**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**Region 1**
**5 Post Office Square, Suite 100**
**BOSTON, MA 02109-3912**

**CERTIFIED MAIL RETURN RECEIPT REQUESTED**

FEB 28 2012

Denise Bartone
CDW Consultants, Inc.
Project Manager
40 Speen Street, Suite 301
Framingham, MA 01701

Re: Authorization to discharge under the Remediation General Permit (RGP) – MAG910000. Lewcott Corporation (d.b.a. Barrday Composite Solutions) site located at 86 Providence Road, Millbury, MA 01527, Worcester County; Authorization # MAG910521

Dear Ms. Bartone:

Based on the review of a Notice of Intent (NOI) submitted on behalf of d.b.a. Barray Composite Solutions by the firm CDW Consultants Inc., for the site referenced above, the U.S. Environmental Protection Agency (EPA) hereby authorizes you, as the named Operator, to discharge in accordance with the provisions of the RGP at that site. Your authorization number is listed above.

The checklist enclosed with this RGP authorization indicates the pollutants which you are required to monitor. Also indicated on the checklist are the effluent limits, test methods and minimum levels (MLs) for each pollutant. Please note that the checklist does not represent the complete requirements of the RGP. Operators must comply with all of the applicable requirements of this permit, including influent and effluent monitoring, narrative water quality standards, record keeping, and reporting requirements, found in Parts I and II, and Appendices I – VIII of the RGP. See EPA's website for the complete RGP and other information at: http://www.epa.gov/region1/npdes/mass.html#dgp.

Please note the enclosed checklist includes parameters that exceeded Appendix III limits. The checklist also includes other parameters for total phthalates which your laboratory reports indicated there was insufficient sensitivity to detect these parameters at the minimum levels established in Appendix VI of the RGP.

Also, please note that the metal iron included on the checklist is a dilution dependent pollutant and therefore is subject to limitations based on a dilution factor range (DFR). Due to the ample dilution at the point of discharge (763) the DFR applicable for this pollutant is greater than the maximum value of one hundred (>100) DFR established in

the RGP. (See the RGP Appendix IV for Massachusetts facilities). Therefore, the limit for iron of 5,000 ug/L shall not be exceeded in the discharge.

Finally, please note the checklist of pollutants attached to this authorization is subject to a recertification if the operations at the site result in a discharge lasting longer than six months. A recertification can be submitted to EPA within six (6) to twelve (12) months of operations in accordance with the 2010 RGP regulations.

This general permit and authorization to discharge will expire on September 9, 2015. You have reported that this project will terminate on February 20, 2013. If for any reason the discharge terminates sooner you are required to submit a Notice of Termination (NOT) to the attention of the contact person indicated below within 30 days of project completion.

Thank you in advance for your cooperation in this matter. Please contact Victor Alvarez at 617-918-1572 or Alvarez.Victor@epa.gov, if you have any questions.

Sincerely,

for David M. Webster, Chief
Industrial Permits Branch

Enclosure

cc: Kathleen Keohane, MassDEP
Robert D. McNeil III, Millbuy DPW

**2010 Remediation General Permit**
**Summary of Monitoring Parameters[1]**

| | |
|---|---|
| **NPDES Authorization Number:** | **MAG910521** |
| Authorization Issued: | February, 2012 |
| Facility/Site Name: | Lewcott Corporation (dba Barrday Solutions) |
| Facility/Site Address: | 86 Providence Road, Millbury, MA 01527 |
| | Email address of owner: Not Provided |
| Legal Name of Operator: | CDW Consultants Inc. |
| Operator contact name, title, and Address: | Denise Bartone, Project Manager, 40 Speen Street, Suite 301, Framingham, MA 01701 |
| | Email: dbartone@cdconsultants.com |
| Estimated Date of Completion: | February 20, 2013 |
| Category and Sub-Category: | Category III. Volatile Organic Compound (VOC) Only Sites |
| RGP Termination Date: | September 9, 2015 |
| Receiving Water: | Blackstone River |
| | |

**Monitoring & Limits are applicable if checked. All samples are to be collected as grab samples**

| | **Parameter** | **Effluent Limit/Method#/ML** (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit) |
|---|---|---|
| | 1. Total Suspended Solids (TSS) | 30 milligrams/liter (mg/L) **, 50 mg/L for hydrostatic testing **, Me#60.2/ML5ug/L |
| | 2. Total Residual Chlorine (TRC) [1] | Freshwater = 11 ug/L ** Saltwater = 7.5 ug/L **/ Me#330.5/ML 20ug/L |
| | 3. Total Petroleum Hydrocarbons (TPH) | 5.0 mg/L/ Me# 1664A/ML 5.0mg/L |
| | 4. Cyanide (CN) [2, 3] | Freshwater = 5.2 ug/l ** Saltwater = 1.0 ug/L **/ Me#335.4/ML 10ug/L |
| | 5. Benzene (B) | 5ug/L /50.0 ug/L for hydrostatic testing only/ Me#8260C/ML 2 ug/L |
| | 6. Toluene (T) | (limited as ug/L total BTEX)/ Me#8260C/ ML 2ug/L |
| | 7. Ethylbenzene (E) | (limited as ug/L total BTEX) Me#8260C/ ML 2ug/L |
| | 8. (m,p,o) Xylenes (X) | (limited as ug/L total BTEX) Me#8260C/ ML 2ug/L |
| | 9. Total Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX) [4] | 100 ug/L/ Me#8260C/ ML 2ug/L |

| | Parameter | Effluent Limit/Method#/ML (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit) |
|---|---|---|
| | 10. Ethylene Dibromide (EDB) (1,2- Dibromoethane) | 0.05 ug/l/ Me#8260C/ ML 10ug/L |
| | 11. Methyl-tert-Butyl Ether (MtBE) | 70.0 ug/l/Me#8260C/ML 10ug/L |
| | 12.tert-Butyl Alcohol (TBA) (TertiaryButanol) | Monitor Only(ug/L)/Me#8260C/ML 10ug/L |
| | 13. tert-Amyl Methyl Ether (TAME) | Monitor Only(ug/L)/Me#8260C/ML 10ug/L |
| | 14. Naphthalene [5] | 20 ug/L /Me#8260C/ML 2ug/L |
| | 15. Carbon Tetrachloride | 4.4 ug/L /Me#8260C/ ML 5ug/L |
| | 16. 1,2 Dichlorobenzene (o-DCB) | 600 ug/L /Me#8260C/ ML 5ug/L |
| | 17. 1,3 Dichlorobenzene (m-DCB) | 320 ug/L /Me#8260C/ ML 5ug/L |
| | 18. 1,4 Dichlorobenzene (p-DCB) | 5.0 ug/L /Me#8260C/ ML 5ug/L |
| | 18a. Total dichlorobenzene | 763 ug/L - NH only /Me#8260C/ ML 5ug/L |
| | 19. 1,1 Dichloroethane (DCA) | 70 ug/L /Me#8260C/ ML 5ug/L |
| | 20. 1,2 Dichloroethane (DCA) | 5.0 ug/L /Me#8260C/ ML 5ug/L |
| | 21. 1,1 Dichloroethene (DCE) | 3.2 ug/L/Me#8260C/ ML 5ug/L |
| | 22. cis-1,2 Dichloroethene (DCE) | 70 ug/L/Me#8260C/ ML 5ug/L |
| | 23. Methylene Chloride | 4.6 ug/L/Me#8260C/ ML 5ug/L |
| | 24. Tetrachloroethene (PCE) | 5.0 ug/L/Me#8260C/ ML 5ug/L |
| | 25. 1,1,1 Trichloro-ethane (TCA) | 200 ug/L/Me#8260C/ ML 5ug/L |
| | 26. 1,1,2 Trichloro-ethane (TCA) | 5.0 ug/L /Me#8260C/ ML 5ug/L |
| | 27. Trichloroethene (TCE) | 5.0 ug/L /Me#8260C/ ML 5ug/L |
| | 28. Vinyl Chloride (Chloroethene) | 2.0 ug/L /Me#8260C/ ML 5ug/L |
| | 29. Acetone | Monitor Only(ug/L)/Me#8260C/ML 50ug/L |
| | 30. 1,4 Dioxane | Monitor Only /Me#1624C/ML 50ug/L |
| | 31. Total Phenols | 300 ug/L Me#420.1&420.2/ML 2 ug/L/ Me# 420.4 /ML 50ug/L |
| | 32. Pentachlorophenol (PCP) | 1.0 ug/L /Me#8270D/ML 5ug/L,Me#604 &625/ML 10ug/L |
| | 33. Total Phthalates (Phthalate esters) [6] | 3.0 ug/L ** /Me#8270D/ML 5ug/L, Me#606/ML 10ug/L& Me#625/ML 5ug/L |
| √ | 34. Bis (2-Ethylhexyl) Phthalate [Di- (ethylhexyl) Phthalate] | 6.0 ug/L /Me#8270D/ML 5ug/L,Me#606/ML 10ug/L & Me#625/ML 5ug/L |
| | 35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH) | 10.0 ug/L |
| | a. Benzo(a) Anthracene [7] | 0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L |

| | Parameter | Effluent Limit/Method#/ML (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit) |
|---|---|---|
| | b. Benzo(a) Pyrene [7] | 0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L |
| | c. Benzo(b)Fluoranthene [7] | 0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L |
| | d. Benzo(k)Fluoranthene [7] | 0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L |
| | e. Chrysene [7] | 0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L |
| | f. Dibenzo(a,h)anthracene [7] | 0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L |
| | g. Indeno(1,2,3-cd) Pyrene [7] | 0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML5ug/L |
| | 36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH) | 100 ug/L |
| | h. Acenaphthene | X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L |
| | i. Acenaphthylene | X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L |
| | j. Anthracene | X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L |
| | k. Benzo(ghi) Perylene | X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L |
| | l. Fluoranthene | X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L |
| | m. Fluorene | X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L |
| | n. Naphthalene [5] | 20 ug/l / Me#8270/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L |
| | o. Phenanthrene | X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L |
| | p. Pyrene | X/Me#8270D/ML5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L |
| | 37. Total Polychlorinated Biphenyls (PCBs) [8, 9] | 0.000064 ug/L/Me# 608/ ML 0.5 ug/L |
| √ | 38. Chloride | Monitor only/Me# 300.0/ ML 0.1ug/L |

| | Metal parameter | Total Recoverable Metal Limit @ H [10]= 50 mg/l CaCO3 for discharges in Massachusetts (ug/l) [11/12] | | Minimum level=ML | |
|---|---|---|---|---|---|
| | | Freshwater | | | |
| | 39. Antimony | 5.6/ML 10 | | | |
| | 40. Arsenic ** | 10/ML20 | | | |

| | Metal parameter | Total Recoverable Metal Limit @ H [10]= 50 mg/l CaCO3 for discharges in Massachusetts (ug/l) [11/12] | | Minimum level=ML | |
|---|---|---|---|---|---|
| | | Freshwater | | | |
| | 41. Cadmium ** | 0.2/ML10 | | | |
| | 42. Chromium III (trivalent) ** | 48.8/ML15 | | | |
| | 43. Chromium VI (hexavalent) ** | 11.4/ML10 | | | |
| | 44. Copper ** | 5.2/ML15 | | | |
| | 45. Lead ** | 1.3/ML20 | | | |
| | 46. Mercury ** | 0.9/ML0.2 | | | |
| | 47. Nickel ** | 29/ML20 | | | |
| | 48. Selenium ** | 5/ML20 | | | |
| | 49. Silver | 1.2/ML10 | | | |
| | 50. Zinc ** | 66.6/ML15 | | | |
| √ | 51. Iron | 5,000/ML 20 | | | |

| | Other Parameters | Limit |
|---|---|---|
| √ | 52. Instantaneous Flow | Site specific in CFS |
| √ | 53. Total Flow | Site specific in CFS |
| √ | 54. pH Range for Class A & Class B Waters in MA | 6.5-8.3; 1/Month/Grab[13] |
| | 55. pH Range for Class SA & Class SB Waters in MA | 6.5-8.3; 1/Month/Grab[13] |
| | 56. pH Range for Class B Waters in NH | 6.5-8; 1/Month/Grab[13] |
| | 57. Daily maximum temperature - Warm water fisheries | 83°F; 1/Month/Grab[14] |
| | 58. Daily maximum temperature - Cold water fisheries | 68°F; 1/Month/Grab[14] |
| | 59. Maximum Change in Temperature in MA - Any Class A water body | 1.5°F; 1/Month/Grab[14] |
| | 60. Maximum Change in Temperature in MA - Any Class B water body- Warm Water | 5°F; 1/Month/Grab[14] |
| | 61. Maximum Change in Temperature in MA – Any Class B water body - Cold water and Lakes/Ponds | 3°F; 1/Month/Grab[14] |
| | 62. Maximum Change in Temperature in MA – Any Class SA water body - Coastal | 1.5°F; 1/Month/Grab[14] |
| | 63. Maximum Change in Temperature in MA – Any Class SB water body - July to September | 1.5°F; 1/Month/Grab[14] |
| | 64. Maximum Change in Temperature in MA –Any Class SB water body - October to June | 4°F; 1/Month/Grab[14] |
| | | |

Footnotes:

[1] Although the maximum values for TRC are 11ug/l and 7.5 ug/l for freshwater, and saltwater respectively, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., Method 330.5, 20 ug/l).

[2] Limits for cyanide are based on EPA's water quality criteria expressed as micrograms per liter. There is currently no EPA approved test method for free cyanide. Therefore, total cyanide must be reported.
[3] Although the maximum values for cyanide are 5.2 ug/l and 1.0 ug/l for freshwater and saltwater, respectively, the compliance limits are equal to the minimum level (ML) of the Method 335.4 as listed in Appendix VI (i.e., 10 ug/l).
[4] BTEX = sum of Benzene, Toluene, Ethylbenzene, and total Xylenes.
[5] Naphthalene can be reported as both a purgeable (VOC) and extractable (SVOC) organic compound. If both VOC and SVOC are analyzed, the highest value must be used unless the QC criteria for one of the analyses is not met. In such cases, the value from the analysis meeting the QC criteria must be used.
[6] The sum of individual phthalate compounds(not including the #34, Bis (2-Ethylhexyl) Phthalate . The compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.
*Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measurement of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.*
[7] Although the maximum value for the individual PAH compounds is 0.0038 ug/l, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.
[8] In the November 2002 WQC, EPA has revised the definition of Total PCBs for aquatic life as total PCBs is the sum of all homologue, all isomer, all congener, or all "Oroclor analyses."Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measure of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.
[9]Although the maximum value for total PCBs is 0.000064 ug/l, the compliance limit is equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., 0.5 ug/l for Method 608 or 0.00005 ug/l when Method 1668a is approved).
[10] Hardness. Cadmium, Chromium III, Copper, Lead, Nickel, Silver, and Zinc are Hardness Dependent.
[11] For a Dilution Factor (DF) from 1 to 5, metals limits are calculated using DF times the base limit for the metal. See Appendix IV. For example, iron limits are calculated using DF x 1,000ug/L (the iron base limit). Therefore DF is 1.5, the iron limit will be 1,500 ug/L; DF 2, then iron limit =1,000 x 2 =2,000 ug/L., etc. not to exceed the DF=5.
[12] Minimum Level (ML) is the lowest level at which the analytical system gives a recognizable signal and acceptable calibration point for the analyte. The ML represents the lowest concentration at which an analyte can be measured with a known level of confidence. The ML is calculated by multiplying the laboratory-determined method detection limit by 3.18 (see 40 CFR Part 136, Appendix B).
[13] pH sampling for compliance with permit limits may be performed using field methods as provided for in EPA test Method 150.1.
[14] Temperature sampling per Method 170.1

## B. Suggested Form for Notice of Intent (NOI) for the Remediation General Permit

**1. General facility/site information.** Please provide the following information about the site:

| | | | | |
|---|---|---|---|---|
| a) Name of **facility/site**: Lewcott Corp (dba Barrday) | | **Facility/site** mailing address: | | |
| Location of **facility/site**: longitude: -071.742121 latitude: 42.185187 | Facility SIC code(s): 2295,2821,3295 | Street: 86 Providence Road | | |
| b) Name of **facility/site owner:** | | Town: Millbury | | |
| Email address of facility/site owner: | | State: Massachusetts | Zip: 01527 | County: Worcester |
| Telephone no. of facility/site **owner**: 508-581-2100 | | | | |
| Fax no. of facility/site **owner**: 508-865-5461 | | **Owner** is (check one): 1. Federal ○ 2. State/Tribal ○ 3. Private ◉ 4. Other ○ if so, describe: | | |
| Address of **owner** (if different from site): | | | | |
| Street: | | | | |
| Town: | State: | Zip: | County: | |
| c) Legal name of **operator**: | **Operator** telephone no: 508-875-2657 | | | |
| CDW Consultants Inc. | **Operator** fax no.: 508-875-6617 | **Operator** email: dbartone@cdwconsultants.com | | |
| **Operator** contact name and title: Denise Bartone, Project Manager | | | | |
| Address of **operator** (if different from owner): | Street: 40 Speen Street, Suite 301 | | | |
| Town: Framingham | State: MA | Zip: 01701 | County: Middlesex | |

d) Check Y for "yes" or N for "no" for the following:
1. Has a prior NPDES permit exclusion been granted for the discharge? Y ○ N ◉, if Y, number:
2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge?
Y ○ N ◉, if Y, date and tracking #:
3. Is the discharge a "new discharge" as defined by 40 CFR 122.2? Y ◉ N ○
4. For sites in Massachusetts, is the discharge covered under the Massachusetts Contingency Plan (MCP) and exempt from state permitting? Y ◉ N ○

e) Is site/facility subject to any State permitting, license, or other action which is causing the generation of discharge? Y ◉ N ○
If Y, please list:
1. site identification # assigned by the state of NH or MA: RTN 2-18481
2. permit or license # assigned:
3. state agency contact information: name, location, and telephone number:

Nicholas Child, Section Chief, BWSC, MADEP-CERO
508-792-7650

f) Is the site/facility covered by any other EPA permit, including:
1. Multi-Sector General Permit? Y ◉ N ○,
if Y, number: MAG250000
2. Final Dewatering General Permit? Y ○ N ◉,
if Y, number:
3. EPA Construction General Permit? Y ○ N ◉,
if Y, number:
4. Individual NPDES permit? Y ○ N ◉,
if Y, number:
5. any other water quality related individual or general permit? Y ○ N ◉, if Y, number:

g) Is the site/facility located within or does it discharge to an Area of Critical Environmental Concern (ACEC)? Y ○ N ◉

h) Based on the facility/site information and any historical sampling data, identify the sub-category into which the potential discharge falls.

| **Activity Category** | **Activity Sub-Category** |
|---|---|
| I - Petroleum Related Site Remediation | A. Gasoline Only Sites ☐<br>B. Fuel Oils and Other Oil Sites (including Residential Non-Business Remediation Discharges) ☐<br>C. Petroleum Sites with Additional Contamination ☐ |
| II - Non Petroleum Site Remediation | A. Volatile Organic Compound (VOC) Only Sites ☒<br>B. VOC Sites with Additional Contamination ☐<br>C. Primarily Heavy Metal Sites ☐ |
| III - Contaminated Construction Dewatering | A. General Urban Fill Sites ☐<br>B. Known Contaminated Sites ☐ |

| | |
|---|---|
| IV - Miscellaneous Related Discharges | A. Aquifer Pump Testing to Evaluate Formerly Contaminated Sites ☐<br>B. Well Development/Rehabilitation at Contaminated/Formerly Contaminated Sites ☐<br>C. Hydrostatic Testing of Pipelines and Tanks ☐<br>D. Long-Term Remediation of Contaminated Sumps and Dikes ☐<br>E. Short-term Contaminated Dredging Drain Back Waters (if not covered by 401/404 permit) ☐ |

**2. Discharge information**. Please provide information about the discharge, (attaching additional sheets as necessary) including:

a) Describe the discharge activities for which the owner/applicant is seeking coverage:

Discharge of groundwater to storm drain after treatment by a granular activated carbon (GAC) unit. The storm drain system outfall discharges to the Blackstone River.

b) Provide the following information about each discharge:

1) Number of discharge points: 1

2) What is the **maximum** and **average flow rate** of discharge (in cubic feet per second, $ft^3/s$)?
Max. flow .00892 Is maximum flow a **design value**? Y ◉ N ○
Average flow (include units) 4 gpm Is average flow a design value or estimate? design

3) Latitude and longitude of each discharge within 100 feet:
pt.1: lat 42.185187 long -071.742121 pt.2: lat. ____ long. ____;
pt.3: lat ____ long ____ pt.4: lat. ____ long. ____;
pt.5: lat ____ long ____ pt.6: lat. ____ long. ____;
pt.7: lat ____ long ____ pt.8: lat. ____ long. ____; etc.

4) If hydrostatic testing, total volume of the discharge (gals): ____

5) Is the discharge intermittent ◉ or seasonal ○ ?
Is discharge ongoing? Y ◉ N ○

c) Expected dates of discharge (mm/dd/yy): start Feb 20, 2012 end Feb 20, 2013

d) Please attach a line drawing or flow schematic showing water flow through the facility including:
1. sources of intake water, 2. contributing flow from the operation, 3. treatment units, and 4. discharge points and receiving waters(s).

**3. Contaminant information.**

a) Based on the sub-category selected (see Appendix III), indicate whether each listed chemical is **believed present** or **believed absent** in the potential discharge. Attach additional sheets as needed.

| Parameter * | CAS Number | Believed Absent | Believed Present | # of Samples | Sample Type (e.g., grab) | Analytical Method Used (method #) | Minimum Level (ML) of Test Method | Maximum daily value | | Average daily value | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | concentration (ug/l) | mass (kg) | concentration (ug/l) | mass (kg) |
| 1. Total Suspended Solids (TSS) | | ☐ | ☐ | | | | | | | | |
| 2. Total Residual Chlorine (TRC) | | ☐ | ☐ | | | | | | | | |
| 3. Total Petroleum Hydrocarbons (TPH) | | ☒ | ☐ | 1 | grab | 1664A | 0.6 mg/L | | | | |
| 4. Cyanide (CN) | 57125 | ☐ | ☐ | | | | | | | | |
| 5. Benzene (B) | 71432 | ☐ | ☐ | | | | | | | | |
| 6. Toluene (T) | 108883 | ☐ | ☐ | | | | | | | | |
| 7. Ethylbenzene (E) | 100414 | ☐ | ☐ | | | | | | | | |
| 8. (m,p,o) Xylenes (X) | 108883; 106423; 95476; 1330207 | ☐ | ☐ | | | | | | | | |
| 9. Total BTEX [2] | n/a | ☒ | ☐ | 1 | grab | 8260C | 0.7 - 0.9 ug/L | | | | |
| 10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) [3] | 106934 | ☐ | ☐ | | | | | | | | |
| 11. Methyl-tert-Butyl Ether (MtBE) | 1634044 | ☐ | ☐ | | | | | | | | |
| 12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol) | 75650 | ☐ | ☐ | | | | | | | | |

* Numbering system is provided to allow cross-referencing to Effluent Limits and Monitoring Requirements by Sub-Category included in Appendix III, as well as the Test Methods and Minimum Levels associated with each parameter provided in Appendix VI.

[2] BTEX = Sum of Benzene, Toluene, Ethylbenzene, total Xylenes.

[3] EDB is a groundwater contaminant at fuel spill and pesticide application sites in New England.

| Parameter * | CAS Number | Believed Absent | Believed Present | # of Samples | Sample Type (e.g., grab) | Analytical Method Used (method #) | Minimum Level (ML) of Test Method | Maximum daily value | | Average daily value | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | concentration (ug/l) | mass (kg) | concentration (ug/l) | mass (kg) |
| 13. tert-Amyl Methyl Ether (TAME) | 9940508 | ☐ | ☐ | | | | | | | | |
| 14. Naphthalene | 91203 | ☐ | ☐ | | | | | | | | |
| 15. Carbon Tetrachloride | 56235 | ☒ | ☐ | 1 | grab | 8260C | 0.5 ug/L | | | | |
| 16. 1,2 Dichlorobenzene (o-DCB) | 95501 | ☒ | ☐ | 1 | grab | 8260C | 0.7 ug/L | | | | |
| 17. 1,3 Dichlorobenzene (m-DCB) | 541731 | ☒ | ☐ | 1 | grab | 8260C | 0.7 ug/L | | | | |
| 18. 1,4 Dichlorobenzene (p-DCB) | 106467 | ☒ | ☐ | 1 | grab | 8260C | 0.6 ug/L | | | | |
| 18a. Total dichlorobenzene | | ☐ | ☐ | | | | | | | | |
| 19. 1,1 Dichloroethane (DCA) | 75343 | ☒ | ☐ | 1 | grab | 8260C | 0.7 ug/L | | | | |
| 20. 1,2 Dichloroethane (DCA) | 107062 | ☒ | ☐ | 1 | grab | 8260C | 0.8 ug/L | | | | |
| 21. 1,1 Dichloroethene (DCE) | 75354 | ☒ | ☐ | 1 | grab | 8260C | 0.5 ug/L | | | | |
| 22. cis-1,2 Dichloroethene (DCE) | 156592 | ☒ | ☐ | 1 | grab | 8260C | 0.7 ug/L | | | | |
| 23. Methylene Chloride | 75092 | ☒ | ☐ | 1 | grab | 8260C | 0.7 ug/L | | | | |
| 24. Tetrachloroethene (PCE) | 127184 | ☒ | ☐ | 1 | grab | 8260C | 0.7 ug/L | | | | |
| 25. 1,1,1 Trichloro-ethane (TCA) | 71556 | ☒ | ☐ | 1 | grab | 8260C | 0.6 ug/L | | | | |
| 26. 1,1,2 Trichloro-ethane (TCA) | 79005 | ☒ | ☐ | 1 | grab | 8260C | 0.3 ug/L | | | | |
| 27. Trichloroethene (TCE) | 79016 | ☒ | ☐ | 1 | grab | 8260C | 0.8 ug/L | | | | |

| Parameter * | CAS Number | Believed Absent | Believed Present | # of Samples | Sample Type (e.g., grab) | Analytical Method Used (method #) | Minimum Level (ML) of Test Method | Maximum daily value | | Average daily value | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | concentration (ug/l) | mass (kg) | concentration (ug/l) | mass (kg) |
| 28. Vinyl Chloride (Chloroethene) | 75014 | ☒ | ☐ | 1 | grab | 8260C | 0.8 ug/L | | | | |
| 29. Acetone | 67641 | ☒ | ☐ | 1 | grab | 8260C | 2.6 ug/L | | | | |
| 30. 1,4 Dioxane | 123911 | ☒ | ☐ | 1 | grab | 8260C | 14.0 ug/L | | | | |
| 31. Total Phenols | 108952 | ☐ | ☒ | 1 | grab | 8270D | 2760 ug/L | 418000 ug/L | 9.127 kg | | |
| 32. Pentachlorophenol (PCP) | 87865 | ☒ | ☐ | 1 | grab | 8270D | 4680 ug/L | | | | |
| 33. Total Phthalates (Phthalate esters) [4] | | ☒ | ☐ | 1 | grab | 8270D | 17.5 ug/L | | | | |
| 34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate] | 117817 | ☒ | ☐ | 1 | grab | 8270D | 17.5 ug/L | | | | |
| 35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH) | | ☐ | ☐ | | | | | | | | |
| a. Benzo(a) Anthracene | 56553 | ☐ | ☐ | | | | | | | | |
| b. Benzo(a) Pyrene | 50328 | ☐ | ☐ | | | | | | | | |
| c. Benzo(b)Fluoranthene | 205992 | ☐ | ☐ | | | | | | | | |
| d. Benzo(k)Fluoranthene | 207089 | ☐ | ☐ | | | | | | | | |
| e. Chrysene | 21801 | ☐ | ☐ | | | | | | | | |
| f. Dibenzo(a,h)anthracene | 53703 | ☐ | ☐ | | | | | | | | |
| g. Indeno(1,2,3-cd) Pyrene | 193395 | ☐ | ☐ | | | | | | | | |
| 36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH) | | ☐ | ☐ | | | | | | | | |

[4] The sum of individual phthalate compounds.

| Parameter * | CAS Number | Believed Absent | Believed Present | # of Samples | Sample Type (e.g., grab) | Analytical Method Used (method #) | Minimum Level (ML) of Test Method | Maximum daily value | | Average daily value | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | concentration (ug/l) | mass (kg) | concentration (ug/l) | mass (kg) |
| h. Acenaphthene | 83329 | ☐ | ☐ | | | | | | | | |
| i. Acenaphthylene | 208968 | ☐ | ☐ | | | | | | | | |
| j. Anthracene | 120127 | ☐ | ☐ | | | | | | | | |
| k. Benzo(ghi) Perylene | 191242 | ☐ | ☐ | | | | | | | | |
| l. Fluoranthene | 206440 | ☐ | ☐ | | | | | | | | |
| m. Fluorene | 86737 | ☐ | ☐ | | | | | | | | |
| n. Naphthalene | 91203 | ☐ | ☐ | | | | | | | | |
| o. Phenanthrene | 85018 | ☐ | ☐ | | | | | | | | |
| p. Pyrene | 129000 | ☐ | ☐ | | | | | | | | |
| 37. Total Polychlorinated Biphenyls (PCBs) | 85687; 84742; 117840; 84662; 131113; 117817. | ☒ | ☐ | 1 | grab | 8082A | 0.213 ug/L | | | | |
| 38. Chloride | 16887006 | ☐ | ☐ | | | | | | | | |
| 39. Antimony | 7440360 | ☐ | ☐ | | | | | | | | |
| 40. Arsenic | 7440382 | ☐ | ☐ | | | | | | | | |
| 41. Cadmium | 7440439 | ☐ | ☐ | | | | | | | | |
| 42. Chromium III (trivalent) | 16065831 | ☐ | ☐ | | | | | | | | |
| 43. Chromium VI (hexavalent) | 18540299 | ☐ | ☐ | | | | | | | | |
| 44. Copper | 7440508 | ☐ | ☐ | | | | | | | | |
| 45. Lead | 7439921 | ☐ | ☐ | | | | | | | | |
| 46. Mercury | 7439976 | ☐ | ☐ | | | | | | | | |
| 47. Nickel | 7440020 | ☐ | ☐ | | | | | | | | |
| 48. Selenium | 7782492 | ☐ | ☐ | | | | | | | | |
| 49. Silver | 7440224 | ☐ | ☐ | | | | | | | | |
| 50. Zinc | 7440666 | ☐ | ☐ | | | | | | | | |
| 51. Iron | 7439896 | ☐ | ☒ | 1 | grab | 6010C | 0.0460 mg/L | 178000 | 3.887 kg | | |
| Other (describe): | | ☐ | ☐ | | | | | | | | |

| Parameter * | CAS Number | Believed Absent | Believed Present | # of Samples | Sample Type (e.g., grab) | Analytical Method Used (method #) | Minimum Level (ML) of Test Method | Maximum daily value | | Average daily value | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | concentration (ug/l) | mass (kg) | concentration (ug/l) | mass (kg) |
| | | ☐ | ☐ | | | | | | | | |
| | | ☐ | ☐ | | | | | | | | |

b) For discharges where **metals** are believed present, please fill out the following (attach results of any calculations):

| | |
|---|---|
| *Step 1:* Do any of the metals in the influent exceed the effluent limits in Appendix III (i.e., the limits set at zero dilution)? Y ◉ N ○ | If yes, which metals?<br>Iron |
| *Step 2:* For any metals which exceed the **Appendix III** limits, calculate the **dilution factor (DF)** using the formula in Part I.A.3.c (step 2) of the NOI instructions or as determined by the State prior to the submission of this NOI. What is the dilution factor for applicable metals?<br>Metal: Iron DF: 77<br>Metal: DF:<br>Metal: DF:<br>Metal: DF:<br>Etc. | Look up the limit calculated at the corresponding dilution factor in **Appendix IV.** Do any of the metals in the **influent** have the potential to exceed the corresponding **effluent** limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)?<br>Y ◉ N ○ If Y, list which metals:<br>Iron |

**4. Treatment system information.** Please describe the treatment system using separate sheets as necessary, including:

a) A description of the treatment system, including a schematic of the proposed or existing treatment system:

The influent will be pumped into an equalizer tank and then through two 5 micron bag filters in series to remove particulates and reduce the potential for fouling the carbon unit. The influent will then flow through two 1,000 lb carbon treatment units in series. The effluent will be pumped through a flow meter/totalizer into the nearby storm drain manhole. Sampling ports are located prior to the bag filters and prior to and after the GAC units so that effluent can be sampled to insure that the contaminants are reduced to the approved limits. If needed to treat for dissolved iron, a cation resin unit will be used after the GAC units and prior to discharge.

| | | | | | | |
|---|---|---|---|---|---|---|
| b) Identify each applicable treatment unit (check all that apply): | Frac. tank ☐ | Air stripper ☐ | Oil/water separator ☐ | Equalization tanks ☒ | Bag filter ☒ | GAC filter ☒ |
| | Chlorination ☐ | De-chlorination ☐ | Other (please describe): | If needed to treat for dissolved iron, a cation resin unit. | | |

c) Proposed **average** and **maximum flow rates** (gallons per minute) for the discharge and the **design flow rate**(s) (gallons per minute) of the treatment system:
Average flow rate of discharge 4 gpm Maximum flow rate of treatment system 4 gpm
Design flow rate of treatment system 4 gpm

d) A description of chemical additives being used or planned to be used (attach MSDS sheets):

None

**5. Receiving surface water(s).** Please provide information about the receiving water(s), using separate sheets as necessary:

| a) Identify the discharge pathway: | Direct to receiving water ☐ | Within facility (sewer) ☐ | Storm drain ☒ | Wetlands ☐ | Other (describe): |
|---|---|---|---|---|---|

b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters:
The discharge will enter the storm drain system via a drain manhole on site. The storm drain system discharges from a nearby outfall to the Blackstone River.

c) Attach a detailed map(s) indicating the site location and location of the outfall to the receiving water:
1. For multiple discharges, number the discharges sequentially.
2. For indirect dischargers, indicate the location of the discharge to the indirect conveyance and the discharge to surface water
The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas.

d) Provide the state water quality classification of the receiving water B warm water

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 6.8 cfs
Please attach any calculation sheets used to support stream flow and dilution calculations.

f) Is the receiving water a listed 303(d) water quality impaired or limited water? Y ◉ N ○ If yes, for which pollutant(s)?
turbidity, aquatic macroinvertebrate bioassessments, fecal coliform, lead, nutrients, sedimentation, ambient bioassays - chronic aquatic toxicity, other
Is there a final TMDL? Y ○ N ◉ If yes, for which pollutant(s)?

**6. ESA and NHPA Eligibility.**

Please provide the following information according to requirements of Permit Parts I.A.4 and I.A.5 Appendices II and VII.

a) Using the instructions in Appendix VII and information on Appendix II, under which criterion listed in Part I.C are you eligible for coverage under this general permit?

A ◉ B ○ C ○ D ○ E ○ F ○

b) If you selected Criterion D or F, has consultation with the federal services been completed? Y ○ N ○ Underway ○

c) If consultation with U.S. Fish and Wildlife Service and/or NOAA Fisheries Service was completed, was a written concurrence finding that the discharge is "not likely to adversely affect" listed species or critical habitat received? Y ○ N ○

d) Attach documentation of ESA eligibility as described in the NOI instructions and required by Appendix VII, Part I.C, Step 4.

e) Using the instructions in Appendix VII, under which criterion listed in Part II.C are you eligible for coverage under this general permit?

1 ◉ 2 ○ 3 ○

f) If Criterion 3 was selected, attach all written correspondence with the State or Tribal historic preservation officers, including any terms and conditions that outline measures the applicant must follow to mitigate or prevent adverse effects due to activities regulated by the RGP.

**7. Supplemental information.**

Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit.

Laboratory analytical data for MW-P2, which is in close proximity to the proposed location of the two extraction wells for the treatment system.
Supporting documentation including: Figure 1 USGS Locus map; Figure 2 Well location and effluent discharge point map; Figure 3 Schematic of treatment system; Figure 4 Location of storm water discharge outfall

**8. Signature Requirements:** The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22, including the following certification:

*I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

| | |
|---|---|
| Facility/Site Name: | Lewcott Corporation (d.b.a. Barrday Composite Solutions) |
| Operator signature: |  |
| Printed Name &Title: | Denise Bartone, Project Manager |
| Date: | 2/9/2012 |


**FIGURE 1**


CDW CONSULTANTS, INC.

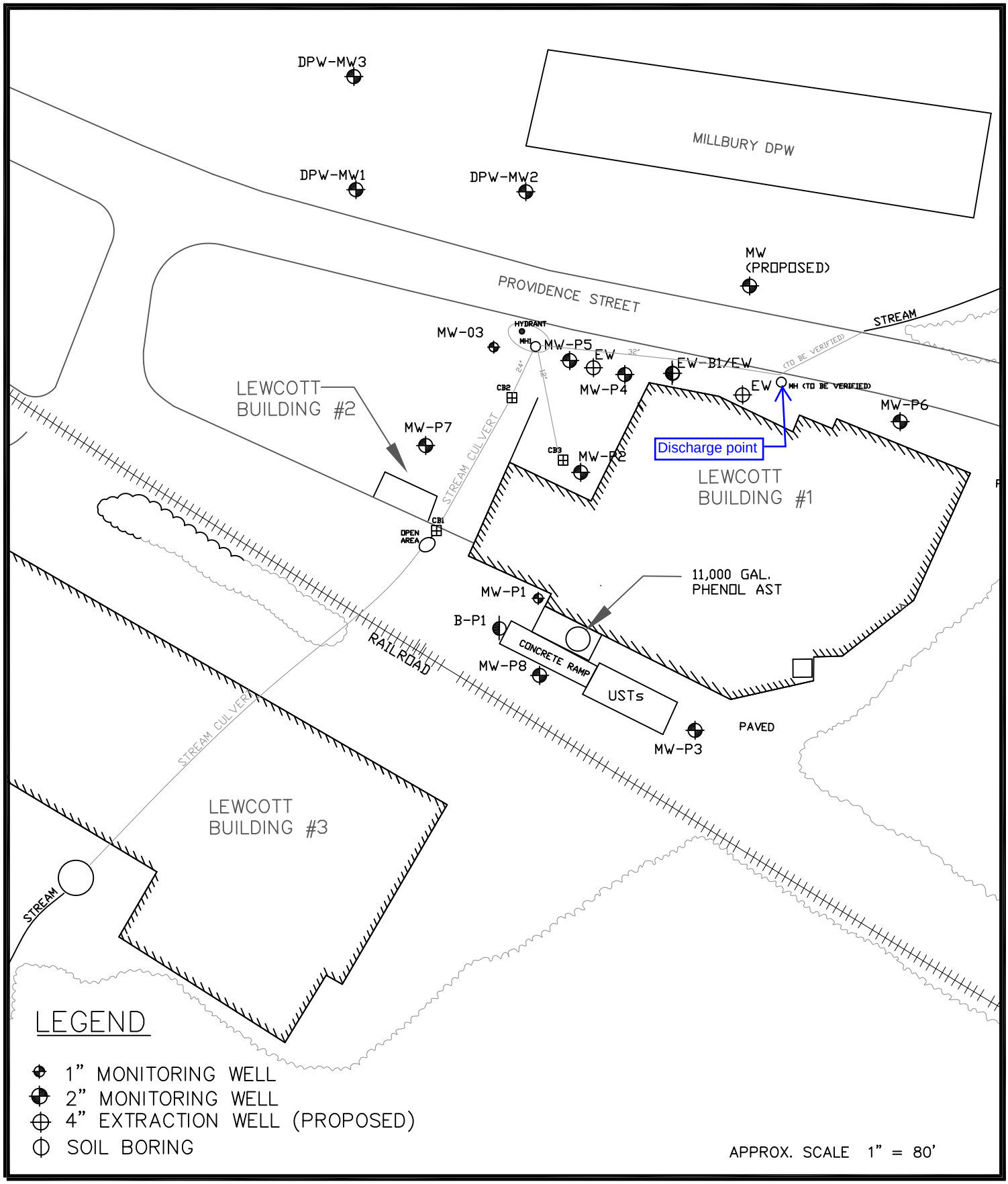
SITE LOCATION MAP
86 PROVIDENCE ST
MILLBURY, MA

SOURCE: MassGIS Commonwealth of MA EOEA

PROJECT NO.: 1145.20
SCALE: 1:25,000

FIGURE 1

**FIGURE 2**




CDW CONSULTANTS, INC.

# PROPOSED EXTRACTION WELL LOCATIONS

## 86 PROVIDENCE STREET

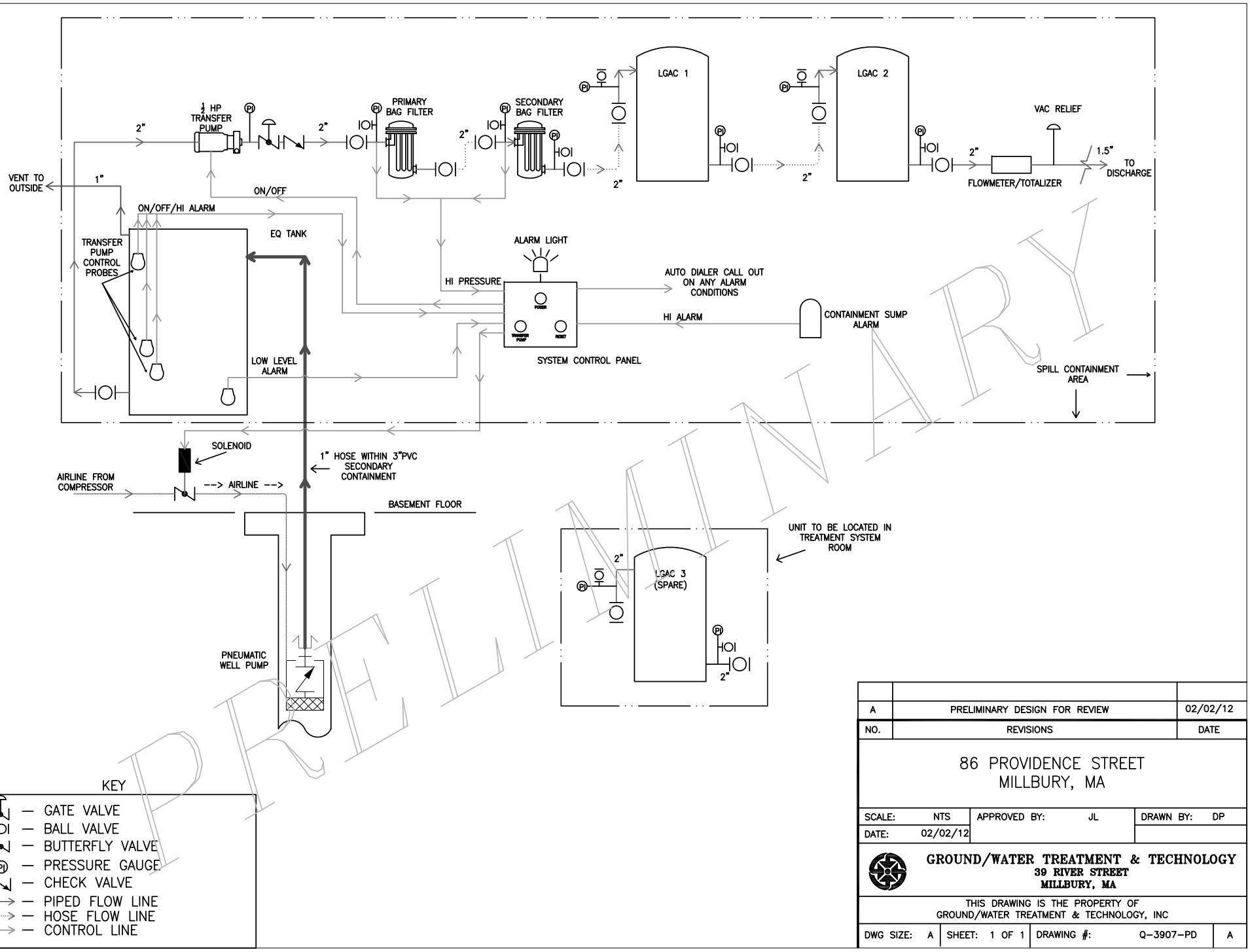
## MILLBURY, MA

FIGURE 2

SOURCE: Site Plan by ERM

Project No. 1145.2

**FIGURE 3**






| NO. | REVISIONS | DATE |
|---|---|---|
| A | PRELIMINARY DESIGN FOR REVIEW | 02/02/12 |

# 86 PROVIDENCE STREET
# MILLBURY, MA

| | | | |
|---|---|---|---|
| SCALE: NTS | APPROVED BY: JL | DRAWN BY: DP | |
| DATE: 02/02/12 | | | |

**GROUND/WATER TREATMENT & TECHNOLOGY**
39 RIVER STREET
MILLBURY, MA



| DWG SIZE: A | SHEET: 1 OF 1 | DRAWING #: Q-3907-PD | A |
|---|---|---|---|

**FIGURE 4**


CDW CONSULTANTS, INC.

AERIAL PHOTO WITH STORMWATER DRAINAGE SYSTEM OUTFALL
LEWCOTT CORPORATION
86 PROVIDENCE STREET, MILLBURY, MA

SOURCE: MASS GIS

PROJECT NO.: 1145.2

FIGURE 4

**ATTACHMENT A**

Report Date:
23-Dec-11 13:38

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

**SPECTRUM ANALYTICAL, INC.**
***Featuring***
**HANIBAL TECHNOLOGY**

# *Laboratory Report*

CDW Consultants, Inc.
40 Speen Street; Suite 301
Framingham, MA 01701
Attn: Brian Miller

Project: Lewcott Corp. - Millbury, MA
Project #: 1145.2

| Laboratory ID | Client Sample ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| SB41215-01 | MW-P1 | Ground Water | 16-Dec-11 08:30 | 16-Dec-11 18:45 |
| SB41215-02 | MW-P2 | Ground Water | 16-Dec-11 09:29 | 16-Dec-11 18:45 |
| SB41215-03 | MW-P3 | Ground Water | 16-Dec-11 09:06 | 16-Dec-11 18:45 |
| SB41215-04 | MW-03 | Ground Water | 16-Dec-11 10:20 | 16-Dec-11 18:45 |
| SB41215-05 | Dup | Ground Water | 16-Dec-11 00:00 | 16-Dec-11 18:45 |

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87600/E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011/MA012
New York # 11393/11840
Pennsylvania # 68-04426/68-02924
Rhode Island # 98
USDA # S-51435

Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of Massachusetts for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of Massachusetts does not offer certification for all analytes.
Please note that this report contains 11 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

*Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method or analyte indicated. Please refer to our "Quality" web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (NY-11840, FL-E87936 and NJ-MA012).*

## MassDEP Analytical Protocol Certification Form

| | |
|---|---|
| **Laboratory Name:** Spectrum Analytical, Inc. | **Project #:** 1145.2 |
| **Project Location:** Lewcott Corp. - Millbury, MA | **RTN:** |
| **This form provides certifications for the following data set:** | SB41215-01 through SB41215-05 |
| **Matrices:** Ground Water | |

**CAM Protocol**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC<br>CAM II A | 7470/7471 Hg<br>CAM III B | MassDEP VPH<br>CAM IV A | 8081 Pesticides<br>CAM V B | 7196 Hex Cr<br>CAM VI B | MassDEP APH<br>CAM IX A |
| ✓ 8270 SVOC<br>CAM II B | 7010 Metals<br>CAM III C | MassDEP EPH<br>CAM IV B | 8151 Herbicides<br>CAM V C | 8330 Explosives<br>CAM VIII A | TO-15 VOC<br>CAM IX B |
| 6010 Metals<br>CAM III A | 6020 Metals<br>CAM III D | 8082 PCB<br>CAM V A | 9012 Total Cyanide/PAC<br>CAM VI A | 9014 Total Cyanide/PAC<br>CAM VI A | 6860 Perchlorate<br>CAM VIII B |

***Affirmative responses to questions A through F are required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain of Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ✓ Yes No |
| **B** | Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? | ✓ Yes No |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ✓ Yes No |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? | ✓ Yes No |
| **E** | a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)?<br>b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? | Yes No<br>Yes No |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to questions A through E)? | ✓ Yes No |

***Responses to questions G, H and I below are required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | Yes ✓ No |

***<u>Data User Note:</u> Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.***

| | | |
|---|---|---|
| **H** | Were all QC performance standards specified in the CAM protocol(s) achieved? | Yes ✓ No |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | Yes ✓ No |

***All negative responses are addressed in a case narrative on the cover page of this report.***

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

Nicole Leja
Laboratory Director
Date: 12/23/2011

**CASE NARRATIVE:**

The samples were received 0.2 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 2.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

MADEP has published a list of analytical methods (CAM) which provides a series of recommended protocols for the acquisition, analysis and reporting of analytical data in support of MCP decisions. "Presumptive Certainty" can be established only for those methods published by the MADEP in the MCP CAM. The compounds and/or elements reported were specifically requested by the client on the Chain of Custody and in some cases may not include the full analyte list as defined in the method. Regulatory limits may not be achieved if specific method and/or technique was not requested on the Chain of Custody.

According to WSC-CAM 5/2009 Rev.1, Table 11 A-1, recovery for some VOC analytes have been deemed potentially difficult. Although they may still be within the recommended recovery range, a range has been set based on historical control limits.

Some target analytes which are not listed as exceptions in the Summary of CAM Reporting Limits may exceed the recommended RL based on sample initial volume or weight provided, % moisture content, or responsiveness of a particular analyte to purge and trap instrumentation.

**See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.**

## SW846 8270D

**Laboratory Control Samples:**

1126593 BS/BSD

Phenol percent recoveries (33/29) are outside individual acceptance criteria (30-130), but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

Dup
MW-03
MW-P1
MW-P2
MW-P3

**Samples:**

S112070-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

4-Nitrophenol (41.3%)

This affected the following samples:

1126593-BLK1
1126593-BS1
1126593-BSD1

S112156-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

4-Nitrophenol (21.7%)

This affected the following samples:

MW-P1
MW-P3

S112210-CCV1

## SW846 8270D

**Samples:**

S112210-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

Pentachlorophenol (-25.2%)

This affected the following samples:

Dup
MW-P2

SB41215-02 *MW-P2*

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference's.

2-Fluorophenol
Phenol-d5

SB41215-04 *MW-03*

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

SB41215-05 *Dup*

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference's.

2-Fluorophenol
Phenol-d5

| Sample Identification | Client Project # | Matrix | Collection Date/Time | Received |
|---|---|---|---|---|
| **MW-P1** | 1145.2 | Ground Water | 16-Dec-11 08:30 | 16-Dec-11 |
| SB41215-01 | | | | |

| CAS No. | Analyte(s) | Result | Flag | Units | *RDL | MDL | Dilution | Method Ref. | Prepared | Analyzed | Analyst | Batch | Cert. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Semivolatile Organic Compounds by GCMS** | | | | | | | | | | | | | |
| Acid Extractables/Phenols<br>Prepared by method SW846 3510C | | | | | | | | | | | | | |
| 59-50-7 | 4-Chloro-3-methylphenol | < 2.58 | | µg/l | 2.58 | 0.747 | 1 | SW846 8270D | 20-Dec-11 | 22-Dec-11 | MSL | 1126593 | |
| 95-57-8 | 2-Chlorophenol | < 2.58 | | µg/l | 2.58 | 0.433 | 1 | " | " | " | " | " | |
| 120-83-2 | 2,4-Dichlorophenol | < 2.58 | | µg/l | 2.58 | 0.686 | 1 | " | " | " | " | " | |
| 105-67-9 | 2,4-Dimethylphenol | < 2.58 | | µg/l | 2.58 | 0.541 | 1 | " | " | " | " | " | |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | < 2.58 | | µg/l | 2.58 | 0.990 | 1 | " | " | " | " | " | |
| 51-28-5 | 2,4-Dinitrophenol | < 2.58 | | µg/l | 2.58 | 1.65 | 1 | " | " | " | " | " | |
| 95-48-7 | 2-Methylphenol | < 2.58 | | µg/l | 2.58 | 0.438 | 1 | " | " | " | " | " | |
| 108-39-4, 106-44-5 | 3 & 4-Methylphenol | < 5.15 | | µg/l | 5.15 | 0.562 | 1 | " | " | " | " | " | |
| 88-75-5 | 2-Nitrophenol | < 2.58 | | µg/l | 2.58 | 0.675 | 1 | " | " | " | " | " | |
| 100-02-7 | 4-Nitrophenol | < 2.58 | | µg/l | 2.58 | 1.32 | 1 | " | " | " | " | " | |
| 87-86-5 | Pentachlorophenol | < 2.58 | | µg/l | 2.58 | 0.918 | 1 | " | " | " | " | " | |
| 108-95-2 | Phenol | **34.1** | | µg/l | 2.58 | 0.541 | 1 | " | " | " | " | " | |
| 95-95-4 | 2,4,5-Trichlorophenol | < 2.58 | | µg/l | 2.58 | 0.758 | 1 | " | " | " | " | " | |
| 88-06-2 | 2,4,6-Trichlorophenol | < 2.58 | | µg/l | 2.58 | 0.500 | 1 | " | " | " | " | " | |
| *Surrogate recoveries:* | | | | | | | | | | | | | |
| *367-12-4* | *2-Fluorophenol* | *40* | | | *15-110 %* | | | " | " | " | " | " | |
| *4165-62-2* | *Phenol-d5* | *30* | | | *15-110 %* | | | " | " | " | " | " | |

| Sample Identification | Client Project # | Matrix | Collection Date/Time | Received |
|---|---|---|---|---|
| **MW-P2** | 1145.2 | Ground Water | 16-Dec-11 09:29 | 16-Dec-11 |
| SB41215-02 | | | | |

| *CAS No.* | *Analyte(s)* | *Result* | *Flag* | *Units* | **RDL* | *MDL* | *Dilution* | *Method Ref.* | *Prepared* | *Analyzed* | *Analyst* | *Batch* | *Cert.* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Semivolatile Organic Compounds by GCMS** | | | | | | | | | | | | | |
| Acid Extractables/Phenols | | | GS1 | | | | | | | | | | |
| Prepared by method SW846 3510C | | | | | | | | | | | | | |
| 59-50-7 | 4-Chloro-3-methylphenol | < 13200 | | µg/l | 13200 | 3820 | 5000 | SW846 8270D | 20-Dec-11 | 23-Dec-11 | MSL | 1126593 | |
| 95-57-8 | 2-Chlorophenol | < 13200 | | µg/l | 13200 | 2210 | 5000 | " | " | " | " | " | |
| 120-83-2 | 2,4-Dichlorophenol | < 13200 | | µg/l | 13200 | 3500 | 5000 | " | " | " | " | " | |
| 105-67-9 | 2,4-Dimethylphenol | < 13200 | | µg/l | 13200 | 2760 | 5000 | " | " | " | " | " | |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | < 13200 | | µg/l | 13200 | 5050 | 5000 | " | " | " | " | " | |
| 51-28-5 | 2,4-Dinitrophenol | < 13200 | | µg/l | 13200 | 8450 | 5000 | " | " | " | " | " | |
| 95-48-7 | 2-Methylphenol | < 13200 | | µg/l | 13200 | 2240 | 5000 | " | " | " | " | " | |
| 108-39-4, 106-44-5 | 3 & 4-Methylphenol | < 26300 | | µg/l | 26300 | 2870 | 5000 | " | " | " | " | " | |
| 88-75-5 | 2-Nitrophenol | < 13200 | | µg/l | 13200 | 3450 | 5000 | " | " | " | " | " | |
| 100-02-7 | 4-Nitrophenol | < 13200 | | µg/l | 13200 | 6760 | 5000 | " | " | " | " | " | |
| 87-86-5 | Pentachlorophenol | < 13200 | | µg/l | 13200 | 4680 | 5000 | " | " | " | " | " | |
| 108-95-2 | Phenol | **418,000** | | µg/l | 13200 | 2760 | 5000 | " | " | " | " | " | |
| 95-95-4 | 2,4,5-Trichlorophenol | < 13200 | | µg/l | 13200 | 3870 | 5000 | " | " | " | " | " | |
| 88-06-2 | 2,4,6-Trichlorophenol | < 13200 | | µg/l | 13200 | 2550 | 5000 | " | " | " | " | " | |
| *Surrogate recoveries:* | | | | | | | | | | | | | |
| *367-12-4* | *2-Fluorophenol* | *0* | S01 | | *15-110 %* | | | " | " | " | " | " | |
| *4165-62-2* | *Phenol-d5* | *0* | S01 | | *15-110 %* | | | " | " | " | " | " | |

| Sample Identification | Client Project # | Matrix | Collection Date/Time | Received |
|---|---|---|---|---|
| **MW-P3** | 1145.2 | Ground Water | 16-Dec-11 09:06 | 16-Dec-11 |
| SB41215-03 | | | | |

| CAS No. | Analyte(s) | Result | Flag | Units | *RDL | MDL | Dilution | Method Ref. | Prepared | Analyzed | Analyst | Batch | Cert. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Semivolatile Organic Compounds by GCMS** | | | | | | | | | | | | | |
| Acid Extractables/Phenols<br>Prepared by method SW846 3510C | | | | | | | | | | | | | |
| 59-50-7 | 4-Chloro-3-methylphenol | < 5.00 | | µg/l | 5.00 | 1.45 | 1 | SW846 8270D | 20-Dec-11 | 22-Dec-11 | MSL | 1126593 | |
| 95-57-8 | 2-Chlorophenol | < 5.00 | | µg/l | 5.00 | 0.840 | 1 | " | " | " | " | " | |
| 120-83-2 | 2,4-Dichlorophenol | < 5.00 | | µg/l | 5.00 | 1.33 | 1 | " | " | " | " | " | |
| 105-67-9 | 2,4-Dimethylphenol | < 5.00 | | µg/l | 5.00 | 1.05 | 1 | " | " | " | " | " | |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | < 5.00 | | µg/l | 5.00 | 1.92 | 1 | " | " | " | " | " | |
| 51-28-5 | 2,4-Dinitrophenol | < 5.00 | | µg/l | 5.00 | 3.21 | 1 | " | " | " | " | " | |
| 95-48-7 | 2-Methylphenol | < 5.00 | | µg/l | 5.00 | 0.850 | 1 | " | " | " | " | " | |
| 108-39-4, 106-44-5 | 3 & 4-Methylphenol | < 10.0 | | µg/l | 10.0 | 1.09 | 1 | " | " | " | " | " | |
| 88-75-5 | 2-Nitrophenol | < 5.00 | | µg/l | 5.00 | 1.31 | 1 | " | " | " | " | " | |
| 100-02-7 | 4-Nitrophenol | < 5.00 | | µg/l | 5.00 | 2.57 | 1 | " | " | " | " | " | |
| 87-86-5 | Pentachlorophenol | < 5.00 | | µg/l | 5.00 | 1.78 | 1 | " | " | " | " | " | |
| 108-95-2 | Phenol | **191** | | µg/l | 5.00 | 1.05 | 1 | " | " | " | " | " | |
| 95-95-4 | 2,4,5-Trichlorophenol | < 5.00 | | µg/l | 5.00 | 1.47 | 1 | " | " | " | " | " | |
| 88-06-2 | 2,4,6-Trichlorophenol | < 5.00 | | µg/l | 5.00 | 0.970 | 1 | " | " | " | " | " | |
| *Surrogate recoveries:* | | | | | | | | | | | | | |
| *367-12-4* | *2-Fluorophenol* | *48* | | | *15-110 %* | | | " | " | " | " | " | |
| *4165-62-2* | *Phenol-d5* | *45* | | | *15-110 %* | | | " | " | " | " | " | |

| Sample Identification | Client Project # | Matrix | Collection Date/Time | Received |
|---|---|---|---|---|
| **MW-03** | 1145.2 | Ground Water | 16-Dec-11 10:20 | 16-Dec-11 |
| SB41215-04 | | | | |

| *CAS No.* | *Analyte(s)* | *Result* | *Flag* | *Units* | **RDL* | *MDL* | *Dilution* | *Method Ref.* | *Prepared* | *Analyzed* | *Analyst* | *Batch* | *Cert.* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Semivolatile Organic Compounds by GCMS** | | | | | | | | | | | | | |
| Acid Extractables/Phenols | | | GS1 | | | | | | | | | | |
| Prepared by method SW846 3510C | | | | | | | | | | | | | |
| 59-50-7 | 4-Chloro-3-methylphenol | < 13.9 | | µg/l | 13.9 | 4.03 | 5 | SW846 8270D | 20-Dec-11 | 22-Dec-11 | MSL | 1126593 | |
| 95-57-8 | 2-Chlorophenol | < 13.9 | | µg/l | 13.9 | 2.33 | 5 | " | " | " | " | " | |
| 120-83-2 | 2,4-Dichlorophenol | < 13.9 | | µg/l | 13.9 | 3.69 | 5 | " | " | " | " | " | |
| 105-67-9 | 2,4-Dimethylphenol | < 13.9 | | µg/l | 13.9 | 2.92 | 5 | " | " | " | " | " | |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | < 13.9 | | µg/l | 13.9 | 5.33 | 5 | " | " | " | " | " | |
| 51-28-5 | 2,4-Dinitrophenol | < 13.9 | | µg/l | 13.9 | 8.92 | 5 | " | " | " | " | " | |
| 95-48-7 | 2-Methylphenol | < 13.9 | | µg/l | 13.9 | 2.36 | 5 | " | " | " | " | " | |
| 108-39-4, 106-44-5 | 3 & 4-Methylphenol | < 27.8 | | µg/l | 27.8 | 3.03 | 5 | " | " | " | " | " | |
| 88-75-5 | 2-Nitrophenol | < 13.9 | | µg/l | 13.9 | 3.64 | 5 | " | " | " | " | " | |
| 100-02-7 | 4-Nitrophenol | < 13.9 | | µg/l | 13.9 | 7.14 | 5 | " | " | " | " | " | |
| 87-86-5 | Pentachlorophenol | < 13.9 | | µg/l | 13.9 | 4.94 | 5 | " | " | " | " | " | |
| 108-95-2 | Phenol | **193** | | µg/l | 13.9 | 2.92 | 5 | " | " | " | " | " | |
| 95-95-4 | 2,4,5-Trichlorophenol | < 13.9 | | µg/l | 13.9 | 4.08 | 5 | " | " | " | " | " | |
| 88-06-2 | 2,4,6-Trichlorophenol | < 13.9 | | µg/l | 13.9 | 2.69 | 5 | " | " | " | " | " | |
| *Surrogate recoveries:* | | | | | | | | | | | | | |
| *367-12-4* | *2-Fluorophenol* | *46* | | | *15-110 %* | | | " | " | " | " | " | |
| *4165-62-2* | *Phenol-d5* | *36* | | | *15-110 %* | | | " | " | " | " | " | |

| Sample Identification | Client Project # | Matrix | Collection Date/Time | Received |
|---|---|---|---|---|
| **Dup** | 1145.2 | Ground Water | 16-Dec-11 00:00 | 16-Dec-11 |
| SB41215-05 | | | | |

| *CAS No.* | *Analyte(s)* | *Result* | *Flag* | *Units* | **RDL* | *MDL* | *Dilution* | *Method Ref.* | *Prepared* | *Analyzed* | *Analyst* | *Batch* | *Cert.* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Semivolatile Organic Compounds by GCMS** | | | | | | | | | | | | | |
| Acid Extractables/Phenols | | | GS1 | | | | | | | | | | |
| Prepared by method SW846 3510C | | | | | | | | | | | | | |
| 59-50-7 | 4-Chloro-3-methylphenol | < 26600 | | µg/l | 26600 | 7710 | 10000 | SW846 8270D | 20-Dec-11 | 23-Dec-11 | MSL | 1126593 | |
| 95-57-8 | 2-Chlorophenol | < 26600 | | µg/l | 26600 | 4470 | 10000 | " | " | " | " | " | |
| 120-83-2 | 2,4-Dichlorophenol | < 26600 | | µg/l | 26600 | 7070 | 10000 | " | " | " | " | " | |
| 105-67-9 | 2,4-Dimethylphenol | < 26600 | | µg/l | 26600 | 5590 | 10000 | " | " | " | " | " | |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | < 26600 | | µg/l | 26600 | 10200 | 10000 | " | " | " | " | " | |
| 51-28-5 | 2,4-Dinitrophenol | < 26600 | | µg/l | 26600 | 17100 | 10000 | " | " | " | " | " | |
| 95-48-7 | 2-Methylphenol | < 26600 | | µg/l | 26600 | 4520 | 10000 | " | " | " | " | " | |
| 108-39-4, 106-44-5 | 3 & 4-Methylphenol | < 53200 | | µg/l | 53200 | 5800 | 10000 | " | " | " | " | " | |
| 88-75-5 | 2-Nitrophenol | < 26600 | | µg/l | 26600 | 6970 | 10000 | " | " | " | " | " | |
| 100-02-7 | 4-Nitrophenol | < 26600 | | µg/l | 26600 | 13700 | 10000 | " | " | " | " | " | |
| 87-86-5 | Pentachlorophenol | < 26600 | | µg/l | 26600 | 9470 | 10000 | " | " | " | " | " | |
| 108-95-2 | Phenol | **766,000** | | µg/l | 26600 | 5590 | 10000 | " | " | " | " | " | |
| 95-95-4 | 2,4,5-Trichlorophenol | < 26600 | | µg/l | 26600 | 7820 | 10000 | " | " | " | " | " | |
| 88-06-2 | 2,4,6-Trichlorophenol | < 26600 | | µg/l | 26600 | 5160 | 10000 | " | " | " | " | " | |
| *Surrogate recoveries:* | | | | | | | | | | | | | |
| *367-12-4* | *2-Fluorophenol* | *0* | S01 | | *15-110 %* | | | " | " | " | " | " | |
| *4165-62-2* | *Phenol-d5* | *0* | S01 | | *15-110 %* | | | " | " | " | " | " | |

| Analyte(s) | Result | Flag | Units | *RDL | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1126593 - SW846 3510C** | | | | | | | | | | |
| **Blank (1126593-BLK1)** | | | | | Prepared & Analyzed: 20-Dec-11 | | | | | |
| 4-Chloro-3-methylphenol | < 2.50 | | µg/l | 2.50 | | | | | | |
| 2-Chlorophenol | < 2.50 | | µg/l | 2.50 | | | | | | |
| 2,4-Dichlorophenol | < 2.50 | | µg/l | 2.50 | | | | | | |
| 2,4-Dimethylphenol | < 2.50 | | µg/l | 2.50 | | | | | | |
| 4,6-Dinitro-2-methylphenol | < 2.50 | | µg/l | 2.50 | | | | | | |
| 2,4-Dinitrophenol | < 2.50 | | µg/l | 2.50 | | | | | | |
| 2-Methylphenol | < 2.50 | | µg/l | 2.50 | | | | | | |
| 3 & 4-Methylphenol | < 5.00 | | µg/l | 5.00 | | | | | | |
| 2-Nitrophenol | < 2.50 | | µg/l | 2.50 | | | | | | |
| 4-Nitrophenol | < 2.50 | | µg/l | 2.50 | | | | | | |
| Pentachlorophenol | < 2.50 | | µg/l | 2.50 | | | | | | |
| Phenol | < 2.50 | | µg/l | 2.50 | | | | | | |
| 2,4,5-Trichlorophenol | < 2.50 | | µg/l | 2.50 | | | | | | |
| 2,4,6-Trichlorophenol | < 2.50 | | µg/l | 2.50 | | | | | | |
| *Surrogate: 2-Fluorophenol* | *19.1* | | µg/l | | *50.0* | | *38* | *15-110* | | |
| *Surrogate: Phenol-d5* | *15.3* | | µg/l | | *50.0* | | *31* | *15-110* | | |
| **LCS (1126593-BS1)** | | | | | Prepared & Analyzed: 20-Dec-11 | | | | | |
| 4-Chloro-3-methylphenol | **31.0** | | µg/l | 2.50 | 50.0 | | 62 | 30-130 | | |
| 2-Chlorophenol | **26.8** | | µg/l | 2.50 | 50.0 | | 54 | 30-130 | | |
| 2,4-Dichlorophenol | **28.6** | | µg/l | 2.50 | 50.0 | | 57 | 30-130 | | |
| 2,4-Dimethylphenol | **26.8** | | µg/l | 2.50 | 50.0 | | 54 | 30-130 | | |
| 4,6-Dinitro-2-methylphenol | **33.4** | | µg/l | 2.50 | 50.0 | | 67 | 30-130 | | |
| 2,4-Dinitrophenol | **32.5** | | µg/l | 2.50 | 50.0 | | 65 | 30-130 | | |
| 2-Methylphenol | **24.7** | | µg/l | 2.50 | 50.0 | | 49 | 30-130 | | |
| 3 & 4-Methylphenol | **26.2** | | µg/l | 5.00 | 50.0 | | 52 | 40-130 | | |
| 2-Nitrophenol | **28.7** | | µg/l | 2.50 | 50.0 | | 57 | 30-130 | | |
| 4-Nitrophenol | **30.5** | | µg/l | 2.50 | 50.0 | | 61 | 30-130 | | |
| Pentachlorophenol | **32.0** | | µg/l | 2.50 | 50.0 | | 64 | 30-130 | | |
| Phenol | **16.3** | | µg/l | 2.50 | 50.0 | | 33 | 30-130 | | |
| 2,4,5-Trichlorophenol | **29.1** | | µg/l | 2.50 | 50.0 | | 58 | 30-130 | | |
| 2,4,6-Trichlorophenol | **27.0** | | µg/l | 2.50 | 50.0 | | 54 | 30-130 | | |
| *Surrogate: 2-Fluorophenol* | *20.6* | | µg/l | | *50.0* | | *41* | *15-110* | | |
| *Surrogate: Phenol-d5* | *15.4* | | µg/l | | *50.0* | | *31* | *15-110* | | |
| **LCS Dup (1126593-BSD1)** | | | | | Prepared & Analyzed: 20-Dec-11 | | | | | |
| 4-Chloro-3-methylphenol | **28.8** | | µg/l | 2.50 | 50.0 | | 58 | 30-130 | 7 | 20 |
| 2-Chlorophenol | **25.1** | | µg/l | 2.50 | 50.0 | | 50 | 30-130 | 7 | 20 |
| 2,4-Dichlorophenol | **27.0** | | µg/l | 2.50 | 50.0 | | 54 | 30-130 | 6 | 20 |
| 2,4-Dimethylphenol | **25.4** | | µg/l | 2.50 | 50.0 | | 51 | 30-130 | 5 | 20 |
| 4,6-Dinitro-2-methylphenol | **31.9** | | µg/l | 2.50 | 50.0 | | 64 | 30-130 | 5 | 20 |
| 2,4-Dinitrophenol | **29.6** | | µg/l | 2.50 | 50.0 | | 59 | 30-130 | 9 | 20 |
| 2-Methylphenol | **22.3** | | µg/l | 2.50 | 50.0 | | 45 | 30-130 | 10 | 20 |
| 3 & 4-Methylphenol | **24.0** | | µg/l | 5.00 | 50.0 | | 48 | 40-130 | 9 | 20 |
| 2-Nitrophenol | **27.6** | | µg/l | 2.50 | 50.0 | | 55 | 30-130 | 4 | 20 |
| 4-Nitrophenol | **26.0** | | µg/l | 2.50 | 50.0 | | 52 | 30-130 | 16 | 20 |
| Pentachlorophenol | **29.5** | | µg/l | 2.50 | 50.0 | | 59 | 30-130 | 8 | 20 |
| Phenol | **14.6** | QC2 | µg/l | 2.50 | 50.0 | | 29 | 30-130 | 11 | 20 |
| 2,4,5-Trichlorophenol | **27.1** | | µg/l | 2.50 | 50.0 | | 54 | 30-130 | 7 | 20 |
| 2,4,6-Trichlorophenol | **25.0** | | µg/l | 2.50 | 50.0 | | 50 | 30-130 | 8 | 20 |
| *Surrogate: 2-Fluorophenol* | *17.8* | | µg/l | | *50.0* | | *36* | *15-110* | | |
| *Surrogate: Phenol-d5* | *13.2* | | µg/l | | *50.0* | | *26* | *15-110* | | |

## Notes and Definitions

| | |
|---|---|
| GS1 | Sample dilution required for high concentration of target analytes to be within the instrument calibration range. |
| QC2 | Analyte out of acceptance range in QC spike but no reportable concentration present in sample. |
| S01 | The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference's. |
| dry | Sample results reported on a dry weight basis |
| NR | Not Reported |
| RPD | Relative Percent Difference |

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
Nicole Leja

SB 41215

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

# CHAIN OF CUSTODY RECORD

Page 1 of 1

**Special Handling:**
- ☐ Standard TAT - 7 to 10 business days
- ☑ Rush TAT - Date Needed: 12/22/11
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: CDM Consultants
40 Speen Street
Framingham, MA 01701
Telephone #: 508-875-7657
Project Mgr. Brian Miller

Invoice To: Same
P.O. No.: _____ RQN: _____

Project No.: 1145.2
Site Name: Lewcott
Location: Millbury State: MA
Sampler(s): Mike Gagne

1=$Na_2S_2O_3$ 2=HCl 3=$H_2SO_4$ 4=$HNO_3$ 5=NaOH 6=Ascorbic Acid 7=$CH_3OH$
8=$NaHSO_4$ 9=Deionized Water 10=_____ 11=_____

List preservative code below:

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

G=Grab C=Composite

| Lab Id: | Sample Id: | Date: | Time: | Type | Matrix | Containers: # of VOA Vials | # of Amber Glass | # of Clear Glass | # of Plastic | Analyses: Phenols by 8270 |
|---|---|---|---|---|---|---|---|---|---|---|
| 41215-01 | MW-P1 | 12/16/11 | 8:30 AM | G | GW | | 1 | | | |
| -02 | MW-P2 | | 9:29 AM | | | | | | | |
| -03 | MW-P3 | | 9:06 AM | | | | | | | |
| ~~-04~~ | ~~MW-P4~~ | | | | | | | | | |
| -04 | MW-03 | | 10:20 AM | | | | | | | |
| -05 | Dup | | | | | | | | | |

QA/QC Reporting Notes:
* additional charges may apply

MA DEP MCP CAM Report: Yes ☑ No ☐
CT DPH RCP Report: Yes ☐ No ☐

**QA/QC Reporting Level**
☑ Standard ☐ No QC ☐ DQA*
☐ NY ASP A* ☐ NY ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ TIER II* ☐ TIER V*
☐ Other _____

State-specific reporting standards:

| Relinquished by: | Received by: | Date: | Time: | Temp°C |
|---|---|---|---|---|
| Michael Hagan | Bill Kwasnik | 12/16/11 | 1215 | |
| Billy Hastings | Jamy Lok | 12/16 | 18:45 | 0.2 |

☐ EDD Format _____
☑ E-mail to bmiller@cdmconsultants.com

☐ Ambient ☐ Iced ☒ Refrigerated ☐ Fridge temp ___ °C ☐ Freezer temp ___ °C

Report Date:
07-Feb-12 17:07

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

**SPECTRUM ANALYTICAL, INC.**
***Featuring***
**HANIBAL TECHNOLOGY**

# *Laboratory Report*

CDW Consultants, Inc.
40 Speen Street; Suite 301
Framingham, MA 01701
Attn: Brian Miller

Project: Lewcott Corp. - Millbury, MA
Project #: 1145.20

| Laboratory ID | Client Sample ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| SB43367-01 | MW-P2 | Ground Water | 03-Feb-12 09:15 | 03-Feb-12 16:25 |
| SB43367-02 | Blank | Ground Water | 03-Feb-12 08:00 | 03-Feb-12 16:25 |

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87600/E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011/MA012
New York # 11393/11840
Pennsylvania # 68-04426/68-02924
Rhode Island # 98
USDA # S-51435

Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of Massachusetts for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of Massachusetts does not offer certification for all analytes.
Please note that this report contains 19 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

*Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method or analyte indicated. Please refer to our "Quality" web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (NY-11840, FL-E87936 and NJ-MA012).*

## MassDEP Analytical Protocol Certification Form

| | |
|---|---|
| **Laboratory Name:** Spectrum Analytical, Inc. | **Project #:** 1145.20 |
| **Project Location:** Lewcott Corp. - Millbury, MA | **RTN:** |
| **This form provides certifications for the following data set:** | SB43367-01 through SB43367-02 |
| **Matrices:** Ground Water | |

**CAM Protocol**

| | | | | | |
|---|---|---|---|---|---|
| ✓ 8260 VOC CAM II A | 7470/7471 Hg CAM III B | MassDEP VPH CAM IV A | 8081 Pesticides CAM V B | 7196 Hex Cr CAM VI B | MassDEP APH CAM IX A |
| ✓ 8270 SVOC CAM II B | 7010 Metals CAM III C | MassDEP EPH CAM IV B | 8151 Herbicides CAM V C | 8330 Explosives CAM VIII A | TO-15 VOC CAM IX B |
| ✓ 6010 Metals CAM III A | 6020 Metals CAM III D | ✓ 8082 PCB CAM V A | 9012 Total Cyanide/PAC CAM VI A | 9014 Total Cyanide/PAC CAM VI A | 6860 Perchlorate CAM VIII B |

***Affirmative responses to questions A through F are required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain of Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ✓ Yes No |
| **B** | Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? | ✓ Yes No |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ✓ Yes No |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? | ✓ Yes No |
| **E** | a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)?<br>b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? | Yes No<br>Yes No |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to questions A through E)? | ✓ Yes No |

***Responses to questions G, H and I below are required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | Yes ✓ No |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | |
|---|---|---|
| **H** | Were all QC performance standards specified in the CAM protocol(s) achieved? | Yes ✓ No |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | Yes ✓ No |

***All negative responses are addressed in a case narrative on the cover page of this report.***

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

Nicole Leja

Nicole Leja
Laboratory Director
Date: 2/7/2012

**CASE NARRATIVE:**

The samples were received 0.8 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

MADEP has published a list of analytical methods (CAM) which provides a series of recommended protocols for the acquisition, analysis and reporting of analytical data in support of MCP decisions. "Presumptive Certainty" can be established only for those methods published by the MADEP in the MCP CAM. The compounds and/or elements reported were specifically requested by the client on the Chain of Custody and in some cases may not include the full analyte list as defined in the method. Regulatory limits may not be achieved if specific method and/or technique was not requested on the Chain of Custody.

According to WSC-CAM 5/2009 Rev.1, Table 11 A-1, recovery for some VOC analytes have been deemed potentially difficult. Although they may still be within the recommended recovery range, a range has been set based on historical control limits.

Some target analytes which are not listed as exceptions in the Summary of CAM Reporting Limits may exceed the recommended RL based on sample initial volume or weight provided, % moisture content, or responsiveness of a particular analyte to purge and trap instrumentation.

**See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.**

## SW846 6010C

**Duplicates:**

1202747-DUP1 *Source: SB43367-01*

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

Iron

**Samples:**

SB43367-01 *MW-P2*

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

Iron

## SW846 8260C

**Calibration:**

1112046

Analyte quantified by quadratic equation type calibration.

Methyl tert-butyl ether
trans-1,4-Dichloro-2-butene
Vinyl chloride

This affected the following samples:

1202759-BLK1
1202759-BS1
1202759-BSD1
Blank
MW-P2
S112414-ICV1
S201436-CCV1

**Laboratory Control Samples:**

1202759 BS/BSD

## SW846 8260C

**Laboratory Control Samples:**

1202759 BS/BSD

Bromoform percent recoveries (138/128) are outside individual acceptance criteria (70-130), but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

Blank
MW-P2

Hexachlorobutadiene percent recoveries (132/117) are outside individual acceptance criteria (70-130), but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

Blank
MW-P2

**Samples:**

S201436-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

1,1,1,2-Tetrachloroethane (25.1%)
2-Butanone (MEK) (-29.9%)
Acetone (-23.1%)
Bromobenzene (25.7%)
Dibromochloromethane (23.9%)
Ethanol (-21.0%)
Tert-Butanol / butyl alcohol (-25.0%)
Tetrachloroethene (23.4%)

Analyte percent drift is outside individual acceptance criteria (20), but within overall method allowances.

Bromoform (37.2%)
Carbon tetrachloride (28.7%)
Hexachlorobutadiene (24.8%)
trans-1,4-Dichloro-2-butene (24.8%)

This affected the following samples:

1202759-BLK1
1202759-BS1
1202759-BSD1
Blank
MW-P2

## SW846 8270D

**Samples:**

SB43367-01 *MW-P2*

The Reporting Limit has been raised to account for matrix interference.

| Sample Identification | Client Project # | Matrix | Collection Date/Time | Received |
|---|---|---|---|---|
| **MW-P2** | 1145.20 | Ground Water | 03-Feb-12 09:15 | 03-Feb-12 |
| SB43367-01 | | | | |

| CAS No. | Analyte(s) | Result | Flag | Units | *RDL | MDL | Dilution | Method Ref. | Prepared | Analyzed | Analyst | Batch | Cert. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| Volatile Organic Compounds<br>Prepared by method SW846 5030 Water MS | | | | | | | | | | | | | |
| 76-13-1 | 1,1,2-Trichlorotrifluoroethane (Freon 113) | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | SW846 8260C | 06-Feb-12 | 07-Feb-12 | jro | 1202759 | |
| 67-64-1 | Acetone | < 10.0 | | µg/l | 10.0 | 2.6 | 1 | " | " | " | " | " | |
| 107-13-1 | Acrylonitrile | < 0.5 | | µg/l | 0.5 | 0.5 | 1 | " | " | " | " | " | |
| 71-43-2 | Benzene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 108-86-1 | Bromobenzene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 74-97-5 | Bromochloromethane | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 75-27-4 | Bromodichloromethane | **0.9** | | µg/l | 0.5 | 0.5 | 1 | " | " | " | " | " | |
| 75-25-2 | Bromoform | **1.4** | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 74-83-9 | Bromomethane | < 2.0 | | µg/l | 2.0 | 1.1 | 1 | " | " | " | " | " | |
| 78-93-3 | 2-Butanone (MEK) | < 10.0 | | µg/l | 10.0 | 1.7 | 1 | " | " | " | " | " | |
| 104-51-8 | n-Butylbenzene | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 135-98-8 | sec-Butylbenzene | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 98-06-6 | tert-Butylbenzene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 75-15-0 | Carbon disulfide | < 2.0 | | µg/l | 2.0 | 0.6 | 1 | " | " | " | " | " | |
| 56-23-5 | Carbon tetrachloride | < 1.0 | | µg/l | 1.0 | 0.5 | 1 | " | " | " | " | " | |
| 108-90-7 | Chlorobenzene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 75-00-3 | Chloroethane | < 2.0 | | µg/l | 2.0 | 1.0 | 1 | " | " | " | " | " | |
| 67-66-3 | Chloroform | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 74-87-3 | Chloromethane | < 2.0 | | µg/l | 2.0 | 1.5 | 1 | " | " | " | " | " | |
| 95-49-8 | 2-Chlorotoluene | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 106-43-4 | 4-Chlorotoluene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | < 2.0 | | µg/l | 2.0 | 0.9 | 1 | " | " | " | " | " | |
| 124-48-1 | Dibromochloromethane | **2.3** | | µg/l | 0.5 | 0.3 | 1 | " | " | " | " | " | |
| 106-93-4 | 1,2-Dibromoethane (EDB) | < 0.5 | | µg/l | 0.5 | 0.3 | 1 | " | " | " | " | " | |
| 74-95-3 | Dibromomethane | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 95-50-1 | 1,2-Dichlorobenzene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 541-73-1 | 1,3-Dichlorobenzene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 106-46-7 | 1,4-Dichlorobenzene | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 75-71-8 | Dichlorodifluoromethane (Freon12) | < 2.0 | | µg/l | 2.0 | 0.4 | 1 | " | " | " | " | " | |
| 75-34-3 | 1,1-Dichloroethane | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 107-06-2 | 1,2-Dichloroethane | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 75-35-4 | 1,1-Dichloroethene | < 1.0 | | µg/l | 1.0 | 0.5 | 1 | " | " | " | " | " | |
| 156-59-2 | cis-1,2-Dichloroethene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 156-60-5 | trans-1,2-Dichloroethene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 78-87-5 | 1,2-Dichloropropane | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 142-28-9 | 1,3-Dichloropropane | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 594-20-7 | 2,2-Dichloropropane | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 563-58-6 | 1,1-Dichloropropene | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 10061-01-5 | cis-1,3-Dichloropropene | < 0.5 | | µg/l | 0.5 | 0.3 | 1 | " | " | " | " | " | |
| 10061-02-6 | trans-1,3-Dichloropropene | < 0.5 | | µg/l | 0.5 | 0.5 | 1 | " | " | " | " | " | |
| 100-41-4 | Ethylbenzene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 87-68-3 | Hexachlorobutadiene | < 0.5 | | µg/l | 0.5 | 0.4 | 1 | " | " | " | " | " | |
| 591-78-6 | 2-Hexanone (MBK) | < 10.0 | | µg/l | 10.0 | 0.5 | 1 | " | " | " | " | " | |

| Sample Identification | Client Project # | Matrix | Collection Date/Time | Received |
|---|---|---|---|---|
| **MW-P2** | 1145.20 | Ground Water | 03-Feb-12 09:15 | 03-Feb-12 |
| SB43367-01 | | | | |

| CAS No. | Analyte(s) | Result | Flag | Units | *RDL | MDL | Dilution | Method Ref. | Prepared | Analyzed | Analyst | Batch | Cert. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| Volatile Organic Compounds<br>Prepared by method SW846 5030 Water MS | | | | | | | | | | | | | |
| 98-82-8 | Isopropylbenzene | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | SW846 8260C | 06-Feb-12 | 07-Feb-12 | jro | 1202759 | |
| 99-87-6 | 4-Isopropyltoluene | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 1634-04-4 | Methyl tert-butyl ether | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 108-10-1 | 4-Methyl-2-pentanone (MIBK) | < 10.0 | | µg/l | 10.0 | 0.9 | 1 | " | " | " | " | " | |
| 75-09-2 | Methylene chloride | < 2.0 | | µg/l | 2.0 | 0.7 | 1 | " | " | " | " | " | |
| 91-20-3 | Naphthalene | < 1.0 | | µg/l | 1.0 | 0.3 | 1 | " | " | " | " | " | |
| 103-65-1 | n-Propylbenzene | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 100-42-5 | Styrene | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | < 0.5 | | µg/l | 0.5 | 0.3 | 1 | " | " | " | " | " | |
| 127-18-4 | Tetrachloroethene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 108-88-3 | Toluene | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 87-61-6 | 1,2,3-Trichlorobenzene | < 1.0 | | µg/l | 1.0 | 0.4 | 1 | " | " | " | " | " | |
| 120-82-1 | 1,2,4-Trichlorobenzene | < 1.0 | | µg/l | 1.0 | 0.4 | 1 | " | " | " | " | " | |
| 108-70-3 | 1,3,5-Trichlorobenzene | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 71-55-6 | 1,1,1-Trichloroethane | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 79-00-5 | 1,1,2-Trichloroethane | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 79-01-6 | Trichloroethene | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 75-69-4 | Trichlorofluoromethane (Freon 11) | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 96-18-4 | 1,2,3-Trichloropropane | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 95-63-6 | 1,2,4-Trimethylbenzene | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 108-67-8 | 1,3,5-Trimethylbenzene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 75-01-4 | Vinyl chloride | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 179601-23-1 | m,p-Xylene | < 2.0 | | µg/l | 2.0 | 1.6 | 1 | " | " | " | " | " | |
| 95-47-6 | o-Xylene | < 1.0 | | µg/l | 1.0 | 0.9 | 1 | " | " | " | " | " | |
| 109-99-9 | Tetrahydrofuran | < 2.0 | | µg/l | 2.0 | 1.4 | 1 | " | " | " | " | " | |
| 60-29-7 | Ethyl ether | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 994-05-8 | Tert-amyl methyl ether | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 637-92-3 | Ethyl tert-butyl ether | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 108-20-3 | Di-isopropyl ether | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 75-65-0 | Tert-Butanol / butyl alcohol | < 10.0 | | µg/l | 10.0 | 8.6 | 1 | " | " | " | " | " | |
| 123-91-1 | 1,4-Dioxane | < 20.0 | | µg/l | 20.0 | 14.0 | 1 | " | " | " | " | " | |
| 110-57-6 | trans-1,4-Dichloro-2-buten e | < 5.0 | | µg/l | 5.0 | 0.8 | 1 | " | " | " | " | " | |
| 64-17-5 | Ethanol | < 400 | | µg/l | 400 | 35.7 | 1 | " | " | " | " | " | |
| *Surrogate recoveries:* | | | | | | | | | | | | | |
| *460-00-4* | *4-Bromofluorobenzene* | *93* | | | *70-130 %* | | | " | " | " | " | " | |
| *2037-26-5* | *Toluene-d8* | *101* | | | *70-130 %* | | | " | " | " | " | " | |
| *17060-07-0* | *1,2-Dichloroethane-d4* | *108* | | | *70-130 %* | | | " | " | " | " | " | |
| *1868-53-7* | *Dibromofluoromethane* | *104* | | | *70-130 %* | | | " | " | " | " | " | |
| **Semivolatile Organic Compounds by GCMS** | | | | | | | | | | | | | |
| Phthalates<br>Prepared by method SW846 3510C | | | R01 | | | | | | | | | | |

| Sample Identification | Client Project # | Matrix | Collection Date/Time | Received |
|---|---|---|---|---|
| **MW-P2** | 1145.20 | Ground Water | 03-Feb-12 09:15 | 03-Feb-12 |
| SB43367-01 | | | | |

| CAS No. | Analyte(s) | Result | Flag | Units | *RDL | MDL | Dilution | Method Ref. | Prepared | Analyzed | Analyst | Batch | Cert. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Semivolatile Organic Compounds by GCMS** | | | | | | | | | | | | | |
| Phthalates | | | R01 | | | | | | | | | | |
| Prepared by method SW846 3510C | | | | | | | | | | | | | |
| 117-81-7 | Bis(2-ethylhexyl)phthalate | < 52.1 | | µg/l | 52.1 | 17.5 | 10 | SW846 8270D | 06-Feb-12 | 07-Feb-12 | ML | 1202737 | |
| 85-68-7 | Butyl benzyl phthalate | < 52.1 | | µg/l | 52.1 | 7.81 | 10 | " | " | " | " | " | |
| 84-66-2 | Diethyl phthalate | < 52.1 | | µg/l | 52.1 | 12.8 | 10 | " | " | " | " | " | |
| 131-11-3 | Dimethyl phthalate | < 52.1 | | µg/l | 52.1 | 8.85 | 10 | " | " | " | " | " | |
| 84-74-2 | Di-n-butyl phthalate | < 52.1 | | µg/l | 52.1 | 14.0 | 10 | " | " | " | " | " | |
| 117-84-0 | Di-n-octyl phthalate | < 52.1 | | µg/l | 52.1 | 13.8 | 10 | " | " | " | " | " | |
| *Surrogate recoveries:* | | | | | | | | | | | | | |
| *321-60-8* | *2-Fluorobiphenyl* | *84* | | | *30-130 %* | | | " | " | " | " | " | |
| *1718-51-0* | *Terphenyl-dl4* | *97* | | | *30-130 %* | | | " | " | " | " | " | |
| **Semivolatile Organic Compounds by GC** | | | | | | | | | | | | | |
| Polychlorinated Biphenyls | | | | | | | | | | | | | |
| Prepared by method SW846 3510C | | | | | | | | | | | | | |
| 12674-11-2 | Aroclor-1016 | < 0.213 | | µg/l | 0.213 | 0.00915 | 1 | SW846 8082A | 06-Feb-12 | 06-Feb-12 | IMR | 1202734 | |
| 11104-28-2 | Aroclor-1221 | < 0.213 | | µg/l | 0.213 | 0.0152 | 1 | " | " | " | " | " | |
| 11141-16-5 | Aroclor-1232 | < 0.213 | | µg/l | 0.213 | 0.0143 | 1 | " | " | " | " | " | |
| 53469-21-9 | Aroclor-1242 | < 0.213 | | µg/l | 0.213 | 0.00777 | 1 | " | " | " | " | " | |
| 12672-29-6 | Aroclor-1248 | < 0.213 | | µg/l | 0.213 | 0.0120 | 1 | " | " | " | " | " | |
| 11097-69-1 | Aroclor-1254 | < 0.213 | | µg/l | 0.213 | 0.0105 | 1 | " | " | " | " | " | |
| 11096-82-5 | Aroclor-1260 | < 0.213 | | µg/l | 0.213 | 0.00617 | 1 | " | " | " | " | " | |
| 37324-23-5 | Aroclor-1262 | < 0.213 | | µg/l | 0.213 | 0.00926 | 1 | " | " | " | " | " | |
| 11100-14-4 | Aroclor-1268 | < 0.213 | | µg/l | 0.213 | 0.0101 | 1 | " | " | " | " | " | |
| *Surrogate recoveries:* | | | | | | | | | | | | | |
| *10386-84-2* | *4,4-DB-Octafluorobiphenyl (Sr)* | *65* | | | *30-150 %* | | | " | " | " | " | " | |
| *10386-84-2* | *4,4-DB-Octafluorobiphenyl (Sr) [2C]* | *75* | | | *30-150 %* | | | " | " | " | " | " | |
| *2051-24-3* | *Decachlorobiphenyl (Sr)* | *35* | | | *30-150 %* | | | " | " | " | " | " | |
| *2051-24-3* | *Decachlorobiphenyl (Sr) [2C]* | *40* | | | *30-150 %* | | | " | " | " | " | " | |
| **Extractable Petroleum Hydrocarbons** | | | | | | | | | | | | | |
| | Non-polar material (SGT-HEM) | **1.4** | | mg/l | 1.0 | 0.6 | 1 | EPA 1664 Rev. A | 06-Feb-12 | 07-Feb-12 | JK | 1202731 | |
| **Total Metals by EPA 200/6000 Series Methods** | | | | | | | | | | | | | |
| | Preservation | **Lab Preserved** | | N/A | | | 1 | EPA 200/6000 methods | 03-Feb-12 | 03-Feb-12 | JLH | 1202663 | |
| **Total Metals by EPA 6000/7000 Series Methods** | | | | | | | | | | | | | |
| 7439-89-6 | Iron | **178** | GS1 | mg/l | 0.150 | 0.0460 | 10 | SW846 6010C | 06-Feb-12 | 07-Feb-12 | LR | 1202747 | |

| Sample Identification | Client Project # | Matrix | Collection Date/Time | Received |
|---|---|---|---|---|
| **Blank** | 1145.20 | Ground Water | 03-Feb-12 08:00 | 03-Feb-12 |
| SB43367-02 | | | | |

| CAS No. | Analyte(s) | Result | Flag | Units | *RDL | MDL | Dilution | Method Ref. | Prepared | Analyzed | Analyst | Batch | Cert. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| Volatile Organic Compounds<br>Prepared by method SW846 5030 Water MS | | | | | | | | | | | | | |
| 76-13-1 | 1,1,2-Trichlorotrifluoroethane (Freon 113) | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | SW846 8260C | 06-Feb-12 | 07-Feb-12 | jro | 1202759 | |
| 67-64-1 | Acetone | < 10.0 | | µg/l | 10.0 | 2.6 | 1 | " | " | " | " | " | |
| 107-13-1 | Acrylonitrile | < 0.5 | | µg/l | 0.5 | 0.5 | 1 | " | " | " | " | " | |
| 71-43-2 | Benzene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 108-86-1 | Bromobenzene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 74-97-5 | Bromochloromethane | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 75-27-4 | Bromodichloromethane | < 0.5 | | µg/l | 0.5 | 0.5 | 1 | " | " | " | " | " | |
| 75-25-2 | Bromoform | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 74-83-9 | Bromomethane | < 2.0 | | µg/l | 2.0 | 1.1 | 1 | " | " | " | " | " | |
| 78-93-3 | 2-Butanone (MEK) | < 10.0 | | µg/l | 10.0 | 1.7 | 1 | " | " | " | " | " | |
| 104-51-8 | n-Butylbenzene | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 135-98-8 | sec-Butylbenzene | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 98-06-6 | tert-Butylbenzene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 75-15-0 | Carbon disulfide | < 2.0 | | µg/l | 2.0 | 0.6 | 1 | " | " | " | " | " | |
| 56-23-5 | Carbon tetrachloride | < 1.0 | | µg/l | 1.0 | 0.5 | 1 | " | " | " | " | " | |
| 108-90-7 | Chlorobenzene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 75-00-3 | Chloroethane | < 2.0 | | µg/l | 2.0 | 1.0 | 1 | " | " | " | " | " | |
| 67-66-3 | Chloroform | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 74-87-3 | Chloromethane | < 2.0 | | µg/l | 2.0 | 1.5 | 1 | " | " | " | " | " | |
| 95-49-8 | 2-Chlorotoluene | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 106-43-4 | 4-Chlorotoluene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | < 2.0 | | µg/l | 2.0 | 0.9 | 1 | " | " | " | " | " | |
| 124-48-1 | Dibromochloromethane | < 0.5 | | µg/l | 0.5 | 0.3 | 1 | " | " | " | " | " | |
| 106-93-4 | 1,2-Dibromoethane (EDB) | < 0.5 | | µg/l | 0.5 | 0.3 | 1 | " | " | " | " | " | |
| 74-95-3 | Dibromomethane | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 95-50-1 | 1,2-Dichlorobenzene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 541-73-1 | 1,3-Dichlorobenzene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 106-46-7 | 1,4-Dichlorobenzene | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 75-71-8 | Dichlorodifluoromethane (Freon12) | < 2.0 | | µg/l | 2.0 | 0.4 | 1 | " | " | " | " | " | |
| 75-34-3 | 1,1-Dichloroethane | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 107-06-2 | 1,2-Dichloroethane | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 75-35-4 | 1,1-Dichloroethene | < 1.0 | | µg/l | 1.0 | 0.5 | 1 | " | " | " | " | " | |
| 156-59-2 | cis-1,2-Dichloroethene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 156-60-5 | trans-1,2-Dichloroethene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 78-87-5 | 1,2-Dichloropropane | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 142-28-9 | 1,3-Dichloropropane | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 594-20-7 | 2,2-Dichloropropane | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 563-58-6 | 1,1-Dichloropropene | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 10061-01-5 | cis-1,3-Dichloropropene | < 0.5 | | µg/l | 0.5 | 0.3 | 1 | " | " | " | " | " | |
| 10061-02-6 | trans-1,3-Dichloropropene | < 0.5 | | µg/l | 0.5 | 0.5 | 1 | " | " | " | " | " | |
| 100-41-4 | Ethylbenzene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 87-68-3 | Hexachlorobutadiene | < 0.5 | | µg/l | 0.5 | 0.4 | 1 | " | " | " | " | " | |
| 591-78-6 | 2-Hexanone (MBK) | < 10.0 | | µg/l | 10.0 | 0.5 | 1 | " | " | " | " | " | |

| Sample Identification | Client Project # | Matrix | Collection Date/Time | Received |
|---|---|---|---|---|
| **Blank** | 1145.20 | Ground Water | 03-Feb-12 08:00 | 03-Feb-12 |
| SB43367-02 | | | | |

| CAS No. | Analyte(s) | Result | Flag | Units | *RDL | MDL | Dilution | Method Ref. | Prepared | Analyzed | Analyst | Batch | Cert. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | |
| Volatile Organic Compounds<br>Prepared by method SW846 5030 Water MS | | | | | | | | | | | | | |
| 98-82-8 | Isopropylbenzene | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | SW846 8260C | 06-Feb-12 | 07-Feb-12 | jro | 1202759 | |
| 99-87-6 | 4-Isopropyltoluene | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 1634-04-4 | Methyl tert-butyl ether | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 108-10-1 | 4-Methyl-2-pentanone (MIBK) | < 10.0 | | µg/l | 10.0 | 0.9 | 1 | " | " | " | " | " | |
| 75-09-2 | Methylene chloride | < 2.0 | | µg/l | 2.0 | 0.7 | 1 | " | " | " | " | " | |
| 91-20-3 | Naphthalene | < 1.0 | | µg/l | 1.0 | 0.3 | 1 | " | " | " | " | " | |
| 103-65-1 | n-Propylbenzene | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 100-42-5 | Styrene | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | < 0.5 | | µg/l | 0.5 | 0.3 | 1 | " | " | " | " | " | |
| 127-18-4 | Tetrachloroethene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 108-88-3 | Toluene | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 87-61-6 | 1,2,3-Trichlorobenzene | < 1.0 | | µg/l | 1.0 | 0.4 | 1 | " | " | " | " | " | |
| 120-82-1 | 1,2,4-Trichlorobenzene | < 1.0 | | µg/l | 1.0 | 0.4 | 1 | " | " | " | " | " | |
| 108-70-3 | 1,3,5-Trichlorobenzene | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 71-55-6 | 1,1,1-Trichloroethane | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 79-00-5 | 1,1,2-Trichloroethane | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 79-01-6 | Trichloroethene | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 75-69-4 | Trichlorofluoromethane (Freon 11) | < 1.0 | | µg/l | 1.0 | 0.6 | 1 | " | " | " | " | " | |
| 96-18-4 | 1,2,3-Trichloropropane | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 95-63-6 | 1,2,4-Trimethylbenzene | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 108-67-8 | 1,3,5-Trimethylbenzene | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 75-01-4 | Vinyl chloride | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 179601-23-1 | m,p-Xylene | < 2.0 | | µg/l | 2.0 | 1.6 | 1 | " | " | " | " | " | |
| 95-47-6 | o-Xylene | < 1.0 | | µg/l | 1.0 | 0.9 | 1 | " | " | " | " | " | |
| 109-99-9 | Tetrahydrofuran | < 2.0 | | µg/l | 2.0 | 1.4 | 1 | " | " | " | " | " | |
| 60-29-7 | Ethyl ether | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 994-05-8 | Tert-amyl methyl ether | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 637-92-3 | Ethyl tert-butyl ether | < 1.0 | | µg/l | 1.0 | 0.8 | 1 | " | " | " | " | " | |
| 108-20-3 | Di-isopropyl ether | < 1.0 | | µg/l | 1.0 | 0.7 | 1 | " | " | " | " | " | |
| 75-65-0 | Tert-Butanol / butyl alcohol | < 10.0 | | µg/l | 10.0 | 8.6 | 1 | " | " | " | " | " | |
| 123-91-1 | 1,4-Dioxane | < 20.0 | | µg/l | 20.0 | 14.0 | 1 | " | " | " | " | " | |
| 110-57-6 | trans-1,4-Dichloro-2-butene | < 5.0 | | µg/l | 5.0 | 0.8 | 1 | " | " | " | " | " | |
| 64-17-5 | Ethanol | < 400 | | µg/l | 400 | 35.7 | 1 | " | " | " | " | " | |
| *Surrogate recoveries:* | | | | | | | | | | | | | |
| *460-00-4* | *4-Bromofluorobenzene* | *92* | | | *70-130 %* | | | " | " | " | " | " | |
| *2037-26-5* | *Toluene-d8* | *102* | | | *70-130 %* | | | " | " | " | " | " | |
| *17060-07-0* | *1,2-Dichloroethane-d4* | *109* | | | *70-130 %* | | | " | " | " | " | " | |
| *1868-53-7* | *Dibromofluoromethane* | *105* | | | *70-130 %* | | | " | " | " | " | " | |

| Analyte(s) | Result | Flag | Units | *RDL | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1202759 - SW846 5030 Water MS** | | | | | | | | | | |
| **Blank (1202759-BLK1)** | | | | | Prepared: 06-Feb-12 Analyzed: 07-Feb-12 | | | | | |
| 1,1,2-Trichlorotrifluoroethane (Freon 113) | < 1.0 | | µg/l | 1.0 | | | | | | |
| Acetone | < 10.0 | | µg/l | 10.0 | | | | | | |
| Acrylonitrile | < 0.5 | | µg/l | 0.5 | | | | | | |
| Benzene | < 1.0 | | µg/l | 1.0 | | | | | | |
| Bromobenzene | < 1.0 | | µg/l | 1.0 | | | | | | |
| Bromochloromethane | < 1.0 | | µg/l | 1.0 | | | | | | |
| Bromodichloromethane | < 0.5 | | µg/l | 0.5 | | | | | | |
| Bromoform | < 1.0 | | µg/l | 1.0 | | | | | | |
| Bromomethane | < 2.0 | | µg/l | 2.0 | | | | | | |
| 2-Butanone (MEK) | < 10.0 | | µg/l | 10.0 | | | | | | |
| n-Butylbenzene | < 1.0 | | µg/l | 1.0 | | | | | | |
| sec-Butylbenzene | < 1.0 | | µg/l | 1.0 | | | | | | |
| tert-Butylbenzene | < 1.0 | | µg/l | 1.0 | | | | | | |
| Carbon disulfide | < 2.0 | | µg/l | 2.0 | | | | | | |
| Carbon tetrachloride | < 1.0 | | µg/l | 1.0 | | | | | | |
| Chlorobenzene | < 1.0 | | µg/l | 1.0 | | | | | | |
| Chloroethane | < 2.0 | | µg/l | 2.0 | | | | | | |
| Chloroform | < 1.0 | | µg/l | 1.0 | | | | | | |
| Chloromethane | < 2.0 | | µg/l | 2.0 | | | | | | |
| 2-Chlorotoluene | < 1.0 | | µg/l | 1.0 | | | | | | |
| 4-Chlorotoluene | < 1.0 | | µg/l | 1.0 | | | | | | |
| 1,2-Dibromo-3-chloropropane | < 2.0 | | µg/l | 2.0 | | | | | | |
| Dibromochloromethane | < 0.5 | | µg/l | 0.5 | | | | | | |
| 1,2-Dibromoethane (EDB) | < 0.5 | | µg/l | 0.5 | | | | | | |
| Dibromomethane | < 1.0 | | µg/l | 1.0 | | | | | | |
| 1,2-Dichlorobenzene | < 1.0 | | µg/l | 1.0 | | | | | | |
| 1,3-Dichlorobenzene | < 1.0 | | µg/l | 1.0 | | | | | | |
| 1,4-Dichlorobenzene | < 1.0 | | µg/l | 1.0 | | | | | | |
| Dichlorodifluoromethane (Freon12) | < 2.0 | | µg/l | 2.0 | | | | | | |
| 1,1-Dichloroethane | < 1.0 | | µg/l | 1.0 | | | | | | |
| 1,2-Dichloroethane | < 1.0 | | µg/l | 1.0 | | | | | | |
| 1,1-Dichloroethene | < 1.0 | | µg/l | 1.0 | | | | | | |
| cis-1,2-Dichloroethene | < 1.0 | | µg/l | 1.0 | | | | | | |
| trans-1,2-Dichloroethene | < 1.0 | | µg/l | 1.0 | | | | | | |
| 1,2-Dichloropropane | < 1.0 | | µg/l | 1.0 | | | | | | |
| 1,3-Dichloropropane | < 1.0 | | µg/l | 1.0 | | | | | | |
| 2,2-Dichloropropane | < 1.0 | | µg/l | 1.0 | | | | | | |
| 1,1-Dichloropropene | < 1.0 | | µg/l | 1.0 | | | | | | |
| cis-1,3-Dichloropropene | < 0.5 | | µg/l | 0.5 | | | | | | |
| trans-1,3-Dichloropropene | < 0.5 | | µg/l | 0.5 | | | | | | |
| Ethylbenzene | < 1.0 | | µg/l | 1.0 | | | | | | |
| Hexachlorobutadiene | < 0.5 | | µg/l | 0.5 | | | | | | |
| 2-Hexanone (MBK) | < 10.0 | | µg/l | 10.0 | | | | | | |
| Isopropylbenzene | < 1.0 | | µg/l | 1.0 | | | | | | |
| 4-Isopropyltoluene | < 1.0 | | µg/l | 1.0 | | | | | | |
| Methyl tert-butyl ether | < 1.0 | | µg/l | 1.0 | | | | | | |
| 4-Methyl-2-pentanone (MIBK) | < 10.0 | | µg/l | 10.0 | | | | | | |
| Methylene chloride | < 2.0 | | µg/l | 2.0 | | | | | | |
| Naphthalene | < 1.0 | | µg/l | 1.0 | | | | | | |
| n-Propylbenzene | < 1.0 | | µg/l | 1.0 | | | | | | |
| Styrene | < 1.0 | | µg/l | 1.0 | | | | | | |
| 1,1,1,2-Tetrachloroethane | < 1.0 | | µg/l | 1.0 | | | | | | |

| Analyte(s) | Result | Flag | Units | *RDL | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1202759 - SW846 5030 Water MS** | | | | | | | | | | |
| **Blank (1202759-BLK1)** | | | | | Prepared: 06-Feb-12 Analyzed: 07-Feb-12 | | | | | |
| 1,1,2,2-Tetrachloroethane | < 0.5 | | µg/l | 0.5 | | | | | | |
| Tetrachloroethene | < 1.0 | | µg/l | 1.0 | | | | | | |
| Toluene | < 1.0 | | µg/l | 1.0 | | | | | | |
| 1,2,3-Trichlorobenzene | < 1.0 | | µg/l | 1.0 | | | | | | |
| 1,2,4-Trichlorobenzene | < 1.0 | | µg/l | 1.0 | | | | | | |
| 1,3,5-Trichlorobenzene | < 1.0 | | µg/l | 1.0 | | | | | | |
| 1,1,1-Trichloroethane | < 1.0 | | µg/l | 1.0 | | | | | | |
| 1,1,2-Trichloroethane | < 1.0 | | µg/l | 1.0 | | | | | | |
| Trichloroethene | < 1.0 | | µg/l | 1.0 | | | | | | |
| Trichlorofluoromethane (Freon 11) | < 1.0 | | µg/l | 1.0 | | | | | | |
| 1,2,3-Trichloropropane | < 1.0 | | µg/l | 1.0 | | | | | | |
| 1,2,4-Trimethylbenzene | < 1.0 | | µg/l | 1.0 | | | | | | |
| 1,3,5-Trimethylbenzene | < 1.0 | | µg/l | 1.0 | | | | | | |
| Vinyl chloride | < 1.0 | | µg/l | 1.0 | | | | | | |
| m,p-Xylene | < 2.0 | | µg/l | 2.0 | | | | | | |
| o-Xylene | < 1.0 | | µg/l | 1.0 | | | | | | |
| Tetrahydrofuran | < 2.0 | | µg/l | 2.0 | | | | | | |
| Ethyl ether | < 1.0 | | µg/l | 1.0 | | | | | | |
| Tert-amyl methyl ether | < 1.0 | | µg/l | 1.0 | | | | | | |
| Ethyl tert-butyl ether | < 1.0 | | µg/l | 1.0 | | | | | | |
| Di-isopropyl ether | < 1.0 | | µg/l | 1.0 | | | | | | |
| Tert-Butanol / butyl alcohol | < 10.0 | | µg/l | 10.0 | | | | | | |
| 1,4-Dioxane | < 20.0 | | µg/l | 20.0 | | | | | | |
| trans-1,4-Dichloro-2-butene | < 5.0 | | µg/l | 5.0 | | | | | | |
| Ethanol | < 400 | | µg/l | 400 | | | | | | |
| *Surrogate: 4-Bromofluorobenzene* | *47.6* | | µg/l | | *50.0* | | *95* | *70-130* | | |
| *Surrogate: Toluene-d8* | *51.1* | | µg/l | | *50.0* | | *102* | *70-130* | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *54.0* | | µg/l | | *50.0* | | *108* | *70-130* | | |
| *Surrogate: Dibromofluoromethane* | *51.8* | | µg/l | | *50.0* | | *104* | *70-130* | | |
| **LCS (1202759-BS1)** | | | | | Prepared: 06-Feb-12 Analyzed: 07-Feb-12 | | | | | |
| 1,1,2-Trichlorotrifluoroethane (Freon 113) | **20.0** | | µg/l | | 20.0 | | 100 | 70-130 | | |
| Acetone | **16.5** | | µg/l | | 20.0 | | 83 | 70-130 | | |
| Acrylonitrile | **17.3** | | µg/l | | 20.0 | | 86 | 70-130 | | |
| Benzene | **19.0** | | µg/l | | 20.0 | | 95 | 70-130 | | |
| Bromobenzene | **24.8** | | µg/l | | 20.0 | | 124 | 70-130 | | |
| Bromochloromethane | **20.1** | | µg/l | | 20.0 | | 100 | 70-130 | | |
| Bromodichloromethane | **21.7** | | µg/l | | 20.0 | | 108 | 70-130 | | |
| Bromoform | **27.7** | QM9 | µg/l | | 20.0 | | 138 | 70-130 | | |
| Bromomethane | **22.4** | | µg/l | | 20.0 | | 112 | 70-130 | | |
| 2-Butanone (MEK) | **17.3** | | µg/l | | 20.0 | | 86 | 70-130 | | |
| n-Butylbenzene | **17.3** | | µg/l | | 20.0 | | 86 | 70-130 | | |
| sec-Butylbenzene | **22.8** | | µg/l | | 20.0 | | 114 | 70-130 | | |
| tert-Butylbenzene | **22.6** | | µg/l | | 20.0 | | 113 | 70-130 | | |
| Carbon disulfide | **17.2** | | µg/l | | 20.0 | | 86 | 70-130 | | |
| Carbon tetrachloride | **25.2** | | µg/l | | 20.0 | | 126 | 70-130 | | |
| Chlorobenzene | **19.3** | | µg/l | | 20.0 | | 96 | 70-130 | | |
| Chloroethane | **19.0** | | µg/l | | 20.0 | | 95 | 70-130 | | |
| Chloroform | **21.2** | | µg/l | | 20.0 | | 106 | 70-130 | | |
| Chloromethane | **19.7** | | µg/l | | 20.0 | | 98 | 70-130 | | |
| 2-Chlorotoluene | **20.4** | | µg/l | | 20.0 | | 102 | 70-130 | | |
| 4-Chlorotoluene | **20.5** | | µg/l | | 20.0 | | 103 | 70-130 | | |

| Analyte(s) | Result | Flag | Units | *RDL | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1202759 - SW846 5030 Water MS** | | | | | | | | | | |
| **LCS (1202759-BS1)** | | | | | | Prepared: 06-Feb-12 Analyzed: 07-Feb-12 | | | | |
| 1,2-Dibromo-3-chloropropane | **19.6** | | µg/l | | 20.0 | | 98 | 70-130 | | |
| Dibromochloromethane | **25.1** | | µg/l | | 20.0 | | 126 | 70-130 | | |
| 1,2-Dibromoethane (EDB) | **20.6** | | µg/l | | 20.0 | | 103 | 70-130 | | |
| Dibromomethane | **19.7** | | µg/l | | 20.0 | | 98 | 70-130 | | |
| 1,2-Dichlorobenzene | **18.8** | | µg/l | | 20.0 | | 94 | 70-130 | | |
| 1,3-Dichlorobenzene | **23.9** | | µg/l | | 20.0 | | 119 | 70-130 | | |
| 1,4-Dichlorobenzene | **17.8** | | µg/l | | 20.0 | | 89 | 70-130 | | |
| Dichlorodifluoromethane (Freon12) | **21.7** | | µg/l | | 20.0 | | 109 | 70-130 | | |
| 1,1-Dichloroethane | **17.5** | | µg/l | | 20.0 | | 88 | 70-130 | | |
| 1,2-Dichloroethane | **19.5** | | µg/l | | 20.0 | | 97 | 70-130 | | |
| 1,1-Dichloroethene | **19.1** | | µg/l | | 20.0 | | 96 | 70-130 | | |
| cis-1,2-Dichloroethene | **19.9** | | µg/l | | 20.0 | | 99 | 70-130 | | |
| trans-1,2-Dichloroethene | **17.4** | | µg/l | | 20.0 | | 87 | 70-130 | | |
| 1,2-Dichloropropane | **18.5** | | µg/l | | 20.0 | | 92 | 70-130 | | |
| 1,3-Dichloropropane | **19.5** | | µg/l | | 20.0 | | 98 | 70-130 | | |
| 2,2-Dichloropropane | **20.4** | | µg/l | | 20.0 | | 102 | 70-130 | | |
| 1,1-Dichloropropene | **19.7** | | µg/l | | 20.0 | | 98 | 70-130 | | |
| cis-1,3-Dichloropropene | **20.3** | | µg/l | | 20.0 | | 101 | 70-130 | | |
| trans-1,3-Dichloropropene | **23.3** | | µg/l | | 20.0 | | 116 | 70-130 | | |
| Ethylbenzene | **20.4** | | µg/l | | 20.0 | | 102 | 70-130 | | |
| Hexachlorobutadiene | **26.4** | QM9 | µg/l | | 20.0 | | 132 | 70-130 | | |
| 2-Hexanone (MBK) | **20.1** | | µg/l | | 20.0 | | 101 | 70-130 | | |
| Isopropylbenzene | **21.5** | | µg/l | | 20.0 | | 107 | 70-130 | | |
| 4-Isopropyltoluene | **17.8** | | µg/l | | 20.0 | | 89 | 70-130 | | |
| Methyl tert-butyl ether | **20.0** | | µg/l | | 20.0 | | 100 | 70-130 | | |
| 4-Methyl-2-pentanone (MIBK) | **22.5** | | µg/l | | 20.0 | | 112 | 70-130 | | |
| Methylene chloride | **17.5** | | µg/l | | 20.0 | | 88 | 70-130 | | |
| Naphthalene | **17.9** | | µg/l | | 20.0 | | 89 | 70-130 | | |
| n-Propylbenzene | **21.2** | | µg/l | | 20.0 | | 106 | 70-130 | | |
| Styrene | **21.0** | | µg/l | | 20.0 | | 105 | 70-130 | | |
| 1,1,1,2-Tetrachloroethane | **25.2** | | µg/l | | 20.0 | | 126 | 70-130 | | |
| 1,1,2,2-Tetrachloroethane | **21.8** | | µg/l | | 20.0 | | 109 | 70-130 | | |
| Tetrachloroethene | **24.6** | | µg/l | | 20.0 | | 123 | 70-130 | | |
| Toluene | **19.1** | | µg/l | | 20.0 | | 95 | 70-130 | | |
| 1,2,3-Trichlorobenzene | **23.8** | | µg/l | | 20.0 | | 119 | 70-130 | | |
| 1,2,4-Trichlorobenzene | **21.8** | | µg/l | | 20.0 | | 109 | 70-130 | | |
| 1,3,5-Trichlorobenzene | **21.7** | | µg/l | | 20.0 | | 108 | 70-130 | | |
| 1,1,1-Trichloroethane | **22.6** | | µg/l | | 20.0 | | 113 | 70-130 | | |
| 1,1,2-Trichloroethane | **19.0** | | µg/l | | 20.0 | | 95 | 70-130 | | |
| Trichloroethene | **18.5** | | µg/l | | 20.0 | | 93 | 70-130 | | |
| Trichlorofluoromethane (Freon 11) | **20.6** | | µg/l | | 20.0 | | 103 | 70-130 | | |
| 1,2,3-Trichloropropane | **20.3** | | µg/l | | 20.0 | | 102 | 70-130 | | |
| 1,2,4-Trimethylbenzene | **22.1** | | µg/l | | 20.0 | | 110 | 70-130 | | |
| 1,3,5-Trimethylbenzene | **22.1** | | µg/l | | 20.0 | | 111 | 70-130 | | |
| Vinyl chloride | **20.8** | | µg/l | | 20.0 | | 104 | 70-130 | | |
| m,p-Xylene | **43.0** | | µg/l | | 40.0 | | 107 | 70-130 | | |
| o-Xylene | **22.2** | | µg/l | | 20.0 | | 111 | 70-130 | | |
| Tetrahydrofuran | **19.0** | | µg/l | | 20.0 | | 95 | 70-130 | | |
| Ethyl ether | **18.9** | | µg/l | | 20.0 | | 94 | 70-130 | | |
| Tert-amyl methyl ether | **17.8** | | µg/l | | 20.0 | | 89 | 70-130 | | |
| Ethyl tert-butyl ether | **18.6** | | µg/l | | 20.0 | | 93 | 70-130 | | |
| Di-isopropyl ether | **18.2** | | µg/l | | 20.0 | | 91 | 70-130 | | |

| Analyte(s) | Result | Flag | Units | *RDL | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1202759 - SW846 5030 Water MS** | | | | | | | | | | |
| **LCS (1202759-BS1)** | | | | | | Prepared: 06-Feb-12 Analyzed: 07-Feb-12 | | | | |
| Tert-Butanol / butyl alcohol | **158** | | µg/l | | 200 | | 79 | 70-130 | | |
| 1,4-Dioxane | **194** | | µg/l | | 200 | | 97 | 70-130 | | |
| trans-1,4-Dichloro-2-butene | **26.0** | | µg/l | | 20.0 | | 130 | 70-130 | | |
| Ethanol | **336** | | µg/l | | 400 | | 84 | 70-130 | | |
| *Surrogate: 4-Bromofluorobenzene* | *51.5* | | µg/l | | *50.0* | | *103* | *70-130* | | |
| *Surrogate: Toluene-d8* | *50.6* | | µg/l | | *50.0* | | *101* | *70-130* | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *50.8* | | µg/l | | *50.0* | | *102* | *70-130* | | |
| *Surrogate: Dibromofluoromethane* | *50.5* | | µg/l | | *50.0* | | *101* | *70-130* | | |
| **LCS Dup (1202759-BSD1)** | | | | | | Prepared: 06-Feb-12 Analyzed: 07-Feb-12 | | | | |
| 1,1,2-Trichlorotrifluoroethane (Freon 113) | **19.3** | | µg/l | | 20.0 | | 97 | 70-130 | 4 | 25 |
| Acetone | **14.6** | | µg/l | | 20.0 | | 73 | 70-130 | 13 | 50 |
| Acrylonitrile | **17.3** | | µg/l | | 20.0 | | 87 | 70-130 | 0.1 | 25 |
| Benzene | **18.2** | | µg/l | | 20.0 | | 91 | 70-130 | 4 | 25 |
| Bromobenzene | **23.2** | | µg/l | | 20.0 | | 116 | 70-130 | 7 | 25 |
| Bromochloromethane | **19.7** | | µg/l | | 20.0 | | 99 | 70-130 | 2 | 25 |
| Bromodichloromethane | **21.0** | | µg/l | | 20.0 | | 105 | 70-130 | 3 | 25 |
| Bromoform | **25.6** | | µg/l | | 20.0 | | 128 | 70-130 | 8 | 25 |
| Bromomethane | **21.9** | | µg/l | | 20.0 | | 109 | 70-130 | 3 | 50 |
| 2-Butanone (MEK) | **20.8** | | µg/l | | 20.0 | | 104 | 70-130 | 18 | 50 |
| n-Butylbenzene | **17.1** | | µg/l | | 20.0 | | 86 | 70-130 | 0.9 | 25 |
| sec-Butylbenzene | **20.6** | | µg/l | | 20.0 | | 103 | 70-130 | 10 | 25 |
| tert-Butylbenzene | **21.0** | | µg/l | | 20.0 | | 105 | 70-130 | 7 | 25 |
| Carbon disulfide | **16.8** | | µg/l | | 20.0 | | 84 | 70-130 | 2 | 25 |
| Carbon tetrachloride | **23.5** | | µg/l | | 20.0 | | 118 | 70-130 | 7 | 25 |
| Chlorobenzene | **18.2** | | µg/l | | 20.0 | | 91 | 70-130 | 6 | 25 |
| Chloroethane | **18.2** | | µg/l | | 20.0 | | 91 | 70-130 | 5 | 50 |
| Chloroform | **20.6** | | µg/l | | 20.0 | | 103 | 70-130 | 3 | 25 |
| Chloromethane | **19.1** | | µg/l | | 20.0 | | 95 | 70-130 | 3 | 25 |
| 2-Chlorotoluene | **19.4** | | µg/l | | 20.0 | | 97 | 70-130 | 5 | 25 |
| 4-Chlorotoluene | **19.2** | | µg/l | | 20.0 | | 96 | 70-130 | 7 | 25 |
| 1,2-Dibromo-3-chloropropane | **18.4** | | µg/l | | 20.0 | | 92 | 70-130 | 6 | 25 |
| Dibromochloromethane | **23.1** | | µg/l | | 20.0 | | 116 | 70-130 | 8 | 50 |
| 1,2-Dibromoethane (EDB) | **19.8** | | µg/l | | 20.0 | | 99 | 70-130 | 4 | 25 |
| Dibromomethane | **19.8** | | µg/l | | 20.0 | | 99 | 70-130 | 0.8 | 25 |
| 1,2-Dichlorobenzene | **18.2** | | µg/l | | 20.0 | | 91 | 70-130 | 3 | 25 |
| 1,3-Dichlorobenzene | **21.3** | | µg/l | | 20.0 | | 106 | 70-130 | 11 | 25 |
| 1,4-Dichlorobenzene | **16.6** | | µg/l | | 20.0 | | 83 | 70-130 | 7 | 25 |
| Dichlorodifluoromethane (Freon12) | **20.4** | | µg/l | | 20.0 | | 102 | 70-130 | 6 | 50 |
| 1,1-Dichloroethane | **17.2** | | µg/l | | 20.0 | | 86 | 70-130 | 2 | 25 |
| 1,2-Dichloroethane | **19.0** | | µg/l | | 20.0 | | 95 | 70-130 | 3 | 25 |
| 1,1-Dichloroethene | **19.0** | | µg/l | | 20.0 | | 95 | 70-130 | 0.9 | 25 |
| cis-1,2-Dichloroethene | **19.3** | | µg/l | | 20.0 | | 97 | 70-130 | 3 | 25 |
| trans-1,2-Dichloroethene | **16.6** | | µg/l | | 20.0 | | 83 | 70-130 | 4 | 25 |
| 1,2-Dichloropropane | **18.2** | | µg/l | | 20.0 | | 91 | 70-130 | 1 | 25 |
| 1,3-Dichloropropane | **19.0** | | µg/l | | 20.0 | | 95 | 70-130 | 2 | 25 |
| 2,2-Dichloropropane | **19.6** | | µg/l | | 20.0 | | 98 | 70-130 | 4 | 25 |
| 1,1-Dichloropropene | **19.0** | | µg/l | | 20.0 | | 95 | 70-130 | 3 | 25 |
| cis-1,3-Dichloropropene | **19.7** | | µg/l | | 20.0 | | 98 | 70-130 | 3 | 25 |
| trans-1,3-Dichloropropene | **23.2** | | µg/l | | 20.0 | | 116 | 70-130 | 0.4 | 25 |
| Ethylbenzene | **19.4** | | µg/l | | 20.0 | | 97 | 70-130 | 5 | 25 |
| Hexachlorobutadiene | **23.4** | | µg/l | | 20.0 | | 117 | 70-130 | 12 | 50 |

| Analyte(s) | Result | Flag | Units | *RDL | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1202759 - SW846 5030 Water MS** | | | | | | | | | | |
| **LCS Dup (1202759-BSD1)** | | | | | Prepared: 06-Feb-12 Analyzed: 07-Feb-12 | | | | | |
| 2-Hexanone (MBK) | **21.1** | | µg/l | | 20.0 | | 106 | 70-130 | 5 | 25 |
| Isopropylbenzene | **20.1** | | µg/l | | 20.0 | | 101 | 70-130 | 7 | 25 |
| 4-Isopropyltoluene | **17.5** | | µg/l | | 20.0 | | 87 | 70-130 | 2 | 25 |
| Methyl tert-butyl ether | **20.4** | | µg/l | | 20.0 | | 102 | 70-130 | 2 | 25 |
| 4-Methyl-2-pentanone (MIBK) | **22.4** | | µg/l | | 20.0 | | 112 | 70-130 | 0.4 | 50 |
| Methylene chloride | **17.3** | | µg/l | | 20.0 | | 87 | 70-130 | 1 | 25 |
| Naphthalene | **17.5** | | µg/l | | 20.0 | | 88 | 70-130 | 2 | 25 |
| n-Propylbenzene | **20.1** | | µg/l | | 20.0 | | 100 | 70-130 | 5 | 25 |
| Styrene | **20.3** | | µg/l | | 20.0 | | 101 | 70-130 | 3 | 25 |
| 1,1,1,2-Tetrachloroethane | **22.8** | | µg/l | | 20.0 | | 114 | 70-130 | 10 | 25 |
| 1,1,2,2-Tetrachloroethane | **20.9** | | µg/l | | 20.0 | | 105 | 70-130 | 4 | 25 |
| Tetrachloroethene | **22.5** | | µg/l | | 20.0 | | 112 | 70-130 | 9 | 25 |
| Toluene | **18.4** | | µg/l | | 20.0 | | 92 | 70-130 | 4 | 25 |
| 1,2,3-Trichlorobenzene | **22.6** | | µg/l | | 20.0 | | 113 | 70-130 | 5 | 25 |
| 1,2,4-Trichlorobenzene | **20.5** | | µg/l | | 20.0 | | 102 | 70-130 | 6 | 25 |
| 1,3,5-Trichlorobenzene | **21.3** | | µg/l | | 20.0 | | 107 | 70-130 | 2 | 25 |
| 1,1,1-Trichloroethane | **21.3** | | µg/l | | 20.0 | | 107 | 70-130 | 6 | 25 |
| 1,1,2-Trichloroethane | **18.9** | | µg/l | | 20.0 | | 94 | 70-130 | 0.7 | 25 |
| Trichloroethene | **18.2** | | µg/l | | 20.0 | | 91 | 70-130 | 2 | 25 |
| Trichlorofluoromethane (Freon 11) | **19.5** | | µg/l | | 20.0 | | 98 | 70-130 | 6 | 50 |
| 1,2,3-Trichloropropane | **20.2** | | µg/l | | 20.0 | | 101 | 70-130 | 0.4 | 25 |
| 1,2,4-Trimethylbenzene | **20.4** | | µg/l | | 20.0 | | 102 | 70-130 | 8 | 25 |
| 1,3,5-Trimethylbenzene | **20.5** | | µg/l | | 20.0 | | 103 | 70-130 | 7 | 25 |
| Vinyl chloride | **20.6** | | µg/l | | 20.0 | | 103 | 70-130 | 1 | 25 |
| m,p-Xylene | **40.7** | | µg/l | | 40.0 | | 102 | 70-130 | 6 | 25 |
| o-Xylene | **20.7** | | µg/l | | 20.0 | | 104 | 70-130 | 7 | 25 |
| Tetrahydrofuran | **18.8** | | µg/l | | 20.0 | | 94 | 70-130 | 0.8 | 25 |
| Ethyl ether | **18.0** | | µg/l | | 20.0 | | 90 | 70-130 | 5 | 50 |
| Tert-amyl methyl ether | **18.3** | | µg/l | | 20.0 | | 91 | 70-130 | 3 | 25 |
| Ethyl tert-butyl ether | **18.6** | | µg/l | | 20.0 | | 93 | 70-130 | 0.2 | 25 |
| Di-isopropyl ether | **18.2** | | µg/l | | 20.0 | | 91 | 70-130 | 0.1 | 25 |
| Tert-Butanol / butyl alcohol | **161** | | µg/l | | 200 | | 81 | 70-130 | 2 | 25 |
| 1,4-Dioxane | **219** | | µg/l | | 200 | | 110 | 70-130 | 12 | 25 |
| trans-1,4-Dichloro-2-butene | **25.1** | | µg/l | | 20.0 | | 126 | 70-130 | 3 | 25 |
| Ethanol | **332** | | µg/l | | 400 | | 83 | 70-130 | 1 | 30 |
| *Surrogate: 4-Bromofluorobenzene* | *50.7* | | µg/l | | *50.0* | | *101* | *70-130* | | |
| *Surrogate: Toluene-d8* | *50.1* | | µg/l | | *50.0* | | *100* | *70-130* | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *50.9* | | µg/l | | *50.0* | | *102* | *70-130* | | |
| *Surrogate: Dibromofluoromethane* | *50.4* | | µg/l | | *50.0* | | *101* | *70-130* | | |

## Semivolatile Organic Compounds by GCMS - Quality Control

| Analyte(s) | Result | Flag | Units | *RDL | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1202737 - SW846 3510C** | | | | | | | | | | |
| **Blank (1202737-BLK1)** | | | | | Prepared & Analyzed: 06-Feb-12 | | | | | |
| Bis(2-ethylhexyl)phthalate | < 5.00 | | µg/l | 5.00 | | | | | | |
| Butyl benzyl phthalate | < 5.00 | | µg/l | 5.00 | | | | | | |
| Diethyl phthalate | < 5.00 | | µg/l | 5.00 | | | | | | |
| Dimethyl phthalate | < 5.00 | | µg/l | 5.00 | | | | | | |
| Di-n-butyl phthalate | < 5.00 | | µg/l | 5.00 | | | | | | |
| Di-n-octyl phthalate | < 5.00 | | µg/l | 5.00 | | | | | | |
| *Surrogate: 2-Fluorobiphenyl* | *34.5* | | µg/l | | *50.0* | | *69* | *30-130* | | |
| *Surrogate: Terphenyl-dl4* | *38.6* | | µg/l | | *50.0* | | *77* | *30-130* | | |
| **LCS (1202737-BS1)** | | | | | Prepared & Analyzed: 06-Feb-12 | | | | | |
| Bis(2-ethylhexyl)phthalate | **30.0** | | µg/l | 5.00 | 50.0 | | 60 | 40-140 | | |
| Butyl benzyl phthalate | **30.6** | | µg/l | 5.00 | 50.0 | | 61 | 40-140 | | |
| Diethyl phthalate | **31.2** | | µg/l | 5.00 | 50.0 | | 62 | 40-140 | | |
| Dimethyl phthalate | **29.3** | | µg/l | 5.00 | 50.0 | | 59 | 40-140 | | |
| Di-n-butyl phthalate | **33.4** | | µg/l | 5.00 | 50.0 | | 67 | 40-140 | | |
| Di-n-octyl phthalate | **32.1** | | µg/l | 5.00 | 50.0 | | 64 | 40-140 | | |
| *Surrogate: 2-Fluorobiphenyl* | *32.7* | | µg/l | | *50.0* | | *65* | *30-130* | | |
| *Surrogate: Terphenyl-dl4* | *36.3* | | µg/l | | *50.0* | | *73* | *30-130* | | |

## Semivolatile Organic Compounds by GC - Quality Control

| Analyte(s) | Result | Flag | Units | *RDL | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1202734 - SW846 3510C** | | | | | | | | | | |
| **Blank (1202734-BLK1)** | | | | | Prepared & Analyzed: 06-Feb-12 | | | | | |
| Aroclor-1016 | < 0.200 | | µg/l | 0.200 | | | | | | |
| Aroclor-1016 [2C] | < 0.200 | | µg/l | 0.200 | | | | | | |
| Aroclor-1221 | < 0.200 | | µg/l | 0.200 | | | | | | |
| Aroclor-1221 [2C] | < 0.200 | | µg/l | 0.200 | | | | | | |
| Aroclor-1232 | < 0.200 | | µg/l | 0.200 | | | | | | |
| Aroclor-1232 [2C] | < 0.200 | | µg/l | 0.200 | | | | | | |
| Aroclor-1242 | < 0.200 | | µg/l | 0.200 | | | | | | |
| Aroclor-1242 [2C] | < 0.200 | | µg/l | 0.200 | | | | | | |
| Aroclor-1248 | < 0.200 | | µg/l | 0.200 | | | | | | |
| Aroclor-1248 [2C] | < 0.200 | | µg/l | 0.200 | | | | | | |
| Aroclor-1254 | < 0.200 | | µg/l | 0.200 | | | | | | |
| Aroclor-1254 [2C] | < 0.200 | | µg/l | 0.200 | | | | | | |
| Aroclor-1260 | < 0.200 | | µg/l | 0.200 | | | | | | |
| Aroclor-1260 [2C] | < 0.200 | | µg/l | 0.200 | | | | | | |
| Aroclor-1262 | < 0.200 | | µg/l | 0.200 | | | | | | |
| Aroclor-1262 [2C] | < 0.200 | | µg/l | 0.200 | | | | | | |
| Aroclor-1268 | < 0.200 | | µg/l | 0.200 | | | | | | |
| Aroclor-1268 [2C] | < 0.200 | | µg/l | 0.200 | | | | | | |
| *Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)* | *0.170* | | µg/l | | *0.200* | | *85* | *30-150* | | |
| *Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]* | *0.170* | | µg/l | | *0.200* | | *85* | *30-150* | | |
| *Surrogate: Decachlorobiphenyl (Sr)* | *0.130* | | µg/l | | *0.200* | | *65* | *30-150* | | |
| *Surrogate: Decachlorobiphenyl (Sr) [2C]* | *0.180* | | µg/l | | *0.200* | | *90* | *30-150* | | |
| **LCS (1202734-BS1)** | | | | | Prepared & Analyzed: 06-Feb-12 | | | | | |
| Aroclor-1016 | **2.25** | | µg/l | 0.200 | 2.50 | | 90 | 50-140 | | |
| Aroclor-1016 [2C] | **2.13** | | µg/l | 0.200 | 2.50 | | 85 | 50-140 | | |
| Aroclor-1260 | **2.24** | | µg/l | 0.200 | 2.50 | | 90 | 50-140 | | |
| Aroclor-1260 [2C] | **1.90** | | µg/l | 0.200 | 2.50 | | 76 | 50-140 | | |
| *Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)* | *0.160* | | µg/l | | *0.200* | | *80* | *30-150* | | |
| *Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]* | *0.150* | | µg/l | | *0.200* | | *75* | *30-150* | | |
| *Surrogate: Decachlorobiphenyl (Sr)* | *0.110* | | µg/l | | *0.200* | | *55* | *30-150* | | |
| *Surrogate: Decachlorobiphenyl (Sr) [2C]* | *0.160* | | µg/l | | *0.200* | | *80* | *30-150* | | |
| **LCS Dup (1202734-BSD1)** | | | | | Prepared & Analyzed: 06-Feb-12 | | | | | |
| Aroclor-1016 | **2.26** | | µg/l | 0.200 | 2.50 | | 90 | 50-140 | 0.4 | 30 |
| Aroclor-1016 [2C] | **2.13** | | µg/l | 0.200 | 2.50 | | 85 | 50-140 | 0 | 30 |
| Aroclor-1260 | **2.28** | | µg/l | 0.200 | 2.50 | | 91 | 50-140 | 2 | 30 |
| Aroclor-1260 [2C] | **1.88** | | µg/l | 0.200 | 2.50 | | 75 | 50-140 | 1 | 30 |
| *Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)* | *0.160* | | µg/l | | *0.200* | | *80* | *30-150* | | |
| *Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]* | *0.150* | | µg/l | | *0.200* | | *75* | *30-150* | | |
| *Surrogate: Decachlorobiphenyl (Sr)* | *0.110* | | µg/l | | *0.200* | | *55* | *30-150* | | |
| *Surrogate: Decachlorobiphenyl (Sr) [2C]* | *0.150* | | µg/l | | *0.200* | | *75* | *30-150* | | |

## Extractable Petroleum Hydrocarbons - Quality Control

| Analyte(s) | Result | Flag | Units | *RDL | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1202731 - SW846 3510C** | | | | | | | | | | |
| **Blank (1202731-BLK1)** | | | | | | Prepared: 06-Feb-12 Analyzed: 07-Feb-12 | | | | |
| Non-polar material (SGT-HEM) | < 1.0 | | mg/l | 1.0 | | | | | | |
| **LCS (1202731-BS1)** | | | | | | Prepared: 06-Feb-12 Analyzed: 07-Feb-12 | | | | |
| Non-polar material (SGT-HEM) | **25.5** | | mg/l | | 30.4 | | 84 | 83-101 | | |

| Analyte(s) | Result | Flag | Units | *RDL | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 1202747 - SW846 3005A** | | | | | | | | | | |
| **Blank (1202747-BLK1)** | | | | | Prepared: 06-Feb-12 Analyzed: 07-Feb-12 | | | | | |
| Iron | < 0.0150 | | mg/l | 0.0150 | | | | | | |
| **LCS (1202747-BS1)** | | | | | Prepared: 06-Feb-12 Analyzed: 07-Feb-12 | | | | | |
| Iron | **1.30** | | mg/l | 0.0150 | 1.25 | | 104 | 85-115 | | |
| **LCS Dup (1202747-BSD1)** | | | | | Prepared: 06-Feb-12 Analyzed: 07-Feb-12 | | | | | |
| Iron | **1.35** | | mg/l | 0.0150 | 1.25 | | 108 | 85-115 | 3 | 20 |
| **Duplicate (1202747-DUP1)** | | | **Source: SB43367-01** | | Prepared: 06-Feb-12 Analyzed: 07-Feb-12 | | | | | |
| Iron | **167** | GS1 | mg/l | 0.150 | | 178 | | | 6 | 20 |

## Notes and Definitions

| | |
|---|---|
| GS1 | Sample dilution required for high concentration of target analytes to be within the instrument calibration range. |
| QM9 | The spike recovery for this QC sample is outside the established control limits. The sample results for the QC batch were accepted based on LCS/LCSD or SRM recoveries within the control limits. |
| R01 | The Reporting Limit has been raised to account for matrix interference. |
| dry | Sample results reported on a dry weight basis |
| NR | Not Reported |
| RPD | Relative Percent Difference |

Interpretation of Total Petroleum Hydrocarbon Report

Petroleum identification is determined by comparing the GC fingerprint obtained from the sample with a library of GC fingerprints obtained from analyses of various petroleum products. Possible match categories are as follows:

Gasoline - includes regular, unleaded, premium, etc.
Fuel Oil #2 - includes home heating oil, #2 fuel oil, and diesel
Fuel Oil #4 - includes #4 fuel oil
Fuel Oil #6 - includes #6 fuel oil and bunker "C" oil
Motor Oil - includes virgin and waste automobile oil
Ligroin - includes mineral spirits, petroleum naphtha, vm&p naphtha
Aviation Fuel - includes kerosene, Jet A and JP-4
Other Oil - includes lubricating and cutting oil, and silicon oil

At times, the unidentified petroleum product is quantified using a calibration that most closely approximates the distribution of compounds in the sample. When this occurs, the result is qualified as Calculated as.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
June O'Connor
Nicole Leja

✓ SB43367 CC

SPECTRUM ANALYTICAL, INC.
*Featuring*
HANIBAL TECHNOLOGY

# CHAIN OF CUSTODY RECORD

Page 1 of 1

**Special Handling:**
- ☐ Standard TAT - 7 to 10 business days
- ☑ Rush TAT - Date Needed: 2/7/12
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: CDW Consultants, Inc.
40 Speen St.
Framingham, MA 01701

Telephone #: 508-875-2657
Project Mgr. Brian Miller

Invoice To: Same

P.O. No.: _____ RQN: _____

Project No.: 1145.20
Site Name: Lewcott
Location: Millbury State: MA
Sampler(s): Mike Crosse

1=$Na_2S_2O_3$ 2=HCl 3=$H_2SO_4$ 4=$HNO_3$ 5=NaOH 6=Ascorbic Acid 7=$CH_3OH$
8=$NaHSO_4$ 9= Deionized Water 10= _____ 11= _____

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

G=Grab C=Composite

| Lab Id: | Sample Id: | Date: | Time: | Type | Matrix | Containers: # of VOA Vials | # of Amber Glass | # of Clear Glass | # of Plastic | List preservative code below: 2 2 4 | Analyses: ✓ VOCs by 8260 | ✓ TPH by 1IR | ✓ PCBs by 8082 | ✓ Phthalates 8270 | ✓ Total Iron |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SB43367-01 | MW-P2 | 2/3/12 | 9:15 AM | G | GW | 3 | 3 | | 1 | | ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ 02 | Blank | 2/3/12 | 8:00 AM | G | GW | 1 | | | | | ✓ | | | | |

QA/QC Reporting Notes:
* additional charges may apply

MA DEP MCP CAM Report: Yes ☑ No ☐
CT DPH RCP Report: Yes ☐ No ☐

**QA/QC Reporting Level**
☑ Standard ☐ No QC ☐ DQA*
☐ NY ASP A* ☐ NY ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ TIER II* ☐ TIER V*
☐ Other _____

State-specific reporting standards:

| Relinquished by: | Received by: | Date: | Time: | Temp°C |
|---|---|---|---|---|
| [signature] | [signature] | 2/3/12 | 1000 | |
| [signature] | [signature] | 2/3/12 | 1625 | 0.8 |

☐ EDD Format _____
☑ E-mail to bmiller@cdwconsultants.com

☐ Ambient ☒ Iced ☐ Refrigerated ☐ Fridge temp ____ °C ☐ Freezer temp ____ °C

CLR

**ATTACHMENT B**

Calculation of Dilution Factor

Formula:

DF = (Qs + Qe)/Qe

DF = dilution factor
Qs = 7Q10 of receiving water
Qe = Design flow of treatment system

Receiving water is the Blackstone River
Qs = 4.4 MGD = 6.8 cfs

Qe = 4 GPM = 0.0892 cfs

DF = (6.8 + 0.0892)/0.0892 = 77