CALIBRE

26 April 2013

Mr. Mohsen Kourehdar, P.E.
Washington State Department of Ecology
Southwest Regional Office, Toxics Cleanup Program
PO Box 47775
Olympia, WA 98504-7775

SUBJECT: Sampling event for SVOCs and Request for Site Closure
Fiberglass Debris Landfill, Hytec-Littlerock Site
Consent Decree No. 10-2-01899-6

Mohsen,

Enclosed is the Laboratory Analytical Report for the most recent sampling event at the Fiberglass Debris Landfill area of the Hytec-Littlerock Site. On April 24, 2013, CALIBRE collected groundwater samples from wells HLMW-4A and HLMW-5B. Sampling was conducted using a Waterra pump with dedicated tubing and a foot valve at HLMW-4A and submersible pump at HLMW-5B. Water quality parameters were measured during well purging at HLMW-4A and recorded at five minute intervals. Purging continued until the water quality parameters had stabilized. The final water quality parameters and depth to water measurements are presented in the attached field sample data sheets. Approximately 400 gallons of water were purged from HLMW-5B before the sample was collected.

The samples were collected and delivered to Fremont Analytical and analyzed for SVOCs under chain-of custody procedures specified in the project Quality Assurance Project Plan (QAPP). QA samples included method blank analysis (by Fremont Analytical following the applicable procedures for SVOCs) and one equipment rinseate sample (collected in the field). Both the method blank analysis and the equipment rinseate sample identified trace levels of SVOCs. All SVOCs detected (in both the blanks and field samples) are at levels less than applicable MTCA criteria.

The results from the two wells are below the MTCA cleanup level of 6 ug/L for bis (2-ethylhexyl) phthalate (see table below). Additional SVOCs detected in the samples include: benzyl butylphthalate, dibutyl phthalate, naphthalene, and phenanthrene. The concentrations of these analytes are also below their respective MTCA cleanup levels. These detections were reported as “J” flagged (noted as above the method detection limit [MDL], but below the reporting limit [RL]) or “B” flagged by the laboratory (noted as analyte detected in the associated method blank).

Four of the five SVOCs were also detected in the method blank analysis reported by the laboratory (method blank sample identification MB-4507, 4/24/13). These SVOC compounds are common laboratory contaminants at low levels and the method blank sample indicated concentrations similar to the groundwater samples for these compounds. The sampling results for these specific analytes are therefore reported as “B” flagged (for blank contamination), and non-detect (“U” flagged at an elevated reporting limit, after a 10x factor was applied to the detections observed in the method blank).

As part of the field sampling, CALIBRE also collected an equipment rinseate sample to provide a QA check on field procedures as a possible source of contamination. A total of three SVOCs (bis(2-ethylhexyl) phthalate, dibutyl phthalate, and phenanthrene) were detected in the rinseate sample (and also in the lab method blank). The detections reported in the field samples, the rinseate blank, and the method blank are of similar concentration (and all are below the respective MTCA Method B criteria). The complete laboratory analytical report is attached.

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Metro Park
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CALIBRE

Table 1 SVOCs - April 2013 Fiberglass Debris Area, Hytec-Littlerock Site

Sample ID	Bis(2-Ethylhexyl) Phthalate (µg/L)	Data quality flag
HLMW-4A	1.84	UB
HLWM-5B	1.08	UB
Equipment Rinseate	0.583	UJB
Method Blank-4507	1.5	
MTCA Method B Criteria	6	
EPA MCL	6	

Qualifiers:

J Above the method detection limit (MDL) but below the reporting limit (RL).

B Analyte detected in the associated Method Blank.

Note - When a UJB or a UB is applied (i.e., it is detected in the method blank) a 10x factor is applied to establish an elevated reporting limit (method blank detection x 10).

With this submittal, the project has completed the remedial actions and monitoring requirements in accordance with the Cleanup Action Plan (CAP) and the approved Remedial Action Work Plan. Based on the work described above we request that Ecology start a delisting process and prepare a letter confirming that the requirements of the CAP and approved Remedial Action Work Plan have been completed. If you have questions regarding this report or the site closure request, please call me at (425) 241-8449.

Sincerely,

Tom McKeon

Tom McKeon, P.E.
CALIBRE Systems, Inc.

cc:
Mike Mayberry
John Houlihan

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Metro Park
Alexandria, Virginia 22310-3252

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info@fremontanalytical.com

Calibre
Tom McKeon
16935 SE 39th St.
Bellevue, Washington 98008

RE: Hytec
Lab ID: 1304227

April 25, 2013

Attention Tom McKeon:

Fremont Analytical, Inc. received 3 sample(s) on 4/24/2013 for the analyses presented in the following report.

Semi-Volatile Organic Compounds by EPA Method 8270

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Michael Dee
Sr. Chemist / Principal

CC:
Justin Neste

Date: *04/25/2013*

CLIENT: Calibre
Project: Hytec
Lab Order: 1304227

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1304227-001	HLMW-04A-042413	04/24/2013 11:23 AM	04/24/2013 3:21 PM
1304227-002	HLMW-05B-042413	04/24/2013 12:35 PM	04/24/2013 3:21 PM
1304227-003	Equipment Rinse-042413	04/24/2013 12:50 PM	04/24/2013 3:21 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1304227**
Date: **4/25/2013**

CLIENT: Calibre
Project: Hytec

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.
Prep Comments for PREP-SEMI-W, Sample 1304227-003A: Foamy Sample

Analytical Report

WO#: **1304227**
Date Reported: **4/25/2013**

Client: Calibre
Collection Date: 4/24/2013 11:23:00 AM
Project: Hytec
Lab ID: 1304227-001
Matrix: Water
Client Sample ID: HLMW-04A-042413

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
Semi-Volatile Organic Compounds by EPA Method 8270				Batch ID: 4507		Analyst: PH
Phenol	ND	0.0111		µg/L	1	4/25/2013 12:53:00 PM
2-Chlorophenol	ND	0.0157		µg/L	1	4/25/2013 12:53:00 PM
1,3-Dichlorobenzene	ND	0.00810		µg/L	1	4/25/2013 12:53:00 PM
1,4-Dichlorobenzene	ND	0.0161		µg/L	1	4/25/2013 12:53:00 PM
1,2-Dichlorobenzene	ND	0.0151		µg/L	1	4/25/2013 12:53:00 PM
Benzyl alcohol	ND	0.0164		µg/L	1	4/25/2013 12:53:00 PM
Bis(2-chloroethyl) ether	ND	0.0161		µg/L	1	4/25/2013 12:53:00 PM
2-Methylphenol (o-cresol)	ND	0.0209		µg/L	1	4/25/2013 12:53:00 PM
Hexachloroethane	ND	0.0937		µg/L	1	4/25/2013 12:53:00 PM
N-Nitrosodi-n-propylamine	ND	0.0134		µg/L	1	4/25/2013 12:53:00 PM
Nitrobenzene	ND	0.0358		µg/L	1	4/25/2013 12:53:00 PM
Isophorone	ND	0.00837		µg/L	1	4/25/2013 12:53:00 PM
4-Methylphenol (p-cresol)	ND	0.0166		µg/L	1	4/25/2013 12:53:00 PM
2-Nitrophenol	ND	0.0194		µg/L	1	4/25/2013 12:53:00 PM
2,4-Dimethylphenol	ND	0.0101		µg/L	1	4/25/2013 12:53:00 PM
Bis(2-chloroethoxy)methane	ND	0.0136		µg/L	1	4/25/2013 12:53:00 PM
2,4-Dichlorophenol	ND	0.0167		µg/L	1	4/25/2013 12:53:00 PM
1,2,4-Trichlorobenzene	ND	0.0114		µg/L	1	4/25/2013 12:53:00 PM
Naphthalene	0.0320	0.00712	J	µg/L	1	4/25/2013 12:53:00 PM
4-Chloroaniline	ND	0.00710		µg/L	1	4/25/2013 12:53:00 PM
Hexachlorobutadiene	ND	0.0139		µg/L	1	4/25/2013 12:53:00 PM
4-Chloro-3-methylphenol	ND	0.0131		µg/L	1	4/25/2013 12:53:00 PM
2-Methylnaphthalene	ND	0.00912		µg/L	1	4/25/2013 12:53:00 PM
1-Methylnaphthalene	ND	0.00779		µg/L	1	4/25/2013 12:53:00 PM
Hexachlorocyclopentadiene	ND	0.0139		µg/L	1	4/25/2013 12:53:00 PM
2,4,6-Trichlorophenol	ND	0.0171		µg/L	1	4/25/2013 12:53:00 PM
2,4,5-Trichlorophenol	ND	0.0452		µg/L	1	4/25/2013 12:53:00 PM
2-Chloronaphthalene	ND	0.0120		µg/L	1	4/25/2013 12:53:00 PM
2-Nitroaniline	ND	0.0231		µg/L	1	4/25/2013 12:53:00 PM
Acenaphthene	ND	0.00698		µg/L	1	4/25/2013 12:53:00 PM
Dimethylphthalate	ND	0.00871		µg/L	1	4/25/2013 12:53:00 PM
2,6-Dinitrotoluene	ND	0.0118		µg/L	1	4/25/2013 12:53:00 PM
Acenaphthylene	ND	0.00933		µg/L	1	4/25/2013 12:53:00 PM
2,4-Dinitrophenol	ND	0.122		µg/L	1	4/25/2013 12:53:00 PM
Dibenzofuran	ND	0.0125		µg/L	1	4/25/2013 12:53:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1304227**
Date Reported: **4/25/2013**

Client: Calibre
Collection Date: 4/24/2013 11:23:00 AM
Project: Hytec
Lab ID: 1304227-001
Matrix: Water
Client Sample ID: HLMW-04A-042413

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
Semi-Volatile Organic Compounds by EPA Method 8270				Batch ID: 4507		Analyst: PH
2,4-Dinitrotoluene	ND	0.128		µg/L	1	4/25/2013 12:53:00 PM
4-Nitrophenol	ND	0.108		µg/L	1	4/25/2013 12:53:00 PM
Fluorene	ND	0.0105		µg/L	1	4/25/2013 12:53:00 PM
4-Chlorophenyl phenyl ether	ND	0.0183		µg/L	1	4/25/2013 12:53:00 PM
Diethylphthalate	ND	0.0381		µg/L	1	4/25/2013 12:53:00 PM
4,6-Dinitro-2-methylphenol	ND	0.0482		µg/L	1	4/25/2013 12:53:00 PM
4-Bromophenyl phenyl ether	ND	0.0210		µg/L	1	4/25/2013 12:53:00 PM
Hexachlorobenzene	ND	0.0195		µg/L	1	4/25/2013 12:53:00 PM
Pentachlorophenol	ND	0.109		µg/L	1	4/25/2013 12:53:00 PM
Phenanthrene	0.0601	0.00935	J	µg/L	1	4/25/2013 12:53:00 PM
Anthracene	ND	0.0124		µg/L	1	4/25/2013 12:53:00 PM
Carbazole	ND	0.0159		µg/L	1	4/25/2013 12:53:00 PM
Di-n-butyl phthalate	0.144	0.00339	J	µg/L	1	4/25/2013 12:53:00 PM
Fluoranthene	ND	0.00830		µg/L	1	4/25/2013 12:53:00 PM
Pyrene	ND	0.0105		µg/L	1	4/25/2013 12:53:00 PM
Benzyl Butylphthalate	0.0660	0.00930	J	µg/L	1	4/25/2013 12:53:00 PM
bis(2-Ethylhexyl)adipate	ND	0.0106		µg/L	1	4/25/2013 12:53:00 PM
Benz[a]anthracene	ND	0.00488		µg/L	1	4/25/2013 12:53:00 PM
Chrysene	ND	0.0106		µg/L	1	4/25/2013 12:53:00 PM
Bis(2-ethylhexyl) phthalate	1.84	0.00698	B	µg/L	1	4/25/2013 12:53:00 PM
Di-n-octyl phthalate	ND	0.00659		µg/L	1	4/25/2013 12:53:00 PM
Benzo (b) fluoranthene	ND	0.0187		µg/L	1	4/25/2013 12:53:00 PM
Benzo (k) fluoranthene	ND	0.0144		µg/L	1	4/25/2013 12:53:00 PM
Benzo[a]pyrene	ND	0.0126		µg/L	1	4/25/2013 12:53:00 PM
Indeno (1,2,3-cd) pyrene	ND	0.0125		µg/L	1	4/25/2013 12:53:00 PM
Dibenzo (a,h) anthracene	ND	0.0116		µg/L	1	4/25/2013 12:53:00 PM
Benzo (g,h,I) perylene	ND	0.0108		µg/L	1	4/25/2013 12:53:00 PM
Surr: 2,4,6-Tribromophenol	81.0	24-138		%REC	1	4/25/2013 12:53:00 PM
Surr: 2-Fluorobiphenyl	79.2	38.6-138		%REC	1	4/25/2013 12:53:00 PM
Surr: Nitrobenzene-d5	75.4	31.7-140		%REC	1	4/25/2013 12:53:00 PM
Surr: Phenol-d6	23.5	15-116		%REC	1	4/25/2013 12:53:00 PM
Surr: p-Terphenyl	102	49-156		%REC	1	4/25/2013 12:53:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1304227**
Date Reported: **4/25/2013**

Client: Calibre
Collection Date: 4/24/2013 12:35:00 PM
Project: Hytec
Lab ID: 1304227-002
Matrix: Water
Client Sample ID: HLMW-05B-042413

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
Semi-Volatile Organic Compounds by EPA Method 8270				Batch ID: 4507		Analyst: PH
Phenol	ND	0.0111		µg/L	1	4/25/2013 1:16:00 PM
2-Chlorophenol	ND	0.0157		µg/L	1	4/25/2013 1:16:00 PM
1,3-Dichlorobenzene	ND	0.00810		µg/L	1	4/25/2013 1:16:00 PM
1,4-Dichlorobenzene	ND	0.0161		µg/L	1	4/25/2013 1:16:00 PM
1,2-Dichlorobenzene	ND	0.0151		µg/L	1	4/25/2013 1:16:00 PM
Benzyl alcohol	ND	0.0164		µg/L	1	4/25/2013 1:16:00 PM
Bis(2-chloroethyl) ether	ND	0.0161		µg/L	1	4/25/2013 1:16:00 PM
2-Methylphenol (o-cresol)	ND	0.0209		µg/L	1	4/25/2013 1:16:00 PM
Hexachloroethane	ND	0.0937		µg/L	1	4/25/2013 1:16:00 PM
N-Nitrosodi-n-propylamine	ND	0.0134		µg/L	1	4/25/2013 1:16:00 PM
Nitrobenzene	ND	0.0358		µg/L	1	4/25/2013 1:16:00 PM
Isophorone	ND	0.00837		µg/L	1	4/25/2013 1:16:00 PM
4-Methylphenol (p-cresol)	ND	0.0166		µg/L	1	4/25/2013 1:16:00 PM
2-Nitrophenol	ND	0.0194		µg/L	1	4/25/2013 1:16:00 PM
2,4-Dimethylphenol	ND	0.0101		µg/L	1	4/25/2013 1:16:00 PM
Bis(2-chloroethoxy)methane	ND	0.0136		µg/L	1	4/25/2013 1:16:00 PM
2,4-Dichlorophenol	ND	0.0167		µg/L	1	4/25/2013 1:16:00 PM
1,2,4-Trichlorobenzene	ND	0.0114		µg/L	1	4/25/2013 1:16:00 PM
Naphthalene	ND	0.00712		µg/L	1	4/25/2013 1:16:00 PM
4-Chloroaniline	ND	0.00710		µg/L	1	4/25/2013 1:16:00 PM
Hexachlorobutadiene	ND	0.0139		µg/L	1	4/25/2013 1:16:00 PM
4-Chloro-3-methylphenol	ND	0.0131		µg/L	1	4/25/2013 1:16:00 PM
2-Methylnaphthalene	ND	0.00912		µg/L	1	4/25/2013 1:16:00 PM
1-Methylnaphthalene	ND	0.00779		µg/L	1	4/25/2013 1:16:00 PM
Hexachlorocyclopentadiene	ND	0.0139		µg/L	1	4/25/2013 1:16:00 PM
2,4,6-Trichlorophenol	ND	0.0171		µg/L	1	4/25/2013 1:16:00 PM
2,4,5-Trichlorophenol	ND	0.0452		µg/L	1	4/25/2013 1:16:00 PM
2-Chloronaphthalene	ND	0.0120		µg/L	1	4/25/2013 1:16:00 PM
2-Nitroaniline	ND	0.0231		µg/L	1	4/25/2013 1:16:00 PM
Acenaphthene	ND	0.00698		µg/L	1	4/25/2013 1:16:00 PM
Dimethylphthalate	ND	0.00871		µg/L	1	4/25/2013 1:16:00 PM
2,6-Dinitrotoluene	ND	0.0118		µg/L	1	4/25/2013 1:16:00 PM
Acenaphthylene	ND	0.00933		µg/L	1	4/25/2013 1:16:00 PM
2,4-Dinitrophenol	ND	0.122		µg/L	1	4/25/2013 1:16:00 PM
Dibenzofuran	ND	0.0125		µg/L	1	4/25/2013 1:16:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1304227**
Date Reported: **4/25/2013**

Client: Calibre
Collection Date: 4/24/2013 12:35:00 PM
Project: Hytec
Lab ID: 1304227-002
Matrix: Water
Client Sample ID: HLMW-05B-042413

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
Semi-Volatile Organic Compounds by EPA Method 8270				Batch ID: 4507		Analyst: PH
2,4-Dinitrotoluene	ND	0.128		µg/L	1	4/25/2013 1:16:00 PM
4-Nitrophenol	ND	0.108		µg/L	1	4/25/2013 1:16:00 PM
Fluorene	ND	0.0105		µg/L	1	4/25/2013 1:16:00 PM
4-Chlorophenyl phenyl ether	ND	0.0183		µg/L	1	4/25/2013 1:16:00 PM
Diethylphthalate	ND	0.0381		µg/L	1	4/25/2013 1:16:00 PM
4,6-Dinitro-2-methylphenol	ND	0.0482		µg/L	1	4/25/2013 1:16:00 PM
4-Bromophenyl phenyl ether	ND	0.0210		µg/L	1	4/25/2013 1:16:00 PM
Hexachlorobenzene	ND	0.0195		µg/L	1	4/25/2013 1:16:00 PM
Pentachlorophenol	ND	0.109		µg/L	1	4/25/2013 1:16:00 PM
Phenanthrene	0.0340	0.00935	J	µg/L	1	4/25/2013 1:16:00 PM
Anthracene	ND	0.0124		µg/L	1	4/25/2013 1:16:00 PM
Carbazole	ND	0.0159		µg/L	1	4/25/2013 1:16:00 PM
Di-n-butyl phthalate	0.0905	0.00339	J	µg/L	1	4/25/2013 1:16:00 PM
Fluoranthene	ND	0.00830		µg/L	1	4/25/2013 1:16:00 PM
Pyrene	ND	0.0105		µg/L	1	4/25/2013 1:16:00 PM
Benzyl Butylphthalate	0.0540	0.00930	J	µg/L	1	4/25/2013 1:16:00 PM
bis(2-Ethylhexyl)adipate	ND	0.0106		µg/L	1	4/25/2013 1:16:00 PM
Benz[a]anthracene	ND	0.00488		µg/L	1	4/25/2013 1:16:00 PM
Chrysene	ND	0.0106		µg/L	1	4/25/2013 1:16:00 PM
Bis(2-ethylhexyl) phthalate	1.08	0.00698	B	µg/L	1	4/25/2013 1:16:00 PM
Di-n-octyl phthalate	ND	0.00659		µg/L	1	4/25/2013 1:16:00 PM
Benzo (b) fluoranthene	ND	0.0187		µg/L	1	4/25/2013 1:16:00 PM
Benzo (k) fluoranthene	ND	0.0144		µg/L	1	4/25/2013 1:16:00 PM
Benzo[a]pyrene	ND	0.0126		µg/L	1	4/25/2013 1:16:00 PM
Indeno (1,2,3-cd) pyrene	ND	0.0125		µg/L	1	4/25/2013 1:16:00 PM
Dibenzo (a,h) anthracene	ND	0.0116		µg/L	1	4/25/2013 1:16:00 PM
Benzo (g,h,I) perylene	ND	0.0108		µg/L	1	4/25/2013 1:16:00 PM
Surr: 2,4,6-Tribromophenol	79.9	24-138		%REC	1	4/25/2013 1:16:00 PM
Surr: 2-Fluorobiphenyl	78.7	38.6-138		%REC	1	4/25/2013 1:16:00 PM
Surr: Nitrobenzene-d5	79.8	31.7-140		%REC	1	4/25/2013 1:16:00 PM
Surr: Phenol-d6	24.5	15-116		%REC	1	4/25/2013 1:16:00 PM
Surr: p-Terphenyl	99.5	49-156		%REC	1	4/25/2013 1:16:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1304227**
Date Reported: **4/25/2013**

Client: Calibre
Collection Date: 4/24/2013 12:50:00 PM
Project: Hytec
Lab ID: 1304227-003
Matrix: Water
Client Sample ID: Equipment Rinse-042413

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
Semi-Volatile Organic Compounds by EPA Method 8270				Batch ID: 4507		Analyst: PH
Phenol	ND	0.0111		µg/L	1	4/25/2013 3:32:00 PM
2-Chlorophenol	ND	0.0157		µg/L	1	4/25/2013 3:32:00 PM
1,3-Dichlorobenzene	ND	0.00810		µg/L	1	4/25/2013 3:32:00 PM
1,4-Dichlorobenzene	ND	0.0161		µg/L	1	4/25/2013 3:32:00 PM
1,2-Dichlorobenzene	ND	0.0151		µg/L	1	4/25/2013 3:32:00 PM
Benzyl alcohol	ND	0.0164		µg/L	1	4/25/2013 3:32:00 PM
Bis(2-chloroethyl) ether	ND	0.0161		µg/L	1	4/25/2013 3:32:00 PM
2-Methylphenol (o-cresol)	ND	0.0209		µg/L	1	4/25/2013 3:32:00 PM
Hexachloroethane	ND	0.0937		µg/L	1	4/25/2013 3:32:00 PM
N-Nitrosodi-n-propylamine	ND	0.0134		µg/L	1	4/25/2013 3:32:00 PM
Nitrobenzene	ND	0.0358		µg/L	1	4/25/2013 3:32:00 PM
Isophorone	ND	0.00837		µg/L	1	4/25/2013 3:32:00 PM
4-Methylphenol (p-cresol)	ND	0.0166		µg/L	1	4/25/2013 3:32:00 PM
2-Nitrophenol	ND	0.0194		µg/L	1	4/25/2013 3:32:00 PM
2,4-Dimethylphenol	ND	0.0101		µg/L	1	4/25/2013 3:32:00 PM
Bis(2-chloroethoxy)methane	ND	0.0136		µg/L	1	4/25/2013 3:32:00 PM
2,4-Dichlorophenol	ND	0.0167		µg/L	1	4/25/2013 3:32:00 PM
1,2,4-Trichlorobenzene	ND	0.0114		µg/L	1	4/25/2013 3:32:00 PM
Naphthalene	ND	0.00712		µg/L	1	4/25/2013 3:32:00 PM
4-Chloroaniline	ND	0.00710		µg/L	1	4/25/2013 3:32:00 PM
Hexachlorobutadiene	ND	0.0139		µg/L	1	4/25/2013 3:32:00 PM
4-Chloro-3-methylphenol	ND	0.0131		µg/L	1	4/25/2013 3:32:00 PM
2-Methylnaphthalene	ND	0.00912		µg/L	1	4/25/2013 3:32:00 PM
1-Methylnaphthalene	ND	0.00779		µg/L	1	4/25/2013 3:32:00 PM
Hexachlorocyclopentadiene	ND	0.0139		µg/L	1	4/25/2013 3:32:00 PM
2,4,6-Trichlorophenol	ND	0.0171		µg/L	1	4/25/2013 3:32:00 PM
2,4,5-Trichlorophenol	ND	0.0452		µg/L	1	4/25/2013 3:32:00 PM
2-Chloronaphthalene	ND	0.0120		µg/L	1	4/25/2013 3:32:00 PM
2-Nitroaniline	ND	0.0231		µg/L	1	4/25/2013 3:32:00 PM
Acenaphthene	ND	0.00698		µg/L	1	4/25/2013 3:32:00 PM
Dimethylphthalate	ND	0.00871		µg/L	1	4/25/2013 3:32:00 PM
2,6-Dinitrotoluene	ND	0.0118		µg/L	1	4/25/2013 3:32:00 PM
Acenaphthylene	ND	0.00933		µg/L	1	4/25/2013 3:32:00 PM
2,4-Dinitrophenol	ND	0.122		µg/L	1	4/25/2013 3:32:00 PM
Dibenzofuran	ND	0.0125		µg/L	1	4/25/2013 3:32:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1304227**
Date Reported: **4/25/2013**

Client: Calibre
Collection Date: 4/24/2013 12:50:00 PM
Project: Hytec
Lab ID: 1304227-003
Matrix: Water
Client Sample ID: Equipment Rinse-042413

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
Semi-Volatile Organic Compounds by EPA Method 8270				Batch ID: 4507		Analyst: PH
2,4-Dinitrotoluene	ND	0.128		µg/L	1	4/25/2013 3:32:00 PM
4-Nitrophenol	ND	0.108		µg/L	1	4/25/2013 3:32:00 PM
Fluorene	ND	0.0105		µg/L	1	4/25/2013 3:32:00 PM
4-Chlorophenyl phenyl ether	ND	0.0183		µg/L	1	4/25/2013 3:32:00 PM
Diethylphthalate	ND	0.0381		µg/L	1	4/25/2013 3:32:00 PM
4,6-Dinitro-2-methylphenol	ND	0.0482		µg/L	1	4/25/2013 3:32:00 PM
4-Bromophenyl phenyl ether	ND	0.0210		µg/L	1	4/25/2013 3:32:00 PM
Hexachlorobenzene	ND	0.0195		µg/L	1	4/25/2013 3:32:00 PM
Pentachlorophenol	ND	0.109		µg/L	1	4/25/2013 3:32:00 PM
Phenanthrene	0.0623	0.00935	J	µg/L	1	4/25/2013 3:32:00 PM
Anthracene	ND	0.0124		µg/L	1	4/25/2013 3:32:00 PM
Carbazole	ND	0.0159		µg/L	1	4/25/2013 3:32:00 PM
Di-n-butyl phthalate	0.122	0.00339	J	µg/L	1	4/25/2013 3:32:00 PM
Fluoranthene	ND	0.00830		µg/L	1	4/25/2013 3:32:00 PM
Pyrene	ND	0.0105		µg/L	1	4/25/2013 3:32:00 PM
Benzyl Butylphthalate	ND	0.00930		µg/L	1	4/25/2013 3:32:00 PM
bis(2-Ethylhexyl)adipate	ND	0.0106		µg/L	1	4/25/2013 3:32:00 PM
Benz[a]anthracene	ND	0.00488		µg/L	1	4/25/2013 3:32:00 PM
Chrysene	ND	0.0106		µg/L	1	4/25/2013 3:32:00 PM
Bis(2-ethylhexyl) phthalate	0.583	0.00698	J	µg/L	1	4/25/2013 3:32:00 PM
Di-n-octyl phthalate	ND	0.00659		µg/L	1	4/25/2013 3:32:00 PM
Benzo (b) fluoranthene	ND	0.0187		µg/L	1	4/25/2013 3:32:00 PM
Benzo (k) fluoranthene	ND	0.0144		µg/L	1	4/25/2013 3:32:00 PM
Benzo[a]pyrene	ND	0.0126		µg/L	1	4/25/2013 3:32:00 PM
Indeno (1,2,3-cd) pyrene	ND	0.0125		µg/L	1	4/25/2013 3:32:00 PM
Dibenzo (a,h) anthracene	ND	0.0116		µg/L	1	4/25/2013 3:32:00 PM
Benzo (g,h,I) perylene	ND	0.0108		µg/L	1	4/25/2013 3:32:00 PM
Surr: 2,4,6-Tribromophenol	45.3	24-138		%REC	1	4/25/2013 3:32:00 PM
Surr: 2-Fluorobiphenyl	79.9	38.6-138		%REC	1	4/25/2013 3:32:00 PM
Surr: Nitrobenzene-d5	75.7	31.7-140		%REC	1	4/25/2013 3:32:00 PM
Surr: Phenol-d6	22.6	15-116		%REC	1	4/25/2013 3:32:00 PM
Surr: p-Terphenyl	72.8	49-156		%REC	1	4/25/2013 3:32:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1304227
CLIENT: Calibre
Project: Hytec

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: **MB-4507** SampType: **MBLK** Units: **µg/L** Prep Date: **4/24/2013** RunNo: **8295**
Client ID: **MBLKW** Batch ID: **4507** Analysis Date: **4/25/2013** SeqNo: **165198**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	ND	2.00									
2-Chlorophenol	ND	1.00									
1,3-Dichlorobenzene	ND	1.00									
1,4-Dichlorobenzene	ND	1.00									
1,2-Dichlorobenzene	ND	1.00									
Benzyl alcohol	ND	1.00									
Bis(2-chloroethyl) ether	ND	2.00									
2-Methylphenol (o-cresol)	ND	1.00									
Hexachloroethane	ND	1.00									
N-Nitrosodi-n-propylamine	ND	1.00									
Nitrobenzene	ND	2.00									
Isophorone	ND	1.00									
4-Methylphenol (p-cresol)	ND	1.00									
2-Nitrophenol	ND	2.00									
2,4-Dimethylphenol	ND	1.00									
Bis(2-chloroethoxy)methane	ND	1.00									
2,4-Dichlorophenol	ND	2.00									
1,2,4-Trichlorobenzene	ND	1.00									
Naphthalene	ND	0.500									
4-Chloroaniline	ND	5.00									
Hexachlorobutadiene	ND	1.00									
4-Chloro-3-methylphenol	ND	5.00									
2-Methylnaphthalene	ND	0.500									
1-Methylnaphthalene	ND	0.500									
Hexachlorocyclopentadiene	ND	1.00									
2,4,6-Trichlorophenol	ND	2.00									
2,4,5-Trichlorophenol	ND	2.00									
2-Chloronaphthalene	ND	1.00									
2-Nitroaniline	ND	5.00									

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1304227
CLIENT: Calibre
Project: Hytec

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: **MB-4507** SampType: **MBLK** Units: **µg/L** Prep Date: **4/24/2013** RunNo: **8295**
Client ID: **MBLKW** Batch ID: **4507** Analysis Date: **4/25/2013** SeqNo: **165198**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.500									
Dimethylphthalate	ND	1.00									
2,6-Dinitrotoluene	ND	1.00									
Acenaphthylene	ND	0.500									
2,4-Dinitrophenol	ND	2.00									
Dibenzofuran	ND	1.00									
2,4-Dinitrotoluene	ND	1.00									
4-Nitrophenol	ND	5.00									
Fluorene	ND	0.500									
4-Chlorophenyl phenyl ether	ND	1.00									
Diethylphthalate	0.247	1.00									J
4,6-Dinitro-2-methylphenol	ND	5.00									
4-Bromophenyl phenyl ether	ND	1.00									
Hexachlorobenzene	ND	1.00									
Pentachlorophenol	ND	2.00									
Phenanthrene	0.0417	0.500									J
Anthracene	ND	0.500									
Carbazole	ND	5.00									
Di-n-butyl phthalate	0.0825	1.00									J
Fluoranthene	ND	0.500									
Pyrene	ND	0.500									
Benzyl Butylphthalate	0.0386	1.00									J
bis(2-Ethylhexyl)adipate	ND	1.00									
Benz[a]anthracene	ND	0.500									
Chrysene	ND	0.500									
Bis(2-ethylhexyl) phthalate	1.50	1.00									
Di-n-octyl phthalate	ND	1.00									
Benzo (b) fluoranthene	ND	0.500									
Benzo (k) fluoranthene	ND	0.500									

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1304227
CLIENT: Calibre
Project: Hytec

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: **MB-4507** SampType: **MBLK** Units: **µg/L** Prep Date: **4/24/2013** RunNo: **8295**
Client ID: **MBLKW** Batch ID: **4507** Analysis Date: **4/25/2013** SeqNo: **165198**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo[a]pyrene	ND	0.500									
Indeno (1,2,3-cd) pyrene	ND	0.500									
Dibenzo (a,h) anthracene	ND	0.500									
Benzo (g,h,I) perylene	ND	0.500									
Surr: 2,4,6-Tribromophenol	2.54		4.000		63.6	24	138				
Surr: 2-Fluorobiphenyl	1.24		2.000		61.9	38.6	138				
Surr: Nitrobenzene-d5	1.34		2.000		67.0	31.7	140				
Surr: Phenol-d6	0.865		4.000		21.6	15	116				
Surr: p-Terphenyl	1.55		2.000		77.4	49	156				

Sample ID: **LCS-4507** SampType: **LCS** Units: **µg/L** Prep Date: **4/24/2013** RunNo: **8295**
Client ID: **LCSW** Batch ID: **4507** Analysis Date: **4/25/2013** SeqNo: **165199**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	2.45	2.00	8.000	0	30.6	20	86.2				
2-Chlorophenol	5.34	1.00	8.000	0	66.8	25	112				
1,3-Dichlorobenzene	5.74	1.00	8.000	0	71.7	25	108				
1,4-Dichlorobenzene	5.66	1.00	8.000	0	70.7	25	110				
1,2-Dichlorobenzene	5.85	1.00	8.000	0	73.1	25	109				
Benzyl alcohol	4.55	1.00	8.000	0	56.8	20	96.5				
Bis(2-chloroethyl) ether	5.99	2.00	8.000	0	74.9	25	111				
2-Methylphenol (o-cresol)	4.61	1.00	8.000	0	57.6	25	101				
Hexachloroethane	5.95	1.00	8.000	0	74.4	25	109				
N-Nitrosodi-n-propylamine	6.79	1.00	8.000	0	84.9	25	122				
Nitrobenzene	6.28	2.00	8.000	0	78.5	25	110				
Isophorone	6.98	1.00	8.000	0	87.3	25	126				
4-Methylphenol (p-cresol)	4.04	1.00	8.000	0	50.5	25	113				
2-Nitrophenol	6.18	2.00	8.000	0	77.3	25	126				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1304227
CLIENT: Calibre
Project: Hytec

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: **LCS-4507** SampType: **LCS** Units: **µg/L** Prep Date: **4/24/2013** RunNo: **8295**
Client ID: **LCSW** Batch ID: **4507** Analysis Date: **4/25/2013** SeqNo: **165199**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4-Dimethylphenol	6.04	1.00	8.000	0	75.6	25	124				
Bis(2-chloroethoxy)methane	6.33	1.00	8.000	0	79.2	25	121				
2,4-Dichlorophenol	5.87	2.00	8.000	0	73.3	29.1	110				
1,2,4-Trichlorobenzene	5.92	1.00	8.000	0	74.0	25	113				
Naphthalene	6.03	0.500	8.000	0	75.3	25	115				
4-Chloroaniline	5.96	5.00	8.000	0	74.5	25	136				
Hexachlorobutadiene	5.96	1.00	8.000	0	74.5	25	111				
4-Chloro-3-methylphenol	5.59	5.00	8.000	0	69.8	32.3	122				
2-Methylnaphthalene	6.44	0.500	8.000	0	80.5	25	119				
1-Methylnaphthalene	6.22	0.500	8.000	0	77.8	25	117				
Hexachlorocyclopentadiene	4.56	1.00	8.000	0	57.0	25	125				
2,4,6-Trichlorophenol	6.99	2.00	8.000	0	87.4	25	133				
2,4,5-Trichlorophenol	6.41	2.00	8.000	0	80.1	25	125				
2-Chloronaphthalene	6.28	1.00	8.000	0	78.6	25	121				
2-Nitroaniline	6.61	5.00	8.000	0	82.7	25	121				
Acenaphthene	6.39	0.500	8.000	0	79.9	25	120				
Dimethylphthalate	7.00	1.00	8.000	0	87.4	25	133				
2,6-Dinitrotoluene	6.47	1.00	8.000	0	80.9	25	131				
Acenaphthylene	6.70	0.500	8.000	0	83.7	25	128				
2,4-Dinitrophenol	4.71	2.00	8.000	0	58.9	39.2	124				
Dibenzofuran	5.99	1.00	8.000	0	74.9	25	121				
2,4-Dinitrotoluene	6.68	1.00	8.000	0	83.6	25	132				
4-Nitrophenol	2.69	5.00	8.000	0	33.7	20	106				
Fluorene	6.42	0.500	8.000	0	80.2	25	127				
4-Chlorophenyl phenyl ether	6.10	1.00	8.000	0	76.3	25	124				
Diethylphthalate	6.38	1.00	8.000	0	79.7	31.3	142				
4,6-Dinitro-2-methylphenol	6.39	5.00	8.000	0	79.9	25	139				
4-Bromophenyl phenyl ether	6.64	1.00	8.000	0	82.9	25	130				
Hexachlorobenzene	6.33	1.00	8.000	0	79.1	29	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1304227
CLIENT: Calibre
Project: Hytec

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: **LCS-4507** SampType: **LCS** Units: **µg/L** Prep Date: **4/24/2013** RunNo: **8295**
Client ID: **LCSW** Batch ID: **4507** Analysis Date: **4/25/2013** SeqNo: **165199**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pentachlorophenol	6.47	2.00	8.000	0	80.8	20	137				
Phenanthrene	6.50	0.500	8.000	0	81.2	34	125				
Anthracene	7.14	0.500	8.000	0	89.3	27.7	134				
Carbazole	7.65	5.00	8.000	0	95.6	27.9	150				
Di-n-butyl phthalate	7.75	1.00	8.000	0	96.8	62	158				
Fluoranthene	7.74	0.500	8.000	0	96.8	34.8	143				
Pyrene	7.63	0.500	8.000	0	95.3	35.5	140				
Benzyl Butylphthalate	8.31	1.00	8.000	0	104	51.4	144				
bis(2-Ethylhexyl)adipate	8.03	1.00	8.000	0	100	51.3	144				
Benz[a]anthracene	7.78	0.500	8.000	0	97.3	27.2	132				
Chrysene	6.54	0.500	8.000	0	81.8	39.5	123				
Bis(2-ethylhexyl) phthalate	9.51	1.00	8.000	0	119	44.7	180				B
Di-n-octyl phthalate	8.54	1.00	8.000	0	107	52.8	164				
Benzo (b) fluoranthene	7.43	0.500	8.000	0	92.9	37.8	123				
Benzo (k) fluoranthene	7.16	0.500	8.000	0	89.5	25	144				
Benzo[a]pyrene	6.92	0.500	8.000	0	86.5	24.9	125				
Indeno (1,2,3-cd) pyrene	6.64	0.500	8.000	0	82.9	25	127				
Dibenzo (a,h) anthracene	6.65	0.500	8.000	0	83.1	25	132				
Benzo (g,h,I) perylene	6.13	0.500	8.000	0	76.7	25	133				
Surr: 2,4,6-Tribromophenol	3.44		4.000		86.0	24	138				
Surr: 2-Fluorobiphenyl	1.72		2.000		86.0	38.6	138				
Surr: Nitrobenzene-d5	1.86		2.000		93.1	31.7	140				
Surr: Phenol-d6	1.03		4.000		25.7	15	116				
Surr: p-Terphenyl	2.15		2.000		108	49	156				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1304227
CLIENT: Calibre
Project: Hytec

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: **1304227-002ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **4/24/2013** RunNo: **8295**
Client ID: **HLMW-05B-042413** Batch ID: **4507** Analysis Date: **4/25/2013** SeqNo: **165202**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	ND	2.00						0	0	50	
2-Chlorophenol	ND	1.00						0	0	50	
1,3-Dichlorobenzene	ND	1.00						0	0	50	
1,4-Dichlorobenzene	ND	1.00						0	0	50	
1,2-Dichlorobenzene	ND	1.00						0	0	50	
Benzyl alcohol	ND	1.00						0	0	50	
Bis(2-chloroethyl) ether	ND	2.00						0	0	50	
2-Methylphenol (o-cresol)	ND	1.00						0	0	50	
Hexachloroethane	ND	1.00						0	0	50	
N-Nitrosodi-n-propylamine	ND	1.00						0	0	50	
Nitrobenzene	ND	2.00						0	0	50	
Isophorone	ND	1.00						0	0	50	
4-Methylphenol (p-cresol)	ND	1.00						0	0	50	
2-Nitrophenol	ND	2.00						0	0	50	
2,4-Dimethylphenol	ND	1.00						0	0	50	
Bis(2-chloroethoxy)methane	ND	1.00						0	0	50	
2,4-Dichlorophenol	ND	2.00						0	0	50	
1,2,4-Trichlorobenzene	ND	1.00						0	0	50	
Naphthalene	ND	0.500						0	0	50	
4-Chloroaniline	ND	5.00						0	0	50	
Hexachlorobutadiene	ND	1.00						0	0	50	
4-Chloro-3-methylphenol	ND	5.00						0	0	50	
2-Methylnaphthalene	ND	0.500						0	0	50	
1-Methylnaphthalene	ND	0.500						0	0	50	
Hexachlorocyclopentadiene	ND	1.00						0	0	50	
2,4,6-Trichlorophenol	ND	2.00						0	0	50	
2,4,5-Trichlorophenol	ND	2.00						0	0	50	
2-Chloronaphthalene	ND	1.00						0	0	50	
2-Nitroaniline	ND	5.00						0	0	50	

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1304227
CLIENT: Calibre
Project: Hytec

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: **1304227-002ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **4/24/2013** RunNo: **8295**
Client ID: **HLMW-05B-042413** Batch ID: **4507** Analysis Date: **4/25/2013** SeqNo: **165202**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.500						0	0	50	
Dimethylphthalate	ND	1.00						0	0	50	
2,6-Dinitrotoluene	ND	1.00						0	0	50	
Acenaphthylene	ND	0.500						0	0	50	
2,4-Dinitrophenol	ND	2.00						0	0	50	
Dibenzofuran	ND	1.00						0	0	50	
2,4-Dinitrotoluene	ND	1.00						0	0	50	
4-Nitrophenol	ND	5.00						0	0	50	
Fluorene	ND	0.500						0	0	50	
4-Chlorophenyl phenyl ether	ND	1.00						0	0	50	
Diethylphthalate	ND	1.00						0	0	50	
4,6-Dinitro-2-methylphenol	ND	5.00						0	0	50	
4-Bromophenyl phenyl ether	ND	1.00						0	0	50	
Hexachlorobenzene	ND	1.00						0	0	50	
Pentachlorophenol	ND	2.00						0	0	50	
Phenanthrene	0.0662	0.500						0.03404	64.2	50	JR
Anthracene	ND	0.500						0	0	50	
Carbazole	ND	5.00						0	0	50	
Di-n-butyl phthalate	0.119	1.00						0.09050	27.1	50	J
Fluoranthene	ND	0.500						0	0	50	
Pyrene	ND	0.500						0	0	50	
Benzyl Butylphthalate	0.0808	1.00						0.05396	39.9	50	J
bis(2-Ethylhexyl)adipate	ND	1.00						0	0	50	
Benz[a]anthracene	ND	0.500						0	0	50	
Chrysene	ND	0.500						0	0	50	
Bis(2-ethylhexyl) phthalate	1.12	1.00						1.080	3.33	50	B
Di-n-octyl phthalate	ND	1.00						0	0	50	
Benzo (b) fluoranthene	ND	0.500						0	0	50	
Benzo (k) fluoranthene	ND	0.500						0	0	50	

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1304227
CLIENT: Calibre
Project: Hytec

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: **1304227-002ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **4/24/2013** RunNo: **8295**
Client ID: **HLMW-05B-042413** Batch ID: **4507** Analysis Date: **4/25/2013** SeqNo: **165202**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo[a]pyrene	ND	0.500						0	0	50	
Indeno (1,2,3-cd) pyrene	ND	0.500						0	0	50	
Dibenzo (a,h) anthracene	ND	0.500						0	0	50	
Benzo (g,h,I) perylene	ND	0.500						0	0	50	
Surr: 2,4,6-Tribromophenol	2.93		4.000		73.2	24	138		0		
Surr: 2-Fluorobiphenyl	1.34		2.000		67.0	38.6	138		0		
Surr: Nitrobenzene-d5	1.39		2.000		69.6	31.7	140		0		
Surr: Phenol-d6	0.854		4.000		21.3	15	116		0		
Surr: p-Terphenyl	1.90		2.000		95.1	49	156		0		

NOTES:
R - High RPD due to low analyte concentration. In this range, high RPD's may be expected.

Sample ID: **1304227-002AMS** SampType: **MS** Units: **µg/L** Prep Date: **4/24/2013** RunNo: **8295**
Client ID: **HLMW-05B-042413** Batch ID: **4507** Analysis Date: **4/25/2013** SeqNo: **165203**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	2.12	2.00	8.000	0	26.5	20	78.2				
2-Chlorophenol	4.63	1.00	8.000	0	57.8	25	106				
1,3-Dichlorobenzene	5.00	1.00	8.000	0	62.5	25.5	103				
1,4-Dichlorobenzene	4.94	1.00	8.000	0	61.8	25.6	104				
1,2-Dichlorobenzene	5.05	1.00	8.000	0	63.2	26.1	105				
Benzyl alcohol	3.76	1.00	8.000	0	47.0	20	96.8				
Bis(2-chloroethyl) ether	5.26	2.00	8.000	0	65.7	25	110				
2-Methylphenol (o-cresol)	3.77	1.00	8.000	0	47.2	25.1	95.8				
Hexachloroethane	5.10	1.00	8.000	0	63.7	25	106				
N-Nitrosodi-n-propylamine	5.81	1.00	8.000	0	72.7	25.5	116				
Nitrobenzene	5.41	2.00	8.000	0	67.6	30.5	105				
Isophorone	5.76	1.00	8.000	0	72.1	25	121				
4-Methylphenol (p-cresol)	3.45	1.00	8.000	0	43.1	25	106				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1304227
CLIENT: Calibre
Project: Hytec

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: **1304227-002AMS** SampType: **MS** Units: **µg/L** Prep Date: **4/24/2013** RunNo: **8295**
Client ID: **HLMW-05B-042413** Batch ID: **4507** Analysis Date: **4/25/2013** SeqNo: **165203**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Nitrophenol	5.26	2.00	8.000	0	65.7	25	123				
2,4-Dimethylphenol	4.82	1.00	8.000	0	60.3	25	123				
Bis(2-chloroethoxy)methane	5.40	1.00	8.000	0	67.4	25.4	116				
2,4-Dichlorophenol	4.70	2.00	8.000	0	58.7	34.3	110				
1,2,4-Trichlorobenzene	5.10	1.00	8.000	0	63.8	25	110				
Naphthalene	5.25	0.500	8.000	0	65.6	25	131				
4-Chloroaniline	5.04	5.00	8.000	0	63.1	25	130				
Hexachlorobutadiene	4.87	1.00	8.000	0	60.8	25	105				
4-Chloro-3-methylphenol	4.84	5.00	8.000	0	60.5	36.3	120				
2-Methylnaphthalene	5.46	0.500	8.000	0	68.3	25	119				
1-Methylnaphthalene	5.35	0.500	8.000	0	66.8	25.3	117				
Hexachlorocyclopentadiene	4.35	1.00	8.000	0	54.3	25	114				
2,4,6-Trichlorophenol	5.27	2.00	8.000	0	65.9	25	131				
2,4,5-Trichlorophenol	5.57	2.00	8.000	0	69.7	25	122				
2-Chloronaphthalene	5.39	1.00	8.000	0	67.4	27.3	115				
2-Nitroaniline	5.63	5.00	8.000	0	70.3	27.9	114				
Acenaphthene	5.42	0.500	8.000	0	67.8	25	136				
Dimethylphthalate	6.20	1.00	8.000	0	77.5	31	128				
2,6-Dinitrotoluene	5.74	1.00	8.000	0	71.7	26.9	125				
Acenaphthylene	5.82	0.500	8.000	0	72.8	26.8	122				
2,4-Dinitrophenol	4.95	2.00	8.000	0	61.9	25	148				
Dibenzofuran	5.38	1.00	8.000	0	67.3	27.8	116				
2,4-Dinitrotoluene	6.13	1.00	8.000	0	76.6	25	123				
4-Nitrophenol	2.27	5.00	8.000	0	28.4	20	109				
Fluorene	5.80	0.500	8.000	0	72.5	25	131				
4-Chlorophenyl phenyl ether	5.36	1.00	8.000	0	67.1	28.9	119				
Diethylphthalate	6.03	1.00	8.000	0	75.3	36.6	136				
4,6-Dinitro-2-methylphenol	5.71	5.00	8.000	0	71.4	25	136				
4-Bromophenyl phenyl ether	6.17	1.00	8.000	0	77.2	30.2	124				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1304227
CLIENT: Calibre
Project: Hytec

QC SUMMARY REPORT

Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: **1304227-002AMS** SampType: **MS** Units: **µg/L** Prep Date: **4/24/2013** RunNo: **8295**
Client ID: **HLMW-05B-042413** Batch ID: **4507** Analysis Date: **4/25/2013** SeqNo: **165203**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexachlorobenzene	5.84	1.00	8.000	0	73.1	34.6	114				
Pentachlorophenol	6.57	2.00	8.000	0	82.2	25	145				
Phenanthrene	6.01	0.500	8.000	0.03404	74.7	26	139				
Anthracene	6.49	0.500	8.000	0	81.1	34.5	129				
Carbazole	7.12	5.00	8.000	0	89.0	36.7	143				
Di-n-butyl phthalate	6.98	1.00	8.000	0.09050	86.2	39.7	149				
Fluoranthene	7.15	0.500	8.000	0	89.4	39.3	141				
Pyrene	6.97	0.500	8.000	0	87.2	40.9	137				
Benzyl Butylphthalate	7.57	1.00	8.000	0.05396	93.9	50.5	139				
bis(2-Ethylhexyl)adipate	7.09	1.00	8.000	0	88.7	36.6	145				
Benz[a]anthracene	7.14	0.500	8.000	0	89.3	34.2	124				
Chrysene	6.14	0.500	8.000	0	76.7	44.6	116				
Bis(2-ethylhexyl) phthalate	8.07	1.00	8.000	1.080	87.3	39.9	143				B
Di-n-octyl phthalate	7.71	1.00	8.000	0	96.3	37.5	163				
Benzo (b) fluoranthene	6.53	0.500	8.000	0	81.6	40.7	116				
Benzo (k) fluoranthene	6.84	0.500	8.000	0	85.5	25.5	135				
Benzo[a]pyrene	6.44	0.500	8.000	0	80.5	25	120				
Indeno (1,2,3-cd) pyrene	6.36	0.500	8.000	0	79.5	25	121				
Dibenzo (a,h) anthracene	6.28	0.500	8.000	0	78.6	25	125				
Benzo (g,h,I) perylene	6.08	0.500	8.000	0	76.0	25	124				
Surr: 2,4,6-Tribromophenol	3.15		4.000		78.7	24	138				
Surr: 2-Fluorobiphenyl	1.38		2.000		68.8	38.6	138				
Surr: Nitrobenzene-d5	1.41		2.000		70.5	31.7	140				
Surr: Phenol-d6	0.823		4.000		20.6	15	116				
Surr: p-Terphenyl	1.88		2.000		93.9	49	156				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Sample Log-In Check List

Client Name: **CLBRE**	Work Order Number: **1304227**
Logged by: **Clare Griggs**	Date Received: **4/24/2013 3:21:00 PM**

Chain of Custody

1.	Were custodial seals present?	Yes	☐	No	☐	Not Required	☑
2.	Is Chain of Custody complete?	Yes	☑	No	☐	Not Present	☐
3.	How was the sample delivered?	Client					

Log In

4.	Coolers are present?	Yes	☑	No	☐	NA	☐
5.	Was an attempt made to cool the samples?	Yes	☑	No	☐	NA	☐
6.	Were all coolers received at a temperature of >0° C to 10.0°C	Yes	☑	No	☐	NA	☐
7.	Sample(s) in proper container(s)?	Yes	☑	No	☐		
8.	Sufficient sample volume for indicated test(s)?	Yes	☑	No	☐		
9.	Are samples properly preserved?	Yes	☑	No	☐		
10.	Was preservative added to bottles?	Yes	☐	No	☑	NA	☐
11.	Is there headspace present in VOA vials?	Yes	☐	No	☑	NA	☐
12.	Did all sample containers arrive in good condition?(unbroken)	Yes	☑	No	☐		
13.	Does paperwork match bottle labels?	Yes	☑	No	☐		
14.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No	☐		
15.	Is it clear what analyses were requested?	Yes	☑	No	☐		
16.	Were all holding times able to be met?	Yes	☑	No	☐		

Special Handling (if applicable)

17.	Was client notified of all discrepancies with this order?	Yes	☐	No	☐	NA	☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

18. Additional remarks/Disrepancies

Item Information

Item #	Temp ºC	Condition
Cooler	5.9	Good
Temp Blank	8.1	Good

Chain of Custody Record

Fremont Analytical

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1304227

Date: 4/24/13

Page: 1 of: 1

Client: CALIBRE
Address:
City, State, Zip
Tel:

Project Name: Hytec
Location: Hytec
Collected by: J Nesbit C Gallagher

Reports To (PM): TomMcKeon
Fax:
Email: tom.mckeon@calibresys.com
Project No: K0308000

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)	VOC (EPA 8260)	GX/BTEX by EPA 8021b	BTEX by 8260	Gasoline Range Organics	HydroCarbon Identification (HCID)	Diesel/Heavy Oil Range Organics	SEMI VOL (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Cl Pesticides (EPA 8081)	Cl Herbicides (EPA 8151A)	Metals* (6020 / 200.8)	Total (T) | Dissolved (D)	Anions (IC)**	Comments/Depth
1	HLMW-04A-042413	4/24/13	1123	GW							X								
2	HLMW-05B-042413	4/24/13	1235	GW							X								MS/MSD
3	Equipment Rinse-042413	4/24/13	1250	W							X								
4																			
5																			
6																			
7																			
8																			
9																			
10																			

*Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

**Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Special Remarks:
1 Jar from each sample
Hold for Analysis
cc Justin Nesbit

Relinquished	Date/Time	Received	Date/Time
x	4/24/13 1521	x	4/24/13 3:21 pm
Relinquished	Date/Time	Received	Date/Time
x		x	

TAT --> (Next Day) 2 Day 3 Day STD

Distribution: White - Lab, Yellow - File, Pink - Originator

www.fremontanalytical.com

Well Sampling Data Sheet

Date	4/24/2013	Site Location	Hytec
Samplers	JN + CG	Well ID	HLMW-04A
Casing Material	PVC	Constructed Depth	30.5'
Casing Diameter	2"	Condition of Well	Good

Field Measurements:

Time	1055	Depth Measured From:	
Depth to Water	21.31		Top of access port
		X	Mark on PVC casing
			Mark of protective casing
			Other

Purging Information:

Pump:		Dedicated		Non-dedicated			
Bailer:		PVC		Stainless Steel		Other:	
Purge Start Time			Purge End Time				
Approximate Gallons Purged							

Water Monitoring Conditions:

Time	1103	1108	1113	1118	1123		
pH	4.60	5.12	5.01	4.86	4.76		
Conductivity	0.192	0.057	0.052	0.051	0.049		
Turbidity	328	62.7	31.4	27.6	26.0		
D.O.	7.01	6.52	6.47	6.36	6.57		
Temperature	10.62	9.65	9.53	9.55	9.47		
ORP	247	239	251	263	268		
Purge Rate	—	—	—	—	—		
Gallons Purged	0	1.0	2.0	3.0	4.0		

Sampling Data:

Time	1123	Sample ID	HLMW-04A-042413
pH	4.76	Duplicates	
Conductivity	0.049	QA/QC Volumes	
Turbidity	26.0		
D.O.	6.57		
Temperature	9.47		
ORP	268		

Sampling Device:

PVC Bailer		SS Bailer		Dedicated Pump		Teflon Bailer	

Analyses to be Performed:

Volatile Organics		VOCs 8260B	SVOCs by 8270C	X	Sulfate 375.2		
Total Metals		RCRA 8 or Priority Pollutants	SVOCs by 8270C/SIM		RSK-175 (methane, ethane, ethene)		
Dissolved Metals			Total Organic Carbon 415.1		Other		

Sampling Notes:

Sampled at 1123

Well Diameter	Well Volume (Gal/ft)
1 inch	0.041
2 inch	0.163
4 inch	0.653
6 inch	1.469

Or:(total depth(ft) - DTW(ft)) x Well Dia^2 x 0.0408 = 1 Well Volume

Well Sampling Data Sheet

Date	4 / 24 /2013	Site Location	Hytec
Samplers	JN + CG	Well ID	HLMW-05B
Casing Material	Steel	Constructed Depth	241'
Casing Diameter	6"-4"	Condition of Well	good

Field Measurements:

Time	0730	Depth Measured From:	
Depth to Water	33.71	X	Top of access port
			Mark on PVC casing
			Mark of protective casing
			Other

Purging Information:

Pump:		Dedicated	X	Non-dedicated	2" grundfos pump from INW	
Bailer:		PVC		Stainless Steel		Other:
Purge Start Time	0755	Purge End Time	1235			
Approximate Gallons Purged	300gal				~3 gpm purge rate w/ Grundfos	

Water Monitoring Conditions:

Time							
pH							
Conductivity							
Turbidity							
D.O.							
Temperature							
ORP							
Purge Rate							
Gallons Purged							

Sampling Data:

Time	1235	Sample ID	HLMW-05B-042413
pH		Duplicates	
Conductivity		QA/QC Volumes	MS/MSD @ 1235
Turbidity			
D.O.			
Temperature			
ORP			

Sampling Device:

PVC Bailer		SS Bailer		Dedicated Pump		Teflon Bailer	

Analyses to be Performed:

Volatile Organics		VOCs 8260B	SVOCs by 8270C	X	Sulfate 375.2	
Total Metals		RCRA 8 or Priority Pollutants	SVOCs by 8270C/SIM		RSK-175 (methane, ethane, ethene)	
Dissolved Metals			Total Organic Carbon 415.1		Other	

Sampling Notes:

equipment Rinsate sample taken @ 1200

Sample @ 1235

Well Diameter	Well Volume (Gal/ft)
1 inch	0.041
2 inch	0.163
4 inch	0.653
6 inch	1.469

Or:(total depth(ft) - DTW(ft)) x Well Dia^2 x 0.0408 = 1 Well Volume