ] 8270C
Pest/Herb/PCBs Extractable: [ ] 505; [ ] 508; [ ] 508 Pesticides; [ ] 608 PCBs; [ ] 515.1; [ ] 504.1; EDB/DBCP; [ ] 608 Pesticides; [ ] 608 PCBs; [ ] 515.1; [ ] 615
Pest/Herb/PCBs Vol.: [ ] 504.1; EDB/DBCP
Metals: Specify for Water Samples; [ ] Total; [ ] Dissolved; [ ] Lead and Copper; [ ] 13 Priority Pollutant; [ ] RCRA; [ ] 5 RCRA; [ ] MA List Metals; [ ] 23 TAL; [ ] Specify:
Petroleum Hydrocarbons Ext. TPH: [ ] TPH-IR; [ ] Diesel Range Organics (DRO); [ ] ME DRO; [ ] CT ETPH; [X] MA DEP EPH w/all targets; [X] EPH Carbon Ranges only; [ ] EPH w/4 PAHs; [ ] Hydrocarbon Fingerprint (GC/FID by ASTM D3328-00-Mod.); [ ] TPH by GC/FID (8015B Mod) Quantitative Only
Petroleum Hydrocarbons Vol. TPH: [ ] Gasoline Range Organics (GRO); [ ] ME 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); [ ] Flash Point; [ ] MA Base 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; [ ] Alkalinity; [ ] Cyanide, Total; [ ] Cyanide, Physiologically Available; [ ] pH; [ ] Dissolved Oxygen; [ ] Turbidity; [ ] Total Coliform; [ ] Fecal Coliform; [ ] HPC
Other:

Sampling TIME	SAMPLE IDENTIFICATION	Matrix	Type	Container(s)	Preservation	Filtered	LABORATORY NUMBER (Lab Use Only)
14:40	WIF02-B2-SUB-03A	SOIL/Sediment	COMPOSITE GRAB	250mL/8 oz Glass	ICE	YES	8757
14:45	WIF02-B2-SUB-03B	SOIL/Sediment	COMPOSITE GRAB	250mL/8 oz Glass	ICE	YES	758
14:50	WIF02-B2-SUB-03C	SOIL/Sediment	COMPOSITE GRAB	250mL/8 oz Glass	ICE	YES	759

Matrix: GROUNDWATER; DRINKING WATER; WASTEWATER; SOIL/Sediment; 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; 1 LITER oz Amber Glass; 250mL/8 oz Plastic; 500mL/16 oz Plastic; 1 LITER oz Plastic; 120mL Sterile
Preservation: HCl; HNO3; H2SO4; NaOH; Methanol; Sodium Bisulfate; ICE
Filtered: YES; NO

REMARKS / SPECIAL INSTRUCTIONS

Composite the A, B, + C sample aliquots for compositing, freeze the A, B, + C aliquots remaining soil and ship to B+B Labs for archiving on dry ice.
PAH analyzed by 8270 w/ Selected Ion Monitoring.

DATA QUALITY OBJECTIVES

Regulatory Program

State	Standard	Deliverables
[ ] CT	[X] MCP GW-1/S-1	[ ] PWS Form
[ ] ME	[X] MCP GW-2/S-2	[ ] MWRA
[X] 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:	9/16/05	1425	Received by:	Receipt Temperature: 2 (Ice [ ] Refrigerated 2-6 C Recommended)
Relinquished by:	9/16/05	1515	Received by:	Container Count:
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

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. Percent 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

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	MA DEP EPH Method	Instrument ID:	GC-9 Agilent 6890	Instrument ID:	GC-9 Agilent 6890
QC Batch ID:	EP-2159-M	Extracted:	09-28-05 10:00	Extracted:	09-28-05 10:00
Matrix:	Soil	Analyzed (AL):	09-29-05 03:04	Analyzed (AL):	09-29-05 04:32
Units:	mg/Kg	Analyzed (AR):	09-29-05 03:48	Analyzed (AR):	09-29-05 05:16
		Analyst:	MM	Analyst:	MM

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
111-84-2	*n*-Nonane (C_9)	3.3	1.6	48 %	3.3	1.6	48 %	1 %	30 - 140 %	25%
124-18-5	*n*-Decane (C_{10})	3.3	1.9	57 %	3.3	1.9	58 %	1 %	40 - 140 %	25%
112-40-3	*n*-Dodecane (C_{12})	3.3	2.0	59 %	3.3	2.0	61 %	2 %	40 - 140 %	25%
629-59-4	*n*-Tetradecane (C_{14})	3.3	2.0	61 %	3.3	2.1	64 %	4 %	40 - 140 %	25%
544-76-3	*n*-Hexadecane (C_{16})	3.3	2.4	72 %	3.3	2.5	74 %	4 %	40 - 140 %	25%
593-45-3	*n*-Octadecane (C_{18})	3.3	2.7	81 %	3.3	2.8	84 %	4 %	40 - 140 %	25%
n/a	*n*-C9 to *n*-C18 Group	20	12	63 %	20	13	65 %	3 %	40 - 140 %	25%
629-92-5	*n*-Nonadecane (C_{19})	3.3	2.7	82 %	3.3	2.8	85 %	3 %	40 - 140 %	25%
112-95-8	*n*-Eicosane (C_{20})	3.3	2.7	82 %	3.3	2.8	84 %	2 %	40 - 140 %	25%
629-97-0	*n*-Docosane (C_{22})	3.3	2.7	83 %	3.3	2.8	85 %	2 %	40 - 140 %	25%
646-31-1	*n*-Tetracosane (C_{24})	3.3	2.6	79 %	3.3	2.7	82 %	4 %	40 - 140 %	25%
630-01-3	*n*-Hexacosane (C_{26})	3.3	2.6	78 %	3.3	2.7	81 %	4 %	40 - 140 %	25%
630-02-4	*n*-Octacosane (C_{28})	3.3	2.6	78 %	3.3	2.7	81 %	4 %	40 - 140 %	25%
638-68-6	*n*-Triacontane (C_{30})	3.3	2.6	78 %	3.3	2.6	80 %	3 %	40 - 140 %	25%
630-06-8	*n*-Hexatriacontane (C_{36})	3.3	2.1	65 %	3.3	2.2	68 %	4 %	40 - 140 %	25%
n/a	*n*-C19 to *n*-C36 Group	26	21	78 %	26	21	81 %	3 %	40 - 140 %	25%
91-20-3	Naphthalene	3.3	1.9	58 %	3.3	1.9	58 %	0 %	40 - 140 %	25%
91-57-6	2-Methylnaphthalene	3.3	2.1	62 %	3.3	2.1	62 %	0 %	40 - 140 %	25%
208-96-8	Acenaphthylene	3.3	2.3	69 %	3.3	2.3	69 %	1 %	40 - 140 %	25%
83-32-9	Acenaphthene	3.3	2.2	65 %	3.3	2.1	65 %	0 %	40 - 140 %	25%
86-73-7	Fluorene	3.3	2.4	72 %	3.3	2.4	72 %	0 %	40 - 140 %	25%
85-01-8	Phenanthrene	3.3	2.7	80 %	3.3	2.7	82 %	2 %	40 - 140 %	25%
120-12-7	Anthracene	3.3	2.9	88 %	3.3	3.0	90 %	2 %	40 - 140 %	25%
206-44-0	Fluoranthene	3.3	3.0	89 %	3.3	3.0	92 %	3 %	40 - 140 %	25%
129-00-0	Pyrene	3.3	2.9	89 %	3.3	3.0	92 %	3 %	40 - 140 %	25%
56-55-3	Benzo[a]anthracene	3.3	3.0	90 %	3.3	3.1	93 %	3 %	40 - 140 %	25%
218-01-9	Chrysene	3.3	3.0	91 %	3.3	3.1	93 %	2 %	40 - 140 %	25%
205-99-2	Benzo[b]fluoranthene	3.3	2.9	88 %	3.3	3.0	91 %	3 %	40 - 140 %	25%
207-08-9	Benzo[k]fluoranthene	3.3	3.0	90 %	3.3	3.0	92 %	2 %	40 - 140 %	25%
50-32-8	Benzo[a]pyrene	3.3	2.9	89 %	3.3	3.0	91 %	2 %	40 - 140 %	25%
193-39-5	Indeno[1,2,3-c,d]pyrene	3.3	2.8	84 %	3.3	2.8	85 %	1 %	40 - 140 %	25%
53-70-3	Dibenzo[a,h]anthracene	3.3	2.9	88 %	3.3	2.9	87 %	1 %	40 - 140 %	25%
191-24-2	Benzo[g,h,i]perylene	3.3	2.7	83 %	3.3	2.7	83 %	0 %	40 - 140 %	25%
n/a	PAH Group	56	45	81 %	56	46	82 %	1 %	40 - 140 %	25%

QC Surrogate Compound		Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
Fractionation:	2-Fluorobiphenyl	2.7	2.1	78 %	2.7	2.1	78 %		40 - 140 %
	2-Bromonaphthalene	2.7	2.0	74 %	2.7	2.2	81 %		40 - 140 %
Extraction:	Chloro-octadecane	2.7	2.1	78 %	2.7	2.1	78 %		40 - 140 %
	ortho-Terphenyl	2.7	2.2	81 %	2.7	2.2	81 %		40 - 140 %

Fractionation Breakthrough Evaluation						QC Limits
91-20-3	Naphthalene	LCS	0 %	LCSD	0 %	5%
91-57-6	2-Methylnaphthalene	LCS	0 %	LCSD	0 %	5%

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004). Method modified by use of microwave accelerated solvent extraction technique.

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.

The LCS and LCSD are prepared from separate source standards than those used for calibration.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	MA DEP EPH	Instrument ID:	GC-9 Agilent 6890
QC Batch ID:	EP-2159-M	Extracted:	09-28-05 10:00
Matrix:	Soil	Analyzed (AL):	09-29-05 01:36
		Analyzed (AR):	09-29-05 02:20
		Analyst:	MM

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	30
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	30
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	30
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	30

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	2.7	2.1	78 %	40 - 140 %
	2-Bromonaphthalene	2.7	2.1	79 %	40 - 140 %
Extraction:	Chloro-octadecane	2.7	2.2	82 %	40 - 140 %
	ortho-Terphenyl	2.7	2.1	77 %	40 - 140 %

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004). Sample extraction performed by microwave accelerated solvent 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 size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	EPA 8270C Modified	Instrument ID:	MS-6 HP 6890	Instrument ID:	MS-6 HP 6890
QC Batch ID:	EP-2159-M	Extracted:	09-28-05 10:00	Extracted:	09-28-05 10:00
Matrix:	Soil	Analyzed:	09-29-05 11:22	Analyzed:	09-29-05 12:02
Units:	ug/Kg	Analyst:	CMM	Analyst:	CMM

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
91-20-3	Naphthalene	330	180	55 %	330	170	52 %	6 %	40 - 140 %	20%
91-57-6	2-Methylnaphthalene	330	190	58 %	330	190	58 %	0 %	40 - 140 %	20%
85-01-8	Phenanthrene	330	240	73 %	330	230	70 %	4 %	40 - 140 %	20%
83-32-9	Acenaphthene	330	230	70 %	330	230	70 %	0 %	40 - 140 %	20%
208-96-8	Acenaphthylene	330	220	67 %	330	210	64 %	5 %	40 - 140 %	20%
86-73-7	Fluorene	330	230	70 %	330	220	67 %	4 %	40 - 140 %	20%
120-12-7	Anthracene	330	250	76 %	330	240	73 %	4 %	40 - 140 %	20%
206-44-0	Fluoranthene	330	300	91 %	330	300	91 %	0 %	40 - 140 %	20%
129-00-0	Pyrene	330	280	85 %	330	280	85 %	0 %	40 - 140 %	20%
56-55-3	Benzo[a]anthracene	330	280	85 %	330	290	88 %	4 %	40 - 140 %	20%
218-01-9	Chrysene	330	280	85 %	330	290	88 %	4 %	40 - 140 %	20%
205-99-2	Benzo[b]fluoranthene	330	270	82 %	330	280	85 %	4 %	40 - 140 %	20%
207-08-9	Benzo[k]fluoranthene	330	280	85 %	330	290	88 %	4 %	40 - 140 %	20%
50-32-8	Benzo[a]pyrene	330	280	85 %	330	280	85 %	0 %	40 - 140 %	20%
193-39-5	Indeno[1,2,3-c,d]pyrene	330	260	79 %	330	260	79 %	0 %	40 - 140 %	20%
53-70-3	Dibenzo[a,h]anthracene	330	240	73 %	330	240	73 %	0 %	40 - 140 %	20%
191-24-2	Benzo[g,h,i]perylene	330	270	82 %	330	270	82 %	0 %	40 - 140 %	20%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery	QC Limits
ortho -Terphenyl	2,700	2,000	74 %	2,700	2,000	74 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3510C.

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.

The LCS and LCSD are prepared from separate source standards than those used for calibration.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA Method 8270C (Mod.) - EPH PAHs by GC/MS-SIM**	Instrument ID:	**MS-6 HP 6890**
QC Batch ID:	**EP-2159-M**	Extracted:	**09-28-05 10:00**
Matrix:	**Soil**	Analyzed:	**09-29-05 10:43**
		Analyst:	**CMM**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	17
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	17
208-96-8	Acenaphthylene	BRL		ug/Kg	17
83-32-9	Acenaphthene	BRL		ug/Kg	17
86-73-7	Fluorene	BRL		ug/Kg	17
85-01-8	Phenanthrene	BRL		ug/Kg	17
120-12-7	Anthracene	BRL		ug/Kg	17
206-44-0	Fluoranthene	BRL		ug/Kg	17
129-00-0	Pyrene	BRL		ug/Kg	17
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	17
218-01-9	Chrysene	BRL		ug/Kg	17
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	17
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	17
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	17
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	17
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	17
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	17

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	2700	2000	**74 %**	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546.

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 size and dilution.

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