

September 14, 2016  
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Environmental Program Specialist  
Alaska Department of Environmental Conservation  
Division of Spill Prevention and Response  
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907-269-2021

## RESTORATION

SCIENCE & ENGINEERING, LLC

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Subject: Bethel Youth Facility UST #1 Site Characterization – August 2016 Groundwater  
Monitoring Event, ADEC File No. 2407.26.016

Dear Ms. Griswold,

This letter report presents results of groundwater monitoring samples collected August 24, 2016 from groundwater monitoring wells installed at the Alaska Department of Health and Social Services (DHSS) Bethel Youth Facility (BYF) in January 2016. The BYF is located at 950 State Highway in Bethel, Alaska. Nine soil borings and four groundwater monitoring wells were installed during site characterization efforts in January 2016 conducted after Summer 2015 removal of a heating underground storage tank and approximately 50 cubic yards of heating oil impacted soil surrounding the heating oil tank.

Groundwater samples were collected using a variable speed peristaltic pump set to a low flow rate during purging and sampling. Prior to purging, the depth to water was measured with a water level indicator. To monitor the stabilization of groundwater within the wells, RSE collected field parameters with a YSI 63 water quality meter during purging. These parameters included temperature, conductivity, specific conductance, salinity, and pH. A minimum of three times the volume of water contained within the well casing was purged prior to sampling.

Groundwater samples were analyzed for diesel range organics (DRO); gasoline range organics (GRO); and benzene, toluene, ethylbenzene and total xylenes (BTEX); with semi-volatile organic compounds (SVOCs) additionally analyzed from monitoring well 4 (MW4). Each water sample was collected using new, dedicated tubing. The water level indicator and other non-disposable or non-dedicated equipment was decontaminated with distilled water and Alconox wash followed by double distilled water rinse before re-use. The tubing inlet was placed in the middle of the screened section, midway between the static water level and the bottom of the well. As water samples were collected, care was taken to minimize volatile loss from excessive turbulence or air mixing. Field personnel took care to avoid spilling or over-diluting acid sample preservatives. Water samples were placed directly into method-specific containers and stored in a clean sample cooler chilled between 2 and 6 °C. Water samples were maintained in a separate cooler from the soil samples. Coolers were transported under chain-of-custody to SGS North America Inc. (SGS), an ADEC-approved laboratory.

Groundwater samples collected from the four (4) installed monitoring wells (identified as MW 1, MW 3, MW 4, and MW 8) were analyzed for DRO, GRO, and BTEX, with the sample from MW 4 analyzed for SVOCs. All August 2016 groundwater sample results were either non-detect or below ADEC Table C groundwater cleanup concentrations. Full August 2016 Sampling Event tabulated groundwater sample results are provided in the attached Tables D1 through D3 in Attachment A.

The nearby Yukon Kuskokwim Correctional Center (YKCC) well is situated approximately 180 feet south of the former UST location in a permafrost thaw bulb that based on the water well log extends to a depth of at least 131 feet below ground surface (bgs). The site characterization encountered shallow groundwater from approximately between 14 and 18 feet bgs depending on the location specific ground surface elevation. An elevation survey of monitoring well top of casing was performed during the August 2016 groundwater monitoring event to account for differential movement of the wells and groundwater elevation was measured in each well. An oil/water interface probe was used and free product was not indicated in the wells, nor was sheen observed on the water samples. The site groundwater gradient (as of August 2016) calculated from groundwater elevation measurement results indicates shallow groundwater at the source area has an east-southeasterly flow direction which is generally consistent with the January 2016 groundwater gradient. An August 2016 groundwater gradient map is attached.

Given the current and likely future uses of the site, and based on previously reported findings (RSE, March 2016), it is RSEs opinion that remaining impacts to soil do not present a risk to human health or the environment. January 2016 and August 2016 sample results show that contaminant concentrations in groundwater at the site are stable and below ADEC Table C cleanup levels. RSE understands that ADEC is requesting at least one additional groundwater sampling event in 2017, and should the 2017 results confirm the findings to date, RSE requests ADEC consider cleanup complete with institutional controls status for the site.

Please contact Neil Waggoner, PE or David Nyman, PE at 907-278-1023 if you have any questions.

Best Regards,



Neil Waggoner, PE



References:

Restoration Science and Engineering, LLC. Site Characterization Report - Bethel Youth Facility. March 2016.

Attachments:

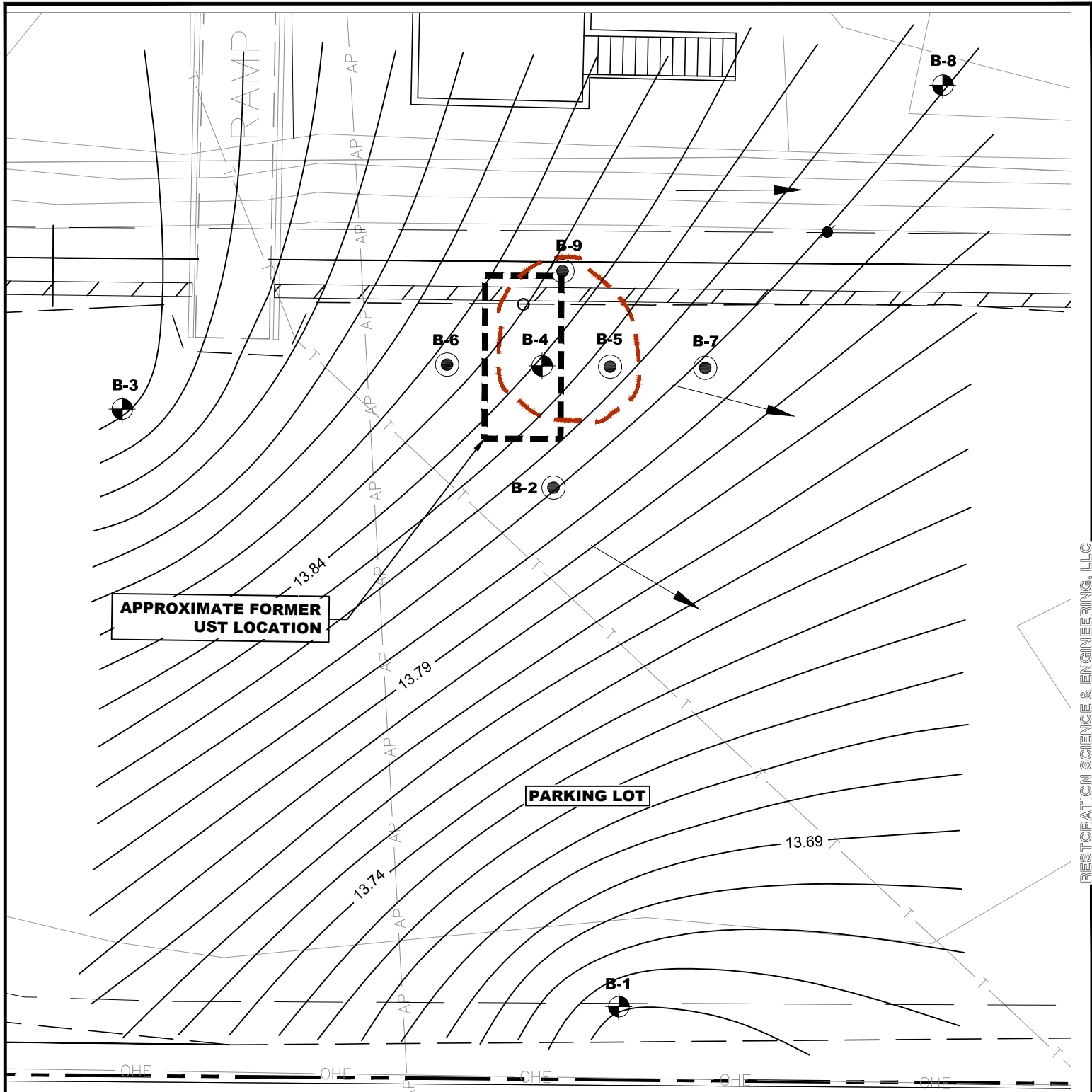
Attachment A - Bethel Youth Facility Groundwater Gradient Map – August 2016 Sampling Event

Attachment B - Tables D1 – D3 August 2016 Sampling Event Groundwater Quality Measurements and Laboratory data tables

Attachment C - SGS Lab Report 1165007, ADEC Laboratory Data Review Checklist





# **ATTACHMENT A**

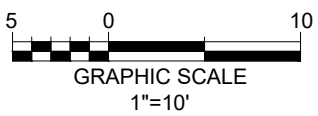
BETHEL YOUTH FACILITY  
GROUNDWATER GRADIENT MAP  
AUGUST 2016 SAMPLING EVENT




RESTORATION SCIENCE & ENGINEERING, LLC

**LEGEND**

-  SOIL BORING & MONITORING WELL LOCATION
-  SOIL BORING LOCATION
-  GROUNDWATER FLOW DIRECTION
- 13.88 APPROX GROUNDWATER ELEVATION JANUARY 2016
-  ESTIMATED LIMITS OF DRO IMPACTED SOIL ABOVE ADEC METHOD 2 CLEANUP LEVELS



|   |             |
|---|-------------|
| <b>ALASKA DEPARTMENT OF HEALTH AND SOCIAL SERVICES<br/>BETHEL YOUTH FACILITY<br/>SITE CHARACTERIZATION REPORT</b>   |             |
| <b>GROUNDWATER GRADIENT MAP<br/>AUGUST 2016</b>   |             |
| <b>BETHEL, ALASKA</b>   |             |
| JOB NO: 15-1459   | DRAWN: MSB  |
| DATE: 9.13.2016   | CHECKED: DN |
|  <b>RESTORATION</b><br>Science & Engineering, LLC<br>911 West 8th Avenue, Suite 100<br>Anchorage, Alaska 99501<br>PH.(907) 278-1023 FAX (907) 277-5718 |             |
| <b>FIGURE 5</b>   |             |

# **ATTACHMENT B**

TABLES D1 – D3  
AUGUST 2016 SAMPLING EVENT  
GROUNDWATER QUALITY MEASUREMENTS  
AND LABORATORY DATA TABLES

**TABLE D1 - GROUNDWATER QUALITY MEASUREMENTS  
 BETHEL YOUTH FACILITY  
 SITE CHARACTERIZATION  
 August 2016 Sampling Event**

| GROUNDWATER QUALITY MEASUREMENTS - 08-24-2016 |                                |                                 |                                      |                              |                        |                            |                     |                  |                         |                                 |                   |
|---|--------------------------------|---------------------------------|--------------------------------------|------------------------------|------------------------|----------------------------|---------------------|------------------|-------------------------|---------------------------------|-------------------|
| LOCATION                                      | Depth To Water (TOC)<br>(feet) | Depth to Bottom (TOC)<br>(feet) | Water Column Depth in Well<br>(feet) | MW Elevation (TOC)<br>(feet) | GW Elevation<br>(feet) | Volume Purged<br>(gallons) | Temperature<br>(°C) | pH<br>(pH Units) | Conductivity<br>(mS/cm) | Specific Conductance<br>(µS/cm) | Salinity<br>(ppt) |
| MW 1  | 17.92                          | 22.41                           | 4.49                                 | 31.55                        | 13.63                  | 1                          | 2.70                | 5.55             | 121.6                   | 209.5                           | 0.1               |
|   |                                |                                 |                                      |                              |                        | 2                          | 2.20                | 5.22             | 113.7                   | 202.0                           | 0.1               |
|   |                                |                                 |                                      |                              |                        | 3                          | 2.10                | 5.36             | 110.8                   | 196.2                           | 0.1               |
| MW 3  | 18.84                          | 23.08                           | 4.24                                 | 32.77                        | 13.93                  | 1                          | 1.70                | 5.46             | 86.4                    | Lerr                            | 0.1               |
|   |                                |                                 |                                      |                              |                        | 2                          | 1.10                | 5.55             | 80.5                    | Lerr                            | 0.1               |
|   |                                |                                 |                                      |                              |                        | 3                          | 1.00                | 5.36             | 81.5                    | Lerr                            | 0.1               |
| MW 4  | 19.09                          | 23.08                           | 3.99                                 | 32.93                        | 13.84                  | 1                          | 2.70                | 5.45             | 220.300                 | 386                             | 0.2               |
|   |                                |                                 |                                      |                              |                        | 2                          | 0.70                | 4.73             | 213.200                 | Lerr                            | 0.2               |
|   |                                |                                 |                                      |                              |                        | 3                          | 0.40                | 4.95             | 215.200                 | Lerr                            | 0.2               |
| MW 8  | 14.70                          | 19.17                           | 4.47                                 | 28.51                        | 13.81                  | 1                          | 3.70                | 5.53             | 1.5                     | 2.8                             | 0.0               |
|   |                                |                                 |                                      |                              |                        | 2                          | 1.50                | 4.80             | 100.4                   | Lerr                            | 0.1               |
|   |                                |                                 |                                      |                              |                        | 3                          | 1.30                | 4.67             | 108.3                   | Lerr                            | 0.1               |

**NOTES:**

- 1) Water quality measurements performed using a YSI Model 63 Water Quality Meter
- 2) mS/cm<sup>3</sup> = millisemens per centimeter cubed, µS/cm = millisemens per centimeter, ppt = parts per thousand
- 3) TOC = Top of Casing
- 4) Temporary bench mark (TBM) is located on the southwest corner of the concrete foundation of the light pole near B-8
- 5) Lerr indicates specific conductance calculation temperature exceeds the values computed using user defined temperature coefficient and/or reference temperature

**TABLE D2 - HYDROCARBON CONCENTRATIONS IN WATER  
 BETHEL YOUTH FACILITY  
 SITE CHARACTERIZATION  
 GROUNDWATER ANALYTICAL RESULTS  
 August 2016 Sampling Event**

| HYDROCARBON CONCENTRATIONS IN GROUNDWATER      |          |                               |   |   |                       |                       |                                 |                                |
|--|----------|-------------------------------|---|---|-----------------------|-----------------------|---------------------------------|--------------------------------|
| SAMPLE ID                                      | DATE     | SGS<br>LABORATORY<br>REPORT # | DIESEL<br>RANGE<br>ORGANICS<br><br>(mg/L) | GASOLINE<br>RANGE<br>ORGANICS<br><br>(mg/L) | BENZENE<br><br>(ug/L) | TOLUENE<br><br>(ug/L) | ETHYL-<br>BENZENE<br><br>(ug/L) | TOTAL<br>XYLENES<br><br>(ug/L) |
| MW 1-082416                                    | 08/24/16 | 1165007                       | <i>0.278 U</i>                            | <b>0.0311 J</b>                             | <i>0.250 U</i>        | <i>0.500 U</i>        | <i>0.500 U</i>                  | <i>1.50 U</i>                  |
| MW 3-082416                                    | 08/24/16 | 1165007                       | <b>0.170 J</b>                            | <b>0.0374 J</b>                             | <i>0.250 U</i>        | <i>0.500 U</i>        | <i>0.500 U</i>                  | <i>1.50 U</i>                  |
| MW 4-082416                                    | 08/24/16 | 1165007                       | <b>0.267 J</b>                            | <b>0.0502 J</b>                             | <i>0.250 U</i>        | <i>0.500 U</i>        | <i>0.500 U</i>                  | <b>2.00 J</b>                  |
| MW X-082416                                    | 08/24/16 | 1165007                       | <b>0.216 J</b>                            | <b>0.0405 J</b>                             | <i>0.250 U</i>        | <i>0.500 U</i>        | <i>0.500 U</i>                  | <b>2.15 J</b>                  |
| MW 8-082416                                    | 08/24/16 | 1165007                       | <b>0.177 J</b>                            | <b>0.0395 J</b>                             | <i>0.250 U</i>        | <i>0.500 U</i>        | <i>0.500 U</i>                  | <i>1.50 U</i>                  |
| <b>ADEC TABLE C GROUNDWATER CLEANUP LEVELS</b> |          |                               | <b>1.5</b>                                | <b>2.2</b>                                  | <b>5.0</b>            | <b>1,000</b>          | <b>700</b>                      | <b>10,000</b>                  |

**NOTES:**

- 1) Diesel range organics analyses by Method AK 102, Gasoline range organics analyses by Method AK 101, BTEX by Method EPA 8260B
- 2) Light yellow highlighting indicates analyte measured above ADEC Table C groundwater cleanup levels
- 3) Bold font indicates that concentrations were detected above the Detection Limit (DL)
- 4) Italicized values with a U flag indicates that the analyte measured non-detectable at the DL, the value given is the Limit of Detection (LOD = 1/2 LOQ)
- 5) Bolded values with a J flag indicates that the result is an estimated value
- 6) mg/L = milligrams per Liter, ug/L = micrograms per Liter, NT = not tested
- 7) LOQ is the limit of quantitation which is the reporting or practical quantitation limit
- 8) MW X is a duplicate of MW 4

**TABLE D3 - SEMI-VOLATILE ORGANIC COMPOUNDS IN WATER  
 BETHEL YOUTH FACILITY  
 SITE CHARACTERIZATION  
 GROUNDWATER ANALYTICAL RESULTS  
 August 2016 Sampling Event**

| <b>Semi-Volatile Organic Compound Concentrations in Groundwater</b> |                    |                   |  |
|---|--------------------|-------------------|--|
| <b>SAMPLE ID</b>  | <b>MW 4-082416</b> | <b>MWX-082416</b> | <b>ADEC Table C<br/>Groundwater<br/>Cleanup Level<br/>(ug/L)</b> |
| <b>SGS LABORATORY<br/>REPORT #</b>                                  | <b>1165007</b>     | <b>1165007</b>    |  |
| <b>DATE</b>   | <b>08/24/16</b>    | <b>08/24/16</b>   |  |
| <b>UNITS</b>  | <b>ug/L</b>        | <b>ug/L</b>       |  |
| 1-Methylnaphthalene   | <i>5.2 U</i>       | <i>5.0 U</i>      | 150  |
| 2-Methylnaphthalene   | <i>5.2 U</i>       | <i>5.0 U</i>      | 150  |
| Acenaphthene  | <i>5.2 U</i>       | <i>5.0 U</i>      | 2,200  |
| Acenaphthylene  | <i>5.2 U</i>       | <i>5.0 U</i>      | 2,200  |
| Anthracene  | <i>5.2 U</i>       | <i>5.0 U</i>      | 11,000   |
| Benzo(a)Anthracene  | <i>5.2 U</i>       | <i>5.0 U</i>      | 1.2  |
| Benzo[a]pyrene  | <i>5.2 U</i>       | <i>5.0 U</i>      | 0.2  |
| Benzo[b]Fluoranthene  | <i>5.2 U</i>       | <i>5.0 U</i>      | 1.2  |
| Benzo[g,h,i]perylene  | <i>5.2 U</i>       | <i>5.0 U</i>      | 1,100  |
| Benzo[k]fluoranthene  | <i>5.2 U</i>       | <i>5.0 U</i>      | 12   |
| Chrysene  | <i>5.2 U</i>       | <i>5.0 U</i>      | 120  |
| Dibenzo[a,h]anthracene  | <i>5.2 U</i>       | <i>5.0 U</i>      | 0.12   |
| Fluoranthene  | <i>5.2 U</i>       | <i>5.0 U</i>      | 1,500  |
| Fluorene  | <i>5.2 U</i>       | <i>5.0 U</i>      | 1,500  |
| Indeno[1,2,3-c,d] pyrene  | <i>5.2 U</i>       | <i>5.0 U</i>      | 1.2  |
| Naphthalene   | <i>5.2 U</i>       | <i>5.0 U</i>      | 730  |
| Phenanthrene  | <i>5.2 U</i>       | <i>5.0 U</i>      | 11,000   |
| Pyrene  | <i>5.2 U</i>       | <i>5.0 U</i>      | 1,100  |

**NOTES:**

- 1) Semi-volatile organic compounds in Monitoring wells by Method EPA 8270
- 2) Bold font indicates that concentrations were detected above the Detection Limit (DL)
- 3) Bolded values with a J flag indicates that the result is an estimated value
- 4) Italicized values with a U flag indicates that the analyte measured non-detectable at the DL, the value given is the Limit of Detection (LOD = 1/2 LOQ)
- 5) LOQ is the limit of quantitation which is the reporting or practical quantitation limit
- 6) Light blue highlight indicates the analyte was not detected at the DL, but the LOD is higher than the Table C Groundwater Cleanup Level



# **ATTACHMENT C**

SGS LAB REPORT 1165007  
LABORATORY DATA REVIEW CHECKLIST



## Laboratory Report of Analysis

To: Restoration Science & Eng  
911 West 8th Ave., Suite 205  
Anchorage, AK 99501  
(907) 278-1023

Report Number: **1165007**

Client Project: **15-1459 Bethel Youth Facility**

Dear Neil Waggoner,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Chuck at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,  
SGS North America Inc.

---

Chuck Homestead  
Project Manager  
Charles.Homestead@sgs.com

Date

Print Date: 09/12/2016 3:06:01PM

## Case Narrative

SGS Client: **Restoration Science & Eng**  
SGS Project: **1165007**  
Project Name/Site: **15-1459 Bethel Youth Facility**  
Project Contact: **Neil Waggoner**

Refer to sample receipt form for information on sample condition.

\*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 09/12/2016 3:06:03PM

### Report of Manual Integrations

| <u>Laboratory ID</u> | <u>Client Sample ID</u>        | <u>Analytical Batch</u> | <u>Analyte</u>      | <u>Reason</u> |
|----------------------|--------------------------------|-------------------------|---------------------|---------------|
| <b>SW8270D</b>       |                                |                         |                     |               |
| 1348111              | LCS for HBN 1742240 [XXX/36151 | XMS9590                 | 1-Chloronaphthalene | PNF           |
| 1348112              | LCSD for HBN 1742240 [XXX/3615 | XMS9590                 | 1-Chloronaphthalene | PNF           |
| 1350090              | CVC for HBN 1742697 [XMS/9590] | XMS9590                 | 1-Chloronaphthalene | RP            |
| 1350451              | CCV for HBN 1742772 [XMS/9594] | XMS9594                 | 1-Chloronaphthalene | RP            |

#### Manual Integration Reason Code Descriptions

| Code | Description                  |
|------|------------------------------|
| O    | Original Chromatogram        |
| M    | Modified Chromatogram        |
| SS   | Skimmed surrogate            |
| BLG  | Closed baseline gap          |
| RP   | Reassign peak name           |
| PIR  | Pattern integration required |
| IT   | Included tail                |
| SP   | Split peak                   |
| RSP  | Removed split peak           |
| FPS  | Forced peak start/stop       |
| BLC  | Baseline correction          |
| PNF  | Peak not found by software   |

All DRO/RRO analysis are integrated per SOP.

## Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

|                    |  |
|--------------------|--|
| *                  | The analyte has exceeded allowable regulatory or control limits.                 |
| !                  | Surrogate out of control limits.   |
| B                  | Indicates the analyte is found in a blank associated with the sample.            |
| CCV/CVA/CVB        | Continuing Calibration Verification  |
| CCCV/CVC/CVCA/CVCB | Closing Continuing Calibration Verification                                      |
| CL                 | Control Limit  |
| D                  | The analyte concentration is the result of a dilution.                           |
| DF                 | Dilution Factor  |
| DL                 | Detection Limit (i.e., maximum method detection limit)                           |
| E                  | The analyte result is above the calibrated range.                                |
| F                  | Indicates value that is greater than or equal to the DL                          |
| GT                 | Greater Than   |
| IB                 | Instrument Blank   |
| ICV                | Initial Calibration Verification   |
| J                  | The quantitation is an estimation.   |
| JL                 | The analyte was positively identified, but the quantitation is a low estimation. |
| LCS(D)             | Laboratory Control Spike (Duplicate)   |
| LOD                | Limit of Detection (i.e., 1/2 of the LOQ)  |
| LOQ                | Limit of Quantitation (i.e., reporting or practical quantitation limit)          |
| LT                 | Less Than  |
| M                  | A matrix effect was present.   |
| MB                 | Method Blank   |
| MS(D)              | Matrix Spike (Duplicate)   |
| ND                 | Indicates the analyte is not detected.   |
| Q                  | QC parameter out of acceptance range.  |
| R                  | Rejected   |
| RPD                | Relative Percent Difference  |
| U                  | Indicates the analyte was analyzed for but not detected.                         |

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

### Sample Summary

| <u>Client Sample ID</u> | <u>Lab Sample ID</u> | <u>Collected</u> | <u>Received</u> | <u>Matrix</u>                 |
|-------------------------|----------------------|------------------|-----------------|-------------------------------|
| MW1-082416              | 1165007001           | 08/24/2016       | 08/25/2016      | Water (Surface, Eff., Ground) |
| MW3-082416              | 1165007002           | 08/24/2016       | 08/25/2016      | Water (Surface, Eff., Ground) |
| MW4-082416              | 1165007003           | 08/24/2016       | 08/25/2016      | Water (Surface, Eff., Ground) |
| MW8-082416              | 1165007004           | 08/24/2016       | 08/25/2016      | Water (Surface, Eff., Ground) |
| MWX-082416              | 1165007005           | 08/24/2016       | 08/25/2016      | Water (Surface, Eff., Ground) |
| Trip Blank              | 1165007006           | 08/24/2016       | 08/25/2016      | Water (Surface, Eff., Ground) |

| <u>Method</u> | <u>Method Description</u>                |
|---------------|--|
| AK101         | AK101/8021 Combo.                        |
| SW8021B       | AK101/8021 Combo.                        |
| AK102         | DRO Low Volume (W)                       |
| SW8270D       | SW846-8270 SVOC by GC/MS (W) Liq/Liq ext |

Print Date: 09/12/2016 3:06:05PM



### Detectable Results Summary

Client Sample ID: **MW1-082416**

Lab Sample ID: 1165007001

**Volatile Fuels**

| <u>Parameter</u>        | <u>Result</u> | <u>Units</u> |
|-------------------------|---------------|--------------|
| Gasoline Range Organics | 0.0311J       | mg/L         |

Client Sample ID: **MW3-082416**

Lab Sample ID: 1165007002

**Semivolatile Organic Fuels**

| <u>Parameter</u>      | <u>Result</u> | <u>Units</u> |
|-----------------------|---------------|--------------|
| Diesel Range Organics | 0.170J        | mg/L         |

**Volatile Fuels**

|                         |         |      |
|-------------------------|---------|------|
| Gasoline Range Organics | 0.0374J | mg/L |
|-------------------------|---------|------|

Client Sample ID: **MW4-082416**

Lab Sample ID: 1165007003

**Semivolatile Organic Fuels**

| <u>Parameter</u>      | <u>Result</u> | <u>Units</u> |
|-----------------------|---------------|--------------|
| Diesel Range Organics | 0.267J        | mg/L         |

**Volatile Fuels**

|                         |         |      |
|-------------------------|---------|------|
| Gasoline Range Organics | 0.0502J | mg/L |
|-------------------------|---------|------|

|          |        |      |
|----------|--------|------|
| o-Xylene | 0.840J | ug/L |
|----------|--------|------|

|               |       |      |
|---------------|-------|------|
| P & M -Xylene | 1.16J | ug/L |
|---------------|-------|------|

Client Sample ID: **MW8-082416**

Lab Sample ID: 1165007004

**Semivolatile Organic Fuels**

| <u>Parameter</u>      | <u>Result</u> | <u>Units</u> |
|-----------------------|---------------|--------------|
| Diesel Range Organics | 0.177J        | mg/L         |

**Volatile Fuels**

|                         |         |      |
|-------------------------|---------|------|
| Gasoline Range Organics | 0.0395J | mg/L |
|-------------------------|---------|------|

Client Sample ID: **MWX-082416**

Lab Sample ID: 1165007005

**Semivolatile Organic Fuels**

| <u>Parameter</u>      | <u>Result</u> | <u>Units</u> |
|-----------------------|---------------|--------------|
| Diesel Range Organics | 0.216J        | mg/L         |

**Volatile Fuels**

|                         |         |      |
|-------------------------|---------|------|
| Gasoline Range Organics | 0.0405J | mg/L |
|-------------------------|---------|------|

|          |        |      |
|----------|--------|------|
| o-Xylene | 0.790J | ug/L |
|----------|--------|------|

|               |       |      |
|---------------|-------|------|
| P & M -Xylene | 1.36J | ug/L |
|---------------|-------|------|

Client Sample ID: **Trip Blank**

Lab Sample ID: 1165007006

**Volatile Fuels**

| <u>Parameter</u>        | <u>Result</u> | <u>Units</u> |
|-------------------------|---------------|--------------|
| Gasoline Range Organics | 0.0414J       | mg/L         |

Print Date: 09/12/2016 3:06:06PM

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Member of SGS Group



Results of **MW1-082416**

Client Sample ID: **MW1-082416**  
Client Project ID: **15-1459 Bethel Youth Facility**  
Lab Sample ID: 1165007001  
Lab Project ID: 1165007

Collection Date: 08/24/16 12:25  
Received Date: 08/25/16 11:34  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by **Semivolatile Organic Fuels**

| <u>Parameter</u>      | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|-----------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Diesel Range Organics | 0.278 U            | 0.556         | 0.167     | mg/L         | 1         |                         | 09/07/16 12:31       |
| <b>Surrogates</b>     |                    |               |           |              |           |                         |                      |
| 5a Androstane (surr)  | 88.7               | 50-150        |           | %            | 1         |                         | 09/07/16 12:31       |

**Batch Information**

Analytical Batch: XFC12800  
Analytical Method: AK102  
Analyst: NRO  
Analytical Date/Time: 09/07/16 12:31  
Container ID: 1165007001-D

Prep Batch: XXX36213  
Prep Method: SW3520C  
Prep Date/Time: 09/04/16 09:09  
Prep Initial Wt./Vol.: 270 mL  
Prep Extract Vol: 1 mL





Results of MW1-082416

Client Sample ID: MW1-082416
Client Project ID: 15-1459 Bethel Youth Facility
Lab Sample ID: 1165007001
Lab Project ID: 1165007

Collection Date: 08/24/16 12:25
Received Date: 08/25/16 11:34
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 0.0311 J, 0.100, 0.0310, mg/L, 1, 09/04/16 19:03

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 106, 50-150, %, 1, 09/04/16 19:03

Batch Information

Analytical Batch: VFC13276
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/04/16 19:03
Container ID: 1165007001-A

Prep Batch: VXX29490
Prep Method: SW5030B
Prep Date/Time: 09/04/16 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 92.3, 77-115, %, 1, 09/04/16 19:03

Batch Information

Analytical Batch: VFC13276
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 09/04/16 19:03
Container ID: 1165007001-A

Prep Batch: VXX29490
Prep Method: SW5030B
Prep Date/Time: 09/04/16 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **MW3-082416**

Client Sample ID: **MW3-082416**  
Client Project ID: **15-1459 Bethel Youth Facility**  
Lab Sample ID: 1165007002  
Lab Project ID: 1165007

Collection Date: 08/24/16 13:10  
Received Date: 08/25/16 11:34  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by **Semivolatile Organic Fuels**

| <u>Parameter</u>      | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|-----------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Diesel Range Organics | 0.170 J            | 0.556         | 0.167     | mg/L         | 1         |                         | 09/07/16 12:41       |
| <b>Surrogates</b>     |                    |               |           |              |           |                         |                      |
| 5a Androstane (surr)  | 93.4               | 50-150        |           | %            | 1         |                         | 09/07/16 12:41       |

**Batch Information**

Analytical Batch: XFC12800  
Analytical Method: AK102  
Analyst: NRO  
Analytical Date/Time: 09/07/16 12:41  
Container ID: 1165007002-D

Prep Batch: XXX36213  
Prep Method: SW3520C  
Prep Date/Time: 09/04/16 09:09  
Prep Initial Wt./Vol.: 270 mL  
Prep Extract Vol: 1 mL



Results of MW3-082416

Client Sample ID: MW3-082416
Client Project ID: 15-1459 Bethel Youth Facility
Lab Sample ID: 1165007002
Lab Project ID: 1165007

Collection Date: 08/24/16 13:10
Received Date: 08/25/16 11:34
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 0.0374 J, 0.100, 0.0310, mg/L, 1, 09/04/16 19:21

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 111, 50-150, %, 1, 09/04/16 19:21

Batch Information

Analytical Batch: VFC13276
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/04/16 19:21
Container ID: 1165007002-A

Prep Batch: VXX29490
Prep Method: SW5030B
Prep Date/Time: 09/04/16 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 94.3, 77-115, %, 1, 09/04/16 19:21

Batch Information

Analytical Batch: VFC13276
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 09/04/16 19:21
Container ID: 1165007002-A

Prep Batch: VXX29490
Prep Method: SW5030B
Prep Date/Time: 09/04/16 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **MW4-082416**

Client Sample ID: **MW4-082416**  
Client Project ID: **15-1459 Bethel Youth Facility**  
Lab Sample ID: 1165007003  
Lab Project ID: 1165007

Collection Date: 08/24/16 14:40  
Received Date: 08/25/16 11:34  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by **Semivolatile Organic Fuels**

| <u>Parameter</u>      | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|-----------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Diesel Range Organics | 0.267 J            | 0.588         | 0.176     | mg/L         | 1         |                         | 09/07/16 12:52       |
| <b>Surrogates</b>     |                    |               |           |              |           |                         |                      |
| 5a Androstane (surr)  | 92.9               | 50-150        |           | %            | 1         |                         | 09/07/16 12:52       |

**Batch Information**

Analytical Batch: XFC12800  
Analytical Method: AK102  
Analyst: NRO  
Analytical Date/Time: 09/07/16 12:52  
Container ID: 1165007003-D

Prep Batch: XXX36213  
Prep Method: SW3520C  
Prep Date/Time: 09/04/16 09:09  
Prep Initial Wt./Vol.: 255 mL  
Prep Extract Vol: 1 mL



Results of MW4-082416

Client Sample ID: MW4-082416
Client Project ID: 15-1459 Bethel Youth Facility
Lab Sample ID: 1165007003
Lab Project ID: 1165007

Collection Date: 08/24/16 14:40
Received Date: 08/25/16 11:34
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW4-082416

Client Sample ID: MW4-082416
Client Project ID: 15-1459 Bethel Youth Facility
Lab Sample ID: 1165007003
Lab Project ID: 1165007

Collection Date: 08/24/16 14:40
Received Date: 08/25/16 11:34
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various organic compounds like Benzo[b]Fluoranthene, Benzo[a,h]anthracene, etc., with their respective values and analysis dates.



**Results of MW4-082416**

Client Sample ID: **MW4-082416**  
Client Project ID: **15-1459 Bethel Youth Facility**  
Lab Sample ID: 1165007003  
Lab Project ID: 1165007

Collection Date: 08/24/16 14:40  
Received Date: 08/25/16 11:34  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

**Results by Semivolatile Organics GC/MS**

| <u>Parameter</u>        | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|-------------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| 2-Fluorobiphenyl (surr) | 69.8               | 44-119        |           | %            | 1         |                         | 09/08/16 00:22       |
| 2-Fluorophenol (surr)   | 43.7               | 19-119        |           | %            | 1         |                         | 09/08/16 00:22       |
| Nitrobenzene-d5 (surr)  | 59.1               | 44-120        |           | %            | 1         |                         | 09/08/16 00:22       |
| Phenol-d6 (surr)        | 41.8               | 10-115        |           | %            | 1         |                         | 09/08/16 00:22       |
| Terphenyl-d14 (surr)    | 104                | 50-134        |           | %            | 1         |                         | 09/08/16 00:22       |

**Batch Information**

Analytical Batch: XMS9594  
Analytical Method: SW8270D  
Analyst: DSH  
Analytical Date/Time: 09/08/16 00:22  
Container ID: 1165007003-F

Prep Batch: XXX36151  
Prep Method: SW3520C  
Prep Date/Time: 08/26/16 09:59  
Prep Initial Wt./Vol.: 960 mL  
Prep Extract Vol: 1 mL



Results of MW4-082416

Client Sample ID: MW4-082416
Client Project ID: 15-1459 Bethel Youth Facility
Lab Sample ID: 1165007003
Lab Project ID: 1165007

Collection Date: 08/24/16 14:40
Received Date: 08/25/16 11:34
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 0.0502 J, 0.100, 0.0310, mg/L, 1, 09/04/16 19:40

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 110, 50-150, %, 1, 09/04/16 19:40

Batch Information

Analytical Batch: VFC13276
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/04/16 19:40
Container ID: 1165007003-A

Prep Batch: VXX29490
Prep Method: SW5030B
Prep Date/Time: 09/04/16 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 91.7, 77-115, %, 1, 09/04/16 19:40

Batch Information

Analytical Batch: VFC13276
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 09/04/16 19:40
Container ID: 1165007003-A

Prep Batch: VXX29490
Prep Method: SW5030B
Prep Date/Time: 09/04/16 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL





Results of **MW8-082416**

Client Sample ID: **MW8-082416**  
Client Project ID: **15-1459 Bethel Youth Facility**  
Lab Sample ID: 1165007004  
Lab Project ID: 1165007

Collection Date: 08/24/16 11:45  
Received Date: 08/25/16 11:34  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by **Semivolatile Organic Fuels**

| <u>Parameter</u>      | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|-----------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Diesel Range Organics | 0.177 J            | 0.566         | 0.170     | mg/L         | 1         |                         | 09/07/16 13:02       |
| <b>Surrogates</b>     |                    |               |           |              |           |                         |                      |
| 5a Androstane (surr)  | 86.8               | 50-150        |           | %            | 1         |                         | 09/07/16 13:02       |

**Batch Information**

Analytical Batch: XFC12800  
Analytical Method: AK102  
Analyst: NRO  
Analytical Date/Time: 09/07/16 13:02  
Container ID: 1165007004-D

Prep Batch: XXX36213  
Prep Method: SW3520C  
Prep Date/Time: 09/04/16 09:09  
Prep Initial Wt./Vol.: 265 mL  
Prep Extract Vol: 1 mL



Results of MW8-082416

Client Sample ID: MW8-082416
Client Project ID: 15-1459 Bethel Youth Facility
Lab Sample ID: 1165007004
Lab Project ID: 1165007

Collection Date: 08/24/16 11:45
Received Date: 08/25/16 11:34
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 0.0395 J, 0.100, 0.0310, mg/L, 1, 09/04/16 19:59

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 108, 50-150, %, 1, 09/04/16 19:59

Batch Information

Analytical Batch: VFC13276
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/04/16 19:59
Container ID: 1165007004-A

Prep Batch: VXX29490
Prep Method: SW5030B
Prep Date/Time: 09/04/16 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 94.7, 77-115, %, 1, 09/04/16 19:59

Batch Information

Analytical Batch: VFC13276
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 09/04/16 19:59
Container ID: 1165007004-A

Prep Batch: VXX29490
Prep Method: SW5030B
Prep Date/Time: 09/04/16 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



**Results of MWX-082416**

Client Sample ID: **MWX-082416**  
Client Project ID: **15-1459 Bethel Youth Facility**  
Lab Sample ID: 1165007005  
Lab Project ID: 1165007

Collection Date: 08/24/16 12:00  
Received Date: 08/25/16 11:34  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

**Results by Semivolatile Organic Fuels**

| <u>Parameter</u>      | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|-----------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Diesel Range Organics | 0.216 J            | 0.566         | 0.170     | mg/L         | 1         |                         | 09/07/16 13:13       |
| <b>Surrogates</b>     |                    |               |           |              |           |                         |                      |
| 5a Androstane (surr)  | 88.1               | 50-150        |           | %            | 1         |                         | 09/07/16 13:13       |

**Batch Information**

Analytical Batch: XFC12800  
Analytical Method: AK102  
Analyst: NRO  
Analytical Date/Time: 09/07/16 13:13  
Container ID: 1165007005-D

Prep Batch: XXX36213  
Prep Method: SW3520C  
Prep Date/Time: 09/04/16 09:09  
Prep Initial Wt./Vol.: 265 mL  
Prep Extract Vol: 1 mL



Results of MWX-082416

Client Sample ID: MWX-082416
Client Project ID: 15-1459 Bethel Youth Facility
Lab Sample ID: 1165007005
Lab Project ID: 1165007

Collection Date: 08/24/16 12:00
Received Date: 08/25/16 11:34
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MWX-082416

Client Sample ID: MWX-082416
Client Project ID: 15-1459 Bethel Youth Facility
Lab Sample ID: 1165007005
Lab Project ID: 1165007

Collection Date: 08/24/16 12:00
Received Date: 08/25/16 11:34
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various organic compounds like Benzo[b]Fluoranthene, Benzo[a]anthracene, etc., with their respective values and analysis dates.

Print Date: 09/12/2016 3:06:07PM

J flagging is activated



**Results of MWX-082416**

Client Sample ID: **MWX-082416**  
Client Project ID: **15-1459 Bethel Youth Facility**  
Lab Sample ID: 1165007005  
Lab Project ID: 1165007

Collection Date: 08/24/16 12:00  
Received Date: 08/25/16 11:34  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

**Results by Semivolatile Organics GC/MS**

| <u>Parameter</u>        | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|-------------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| 2-Fluorobiphenyl (surr) | 58.7               | 44-119        |           | %            | 1         |                         | 09/08/16 00:39       |
| 2-Fluorophenol (surr)   | 43.5               | 19-119        |           | %            | 1         |                         | 09/08/16 00:39       |
| Nitrobenzene-d5 (surr)  | 52.6               | 44-120        |           | %            | 1         |                         | 09/08/16 00:39       |
| Phenol-d6 (surr)        | 42.1               | 10-115        |           | %            | 1         |                         | 09/08/16 00:39       |
| Terphenyl-d14 (surr)    | 103                | 50-134        |           | %            | 1         |                         | 09/08/16 00:39       |

**Batch Information**

Analytical Batch: XMS9594  
Analytical Method: SW8270D  
Analyst: DSH  
Analytical Date/Time: 09/08/16 00:39  
Container ID: 1165007005-F

Prep Batch: XXX36151  
Prep Method: SW3520C  
Prep Date/Time: 08/26/16 09:59  
Prep Initial Wt./Vol.: 1000 mL  
Prep Extract Vol: 1 mL



Results of **MWX-082416**

Client Sample ID: **MWX-082416**  
Client Project ID: **15-1459 Bethel Youth Facility**  
Lab Sample ID: 1165007005  
Lab Project ID: 1165007

Collection Date: 08/24/16 12:00  
Received Date: 08/25/16 11:34  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by **Volatile Fuels**

| <u>Parameter</u>        | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|-------------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Gasoline Range Organics | 0.0405 J           | 0.100         | 0.0310    | mg/L         | 1         |                         | 09/04/16 20:17       |

**Surrogates**

|                             |     |        |  |   |   |  |                |
|-----------------------------|-----|--------|--|---|---|--|----------------|
| 4-Bromofluorobenzene (surr) | 111 | 50-150 |  | % | 1 |  | 09/04/16 20:17 |
|-----------------------------|-----|--------|--|---|---|--|----------------|

**Batch Information**

Analytical Batch: VFC13276  
Analytical Method: AK101  
Analyst: ST  
Analytical Date/Time: 09/04/16 20:17  
Container ID: 1165007005-A

Prep Batch: VXX29490  
Prep Method: SW5030B  
Prep Date/Time: 09/04/16 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

| <u>Parameter</u> | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Benzene          | 0.250 U            | 0.500         | 0.150     | ug/L         | 1         |                         | 09/04/16 20:17       |
| Ethylbenzene     | 0.500 U            | 1.00          | 0.310     | ug/L         | 1         |                         | 09/04/16 20:17       |
| o-Xylene         | 0.790 J            | 1.00          | 0.310     | ug/L         | 1         |                         | 09/04/16 20:17       |
| P & M -Xylene    | 1.36 J             | 2.00          | 0.620     | ug/L         | 1         |                         | 09/04/16 20:17       |
| Toluene          | 0.500 U            | 1.00          | 0.310     | ug/L         | 1         |                         | 09/04/16 20:17       |

**Surrogates**

|                            |      |        |  |   |   |  |                |
|----------------------------|------|--------|--|---|---|--|----------------|
| 1,4-Difluorobenzene (surr) | 91.4 | 77-115 |  | % | 1 |  | 09/04/16 20:17 |
|----------------------------|------|--------|--|---|---|--|----------------|

**Batch Information**

Analytical Batch: VFC13276  
Analytical Method: SW8021B  
Analyst: ST  
Analytical Date/Time: 09/04/16 20:17  
Container ID: 1165007005-A

Prep Batch: VXX29490  
Prep Method: SW5030B  
Prep Date/Time: 09/04/16 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



### Results of Trip Blank

Client Sample ID: **Trip Blank**  
 Client Project ID: **15-1459 Bethel Youth Facility**  
 Lab Sample ID: 1165007006  
 Lab Project ID: 1165007

Collection Date: 08/24/16 11:45  
 Received Date: 08/25/16 11:34  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Volatile Fuels

| <u>Parameter</u>        | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|-------------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Gasoline Range Organics | 0.0414 J           | 0.100         | 0.0310    | mg/L         | 1         |                         | 09/04/16 13:27       |

#### Surrogates

|                             |     |        |  |   |   |  |                |
|-----------------------------|-----|--------|--|---|---|--|----------------|
| 4-Bromofluorobenzene (surr) | 106 | 50-150 |  | % | 1 |  | 09/04/16 13:27 |
|-----------------------------|-----|--------|--|---|---|--|----------------|

### Batch Information

Analytical Batch: VFC13276  
 Analytical Method: AK101  
 Analyst: ST  
 Analytical Date/Time: 09/04/16 13:27  
 Container ID: 1165007006-A

Prep Batch: VXX29490  
 Prep Method: SW5030B  
 Prep Date/Time: 09/04/16 06:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL

| <u>Parameter</u> | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Benzene          | 0.250 U            | 0.500         | 0.150     | ug/L         | 1         |                         | 09/04/16 13:27       |
| Ethylbenzene     | 0.500 U            | 1.00          | 0.310     | ug/L         | 1         |                         | 09/04/16 13:27       |
| o-Xylene         | 0.500 U            | 1.00          | 0.310     | ug/L         | 1         |                         | 09/04/16 13:27       |
| P & M -Xylene    | 1.00 U             | 2.00          | 0.620     | ug/L         | 1         |                         | 09/04/16 13:27       |
| Toluene          | 0.500 U            | 1.00          | 0.310     | ug/L         | 1         |                         | 09/04/16 13:27       |

#### Surrogates

|                            |      |        |  |   |   |  |                |
|----------------------------|------|--------|--|---|---|--|----------------|
| 1,4-Difluorobenzene (surr) | 96.8 | 77-115 |  | % | 1 |  | 09/04/16 13:27 |
|----------------------------|------|--------|--|---|---|--|----------------|

### Batch Information

Analytical Batch: VFC13276  
 Analytical Method: SW8021B  
 Analyst: ST  
 Analytical Date/Time: 09/04/16 13:27  
 Container ID: 1165007006-A

Prep Batch: VXX29490  
 Prep Method: SW5030B  
 Prep Date/Time: 09/04/16 06:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL





### Method Blank

Blank ID: MB for HBN 1742645 [VXX/29490]  
Blank Lab ID: 1349899

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1165007001, 1165007002, 1165007003, 1165007004, 1165007005, 1165007006

### Results by AK101

| <u>Parameter</u>            | <u>Results</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> |
|-----------------------------|----------------|---------------|-----------|--------------|
| Gasoline Range Organics     | 0.0354J        | 0.100         | 0.0310    | mg/L         |
| <b>Surrogates</b>           |                |               |           |              |
| 4-Bromofluorobenzene (surr) | 106            | 50-150        |           | %            |

### Batch Information

Analytical Batch: VFC13276  
Analytical Method: AK101  
Instrument: Agilent 7890A PID/FID  
Analyst: ST  
Analytical Date/Time: 9/4/2016 11:36:00AM

Prep Batch: VXX29490  
Prep Method: SW5030B  
Prep Date/Time: 9/4/2016 6:00:00AM  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Print Date: 09/12/2016 3:06:10PM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1165007 [VXX29490]  
Blank Spike Lab ID: 1349902  
Date Analyzed: 09/04/2016 12:32

Spike Duplicate ID: LCSD for HBN 1165007 [VXX29490]  
Spike Duplicate Lab ID: 1349903  
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165007001, 1165007002, 1165007003, 1165007004, 1165007005, 1165007006

### Results by AK101

| Parameter               | Blank Spike (mg/L) |        |         | Spike Duplicate (mg/L) |        |         | CL         | RPD (%) | RPD CL  |
|-------------------------|--------------------|--------|---------|------------------------|--------|---------|------------|---------|---------|
|                         | Spike              | Result | Rec (%) | Spike                  | Result | Rec (%) |            |         |         |
| Gasoline Range Organics | 1.00               | 1.04   | 104     | 1.00                   | 0.984  | 98      | ( 60-120 ) | 5.60    | (< 20 ) |

### Surrogates

|                             |        |     |     |        |     |     |            |      |  |
|-----------------------------|--------|-----|-----|--------|-----|-----|------------|------|--|
| 4-Bromofluorobenzene (surr) | 0.0500 | 118 | 118 | 0.0500 | 114 | 114 | ( 50-150 ) | 3.60 |  |
|-----------------------------|--------|-----|-----|--------|-----|-----|------------|------|--|

### Batch Information

Analytical Batch: VFC13276  
Analytical Method: AK101  
Instrument: Agilent 7890A PID/FID  
Analyst: ST

Prep Batch: VXX29490  
Prep Method: SW5030B  
Prep Date/Time: 09/04/2016 06:00  
Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL  
Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

Print Date: 09/12/2016 3:06:12PM



### Method Blank

Blank ID: MB for HBN 1742645 [VXX/29490]  
Blank Lab ID: 1349899

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
1165007001, 1165007002, 1165007003, 1165007004, 1165007005, 1165007006

### Results by SW8021B

| <u>Parameter</u>           | <u>Results</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> |
|----------------------------|----------------|---------------|-----------|--------------|
| Benzene                    | 0.250U         | 0.500         | 0.150     | ug/L         |
| Ethylbenzene               | 0.500U         | 1.00          | 0.310     | ug/L         |
| o-Xylene                   | 0.500U         | 1.00          | 0.310     | ug/L         |
| P & M -Xylene              | 1.00U          | 2.00          | 0.620     | ug/L         |
| Toluene                    | 0.500U         | 1.00          | 0.310     | ug/L         |
| <b>Surrogates</b>          |                |               |           |              |
| 1,4-Difluorobenzene (surr) | 97.1           | 77-115        |           | %            |

### Batch Information

Analytical Batch: VFC13276  
Analytical Method: SW8021B  
Instrument: Agilent 7890A PID/FID  
Analyst: ST  
Analytical Date/Time: 9/4/2016 11:36:00AM

Prep Batch: VXX29490  
Prep Method: SW5030B  
Prep Date/Time: 9/4/2016 6:00:00AM  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Print Date: 09/12/2016 3:06:13PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1165007 [VXX29490]  
 Blank Spike Lab ID: 1349900  
 Date Analyzed: 09/04/2016 12:13

Spike Duplicate ID: LCSD for HBN 1165007 [VXX29490]  
 Spike Duplicate Lab ID: 1349901  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165007001, 1165007002, 1165007003, 1165007004, 1165007005, 1165007006

## Results by SW8021B

| Parameter                  | Blank Spike (ug/L) |        |         | Spike Duplicate (ug/L) |        |         | CL         | RPD (%) | RPD CL  |
|----------------------------|--------------------|--------|---------|------------------------|--------|---------|------------|---------|---------|
|                            | Spike              | Result | Rec (%) | Spike                  | Result | Rec (%) |            |         |         |
| Benzene                    | 100                | 107    | 107     | 100                    | 108    | 108     | ( 80-120 ) | 1.10    | (< 20 ) |
| Ethylbenzene               | 100                | 103    | 103     | 100                    | 104    | 104     | ( 75-125 ) | 1.10    | (< 20 ) |
| o-Xylene                   | 100                | 104    | 104     | 100                    | 101    | 101     | ( 80-120 ) | 3.40    | (< 20 ) |
| P & M -Xylene              | 200                | 210    | 105     | 200                    | 204    | 102     | ( 75-130 ) | 2.80    | (< 20 ) |
| Toluene                    | 100                | 102    | 102     | 100                    | 104    | 104     | ( 75-120 ) | 2.00    | (< 20 ) |
| <b>Surrogates</b>          |                    |        |         |                        |        |         |            |         |         |
| 1,4-Difluorobenzene (surr) | 50                 | 101    | 101     | 50                     | 96.3   | 96      | ( 77-115 ) | 4.60    |         |

## Batch Information

Analytical Batch: **VFC13276**  
 Analytical Method: **SW8021B**  
 Instrument: **Agilent 7890A PID/FID**  
 Analyst: **ST**

Prep Batch: **VXX29490**  
 Prep Method: **SW5030B**  
 Prep Date/Time: **09/04/2016 06:00**  
 Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL



### Method Blank

Blank ID: MB for HBN 1742240 [XXX/36151]

Blank Lab ID: 1348110

QC for Samples:

1165007003, 1165007005

Matrix: Water (Surface, Eff., Ground)

### Results by SW8270D

| <u>Parameter</u>              | <u>Results</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> |
|-------------------------------|----------------|---------------|-----------|--------------|
| 1,2,4-Trichlorobenzene        | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 1,2-Dichlorobenzene           | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 1,3-Dichlorobenzene           | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 1,4-Dichlorobenzene           | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 1-Chloronaphthalene           | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 1-Methylnaphthalene           | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 2,4,5-Trichlorophenol         | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 2,4,6-Trichlorophenol         | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 2,4-Dichlorophenol            | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 2,4-Dimethylphenol            | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 2,4-Dinitrophenol             | 0.0250U        | 0.0500        | 0.0150    | mg/L         |
| 2,4-Dinitrotoluene            | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 2,6-Dichlorophenol            | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 2,6-Dinitrotoluene            | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 2-Chloronaphthalene           | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 2-Chlorophenol                | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 2-Methyl-4,6-dinitrophenol    | 0.0250U        | 0.0500        | 0.0150    | mg/L         |
| 2-Methylnaphthalene           | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 2-Methylphenol (o-Cresol)     | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 2-Nitroaniline                | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 2-Nitrophenol                 | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 3&4-Methylphenol (p&m-Cresol) | 0.0100U        | 0.0200        | 0.00620   | mg/L         |
| 3,3-Dichlorobenzidine         | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 3-Nitroaniline                | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 4-Bromophenyl-phenylether     | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 4-Chloro-3-methylphenol       | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 4-Chloroaniline               | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 4-Chlorophenyl-phenylether    | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 4-Nitroaniline                | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| 4-Nitrophenol                 | 0.0250U        | 0.0500        | 0.0150    | mg/L         |
| Acenaphthene                  | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Acenaphthylene                | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Aniline                       | 0.0250U        | 0.0500        | 0.0150    | mg/L         |
| Anthracene                    | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Azobenzene                    | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Benzo(a)Anthracene            | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Benzo[a]pyrene                | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Benzo[b]Fluoranthene          | 0.00500U       | 0.0100        | 0.00310   | mg/L         |

Print Date: 09/12/2016 3:06:15PM



**Method Blank**

Blank ID: MB for HBN 1742240 [XXX/36151]

Blank Lab ID: 1348110

QC for Samples:

1165007003, 1165007005

Matrix: Water (Surface, Eff., Ground)

**Results by SW8270D**

| <u>Parameter</u>              | <u>Results</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> |
|-------------------------------|----------------|---------------|-----------|--------------|
| Benzo[g,h,i]perylene          | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Benzo[k]fluoranthene          | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Benzoic acid                  | 0.0250U        | 0.0500        | 0.0150    | mg/L         |
| Benzyl alcohol                | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Bis(2chloro1methylethyl)Ether | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Bis(2-Chloroethoxy)methane    | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Bis(2-Chloroethyl)ether       | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| bis(2-Ethylhexyl)phthalate    | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Butylbenzylphthalate          | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Carbazole                     | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Chrysene                      | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Dibenzo[a,h]anthracene        | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Dibenzofuran                  | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Diethylphthalate              | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Dimethylphthalate             | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Di-n-butylphthalate           | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| di-n-Octylphthalate           | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Fluoranthene                  | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Fluorene                      | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Hexachlorobenzene             | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Hexachlorobutadiene           | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Hexachlorocyclopentadiene     | 0.0150U        | 0.0300        | 0.00940   | mg/L         |
| Hexachloroethane              | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Indeno[1,2,3-c,d] pyrene      | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Isophorone                    | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Naphthalene                   | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Nitrobenzene                  | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| N-Nitrosodimethylamine        | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| N-Nitroso-di-n-propylamine    | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| N-Nitrosodiphenylamine        | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Pentachlorophenol             | 0.0250U        | 0.0500        | 0.0150    | mg/L         |
| Phenanthrene                  | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Phenol                        | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| Pyrene                        | 0.00500U       | 0.0100        | 0.00310   | mg/L         |
| <b>Surrogates</b>             |                |               |           |              |
| 2,4,6-Tribromophenol (surr)   | 78.5           | 43-140        |           | %            |
| 2-Fluorobiphenyl (surr)       | 67.4           | 44-119        |           | %            |
| 2-Fluorophenol (surr)         | 58.3           | 19-119        |           | %            |

Print Date: 09/12/2016 3:06:15PM



### Method Blank

Blank ID: MB for HBN 1742240 [XXX/36151]

Blank Lab ID: 1348110

QC for Samples:

1165007003, 1165007005

Matrix: Water (Surface, Eff., Ground)

### Results by SW8270D

| <u>Parameter</u>       | <u>Results</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> |
|------------------------|----------------|---------------|-----------|--------------|
| Nitrobenzene-d5 (surr) | 65.3           | 44-120        |           | %            |
| Phenol-d6 (surr)       | 61.4           | 10-115        |           | %            |
| Terphenyl-d14 (surr)   | 104            | 50-134        |           | %            |

### Batch Information

Analytical Batch: XMS9590

Analytical Method: SW8270D

Instrument: HP 6890/5973 SSA

Analyst: DSH

Analytical Date/Time: 9/1/2016 2:42:00PM

Prep Batch: XXX36151

Prep Method: SW3520C

Prep Date/Time: 8/26/2016 9:59:10AM

Prep Initial Wt./Vol.: 1000 mL

Prep Extract Vol: 1 mL

Print Date: 09/12/2016 3:06:15PM



### Leaching Blank

Blank ID: LB for HBN 1741556 [TCLP/8471]  
Blank Lab ID: 1344884

Matrix: Solid/Soil (Wet Weight)

QC for Samples:  
1165007003, 1165007005

### Results by SW8270D

| <u>Parameter</u>              | <u>Results</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> |
|-------------------------------|----------------|---------------|-----------|--------------|
| 2,4,5-Trichlorophenol         | 0.0500U        | 0.100         | 0.0310    | mg/L         |
| 2,4,6-Trichlorophenol         | 0.0500U        | 0.100         | 0.0310    | mg/L         |
| 2,4-Dinitrotoluene            | 0.0500U        | 0.100         | 0.0310    | mg/L         |
| 2-Methylphenol (o-Cresol)     | 0.0500U        | 0.100         | 0.0310    | mg/L         |
| 3&4-Methylphenol (p&m-Cresol) | 0.100U         | 0.200         | 0.0620    | mg/L         |
| Hexachlorobenzene             | 0.0500U        | 0.100         | 0.0310    | mg/L         |
| Hexachlorobutadiene           | 0.0500U        | 0.100         | 0.0310    | mg/L         |
| Hexachloroethane              | 0.0500U        | 0.100         | 0.0310    | mg/L         |
| Nitrobenzene                  | 0.0500U        | 0.100         | 0.0310    | mg/L         |
| Pentachlorophenol             | 0.250U         | 0.500         | 0.150     | mg/L         |
| <b>Surrogates</b>             |                |               |           |              |
| 2,4,6-Tribromophenol (surr)   | 77.7           | 43-140        |           | %            |
| 2-Fluorobiphenyl (surr)       | 62.7           | 44-119        |           | %            |
| 2-Fluorophenol (surr)         | 47.9           | 19-119        |           | %            |
| Nitrobenzene-d5 (surr)        | 56.9           | 44-120        |           | %            |
| Phenol-d6 (surr)              | 50             | 10-115        |           | %            |
| Terphenyl-d14 (surr)          | 105            | 50-134        |           | %            |

### Batch Information

Analytical Batch: XMS9590  
Analytical Method: SW8270D  
Instrument: HP 6890/5973 SSA  
Analyst: DSH  
Analytical Date/Time: 9/1/2016 2:24:00PM

Prep Batch: XXX36151  
Prep Method: SW3520C  
Prep Date/Time: 8/26/2016 9:59:10AM  
Prep Initial Wt./Vol.: 100 mL  
Prep Extract Vol: 1 mL

Print Date: 09/12/2016 3:06:15PM





### Blank Spike Summary

Blank Spike ID: LCS for HBN 1165007 [XXX36151]  
 Blank Spike Lab ID: 1348111  
 Date Analyzed: 09/01/2016 15:18

Spike Duplicate ID: LCSD for HBN 1165007  
 [XXX36151]  
 Spike Duplicate Lab ID: 1348112  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165007003, 1165007005

### Results by SW8270D

| Parameter                     | Blank Spike (mg/L) |         |         | Spike Duplicate (mg/L) |         |         | CL         | RPD (%) | RPD CL  |
|-------------------------------|--------------------|---------|---------|------------------------|---------|---------|------------|---------|---------|
|                               | Spike              | Result  | Rec (%) | Spike                  | Result  | Rec (%) |            |         |         |
| 1,2,4-Trichlorobenzene        | 0.1                | 0.0594  | 59      | 0.1                    | 0.0602  | 60      | ( 29-116 ) | 1.30    | (< 20 ) |
| 1,2-Dichlorobenzene           | 0.1                | 0.0542  | 54      | 0.1                    | 0.0557  | 56      | ( 32-111 ) | 2.70    | (< 20 ) |
| 1,3-Dichlorobenzene           | 0.1                | 0.0528  | 53      | 0.1                    | 0.0549  | 55      | ( 28-110 ) | 4.10    | (< 20 ) |
| 1,4-Dichlorobenzene           | 0.1                | 0.0535  | 54      | 0.1                    | 0.0565  | 57      | ( 29-112 ) | 5.30    | (< 20 ) |
| 1-Chloronaphthalene           | 0.04               | 0.0286  | 72      | 0.04                   | 0.0264  | 66      | ( 58-111 ) | 8.30    | (< 20 ) |
| 1-Methylnaphthalene           | 0.1                | 0.0681  | 68      | 0.1                    | 0.0657  | 66      | ( 41-119 ) | 3.60    | (< 20 ) |
| 2,4,5-Trichlorophenol         | 0.1                | 0.0839  | 84      | 0.1                    | 0.0796  | 80      | ( 53-123 ) | 5.30    | (< 20 ) |
| 2,4,6-Trichlorophenol         | 0.1                | 0.0800  | 80      | 0.1                    | 0.0789  | 79      | ( 50-125 ) | 1.40    | (< 20 ) |
| 2,4-Dichlorophenol            | 0.1                | 0.0663  | 66      | 0.1                    | 0.0610  | 61      | ( 47-121 ) | 8.50    | (< 20 ) |
| 2,4-Dimethylphenol            | 0.1                | 0.0626  | 63      | 0.1                    | 0.0592  | 59      | ( 31-124 ) | 5.60    | (< 20 ) |
| 2,4-Dinitrophenol             | 0.18               | 0.150   | 84      | 0.18                   | 0.146   | 81      | ( 23-143 ) | 3.10    | (< 20 ) |
| 2,4-Dinitrotoluene            | 0.1                | 0.0863  | 86      | 0.1                    | 0.0893  | 89      | ( 57-128 ) | 3.40    | (< 20 ) |
| 2,6-Dichlorophenol            | 0.04               | 0.0260  | 65      | 0.04                   | 0.0238  | 59      | ( 50-118 ) | 8.90    | (< 20 ) |
| 2,6-Dinitrotoluene            | 0.1                | 0.0863  | 86      | 0.1                    | 0.0852  | 85      | ( 57-124 ) | 1.30    | (< 20 ) |
| 2-Chloronaphthalene           | 0.1                | 0.0717  | 72      | 0.1                    | 0.0740  | 74      | ( 40-116 ) | 3.30    | (< 20 ) |
| 2-Chlorophenol                | 0.1                | 0.0555  | 56      | 0.1                    | 0.0537  | 54      | ( 38-117 ) | 3.30    | (< 20 ) |
| 2-Methyl-4,6-dinitrophenol    | 0.18               | 0.166   | 92      | 0.18                   | 0.164   | 91      | ( 44-137 ) | 1.60    | (< 20 ) |
| 2-Methylnaphthalene           | 0.1                | 0.0649  | 65      | 0.1                    | 0.0640  | 64      | ( 40-121 ) | 1.40    | (< 20 ) |
| 2-Methylphenol (o-Cresol)     | 0.1                | 0.0593  | 59      | 0.1                    | 0.0560  | 56      | ( 30-117 ) | 5.80    | (< 20 ) |
| 2-Nitroaniline                | 0.1                | 0.0923  | 92      | 0.1                    | 0.0912  | 91      | ( 55-117 ) | 1.20    | (< 20 ) |
| 2-Nitrophenol                 | 0.1                | 0.0649  | 65      | 0.1                    | 0.0625  | 63      | ( 47-123 ) | 3.80    | (< 20 ) |
| 3&4-Methylphenol (p&m-Cresol) | 0.14               | 0.0963  | 69      | 0.14                   | 0.0861  | 62      | ( 29-110 ) | 11.30   | (< 20 ) |
| 3,3-Dichlorobenzidine         | 0.1                | 0.0780  | 78      | 0.1                    | 0.0798  | 80      | ( 27-129 ) | 2.30    | (< 20 ) |
| 3-Nitroaniline                | 0.1                | 0.0891  | 89      | 0.1                    | 0.0884  | 88      | ( 41-128 ) | 0.76    | (< 20 ) |
| 4-Bromophenyl-phenylether     | 0.1                | 0.0878  | 88      | 0.1                    | 0.0884  | 88      | ( 55-124 ) | 0.73    | (< 20 ) |
| 4-Chloro-3-methylphenol       | 0.1                | 0.0779  | 78      | 0.1                    | 0.0714  | 71      | ( 52-119 ) | 8.80    | (< 20 ) |
| 4-Chloroaniline               | 0.1                | 0.0609  | 61      | 0.1                    | 0.0585  | 59      | ( 33-117 ) | 4.00    | (< 20 ) |
| 4-Chlorophenyl-phenylether    | 0.1                | 0.0841  | 84      | 0.1                    | 0.0827  | 83      | ( 53-121 ) | 1.60    | (< 20 ) |
| 4-Nitroaniline                | 0.1                | 0.0879  | 88      | 0.1                    | 0.0916  | 92      | ( 74-118 ) | 4.20    | (< 20 ) |
| 4-Nitrophenol                 | 0.14               | 0.101   | 72      | 0.14                   | 0.0935  | 67      | ( 52-111 ) | 7.30    | (< 20 ) |
| Acenaphthene                  | 0.1                | 0.0789  | 79      | 0.1                    | 0.0774  | 77      | ( 47-122 ) | 1.90    | (< 20 ) |
| Acenaphthylene                | 0.1                | 0.0770  | 77      | 0.1                    | 0.0772  | 77      | ( 41-130 ) | 0.18    | (< 20 ) |
| Aniline                       | 0.1                | 0.0309J | 31      | 0.1                    | 0.0339J | 34      | ( 10-87 )  | 9.20    | (< 20 ) |
| Anthracene                    | 0.1                | 0.0792  | 79      | 0.1                    | 0.0791  | 79      | ( 57-123 ) | 0.09    | (< 20 ) |

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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1165007 [XXX36151]  
 Blank Spike Lab ID: 1348111  
 Date Analyzed: 09/01/2016 15:18

Spike Duplicate ID: LCSD for HBN 1165007  
 [XXX36151]  
 Spike Duplicate Lab ID: 1348112  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165007003, 1165007005

## Results by SW8270D

| Parameter                     | Blank Spike (mg/L) |        |         | Spike Duplicate (mg/L) |        |         | CL         | RPD (%) | RPD CL  |
|-------------------------------|--------------------|--------|---------|------------------------|--------|---------|------------|---------|---------|
|                               | Spike              | Result | Rec (%) | Spike                  | Result | Rec (%) |            |         |         |
| Azobenzene                    | 0.1                | 0.0942 | 94      | 0.1                    | 0.0895 | 90      | ( 61-116 ) | 5.10    | (< 20 ) |
| Benzo(a)Anthracene            | 0.1                | 0.0937 | 94      | 0.1                    | 0.0943 | 94      | ( 58-125 ) | 0.70    | (< 20 ) |
| Benzo[a]pyrene                | 0.1                | 0.0898 | 90      | 0.1                    | 0.0895 | 90      | ( 54-128 ) | 0.30    | (< 20 ) |
| Benzo[b]Fluoranthene          | 0.1                | 0.0933 | 93      | 0.1                    | 0.0873 | 87      | ( 53-131 ) | 6.70    | (< 20 ) |
| Benzo[g,h,i]perylene          | 0.1                | 0.0912 | 91      | 0.1                    | 0.0912 | 91      | ( 50-134 ) | 0.06    | (< 20 ) |
| Benzo[k]fluoranthene          | 0.1                | 0.0962 | 96      | 0.1                    | 0.102  | 102     | ( 57-129 ) | 5.50    | (< 20 ) |
| Benzoic acid                  | 0.14               | 0.0703 | 50      | 0.14                   | 0.0586 | 42      | ( 21-107 ) | 18.20   | (< 20 ) |
| Benzyl alcohol                | 0.1                | 0.0587 | 59      | 0.1                    | 0.0556 | 56      | ( 31-112 ) | 5.50    | (< 20 ) |
| Bis(2chloro1methylethyl)Ether | 0.1                | 0.0606 | 61      | 0.1                    | 0.0624 | 62      | ( 37-130 ) | 3.00    | (< 20 ) |
| Bis(2-Chloroethoxy)methane    | 0.1                | 0.0687 | 69      | 0.1                    | 0.0664 | 66      | ( 48-120 ) | 3.40    | (< 20 ) |
| Bis(2-Chloroethyl)ether       | 0.1                | 0.0536 | 54      | 0.1                    | 0.0534 | 53      | ( 43-118 ) | 0.37    | (< 20 ) |
| bis(2-Ethylhexyl)phthalate    | 0.1                | 0.0947 | 95      | 0.1                    | 0.0955 | 96      | ( 55-135 ) | 0.85    | (< 20 ) |
| Butylbenzylphthalate          | 0.1                | 0.0987 | 99      | 0.1                    | 0.0975 | 98      | ( 53-134 ) | 1.30    | (< 20 ) |
| Carbazole                     | 0.1                | 0.0950 | 95      | 0.1                    | 0.0975 | 98      | ( 60-122 ) | 2.70    | (< 20 ) |
| Chrysene                      | 0.1                | 0.0999 | 100     | 0.1                    | 0.0986 | 99      | ( 59-123 ) | 1.30    | (< 20 ) |
| Dibenzo[a,h]anthracene        | 0.1                | 0.0908 | 91      | 0.1                    | 0.0908 | 91      | ( 51-134 ) | 0.01    | (< 20 ) |
| Dibenzofuran                  | 0.1                | 0.0775 | 78      | 0.1                    | 0.0808 | 81      | ( 53-118 ) | 4.10    | (< 20 ) |
| Diethylphthalate              | 0.1                | 0.0867 | 87      | 0.1                    | 0.0877 | 88      | ( 56-125 ) | 1.20    | (< 20 ) |
| Dimethylphthalate             | 0.1                | 0.0838 | 84      | 0.1                    | 0.0832 | 83      | ( 45-127 ) | 0.75    | (< 20 ) |
| Di-n-butylphthalate           | 0.1                | 0.0903 | 90      | 0.1                    | 0.0930 | 93      | ( 59-127 ) | 2.90    | (< 20 ) |
| di-n-Octylphthalate           | 0.1                | 0.0874 | 87      | 0.1                    | 0.0900 | 90      | ( 51-140 ) | 2.90    | (< 20 ) |
| Fluoranthene                  | 0.1                | 0.0872 | 87      | 0.1                    | 0.0901 | 90      | ( 57-128 ) | 3.20    | (< 20 ) |
| Fluorene                      | 0.1                | 0.0811 | 81      | 0.1                    | 0.0838 | 84      | ( 52-124 ) | 3.20    | (< 20 ) |
| Hexachlorobenzene             | 0.1                | 0.0880 | 88      | 0.1                    | 0.0860 | 86      | ( 53-125 ) | 2.30    | (< 20 ) |
| Hexachlorobutadiene           | 0.1                | 0.0631 | 63      | 0.1                    | 0.0638 | 64      | ( 22-124 ) | 1.10    | (< 20 ) |
| Hexachlorocyclopentadiene     | 0.1                | 0.0487 | 49      | 0.1                    | 0.0511 | 51      | ( 10-93 )  | 4.80    | (< 20 ) |
| Hexachloroethane              | 0.1                | 0.0528 | 53      | 0.1                    | 0.0542 | 54      | ( 21-115 ) | 2.60    | (< 20 ) |
| Indeno[1,2,3-c,d] pyrene      | 0.1                | 0.0862 | 86      | 0.1                    | 0.0862 | 86      | ( 52-134 ) | 0.01    | (< 20 ) |
| Isophorone                    | 0.1                | 0.0673 | 67      | 0.1                    | 0.0639 | 64      | ( 42-124 ) | 5.20    | (< 20 ) |
| Naphthalene                   | 0.1                | 0.0622 | 62      | 0.1                    | 0.0612 | 61      | ( 40-121 ) | 1.50    | (< 20 ) |
| Nitrobenzene                  | 0.1                | 0.0612 | 61      | 0.1                    | 0.0620 | 62      | ( 45-121 ) | 1.20    | (< 20 ) |
| N-Nitrosodimethylamine        | 0.1                | 0.0479 | 48      | 0.1                    | 0.0473 | 47      | ( 41-117 ) | 1.30    | (< 20 ) |
| N-Nitroso-di-n-propylamine    | 0.1                | 0.0725 | 73      | 0.1                    | 0.0678 | 68      | ( 49-119 ) | 6.70    | (< 20 ) |
| N-Nitrosodiphenylamine        | 0.1                | 0.0756 | 76      | 0.1                    | 0.0734 | 73      | ( 51-123 ) | 3.00    | (< 20 ) |

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### Blank Spike Summary

Blank Spike ID: LCS for HBN 1165007 [XXX36151]  
 Blank Spike Lab ID: 1348111  
 Date Analyzed: 09/01/2016 15:18

Spike Duplicate ID: LCSD for HBN 1165007  
 [XXX36151]  
 Spike Duplicate Lab ID: 1348112  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165007003, 1165007005

### Results by SW8270D

| Parameter                   | Blank Spike (mg/L) |        |         | Spike Duplicate (mg/L) |        |         | CL         | RPD (%) | RPD CL  |
|-----------------------------|--------------------|--------|---------|------------------------|--------|---------|------------|---------|---------|
|                             | Spike              | Result | Rec (%) | Spike                  | Result | Rec (%) |            |         |         |
| Pentachlorophenol           | 0.14               | 0.133  | 95      | 0.14                   | 0.130  | 93      | ( 35-138 ) | 2.40    | (< 20 ) |
| Phenanthrene                | 0.1                | 0.0874 | 87      | 0.1                    | 0.0886 | 89      | ( 59-120 ) | 1.30    | (< 20 ) |
| Phenol                      | 0.1                | 0.0517 | 52      | 0.1                    | 0.0484 | 48      | ( 39-84 )  | 6.60    | (< 20 ) |
| Pyrene                      | 0.1                | 0.104  | 104     | 0.1                    | 0.0968 | 97      | ( 57-126 ) | 7.00    | (< 20 ) |
| <b>Surrogates</b>           |                    |        |         |                        |        |         |            |         |         |
| 2,4,6-Tribromophenol (surr) | 0.2                | 89.5   | 90      | 0.2                    | 90.8   | 91      | ( 43-140 ) | 1.40    |         |
| 2-Fluorobiphenyl (surr)     | 0.1                | 68.8   | 69      | 0.1                    | 69.1   | 69      | ( 44-119 ) | 0.48    |         |
| 2-Fluorophenol (surr)       | 0.2                | 49.7   | 50      | 0.2                    | 52.3   | 52      | ( 19-119 ) | 5.00    |         |
| Nitrobenzene-d5 (surr)      | 0.1                | 58.4   | 58      | 0.1                    | 59.7   | 60      | ( 44-120 ) | 2.20    |         |
| Phenol-d6 (surr)            | 0.2                | 55.1   | 55      | 0.2                    | 54.2   | 54      | ( 10-115 ) | 1.80    |         |
| Terphenyl-d14 (surr)        | 0.1                | 101    | 101     | 0.1                    | 100    | 100     | ( 50-134 ) | 0.83    |         |

### Batch Information

Analytical Batch: XMS9590  
 Analytical Method: SW8270D  
 Instrument: HP 6890/5973 SSA  
 Analyst: DSH

Prep Batch: XXX36151  
 Prep Method: SW3520C  
 Prep Date/Time: 08/26/2016 09:59  
 Spike Init Wt./Vol.: 0.1 mg/L Extract Vol: 1 mL  
 Dupe Init Wt./Vol.: 0.1 mg/L Extract Vol: 1 mL

Print Date: 09/12/2016 3:06:17PM



### Method Blank

Blank ID: MB for HBN 1742638 [XXX/36213]  
Blank Lab ID: 1349879

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
1165007001, 1165007002, 1165007003, 1165007004, 1165007005

### Results by AK102

| <u>Parameter</u>      | <u>Results</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> |
|-----------------------|----------------|---------------|-----------|--------------|
| Diesel Range Organics | 0.300U         | 0.600         | 0.180     | mg/L         |
| <b>Surrogates</b>     |                |               |           |              |
| 5a Androstane (surr)  | 91.9           | 60-120        |           | %            |

### Batch Information

Analytical Batch: XFC12800  
Analytical Method: AK102  
Instrument: Agilent 7890B R  
Analyst: NRO  
Analytical Date/Time: 9/7/2016 10:47:00AM

Prep Batch: XXX36213  
Prep Method: SW3520C  
Prep Date/Time: 9/4/2016 9:09:48AM  
Prep Initial Wt./Vol.: 250 mL  
Prep Extract Vol: 1 mL

Print Date: 09/12/2016 3:06:18PM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1165007 [XXX36213]  
Blank Spike Lab ID: 1349880  
Date Analyzed: 09/07/2016 10:58

Spike Duplicate ID: LCSD for HBN 1165007 [XXX36213]  
Spike Duplicate Lab ID: 1349881  
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165007001, 1165007002, 1165007003, 1165007004, 1165007005

### Results by AK102

| Parameter             | Blank Spike (mg/L) |        |         | Spike Duplicate (mg/L) |        |         | CL         | RPD (%) | RPD CL  |
|-----------------------|--------------------|--------|---------|------------------------|--------|---------|------------|---------|---------|
|                       | Spike              | Result | Rec (%) | Spike                  | Result | Rec (%) |            |         |         |
| Diesel Range Organics | 20                 | 21.1   | 106     | 20                     | 21.0   | 105     | ( 75-125 ) | 0.45    | (< 20 ) |
| <b>Surrogates</b>     |                    |        |         |                        |        |         |            |         |         |
| 5a Androstane (surr)  | 0.4                | 94.2   | 94      | 0.4                    | 94.7   | 95      | ( 60-120 ) | 0.50    |         |

### Batch Information

Analytical Batch: **XFC12800**  
Analytical Method: **AK102**  
Instrument: **Agilent 7890B R**  
Analyst: **NRO**

Prep Batch: **XXX36213**  
Prep Method: **SW3520C**  
Prep Date/Time: **09/04/2016 09:09**  
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL  
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Print Date: 09/12/2016 3:06:19PM







e-SAMPLE RECEIPT FORM

1165007



| Review Criteria  | Y/N (yes/no)                        | Exceptions Noted below  |
|--|-------------------------------------|---|
| Were Custody Seals intact? Note # & location   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> exemption permitted if sampler hand carries/delivers. |
| COC accompanied samples?   | <input checked="" type="checkbox"/> | ABSENT  |
| <input type="checkbox"/> **exemption permitted if chilled & collected <8hrs ago or chilling not required (i.e., waste, oil)  | <input checked="" type="checkbox"/> |   |
| Temperature blank compliant* (i.e., 0-6 °C after CF)?  | <input checked="" type="checkbox"/> | Cooler ID: 1 @ 0.4 °C Therm ID: D6  |
|  | <input type="checkbox"/>            | Cooler ID: @ °C Therm ID:   |
|  | <input type="checkbox"/>            | Cooler ID: @ °C Therm ID:   |
|  | <input type="checkbox"/>            | Cooler ID: @ °C Therm ID:   |
|  | <input type="checkbox"/>            | Cooler ID: @ °C Therm ID:   |
| *If >6°C, were samples collected <8 hours ago?   | <input type="checkbox"/>            |   |
| If <0°C, were sample containers ice free?  | <input type="checkbox"/>            |   |
| If samples received <u>without</u> a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "COOLER TEMP" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled". |                                     |   |
| Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.  |                                     |   |
| Note: Refer to form F-083 "Sample Guide" for hold times.   |                                     |   |
| Were samples received within hold time?  | <input checked="" type="checkbox"/> |   |
| Do samples <b>match COC**</b> (i.e., sample IDs, dates/times collected)?   | <input checked="" type="checkbox"/> |   |
| **Note: If times differ <1hr, record details & login per COC.  |                                     |   |
| Were analyses requested unambiguous?   | <input checked="" type="checkbox"/> |   |
| Were proper containers (type/mass/volume/preservative***)used?   | <input checked="" type="checkbox"/> | <input type="checkbox"/> ***Exemption permitted for metals (e.g,200.8/6020A).             |
| <b>IF APPLICABLE</b>   |                                     |   |
| Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?   | <input checked="" type="checkbox"/> |   |
| Were all VOA vials free of headspace (i.e., bubbles ≤ 6mm)?  | <input type="checkbox"/>            |   |
| Were all soil VOAs field extracted with MeOH+BFB?  | <input checked="" type="checkbox"/> |   |
| <b>Note to Client:</b> Any "no" answer above indicates non-compliance with standard procedures and may impact data quality.  |                                     |   |
| Additional notes (if applicable):  |                                     |   |
| The lid for Sample 3E was broken and replaced at the lab. The sample was unharmed.   |                                     |   |





### Sample Containers and Preservatives

| <u>Container Id</u> | <u>Preservative</u>      | <u>Container Condition</u> | <u>Container Id</u> | <u>Preservative</u> | <u>Container Condition</u> |
|---------------------|--------------------------|----------------------------|---------------------|---------------------|----------------------------|
| 1165007001-A        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007001-B        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007001-C        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007001-D        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007001-E        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007002-A        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007002-B        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007002-C        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007002-D        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007002-E        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007003-A        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007003-B        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007003-C        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007003-D        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007003-E        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007003-F        | No Preservative Required | OK                         |                     |                     |                            |
| 1165007003-G        | No Preservative Required | OK                         |                     |                     |                            |
| 1165007004-A        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007004-B        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007004-C        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007004-D        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007004-E        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007005-A        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007005-B        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007005-C        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007005-D        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007005-E        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007005-F        | No Preservative Required | OK                         |                     |                     |                            |
| 1165007005-G        | No Preservative Required | OK                         |                     |                     |                            |
| 1165007006-A        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007006-B        | HCL to pH < 2            | OK                         |                     |                     |                            |
| 1165007006-C        | HCL to pH < 2            | OK                         |                     |                     |                            |

Container Id

Preservative

Container  
Condition

Container Id

Preservative

Container  
Condition

#### Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM- The container was received damaged.

FR- The container was received frozen and not usable for Bacteria or BOD analyses.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

## Laboratory Data Review Checklist

|                   |  |                           |         |
|-------------------|--|---------------------------|---------|
| Completed by:     | Neil Waggoner, PE                      |                           |         |
| Title:            | Civil Engineer                         | Date:                     | 9/13/16 |
| CS Report Name:   | BYF Aust 2016 Groundwater Monitoring   | Report Date:              | 9/14/16 |
| Consultant Firm:  | Restoration Science & Engineering, LLC |                           |         |
| Laboratory Name:  | SGS                                    | Laboratory Report Number: | 1165007 |
| ADEC File Number: | 2407.26.016                            | ADEC RecKey Number:       |         |

### 1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes     No     NA (Please explain.)    Comments:

All analyses performed by SGS.

b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes     No     NA (Please explain)    Comments:

Samples not transferred to another network laboratory

### 2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?

Yes     No     NA (Please explain)    Comments:

COC completed, signed, and dated.

b. Correct analyses requested?

Yes     No     NA (Please explain)    Comments:

Correct analyses requested.

### 3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt ( $4^{\circ} \pm 2^{\circ}$  C)?

Yes     No     NA (Please explain)    Comments:

Sample temp blank within range.

b. Sample preservation acceptable - acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes       No       NA (Please explain)      Comments:

Samples preserved appropriately

c. Sample condition documented - broken, leaking (Methanol), zero headspace (VOC vials)?

Yes       No       NA (Please explain)      Comments:

Sample condition documented.

d. If there were any discrepancies, were they documented? - For example, incorrect sample containers/preservation, sample temperature outside of acceptance range, insufficient or missing samples, etc.?

Yes       No       NA (Please explain)      Comments:

No discrepancies.

e. Data quality or usability affected? (Please explain)

Comments:

Data quality and usability unaffected.

#### 4. Case Narrative

a. Present and understandable?

Yes       No       NA (Please explain)      Comments:

Case Narrative present and understandable.

b. Discrepancies, errors or QC failures identified by the lab?

Yes       No       NA (Please explain)      Comments:

No discrepancies, errors, or QC failures identified.

c. Were all corrective actions documented?

Yes       No       NA (Please explain)      Comments:

No corrective actions needed.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

## 5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes     No     NA (Please explain)

Comments:

Correct analyses performed and reported.

b. All applicable holding times met?

Yes     No     NA (Please explain)

Comments:

All holding times met.

c. All soils reported on a dry weight basis?

Yes     No     NA (Please explain)

Comments:

No soils samples submitted.

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

Yes     No     NA (Please explain)

Comments:

SVOC results nondetected at LOD above cleanup level for five SVOC analytes.

e. Data quality or usability affected? (Please explain)

Comments:

Data quality and usability are not affected.

## 6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes     No     NA (Please explain)

Comments:

Method blank reported.

ii. All method blank results less than PQL?

Yes     No     NA (Please explain)

Comments:

All method blank results less than the LOD.

iii. If above PQL, what samples are affected?

Comments:

NA

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes     No     NA (Please explain)    Comments:

No affected samples.

v. Data quality or usability affected? (Please explain)    Comments:

Data quality and usability are not affected.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics - One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes     No     NA (Please explain)    Comments:

One LCS/LCSD reported per matrix, analysis and 20 samples.

ii. Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes     No     NA (Please explain)    Comments:

No metals/inorganics analysis performed.

iii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes     No     NA (Please explain)    Comments:

All %R within method and laboratory limits.

iv. Precision - All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/DMSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes     No     NA (Please explain)    Comments:

All results either not detected or estimated values. Laboratory QC pages indicate results are usable.

v. If %R or RPD is outside of acceptable limits, what samples are affected?    Comments:

No samples are affected.

vi. Do the affected samples(s) have data flags? If so, are the data flags clearly defined?

Yes     No     NA (Please explain)    Comments:

No affected samples or data flags.

vii. Data quality or usability affected? (Please explain)

Comments:

Data quality and usability are not affected.

c. Surrogates - Organics Only

i. Are surrogate recoveries reported for organic analyses - field, QC and laboratory samples?

Yes     No     NA (Please explain)    Comments:

Surrogate recoveries reported.

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes     No     NA (Please explain)    Comments:

%R reported and within limits.

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

Yes     No     NA (Please explain)    Comments:

No failed surrogate recoveries or data flags.

iv. Data quality or usability affected? (Use the comment box to explain.)

Comments:

Data Quality and usability are not affected.

d. Trip Blank - Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes     No     NA (Please explain.)    Comments:

One trip blank reported per matrix and analysis.

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes     No     NA (Please explain.)    Comments:

Cooler indicated.

iii. All results less than PQL?

Yes     No     NA (Please explain.)

Comments:

All trip blank results less than the LOQ.

iv. If above PQL, what samples are affected?

Comments:

No samples are affected.

v. Data quality or usability affected? (Please explain.)

Comments:

Data Quality and Usability are not affected.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes     No     NA (Please explain)

Comments:

One field duplicate submitted.

ii. Submitted blind to lab?

Yes     No     NA (Please explain.)

Comments:

Field duplicate submitted blind to the lab.

iii. Precision - All relative percent differences (RPD) less than specified DQOs?  
(Recommended: 30% water, 50% soil)

$$RPD (\%) = \frac{\text{Absolute Value of: } (R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where  $R_1$  = Sample Concentration

$R_2$  = Field Duplicate Concentration

Yes     No     NA (Please explain)

Comments:

All results either not detected or estimated values.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Yes     No     NA (Please explain)

Comments:

Data quality and usability are not affected.



f. Decontamination or Equipment Blank (if applicable)

Yes     No     NA (Please explain)

Comments:

No decontamination or equipment blank collected. Dedicated tubing used to collect samples.

i. All results less than PQL?

Yes     No     NA (Please explain)

Comments:

No decon or equipment blank collected.

ii. If above PQL, what samples are affected?

Comments:

No samples are affected.

iii. Data quality or usability affected? (Please explain.)

Comments:

Data quality and usability are not affected.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes     No     NA (Please explain)

Comments:

No other data flags.

Reset Form