

**EPA Method 8270C (Continued)
Semivolatile Organics by GC/MS**

Field ID:	Influent	Matrix:	Aqueous
Project:	Ipswich Power Plant/2002.01	Container:	1 L Amber Glass
Client:	Clean Soils Environmental Ltd.	Preservation:	Cool
Laboratory ID:	90679-07	QC Batch ID:	SV-1821-F
Sampled:	01-09-06 10:30	Instrument ID:	MS-3 HP 5890
Received:	01-09-06 18:40	Sample Volume:	900 mL
Extracted:	01-12-06 16:50	Final Volume:	1 mL
Analyzed:	01-17-06 01:56	Dilution Factor:	1
Analyst:	CMM		

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CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
84-66-2	Diethyl phthalate	BRL		ug/L	6
7005-72-3	4-Chlorophenyl phenyl ether	BRL		ug/L	6
86-73-7	Fluorene	BRL		ug/L	6
100-01-6	4-Nitroaniline	BRL		ug/L	6
534-52-1	4,6-Dinitro-2-methylphenol	BRL		ug/L	6
86-30-6	N-Nitrosodiphenylamine [†]	BRL		ug/L	6
122-66-7	1,2-Diphenylhydrazine [°]	BRL		ug/L	6
101-55-3	4-Bromophenyl phenyl ether	BRL		ug/L	6
118-74-1	Hexachlorobenzene	BRL		ug/L	6
87-86-5	Pentachlorophenol	BRL		ug/L	6
85-01-8	Phenanthrene	BRL		ug/L	6
120-12-7	Anthracene	BRL		ug/L	6
86-74-8	Carbazole	BRL		ug/L	6
84-74-2	Di-n-butyl phthalate	BRL		ug/L	6
206-44-0	Fluoranthene	BRL		ug/L	6
129-00-0	Pyrene	BRL		ug/L	6
85-68-7	Butyl benzyl phthalate	BRL		ug/L	6
91-94-1	3,3'-Dichlorobenzidine	BRL		ug/L	6
56-55-3	Benzo[a]anthracene	BRL		ug/L	6
218-01-9	Chrysene	BRL		ug/L	6
117-81-7	Bis(2-ethylhexyl) phthalate	BRL		ug/L	6
117-84-0	Di-n-octyl phthalate	BRL		ug/L	6
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	6
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	6
50-32-8	Benzo[a]pyrene	BRL		ug/L	6
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	6
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	6
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	6

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	220	120	53 %	15 - 110 %
Phenol-d5	220	100	45 %	15 - 110 %
Nitrobenzene-d5	110	72	64 %	30 - 130 %
2-Fluorobiphenyl	110	92	83 %	30 - 130 %
2,4,6-Tribromophenol	220	190	84 %	15 - 110 %
Terphenyl-d14	110	93	84 %	30 - 130 %

**EPA Method 8082
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID:	Influent	Matrix:	Aqueous
Project:	Ipswich Power Plant/2002.01	Container:	1 L Amber Glass
Client:	Clean Soils Environmental Ltd.	Preservation:	Cool
Laboratory ID:	90679-08	QC Batch ID:	PB-1198-F
Sampled:	01-09-06 10:30	Instrument ID:	GC-6 HP 5890
Received:	01-09-06 18:40	Sample Weight:	1000 mL
Extracted:	01-14-06 12:00	Final Volume:	1 mL
Cleaned Up:	01-15-06 20:00	Dilution Factor:	1
Analyzed:	01-16-06 16:35		
Analyst:	MJB		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/L	0.2
11104-28-2	Aroclor 1221	BRL		ug/L	0.2
11141-16-5	Aroclor 1232	BRL		ug/L	0.2
53469-21-9	Aroclor 1242	BRL		ug/L	0.2
12672-29-6	Aroclor 1248	BRL		ug/L	0.2
11097-69-1	Aroclor 1254	BRL		ug/L	0.2
11096-82-5	Aroclor 1260	BRL		ug/L	0.2
37324-23-5	Aroclor 1262 †	BRL		ug/L	0.2
11100-14-4	Aroclor 1268 †	BRL		ug/L	0.2

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	0.20	0.13	64 %	30 - 150 %
Column	Decachlorobiphenyl	0.20	0.17	85 %	30 - 150 %
Second	Tetrachloro- <i>m</i> -xylene	0.20	0.13	67 %	30 - 150 %
Column	Decachlorobiphenyl	0.20	0.18	89 %	30 - 150 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

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.
† Non-target analyte. Result is based on a single mid-range calibration standard.

Project Narrative

Project: **Ipswich Power Plant/2002.01**
Client: **Clean Soils Environmental, Ltd.**

Lab ID: **90679**
Received: **01-09-06 18:40**

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. EPA 8260B Non-conformance: Sample 90679-01. Laboratory control sample (LCS) analyte tert-Butyl Alcohol was above recommended recovery limits for QC batch VM4-3410-W.
2. EPA 8270C Non-conformance: Laboratory Control Sample (LCS) had an analyte with RPD recoveries above recommended limits for QC Batch SV-1821-F.

Post: P.O. Box 1901
Rt. 1A, MA 02512
Tel: 781-344-1111 FAX: 781-344-1175
www.analytical.com

CHAIN-OF-CUSTODY RECORD
AND WORK ORDER

Nº 206233

CS0165
25 Street
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-356-1177
(except replicates)

TURNAROUND
☒ STANDARD (4 Business Days) **6 DAYS**
☐ PRIORITY (5 Business Days)
☐ RUSH (RAN)
(Please specify Rush Authorization Number)
☒ Please Email to: **Stephen.H.Kowalski**
☐ Please FAX to:

BILLING
☐ Purchase Order No.: **JB 70141-4-22-10**
☐ Third Party Billing: **Don't know**
☐ GISA Quoted: **PAID PHANTOM**

ANALYSIS REQUEST		Preservation		Analysis Request		Sample		Retention/Reference		Mat. Waste		Special Recovery		Notes	
Parameter	Units	Method	Matrix	Preservation	Analysis Request	Sample	Retention/Reference	Mat. Waste	Special Recovery	Notes	Notes	Notes	Notes	Notes	Notes
Asbestos	mg/L	7090	Water	4°C	Asbestos	Water	7090								
Barium	mg/L	3051	Water	4°C	Barium	Water	3051								
Boron	mg/L	3091	Water	4°C	Boron	Water	3091								
Bromine	mg/L	3061	Water	4°C	Bromine	Water	3061								
Calcium	mg/L	3041	Water	4°C	Calcium	Water	3041								
Chloride	mg/L	3031	Water	4°C	Chloride	Water	3031								
Copper	mg/L	3071	Water	4°C	Copper	Water	3071								
Fluoride	mg/L	3081	Water	4°C	Fluoride	Water	3081								
Iron	mg/L	3021	Water	4°C	Iron	Water	3021								
Magnesium	mg/L	3011	Water	4°C	Magnesium	Water	3011								
Manganese	mg/L	3001	Water	4°C	Manganese	Water	3001								
Mercury	mg/L	3101	Water	4°C	Mercury	Water	3101								
Molybdenum	mg/L	3091	Water	4°C	Molybdenum	Water	3091								
Nickel	mg/L	3061	Water	4°C	Nickel	Water	3061								
Nitrate	mg/L	3051	Water	4°C	Nitrate	Water	3051								
Nitrite	mg/L	3041	Water	4°C	Nitrite	Water	3041								
Phosphate	mg/L	3071	Water	4°C	Phosphate	Water	3071								
Potassium	mg/L	3011	Water	4°C	Potassium	Water	3011								
Sulfate	mg/L	3021	Water	4°C	Sulfate	Water	3021								
Selenium	mg/L	3031	Water	4°C	Selenium	Water	3031								
Silver	mg/L	3081	Water	4°C	Silver	Water	3081								
Sodium	mg/L	3091	Water	4°C	Sodium	Water	3091								
Strontium	mg/L	3101	Water	4°C	Strontium	Water	3101								
Titanium	mg/L	3001	Water	4°C	Titanium	Water	3001								
Vanadium	mg/L	3011	Water	4°C	Vanadium	Water	3011								
Zinc	mg/L	3021	Water	4°C	Zinc	Water	3021								

DATA QUALITY OBJECTIVES

Regulatory Program
State: ☐ CT ☐ ME ☐ MA ☐ NH ☐ NY ☐ RI ☐ VT ☒ RGP
Standard: ☐ MCF GW-1/S-1 ☐ MCF GW-2/S-2 ☐ NY STARS ☐ Drinking Water ☒ Wastewater ☐ Waste Disposal ☐ 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 Duplicates
☐ 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 insert.

Received by: Stephen H. Kowalski	Date: 1/16/06	Time: 14:00	Received by: Colin S. Sullivan	Receipt Temperature: 11°C
Received by: Stephen H. Kowalski	Date: 1/16/06	Time: 14:00	Received by: Colin S. Sullivan	Container Count: 2
Received by: Stephen H. Kowalski	Date: 1/16/06	Time: 14:00	Received by: Colin S. Sullivan	Shipping/Label Number: 206233
Method of Shipment: ☐ GISA Courier ☒ Express Mail ☐ Federal Express				Custody Seal Number: 206233

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.



Quality Control Report
Laboratory Control Samples

Category: Inorganics
Matrix: Aqueous
Units: mg/L

Sample Type	Method	QC Batch ID	Prep Method	Prepared	Analyzed	Instrument ID	Analyst
LCS	SM 3500 Cr D	HC-0242-W	SM 3500 Cr D	1/9/2006 22:00	1/9/2006 22:26	Lachat 8000 Autoanalyzer	DDW
LCSD	SM 3500 Cr D	HC-0242-W	SM 3500 Cr D	1/9/2006 22:00	1/9/2006 22:27	Lachat 8000 Autoanalyzer	DDW

Analyte	LCS			LCS Duplicate			QC Limits			Method
	Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	LCS	RPD	
Chromium, Hexavalent	0.10	0.10	101%	0.10	0.10	97%	2 %	80-120%	30 %	SM 3500 Cr D

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and
Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111,
(1994), and 40 C.F.R. 136, Appendix C (1990).

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.

Quality Control Report
Laboratory Control Sample

Category: Inorganic Chemistry
Matrix: Aqueous

Analyte	Units	Spiked	Measured	Recovery	QC Limits	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	mg/L	93	94	101 %	80 - 120 %	01-10-06 11:40	TSS-1180-W	SM 2540 D	4	EB
Chlorine, Total Residual	mg/L	1.0	0.94	94 %	80 - 120 %	01-10-06 18:30	TRC-0398-W	SM 4500-Cl G	2	LJD
pH	pH	7.0	7.0	100 %	80 - 120 %	01-09-06 12:56	PH-2047-W	SM 4500-H+ B	3	EB
Oil and Grease, Total	mg/L	40	42	106 %	78 - 114 %	01-17-06 09:30	HO-0202-W	EPA 1664	4	DEB
Cyanide, Total	mg/L	0.10	0.09	93 %	80 - 120 %	01-12-06 15:14	TCN-1142-W	Lachat 10-204-00-1-A (EPA 335.7)	1	DEB

Method Reference: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020 (Revised 1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100 (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Twentieth Edition (1998), and Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

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

- 1 Instrument ID: Lachat 8000 Autoanalyzer
- 2 Instrument ID: Milton Roy Spectronic 401
- 3 Instrument ID: Accumet AR50
- 4 Instrument ID: Mettler AT 200 Balance

Quality Control Report
Method Blank

Category: Inorganic Chemistry
Matrix: Aqueous

Analyte	Result	Units	RL	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	BRL	mg/L	2	01-10-06 11:40	TSS-1180-W	SM 2540 D	3	EB
Chlorine, Total Residual	BRL	mg/L	0.2	01-10-06 18:30	TRC-0398-W	SM 4500-Cl G	2	LJD
Chromium, Hexavalent	BRL	mg/L	0.01	01-09-06 22:26	HC-0242-W	SM 3500-Cr D	1	DDW
Oil and Grease, Total	BRL	mg/L	5	01-17-06 09:30	HO-0202-W	EPA 1664	3	DEB
Cyanide, Total	BRL	mg/L	0.01	01-12-06 15:14	TCN-1142-W	Lachat 10-204-00-1-A (EPA 335.3)	1	DEB

Method Reference: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020 (Revised 1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100 (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Twentieth Edition (1998), and Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

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.

RL Reporting Limit.

1 Instrument ID: Lachat 8000 Autoanalyzer

2 Instrument ID: Milton Roy Spectronic 401

3 Instrument ID: Mettler AT 200 Balance

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	EPA 8082	Instrument ID:	GC-6 HP 5890	Instrument ID:	GC-6 HP 5890
QC Batch ID:	PB-1198-F	Extracted:	01-14-06 12:00	Extracted:	01-14-06 12:00
Matrix:	Aqueous	Cleaned Up:	01-15-06 20:00	Cleaned Up:	01-15-06 20:00
Units:	ug/L	Analyzed:	01-16-06 15:26	Analyzed:	01-16-06 16:00
		Analyst:	MJB	Analyst:	MJB

CAS Number	Analyte	LCS						LCS Duplicate						QC Limits	
		Spiked	Measured		Recovery		Spiked	Measured		Recovery		RPD			
	1st Col		2nd Col	1st Col	2nd Col			1st Col	2nd Col	1st Col	2nd Col	1st Col	2nd Col	Spike	RPD
12674-11-2	Aroclor 1016	5.0	4.1	4.2	82%	84%	5.0	4.3	4.3	85%	86%	4 %	2 %	40 - 140%	30 %
11096-82-5	Aroclor 1260	5.0	4.6	4.7	91%	93%	5.0	4.9	5.0	98%	100%	7 %	7 %	40 - 140%	30 %
QC Surrogate Compound		Surrogate Recovery												QC Limits	
Tetrachloro- <i>m</i> -xylene		0.20	0.15	0.16	77%	80%	0.20	0.16	0.16	79%	79%			30 - 150 %	
Decachlorobiphenyl		0.20	0.18	0.18	88%	91%	0.20	0.19	0.20	96%	99%			30 - 150 %	

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

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.

Quality Control Report
Method Blank

Category: EPA Method 8082

QC Batch ID: PB-1198-F

Matrix: Aqueous

Instrument ID: GC-6 HP 5890

Extracted: 01-14-06 12:00

Cleaned Up: 01-15-06 20:00

Analyzed: 01-16-06 14:51

Analyst: MJB

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/L	0.2
11104-28-2	Aroclor 1221	BRL		ug/L	0.2
11141-16-5	Aroclor 1232	BRL		ug/L	0.2
53469-21-9	Aroclor 1242	BRL		ug/L	0.2
12672-29-6	Aroclor 1248	BRL		ug/L	0.2
11097-69-1	Aroclor 1254	BRL		ug/L	0.2
11096-82-5	Aroclor 1260	BRL		ug/L	0.2
37324-23-5	Aroclor 1262 [†]	BRL		ug/L	0.2
11100-14-4	Aroclor 1268 [†]	BRL		ug/L	0.2

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	0.20	0.16	81 %	30 - 150 %
Column	Decachlorobiphenyl	0.20	0.19	93 %	30 - 150 %
Second	Tetrachloro- <i>m</i> -xylene	0.20	0.16	79 %	30 - 150 %
Column	Decachlorobiphenyl	0.20	0.19	95 %	30 - 150 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

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.

† Non-target analyte. Result is based on a single mid-range calibration standard.

**Quality Control Report
Laboratory Control Sample**

Category: EPA Method 504.1

QC Batch ID: PV-0813-E

Matrix: Aqueous

Units: ug/L

Instrument ID: GC-5 HP 5890

Extracted: 01-12-05 10:30

Analyzed: 01-12-06 14:44

Analyst: CRL

CAS Number	Analyte	Spiked	Measured		Recovery		QC Limits
			1st Column	2nd Column	1st Column	2nd Column	
106-93-4	1,2-Dibromoethane (EDB)	0.20	0.21	0.21	104 %	105 %	70 - 130 %
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	0.20	0.20	0.21	102 %	106 %	70 - 130 %

Method Reference: Methods for the Determination of Organic Compounds in Drinking Water, Supplement III, US EPA, EPA-600/R-95/131 (1995). Method Revision 1.1.

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.

**Quality Control Report
Method Blank**

Category:	EPA Method 504.1	Instrument ID:	GC-5 HP 5890
QC Batch ID:	PV-0813-E	Extracted:	01-12-06 10:30
Matrix:	Aqueous	Analyzed:	01-13-06 00:13
		Analyst:	CRL

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.02
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	BRL		ug/L	0.02

Method Reference: Methods for the Determination of Organic Compounds in Drinking Water, Supplement III, US EPA, EPA-600/R-95/131 (1995). Method Revision 1.1.

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.



Quality Control Report
Laboratory Control Sample

Category: Metals
Matrix: Aqueous
Units: mg/L

Analysis Method	QC Batch ID	Prep Method	Prepared	Instrument ID	Analyst
EPA 7041	MB-1882-WL	EPA 3010A	01-10-06 07:43	GFAA-1 PE 5100 Zeeman	MFP
EPA 7421	MB-1882-WL	EPA 3010A	01-10-06 07:43	GFAA-1 PE 5100 Zeeman	MFP
EPA 7740	MB-1882-WL	EPA 3010A	01-10-06 07:43	GFAA-1 PE 5100 Zeeman	MFP
EPA 6010B	MB-1882-WL	EPA 3010A	01-10-06 07:43	ICP-2 PE 3300	MWR
EPA 7470A	MP-1787-WL	EPA 7470A	01-12-06 12:00	CVAA-1 PE FIMS	MFP

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits	Analyzed	Method
7440-36-0	Antimony	0.050	0.053	106 %	80-120 %	01-13-06 12:28	EPA 7041
7440-38-2	Arsenic	5.0	5.9	118 %	80-120 %	01-13-06 11:14	EPA 6010B
7440-43-9	Cadmium	1.0	1.1	107 %	80-120 %	01-13-06 11:13	EPA 6010B
7440-47-3	Chromium	1.0	1.0	101 %	80-120 %	01-12-06 11:41	EPA 6010B
7440-50-8	Copper	1.0	0.96	96 %	80-120 %	01-12-06 11:41	EPA 6010B
7439-89-6	Iron	5.0	4.9	98 %	80-120 %	01-12-06 11:40	EPA 6010B
7439-92-1	Lead	0.050	0.054	108 %	80-120 %	01-10-06 18:53	EPA 7421
7439-97-6	Mercury	0.0010	0.0011	106 %	80-120 %	01-12-06 17:21	EPA 7470A
7440-02-0	Nickel	1.0	0.99	99 %	80-120 %	01-12-06 11:41	EPA 6010B
7782-49-2	Selenium	0.050	0.054	108 %	80-120 %	01-11-06 16:52	EPA 7740
7440-22-4	Silver	1.0	1.1	111 %	80-120 %	01-13-06 11:13	EPA 6010B
7440-66-6	Zinc	1.0	0.95	95 %	80-120 %	01-12-06 11:41	EPA 6010B

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

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

**Quality Control Report
Method Blank**

Category: **Metals**
Matrix: **Aqueous**

<u>Analysis Method</u>	<u>QC Batch ID</u>	<u>Prep Method</u>	<u>Prepared</u>	<u>Sample Volume</u>	<u>Instrument ID</u>	<u>Analyst</u>
EPA 7041	MB-1882-WB	EPA 3010A	01-10-06 07:43	50 mL	GFAA-1 PE 5100 Zeeman	MFP
EPA 7740	MB-1882-WB	EPA 3010A	01-10-06 07:43	50 mL	GFAA-1 PE 5100 Zeeman	MFP
EPA 7421	MB-1882-WB	EPA 3010A	01-10-06 07:43	50 mL	GFAA-1 PE 5100 Zeeman	MFP
EPA 6010B	MB-1882-WB	EPA 3010A	01-10-06 07:43	50 mL	ICP-2 PE 3300	MWR
EPA 7470A	MP-1787-WB	EPA 7470A	01-12-06 12:00	25 mL	CVAA-1 PE FIMS	MFP

<u>CAS Number</u>	<u>Analyte</u>	<u>Concentration</u>	<u>Notes</u>	<u>Units</u>	<u>Reporting Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Method</u>
7440-36-0	Antimony		BRL	mg/L	0.003	1	01-13-06 12:22	EPA 7041
7440-38-2	Arsenic		BRL	mg/L	0.01	1	01-13-06 11:10	EPA 6010B
7440-43-9	Cadmium		BRL	mg/L	0.01	1	01-13-06 11:10	EPA 6010B
7440-47-3	Chromium		BRL	mg/L	0.01	1	01-12-06 11:36	EPA 6010B
7440-50-8	Copper		BRL	mg/L	0.025	1	01-12-06 11:36	EPA 6010B
7439-89-6	Iron		BRL	mg/L	0.1	1	01-12-06 11:36	EPA 6010B
7439-92-1	Lead		BRL	mg/L	0.005	1	01-10-06 18:48	EPA 7421
7439-97-6	Mercury		BRL	mg/L	0.0002	1	01-12-06 17:21	EPA 7470A
7440-02-0	Nickel		BRL	mg/L	0.04	1	01-12-06 11:37	EPA 6010B
7782-49-2	Selenium		BRL	mg/L	0.005	1	01-11-06 16:46	EPA 7740
7440-22-4	Silver		BRL	mg/L	0.007	1	01-13-06 11:09	EPA 6010B
7440-66-6	Zinc		BRL	mg/L	0.2	1	01-12-06 11:37	EPA 6010B

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

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.
DF Dilution Factor.

Quality Control Report
Laboratory Control Samples

Category: EPA Method 8260B
QC Batch ID: VM4-3410-WL
Matrix: Aqueous
Units: ug/L

LCS
Instrument ID: MS-4 HP 6890
Analyzed: 01-12-06 13:30
Analyst: KMC

LCSD
Instrument ID: MS-4 HP 6890
Analyzed: 01-12-06 13:59
Analyst: KMC

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CAS Number	Analyte	LCS			LCS Duplicate			RPD	QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery		Spike	RPD
75-71-8	Dichlorodifluoromethane	10	12	118 %	10	12	121 %	2 %	70 - 130 %	25%
74-87-3	Chloromethane	10	11	106 %	10	10	104 %	3 %	70 - 130 %	25%
75-01-4	Vinyl Chloride	10	11	114 %	10	11	109 %	4 %	70 - 130 %	25%
74-83-9	Bromomethane	10	10	102 %	10	10	101 %	1 %	70 - 130 %	25%
75-00-3	Chloroethane	10	11	111 %	10	11	112 %	1 %	70 - 130 %	25%
75-69-4	Trichlorofluoromethane	10	9.1	91 %	10	9.1	91 %	0 %	70 - 130 %	25%
60-29-7	Diethyl Ether	20	20	99 %	20	18	91 %	8 %	70 - 130 %	25%
75-35-4	1,1-Dichloroethene	10	10	103 %	10	9.8	98 %	5 %	70 - 130 %	25%
76-13-1	1,1,2-Trichlorotrifluoroethane	20	20	99 %	20	18	92 %	8 %	70 - 130 %	25%
67-64-1	Acetone	20	19	94 %	20	21	105 %	11 %	70 - 130 %	25%
75-15-0	Carbon Disulfide	20	18	89 %	20	17	86 %	3 %	70 - 130 %	25%
75-09-2	Methylene Chloride	10	8.2	82 %	10	7.9	79 %	3 %	70 - 130 %	25%
156-60-5	trans- 1,2-Dichloroethene	10	10	100 %	10	9.6	96 %	5 %	70 - 130 %	25%
1634-04-4	Methyl tert- butyl Ether (MTBE)	10	9.5	95 %	10	8.7	87 %	9 %	70 - 130 %	25%
75-34-3	1,1-Dichloroethane	10	9.9	99 %	10	9.5	95 %	4 %	70 - 130 %	25%
594-20-7	2,2-Dichloropropane	10	9.8	98 %	10	9.4	94 %	4 %	70 - 130 %	25%
156-59-2	cis- 1,2-Dichloroethene	10	10	101 %	10	9.6	96 %	5 %	70 - 130 %	25%
78-93-3	2-Butanone (MEK)	20	20	102 %	20	16	80 %	24 %	70 - 130 %	25%
74-97-5	Bromochloromethane	10	10	103 %	10	9.7	97 %	6 %	70 - 130 %	25%
109-99-9	Tetrahydrofuran (THF)	20	18	89 %	20	16	79 %	11 %	70 - 130 %	25%
67-66-3	Chloroform	10	10	102 %	10	9.7	97 %	5 %	70 - 130 %	25%
71-55-6	1,1,1-Trichloroethane	10	10	102 %	10	9.6	96 %	6 %	70 - 130 %	25%
56-23-5	Carbon Tetrachloride	10	10	105 %	10	10	100 %	5 %	70 - 130 %	25%
563-58-6	1,1-Dichloropropene	10	10	103 %	10	10	100 %	3 %	70 - 130 %	25%
71-43-2	Benzene	10	10	102 %	10	9.7	97 %	4 %	70 - 130 %	25%
107-06-2	1,2-Dichloroethane	10	9.1	91 %	10	8.5	85 %	7 %	70 - 130 %	25%
79-01-6	Trichloroethene	10	9.8	98 %	10	9.8	98 %	0 %	70 - 130 %	25%
78-87-5	1,2-Dichloropropane	10	10	103 %	10	9.9	99 %	4 %	70 - 130 %	25%
74-95-3	Dibromomethane	10	9.9	99 %	10	9.3	93 %	6 %	70 - 130 %	25%
75-27-4	Bromodichloromethane	10	10	104 %	10	10	101 %	3 %	70 - 130 %	25%
123-91-1	1,4-Dioxane	200	200	100 %	200	180	91 %	9 %	70 - 130 %	25%
10061-01-5	cis- 1,3-Dichloropropene	10	11	106 %	10	10	102 %	4 %	70 - 130 %	25%
108-10-1	4-Methyl-2-Pentanone (MIBK)	20	19	96 %	20	17	85 %	11 %	70 - 130 %	25%
108-88-3	Toluene	10	10	103 %	10	10	104 %	1 %	70 - 130 %	25%
10061-02-6	trans- 1,3-Dichloropropene	10	9.9	99 %	10	9.7	97 %	2 %	70 - 130 %	25%
79-00-5	1,1,2-Trichloroethane	10	11	110 %	10	10	103 %	6 %	70 - 130 %	25%
127-18-4	Tetrachloroethene	10	10	102 %	10	9.9	99 %	3 %	70 - 130 %	25%
142-28-9	1,3-Dichloropropane	10	10	104 %	10	9.8	98 %	6 %	70 - 130 %	25%
591-78-6	2-Hexanone	20	20	99 %	20	17	87 %	12 %	70 - 130 %	25%

Quality Control Report
Laboratory Control Samples

Category: EPA Method 8260B
QC Batch ID: VM4-3410-WL
Matrix: Aqueous
Units: ug/L

LCS
Instrument ID: MS-4 HP 6890
Analyzed: 01-12-06 13:30
Analyst: KMC

LCSD
Instrument ID: MS-4 HP 6890
Analyzed: 01-12-06 13:59
Analyst: KMC

Page: 2 of 2

CAS Number	Analyte	LCS			LCS Duplicate			RPD	QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery		Spike	RPD
108-86-1	Bromobenzene	10	9.7	97 %	10	9.8	98 %	2 %	70 - 130 %	25%
79-34-5	1,1,2,2-Tetrachloroethane	10	10	103 %	10	9.4	94 %	9 %	70 - 130 %	25%
96-18-4	1,2,3-Trichloropropane	10	10	103 %	10	10	103 %	0 %	70 - 130 %	25%
103-65-1	n-Propylbenzene	10	11	107 %	10	11	108 %	1 %	70 - 130 %	25%
95-49-8	2-Chlorotoluene	10	9.8	98 %	10	10	100 %	3 %	70 - 130 %	25%
108-67-8	1,3,5-Trimethylbenzene	10	9.9	99 %	10	10	101 %	2 %	70 - 130 %	25%
106-43-4	4-Chlorotoluene	10	9	90 %	10	9.2	92 %	3 %	70 - 130 %	25%
98-06-6	tert- Butylbenzene	10	9.5	95 %	10	9.8	98 %	3 %	70 - 130 %	25%
95-63-6	1,2,4-Trimethylbenzene	10	10	101 %	10	10	102 %	1 %	70 - 130 %	25%
135-98-8	sec-Butylbenzene	10	9.7	97 %	10	9.8	98 %	0 %	70 - 130 %	25%
541-73-1	1,3-Dichlorobenzene	10	9.9	99 %	10	10	100 %	1 %	70 - 130 %	25%
99-87-6	4-Isopropyltoluene	10	9.7	97 %	10	9.7	97 %	1 %	70 - 130 %	25%
106-46-7	1,4-Dichlorobenzene	10	9.6	96 %	10	9.7	97 %	2 %	70 - 130 %	25%
95-50-1	1,2-Dichlorobenzene	10	9.9	99 %	10	9.9	99 %	0 %	70 - 130 %	25%
104-51-8	n-Butylbenzene	10	11	105 %	10	11	106 %	1 %	70 - 130 %	25%
96-12-8	1,2-Dibromo-3-chloropropane	10	9.2	92 %	10	8.8	88 %	5 %	70 - 130 %	25%
120-82-1	1,2,4-Trichlorobenzene	10	9.5	95 %	10	9.6	96 %	1 %	70 - 130 %	25%
87-68-3	Hexachlorobutadiene	10	11	112 %	10	11	111 %	1 %	70 - 130 %	25%
91-20-3	Naphthalene	10	9	90 %	10	8.7	87 %	4 %	70 - 130 %	25%
87-61-6	1,2,3-Trichlorobenzene	10	9.6	96 %	10	9.4	94 %	2 %	70 - 130 %	25%
75-65-0	tert-Butyl Alcohol (TBA)	200	700	350 % q	200	590	297 % q	16 %	70 - 130 %	25%
108-20-3	Di-isopropyl Ether (DIPE)	10	9.8	98 %	10	9.2	92 %	6 %	70 - 130 %	25%
637-92-3	Ethyl tert- butyl Ether (ETBE)	10	9.5	95 %	10	8.9	89 %	6 %	70 - 130 %	25%
994-05-8	tert-Amyl Methyl Ether (TAME)	10	9.1	91 %	10	8.2	82 %	10 %	70 - 130 %	25%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	8.6	86 %	10	8.6	86 %	70 - 130 %
1,2-Dichloroethane-d ₄	10	9	90 %	10	8.5	85 %	70 - 130 %
Toluene-d ₈	10	8.7	87 %	10	9.2	92 %	70 - 130 %
4-Bromofluorobenzene	10	8.4	84 %	10	8.8	88 %	70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample preparation performed by EPA Method 5030B.

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.

q Recovery outside recommended limits.

**Quality Control Report
Method Blank**

Category: EPA Method 8260B
QC Batch ID: VM4-3410-WB
Matrix: Aqueous

Instrument ID: MS-4 HP 6890
Analyzed: 01-12-06 14:28
Analyst: KMC

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CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL		ug/L	0.5
74-87-3	Chloromethane	BRL		ug/L	0.5
75-01-4	Vinyl Chloride	BRL		ug/L	0.5
74-83-9	Bromomethane	BRL		ug/L	0.5
75-00-3	Chloroethane	BRL		ug/L	0.5
75-69-4	Trichlorofluoromethane	BRL		ug/L	0.5
60-29-7	Diethyl Ether	BRL		ug/L	2
75-35-4	1,1-Dichloroethene	BRL		ug/L	0.5
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL		ug/L	5
67-64-1	Acetone	BRL		ug/L	10
75-15-0	Carbon Disulfide	BRL		ug/L	5
75-09-2	Methylene Chloride	BRL		ug/L	2.5
156-60-5	trans- 1,2-Dichloroethene	BRL		ug/L	0.5
1634-04-4	Methyl tert- butyl Ether (MTBE)	BRL		ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL		ug/L	0.5
594-20-7	2,2-Dichloropropane	BRL		ug/L	0.5
156-59-2	cis- 1,2-Dichloroethene	BRL		ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL		ug/L	5
74-97-5	Bromochloromethane	BRL		ug/L	0.5
109-99-9	Tetrahydrofuran (THF)	BRL		ug/L	5
67-66-3	Chloroform	BRL		ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL		ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL		ug/L	0.5
563-58-6	1,1-Dichloropropene	BRL		ug/L	0.5
71-43-2	Benzene	BRL		ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL		ug/L	0.5
79-01-6	Trichloroethene	BRL		ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL		ug/L	0.5
74-95-3	Dibromomethane	BRL		ug/L	0.5
75-27-4	Bromodichloromethane	BRL		ug/L	0.5
123-91-1	1,4-Dioxane	BRL		ug/L	500
10061-01-5	cis- 1,3-Dichloropropene	BRL		ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL		ug/L	5
108-88-3	Toluene	BRL		ug/L	0.5
10061-02-6	trans- 1,3-Dichloropropene	BRL		ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL		ug/L	0.5
127-18-4	Tetrachloroethene	BRL		ug/L	0.5
142-28-9	1,3-Dichloropropane	BRL		ug/L	0.5
591-78-6	2-Hexanone	BRL		ug/L	5
124-48-1	Dibromochloromethane	BRL		ug/L	0.5
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.5

**Quality Control Report
Method Blank**

Category: EPA Method 8260B
QC Batch ID: VM4-3410-WB
Matrix: Aqueous

Instrument ID: MS-4 HP 6890
Analyzed: 01-12-06 14:28
Analyst: KMC

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CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
108-86-1	Bromobenzene	BRL		ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL		ug/L	0.5
96-18-4	1,2,3-Trichloropropane	BRL		ug/L	0.5
103-65-1	n-Propylbenzene	BRL		ug/L	0.5
95-49-8	2-Chlorotoluene	BRL		ug/L	0.5
108-67-8	1,3,5-Trimethylbenzene	BRL		ug/L	0.5
106-43-4	4-Chlorotoluene	BRL		ug/L	0.5
98-06-6	tert-Butylbenzene	BRL		ug/L	0.5
95-63-6	1,2,4-Trimethylbenzene	BRL		ug/L	0.5
135-98-8	sec-Butylbenzene	BRL		ug/L	0.5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	0.5
99-87-6	4-Isopropyltoluene	BRL		ug/L	0.5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	0.5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	0.5
104-51-8	n-Butylbenzene	BRL		ug/L	0.5
96-12-8	1,2-Dibromo-3-chloropropane	BRL		ug/L	0.5
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	0.5
87-68-3	Hexachlorobutadiene	BRL		ug/L	0.5
91-20-3	Naphthalene	BRL		ug/L	0.5
87-61-6	1,2,3-Trichlorobenzene	BRL		ug/L	0.5
75-65-0	tert-Butyl Alcohol (TBA)	BRL		ug/L	20
108-20-3	Di-isopropyl Ether (DIPE)	BRL		ug/L	0.5
637-92-3	Ethyl tert-butyl Ether (ETBE)	BRL		ug/L	0.5
994-05-8	tert-Amyl Methyl Ether (TAME)	BRL		ug/L	0.5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	8.9	89 %	70 - 130 %
1,2-Dichloroethane-d ₄	10	8.5	85 %	70 - 130 %
Toluene-d ₈	10	8.9	89 %	70 - 130 %
4-Bromofluorobenzene	10	8.6	86 %	70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample preparation performed by EPA Method 5030B.

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.

**Quality Control Report
Laboratory Control Samples**

Category: EPA Method 8270C
QC Batch ID: SV-1821-F
Matrix: Aqueous
Units: ug/L

LCS
Instrument ID: MS-3 HP 5890
Extracted: 01-12-06 16:50
Analyzed: 01-16-06 21:09
Analyst: CMM

LCSD
Instrument ID: MS-3 HP 5890
Extracted: 01-12-06 16:50
Analyzed: 01-16-06 21:50
Analyst: CMM

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CAS Number	Analyte	LCS			LCS Duplicate			RPD	QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery		Spike	RPD
62-75-9	N-Nitrosodimethylamine	50	35	70 %	50	38	77 %	9 %	40 - 140 %	25%
110-86-1	Pyridine	50	29	58 %	50	33	65 %	11 %	40 - 140 %	25%
108-95-2	Phenol	50	22	45 %	50	25	50 %	10 %	30 - 130 %	25%
62-53-3	Aniline	50	37	74 %	50	40	80 %	7 %	40 - 140 %	25%
111-44-4	Bis(2-chloroethyl) ether	50	39	79 %	50	45	90 %	14 %	40 - 140 %	25%
95-57-8	2-Chlorophenol	50	34	69 %	50	38	76 %	10 %	30 - 130 %	25%
541-73-1	1,3-Dichlorobenzene	50	38	75 %	50	42	83 %	10 %	40 - 140 %	25%
106-46-7	1,4-Dichlorobenzene	50	37	74 %	50	41	82 %	10 %	40 - 140 %	25%
100-51-6	Benzyl Alcohol	50	38	76 %	50	41	81 %	7 %	30 - 130 %	25%
95-50-1	1,2-Dichlorobenzene	50	36	72 %	50	40	81 %	11 %	40 - 140 %	25%
95-48-7	2-Methylphenol	50	36	73 %	50	38	76 %	5 %	30 - 130 %	25%
108-60-1	Bis(2-chloroisopropyl) ether	50	44	89 %	50	47	95 %	7 %	40 - 140 %	25%
106-44-5	4-Methylphenol	50	37	73 %	50	38	77 %	5 %	30 - 130 %	25%
621-64-7	N-Nitrosodi-n-propylamine	50	44	88 %	50	46	92 %	5 %	40 - 140 %	25%
98-86-2	Acetophenone	50	46	92 %	50	49	98 %	6 %	40 - 140 %	25%
67-72-1	Hexachloroethane	50	37	74 %	50	42	83 %	11 %	40 - 140 %	25%
98-95-3	Nitrobenzene	50	35	71 %	50	38	76 %	7 %	40 - 140 %	25%
78-59-1	Isophorone	50	35	69 %	50	36	72 %	4 %	40 - 140 %	25%
88-75-5	2-Nitrophenol	50	33	66 %	50	35	69 %	4 %	30 - 130 %	25%
105-67-9	2,4-Dimethylphenol	50	34	68 %	50	35	71 %	4 %	30 - 130 %	25%
111-91-1	Bis(2-chloroethoxy) methane	50	37	73 %	50	38	75 %	2 %	40 - 140 %	25%
120-83-2	2,4-Dichlorophenol	50	31	62 %	50	33	66 %	6 %	30 - 130 %	25%
120-82-1	1,2,4-Trichlorobenzene	50	33	65 %	50	35	70 %	6 %	40 - 140 %	25%
91-20-3	Naphthalene	50	34	69 %	50	36	72 %	5 %	40 - 140 %	25%
106-47-8	4-Chloroaniline	50	36	71 %	50	49	98 %	31 %	40 - 140 %	25%
87-68-3	Hexachlorobutadiene	50	29	58 %	50	32	63 %	8 %	40 - 140 %	25%
59-50-7	4-Chloro-3-methylphenol	50	35	70 %	50	35	70 %	0 %	30 - 130 %	25%
91-57-6	2-Methylnaphthalene	50	35	69 %	50	36	72 %	4 %	40 - 140 %	25%
77-47-4	Hexachlorocyclopentadiene	50	32	64 %	50	33	67 %	4 %	40 - 140 %	25%
88-06-2	2,4,6-Trichlorophenol	50	38	76 %	50	40	80 %	5 %	30 - 130 %	25%
95-95-4	2,4,5-Trichlorophenol	50	40	80 %	50	42	85 %	6 %	30 - 130 %	25%
91-58-7	2-Chloronaphthalene	50	42	84 %	50	43	87 %	4 %	40 - 140 %	25%
88-74-4	2-Nitroaniline	50	48	95 %	50	50	100 %	5 %	40 - 140 %	25%
100-25-4	1,4-Dinitrobenzene	50	38	77 %	50	39	78 %	2 %	40 - 140 %	25%
131-11-3	Dimethyl phthalate	50	46	91 %	50	47	95 %	4 %	40 - 140 %	25%
99-65-0	1,3-Dinitrobenzene	50	42	84 %	50	44	87 %	4 %	40 - 140 %	25%
208-96-8	Acenaphthylene	50	43	87 %	50	45	90 %	4 %	40 - 140 %	25%
606-20-2	2,6-Dinitrotoluene	50	45	91 %	50	47	94 %	4 %	40 - 140 %	25%

Quality Control Report
Laboratory Control Samples

Category: EPA Method 8270C
QC Batch ID: SV-1821-F
Matrix: Aqueous
Units: ug/L

LCS
Instrument ID: MS-3 HP 5890
Extracted: 01-12-06 16:50
Analyzed: 01-16-06 21:09
Analyst: CMM

LCSD
Instrument ID: MS-3 HP 5890
Extracted: 01-12-06 16:50
Analyzed: 01-16-06 21:50
Analyst: CMM

Page: 2 of 2

CAS Number	Analyte	LCS			LCS Duplicate			RPD	QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery		Spike	RPD
100-01-6	4-Nitroaniline	50	47	94 %	50	48	96 %	2 %	40 - 140 %	25%
534-52-1	4,6-Dinitro-2-methylphenol	50	41	82 %	50	42	84 %	2 %	30 - 130 %	25%
86-30-6	N-Nitrosodiphenylamine †	50	44	88 %	50	45	90 %	1 %	40 - 140 %	25%
122-66-7	1,2-Diphenylhydrazine	50	51	101 %	50	52	104 %	3 %	40 - 140 %	25%
101-55-3	4-Bromophenyl phenyl ether	50	51	101 %	50	51	101 %	0 %	40 - 140 %	25%
118-74-1	Hexachlorobenzene	50	43	87 %	50	44	88 %	2 %	40 - 140 %	25%
87-86-5	Pentachlorophenol	50	41	83 %	50	43	86 %	4 %	30 - 130 %	25%
85-01-8	Phenanthrene	50	47	94 %	50	48	96 %	3 %	40 - 140 %	25%
120-12-7	Anthracene	50	46	92 %	50	47	94 %	2 %	40 - 140 %	25%
86-74-8	Carbazole	50	49	99 %	50	50	100 %	1 %	40 - 140 %	25%
84-74-2	Di-n-butyl phthalate	50	50	100 %	50	51	101 %	1 %	40 - 140 %	25%
206-44-0	Fluoranthene	50	48	96 %	50	48	97 %	0 %	40 - 140 %	25%
129-00-0	Pyrene	50	47	95 %	50	48	95 %	1 %	40 - 140 %	25%
85-68-7	Butyl benzyl phthalate	50	47	93 %	50	47	94 %	1 %	40 - 140 %	25%
91-94-1	3,3'-Dichlorobenzidine	50	51	103 %	50	52	103 %	0 %	40 - 140 %	25%
56-55-3	Benzo[a]anthracene	50	49	97 %	50	49	98 %	1 %	40 - 140 %	25%
218-01-9	Chrysene	50	48	95 %	50	48	96 %	1 %	40 - 140 %	25%
117-81-7	Bis(2-ethylhexyl) phthalate	50	49	99 %	50	50	100 %	1 %	40 - 140 %	25%
117-84-0	Di-n-octyl phthalate	50	52	104 %	50	52	105 %	1 %	40 - 140 %	25%
205-99-2	Benzo[b]fluoranthene	50	49	97 %	50	49	98 %	1 %	40 - 140 %	25%
207-08-9	Benzo[k]fluoranthene	50	50	99 %	50	49	98 %	1 %	40 - 140 %	25%
50-32-8	Benzo[a]pyrene	50	49	98 %	50	49	99 %	0 %	40 - 140 %	25%
193-39-5	Indeno[1,2,3-c,d]pyrene	50	47	93 %	50	47	94 %	1 %	40 - 140 %	25%
53-70-3	Dibenzo[a,h]anthracene	50	47	94 %	50	47	94 %	0 %	40 - 140 %	25%
191-24-2	Benzo[g,h,i]perylene	50	45	90 %	50	45	90 %	0 %	40 - 140 %	25%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	200	110	54 %	200	120	60 %	15 - 110 %
Phenol-d5	200	89	45 %	200	96	48 %	15 - 110 %
Nitrobenzene-d5	100	63	63 %	100	67	67 %	30 - 130 %
2-Fluorobiphenyl	100	83	83 %	100	86	86 %	30 - 130 %
2,4,6-Tribromophenol	200	170	83 %	200	170	85 %	15 - 110 %
Terphenyl-d14	100	90	90 %	100	90	90 %	30 - 130 %

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

† Reported as sum of N-Nitrosodiphenylamine and Diphenylamine.

**Quality Control Report
Method Blank**

Category: EPA Method 8270C
QC Batch ID: SV-1821-F
Matrix: Aqueous

Instrument ID: MS-3 HP 5890
Extracted: 01-12-06 16:50
Analyzed: 01-16-06 20:28
Analyst: CMM

Page: 1 of 2

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
62-75-9	N-Nitrosodimethylamine	BRL		ug/L	5
110-86-1	Pyridine	BRL		ug/L	5
108-95-2	Phenol	BRL		ug/L	5
62-53-3	Aniline	BRL		ug/L	5
111-44-4	Bis(2-chloroethyl) ether	BRL		ug/L	5
95-57-8	2-Chlorophenol	BRL		ug/L	5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	5
100-51-6	Benzyl Alcohol	BRL		ug/L	5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	5
95-48-7	2-Methylphenol	BRL		ug/L	5
108-60-1	Bis(2-chloroisopropyl) ether	BRL		ug/L	5
108-39-4/106-44-5	3 and 4-Methylphenol *	BRL		ug/L	5
621-64-7	N-Nitrosodi-n-propylamine	BRL		ug/L	5
98-86-2	Acetophenone	BRL		ug/L	5
67-72-1	Hexachloroethane	BRL		ug/L	5
98-95-3	Nitrobenzene	BRL		ug/L	5
78-59-1	Isophorone	BRL		ug/L	5
88-75-5	2-Nitrophenol	BRL		ug/L	5
105-67-9	2,4-Dimethylphenol	BRL		ug/L	5
111-91-1	Bis(2-chloroethoxy) methane	BRL		ug/L	5
120-83-2	2,4-Dichlorophenol	BRL		ug/L	5
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	5
91-20-3	Naphthalene	BRL		ug/L	5
106-47-8	4-Chloroaniline	BRL		ug/L	5
87-68-3	Hexachlorobutadiene	BRL		ug/L	5
59-50-7	4-Chloro-3-methylphenol	BRL		ug/L	5
91-57-6	2-Methylnaphthalene	BRL		ug/L	5
77-47-4	Hexachlorocyclopentadiene	BRL		ug/L	5
88-06-2	2,4,6-Trichlorophenol	BRL		ug/L	5
95-95-4	2,4,5-Trichlorophenol	BRL		ug/L	5
91-58-7	2-Chloronaphthalene	BRL		ug/L	5
88-74-4	2-Nitroaniline	BRL		ug/L	5
100-25-4	1,4-Dinitrobenzene	BRL		ug/L	5
131-11-3	Dimethyl phthalate	BRL		ug/L	5
99-65-0	1,3-Dinitrobenzene	BRL		ug/L	5
208-96-8	Acenaphthylene	BRL		ug/L	5
606-20-2	2,6-Dinitrotoluene	BRL		ug/L	5
528-29-0	1,2-Dinitrobenzene	BRL		ug/L	5
99-09-2	3-Nitroaniline	BRL		ug/L	5

**Quality Control Report
Method Blank**

Category: EPA Method 8270C

QC Batch ID: SV-1821-F

Matrix: Aqueous

Instrument ID: MS-3 HP 5890

Extracted: 01-12-06 16:50

Analyzed: 01-16-06 20:28

Analyst: CMM

Page: 2 of 2

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
534-52-1	4,6-Dinitro-2-methylphenol	BRL		ug/L	5
86-30-6	N-Nitrosodiphenylamine [†]	BRL		ug/L	5
122-66-7	1,2-Diphenylhydrazine [°]	BRL		ug/L	5
101-55-3	4-Bromophenyl phenyl ether	BRL		ug/L	5
118-74-1	Hexachlorobenzene	BRL		ug/L	5
87-86-5	Pentachlorophenol	BRL		ug/L	5
85-01-8	Phenanthrene	BRL		ug/L	5
120-12-7	Anthracene	BRL		ug/L	5
86-74-8	Carbazole	BRL		ug/L	5
84-74-2	Di-n-butyl phthalate	BRL		ug/L	5
206-44-0	Fluoranthene	BRL		ug/L	5
129-00-0	Pyrene	BRL		ug/L	5
85-68-7	Butyl benzyl phthalate	BRL		ug/L	5
91-94-1	3,3'-Dichlorobenzidine	BRL		ug/L	5
56-55-3	Benzo[a]anthracene	BRL		ug/L	5
218-01-9	Chrysene	BRL		ug/L	5
117-81-7	Bis(2-ethylhexyl) phthalate	BRL		ug/L	5
117-84-0	Di-n-octyl phthalate	BRL		ug/L	5
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	5
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	5
50-32-8	Benzo[a]pyrene	BRL		ug/L	5
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	5
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	5
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	200	94	47 %	15 - 110 %
Phenol-d5	200	76	38 %	15 - 110 %
Nitrobenzene-d5	100	55	55 %	30 - 130 %
2-Fluorobiphenyl	100	71	71 %	30 - 130 %
2,4,6-Tribromophenol	200	150	74 %	15 - 110 %
Terphenyl-d14	100	84	84 %	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C.

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.

* Analyzed as 4-Methylphenol.

† Reported as sum of N-Nitrosodiphenylamine and Diphenylamine.

° Analyzed as Azobenzene.

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

GROUNDWATER ANALYTICAL

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P.O. Box 1200
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www.groundwateranalytical.com

January 18, 2006

Mr. Stephan Landry
Clean Soils Environmental, Ltd.
P.O. Box 591
33 Estes Street
Ipswich, MA 01938

LABORATORY REPORT AMENDMENT

Project: Ipswich Power Plant/2002.01
Lab ID: 90679
Received: 01-09-06

Dear Stephan:

Enclosed are the amended analytical results for the above referenced project.

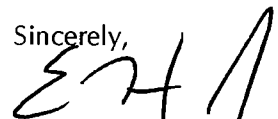
This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of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





Sample Receipt Report

Project: Ipswich Power Plant/2002.01

Client: Clean Soils Environmental, Ltd.

Lab ID: 90679

Delivery: GWA Courier

Airbill: n/a

Lab Receipt: 01-09-06

Temperature: 2.0'C

Chain of Custody: Present

Custody Seal(s): n/a

Lab ID	Field ID	Matrix	Sampled	Method				Notes
90679-1	Influent	Aqueous	1/9/06 10:30	EPA 8260B Volatile Organics with Oxygenates				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C728588	40 mL VOA Vial	Proline	BX19277	HCl	R-4601F	12-30-05	01-05-06	
C728576	40 mL VOA Vial	Proline	BX19277	HCl	R-4601F	12-30-05	01-05-06	
C728559	40 mL VOA Vial	Proline	BX19277	HCl	R-4601F	12-30-05	01-05-06	

Lab ID	Field ID	Matrix	Sampled	Method				Notes
90679-2	Influent	Aqueous	1/9/06 10:30	EPA 504.1 EDB and DBCP				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C718635	40 mL VOA Vial	Proline	BX19284	None	n/a	n/a	01-05-06	
C718623	40 mL VOA Vial	Proline	BX19284	None	n/a	n/a	01-05-06	
C718611	40 mL VOA Vial	Proline	BX19284	None	n/a	n/a	01-05-06	

Lab ID	Field ID	Matrix	Sampled	Method				Notes
90679-3	Influent	Aqueous	1/9/06 10:30	SM 3500-Cr D Hexavalent Chromium				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C719462	500 mL Plastic	Greenwood	BX19394	None	n/a	n/a	01-05-06	

Lab ID	Field ID	Matrix	Sampled	Method				Notes
90679-4	Influent	Aqueous	1/9/06 10:30	SM 4500-Cl G Total Residual Chlorine SM 2540 D Total Suspended Solids SM 4500-H+ B pH				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C719944	1 L Plastic	Greenwood Products	BX19414	None	n/a	n/a	01-05-06	

Lab ID	Field ID	Matrix	Sampled	Method				Notes
90679-5	Influent	Aqueous	1/9/06 10:30	Lachat 10-204-00-1-A (EPA 335.3) Total Cyanide				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C780112	500 mL Plastic	Proline	BX19120	NaOH	R-4387A	11-30-05	01-05-06	

Lab ID	Field ID	Matrix	Sampled	Method				Notes
90679-6	Influent	Aqueous	1/9/06 10:30	EPA 6010B Cr Fe Ni Ag As Cd Cu Zn Total EPA 7041 Antimony by GFAA Sb EPA 7421 Lead by GFAA EPA 7470A Hg Total EPA 7740 Selenium by GFAA SM 3500-CR D/ EPA 200.7				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C717350	250 mL Plastic	Greenwood	BX19194	HNO3	R-4550E	12-07-05	01-05-06	

Lab ID	Field ID	Matrix	Sampled	Method				Notes
90679-7	Influent	Aqueous	1/9/06 10:30	EPA 8270C Semivolatile Organics				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	



Sample Receipt Report (Continued)

Project: Ipswich Power Plant/2002.01

Client: Clean Soils Environmental, Ltd.

Lab ID: 90679

Delivery: GWA Courier

Airbill: n/a

Lab Receipt: 01-09-06

Temperature: 2.0'C

Chain of Custody: Present

Custody Seal(s): n/a

Lab ID	Field ID		Matrix	Sampled	Method			Notes	
90679-9	Influent		Aqueous	1/9/06 10:30	EPA 1664 Hexane Extractable Material				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C718472	1 L Amber Glass	Proline	BX19243	H2SO4	R-4746A	12-28-05	01-05-06		
C718471	1 L Amber Glass	Proline	BX19243	H2SO4	R-4746A	12-28-05	01-05-06		

Inorganic Chemistry

Field ID: Influent
Project: Ipswich Power Plant/2002.01
Client: Clean Soils Environmental, Ltd.

Matrix: Aqueous
Received: 01-09-06 18:40

Lab ID: 90679-03	Sampled: 01-09-06 10:30	Container: 500 mL Plastic					Preservation: Cool				
Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst	
Chromium, Hexavalent	BRL	mg/L	0.01	1	5 mL	01-09-06 22:14	HC-0242-W	SM 3500-Cr D	1	DDW	

Lab ID: 90679-04	Sampled: 01-09-06 10:30	Container: 1 L Plastic				Preservation: Cool					
Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst	
Solids, Total Suspended	12	mg/L	10	5	100 mL	01-10-06 11:40	TSS-1180-W	SM 2540 D	4	EB	
Chlorine, Total Residual	BRL	mg/L	0.2	1	5 mL	01-10-06 18:30	TRC-0398-W	SM 4500-Cl G	2	LJD	
pH	6.6	pH	NA	1	50 mL	01-09-06 19:53	PH-2047-W	SM 4500-H + B	3	LJD	

Lab ID: 90679-05		Sampled: 01-09-06 10:30		Container: 500 mL Plastic		Preservation: NaOH/Cool					
Analyte		Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Cyanide, Total		BRL	mg/L	0.01	1	50 mL	01-12-06 15:15	TCN-1142-W	Lachat 10-200-00-1-A (EPA 335.3)	1	DEB

Lab ID: 90679-09	Sampled: 01-09-06 10:30	Container: 1 L Amber Glass				Preservation: H2SO4/Cool					
Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst	
Oil and Grease, Total	5.7	mg/L	5.0	1	900 mL	01-17-06 09:30	HO-0202-W	EPA 1664	4	DEB	

Method Reference: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020 (Revised 1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100 (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Twentieth Edition (1998), and Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

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.

RL Reporting Limit.

DF Dilution Factor.

1 Instrument ID: Lachat 8000 Autoanalyzer

2 Instrument ID: Milton Roy Spectronic 401

3 Instrument ID: Accumet AR50

4 Instrument ID: Mettler AT 200 Balance



Project Narrative

Project: Ipswich Power Plant/2002.01
Client: Clean Soils Environmental, Ltd.

Lab ID: 90679
Received: 01-09-06 18:40

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. EPA 8260B Non-conformance: Sample 90679-01. Laboratory control sample (LCS) analyte tert-Butyl Alcohol was above recommended recovery limits for QC batch VM4-3410-W.
- 2. EPA 8270C Non-conformance: Laboratory Control Sample (LCS) had an analyte with RPD recoveries above recommended limits for QC Batch SV-1821-F.

Ref: PO Box 1905
Rt. MA 01938
508) 752-4441 • FAX (508) 752-4473
kwateran@kwater.com

CHAIN-OF-CUSTODY RECORD
AND WORK ORDER

Nº 206233

01965
01 Street
Rt. MA 01938
-356-1177
(except replicates)

TURNAROUND

☒ STANDARD (5 Business Days) 6 PM

☐ PRIORITY (3 Business Days)

☐ RUSH (RAN)
(Please specify Rush Authorization Number)

☒ Please Email to: Stephen@kwater.com

☐ Please FAX to:

BILLING

☐ Purchase Order No.: TO TOWN OF FRYBURGH

☐ Third Party Billing: DO NOT BILL

☐ GWA Check: PAID

ANALYSIS REQUEST										CHAIN-OF-CUSTODY RECORD									
Volatiles					Semi-volatiles					Residue					Receiving Laboratory				
Metals					Nutrients					Microbiology					Date/Time				
pH					Temperature					Signature					Initials				
DO					TSS					Name					Title				
BOD					COD					Address					City/State/Zip				
SOD					TOC					Phone/Fax					E-mail				
TDS					Total Hardness					Comments					Notes				
Calcium					Magnesium					Analysis Fee					Shipping Fee				
Sulfate					Chloride					Analysis Fee					Shipping Fee				
Nitrate					Nitrite					Analysis Fee					Shipping Fee				
Ammonia					Total Phosphorus					Analysis Fee					Shipping Fee				
Total Phosphorus					Dissolved Phosphorus					Analysis Fee					Shipping Fee				
Dissolved Phosphorus					Total Nitrogen					Analysis Fee					Shipping Fee				
Total Nitrogen					Dissolved Nitrogen					Analysis Fee					Shipping Fee				
Dissolved Nitrogen					Total Suspended Solids					Analysis Fee					Shipping Fee				
Total Suspended Solids					Dissolved Solids					Analysis Fee					Shipping Fee				
Dissolved Solids					Total Hardness					Analysis Fee					Shipping Fee				
Total Hardness					Dissolved Hardness					Analysis Fee					Shipping Fee				
Dissolved Hardness					Total Alkalinity					Analysis Fee					Shipping Fee				
Total Alkalinity					Dissolved Alkalinity					Analysis Fee					Shipping Fee				
Dissolved Alkalinity					Total Chloride					Analysis Fee					Shipping Fee				
Total Chloride					Dissolved Chloride					Analysis Fee					Shipping Fee				
Dissolved Chloride					Total Sulfate					Analysis Fee					Shipping Fee				
Total Sulfate					Dissolved Sulfate					Analysis Fee					Shipping Fee				
Dissolved Sulfate					Total Nitrate					Analysis Fee					Shipping Fee				
Total Nitrate					Dissolved Nitrate					Analysis Fee					Shipping Fee				
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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.

Quality Control Report
Laboratory Control Samples

Category: Inorganics
Matrix: Aqueous
Units: mg/L

Sample Type	Method	QC Batch ID	Prep Method	Prepared	Analyzed	Instrument ID	Analyst
LCS	SM 3500 Cr D	HC-0242-W	SM 3500 Cr D	1/9/2006 22:00	1/9/2006 22:26	Lachat 8000 Autoanalyzer	DDW
LCSD	SM 3500 Cr D	HC-0242-W	SM 3500 Cr D	1/9/2006 22:00	1/9/2006 22:27	Lachat 8000 Autoanalyzer	DDW

Analyte	LCS			LCS Duplicate			QC Limits			Method
	Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	LCS	RPD	
Chromium, Hexavalent	0.10	0.10	101%	0.10	0.10	97%	2 %	80-120%	30 %	SM 3500 Cr D

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and
Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111,
(1994), and 40 C.F.R. 136, Appendix C (1990).

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.



Quality Control Report
Laboratory Control Sample

Category: Inorganic Chemistry
Matrix: Aqueous

Analyte	Units	Spiked	Measured	Recovery	QC Limits	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	mg/L	93	94	101 %	80 - 120 %	01-10-06 11:40	TSS-1180-W	SM 2540 D	4	EB
Chlorine, Total Residual	mg/L	1.0	0.94	94 %	80 - 120 %	01-10-06 18:30	TRC-0398-W	SM 4500-Cl G	2	LJD
pH	pH	7.0	7.0	100 %	80 - 120 %	01-09-06 12:56	PH-2047-W	SM 4500-H + B	3	EB
Oil and Grease, Total	mg/L	40	42	106 %	78 - 114 %	01-17-06 09:30	HO-0202-W	EPA 1664	4	DEB
Cyanide, Total	mg/L	0.10	0.09	93 %	80 - 120 %	01-12-06 15:14	TCN-1142-W	Lachat 10-204-00-1-A (EPA 335 B)	1	DEB

Method Reference: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020 (Revised 1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100 (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Twentieth Edition (1998), and Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

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

- 1 Instrument ID: Lachat 8000 Autoanalyzer
- 2 Instrument ID: Milton Roy Spectronic 401
- 3 Instrument ID: Accumet AR50
- 4 Instrument ID: Mettler AT 200 Balance



Quality Control Report
Method Blank

Category: Inorganic Chemistry
Matrix: Aqueous

Analyte	Result	Units	RL	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	BRL	mg/L	2	01-10-06 11:40	TSS-1180-W	SM 2540 D	3	EB
Chlorine, Total Residual	BRL	mg/L	0.2	01-10-06 18:30	TRC-0398-W	SM 4500-Cl G	2	LJD
Chromium, Hexavalent	BRL	mg/L	0.01	01-09-06 22:26	HC-0242-W	SM 3500-Cr D	1	DDW
Oil and Grease, Total	BRL	mg/L	5	01-17-06 09:30	HO-0202-W	EPA 1664	3	DEB
Cyanide, Total	BRL	mg/L	0.01	01-12-06 15:14	TCN-1142-W	Lachat 10-204-00-1-A (EPA 335.3)	1	DEB

Method Reference: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020 (Revised 1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100 (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Twentieth Edition (1998), and Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

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.

RL Reporting Limit.

1 Instrument ID: Lachat 8000 Autoanalyzer

2 Instrument ID: Milton Roy Spectronic 401

3 Instrument ID: Mettler AT 200 Balance

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