JUN 17 2008

# Quarterly Groundwater Monitoring Report
# Red Hill Fuel Storage Facility

Pearl Harbor, Oahu, Hawaii
Latitude: 21°22'15" N
Longitude: 157°53'33" W

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## *Executive Summary*

There are 18 active and 2 inactive, 12.5 million gallon, field-constructed underground storage tanks (USTs) located at the Red Hill Fuel Storage Facility. Previous environmental site investigations indicated a release had occurred and contaminated the groundwater underlying the Facility.

The Navy implemented a groundwater monitoring program, which includes collecting groundwater samples quarterly from U.S. Navy well 2254-01 (RHMW2254-01) and three wells installed in the Facility lower access tunnel (RHMW01, RHMW02, RHMW03). The U.S. Navy well 2254-01 is located approximately 3,000 feet downgradient from the Red Hill Fuel Storage Facility and provides approximately 24 percent of the potable water to the Pearl Harbor Water System. The groundwater samples are analyzed for petroleum constituents and compared against State of Hawaii Department of Health (DOH) Drinking Water Environmental Action Levels (EALs) (DOH, 2005a).

This groundwater monitoring report presents the analytical results and comparisons against DOH Drinking Water EALs for samples collected in April 2008. Concentration trends for chemicals that exceeded DOH Drinking Water EALs are also provided in this report.

Laboratory analytical results indicate total petroleum hydrocarbons (TPH) as diesel range organics (TPH-DRO) and polynuclear aromatic hydrocarbons (PAHs) are present in the groundwater beneath the Red Hill Fuel Storage Facility at concentrations that exceed DOH Drinking Water EALs. TPH-DRO was detected at 427 micrograms per liter (µg/L) in RHMW01, 3070 µg/L in RHMW02, and 190 µg/L in RHMW03. The DOH Drinking Water EAL for TPH-DRO is 100 µg/L. Three PAHs were detected in RHMW02 at concentrations above the DOH Drinking Water EALs: naphthalene at 89 µg/L (DOH EAL is 6.2 µg/L), 1-methylnaphthalene at 73.9 µg/L (DOH EAL is 10 µg/L), and 2-methylnaphthalene at 37.7 µg/L (DOH EAL is 10 µg/L).

Concentrations of TPH-DRO at RHMW01 have been above the DOH Drinking Water EAL during groundwater sampling events since September 2005 and showed a decreasing trend until the January 2008 sampling event. TPH-DRO observed during the April 2008 sampling event at RHMW01 was lower than the concentration observed in January 2008, but higher than the previous four rounds. Concentrations of TPH-DRO at RHMW03 showed a decreasing trend until the January 2008 sampling event. TPH-DRO observed during the April 2008 sampling event was lower than the concentrations observed in January 2008, but higher than the previous rounds. The concentrations of TPH-DRO remained relatively stable at RHMW02, ranging from 2,250 to 3,180 µg/L, which are well above the DOH Drinking Water EAL of 100 µg/L. Concentrations of three PAHs at RHMW02 remained above the DOH Drinking Water EALs, but showed a decreasing trend over the past two years. During the April 2008 sampling round, the concentrations of these PAHs increased slightly.

The ongoing quarterly collection and analysis of groundwater samples will continue to monitor the quality of the groundwater located beneath the Red Hill Fuel Storage Facility. The analytical

results from the groundwater monitoring program will determine whether contamination presents a risk to consumers of the water within the Red Hill sub-basin.

# *1.0 Introduction*

This report presents the results of the 11th groundwater sampling and analysis event, conducted in April 2008 at the Red Hill Fuel Storage Facility, Oahu, Hawaii (hereafter referred to as "the Facility"). The Facility consists of 18 active and 2 inactive underground storage tanks (USTs) operated by the Fleet Industrial and Supply Center (FISC), Pearl Harbor. The groundwater sampling and analysis event is part of a groundwater monitoring program for the UST site in response to past UST releases, previous environmental investigations, and recommendations from the State of Hawaii Department of Health (DOH).

## *1.1 Project Objective*

This groundwater sampling and analysis project was performed to evaluate the presence of chemicals of potential concern in groundwater underlying the Facility. The project was conducted to ensure the Navy remains in compliance with DOH UST release response requirements as described in Hawaii Administrative Rules (HAR) 11-281 Subchapter 7, Release Response Action. The groundwater sampling and analysis procedures generally followed the procedures described in *Red Hill Bulk Fuel Storage Facility Groundwater Protection Plan* (TEC Inc [TEC], 2008).

This groundwater sampling and analysis event was conducted by TEC under Air Force Center for Engineering and the Environment (AFCEE) Contract Number F41624-03-D-8618, Task Order 021.

## *1.2 Previous Reports*

The following groundwater monitoring reports were previously submitted to the DOH:

1. Groundwater Sampling Report, First Quarter 2005 (submitted April 2005);
2. Groundwater Sampling Report, Second Quarter 2005 (submitted August 2005);
3. Groundwater Sampling Report, Third Quarter 2005 (submitted November 2005);
4. Groundwater Sampling Report, Fourth Quarter 2005 (submitted February 2006);
5. Groundwater Monitoring Results, July 2006 (submitted September 2006);
6. Groundwater Monitoring Results, December 2006 (submitted January 2007);
7. Groundwater Monitoring Results, March 2007 (submitted May 2007);
8. Groundwater Monitoring Results, June 2007 (submitted August 2007);
9. Groundwater Monitoring Results, September 2007 (submitted October 2007); and
10. Groundwater Monitoring Results, January 2008 (submitted March 2008);

## *1.3 Background*

The following sections provide a description of the site and information on the Facility and USTs.

### *1.3.1 Site Description*

The Facility is located in Halawa Heights on Oahu, Hawaii. Land adjacent to the north of the Facility is occupied by Halawa Correctional Facility and private businesses. Land to the south and west of the Facility includes the Coast Guard Reservation. Moanalua Valley is located east of the Facility (Dawson, 2006).

The Navy Public Works Department operates a potable water infiltration tunnel approximately 1,550 feet hydraulically downgradient from the Facility (Dawson, 2006). The U.S. Navy well 2254-01 is located approximately 3,000 feet downgradient (west) of the Facility and provides approximately 24 percent of the potable water to the Pearl Harbor Water System, which serves approximately 52,200 military consumers (TEC, 2008).

### *1.3.2 Facility Information*

The Facility consists of 18 active and 2 inactive USTs operated by Navy FISC Pearl Harbor. Each UST has a capacity of 12.5 million gallons. The Facility is located approximately 100 feet above the basal aquifer (Dawson, 2006).

### *1.3.3 UST Information*

The USTs were constructed in the early 1940s. The tanks were constructed of steel and currently contain Jet Propulsion fuel 5 (JP-5) and F-76 (a marine diesel fuel). Previously, several tanks stored Navy Special Fuel Oil, Navy Distillate, aviation gasoline, and motor gasoline. Each tank measures approximately 245 feet in height and 100 feet in diameter. The upper domes of the tanks lie at depths varying between approximately 100 feet and 200 feet below the existing ground surface (TEC, 2006).

## *1.4 Previous Environmental Investigations*

**1998 to 2001:** From 1998 to 2001, the Navy conducted an investigation at the Facility to assess potential releases from the fuel storage USTs and piping systems. In February 2001, the Navy installed a one-inch diameter sentinel well RHMW01 (previously known as MW-V1D) to monitor for contamination of the basal aquifer underlying the Facility. The well was installed and completed at approximately 100 feet below grade within the underground access tunnel. At the time of well completion, depth to water in RHMW01 was measured at 86 feet below grade (Dawson, 2006).

In February 2001, groundwater samples collected from sentinel well RHMW01 contained total petroleum hydrocarbons (TPH) concentrations ranging from 0.883 milligrams per liter (mg/L) to 1.05 mg/L and total lead ranging from 0.0104 mg/L to 0.015 mg/L. The maximum total lead concentration in the samples was equal to the primary drinking water standard of 0.015 mg/L for lead and exceeded the DOH Tier 1 groundwater action level of 0.0056 mg/L (Dawson, 2006).

**2005 – Groundwater Sampling:** The Navy began quarterly groundwater sampling at existing monitoring wells in 2005. Dawson Group, Inc. collected groundwater samples from RHMW01 and the Red Hill Navy Pump Station (U.S. Navy well 2254-01) in February, June, September, and December 2005.

Samples collected in February and June 2005 were not filtered in the field prior to analysis for lead. Analytical results for samples collected from RHMW01 indicated concentrations of total lead were above the DOH Tier 1 action level of 0.0056 mg/L. The results were not considered appropriate for risk assessment since the sample had not been filtered. In addition, lead was not a component of fuels from the tanks near RHMW01. Lead may have been part of the Facility construction material (TEC, 2007).

Samples were filtered in September and December 2005, and dissolved lead concentrations were below the DOH Tier 1 action level. Concentrations of all other contaminants of potential concern were below DOH Tier 1 action levels.

**2005 – Site Investigation:** As part of a site investigation, TEC installed three groundwater monitoring wells at the Facility between June and September 2005. Well RHMW02 was installed in the lower access tunnel near Tanks 5 and 6. Well RHMW03 was installed in the lower access tunnel near Tanks 13 and 14. Well RHMW04 was installed hydraulically upgradient of the USTs to provide geochemistry for water moving through the basal aquifer beneath the Facility. Wells RHMW02 and RHMW03 were completed to depths of approximately 125 feet below the tunnel floor, and well RHMW04 was completed to a depth of approximately 300 feet below ground surface outside the tunnel. Groundwater samples were collected from the three newly installed wells and two existing wells (RHMW01 and U.S. Navy well 2254-01) in September 2005.

Naphthalene and trichloroethylene were detected in samples collected from RHMW02 at concentrations greater than the DOH Tier 1 action levels. Lead was detected in the sample collected from RHMW01 at a concentration greater than the DOH Tier 1 action level; however, the sample was not filtered in the field prior to analysis. Analytical results for filtered samples obtained by Dawson during the same period indicated concentrations of dissolved lead were below the DOH Tier 1 action level.

**2006 – Site Investigation:** Dedicated sampling pumps were installed in five wells (RHMW01, RHMW02, RHMW03, RHMW04, and U.S. Navy well 2254-01). TEC collected groundwater samples from the wells in July 2006. The groundwater samples were analyzed for petroleum constituents. Naphthalene was detected in samples collected from RHMW02 at concentrations above the DOH Tier 1 action level.

In September 2005, with concurrence from the DOH, the Navy decided to use the newer DOH Environmental Action Levels (EALs) for the Red Hill Site Investigation and Risk Assessment project. The EALs are current and provide action levels for more chemicals, and are much more useful for conducting screening risk assessments. Since the DOH June 2005 Policy Letter stated that the two sets of action levels should not be mixed, the Tier 1 screening levels presented in

HAR Section 11-281-78 would no longer be used to evaluate environmental impact at the Facility.

**2006 – Groundwater Sampling:** Groundwater samples were collected in December 2006. Analytical results indicated the following:

- No chemicals were detected in groundwater from U.S. Navy well 2254-01 or RHMW03;
- TPH as diesel range organics (TPH-DRO) was detected in groundwater above the DOH Drinking Water EALs in RHMW01; and
- TPH as gasoline range organics (TPH-GRO), TPH-DRO, and naphthalene were detected in groundwater above the DOH Drinking Water EALs in RHMW02.

**2007 – Groundwater Sampling:** Groundwater samples were collected in March, June, and September 2007. Analytical results indicated the following:

- No chemicals were detected above DOH Drinking Water EALs at U.S. Navy well 2254-01;
- TPH-DRO exceeded DOH Drinking Water EALs at RHMW01 during all three sampling events;
- TPH-GRO exceeded DOH Drinking Water EALs at RHMW02 in March;
- TPH-DRO and naphthalene exceeded DOH Drinking Water EALs at RHMW02 during all three sampling events;
- 1-methylnaphthalene and 2-methylnaphthalene exceeded DOH Drinking Water EAL for taste and odor at RHMW02 during all three sampling events; and
- TPH-DRO exceeded DOH Drinking Water EALs at RHMW03 in June.

**2008 – Groundwater Sampling:** Groundwater samples were collected in January 2008. Analytical results indicated the following:

- No chemicals were detected above DOH Drinking Water EALs at U.S. Navy well 2254-01;
- TPH-DRO exceeded DOH Drinking Water EALs at RHMW01;
- TPH-GRO did not exceed DOH Drinking Water EALs at RHMW02;
- TPH-DRO and naphthalene exceeded DOH Drinking Water EALs at RHMW02;
- 1-methylnaphthalene and 2-methylnaphthalene exceeded DOH Drinking Water EAL for taste and odor at RHMW02; and
- TPH-DRO exceeded DOH Drinking Water EALs at RHMW03.

## *2.0 Sample Collection and Analyses*

Field activities relating to groundwater sample collection were conducted on April 15, 2008. Groundwater samples were collected from three monitoring wells located inside the Facility lower access tunnel and one monitoring well located at the Red Hill Navy Pump Station. Sampling and analysis were conducted according to *Red Hill Bulk Fuel Storage Facility Groundwater Protection Plan* (TEC, 2008). A total of seven samples were collected; one normal sample from monitoring wells US Navy well 2254-01, RHMW01, RHMW02 and RHMW03, one duplicate sample from RHMW02 (Sampled as RHMWA01 and reported as RHMW02-WG11D), and one matrix spike and matrix spike duplicate from US Navy well 2254-01.

## *2.1 Monitoring Well Purging*

The groundwater monitoring wells were purged and sampled using a dedicated pump system. Well purging was considered complete when no less than three successive water quality parameter measurements had stabilized within approximately 10 percent. Field parameters were measured at regular intervals during well purging and included pH, temperature, specific conductivity, dissolved oxygen, and turbidity. Purge water was disposed in the Facility oil/water separator system.

## *2.2 Groundwater Sample Collection*

Each monitoring well was sampled immediately following purging. All wells were sampled directly from their dedicated bladder pump system. Samples were placed into sampling containers with appropriate preservatives (i.e., hydrochloric acid [HCl] for volatile organic analysis, nitric acid [$HNO_3$] for dissolved lead). Dissolved lead samples were filtered in the field and placed in preserved bottles. Sample containers were labeled with the date, sample identification number, type of analysis, and sampler's name. The containers were placed on ice in sample coolers and transported under chain-of-custody procedures to the certified laboratory for analysis.

## *2.3 Groundwater Sample Analyses*

Groundwater samples were analyzed by SGS Environmental Service, Inc. in Anchorage, Alaska for TPH-DRO and TPH-GRO by EPA Method 8015B, volatile organic compounds (VOCs) by EPA Method 8260B, polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270C SIMS, and dissolved lead by EPA Method 6020.

# *3.0 Groundwater Sample Analytical Results*

This section provides a summary of analytical results for groundwater samples collected from three monitoring wells located in the lower access tunnel of the Facility and one monitoring well located at the Red Hill Navy Pump Station. All sample results reported for monitoring well RHMW02 are mean values of the normal sample (N) and duplicate sample (D). A summary of groundwater analytical results is included in Table 1. Complete analytical laboratory reports are provided in Appendix A.

## *3.1 April 2008 Sample Analytical Results*

All groundwater samples were analyzed for TPH-DRO, TPH-GRO, VOCs, PAHs, and dissolved lead. No chemicals of potential concern were detected at or above the method detection limits at U.S. Navy well 2254-01. Data qualifier "F" indicates the result is between the method detection limit (MDL) and the reporting limit (RL) and considered an estimated value.

TPH-GRO was detected at RHMW01 at 13.6F µg/L, which is below the DOH Drinking Water EAL of 100 µg/L. TPH-DRO was detected at RHMW01 at 427 µg/L, which is above the DOH Drinking Water EAL of 100 µg/L. All other chemicals of potential concern were below DOH Drinking Water EALs at RHMW01.

Normal and duplicate samples were collected at RHMW02. TPH-DRO was detected at RHMW02 at 3,120N and 3,020D µg/L (DOH EAL is 100 µg/L). Naphthalene was analyzed by EPA Method 8270 SIM and EPA Method 8260B and detected by both methods at RHMW02. EPA Method 8260B produced the highest concentrations, which were 290N and 293D µg/L (DOH EAL is 6.2 µg/L). The concentrations of 1-methylnaphthalene and 2-methylnapthalene were above the DOH Drinking Water EALs for taste and odor. All other chemicals of potential concern were below DOH Drinking Water EALs at RHMW02.

TPH-DRO was detected at RHMW03 at 190 µg/L, (DOH EAL of 100 µg/L). All other chemicals of potential concern were below DOH Drinking Water EALs at RHMW03.

**Table 1. Analytical Results for Quarterly Groundwater Sampling Release Response Report, April 15, 2008**
**Red Hill Fuel Storage Facility, Hawaii**

| Method | Chemical | HDOH Residential Drinking Water EALs[1] UG/L | HDOH Drinking Water Ceiling EALs[2] UG/L | Units | RHMW01-WG11 UG/L April 15, 2008 | | | | RHMW02-WG11 UG/L April 15, 2008 | | | | RHMW02-WG11D UG/L April 15, 2008 | | | | RHMW03-WG11 UG/L April 15, 2008 | | | | RHMW2254-01-WG11 UG/L April 15, 2008 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Result | Q | MDL | RL | Result | Q | MDL | RL | Result | Q | MDL | RL | Result | Q | MDL | RL | Result | Q | MDL | RL |
| SW8015B | TPH as DIESEL RANGE ORGANICS | 100 | 100 | UG/L | ***427*** | F | 85.6 | 428 | ***3120*** | | 84.7 | 423 | ***3020*** | | 83.3 | 417 | ***190*** | F | 82.9 | 415 | ND | U | 86 | 430 |
| | TPH as GASOLINE RANGE ORGANICS | 100 | 100 | UG/L | 13 6 | F | 10 | 100 | 58.9 | F | 10 | 100 | 58.9 | F | 10 | 100 | ND | U | 10 | 100 | ND | U | 10 | 100 |
| BNASIM | 1-METHYLNAPHTHALENE | 240 | 10 | UG/L | 0.101 | | 0.016 | 0 0532 | ***75.8*** | | 0 777 | 2 59 | ***71.9*** | | 1 55 | 5 15 | 0.0268 | F | 0.0165 | 0.0549 | 0 0435 | F | 0.016 | 0 0535 |
| | 2-METHYLNAPHTHALENE | 240 | 10 | UG/L | 0 0789 | | 0 016 | 0.0532 | ***34.5*** | | 0 777 | 2 59 | ***40.8*** | | 1 55 | 5.15 | 0 0279 | F | 0.0165 | 0.0549 | 0.0561 | | 0.016 | 0 0535 |
| | ACENAPHTHENE | 370 | 20 | UG/L | 0.0406 | F | 0 016 | 0.0532 | 0.404 | | 0.0155 | 0.0518 | 0.346 | | 0.0155 | 0 0515 | ND | U | 0 0165 | 0.0549 | ND | U | 0.016 | 0 0535 |
| | ACENAPHTHYLENE | 240 | 2000 | UG/L | ND | U | 0.016 | 0 0532 | ND | U | 0 0155 | 0 0518 | ND | U | 0 0155 | 0.0515 | ND | U | 0 0165 | 0.0549 | ND | U | 0 016 | 0.0535 |
| | ANTHRACENE | 1800 | 22 | UG/L | ND | U | 0.016 | 0.0532 | ND | U | 0 0155 | 0.0518 | ND | U | 0.0155 | 0 0515 | ND | U | 0 0165 | 0.0549 | ND | U | 0.016 | 0 0535 |
| | BENZO(a)ANTHRACENE | 0.092 | 5 | UG/L | ND | U | 0.016 | 0 0532 | ND | U | 0 0155 | 0 0518 | ND | U | 0 0155 | 0.0515 | ND | U | 0.0165 | 0 0549 | ND | U | 0.016 | 0.0535 |
| | BENZO(a)PYRENE | 0 2 | 1.9 | UG/L | ND | U | 0.016 | 0 0532 | ND | U | 0.0155 | 0 0518 | ND | U | 0 0155 | 0.0515 | ND | U | 0.0165 | 0 0549 | ND | U | 0.016 | 0.0535 |
| | BENZO(b)FLUORANTHENE | 0.092 | 7 | UG/L | ND | U | 0 016 | 0.0532 | ND | U | 0.0155 | 0.0518 | ND | U | 0 0155 | 0.0515 | ND | U | 0 0165 | 0.0549 | ND | U | 0.016 | 0 0535 |
| | BENZO(g,h,I)PERYLENE | 1500 | 0.13 | UG/L | ND | U | 0 016 | 0.0532 | ND | U | 0.0155 | 0 0518 | ND | U | 0.0155 | 0.0515 | ND | U | 0.0165 | 0 0549 | ND | U | 0.016 | 0.0535 |
| | BENZO(k)FLUORANTHENE | 0.92 | 0 4 | UG/L | ND | U | 0 016 | 0.0532 | ND | U | 0.0155 | 0.0518 | ND | U | 0.0155 | 0 0515 | ND | U | 0 0165 | 0.0549 | ND | U | 0.016 | 0.0535 |
| | CHRYSENE | 9 2 | 0.8 | UG/L | ND | U | 0 016 | 0.0532 | ND | U | 0.0155 | 0.0518 | ND | U | 0 0155 | 0.0515 | ND | U | 0.0165 | 0 0549 | ND | U | 0 016 | 0.0535 |
| | DIBENZ(a,h)ANTHRACENE | 0.0092 | 0 25 | UG/L | ND | U | 0.016 | 0.0532 | ND | U | 0.0155 | 0.0518 | ND | U | 0.0155 | 0 0515 | ND | U | 0 0165 | 0.0549 | ND | U | 0.016 | 0.0535 |
| | FLUORANTHENE | 1500 | 130 | UG/L | ND | U | 0.016 | 0 0532 | ND | U | 0.0155 | 0 0518 | ND | U | 0 0155 | 0.0515 | ND | U | 0 0165 | 0.0549 | ND | U | 0 016 | 0.0535 |
| | FLUORENE | 240 | 950 | UG/L | 0.0375 | F | 0.016 | 0 0532 | 0.22 | | 0 0155 | 0.0518 | 0 187 | | 0.0155 | 0 0515 | ND | U | 0 0165 | 0.0549 | ND | U | 0 016 | 0.0535 |
| | INDENO(1,2,3-c,d)PYRENE | 0.092 | 0.27 | UG/L | ND | U | 0.016 | 0 0532 | ND | U | 0.0155 | 0 0518 | ND | U | 0 0155 | 0.0515 | ND | U | 0.0165 | 0 0549 | ND | U | 0 016 | 0.0535 |
| | NAPHTHALENE | 6 2 | 21 | UG/L | 0.216 | | 0.033 | 0.106 | ***73*** | | 1 61 | 5.18 | ***105*** | | 3.2 | 10.3 | ND | U | 0 0341 | 0.11 | ND | U | 0.0332 | 0 107 |
| | PHENANTHRENE | 240 | 410 | UG/L | ND | U | 0.016 | 0 0532 | ND | U | 0 0155 | 0 0518 | ND | U | 0.0155 | 0.0515 | ND | U | 0.0165 | 0 0549 | ND | U | 0 016 | 0.0535 |
| | PYRENE | 180 | 68 | UG/L | ND | U | 0 016 | 0.0532 | ND | U | 0.0155 | 0 0518 | ND | U | 0.0155 | 0.0515 | ND | U | 0.0165 | 0.0549 | ND | U | 0.016 | 0 0535 |
| SW8260 | 1,1,1,2-TETRACHLOROETHANE | 0.43 | 50000 | UG/L | ND | U | 0.15 | 0.5 | ND | U | 0.15 | 0.5 | ND | U | 0 15 | 0.5 | ND | U | 0 15 | 0 5 | ND | U | 0.15 | 0.5 |
| | 1,1,1-TRICHLOROETHANE | 200 | 970 | UG/L | ND | U | 0 31 | 1 | ND | U | 0 31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 |
| | 1,1,2,2-TETRACHLOROETHANE | 0.056 | 500 | UG/L | ND | U | 0.15 | 0.5 | ND | U | 0.15 | 0 5 | ND | U | 0.15 | 0.5 | ND | U | 0.15 | 0.5 | ND | U | 0.15 | 0 5 |
| | 1,1,2-TRICHLOROETHANE | 5 | 50000 | UG/L | ND | U | 0 31 | 1 | ND | U | 0 31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0 31 | 1 |
| | 1,2,4-TRICHLOROBENZENE | 70 | 3000 | UG/L | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 |
| | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 0 04 | 10 | UG/L | ND | U | 0.62 | 2 | ND | U | 0.62 | 2 | ND | U | 0.62 | 2 | ND | U | 0.62 | 2 | ND | U | 0.62 | 2 |
| | 1,2-DICHLOROPROPANE | 5 | 10 | UG/L | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0 31 | 1 | ND | U | 0 31 | 1 | ND | U | 0.31 | 1 |
| | 1,3-DICHLOROBENZENE | 180 | 50000 | UG/L | ND | U | 0 31 | 1 | ND | U | 0.31 | 1 | ND | U | 0 31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 |
| | 1,3-DICHLOROPROPANE | 0.4 | 50000 | UG/L | ND | U | 0 12 | 0.4 | ND | U | 0.12 | 0.4 | ND | U | 0 12 | 0.4 | ND | U | 0.12 | 0 4 | ND | U | 0.12 | 0.4 |
| | 1,4-DICHLOROBENZENE | 75 | 5 | UG/L | ND | U | 0 15 | 0.5 | ND | U | 0 15 | 0.5 | ND | U | 0.15 | 0 5 | ND | U | 0 15 | 0.5 | ND | U | 0 15 | 0.5 |
| | ACETONE | 5500 | 20000 | UG/L | ND | U | 3.1 | 10 | ND | U | 3.1 | 10 | ND | U | 3 1 | 10 | ND | U | 3.1 | 10 | ND | U | 3.1 | 10 |
| | BENZENE | 5 | 170 | UG/L | ND | U | 0 12 | 0.4 | ND | U | 0 12 | 0.4 | 0.15 | F | 0.12 | 0 4 | ND | U | 0.12 | 0.4 | ND | U | 0 12 | 0 4 |
| | BROMODICHLOROMETHANE | 0.18 | 50000 | UG/L | ND | U | 0.15 | 0 5 | ND | U | 0.15 | 0.5 | ND | U | 0 15 | 0.5 | ND | U | 0.15 | 0 5 | ND | U | 0.15 | 0.5 |
| | BROMOFORM | 100 | 510 | UG/L | ND | U | 0.31 | 1 | ND | U | 0 31 | 1 | ND | U | 0 31 | 1 | ND | U | 0 31 | 1 | ND | U | 0 31 | 1 |
| | BROMOMETHANE | 8.5 | 50000 | UG/L | ND | U | 0.94 | 3 | ND | U | 0.94 | 3 | ND | U | 0.94 | 3 | ND | U | 0 94 | 3 | ND | U | 0.94 | 3 |
| | CARBON TETRACHLORIDE | 5 | 520 | UG/L | ND | U | 0 31 | 1 | ND | U | 0 31 | 1 | ND | U | 0 31 | 1 | ND | U | 0.31 | 1 | ND | U | 0 31 | 1 |
| | CHLOROBENZENE | 100 | 50 | UG/L | ND | U | 0 15 | 0 5 | ND | U | 0 15 | 0 5 | ND | U | 0.15 | 0 5 | ND | U | 0.15 | 0.5 | ND | U | 0.15 | 0 5 |
| | CHLOROETHANE | 3.9 | 16 | UG/L | ND | U | 0 31 | 1 | ND | U | 0 31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0 31 | 1 |
| | CHLOROFORM | 100 | 2400 | UG/L | ND | U | 0 3 | 1 | ND | U | 0 3 | 1 | ND | U | 0 3 | 1 | ND | U | 0.3 | 1 | ND | U | 0.3 | 1 |
| | CHLOROMETHANE | 160 | 50000 | UG/L | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0 31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 |
| | cis-1,2-DICHLOROETHENE | 0 | 0 | UG/L | ND | U | 0.31 | 1 | ND | U | 0 31 | 1 | ND | U | 0.31 | 1 | ND | U | 0 31 | 1 | ND | U | 0.31 | 1 |
| | cis-1,2-DICHLOROETHYLENE | 70 | 50000 | UG/L | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0 31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 |
| | DIBROMOMETHANE | 0.0056 | 50000 | UG/L | ND | U | 0.31 | 1 | ND | U | 0 31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 |
| | ETHYLBENZENE | 700 | 30 | UG/L | ND | U | 0.31 | 1 | ND | U | 0 31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 |
| | HEXACHLOROBUTADIENE | 0 86 | 6 | UG/L | ND | U | 0 31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0 31 | 1 |
| | M,P-XYLENE (SUM OF ISOMERS) | 10000 | 20 | UG/L | ND | U | 0.62 | 2 | ND | U | 0.62 | 2 | ND | U | 0.62 | 2 | ND | U | 0.62 | 2 | ND | U | 0.62 | 2 |
| | METHYL ETHYL KETONE (2-BUTANONE) | 7000 | 8400 | UG/L | ND | U | 3 1 | 10 | ND | U | 3.1 | 10 | ND | U | 3.1 | 10 | ND | U | 3.1 | 10 | ND | U | 3 1 | 10 |
| | METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE) | 2000 | 1300 | UG/L | ND | U | 3.1 | 10 | ND | U | 3.1 | 10 | ND | U | 3 1 | 10 | ND | U | 3.1 | 10 | ND | U | 3.1 | 10 |
| | METHYLENE CHLORIDE | 4 3 | 9100 | UG/L | ND | U | 1 | 5 | ND | U | 1 | 5 | ND | U | 1 | 5 | ND | U | 1 | 5 | ND | U | 1 | 5 |
| | NAPHTHALENE | 6.2 | 21 | UG/L | ND | U | 0.62 | 2 | ***290*** | | 12.4 | 40 | ***293*** | | 12.4 | 40 | ND | U | 0.62 | 2 | ND | U | 0 62 | 2 |
| | STYRENE | 100 | 10 | UG/L | ND | U | 0 31 | 1 | ND | U | 0 31 | 1 | ND | U | 0 31 | 1 | ND | U | 0 31 | 1 | ND | U | 0 31 | 1 |
| | TETRACHLOROETHYLENE(PCE) | 5 | 170 | UG/L | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 |
| | TOLUENE | 1000 | 40 | UG/L | ND | U | 0 31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0 31 | 1 | ND | U | 0 31 | 1 |
| | trans-1,2-DICHLOROETHENE | 100 | 260 | UG/L | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 |
| | TRICHLOROETHYLENE (TCE) | 5 | 310 | UG/L | ND | U | 0 31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0 31 | 1 | ND | U | 0 31 | 1 |
| | VINYL CHLORIDE | 2 | 3400 | UG/L | ND | U | 0 31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 |
| SW6020 | LEAD | 15 | 50000 | UG/L | ND | U | 0 31 | 1 | ND | U | 0 31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 | ND | U | 0.31 | 1 |

UG/L - Micrograms per Liter
Q - Data qualifier
U - Indicates that the compound was analyzed for but not detected at or above the stated limit
F - Indicates that the compound was identified but the concentration was above the MDL and below the RL
MDL - Method detection limit
RL - Reporting limit
TPH - Total Petroleum hydrocarbons
ND - Indicates that the compound was not detected above the stated method detection limit
***200***[1] - Result exceeds one or both HDOH EAL's

[1] Toxicity-based environmental action levels, Table D-2, *Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater,* HDOH, 2005

[2] Taste, odor and solubility thresholds, Table G-1, *Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater*, HDOH, 2005

### *3.2 Groundwater Contaminant Trend*

Groundwater samples have been collected and analyzed by TEC since September 2005. Figure 1 shows TPH trends in groundwater at the Facility. Figure 2 shows PAH trends in groundwater at the Facility. In these figures, open icons (without fill) represent the method detection limit for chemicals that were not detected.

RHMW01

TPH-GRO was not detected prior to April 2008. In April 2008, TPH-GRO was detected 13.6F µg/L, which is below the DOH Drinking Water EAL of 100 µg/L. TPH-DRO was detected above the DOH Drinking Water EAL of 100 µg/L during all groundwater sampling events and had shown a decreasing trend until the January 2008 sampling event. Concentration of TPH-DRO observed during the April 2008 sampling event is lower than the concentrations observed in January 2008, but higher than the previous four rounds.

RHMW02

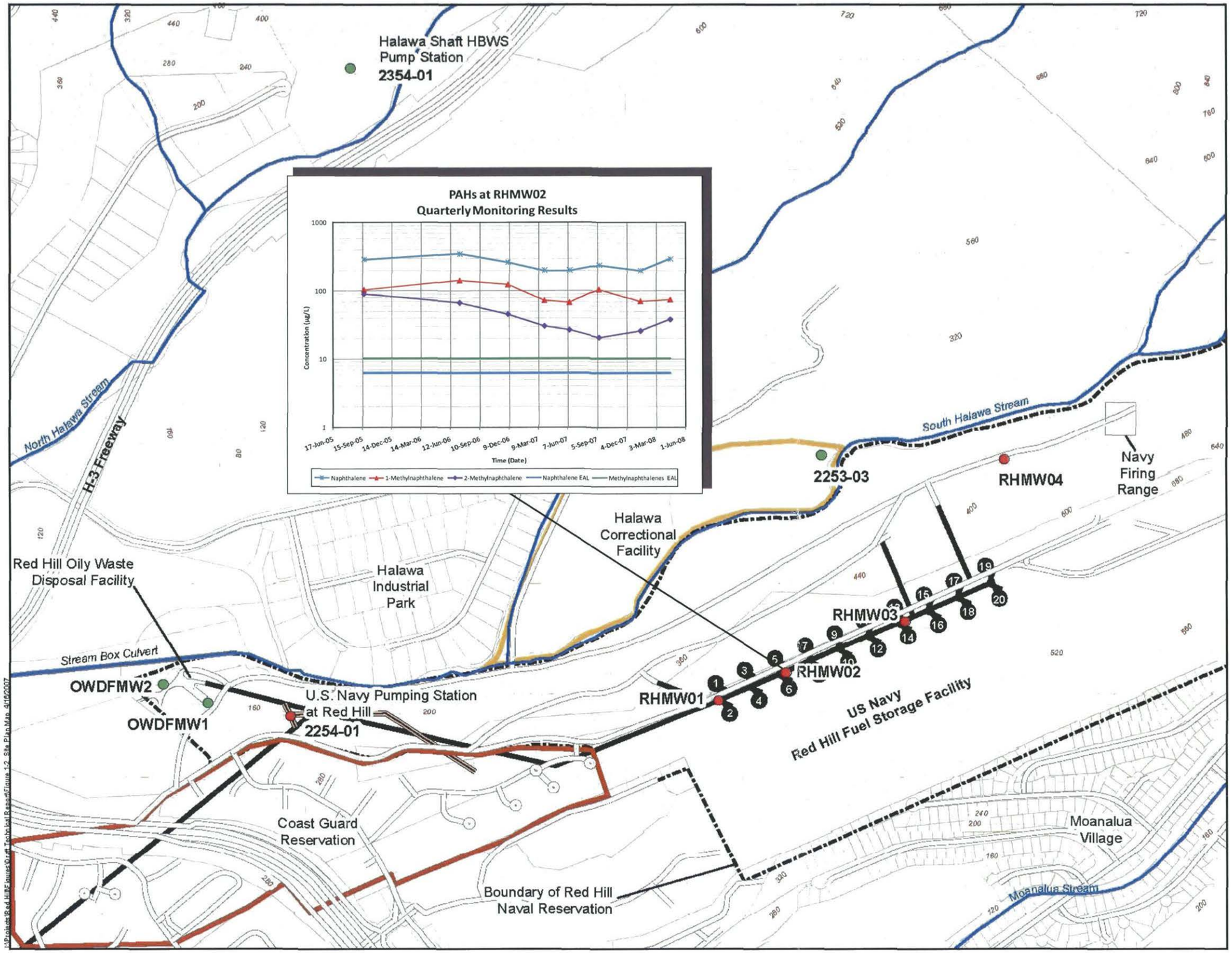
TPH-GRO was detected in seven of eight sampling events since September 2005, and exceeded the DOH Drinking Water EAL three times during 2006 and 2007. The maximum concentration detected was 148 µg/L, which is slightly above the EAL of 100 µg/L. The concentration of TPH-DRO has remained relatively stable at RHMW02, ranging from 2,250 to 3,180 µg/L, which are well above the DOH Drinking Water EAL of 100 µg/L. Although concentrations of PAHs at RHMW02 remain above the DOH Drinking Water EALs, they show a decreasing trend over the past two years.

RHMW03

TPH-GRO was not detected since September 2005. TPH-DRO had shown a decreasing trend until the January 2008 sampling event. Concentrations of TPH-DRO observed during the April 2008 sampling event are lower than the concentrations observed in January 2008, but higher than the previous rounds.

## *4.0 Summary and Conclusions*

TPH-DRO and PAHs are present in the groundwater beneath the Facility at concentrations that exceed DOH Drinking Water EALs. The quarterly collection and analysis of groundwater samples will continue to monitor the quality of the groundwater located beneath the Facility. Groundwater monitoring reports will be submitted to the DOH upon receipt and evaluation of laboratory analytical results.





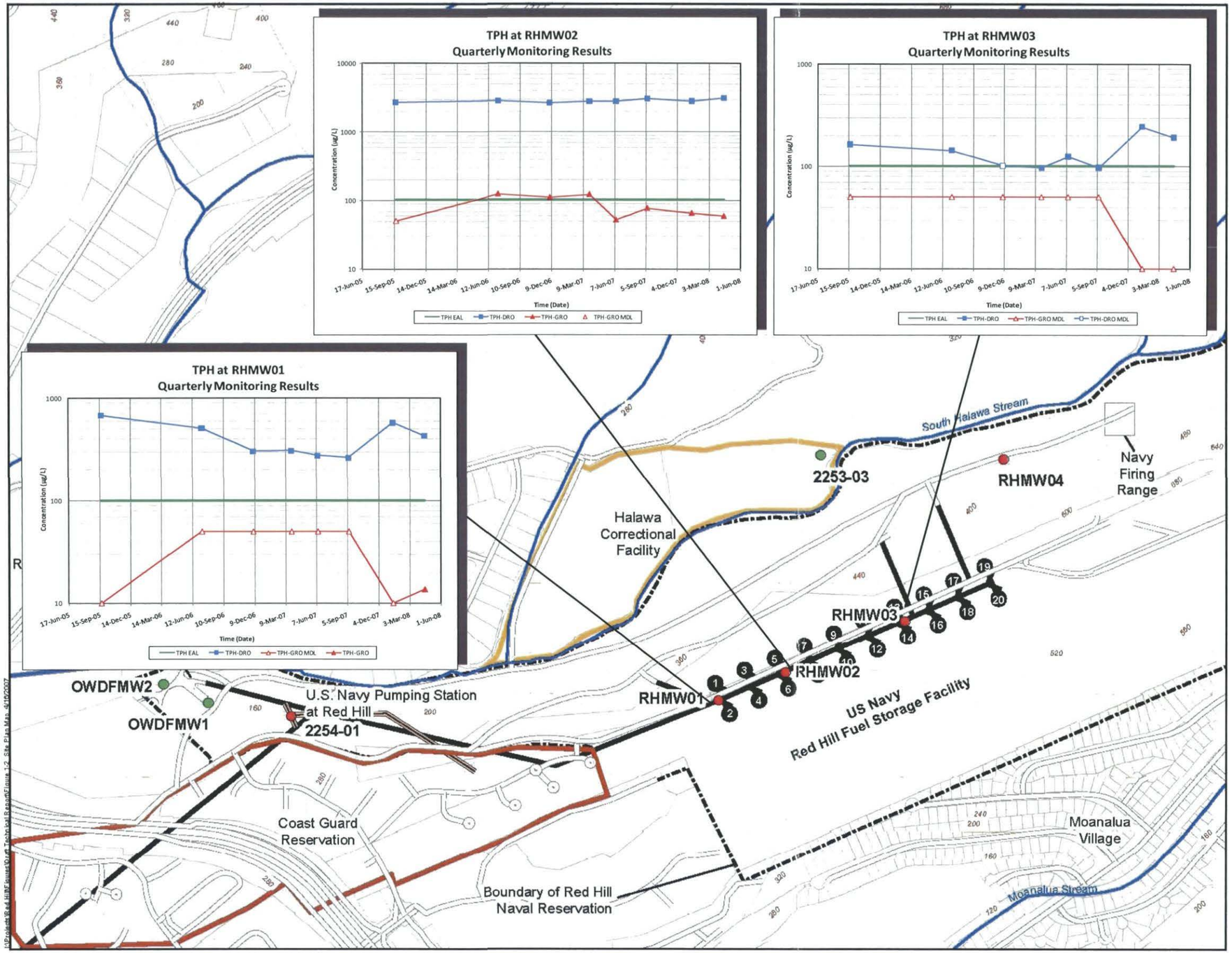
**Legend**

- Red Hill UST ID Number
- Parcel
- 40-foot Interval Contour Line
- Unpaved Road
- Road
- Stream
- Red Hill Navy Installation Boundary
- Red Hill Tunnels
- 2254-01 Infiltration Gallery
- Halawa Correctional Facility Boundary
- Coast Guard Reservation

N

Meters
0 87.5 50
0 312.5 625 1,250
Feet

**Figure 2**
**PAH Trends in Groundwater**
**Round 11 (April 15, 2008)**
**Red Hill Fuel Storage Facility**
**Oahu, Hawaii**




## Legend

- Red Hill UST ID Number
- Parcel
- 40-foot Interval Contour Line
- Unpaved Road
- Road
- Stream
- Red Hill Navy Installation Boundary
- Red Hill Tunnels
- 2254-01 Infiltration Gallery
- Halawa Correctional Facility Boundary
- Coast Guard Reservation

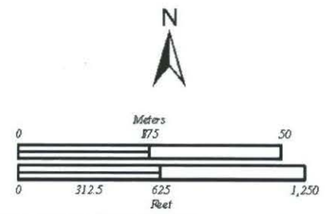




**Figure 1**
**TPH Trends in Groundwater**
**Round 11 (April 15, 2008)**
**Red Hill Fuel Storage Facility**
**Oahu, Hawaii**

## *5.0 References*

Dawson Group, Inc. 2006. *Fourth Quarter 2005 Groundwater Sampling Report, Red Hill Fuel Storage Facility, Hawaii.* February.

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*Appendix A*
*Laboratory Analytical Reports*

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMW03-WG-11**
SGS Ref. #: 1081553004
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 14:15
Receipt Date/Time: 04/17/08 11:30

**Polynuclear Aromatics GC/MS**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Acenaphthylene | ND | 0.0549 | 0.0165 | ug/L | 1 | XMS4467 | XXX19235 | |
| Acenaphthene | ND | 0.0549 | 0.0165 | ug/L | 1 | XMS4467 | XXX19235 | |
| Fluorene | ND | 0.0549 | 0.0165 | ug/L | 1 | XMS4467 | XXX19235 | |
| Phenanthrene | ND | 0.0549 | 0.0165 | ug/L | 1 | XMS4467 | XXX19235 | |
| Anthracene | ND | 0.0549 | 0.0165 | ug/L | 1 | XMS4467 | XXX19235 | |
| Fluoranthene | ND | 0.0549 | 0.0165 | ug/L | 1 | XMS4467 | XXX19235 | |
| Pyrene | ND | 0.0549 | 0.0165 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo(a)Anthracene | ND | 0.0549 | 0.0165 | ug/L | 1 | XMS4467 | XXX19235 | |
| Chrysene | ND | 0.0549 | 0.0165 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo[b]Fluoranthene | ND | 0.0549 | 0.0165 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo[k]fluoranthene | ND | 0.0549 | 0.0165 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo[a]pyrene | ND | 0.0549 | 0.0165 | ug/L | 1 | XMS4467 | XXX19235 | |
| Indeno[1,2,3-c,d] pyrene | ND | 0.0549 | 0.0165 | ug/L | 1 | XMS4467 | XXX19235 | |
| Dibenzo[a,h]anthracene | ND | 0.0549 | 0.0165 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo[g,h,i]perylene | ND | 0.0549 | 0.0165 | ug/L | 1 | XMS4467 | XXX19235 | |
| Naphthalene | ND | 0.110 | 0.0341 | ug/L | 1 | XMS4467 | XXX19235 | |
| 1-Methylnaphthalene | 0.0268 J | 0.0549 | 0.0165 | ug/L | 1 | XMS4467 | XXX19235 | |
| 2-Methylnaphthalene | 0.0279 J | 0.0549 | 0.0165 | ug/L | 1 | XMS4467 | XXX19235 | |
| Terphenyl-d14 <surr> | 74.4 | 50-135 | | % | 1 | XMS4467 | XXX19235 | |

**Batch Information**

Analytical Batch: XMS4467
Analytical Method: 8270D SIMS
Analysis Date/Time: 04/25/08 05:28
Dilution Factor: 1

Prep Batch: XXX19235
Prep Method: SW3520C
Prep Date/Time: 04/18/08 09:10

Initial Prep Wt./Vol.: 910 mL
Prep Extract Vol.: 1 mL
Container ID:1081553004-J
Analyst: WAA

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMW02-WG-11**
SGS Ref. #: 1081553005
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 15:45
Receipt Date/Time: 04/17/08 11:30

**Dissolved Metals by ICP/MS**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Lead | ND | 1.00 | 0.310 | ug/L | 5 | MMS5390 | MXX20161 | |

**Batch Information**

Analytical Batch: MMS5390
Analytical Method: SW6020
Analysis Date/Time: 04/23/08 17:05
Dilution Factor: 5

Prep Batch: MXX20161
Prep Method: SW3010A
Prep Date/Time: 04/22/08 07:05

Initial Prep Wt./Vol.: 50 mL
Prep Extract Vol.: 50 mL
Container ID:1081553005-G
Analyst: NRB

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMW02-WG-11**
SGS Ref. #: 1081553005
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 15:45
Receipt Date/Time: 04/17/08 11:30

**Volatile Fuels Department**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics | 58.9 J | 100 | 10.0 | ug/L | 1 | VFC8905 | VXX18015 | |
| 4-Bromofluorobenzene <surr> | 138 | 50-150 | | % | 1 | VFC8905 | VXX18015 | |

**Batch Information**

Analytical Batch: VFC8905
Analytical Method: SW8015B
Analysis Date/Time: 04/23/08 11:20
Dilution Factor: 1

Prep Batch: VXX18015
Prep Method: SW5030B
Prep Date/Time: 04/23/08 08:00

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1081553005-A
Analyst: HM

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMW02-WG-11**
SGS Ref. #: 1081553005
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 15:45
Receipt Date/Time: 04/17/08 11:30

**Semivolatile Organic Fuels Department**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 3.12 | 0.423 | 0.0847 | mg/L | 1 | XFC7885 | XXX19238 | |
| 5a Androstane <surr> | 89.6 | 50-150 | | % | 1 | XFC7885 | XXX19238 | |

**Batch Information**

Analytical Batch: XFC7885
Analytical Method: SW8015B
Analysis Date/Time: 04/22/08 22:45
Dilution Factor: 1

Prep Batch: XXX19238
Prep Method: SW3520C
Prep Date/Time: 04/18/08 09:30

Initial Prep Wt./Vol.: 945 mL
Prep Extract Vol.: 1 mL
Container ID:1081553005-I
Analyst: BME

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMW02-WG-11**
SGS Ref. #: 1081553005
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 15:45
Receipt Date/Time: 04/17/08 11:30

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.400 | 0.120 | ug/L | 1 | VMS9727 | VXX18041 | |
| Toluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Ethylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| n-Butylbenzene | 6.64 | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,4-Dichlorobenzene | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichloroethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,3,5-Trimethylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 4-Chlorotoluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Chlorobenzene | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 4-Methyl-2-pentanone (MIBK) | ND | 10.0 | 3.10 | ug/L | 1 | VMS9727 | VXX18041 | |
| cis-1,2-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 4-Isopropyltoluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| cis-1,3-Dichloropropene | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| n-Propylbenzene | 11.1 | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Styrene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Dibromomethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| trans-1,3-Dichloropropene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,4-Trichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Acetone | ND | 10.0 | 3.10 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,2,2-Tetrachloroethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dibromo-3-chloropropane | ND | 2.00 | 0.620 | ug/L | 1 | VMS9727 | VXX18041 | |
| Methyl-t-butyl ether | ND | 5.00 | 1.50 | ug/L | 1 | VMS9727 | VXX18041 | |
| Tetrachloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Dibromochloromethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,3-Dichloropropane | ND | 0.400 | 0.120 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dibromoethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Carbon tetrachloride | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,1,2-Tetrachloroethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| Chloroform | ND | 1.00 | 0.300 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Chloromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,3-Trichloropropane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromomethane | ND | 3.00 | 0.940 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromochloromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Vinyl chloride | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Dichlorodifluoromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMW02-WG-11**
SGS Ref #: 1081553005
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 15:45
Receipt Date/Time: 04/17/08 11:30

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Chloroethane . | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| sec-Butylbenzene | 6.76 | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromodichloromethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 2-Butanone (MEK) | ND | 10.0 | 3.10 | ug/L | 1 | VMS9727 | VXX18041 | |
| Methylene chloride | ND | 5.00 | 1.00 | ug/L | 1 | VMS9727 | VXX18041 | |
| Trichlorofluoromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| P & M -Xylene | ND | 2.00 | 0.620 | ug/L | 1 | VMS9727 | VXX18041 | |
| Naphthalene | 290 | 40.0 | 12.4 | ug/L | 20 | VMS9730 | VXX18047 | |
| o-Xylene | 0.740 J | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromoform | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1-Chlorohexane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,4-Trimethylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| tert-Butylbenzene | 0.640 J | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,1-Trichloroethane | ND | 1 00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1-Dichloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 2-Chlorotoluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Trichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| trans-1,2-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 2,2-Dichloropropane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Hexachlorobutadiene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Isopropylbenzene (Cumene) | 6.19 | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichloropropane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1-Dichloropropene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,2-Trichloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,3-Dichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,3-Trichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichloroethane-D4 <surr> | 111 | 73-120 | | % | 1 | VMS9727 | VXX18041 | |
| Toluene-d8 <surr> | 99.7 | 80-120 | | % | 1 | VMS9727 | VXX18041 | |
| 4-Bromofluorobenzene <surr> | 94.3 | 76-120 | | % | 1 | VMS9727 | VXX18041 | |

Client Sample ID: **RHMW02-WG-11**
SGS Ref. #: 1081553005
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 15:45
Receipt Date/Time: 04/17/08 11:30

## Volatile Gas Chromatography/Mass Spectroscopy

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| **Batch Information** | | | | | | | | |
| Analytical Batch: VMS9727 | | Prep Batch: VXX18041 | | | | Initial Prep Wt./Vol.: 20 mL | | |
| Analytical Method: SW8260B | | Prep Method: SW5030B | | | | Prep Extract Vol.: 20 mL | | |
| Analysis Date/Time: 04/29/08 20:11 | | Prep Date/Time: 04/29/08 09:00 | | | | Container ID:1081553005-B | | |
| Dilution Factor: 1 | | | | | | Analyst: DSH | | |
| Analytical Batch: VMS9730 | | Prep Batch: VXX18047 | | | | Initial Prep Wt./Vol.: 20 mL | | |
| Analytical Method: SW8260B | | Prep Method: SW5030B | | | | Prep Extract Vol.: 20 mL | | |
| Analysis Date/Time: 04/29/08 21:36 | | Prep Date/Time: 04/29/08 03:34 | | | | Container ID:1081553005-E | | |
| Dilution Factor: 20 | | | | | | Analyst: DSH | | |

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMW02-WG-11**
SGS Ref. #: 1081553005
Project ID: 9121-003 Red Hill BFSF
Matrix. Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 15:45
Receipt Date/Time: 04/17/08 11:30

**Polynuclear Aromatics GC/MS**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Acenaphthylene | ND | 0.0518 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Acenaphthene | 0.404 | 0.0518 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Fluorene | 0.220 | 0.0518 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Phenanthrene | ND | 0.0518 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Anthracene | ND | 0.0518 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Fluoranthene | ND | 0.0518 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Pyrene | ND | 0.0518 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo(a)Anthracene | ND | 0.0518 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Chrysene | ND | 0.0518 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo[b]Fluoranthene | ND | 0.0518 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo[k]fluoranthene | ND | 0.0518 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo[a]pyrene | ND | 0.0518 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Indeno[1,2,3-c,d] pyrene | ND | 0.0518 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Dibenzo[a,h]anthracene | ND | 0.0518 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo[g,h,i]perylene | ND | 0.0518 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Naphthalene | 73.0 | 5.18 | 1.61 | ug/L | 50 | XMS4469 | XXX19235 | |
| 1-Methylnaphthalene | 75.8 | 2.59 | 0.777 | ug/L | 50 | XMS4469 | XXX19235 | |
| 2-Methylnaphthalene | 34.5 | 2.59 | 0.777 | ug/L | 50 | XMS4469 | XXX19235 | |
| Terphenyl-d14 <surr> | 79.8 | 50-135 | | % | 1 | XMS4467 | XXX19235 | |

**Batch Information**

Analytical Batch: XMS4467
Analytical Method: 8270D SIMS
Analysis Date/Time: 04/25/08 06:01
Dilution Factor: 1
Prep Batch: XXX19235
Prep Method: SW3520C
Prep Date/Time: 04/18/08 09:10
Initial Prep Wt./Vol.: 965 mL
Prep Extract Vol.: 1 mL
Container ID:1081553005-J
Analyst: WAA

Analytical Batch: XMS4469
Analytical Method: 8270D SIMS
Analysis Date/Time: 04/25/08 13:45
Dilution Factor: 50
Prep Batch: XXX19235
Prep Method: SW3520C
Prep Date/Time: 04/18/08 09:10
Initial Prep Wt./Vol.: 965 mL
Prep Extract Vol.: 1 mL
Container ID:1081553005-D
Analyst: WAA

SGS

**The Environmental Company, Inc. (TEC)** Print Date: 5/13/2008

Client Sample ID: **RHMWA01-WG-11**
SGS Ref. #: 1081553006
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 14:05
Receipt Date/Time: 04/17/08 11:30

**Dissolved Metals by ICP/MS**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Lead | ND | 1.00 | 0.310 | ug/L | 5 | MMS5390 | MXX20161 | |

**Batch Information**

Analytical Batch: MMS5390
Analytical Method: SW6020
Analysis Date/Time: 04/23/08 17:12
Dilution Factor: 5

Prep Batch: MXX20161
Prep Method: SW3010A
Prep Date/Time: 04/22/08 07:05

Initial Prep Wt./Vol.: 50 mL
Prep Extract Vol.: 50 mL
Container ID:1081553006-G
Analyst: NRB

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMWA01-WG-11**
SGS Ref. #: 1081553006
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 14:05
Receipt Date/Time: 04/17/08 11:30

**Volatile Fuels Department**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics | 58.9 J | 100 | 10.0 | ug/L | 1 | VFC8905 | VXX18015 | |
| 4-Bromofluorobenzene <surr> | 139 | 50-150 | | % | 1 | VFC8905 | VXX18015 | |

**Batch Information**

Analytical Batch: VFC8905
Analytical Method: SW8015B
Analysis Date/Time: 04/23/08 11:38
Dilution Factor: 1

Prep Batch: VXX18015
Prep Method: SW5030B
Prep Date/Time: 04/23/08 08:00

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1081553006-A
Analyst: HM

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMWA01-WG-11**
SGS Ref. #: 1081553006
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 14:05
Receipt Date/Time: 04/17/08 11:30

**Semivolatile Organic Fuels Department**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 3.02 | 0.417 | 0.0833 | mg/L | 1 | XFC7885 | XXX19238 | |
| a Androstane <surr> | 88.8 | 50-150 | | % | 1 | XFC7885 | XXX19238 | |

**Batch Information**

Analytical Batch: XFC7885
Analytical Method: SW8015B
Analysis Date/Time: 04/22/08 22:55
Dilution Factor: 1

Prep Batch: XXX19238
Prep Method: SW3520C
Prep Date/Time: 04/18/08 09:30

Initial Prep Wt./Vol.: 960 mL
Prep Extract Vol.: 1 mL
Container ID:1081553006-I
Analyst: BME

SGS

**The Environmental Company, Inc. (TEC)** Print Date: 5/13/2008

Client Sample ID: **RHMWA01-WG-11**
SGS Ref. #: 1081553006
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 14:05
Receipt Date/Time: 04/17/08 11:30

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Benzene | 0.150 J | 0.400 | 0.120 | ug/L | 1 | VMS9727 | VXX18041 | |
| Toluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Ethylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| n-Butylbenzene | 6.76 | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,4-Dichlorobenzene | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichloroethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,3,5-Trimethylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 4-Chlorotoluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Chlorobenzene | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 4-Methyl-2-pentanone (MIBK) | ND | 10.0 | 3.10 | ug/L | 1 | VMS9727 | VXX18041 | |
| cis-1,2-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 4-Isopropyltoluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| cis-1,3-Dichloropropene | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| n-Propylbenzene | 11.3 | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Styrene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Dibromomethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| trans-1,3-Dichloropropene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,4-Trichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Acetone | ND | 10.0 | 3.10 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,2,2-Tetrachloroethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dibromo-3-chloropropane | ND | 2.00 | 0.620 | ug/L | 1 | VMS9727 | VXX18041 | |
| Methyl-t-butyl ether | ND | 5.00 | 1.50 | ug/L | 1 | VMS9727 | VXX18041 | |
| Tetrachloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Dibromochloromethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,3-Dichloropropane | ND | 0.400 | 0.120 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dibromoethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Carbon tetrachloride | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,1,2-Tetrachloroethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| Chloroform | ND | 1 00 | 0.300 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Chloromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,3-Trichloropropane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromomethane | ND | 3.00 | 0.940 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromochloromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Vinyl chloride | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Dichlorodifluoromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMWA01-WG-11**
SGS Ref. #: 1081553006
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 14:05
Receipt Date/Time: 04/17/08 11:30

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Chloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| sec-Butylbenzene | 6.71 | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromodichloromethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 2-Butanone (MEK) | ND | 10.0 | 3.10 | ug/L | 1 | VMS9727 | VXX18041 | |
| Methylene chloride | ND | 5.00 | 1.00 | ug/L | 1 | VMS9727 | VXX18041 | |
| Trichlorofluoromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| P & M -Xylene | ND | 2.00 | 0.620 | ug/L | 1 | VMS9727 | VXX18041 | |
| Naphthalene | 293 | 40.0 | 12.4 | ug/L | 20 | VMS9730 | VXX18047 | |
| O-Xylene | 0.750 J | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromoform | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| n-Chlorohexane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,4-Trimethylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| tert-Butylbenzene | 0.730 J | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,1-Trichloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1-Dichloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 2-Chlorotoluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Trichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| trans-1,2-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 2,2-Dichloropropane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Hexachlorobutadiene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Isopropylbenzene (Cumene) | 6.31 | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichloropropane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1-Dichloropropene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,2-Trichloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,3-Dichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,3-Trichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichloroethane-D4 <surr> | 101 | 73-120 | | % | 1 | VMS9727 | VXX18041 | |
| Toluene-d8 <surr> | 98.8 | 80-120 | | % | 1 | VMS9727 | VXX18041 | |
| 4-Bromofluorobenzene <surr> | 92.6 | 76-120 | | % | 1 | VMS9727 | VXX18041 | |

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMWA01-WG-11**
SGS Ref. #: 1081553006
Project ID: 9121-003 Red Hill BFSF
Matrix. Water (Surface, Eff., Ground)

*All Dates/Times are Alaska Local Time*
Collection Date/Time: 04/15/08 14:05
Receipt Date/Time: 04/17/08 11:30

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| **Batch Information** | | | | | | | | |
| Analytical Batch: VMS9727 | | Prep Batch: VXX18041 | | | | Initial Prep Wt./Vol.: 20 mL | | |
| Analytical Method: SW8260B | | Prep Method: SW5030B | | | | Prep Extract Vol.: 20 mL | | |
| Analysis Date/Time: 04/29/08 20:45 | | Prep Date/Time: 04/29/08 09:00 | | | | Container ID:1081553006-B | | |
| Dilution Factor: 1 | | | | | | Analyst: DSH | | |
| Analytical Batch: VMS9730 | | Prep Batch: VXX18047 | | | | Initial Prep Wt./Vol.. 20 mL | | |
| Analytical Method: SW8260B | | Prep Method: SW5030B | | | | Prep Extract Vol.: 20 mL | | |
| Analysis Date/Time: 04/29/08 22:10 | | Prep Date/Time: 04/29/08 03:34 | | | | Container ID:1081553006-E | | |
| Dilution Factor: 20 | | | | | | Analyst: DSH | | |

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMWA01-WG-11**
SGS Ref. #: 1081553006
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 14:05
Receipt Date/Time: 04/17/08 11:30

**Polynuclear Aromatics GC/MS**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Acenaphthylene | ND | 0.0515 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Acenaphthene | 0.346 | 0.0515 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Fluorene | 0.187 | 0.0515 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Phenanthrene | ND | 0.0515 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Anthracene | ND | 0.0515 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Fluoranthene | ND | 0.0515 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Pyrene | ND | 0.0515 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo(a)Anthracene | ND | 0.0515 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Chrysene | ND | 0.0515 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo[b]Fluoranthene | ND | 0.0515 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo[k]fluoranthene | ND | 0.0515 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo[a]pyrene | ND | 0.0515 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Indeno[1,2,3-c,d] pyrene | ND | 0.0515 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Dibenzo[a,h]anthracene | ND | 0.0515 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo[g,h,i]perylene | ND | 0.0515 | 0.0155 | ug/L | 1 | XMS4467 | XXX19235 | |
| Naphthalene | 105 | 10.3 | 3.20 | ug/L | 100 | XMS4470 | XXX19235 | |
| 1-Methylnaphthalene | 71.9 | 5.15 | 1.55 | ug/L | 100 | XMS4470 | XXX19235 | |
| 2-Methylnaphthalene | 40.8 | 5.15 | 1.55 | ug/L | 100 | XMS4470 | XXX19235 | |
| Terphenyl-d14 <surr> | 74.4 | 50-135 | | % | 1 | XMS4467 | XXX19235 | |

**Batch Information**

Analytical Batch: XMS4467
Analytical Method: 8270D SIMS
Analysis Date/Time: 04/25/08 06:34
Dilution Factor: 1
Prep Batch: XXX19235
Prep Method: SW3520C
Prep Date/Time: 04/18/08 09:10
Initial Prep Wt./Vol.: 970 mL
Prep Extract Vol.: 1 mL
Container ID:1081553006-J
Analyst: WAA

Analytical Batch: XMS4470
Analytical Method: 8270D SIMS
Analysis Date/Time: 04/26/08 05:23
Dilution Factor: 100
Prep Batch: XXX19235
Prep Method: SW3520C
Prep Date/Time: 04/18/08 09:10
Initial Prep Wt./Vol.: 970 mL
Prep Extract Vol.: 1 mL
Container ID:1081553006-J
Analyst: WAA

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMW01-WG-11**
SGS Ref. #. 1081553007
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 17:15
Receipt Date/Time: 04/17/08 11:30

**Dissolved Metals by ICP/MS**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Lead | ND | 1.00 | 0.310 | ug/L | 5 | MMS5390 | MXX20161 | |

**Batch Information**

Analytical Batch: MMS5390
Analytical Method: SW6020
Analysis Date/Time: 04/23/08 17:18
Dilution Factor: 5

Prep Batch: MXX20161
Prep Method: SW3010A
Prep Date/Time: 04/22/08 07:05

Initial Prep Wt./Vol.: 50 mL
Prep Extract Vol.: 50 mL
Container ID:1081553007-G
Analyst: NRB

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMW01-WG-11**
SGS Ref. #: 1081553007
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 17:15
Receipt Date/Time: 04/17/08 11:30

**Volatile Fuels Department**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics | 13.6 J | 100 | 10.0 | ug/L | 1 | VFC8905 | VXX18015 | |
| 4-Bromofluorobenzene <surr> | 109 | 50-150 | | % | 1 | VFC8905 | VXX18015 | |

**Batch Information**

Analytical Batch: VFC8905
Analytical Method: SW8015B
Analysis Date/Time: 04/23/08 11:57
Dilution Factor: 1

Prep Batch: VXX18015
Prep Method: SW5030B
Prep Date/Time: 04/23/08 08:00

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1081553007-A
Analyst: HM

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMW01-WG-11**
SGS Ref. #: 1081553007
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 17:15
Receipt Date/Time: 04/17/08 11:30

**Semivolatile Organic Fuels Department**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 0.427 J | 0.428 | 0.0856 | mg/L | 1 | XFC7885 | XXX19238 | |
| 5a Androstane <surr> | 85.9 | 50-150 | | % | 1 | XFC7885 | XXX19238 | |

**Batch Information**

Analytical Batch: XFC7885
Analytical Method: SW8015B
Analysis Date/Time: 04/22/08 23:16
Dilution Factor: 1

Prep Batch: XXX19238
Prep Method: SW3520C
Prep Date/Time: 04/18/08 09:30

Initial Prep Wt./Vol.: 935 mL
Prep Extract Vol. 1 mL
Container ID:1081553007-I
Analyst: BME

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMW01-WG-11**
SGS Ref. #: 1081553007
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 17:15
Receipt Date/Time: 04/17/08 11:30

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.400 | 0.120 | ug/L | 1 | VMS9727 | VXX18041 | |
| Toluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Ethylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| n-Butylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,4-Dichlorobenzene | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichloroethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,3,5-Trimethylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 4-Chlorotoluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Chlorobenzene | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 4-Methyl-2-pentanone (MIBK) | ND | 10.0 | 3.10 | ug/L | 1 | VMS9727 | VXX18041 | |
| cis-1,2-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 4-Isopropyltoluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| cis-1,3-Dichloropropene | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| n-Propylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Styrene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Dibromomethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| trans-1,3-Dichloropropene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,4-Trichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Acetone | ND | 10.0 | 3.10 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,2,2-Tetrachloroethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dibromo-3-chloropropane | ND | 2.00 | 0.620 | ug/L | 1 | VMS9727 | VXX18041 | |
| Methyl-t-butyl ether | ND | 5.00 | 1 50 | ug/L | 1 | VMS9727 | VXX18041 | |
| Tetrachloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Dibromochloromethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,3-Dichloropropane | ND | 0.400 | 0.120 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dibromoethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Carbon tetrachloride | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,1,2-Tetrachloroethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| Chloroform | ND | 1.00 | 0.300 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Chloromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,3-Trichloropropane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromomethane | ND | 3.00 | 0.940 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromochloromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Vinyl chloride | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Dichlorodifluoromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |

SGS

**The Environmental Company, Inc. (TEC)** Print Date: 5/13/2008

Client Sample ID: **RHMW01-WG-11**
SGS Ref. #: 1081553007
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 17:15
Receipt Date/Time: 04/17/08 11:30

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Chloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| sec-Butylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromodichloromethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 2-Butanone (MEK) | ND | 10.0 | 3.10 | ug/L | 1 | VMS9727 | VXX18041 | |
| Methylene chloride | ND | 5.00 | 1.00 | ug/L | 1 | VMS9727 | VXX18041 | |
| Trichlorofluoromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| P & M -Xylene | ND | 2.00 | 0.620 | ug/L | 1 | VMS9727 | VXX18041 | |
| Naphthalene | ND | 2.00 | 0.620 | ug/L | 1 | VMS9727 | VXX18041 | |
| o-Xylene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromoform | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1-Chlorohexane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,4-Trimethylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| tert-Butylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,1-Trichloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1-Dichloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 2-Chlorotoluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Trichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| trans-1,2-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 2,2-Dichloropropane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Hexachlorobutadiene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Isopropylbenzene (Cumene) | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichloropropane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1-Dichloropropene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,2-Trichloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,3-Dichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,3-Trichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichloroethane-D4 <surr> | 101 | 73-120 | | % | 1 | VMS9727 | VXX18041 | |
| Toluene-d8 <surr> | 101 | 80-120 | | % | 1 | VMS9727 | VXX18041 | |
| 4-Bromofluorobenzene <surr> | 92.8 | 76-120 | | % | 1 | VMS9727 | VXX18041 | |

**Batch Information**

Analytical Batch: VMS9727
Analytical Method: SW8260B
Analysis Date/Time: 04/29/08 18:29
Dilution Factor: 1

Prep Batch: VXX18041
Prep Method: SW5030B
Prep Date/Time: 04/29/08 09:00

Initial Prep Wt./Vol.: 20 mL
Prep Extract Vol.: 20 mL
Container ID:1081553007-B
Analyst: DSH

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMW01-WG-11**
SGS Ref. #: 1081553007
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 17:15
Receipt Date/Time: 04/17/08 11:30

**Polynuclear Aromatics GC/MS**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Acenaphthylene | ND | 0.0532 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Acenaphthene | 0.0406 J | 0.0532 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Fluorene | 0.0375 J | 0.0532 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Phenanthrene | ND | 0.0532 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Anthracene | ND | 0.0532 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Fluoranthene | ND | 0.0532 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Pyrene | ND | 0.0532 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo(a)Anthracene | ND | 0.0532 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Chrysene | ND | 0.0532 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo[b]Fluoranthene | ND | 0.0532 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo[k]fluoranthene | ND | 0.0532 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo[a]pyrene | ND | 0.0532 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Indeno[1,2,3-c,d] pyrene | ND | 0.0532 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Dibenzo[a,h]anthracene | ND | 0.0532 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo[g,h,i]perylene | ND | 0.0532 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Naphthalene | 0.216 | 0.106 | 0.0330 | ug/L | 1 | XMS4467 | XXX19235 | |
| 1-Methylnaphthalene | 0.101 | 0.0532 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| 2-Methylnaphthalene | 0.0789 | 0.0532 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Terphenyl-d14 <surr> | 75.9 | 50-135 | | % | 1 | XMS4467 | XXX19235 | |

**Batch Information**

Analytical Batch: XMS4467
Analytical Method: 8270D SIMS
Analysis Date/Time: 04/25/08 07:06
Dilution Factor: 1

Prep Batch: XXX19235
Prep Method: SW3520C
Prep Date/Time: 04/18/08 09:10

Initial Prep Wt./Vol.: 940 mL
Prep Extract Vol.: 1 mL
Container ID:1081553007-J
Analyst: WAA

SGS

The Environmental Company, Inc. (TEC)

Print Date: 5/13/2008

Client Sample ID: **TB01-WG-11**
SGS Ref. #: 1081553008
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 10:05
Receipt Date/Time: 04/17/08 11:30

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.400 | 0.120 | ug/L | 1 | VMS9727 | VXX18041 | |
| Toluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Ethylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| n-Butylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,4-Dichlorobenzene | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichloroethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,3,5-Trimethylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 4-Chlorotoluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Chlorobenzene | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 4-Methyl-2-pentanone (MIBK) | ND | 10.0 | 3.10 | ug/L | 1 | VMS9727 | VXX18041 | |
| cis-1,2-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 4-Isopropyltoluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| cis-1,3-Dichloropropene | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| n-Propylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Styrene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Dibromomethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| trans-1,3-Dichloropropene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,4-Trichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Acetone | ND | 10.0 | 3.10 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,2,2-Tetrachloroethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dibromo-3-chloropropane | ND | 2.00 | 0.620 | ug/L | 1 | VMS9727 | VXX18041 | |
| Methyl-t-butyl ether | ND | 5.00 | 1.50 | ug/L | 1 | VMS9727 | VXX18041 | |
| Tetrachloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Dibromochloromethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,3-Dichloropropane | ND | 0.400 | 0.120 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dibromoethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Carbon tetrachloride | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,1,2-Tetrachloroethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| Chloroform | ND | 1.00 | 0.300 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,3-Trichloropropane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Chloromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromomethane | ND | 3.00 | 0.940 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromochloromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Vinyl chloride | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Dichlorodifluoromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **TB01-WG-11**
SGS Ref. #: 1081553008
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 10:05
Receipt Date/Time: 04/17/08 11:30

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Chloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| sec-Butylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromodichloromethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 2-Butanone (MEK) | ND | 10.0 | 3.10 | ug/L | 1 | VMS9727 | VXX18041 | |
| Methylene chloride | ND | 5.00 | 1.00 | ug/L | 1 | VMS9727 | VXX18041 | |
| Trichlorofluoromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| P & M -Xylene | ND | 2.00 | 0.620 | ug/L | 1 | VMS9727 | VXX18041 | |
| Naphthalene | ND | 2.00 | 0.620 | ug/L | 1 | VMS9727 | VXX18041 | |
| o-Xylene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromoform | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 4-Chlorohexane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,4-Trimethylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| tert-Butylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,1-Trichloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1-Dichloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 2-Chlorotoluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Trichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| trans-1,2-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 2,2-Dichloropropane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Hexachlorobutadiene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Isopropylbenzene (Cumene) | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichloropropane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1-Dichloropropene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,2-Trichloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,3-Dichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,3-Trichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichloroethane-D4 <surr> | 101 | 73-120 | | % | 1 | VMS9727 | VXX18041 | |
| Toluene-d8 <surr> | 99.6 | 80-120 | | % | 1 | VMS9727 | VXX18041 | |
| 4-Bromofluorobenzene <surr> | 99.6 | 76-120 | | % | 1 | VMS9727 | VXX18041 | |

**Batch Information**

Analytical Batch: VMS9727
Analytical Method: SW8260B
Analysis Date/Time: 04/29/08 14:32
Dilution Factor: 1

Prep Batch: VXX18041
Prep Method: SW5030B
Prep Date/Time: 04/29/08 09:00

Initial Prep Wt./Vol.: 20 mL
Prep Extract Vol.: 20 mL
Container ID:1081553008-B
Analyst: DSH

SGS

| | | | | | |
|---|---|---|---|---|---|
| **SGS Ref.#** | 823986 | Method Blank | **Printed Date/Time** | | 05/13/2008 16:34 |
| **Client Name** | The Environmental Company, Inc. (TEC) | | **Prep** | **Batch** | XXX19235 |
| **Project Name/#** | 9121-003 Red Hill BFSF | | | **Method** | SW3520C |
| **Matrix** | Water (Surface, Eff., Ground) | | | **Date** | 04/18/2008 |

QC results affect the following production samples:

1081553001, 1081553004, 1081553005, 1081553006, 1081553007

| Parameter | Results | Reporting/Control Limit | MDL | Units | Analysis Date |
|---|---|---|---|---|---|
| **Polynuclear Aromatics GC/MS** | | | | | |
| Acenaphthylene | ND | 0.0500 | 0.0150 | ug/L | 04/24/08 |
| Acenaphthene | ND | 0.0500 | 0.0150 | ug/L | 04/24/08 |
| Fluorene | ND | 0.0500 | 0.0150 | ug/L | 04/24/08 |
| Phenanthrene | ND | 0.0500 | 0.0150 | ug/L | 04/24/08 |
| Anthracene | ND | 0.0500 | 0.0150 | ug/L | 04/24/08 |
| Fluoranthene | ND | 0.0500 | 0.0150 | ug/L | 04/24/08 |
| Pyrene | ND | 0.0500 | 0.0150 | ug/L | 04/24/08 |
| Benzo(a)Anthracene | ND | 0.0500 | 0.0150 | ug/L | 04/24/08 |
| Chrysene | ND | 0.0500 | 0.0150 | ug/L | 04/24/08 |
| Benzo[b]Fluoranthene | ND | 0.0500 | 0.0150 | ug/L | 04/24/08 |
| Benzo[k]fluoranthene | ND | 0.0500 | 0.0150 | ug/L | 04/24/08 |
| Benzo[a]pyrene | ND | 0.0500 | 0.0150 | ug/L | 04/24/08 |
| Indeno[1,2,3-c,d] pyrene | ND | 0.0500 | 0.0150 | ug/L | 04/24/08 |
| Dibenzo[a,h]anthracene | ND | 0.0500 | 0.0150 | ug/L | 04/24/08 |
| Benzo[g,h,i]perylene | ND | 0.0500 | 0.0150 | ug/L | 04/24/08 |
| Naphthalene | ND | 0.100 | 0.0310 | ug/L | 04/24/08 |
| 1-Methylnaphthalene | 0.0303 J | 0.0500 | 0.0150 | ug/L | 04/24/08 |
| 2-Methylnaphthalene | 0.0411 J | 0.0500 | 0.0150 | ug/L | 04/24/08 |
| **Surrogates** | | | | | |
| Terphenyl-d14 <surr> | 70.1 | 50-135 | | % | 04/24/08 |

**Batch** XMS4467
**Method** 8270D SIMS
**Instrument** HP 5890 Series II MS2 SVOA

SGS

| | | | | | |
|---|---|---|---|---|---|
| **SGS Ref.#** | 824067 Method Blank | | **Printed Date/Time** | | 05/13/2008 16:34 |
| **Client Name** | The Environmental Company, Inc. (TEC) | | **Prep** | **Batch** | XXX19238 |
| **Project Name/#** | 9121-003 Red Hill BFSF | | | **Method** | SW3520C |
| **Matrix** | Water (Surface, Eff., Ground) | | | **Date** | 04/18/2008 |

QC results affect the following production samples:

1081553001, 1081553004, 1081553005, 1081553006, 1081553007

| Parameter | Results | Reporting/Control Limit | MDL | Units | Analysis Date |
|---|---|---|---|---|---|
| **Semivolatile Organic Fuels Department** | | | | | |
| Diesel Range Organics | ND | 0.400 | 0.0800 | mg/L | 04/22/08 |
| **Surrogates** | | | | | |
| 5a Androstane <surr> | 86.6 | 60-120 | | % | 04/22/08 |

**Batch** XFC7885
**Method** SW8015B
**Instrument** HP 5890 Series II FID SV A F

SGS

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|---|---|---|---|---|---|
| **SGS Ref.#** | 824334 | Method Blank | **Printed Date/Time** | | 05/13/2008 16:34 |
| **Client Name** | The Environmental Company, Inc. (TEC) | | **Prep** | **Batch** | MXX20161 |
| **Project Name/#** | 9121-003 Red Hill BFSF | | | **Method** | SW3010A |
| **Matrix** | Water (Surface, Eff., Ground) | | | **Date** | 04/22/2008 |

QC results affect the following production samples:

1081553001, 1081553004, 1081553005, 1081553006, 1081553007

| Parameter | Results | Reporting/Control Limit | MDL | Units | Analysis Date |
|---|---|---|---|---|---|
| **Metals by ICP/MS** | | | | | |
| Lead | ND | 1.00 | 0.310 | ug/L | 04/23/08 |
| **Batch** | MMS5390 | | | | |
| **Method** | SW6020 | | | | |
| **Instrument** | Perkin Elmer Sciex ICP-MS P4 | | | | |

SGS

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|---|---|---|---|---|---|
| **SGS Ref.#** | 824560 | Method Blank | **Printed Date/Time** | | 05/13/2008 16:34 |
| **Client Name** | The Environmental Company, Inc. (TEC) | | **Prep** | **Batch** | VXX18015 |
| **Project Name/#** | 9121-003 Red Hill BFSF | | | **Method** | SW5030B |
| **Matrix** | Water (Surface, Eff., Ground) | | | **Date** | 04/23/2008 |

QC results affect the following production samples:

1081553001, 1081553004, 1081553005, 1081553006, 1081553007

| Parameter | Results | Reporting/Control Limit | MDL | Units | Analysis Date |
|---|---|---|---|---|---|
| **Volatile Fuels Department** | | | | | |
| Gasoline Range Organics | ND | 100 | 10.0 | ug/L | 04/23/08 |
| **Surrogates** | | | | | |
| 4-Bromofluorobenzene <surr> | 110 | 50-150 | | % | 04/23/08 |
| **Batch** VFC8905 | | | | | |
| **Method** SW8015B | | | | | |
| **Instrument** HP 5890 Series II PID+HECD VBA | | | | | |

SGS

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|---|---|---|---|---|---|
| **SGS Ref.#** | 825339 | Method Blank | **Printed Date/Time** | 05/13/2008 | 16:34 |
| **Client Name** | The Environmental Company, Inc. (TEC) | | **Prep Batch** | VXX18041 | |
| **Project Name/#** | 9121-003 Red Hill BFSF | | **Method** | SW5030B | |
| **Matrix** | Water (Surface, Eff., Ground) | | **Date** | 04/29/2008 | |

QC results affect the following production samples:

1081553001, 1081553004, 1081553005, 1081553006, 1081553007, 1081553008

| Parameter | Results | Reporting/Control Limit | MDL | Units | Analysis Date |
|---|---|---|---|---|---|

**Volatile Gas Chromatography/Mass Spectroscopy**

SGS

| | | | |
|---|---|---|---|
| **SGS Ref.#** | 825339 Method Blank | **Printed Date/Time** | 05/13/2008 16:34 |
| **Client Name** | The Environmental Company, Inc. (TEC) | **Prep Batch** | VXX18041 |
| **Project Name/#** | 9121-003 Red Hill BFSF | **Method** | SW5030B |
| **Matrix** | Water (Surface, Eff., Ground) | **Date** | 04/29/2008 |

| Parameter | Results | Reporting/Control Limit | MDL | Units | Analysis Date |
|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | |
| Benzene | ND | 0.400 | 0.120 | ug/L | 04/29/08 |
| Toluene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| Ethylbenzene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| n-Butylbenzene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| 1,4-Dichlorobenzene | ND | 0.500 | 0.150 | ug/L | 04/29/08 |
| 1,2-Dichloroethane | ND | 0.500 | 0.150 | ug/L | 04/29/08 |
| 1,3,5-Trimethylbenzene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| 4-Chlorotoluene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| Chlorobenzene | ND | 0.500 | 0.150 | ug/L | 04/29/08 |
| 4-Methyl-2-pentanone (MIBK) | ND | 10.0 | 3.10 | ug/L | 04/29/08 |
| cis-1,2-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| 4-Isopropyltoluene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| cis-1,3-Dichloropropene | ND | 0.500 | 0.150 | ug/L | 04/29/08 |
| n-Propylbenzene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| Styrene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| Dibromomethane | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| trans-1,3-Dichloropropene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| 1,2,4-Trichlorobenzene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| Acetone | ND | 10.0 | 3.10 | ug/L | 04/29/08 |
| 1,1,2,2-Tetrachloroethane | ND | 0.500 | 0.150 | ug/L | 04/29/08 |
| 1,2-Dibromo-3-chloropropane | ND | 2.00 | 0.620 | ug/L | 04/29/08 |
| Methyl-t-butyl ether | ND | 5.00 | 1.50 | ug/L | 04/29/08 |
| Tetrachloroethene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| Dibromochloromethane | ND | 0.500 | 0.150 | ug/L | 04/29/08 |
| 1,3-Dichloropropane | ND | 0.400 | 0.120 | ug/L | 04/29/08 |
| 1,2-Dibromoethane | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| Carbon tetrachloride | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| 1,1,1,2-Tetrachloroethane | ND | 0.500 | 0.150 | ug/L | 04/29/08 |
| Chloroform | ND | 1.00 | 0.300 | ug/L | 04/29/08 |
| Bromobenzene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| Chloromethane | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| 1,2,3-Trichloropropane | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| Bromomethane | ND | 3.00 | 0.940 | ug/L | 04/29/08 |
| Bromochloromethane | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| Vinyl chloride | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| Dichlorodifluoromethane | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| Chloroethane | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| sec-Butylbenzene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| Bromodichloromethane | ND | 0.500 | 0.150 | ug/L | 04/29/08 |

SGS

| | | | |
|---|---|---|---|
| **SGS Ref.#** | 825339 Method Blank | **Printed Date/Time** | 05/13/2008 16:34 |
| **Client Name** | The Environmental Company, Inc. (TEC) | **Prep Batch** | VXX18041 |
| **Project Name/#** | 9121-003 Red Hill BFSF | **Method** | SW5030B |
| **Matrix** | Water (Surface, Eff., Ground) | **Date** | 04/29/2008 |

| Parameter | Results | Reporting/Control Limit | MDL | Units | Analysis Date |
|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | |
| 1,1-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| 2-Butanone (MEK) | ND | 10.0 | 3.10 | ug/L | 04/29/08 |
| Methylene chloride | ND | 5.00 | 1.00 | ug/L | 04/29/08 |
| Trichlorofluoromethane | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| P & M -Xylene | ND | 2.00 | 0.620 | ug/L | 04/29/08 |
| Naphthalene | ND | 2.00 | 0.620 | ug/L | 04/29/08 |
| o-Xylene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| Bromoform | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| 1-Chlorohexane | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| 1,2,4-Trimethylbenzene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| tert-Butylbenzene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| 1,1,1-Trichloroethane | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| 1,1-Dichloroethane | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| 2-Chlorotoluene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| Trichloroethene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| trans-1,2-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| 1,2-Dichlorobenzene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| 2,2-Dichloropropane | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| Hexachlorobutadiene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| Isopropylbenzene (Cumene) | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| 1,2-Dichloropropane | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| 1,1-Dichloropropene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| 1,1,2-Trichloroethane | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| 1,3-Dichlorobenzene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| 1,2,3-Trichlorobenzene | ND | 1.00 | 0.310 | ug/L | 04/29/08 |
| **Surrogates** | | | | | |
| 1,2-Dichloroethane-D4 <surr> | 107 | 73-120 | | % | 04/29/08 |
| Toluene-d8 <surr> | 99.9 | 80-120 | | % | 04/29/08 |
| 4-Bromofluorobenzene <surr> | 99.6 | 76-120 | | % | 04/29/08 |

**Batch** VMS9727
**Method** SW8260B
**Instrument** HP 5890 Series II MS3 VNA

SGS

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|---|---|---|---|---|---|
| **SGS Ref.#** | 825521 | Method Blank | **Printed Date/Time** | | 05/13/2008 16:34 |
| **Client Name** | The Environmental Company, Inc. (TEC) | | **Prep** | **Batch** | VXX18047 |
| **Project Name/#** | 9121-003 Red Hill BFSF | | | **Method** | SW5030B |
| **Matrix** | Water (Surface, Eff., Ground) | | | **Date** | 04/29/2008 |

QC results affect the following production samples:

1081553005, 1081553006

| Parameter | Results | Reporting/Control Limit | MDL | Units | Analysis Date |
|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | |
| Naphthalene | ND | 2.00 | 0.620 | ug/L | 04/29/08 |
| **Surrogates** | | | | | |
| 1,2-Dichloroethane-D4 <surr> | 99.6 | 73-120 | | % | 04/29/08 |
| Toluene-d8 <surr> | 99.9 | 80-120 | | % | 04/29/08 |
| 4-Bromofluorobenzene <surr> | 103 | 76-120 | | % | 04/29/08 |

**Batch** VMS9730
**Method** SW8260B
**Instrument** HP 5890 Series II MS3 VNA

SGS

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|---|---|---|---|---|---|
| **SGS Ref.#** | 823987 Lab Control Sample | **Printed Date/Time** | | 05/13/2008 | 16:35 |
| | | **Prep** | **Batch** | XXX19235 | |
| **Client Name** | The Environmental Company, Inc. (TEC) | | **Method** | SW3520C | |
| **Project Name/#** | 9121-003 Red Hill BFSF | | **Date** | 04/18/2008 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | | |

QC results affect the following production samples:

1081553001, 1081553004, 1081553005, 1081553006, 1081553007

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Polynuclear Aromatics GC/MS** | | | | | | | | |
| Acenaphthylene | LCS | 0.388 | 78 | ( 50-105 ) | | | 0.5 ug/L | 04/24/2008 |
| Acenaphthene | LCS | 0.400 | 80 | ( 45-110 ) | | | 0.5 ug/L | 04/24/2008 |
| Fluorene | LCS | 0.413 | 83 | ( 50-110 ) | | | 0.5 ug/L | 04/24/2008 |
| Phenanthrene | LCS | 0.432 | 87 | ( 50-115 ) | | | 0.5 ug/L | 04/24/2008 |
| Anthracene | LCS | 0.401 | 80 | ( 50-110 ) | | | 0.5 ug/L | 04/24/2008 |
| Fluoranthene | LCS | 0.473 | 95 | ( 55-115 ) | | | 0.5 ug/L | 04/24/2008 |
| Pyrene | LCS | 0.458 | 92 | ( 50-126 ) | | | 0.5 ug/L | 04/24/2008 |
| Benzo(a)Anthracene | LCS | 0.451 | 90 | ( 55-110 ) | | | 0.5 ug/L | 04/24/2008 |
| Chrysene | LCS | 0.495 | 99 | ( 55-110 ) | | | 0.5 ug/L | 04/24/2008 |
| Benzo[b]Fluoranthene | LCS | 0.463 | 93 | ( 45-120 ) | | | 0.5 ug/L | 04/24/2008 |
| Benzo[k]fluoranthene | LCS | 0.473 | 95 | ( 49-125 ) | | | 0.5 ug/L | 04/24/2008 |
| Benzo[a]pyrene | LCS | 0.430 | 86 | ( 55-110 ) | | | 0.5 ug/L | 04/24/2008 |
| Indeno[1,2,3-c,d] pyrene | LCS | 0.448 | 90 | ( 45-125 ) | | | 0.5 ug/L | 04/24/2008 |
| Dibenzo[a,h]anthracene | LCS | 0.453 | 91 | ( 40-125 ) | | | 0.5 ug/L | 04/24/2008 |
| Benzo[g,h,i]perylene | LCS | 0.457 | 91 | ( 40-125 ) | | | 0.5 ug/L | 04/24/2008 |
| Naphthalene | LCS | 0.415 | 83 | ( 40-115 ) | | | 0.5 ug/L | 04/24/2008 |
| 1-Methylnaphthalene | LCS | 0.436 | 87 | ( 35-121 ) | | | 0.5 ug/L | 04/24/2008 |
| 2-Methylnaphthalene | LCS | 0.438 | 88 | ( 45-105 ) | | | 0.5 ug/L | 04/24/2008 |
| **Surrogates** | | | | | | | | |
| Terphenyl-d14 <surr> | LCS | | 70 | ( 50-135 ) | | | | 04/24/2008 |

SGS

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|---|---|---|---|---|---|
| **SGS Ref.#** | 823987 Lab Control Sample | **Printed Date/Time** | | 05/13/2008 | 16:35 |
| | | **Prep** | **Batch** | XXX19235 | |
| **Client Name** | The Environmental Company, Inc. (TEC) | | **Method** | SW3520C | |
| **Project Name/#** | 9121-003 Red Hill BFSF | | **Date** | 04/18/2008 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | | |

| Parameter | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|

**Polynuclear Aromatics GC/MS**

| | |
|---|---|
| **Batch** | XMS4467 |
| **Method** | 8270D SIMS |
| **Instrument** | HP 5890 Series II MS2 SVOA |

SGS

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|---|---|---|---|---|---|
| **SGS Ref.#** | 824069 | Lab Control Sample | **Printed Date/Time** | 05/13/2008 | 16:35 |
| | 824071 | Lab Control Sample Duplicate | **Prep Batch** | XXX19238 | |
| **Client Name** | The Environmental Company, Inc. (TEC) | | **Method** | SW3520C | |
| **Project Name/#** | 9121-003 Red Hill BFSF | | **Date** | 04/18/2008 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | | |

QC results affect the following production samples:

1081553001, 1081553004, 1081553005, 1081553006, 1081553007

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Semivolatile Organic Fuels Department** | | | | | | | | |
| Diesel Range Organics | LCS | 4.16 | 83 | ( 75-125 ) | | | 5 mg/L | 04/22/2008 |
| | LCSD | 4.07 | 81 | | 2 | (< 20 ) | 5 mg/L | 04/22/2008 |
| **Surrogates** | | | | | | | | |
| 5a Androstane <surr> | LCS | | 97 | ( 60-120 ) | | | | 04/22/2008 |
| | LCSD | | 95 | | 2 | | | 04/22/2008 |

**Batch** XFC7885
**Method** SW8015B
**Instrument** HP 5890 Series II FID SV A F

SGS

# SGS Environmental Services
# Alaska Division
# Level II Laboratory Data Report

| | |
|---|---|
| Project: | 9121-003 Red Hill BFSF |
| Client: | The Environmental Company, Inc. (TEC) |
| SGS Work Order: | 1081553 |

Released by:

**Contents:**



**Note:**
Unless otherwise noted, all quality assurance/quality control criteria is in compliance with the standards set forth by the proper regulatory authority, the SGS Quality Assurance Program Plan, and the National Environmental Accreditation Conference.

## SGS Environmental Services Inc.

# Case Narrative

**Customer: THEENVC** **The Environmental Company, Inc. (TEC)**

**Project: 1081553** **9121-003 Red Hill BFSF**

**NPDL WO:**

*Refer to the sample receipt form for information on sample condition.*

**1081553001 PS** **RHMW2254-WG-11**

6020 - ICSA did not meet QC criteria for lead due to contamination of the ICS stock standard. Lead was not detected in the associated samples.

**1081553004 PS** **RHMW03-WG-11**

6020 - ICSA did not meet QC criteria for lead due to contamination of the ICS stock standard. Lead was not detected in the associated samples.

**1081553005 PS** **RHMW02-WG-11**

6020 - ICSA did not meet QC criteria for lead due to contamination of the ICS stock standard. Lead was not detected in the associated samples.

8015B - An unknown hydrocarbon is present.

**1081553006 PS** **RHMWA01-WG-11**

6020 - ICSA did not meet QC criteria for lead due to contamination of the ICS stock standard. Lead was not detected in the associated samples.

8015B - An unknown hydrocarbon is present.

**1081553007 PS** **RHMW01-WG-11**

6020 - ICSA did not meet QC criteria for lead due to contamination of the ICS stock standard. Lead was not detected in the associated samples.

**1081553002 BMS** **RHMW2254-WG-11 MS**

6020 - ICSA did not meet QC criteria for lead due to contamination of the ICS stock standard. Lead was not detected in the associated samples.

8270D SIM - MS/MSD recovery for benzo[a]pyrene and benzo(a)anthracene does not meet QC criteria (biased high).

**823990 MS** **1081553001MS**

8270D SIM - MS/MSD recovery for benzo[a]pyrene and benzo(a)anthracene does not meet QC criteria (biased high).

**1081553003 BMSD** **RHMW2254-WG-11 MSD**

6020 - ICSA did not meet QC criteria for lead due to contamination of the ICS stock standard. Lead was not detected in the associated samples.

8260B - The MS/MSD does not meet laboratory RPD criteria for methyl-t-butyl ether. This analyte was not detected above the PQL in the associated samples.

**823986 MB** **XXX/19235]**

8270D SIM - MB result for 1-methylnaphthalene and 2-methylnaphthalene is greater then 1/2 PQL yet lower then the PQL.

**825340 LCS** **VXX/18041]**

8260B - Labortory control sample (LCS) result for methyl-t-butyl ether does not meet QC goals (biased high). This analyte was not detected above the PQL in the associated samples.

**825341 LCSD** **VXX/18041**

8260B - Labortory control sample duplicate (LCSD) result for 1,1-dichloroethane and bromodichloromethane does not meet QC goals (biased high). These analytes were not detected above the PQL in the associated samples.

8260B - LCS/LCSD does not meet laboratory RPD criteria for hexachlorobutadiene and methyl-t-butyl ether. These analytes were not detected above the PQL in the associated samples.

**825343 CCV** **VMS/9727]**

8260B - Continuing calibration verification (CCV) result for 2,2-dichloropropane and methyl-t-butyl ether does not meet QC goals (biased high). These analytes were not detected above the PQL in the associated samples.

SGS

# Laboratory Analytical Report

Client: **The Environmental Company, Inc.**
1001 Bishop Street Ste 1400
ASB Tower
Honolulu, HI 96813

Attn: **Jeff Hart**
T: (808)528-1445 F:(808)528-0768
jshart@tecinc.com

Project: **9121-003 Red Hill BFSF**

Workorder No.: **1081553**

Certification:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, other than the conditions noted on the sample data sheet(s) and/or the case narrative. This certification applies only to the tested parameters and the specific sample(s) received at the laboratory.

If you have any questions regarding this report, or if we can be of further assistance, please contact your SGS Project Manager.

Mark Abe
mark.abe@sgs.com
Project Manager

SGS

Print Date: 5/13/2008

Enclosed are the analytical results associated with this workorder.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by SGS. A copy of our Quality Assurance Plan (QAP), which outlines this program is available at your request.

The laboratory certification numbers are AK971-05 (DW), UST-005 (CS) and AK00971 (Micro) for ADEC and 001992 for NELAP (RCRA methods: 1020A, 1311, 6010B, 7470A,7471A,9040B,9045C, 9056, 9060, 9065, 8015B, 8021B, 8081A/8082, 8260B, 8270C).

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP, the National Environmental Laboratory Accreditation Program and, when applicable, other regulatory authorities.

If you have any questions regarding this report or if we can be of any assistance, please contact your SGS Project Manager at 907-562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

| | |
|---|---|
| MDL | Method Detection Limit |
| PQL | Practical Quantitation Limit (reporting limit). |
| CL | Control Limit |
| U | Indicates the analyte was analyzed for but not detected. |
| F | Indicates value that is greater than or equal to the MDL. |
| J | The quantitation is an estimation. |
| ND | Indicates the analyte is not detected |
| B | Indicates the analyte is found in a blank associated with the sample. |
| * | The analyte has exceeded allowable regulatory or control limits. |
| D | The analyte concentration is the result of dilution. |
| GT | Greater Than |
| LT | Less Than |
| Q | QC parameter out of acceptance range |
| M | A matrix effect was present. |
| E | The analyte result is above the calibrated range. |
| R | Rejected |
| DF | Analytical Dilution Factor |
| JL | The analyte was positively identified, but the quantitation is a low estimation. |
| <Surr> | Surrogate QC spiked standard |
| <Surr/IS> | Surrogate / Internal Standard QC spiked standard |
| QC | Quality Control |
| QA | Quality Assurance |
| MB | Method Blank |
| LCS (D) | Laboratory Control Sample (Duplicate) |
| MS(D) | Matrix Spike (Duplicate) |
| BMS(D) | Site Specific Matrix Spike |
| RPD | Relative Percent Difference |
| ICV | Initial Calibration Verification |
| CCV | Continuous Calibration Verification |
| MSA | Method of Standard Addition |

Note: Soil samples are reported on a dry weight basis unless otherwise specified

SGS

## SAMPLE SUMMARY

Print Date: 5/13/2008

**Client Name: The Environmental Company, Inc. (TEC)**
**Project Name: 9121-003 Red Hill BFSF**
**Workorder No.: 1081553**

## Analytical Methods

| Method Description | Analytical Method |
|---|---|
| 8270 PAH SIM Semi-Vol GC/MS Liq/Liq ext. | 8270D SIMS |
| TPHCEE 3.1 8260 (W) | SW8260B |
| Dissolved Metals by ICP-MS | SW6020 |
| DRO by 8015B (W) | SW8015B |
| GRO (W) | SW8015B |

## Sample ID Cross Reference

| Lab Sample ID | Client Sample ID |
|---|---|
| 1081553001 | RHMW2254-WG-11 |
| 1081553002 | RHMW2254-WG-11 MS |
| 1081553003 | RHMW2254-WG-11 MSD |
| 1081553004 | RHMW03-WG-11 |
| 1081553005 | RHMW02-WG-11 |
| 1081553006 | RHMWA01-WG-11 |
| 1081553007 | RHMW01-WG-11 |
| 1081553008 | TB01-WG-11 |

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMW2254-WG-11**
SGS Ref. #: 1081553001
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 12:30
Receipt Date/Time: 04/17/08 11:30

**Dissolved Metals by ICP/MS**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Lead | ND | 1.00 | 0.310 | ug/L | 5 | MMS5390 | MXX20161 | |

**Batch Information**

Analytical Batch: MMS5390
Analytical Method: SW6020
Analysis Date/Time: 04/23/08 14:25
Dilution Factor: 5

Prep Batch: MXX20161
Prep Method: SW3010A
Prep Date/Time: 04/22/08 07:05

Initial Prep Wt./Vol.: 50 mL
Prep Extract Vol.: 50 mL
Container ID:1081553001-G
Analyst: NRB

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMW2254-WG-11**
SGS Ref. #: 1081553001
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 12:30
Receipt Date/Time: 04/17/08 11:30

**Volatile Fuels Department**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics | ND | 100 | 10.0 | ug/L | 1 | VFC8905 | VXX18015 | |
| 4-Bromofluorobenzene <surr> | 110 | 50-150 | | % | 1 | VFC8905 | VXX18015 | |

**Batch Information**

Analytical Batch: VFC8905
Analytical Method: SW8015B
Analysis Date/Time: 04/23/08 10:06
Dilution Factor: 1

Prep Batch: VXX18015
Prep Method: SW5030B
Prep Date/Time: 04/23/08 08:00

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1081553001-A
Analyst: HM

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMW2254-WG-11**
SGS Ref. #: 1081553001
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 12:30
Receipt Date/Time: 04/17/08 11:30

**Semivolatile Organic Fuels Department**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | ND | 0.430 | 0.0860 | mg/L | 1 | XFC7885 | XXX19238 | |
| 5a Androstane <surr> | 88.4 | 50-150 | | % | 1 | XFC7885 | XXX19238 | |

**Batch Information**

Analytical Batch: XFC7885
Analytical Method: SW8015B
Analysis Date/Time: 04/22/08 21:54
Dilution Factor: 1

Prep Batch: XXX19238
Prep Method: SW3520C
Prep Date/Time: 04/18/08 09:30

Initial Prep Wt./Vol.: 930 mL
Prep Extract Vol.: 1 mL
Container ID:1081553001-I
Analyst: BME

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMW2254-WG-11**
SGS Ref. #: 1081553001
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 12:30
Receipt Date/Time: 04/17/08 11:30

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.400 | 0.120 | ug/L | 1 | VMS9727 | VXX18041 | |
| Toluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Ethylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| n-Butylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,4-Dichlorobenzene | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichloroethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,3,5-Trimethylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 4-Chlorotoluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Chlorobenzene | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 4-Methyl-2-pentanone (MIBK) | ND | 10.0 | 3.10 | ug/L | 1 | VMS9727 | VXX18041 | |
| cis-1,2-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 4-Isopropyltoluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| cis-1,3-Dichloropropene | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| n-Propylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Styrene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Dibromomethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| trans-1,3-Dichloropropene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,4-Trichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Acetone | ND | 10.0 | 3.10 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,2,2-Tetrachloroethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dibromo-3-chloropropane | ND | 2.00 | 0.620 | ug/L | 1 | VMS9727 | VXX18041 | |
| Methyl-t-butyl ether | ND | 5.00 | 1.50 | ug/L | 1 | VMS9727 | VXX18041 | |
| Tetrachloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Dibromochloromethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,3-Dichloropropane | ND | 0.400 | 0.120 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dibromoethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Carbon tetrachloride | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,1,2-Tetrachloroethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| Chloroform | ND | 1.00 | 0.300 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Chloromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,3-Trichloropropane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromomethane | ND | 3.00 | 0.940 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromochloromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Vinyl chloride | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Dichlorodifluoromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMW2254-WG-11**
SGS Ref. #: 1081553001
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 12:30
Receipt Date/Time: 04/17/08 11:30

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Chloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| sec-Butylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromodichloromethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 2-Butanone (MEK) | ND | 10.0 | 3.10 | ug/L | 1 | VMS9727 | VXX18041 | |
| Methylene chloride | ND | 5.00 | 1.00 | ug/L | 1 | VMS9727 | VXX18041 | |
| Trichlorofluoromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| P & M -Xylene | ND | 2.00 | 0.620 | ug/L | 1 | VMS9727 | VXX18041 | |
| Naphthalene | ND | 2.00 | 0.620 | ug/L | 1 | VMS9727 | VXX18041 | |
| o-Xylene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromoform | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1-Chlorohexane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,4-Trimethylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| tert-Butylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,1-Trichloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1-Dichloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 2-Chlorotoluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Trichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| trans-1,2-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 2,2-Dichloropropane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Hexachlorobutadiene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Isopropylbenzene (Cumene) | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichloropropane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1-Dichloropropene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,2-Trichloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,3-Dichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,3-Trichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichloroethane-D4 <surr> | 102 | 73-120 | | % | 1 | VMS9727 | VXX18041 | |
| Toluene-d8 <surr> | 103 | 80-120 | | % | 1 | VMS9727 | VXX18041 | |
| 4-Bromofluorobenzene <surr> | 100 | 76-120 | | % | 1 | VMS9727 | VXX18041 | |

**Batch Information**

Analytical Batch: VMS9727
Analytical Method: SW8260B
Analysis Date/Time: 04/29/08 17:22
Dilution Factor: 1

Prep Batch: VXX18041
Prep Method: SW5030B
Prep Date/Time: 04/29/08 09:00

Initial Prep Wt./Vol.: 20 mL
Prep Extract Vol.: 20 mL
Container ID:1081553001-B
Analyst: DSH

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMW2254-WG-11**
SGS Ref. #: 1081553001
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 12:30
Receipt Date/Time: 04/17/08 11:30

**Polynuclear Aromatics GC/MS**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Acenaphthylene | ND | 0.0535 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Acenaphthene | ND | 0.0535 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Fluorene | ND | 0.0535 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Phenanthrene | ND | 0.0535 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Anthracene | ND | 0.0535 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Fluoranthene | ND | 0.0535 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Pyrene | ND | 0.0535 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo(a)Anthracene | ND | 0.0535 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Chrysene | ND | 0.0535 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo[b]Fluoranthene | ND | 0.0535 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo[k]fluoranthene | ND | 0.0535 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo[a]pyrene | ND | 0.0535 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Indeno[1,2,3-c,d] pyrene | ND | 0.0535 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Dibenzo[a,h]anthracene | ND | 0.0535 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Benzo[g,h,i]perylene | ND | 0.0535 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Naphthalene | ND | 0.107 | 0.0332 | ug/L | 1 | XMS4467 | XXX19235 | |
| 1-Methylnaphthalene | 0.0435 J | 0.0535 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| 2-Methylnaphthalene | 0.0561 | 0.0535 | 0.0160 | ug/L | 1 | XMS4467 | XXX19235 | |
| Terphenyl-d14 <surr> | 78.1 | 50-135 | | % | 1 | XMS4467 | XXX19235 | |

**Batch Information**

Analytical Batch: XMS4467
Analytical Method: 8270D SIMS
Analysis Date/Time: 04/25/08 03:50
Dilution Factor: 1

Prep Batch: XXX19235
Prep Method: SW3520C
Prep Date/Time: 04/18/08 09:10

Initial Prep Wt./Vol.: 935 mL
Prep Extract Vol.: 1 mL
Container ID:1081553001-J
Analyst: WAA

SGS

**The Environmental Company, Inc. (TEC)** Print Date: 5/13/2008

Client Sample ID: **RHMW03-WG-11**
SGS Ref. #: 1081553004
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 14:15
Receipt Date/Time: 04/17/08 11:30

**Dissolved Metals by ICP/MS**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Lead | ND | 1.00 | 0.310 | ug/L | 5 | MMS5390 | MXX20161 | |

**Batch Information**

Analytical Batch: MMS5390
Analytical Method: SW6020
Analysis Date/Time: 04/23/08 16:58
Dilution Factor: 5

Prep Batch: MXX20161
Prep Method: SW3010A
Prep Date/Time: 04/22/08 07:05

Initial Prep Wt./Vol.: 50 mL
Prep Extract Vol.: 50 mL
Container ID:1081553004-G
Analyst: NRB

SGS

**The Environmental Company, Inc. (TEC)** Print Date: 5/13/2008

Client Sample ID: **RHMW03-WG-11**
SGS Ref. #: 1081553004
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 14:15
Receipt Date/Time: 04/17/08 11:30

**Volatile Fuels Department**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics | ND | 100 | 10.0 | ug/L | 1 | VFC8905 | VXX18015 | |
| 4-Bromofluorobenzene <surr> | 110 | 50-150 | | % | 1 | VFC8905 | VXX18015 | |

**Batch Information**

Analytical Batch: VFC8905
Analytical Method: SW8015B
Analysis Date/Time: 04/23/08 11:01
Dilution Factor: 1

Prep Batch: VXX18015
Prep Method: SW5030B
Prep Date/Time: 04/23/08 08:00

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1081553004-A
Analyst: HM

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMW03-WG-11**
SGS Ref. #: 1081553004
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 14:15
Receipt Date/Time: 04/17/08 11:30

**Semivolatile Organic Fuels Department**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 0.190 J | 0.415 | 0.0829 | mg/L | 1 | XFC7885 | XXX19238 | |
| 5a Androstane <surr> | 90.8 | 50-150 | | % | 1 | XFC7885 | XXX19238 | |

**Batch Information**

Analytical Batch: XFC7885
Analytical Method: SW8015B
Analysis Date/Time: 04/22/08 22:25
Dilution Factor: 1

Prep Batch: XXX19238
Prep Method: SW3520C
Prep Date/Time: 04/18/08 09:30

Initial Prep Wt./Vol.: 965 mL
Prep Extract Vol.: 1 mL
Container ID:1081553004-I
Analyst: BME

SGS

The Environmental Company, Inc. (TEC) Print Date: 5/13/2008

Client Sample ID: **RHMW03-WG-11**
SGS Ref. #: 1081553004
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 14:15
Receipt Date/Time: 04/17/08 11:30

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.400 | 0.120 | ug/L | 1 | VMS9727 | VXX18041 | |
| Toluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Ethylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| n-Butylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,4-Dichlorobenzene | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichloroethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,3,5-Trimethylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 4-Chlorotoluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Chlorobenzene | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 4-Methyl-2-pentanone (MIBK) | ND | 10.0 | 3.10 | ug/L | 1 | VMS9727 | VXX18041 | |
| cis-1,2-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 4-Isopropyltoluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| cis-1,3-Dichloropropene | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| n-Propylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Styrene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Dibromomethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| trans-1,3-Dichloropropene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,4-Trichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Acetone | ND | 10.0 | 3.10 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,2,2-Tetrachloroethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dibromo-3-chloropropane | ND | 2.00 | 0.620 | ug/L | 1 | VMS9727 | VXX18041 | |
| Methyl-t-butyl ether | ND | 5.00 | 1.50 | ug/L | 1 | VMS9727 | VXX18041 | |
| Tetrachloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Dibromochloromethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,3-Dichloropropane | ND | 0.400 | 0.120 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dibromoethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Carbon tetrachloride | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,1,2-Tetrachloroethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| Chloroform | ND | 1.00 | 0.300 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Chloromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,3-Trichloropropane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromomethane | ND | 3.00 | 0.940 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromochloromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Vinyl chloride | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Dichlorodifluoromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |

SGS

**The Environmental Company, Inc. (TEC)** Print Date: 5/13/2008

Client Sample ID: **RHMW03-WG-11**
SGS Ref. #: 1081553004
Project ID: 9121-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time
Collection Date/Time: 04/15/08 14:15
Receipt Date/Time: 04/17/08 11:30

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | PQL/CL | MDL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Chloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| sec-Butylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromodichloromethane | ND | 0.500 | 0.150 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 2-Butanone (MEK) | ND | 10.0 | 3.10 | ug/L | 1 | VMS9727 | VXX18041 | |
| Methylene chloride | ND | 5.00 | 1.00 | ug/L | 1 | VMS9727 | VXX18041 | |
| Trichlorofluoromethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| P & M -Xylene | ND | 2.00 | 0.620 | ug/L | 1 | VMS9727 | VXX18041 | |
| Naphthalene | ND | 2.00 | 0.620 | ug/L | 1 | VMS9727 | VXX18041 | |
| o-Xylene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Bromoform | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1-Chlorohexane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,4-Trimethylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| tert-Butylbenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,1-Trichloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1-Dichloroethane | ND | 1 00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 2-Chlorotoluene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Trichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| trans-1,2-Dichloroethene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 2,2-Dichloropropane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Hexachlorobutadiene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| Isopropylbenzene (Cumene) | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichloropropane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1-Dichloropropene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,1,2-Trichloroethane | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,3-Dichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2,3-Trichlorobenzene | ND | 1.00 | 0.310 | ug/L | 1 | VMS9727 | VXX18041 | |
| 1,2-Dichloroethane-D4 <surr> | 103 | 73-120 | | % | 1 | VMS9727 | VXX18041 | |
| Toluene-d8 <surr> | 102 | 80-120 | | % | 1 | VMS9727 | VXX18041 | |
| 4-Bromofluorobenzene <surr> | 103 | 76-120 | | % | 1 | VMS9727 | VXX18041 | |

**Batch Information**

Analytical Batch: VMS9727
Analytical Method: SW8260B
Analysis Date/Time: 04/29/08 17:56
Dilution Factor: 1

Prep Batch: VXX18041
Prep Method: SW5030B
Prep Date/Time: 04/29/08 09:00

Initial Prep Wt./Vol.: 20 mL
Prep Extract Vol.: 20 mL
Container ID:1081553004-B
Analyst: DSH

SGS

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|---|---|---|---|---|---|
| **SGS Ref.#** | 824335 Lab Control Sample | **Printed Date/Time** | | 05/13/2008 | 16:35 |
| | | **Prep** | **Batch** | MXX20161 | |
| **Client Name** | The Environmental Company, Inc. (TEC) | | **Method** | SW3010A | |
| **Project Name/#** | 9121-003 Red Hill BFSF | | **Date** | 04/22/2008 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | | |

QC results affect the following production samples:

1081553001, 1081553004, 1081553005, 1081553006, 1081553007

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Metals by ICP/MS** | | | | | | | | |
| Lead | LCS | 1040 | 104 | ( 80-120 ) | | | 1000 ug/L | 04/23/2008 |

**Batch** MMS5390
**Method** SW6020
**Instrument** Perkin Elmer Sciex ICP-MS P4

SGS

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|---|---|---|---|---|---|
| **SGS Ref.#** | 824561 | Lab Control Sample | **Printed Date/Time** | 05/13/2008 | 16:35 |
| | 824562 | Lab Control Sample Duplicate | **Prep Batch** | VXX18015 | |
| **Client Name** | The Environmental Company, Inc. (TEC) | | **Method** | SW5030B | |
| **Project Name/#** | 9121-003 Red Hill BFSF | | **Date** | 04/23/2008 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | | |

QC results affect the following production samples:

1081553001, 1081553004, 1081553005, 1081553006, 1081553007

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Fuels Department** | | | | | | | | |
| Gasoline Range Organics | LCS | 194 | 97 | ( 79-108 ) | | | 200 ug/L | 04/23/2008 |
| | LCSD | 189 | 94 | | 3 | (< 20 ) | 200 ug/L | 04/23/2008 |
| **Surrogates** | | | | | | | | |
| 4-Bromofluorobenzene <surr> | LCS | | 113 | ( 50-150 ) | | | | 04/23/2008 |
| | LCSD | | 110 | | 2 | | | 04/23/2008 |

**Batch** VFC8905
**Method** SW8015B
**Instrument** HP 5890 Series II PID+HECD VBA

SGS

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|---|---|---|---|---|---|
| **SGS Ref.#** | 825340 | Lab Control Sample | **Printed Date/Time** | 05/13/2008 | 16:35 |
| | 825341 | Lab Control Sample Duplicate | **Prep Batch** | VXX18041 | |
| **Client Name** | The Environmental Company, Inc. (TEC) | | **Method** | SW5030B | |
| **Project Name/#** | 9121-003 Red Hill BFSF | | **Date** | 04/29/2008 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | | |

QC results affect the following production samples:

1081553001, 1081553004, 1081553005, 1081553006, 1081553007, 1081553008

| Parameter | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|

**Volatile Gas Chromatography/Mass Spectroscopy**

SGS

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|---|---|---|---|---|---|
| **SGS Ref.#** | 825340 | Lab Control Sample | **Printed Date/Time** | 05/13/2008 | 16:35 |
| | 825341 | Lab Control Sample Duplicate | **Prep Batch** | VXX18041 | |
| **Client Name** | The Environmental Company, Inc. (TEC) | | **Method** | SW5030B | |
| **Project Name/#** | 9121-003 Red Hill BFSF | | **Date** | 04/29/2008 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| Benzene | LCS | 32.1 | 107 | ( 80-120 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 33.8 | 113 | | 5 | (< 20 ) | 30 ug/L | 04/29/2008 |
| Toluene | LCS | 30.4 | 101 | ( 77-120 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 33.6 | 112 | | 10 | (< 20 ) | 30 ug/L | 04/29/2008 |
| Ethylbenzene | LCS | 31.7 | 106 | ( 80-120 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 35.5 | 118 | | 11 | (< 20 ) | 30 ug/L | 04/29/2008 |
| n-Butylbenzene | LCS | 27.8 | 93 | ( 80-124 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 32.8 | 109 | | 17 | (< 20 ) | 30 ug/L | 04/29/2008 |
| 1,4-Dichlorobenzene | LCS | 30.0 | 100 | ( 80-120 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 33.6 | 112 | | 11 | (< 20 ) | 30 ug/L | 04/29/2008 |
| 1,2-Dichloroethane | LCS | 30.9 | 103 | ( 80-129 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 31.6 | 105 | | 2 | (< 20 ) | 30 ug/L | 04/29/2008 |
| 1,3,5-Trimethylbenzene | LCS | 30.6 | 102 | ( 80-128 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 33.9 | 113 | | 10 | (< 20 ) | 30 ug/L | 04/29/2008 |
| 4-Chlorotoluene | LCS | 29.5 | 98 | ( 79-128 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 32.6 | 109 | | 10 | (< 20 ) | 30 ug/L | 04/29/2008 |
| Chlorobenzene | LCS | 32.0 | 107 | ( 80-120 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 34.9 | 116 | | 9 | (< 20 ) | 30 ug/L | 04/29/2008 |
| 4-Methyl-2-pentanone (MIBK) | LCS | 96.7 | 107 | ( 69-134 ) | | | 90 ug/L | 04/29/2008 |
| | LCSD | 96.5 | 107 | | 0 | (< 20 ) | 90 ug/L | 04/29/2008 |
| cis-1,2-Dichloroethene | LCS | 29.3 | 98 | ( 80-125 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 31.3 | 104 | | 6 | (< 20 ) | 30 ug/L | 04/29/2008 |
| 4-Isopropyltoluene | LCS | 28.4 | 95 | ( 80-125 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 33.0 | 110 | | 15 | (< 20 ) | 30 ug/L | 04/29/2008 |
| cis-1,3-Dichloropropene | LCS | 30.4 | 101 | ( 80-120 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 32.0 | 107 | | 5 | (< 20 ) | 30 ug/L | 04/29/2008 |
| n-Propylbenzene | LCS | 29.5 | 98 | ( 80-129 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 33.4 | 111 | | 12 | (< 20 ) | 30 ug/L | 04/29/2008 |

SGS

| | | | | | |
|---|---|---|---|---|---|
| SGS Ref.# | 825340 | Lab Control Sample | Printed Date/Time | 05/13/2008 | 16:35 |
| | 825341 | Lab Control Sample Duplicate | Prep Batch | VXX18041 | |
| Client Name | The Environmental Company, Inc. (TEC) | | Method | SW5030B | |
| Project Name/# | 9121-003 Red Hill BFSF | | Date | 04/29/2008 | |
| Matrix | Water (Surface, Eff., Ground) | | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| Styrene | LCS | 31.4 | 105 | ( 80-120 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 34.2 | 114 | | 9 | (< 20 ) | 30 ug/L | 04/29/2008 |
| Dibromomethane | LCS | 30.6 | 102 | ( 80-120 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 31.0 | 103 | | 1 | (< 20 ) | 30 ug/L | 04/29/2008 |
| trans-1,3-Dichloropropene | LCS | 34.2 | 114 | ( 80-124 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 36.4 | 121 | | 6 | (< 20 ) | 30 ug/L | 04/29/2008 |
| 1,2,4-Trichlorobenzene | LCS | 26.2 | 87 | ( 80-120 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 30.4 | 101 | | 15 | (< 20 ) | 30 ug/L | 04/29/2008 |
| Acetone | LCS | 100 | 111 | ( 50-135 ) | | | 90 ug/L | 04/29/2008 |
| | LCSD | 106 | 118 | | 6 | (< 20 ) | 90 ug/L | 04/29/2008 |
| 1,1,2,2-Tetrachloroethane | LCS | 29.2 | 97 | ( 76-123 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 31.4 | 105 | | 7 | (< 20 ) | 30 ug/L | 04/29/2008 |
| 1,2-Dibromo-3-chloropropane | LCS | 30.9 | 103 | ( 73-130 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 30.5 | 102 | | 1 | (< 20 ) | 30 ug/L | 04/29/2008 |
| Methyl-t-butyl ether | LCS | 62.9 | 140 * | ( 80-120 ) | | | 45 ug/L | 04/29/2008 |
| | LCSD | 49.0 | 109 | | 25 * | (< 20 ) | 45 ug/L | 04/29/2008 |
| Tetrachloroethene | LCS | 29.3 | 98 | ( 79-122 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 32.6 | 109 | | 11 | (< 20 ) | 30 ug/L | 04/29/2008 |
| Dibromochloromethane | LCS | 33.0 | 110 | ( 80-120 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 34.7 | 116 | | 5 | (< 20 ) | 30 ug/L | 04/29/2008 |
| 1,3-Dichloropropane | LCS | 33.4 | 111 | ( 80-121 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 35.4 | 118 | | 6 | (< 20 ) | 30 ug/L | 04/29/2008 |
| 1,2-Dibromoethane | LCS | 32.5 | 108 | ( 80-120 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 32.8 | 109 | | 1 | (< 20 ) | 30 ug/L | 04/29/2008 |
| Carbon tetrachloride | LCS | 32.8 | 109 | ( 80-126 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 35.1 | 117 | | 7 | (< 20 ) | 30 ug/L | 04/29/2008 |
| 1,1,1,2-Tetrachloroethane | LCS | 31.5 | 105 | ( 80-120 ) | | | 30 ug/L | 04/29/2008 |

SGS

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|---|---|---|---|---|---|
| **SGS Ref.#** | 825340 | Lab Control Sample | **Printed Date/Time** | 05/13/2008 | 16:35 |
| | 825341 | Lab Control Sample Duplicate | **Prep Batch** | VXX18041 | |
| **Client Name** | The Environmental Company, Inc. (TEC) | | **Method** | SW5030B | |
| **Project Name/#** | 9121-003 Red Hill BFSF | | **Date** | 04/29/2008 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| | LCSD | 34.6 | 115 | | 10 | (< 20 ) | 30 ug/L | 04/29/2008 |
| Chloroform | LCS | 30.3 | 101 | ( 80-124 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 32.5 | 108 | | 7 | (< 20 ) | 30 ug/L | 04/29/2008 |
| Bromobenzene | LCS | 28.5 | 95 | ( 80-120 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 31.7 | 106 | | 11 | (< 20 ) | 30 ug/L | 04/29/2008 |
| Chloromethane | LCS | 28.5 | 95 | ( 67-125 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 33.5 | 112 | | 16 | (< 20 ) | 30 ug/L | 04/29/2008 |
| 1,2,3-Trichloropropane | LCS | 28.8 | 96 | ( 80-120 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 30.2 | 101 | | 5 | (< 20 ) | 30 ug/L | 04/29/2008 |
| Bromomethane | LCS | 30.0 | 100 | ( 30-140 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 31.4 | 105 | | 5 | (< 20 ) | 30 ug/L | 04/29/2008 |
| Bromochloromethane | LCS | 29.6 | 99 | ( 77-129 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 30.7 | 102 | | 4 | (< 20 ) | 30 ug/L | 04/29/2008 |
| Vinyl chloride | LCS | 32.3 | 108 | ( 72-145 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 34.7 | 116 | | 7 | (< 20 ) | 30 ug/L | 04/29/2008 |
| Dichlorodifluoromethane | LCS | 31.1 | 104 | ( 62-153 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 32.5 | 108 | | 4 | (< 20 ) | 30 ug/L | 04/29/2008 |
| Chloroethane | LCS | 27.8 | 93 | ( 67-133 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 28.7 | 96 | | 3 | (< 20 ) | 30 ug/L | 04/29/2008 |
| sec-Butylbenzene | LCS | 29.0 | 97 | ( 80-120 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 33.1 | 110 | | 13 | (< 20 ) | 30 ug/L | 04/29/2008 |
| Bromodichloromethane | LCS | 35.0 | 117 | ( 80-120 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 36.8 | 123 * | | 5 | (< 20 ) | 30 ug/L | 04/29/2008 |
| 1,1-Dichloroethene | LCS | 31.0 | 103 | ( 76-130 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 32.6 | 109 | | 5 | (< 20 ) | 30 ug/L | 04/29/2008 |
| 2-Butanone (MEK) | LCS | 86.1 | 96 | ( 66-136 ) | | | 90 ug/L | 04/29/2008 |
| | LCSD | 95.0 | 106 | | 10 | (< 20 ) | 90 ug/L | 04/29/2008 |

SGS

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|---|---|---|---|---|---|
| SGS Ref.# | 825340 | Lab Control Sample | Printed Date/Time | 05/13/2008 | 16:35 |
| | 825341 | Lab Control Sample Duplicate | Prep Batch | VXX18041 | |
| Client Name | The Environmental Company, Inc. (TEC) | | Method | SW5030B | |
| Project Name/# | 9121-003 Red Hill BFSF | | Date | 04/29/2008 | |
| Matrix | Water (Surface, Eff., Ground) | | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| Methylene chloride | LCS | 30.7 | 102 | ( 63-131 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 30.9 | 103 | | 1 | (< 20 ) | 30 ug/L | 04/29/2008 |
| Trichlorofluoromethane | LCS | 31.1 | 104 | ( 68-145 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 33.2 | 111 | | 7 | (< 20 ) | 30 ug/L | 04/29/2008 |
| P & M -Xylene | LCS | 64.0 | 107 | ( 80-120 ) | | | 60 ug/L | 04/29/2008 |
| | LCSD | 71.7 | 120 | | 11 | (< 20 ) | 60 ug/L | 04/29/2008 |
| Naphthalene | LCS | 27.6 | 92 | ( 75-120 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 30.6 | 102 | | 10 | (< 20 ) | 30 ug/L | 04/29/2008 |
| o-Xylene | LCS | 30.8 | 103 | ( 80-120 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 34.6 | 115 | | 12 | (< 20 ) | 30 ug/L | 04/29/2008 |
| Bromoform | LCS | 32.4 | 108 | ( 80-120 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 34.5 | 115 | | 6 | (< 20 ) | 30 ug/L | 04/29/2008 |
| 1-Chlorohexane | LCS | 47.0 | 104 | ( 70-125 ) | | | 45 ug/L | 04/29/2008 |
| | LCSD | 53.0 | 118 | | 12 | (< 20 ) | 45 ug/L | 04/29/2008 |
| 1,2,4-Trimethylbenzene | LCS | 29.5 | 98 | ( 80-125 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 32.7 | 109 | | 10 | (< 20 ) | 30 ug/L | 04/29/2008 |
| tert-Butylbenzene | LCS | 28.6 | 95 | ( 80-122 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 32.5 | 108 | | 13 | (< 20 ) | 30 ug/L | 04/29/2008 |
| 1,1,1-Trichloroethane | LCS | 31.5 | 105 | ( 80-122 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 33.5 | 112 | | 6 | (< 20 ) | 30 ug/L | 04/29/2008 |
| 1,1-Dichloroethane | LCS | 35.6 | 119 | ( 80-120 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 36.4 | 121 * | | 2 | (< 20 ) | 30 ug/L | 04/29/2008 |
| 2-Chlorotoluene | LCS | 29.2 | 97 | ( 80-125 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 32.2 | 107 | | 10 | (< 20 ) | 30 ug/L | 04/29/2008 |
| Trichloroethene | LCS | 30.5 | 102 | ( 80-125 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 33.0 | 110 | | 8 | (< 20 ) | 30 ug/L | 04/29/2008 |
| trans-1,2-Dichloroethene | LCS | 33.2 | 111 | ( 79-132 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 33.1 | 110 | | 0 | (< 20 ) | 30 ug/L | 04/29/2008 |

SGS

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|---|---|---|---|---|---|
| **SGS Ref.#** | 825340 | Lab Control Sample | **Printed Date/Time** | 05/13/2008 | 16:35 |
| | 825341 | Lab Control Sample Duplicate | **Prep Batch** | VXX18041 | |
| **Client Name** | The Environmental Company, Inc. (TEC) | | **Method** | SW5030B | |
| **Project Name/#** | 9121-003 Red Hill BFSF | | **Date** | 04/29/2008 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | | |
| 1,2-Dichlorobenzene | LCS | 28.3 | 94 | ( 80-120 ) | | | | 30 ug/L | 04/29/2008 |
| | LCSD | 30.9 | 103 | | 9 | | (< 20 ) | 30 ug/L | 04/29/2008 |
| 2,2-Dichloropropane | LCS | 37.5 | 125 | ( 80-132 ) | | | | 30 ug/L | 04/29/2008 |
| | LCSD | 34.9 | 116 | | 7 | | (< 20 ) | 30 ug/L | 04/29/2008 |
| Hexachlorobutadiene | LCS | 27.3 | 91 | ( 77-125 ) | | | | 30 ug/L | 04/29/2008 |
| | LCSD | 34.1 | 114 | | 22 | * | (< 20 ) | 30 ug/L | 04/29/2008 |
| Isopropylbenzene (Cumene) | LCS | 31.0 | 103 | ( 80-121 ) | | | | 30 ug/L | 04/29/2008 |
| | LCSD | 34.6 | 115 | | 11 | | (< 20 ) | 30 ug/L | 04/29/2008 |
| 1,2-Dichloropropane | LCS | 31.5 | 105 | ( 80-121 ) | | | | 30 ug/L | 04/29/2008 |
| | LCSD | 32.9 | 110 | | 4 | | (< 20 ) | 30 ug/L | 04/29/2008 |
| 1,1-Dichloropropene | LCS | 28.6 | 95 | ( 80-122 ) | | | | 30 ug/L | 04/29/2008 |
| | LCSD | 31.2 | 104 | | 9 | | (< 20 ) | 30 ug/L | 04/29/2008 |
| 1,1,2-Trichloroethane | LCS | 30.4 | 101 | ( 77-120 ) | | | | 30 ug/L | 04/29/2008 |
| | LCSD | 33.6 | 112 | | 10 | | (< 20 ) | 30 ug/L | 04/29/2008 |
| 1,3-Dichlorobenzene | LCS | 27.9 | 93 | ( 80-120 ) | | | | 30 ug/L | 04/29/2008 |
| | LCSD | 30.6 | 102 | | 9 | | (< 20 ) | 30 ug/L | 04/29/2008 |
| 1,2,3-Trichlorobenzene | LCS | 26.3 | 88 | ( 77-120 ) | | | | 30 ug/L | 04/29/2008 |
| | LCSD | 31.0 | 103 | | 16 | | (< 20 ) | 30 ug/L | 04/29/2008 |
| **Surrogates** | | | | | | | | | |
| 1,2-Dichloroethane-D4 <surr> | LCS | | 100 | ( 73-120 ) | | | | | 04/29/2008 |
| | LCSD | | 98 | | 2 | | | | 04/29/2008 |
| Toluene-d8 <surr> | LCS | | 101 | ( 80-120 ) | | | | | 04/29/2008 |
| | LCSD | | 104 | | 3 | | | | 04/29/2008 |
| 4-Bromofluorobenzene <surr> | LCS | | 97 | ( 76-120 ) | | | | | 04/29/2008 |
| | LCSD | | 98 | | 1 | | | | 04/29/2008 |

SGS

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|---|---|---|---|---|---|
| **SGS Ref.#** | 825340 | Lab Control Sample | **Printed Date/Time** | 05/13/2008 | 16:35 |
| | 825341 | Lab Control Sample Duplicate | **Prep Batch** | VXX18041 | |
| **Client Name** | The Environmental Company, Inc. (TEC) | | **Method** | SW5030B | |
| **Project Name/#** | 9121-003 Red Hill BFSF | | **Date** | 04/29/2008 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | | |

| Parameter | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|

## Volatile Gas Chromatography/Mass Spectroscopy

**Batch** VMS9727
**Method** SW8260B
**Instrument** HP 5890 Series II MS3 VNA

SGS

| | | | | | |
|---|---|---|---|---|---|
| **SGS Ref.#** | 825522 | Lab Control Sample | **Printed Date/Time** | 05/13/2008 | 16:35 |
| | 825523 | Lab Control Sample Duplicate | **Prep Batch** | VXX18047 | |
| **Client Name** | The Environmental Company, Inc. (TEC) | | **Method** | SW5030B | |
| **Project Name/#** | 9121-003 Red Hill BFSF | | **Date** | 04/29/2008 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | | |

QC results affect the following production samples:

1081553005, 1081553006

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| Naphthalene | LCS | 27.6 | 92 | ( 75-120 ) | | | 30 ug/L | 04/29/2008 |
| | LCSD | 28.7 | 96 | | 4 | (< 20 ) | 30 ug/L | 04/29/2008 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 <surr> | LCS | | 87 | ( 73-120 ) | | | | 04/29/2008 |
| | LCSD | | 86 | | 1 | | | 04/29/2008 |
| Toluene-d8 <surr> | LCS | | 100 | ( 80-120 ) | | | | 04/29/2008 |
| | LCSD | | 101 | | 1 | | | 04/29/2008 |
| 4-Bromofluorobenzene <surr> | LCS | | 99 | ( 76-120 ) | | | | 04/29/2008 |
| | LCSD | | 97 | | 2 | | | 04/29/2008 |

| | |
|---|---|
| **Batch** | VMS9730 |
| **Method** | SW8260B |
| **Instrument** | HP 5890 Series II MS3 VNA |

SGS

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|---|---|---|---|---|---|
| SGS Ref.# | 825527 | Matrix Spike | Printed Date/Time | | 05/13/2008 16:35 |
| | 825528 | Matrix Spike Duplicate | Prep | Batch | VXX18047 |
| | | | | Method | Volatiles Extraction AFCEE 3.1 |
| | | | | Date | 04/29/2008 |
| Original | 825526 | | | | |
| Matrix | Water (Surface, Eff., Ground) | | | | |

QC results affect the following production samples:
1081553005, 1081553006

| Parameter | Qualifiers | Original Result | QC Result | Pct Recov | MS/MSD Limits | RPD | RPD Limits | Spiked Amount | | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | | | |
| Naphthalene | MS | ND | 29 | 97 | ( 75-120 ) | | | 30.0 | ug/L | 04/29/2008 |
| | MSD | | 28.8 | 96 | | 1 | (< 20 ) | 30.0 | ug/L | 04/29/2008 |
| **Surrogates** | | | | | | | | | | |
| 1,2-Dichloroethane-D4 <surr> | MS | | 30.8 | 103 | ( 73-120 ) | | | | | 04/29/2008 |
| | MSD | | 26.6 | 89 | | 15 | | | | 04/29/2008 |
| Toluene-d8 <surr> | MS | | 29.8 | 99 | ( 80-120 ) | | | | | 04/29/2008 |
| | MSD | | 30.3 | 101 | | 2 | | | | 04/29/2008 |
| 4-Bromofluorobenzene <surr> | MS | | 29.5 | 98 | ( 76-120 ) | | | | | 04/29/2008 |
| | MSD | | 29.0 | 97 | | 2 | | | | 04/29/2008 |

**Batch** VMS9730
**Method** SW8260B
**Instrument** HP 5890 Series II MS3 VNA

SGS

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1081553002 | Billable Matrix Spike | **Printed Date/Time** | 05/13/2008 16:35 |
| | 1081553003 | Billable Matrix Spike Dup. | **Prep Batch** | MXX20161 |
| | | | **Method** | 3010 H20 Digest for Metals ICI |
| | | | **Date** | 04/22/2008 |
| **Original** | 1081553001 | | | |
| **Matrix** | Water (Surface, Eff., Ground) | | | |

QC results affect the following production samples:

| Parameter | Qualifiers | Original Result | QC Result | Pct Recov | MS/MSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| **Dissolved Metals by ICP/MS** | | | | | | | | | |
| Lead | | BMS ND | 1030 | 103 | ( 80-120 ) | | | 1000 ug/L | 04/23/2008 |
| | | BMSD | 1060 | 106 | | 3 | (< 15 ) | 1000 ug/L | 04/23/2008 |
| **Batch** | MMS5390 | | | | | | | | |
| **Method** | SW6020 | | | | | | | | |
| **Instrument** | Perkin Elmer Sciex ICP-MS P4 | | | | | | | | |
| **Volatile Fuels Department** | | | | | | | | | |
| Gasoline Range Organics | | BMS ND | 408 | 91 | ( 79-108 ) | | | 450 ug/L | 04/23/2008 |
| | | BMSD | 407 | 91 | | 0 | (< 20 ) | 450 ug/L | 04/23/2008 |
| **Surrogates** | | | | | | | | | |
| 4-Bromofluorobenzene <surr> | | BMS | 56.8 | 114 | ( 50-150 ) | | | | 04/23/2008 |
| | | BMSD | 56.5 | 113 | | 1 | | | 04/23/2008 |
| **Batch** | VFC8905 | | | | | | | | |
| **Method** | SW8015B | | | | | | | | |
| **Instrument** | HP 5890 Series II PID+HECD VBA | | | | | | | | |
| **Semivolatile Organic Fuels Department** | | | | | | | | | |
| Diesel Range Organics | | BMS ND | 4.43 | 85 | ( 75-125 ) | | | 5.21 mg/L | 04/22/2008 |
| | | BMSD | 4.33 | 84 | | 2 | (< 30 ) | 5.15 mg/L | 04/22/2008 |
| **Surrogates** | | | | | | | | | |
| 5a Androstane <surr> | | BMS | .0982 | 94 | ( 50-150 ) | | | | 04/22/2008 |
| | | BMSD | 0.0959 | 93 | | 2 | | | 04/22/2008 |
| **Batch** | XFC7885 | | | | | | | | |
| **Method** | SW8015B | | | | | | | | |
| **Instrument** | HP 5890 Series II FID SV A F | | | | | | | | |
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | | |

SGS

| | | | | |
|---|---|---|---|---|
| SGS Ref.# | 1081553002 | Billable Matrix Spike | Printed Date/Time | 05/13/2008 16:35 |
| | 1081553003 | Billable Matrix Spike Dup. | Prep Batch | VXX18041 |
| | | | Method | Volatiles Extraction AFCEE 3.1 |
| | | | Date | 04/29/2008 |
| Original | 1081553001 | | | |
| Matrix | Water (Surface, Eff., Ground) | | | |

| Parameter | Qualifiers | Original Result | QC Result | Pct Recov | MS/MSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | | |
| Benzene | BMS | ND | 27.5 | 92 | ( 80-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 28.9 | 97 | | 5 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Toluene | BMS | ND | 27.8 | 93 | ( 77-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 27.4 | 91 | | 1 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Ethylbenzene | BMS | ND | 30 | 100 | ( 80-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 30.1 | 100 | | 0 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| n-Butylbenzene | BMS | ND | 28 | 93 | ( 80-124 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 28.6 | 95 | | 2 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| 1,4-Dichlorobenzene | BMS | ND | 27.7 | 92 | ( 80-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 28.8 | 96 | | 4 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| 1,2-Dichloroethane | BMS | ND | 26.7 | 89 | ( 80-129 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 28.5 | 95 | | 6 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| 1,3,5-Trimethylbenzene | BMS | ND | 28.6 | 95 | ( 80-128 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 29.3 | 98 | | 3 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| 4-Chlorotoluene | BMS | ND | 27.8 | 93 | ( 79-128 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 28.6 | 95 | | 3 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Chlorobenzene | BMS | ND | 29.3 | 98 | ( 80-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 29.3 | 98 | | 0 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| 4-Methyl-2-pentanone (MIBK) | BMS | ND | 90.7 | 101 | ( 69-134 ) | | | 90.0 | ug/L 04/29/2008 |
| | BMSD | | 92.9 | 103 | | 2 | (< 20 ) | 90.0 | ug/L 04/29/2008 |
| cis-1,2-Dichloroethene | BMS | ND | 25.5 | 85 | ( 80-125 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 26.5 | 88 | | 4 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| 4-Isopropyltoluene | BMS | ND | 27.7 | 92 | ( 80-125 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 28.7 | 96 | | 4 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| cis-1,3-Dichloropropene | BMS | ND | 27.3 | 91 | ( 80-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 29.0 | 97 | | 6 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| n-Propylbenzene | BMS | ND | 28.4 | 95 | ( 80-129 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 29.0 | 97 | | 2 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Styrene | BMS | ND | 28.7 | 96 | ( 80-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 28.1 | 94 | | 2 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Dibromomethane | BMS | ND | 26.4 | 88 | ( 80-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 27.8 | 93 | | 5 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| trans-1,3-Dichloropropene | BMS | ND | 31.7 | 106 | ( 80-124 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 32.6 | 109 | | 3 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| 1,2,4-Trichlorobenzene | BMS | ND | 26 | 87 | ( 80-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 26.6 | 89 | | 2 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Acetone | BMS | ND | 93.6 | 104 | ( 50-135 ) | | | 90.0 | ug/L 04/29/2008 |
| | BMSD | | 96.8 | 108 | | 3 | (< 20 ) | 90.0 | ug/L 04/29/2008 |
| 1,1,2,2-Tetrachloroethane | BMS | ND | 27 | 90 | ( 76-123 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 28.3 | 94 | | 5 | (< 20 ) | 30.0 | ug/L 04/29/2008 |

SGS

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|---|---|---|---|---|
| **SGS Ref.#** | 1081553002 | Billable Matrix Spike | **Printed Date/Time** | 05/13/2008 16:35 |
| | 1081553003 | Billable Matrix Spike Dup. | **Prep Batch** | VXX18041 |
| | | | **Method** | Volatiles Extraction AFCEE 3.1 |
| | | | **Date** | 04/29/2008 |
| **Original** | 1081553001 | | | |
| **Matrix** | Water (Surface, Eff., Ground) | | | |

| Parameter | Qualifiers | Original Result | QC Result | Pct Recov | MS/MSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | | |
| 1,2-Dibromo-3-chloropropane | BMS | ND | 30.4 | 101 | ( 73-130 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 30.8 | 103 | | 1 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Methyl-t-butyl ether | BMS | ND | 42.8 | 95 | ( 80-120 ) | | | 45.0 | ug/L 04/29/2008 |
| | BMSD | | 52.5 | 117 | | 20 * | (< 20 ) | 45.0 | ug/L 04/29/2008 |
| Tetrachloroethene | BMS | ND | 28 | 93 | ( 79-122 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 27.7 | 92 | | 1 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Dibromochloromethane | BMS | ND | 29.8 | 99 | ( 80-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 30.3 | 101 | | 2 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| 1,3-Dichloropropane | BMS | ND | 30.6 | 102 | ( 80-121 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 31.0 | 103 | | 1 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| 1,2-Dibromoethane | BMS | ND | 29.8 | 99 | ( 80-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 30.2 | 101 | | 2 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Carbon tetrachloride | BMS | ND | 31 | 103 | ( 80-126 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 32.7 | 109 | | 5 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| 1,1,1,2-Tetrachloroethane | BMS | ND | 28.8 | 96 | ( 80-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 29.2 | 97 | | 1 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Chloroform | BMS | ND | 27.2 | 91 | ( 80-124 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 27.4 | 91 | | 1 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Bromobenzene | BMS | ND | 26.3 | 88 | ( 80-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 27.1 | 91 | | 3 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Chloromethane | BMS | ND | 29.6 | 99 | ( 67-125 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 30.1 | 100 | | 2 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| 1,2,3-Trichloropropane | BMS | ND | 26.8 | 89 | ( 80-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 28.2 | 94 | | 5 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Bromomethane | BMS | ND | 27.1 | 90 | ( 30-140 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 27.9 | 93 | | 3 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Bromochloromethane | BMS | ND | 26.1 | 87 | ( 77-129 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 27.7 | 92 | | 6 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Vinyl chloride | BMS | ND | 31.4 | 105 | ( 72-145 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 31.2 | 104 | | 1 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Dichlorodifluoromethane | BMS | ND | 31.4 | 105 | ( 62-153 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 33.3 | 111 | | 6 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Chloroethane | BMS | ND | 25.5 | 85 | ( 67-133 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 29.3 | 98 | | 14 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| sec-Butylbenzene | BMS | ND | 28.2 | 94 | ( 80-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 28.9 | 96 | | 3 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Bromodichloromethane | BMS | ND | 31.8 | 106 | ( 80-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 33.2 | 111 | | 4 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| 1,1-Dichloroethene | BMS | ND | 26.4 | 88 | ( 76-130 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 28.2 | 94 | | 7 | (< 20 ) | 30.0 | ug/L 04/29/2008 |

SGS

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|---|---|---|---|---|
| SGS Ref.# | 1081553002 | Billable Matrix Spike | Printed Date/Time | 05/13/2008 16:35 |
| | 1081553003 | Billable Matrix Spike Dup. | Prep Batch | VXX18041 |
| | | | Method | Volatiles Extraction AFCEE 3.1 |
| | | | Date | 04/29/2008 |
| Original | 1081553001 | | | |
| Matrix | Water (Surface, Eff., Ground) | | | |

| Parameter | Qualifiers | Original Result | QC Result | Pct Recov | MS/MSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | | |
| 2-Butanone (MEK) | BMS | ND | 82.3 | 92 | ( 66-136 ) | | | 90.0 | ug/L 04/29/2008 |
| | BMSD | | 90.3 | 100 | | 9 | (< 20 ) | 90.0 | ug/L 04/29/2008 |
| Methylene chloride | BMS | ND | 25.6 | 85 | ( 63-131 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 27.2 | 91 | | 6 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Trichlorofluoromethane | BMS | ND | 31.7 | 106 | ( 68-145 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 32.5 | 108 | | 3 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| P & M -Xylene | BMS | ND | 60.5 | 101 | ( 80-120 ) | | | 60.0 | ug/L 04/29/2008 |
| | BMSD | | 58.8 | 98 | | 3 | (< 20 ) | 60.0 | ug/L 04/29/2008 |
| Naphthalene | BMS | ND | 26.1 | 87 | ( 75-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 28.1 | 94 | | 7 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| o-Xylene | BMS | ND | 28 | 93 | ( 80-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 28.4 | 95 | | 1 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Bromoform | BMS | ND | 30.5 | 102 | ( 80-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 30.8 | 103 | | 1 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| 1-Chlorohexane | BMS | ND | 46.7 | 104 | ( 70-125 ) | | | 45.0 | ug/L 04/29/2008 |
| | BMSD | | 45.0 | 100 | | 4 | (< 20 ) | 45.0 | ug/L 04/29/2008 |
| 1,2,4-Trimethylbenzene | BMS | ND | 27.3 | 91 | ( 80-125 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 28.2 | 94 | | 3 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| tert-Butylbenzene | BMS | ND | 27.6 | 92 | ( 80-122 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 28.9 | 96 | | 4 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| 1,1,1-Trichloroethane | BMS | ND | 28.2 | 94 | ( 80-122 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 29.4 | 98 | | 4 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| 1,1-Dichloroethane | BMS | ND | 29.6 | 99 | ( 80-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 31.0 | 103 | | 5 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| 2-Chlorotoluene | BMS | ND | 27.1 | 90 | ( 80-125 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 27.7 | 92 | | 2 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Trichloroethene | BMS | ND | 26.9 | 90 | ( 80-125 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 28.8 | 96 | | 7 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| trans-1,2-Dichloroethene | BMS | ND | 27.3 | 91 | ( 79-132 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 28.5 | 95 | | 4 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| 1,2-Dichlorobenzene | BMS | ND | 26 | 87 | ( 80-120 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 27.4 | 91 | | 5 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| 2,2-Dichloropropane | BMS | ND | 31.1 | 104 | ( 80-132 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 34.7 | 116 | | 11 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Hexachlorobutadiene | BMS | ND | 29.4 | 98 | ( 77-125 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 28.9 | 96 | | 2 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| Isopropylbenzene (Cumene) | BMS | ND | 29.6 | 99 | ( 80-121 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 28.9 | 96 | | 3 | (< 20 ) | 30.0 | ug/L 04/29/2008 |
| 1,2-Dichloropropane | BMS | ND | 27.2 | 91 | ( 80-121 ) | | | 30.0 | ug/L 04/29/2008 |
| | BMSD | | 28.7 | 96 | | 5 | (< 20 ) | 30.0 | ug/L 04/29/2008 |

SGS

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1081553002 | Billable Matrix Spike | **Printed Date/Time** | 05/13/2008 16:35 |
| | 1081553003 | Billable Matrix Spike Dup. | **Prep Batch** | VXX18041 |
| | | | **Method** | Volatiles Extraction AFCEE 3.1 |
| | | | **Date** | 04/29/2008 |
| **Original** | 1081553001 | | | |
| **Matrix** | Water (Surface, Eff., Ground) | | | |

| Parameter | Qualifiers | Original Result | QC Result | Pct Recov | MS/MSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | | |
| 1,1-Dichloropropene | | BMS ND | 26 | 87 | ( 80-122 ) | | | 30.0 ug/L | 04/29/2008 |
| | | BMSD | 27.1 | 90 | | 4 | (< 20 ) | 30.0 ug/L | 04/29/2008 |
| 1,1,2-Trichloroethane | | BMS ND | 28.9 | 96 | ( 77-120 ) | | | 30.0 ug/L | 04/29/2008 |
| | | BMSD | 28.5 | 95 | | 1 | (< 20 ) | 30.0 ug/L | 04/29/2008 |
| 1,3-Dichlorobenzene | | BMS ND | 26 | 87 | ( 80-120 ) | | | 30.0 ug/L | 04/29/2008 |
| | | BMSD | 27.2 | 91 | | 5 | (< 20 ) | 30.0 ug/L | 04/29/2008 |
| 1,2,3-Trichlorobenzene | | BMS ND | 25.8 | 86 | ( 77-120 ) | | | 30.0 ug/L | 04/29/2008 |
| | | BMSD | 27.0 | 90 | | 5 | (< 20 ) | 30.0 ug/L | 04/29/2008 |
| **Surrogates** | | | | | | | | | |
| 1,2-Dichloroethane-D4 <surr> | | BMS | 29.7 | 99 | ( 73-120 ) | | | | 04/29/2008 |
| | | BMSD | 30.1 | 100 | | 1 | | | 04/29/2008 |
| Toluene-d8 <surr> | | BMS | 30.8 | 103 | ( 80-120 ) | | | | 04/29/2008 |
| | | BMSD | 30.1 | 100 | | 2 | | | 04/29/2008 |
| 4-Bromofluorobenzene <surr> | | BMS | 28.8 | 96 | ( 76-120 ) | | | | 04/29/2008 |
| | | BMSD | 29.0 | 97 | | 1 | | | 04/29/2008 |

**Batch** VMS9727
**Method** SW8260B
**Instrument** HP 5890 Series II MS3 VNA

**Polynuclear Aromatics GC/MS**

SGS

| | | | | |
|---|---|---|---|---|
| SGS Ref.# | 1081553002 | Billable Matrix Spike | Printed Date/Time | 05/13/2008 16:35 |
| | 1081553003 | Billable Matrix Spike Dup. | Prep Batch | XXX19235 |
| | | | Method | 3520 Liquid/Liquid Ext for 827 |
| | | | Date | 04/18/2008 |
| Original | 1081553001 | | | |
| Matrix | Water (Surface, Eff., Ground) | | | |

| Parameter | Qualifiers | Original Result | QC Result | Pct Recov | MS/MSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| **Polynuclear Aromatics GC/MS** | | | | | | | | | |
| Acenaphthylene | | BMS ND | .527 | 98 | ( 50-105 ) | | | 0.538 | ug/L 04/25/2008 |
| | | BMSD | 0.496 | 96 | | 6 | (< 30 ) | 0.515 | ug/L 04/25/2008 |
| Acenaphthene | | BMS ND | .471 | 88 | ( 45-110 ) | | | 0.538 | ug/L 04/25/2008 |
| | | BMSD | 0.445 | 86 | | 6 | (< 30 ) | 0.515 | ug/L 04/25/2008 |
| Fluorene | | BMS ND | .514 | 96 | ( 50-110 ) | | | 0.538 | ug/L 04/25/2008 |
| | | BMSD | 0.479 | 93 | | 7 | (< 30 ) | 0.515 | ug/L 04/25/2008 |
| Phenanthrene | | BMS ND | .528 | 98 | ( 50-115 ) | | | 0.538 | ug/L 04/25/2008 |
| | | BMSD | 0.493 | 96 | | 7 | (< 30 ) | 0.515 | ug/L 04/25/2008 |
| Anthracene | | BMS ND | .53 | 99 | ( 50-110 ) | | | 0.538 | ug/L 04/25/2008 |
| | | BMSD | 0.511 | 99 | | 4 | (< 30 ) | 0.515 | ug/L 04/25/2008 |
| Fluoranthene | | BMS ND | .562 | 104 | ( 55-115 ) | | | 0.538 | ug/L 04/25/2008 |
| | | BMSD | 0.517 | 100 | | 8 | (< 30 ) | 0.515 | ug/L 04/25/2008 |
| Pyrene | | BMS ND | .541 | 101 | ( 50-126 ) | | | 0.538 | ug/L 04/25/2008 |
| | | BMSD | 0.501 | 97 | | 8 | (< 30 ) | 0.515 | ug/L 04/25/2008 |
| Benzo(a)Anthracene | | BMS ND | .595 | 111* | ( 55-110 ) | | | 0.538 | ug/L 04/25/2008 |
| | | BMSD | 0.538 | 104 | | 10 | (< 30 ) | 0.515 | ug/L 04/25/2008 |
| Chrysene | | BMS ND | .556 | 103 | ( 55-110 ) | | | 0.538 | ug/L 04/25/2008 |
| | | BMSD | 0.517 | 100 | | 7 | (< 30 ) | 0.515 | ug/L 04/25/2008 |
| Benzo[b]Fluoranthene | | BMS ND | .601 | 112 | ( 45-120 ) | | | 0.538 | ug/L 04/25/2008 |
| | | BMSD | 0.557 | 108 | | 8 | (< 30 ) | 0.515 | ug/L 04/25/2008 |
| Benzo[k]fluoranthene | | BMS ND | .605 | 113 | ( 49-125 ) | | | 0.538 | ug/L 04/25/2008 |
| | | BMSD | 0.539 | 105 | | 12 | (< 30 ) | 0.515 | ug/L 04/25/2008 |
| Benzo[a]pyrene | | BMS ND | .602 | 112* | ( 55-110 ) | | | 0.538 | ug/L 04/25/2008 |
| | | BMSD | 0.559 | 108 | | 8 | (< 30 ) | 0.515 | ug/L 04/25/2008 |
| Indeno[1,2,3-c,d] pyrene | | BMS ND | .576 | 107 | ( 45-125 ) | | | 0.538 | ug/L 04/25/2008 |
| | | BMSD | 0.518 | 100 | | 11 | (< 30 ) | 0.515 | ug/L 04/25/2008 |
| Dibenzo[a,h]anthracene | | BMS ND | .582 | 108 | ( 40-125 ) | | | 0.538 | ug/L 04/25/2008 |
| | | BMSD | 0.521 | 101 | | 11 | (< 30 ) | 0.515 | ug/L 04/25/2008 |
| Benzo[g,h,i]perylene | | BMS ND | .542 | 101 | ( 40-125 ) | | | 0.538 | ug/L 04/25/2008 |
| | | BMSD | 0.488 | 95 | | 11 | (< 30 ) | 0.515 | ug/L 04/25/2008 |
| Naphthalene | | BMS ND | .45 | 84 | ( 40-115 ) | | | 0.538 | ug/L 04/25/2008 |
| | | BMSD | 0.446 | 86 | | 1 | (< 30 ) | 0.515 | ug/L 04/25/2008 |
| 1-Methylnaphthalene | | BMS 0.0435 J | .491 | 83 | ( 35-121 ) | | | 0.538 | ug/L 04/25/2008 |
| | | BMSD | 0.445 | 78 | | 10 | (< 30 ) | 0.515 | ug/L 04/25/2008 |
| 2-Methylnaphthalene | | BMS 0.0561 | .485 | 80 | ( 45-105 ) | | | 0.538 | ug/L 04/25/2008 |
| | | BMSD | 0.440 | 75 | | 10 | (< 30 ) | 0.515 | ug/L 04/25/2008 |
| **Surrogates** | | | | | | | | | |
| Terphenyl-d14 <surr> | | BMS | .397 | 74 | ( 50-135 ) | | | | 04/25/2008 |
| | | BMSD | 0.357 | 69 | | 11 | | | 04/25/2008 |

SGS

| | | | | | |
|---|---|---|---|---|---|
| **SGS Ref.#** | 1081553002 | Billable Matrix Spike | **Printed Date/Time** | | 05/13/2008 16:35 |
| | 1081553003 | Billable Matrix Spike Dup. | **Prep** | **Batch** | XXX19235 |
| | | | | **Method** | 3520 Liquid/Liquid Ext for 827 |
| | | | | **Date** | 04/18/2008 |
| **Original** | 1081553001 | | | | |
| **Matrix** | Water (Surface, Eff., Ground) | | | | |

| Parameter | Qualifiers | Original Result | QC Result | Pct Recov | MS/MSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|

**Polynuclear Aromatics GC/MS**

| | |
|---|---|
| **Batch** | XMS4467 |
| **Method** | 8270D SIMS |
| **Instrument** | HP 5890 Series II MS2 SVOA |

**SGS**

# CHAIN OF CUSTODY RE
## SGS Environmental Servic

1081553

| | |
|---|---|
| CLIENT: TEC INC. | SGS Reference #: |
| CONTACT: Jeff Hart — PHONE NO: 808.528.1445 | |
| PROJECT: 9121-003 — SITE/PWSID#: Red Hill BFSF | |
| REPORTS TO: Jeff Hart — email jshart@tecinc.com; cc snmacmillan@tecinc.com | |
| INVOICE TO: TEC INC — QUOTE #: P.O. NUMBER: | |

| LAB NO. | SAMPLE IDENTIFICATION | DATE | TIME | MATRIX | # CONTAINERS | Preserv. Used | SAMPLE TYPE C = COMP G = GRAB | TPH-GRO (8015B) HCL | TPH-DRO (8015B) HCL | VOC's (8260B) | PAH's (8270C-SIMS) | Diss Pb (6020) HNO3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 A-K | | | | | | | | | | | | |
| 3 A-L | RHMW2254-WG-11 | 4/15/2008 | 1030 | Water | 11 | | | X | X | X | X | X |
| 4 A-K | RHMW03-WG-11 | 4/15/2008 | 1215 | Water | 6 | | | X | | X | | |
| 5 | RHMW02-WG-11 | 4/15/2008 | 1345 | Water | 6 | | | X | | X | | |
| 6 | RHMWA01-WG-11 | 4/15/2008 | 1205 | Water | 6 | | | X | | X | | |
| 7 | RHMW01-WG-11 | 4/15/2008 | 1515 | Water | 6 | | | X | | X | | |
| 8 A-C | TB01-WG-11 | 4/15/2008 | 0805 | Water | 3 | | | | | X | | |

| | | | |
|---|---|---|---|
| Collected/Relinquished By: (1) Jeff S. Hart, R.C | Date 4/15/2008 | Time 1745 | Received By |
| Relinquished By (2) | Date 4/16/08 | Time 1800 | Received By |
| Relinquished By: (3) | Date | Time | Received By: |
| Relinquished By (4) | Date 4/17/08 | Time 1130 | Received For Laboratory By |

Shipping Carrier

Shipping Ticket No:

Special Deliverable Requirements.
**See Contract**

Requested Turnaround Time and-or Speci
**See Contract**


- 200 W Potter Drive **Anchorage, AK 99518** Tel (907) 562-2343 Fax (907) 561-5301
- 3180 Peger Road **Fairbanks, AK 99701** Tel (907) 474-8656 Fax (907) 474-9685
- 255 Sand Island Access Rd., Unit 1B **Honolulu, HI 96819** Tel: (808) 224-6217 Fax (808) 845-228
- 151 James Drive West **St Rose, LA 70087** Tel: (504) 469
- 1258 Greenbrier Street **Charleston, WV 25311** Tel (304
- 5500 Business Drive **Wilmington, NC 28405** Tel. (910)

**SGS**

# CHAIN OF CUSTOD' 1081553
## SGS Environmental S<

| | |
|---|---|
| CLIENT: TEC INC. | SGS Referenc |
| CONTACT: Jeff Hart — PHONE NO: 808 528.1445 | |
| PROJECT: 9121-003 — SITE/PWSID#: Red Hill BFSF | |
| REPORTS TO: Jeff Hart — email jshart@tecinc.com; cc snmacmillan@tecinc.com | |
| INVOICE TO: TEC INC — QUOTE #: P.O. NUMBER: | |

| LAB NO. | SAMPLE IDENTIFICATION | DATE | TIME | MATRIX | # CONTAINERS | Preserv. Used | SAMPLE TYPE C = COMP G = GRAB | HCL TPH-GRO (8015B) | HCL TPH-DRO (8015B) | HCl VOC's (8260B) | HNO3 PAH's (8270C-SIMS) | HNO3 Diss Pb (6020) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ~~①A-K~~ ③A-L | RHMW2254-WG-11 | 4/15/2008 | 1030 | Water | 10 | | | | X | | X | X | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
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| | | | | |
|---|---|---|---|---|
| Collected/Relinquished By (1) Jeff Hart, R.C | Date 4/15/2008 | Time 1745 | Received By: | Shipping Carrier |
| Relinquished By (2) | Date 4/17/08 | Time 1800 | Received By | Shipping Ticket No. |
| Relinquished By (3) | Date | Time | Received By | Special Deliverable Requirements. **See Contract** |
| Relinquished By (4) | Date 4/17/08 | Time 1180 | Received For Laboratory By: | Requested Turnaround Time and-or Spec **See Contract** |


- ☐ 200 W Potter Drive **Anchorage, AK 99518** Tel (907) 562-2343 Fax. (907) 561-5301
- ☐ 3180 Peger Road **Fairbanks, AK 99701** Tel: (907) 474-8656 Fax: (907) 474-9685
- ☐ 255 Sand Island Access Rd , Unit 1B **Honolulu, HI 96819** Tel. (808) 224-6217 Fax: (808) 845-228
- ☐ 151 James Drive West **St Rose, LA 70087** Tel (504) 4
- ☐ 1258 Greenbrier Street **Charleston, WV 25311** Tel (304
- ☐ 5500 Business Drive **Wilmington, NC 28405** Tel (910)

**SGS**

# CHAIN OF CUSTOD
## SGS Environmental S

1081553

CLIENT: TEC INC.

CONTACT: **Jeff Hart** PHONE NO: 808.528.1445

PROJECT: **9121-003** SITE/PWSID#: Red Hill BFSF

REPORTS TO: Jeff Hart email jshart@tecinc.com
cc snmacmillan@tecinc.com

INVOICE TO: TEC INC QUOTE #:
P.O. NUMBER:

SGS Reference #:

| LAB NO. | SAMPLE IDENTIFICATION | DATE | TIME | MATRIX | # CONTAINERS | Preserv. Used | SAMPLE TYPE C = COMP G = GRAB | HCL TPH-GRO (8015B) | HCL TPH-DRO (8015B) | HCl VOC's (8260B) | HCl PAH's (8270C-SIMS) | $HNO_3$ Diss Pb (6020) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ④A-K | **RHMW03-WG-11** | **4/15/2008** | **1215** | **Water** | **5** | | | | X | | X | X |
| ⑤A-K | **RHMW01-WG-11** | **4/15/2008** | **1515** | **Water** | **5** | | | | X | | X | X |

| | | | | |
|---|---|---|---|---|
| Collected/Relinquished By: (1) J. Hart, R.C | Date 4/15/2008 | Time 1745 | Received By | Shipping Carrier: |
| Relinquished By: (2) | Date 4/16/08 | Time 1500 | Received By | Shipping Ticket No. |
| Relinquished By (3) | Date | Time | Received By | Special Deliverable Requirements: **See Contract** |
| Relinquished By: (4) | Date 4/17/08 | Time 1130 | Received For Laboratory By: | Requested Turnaround Time and-or Speci **See Contract** |


- 200 W Potter Drive **Anchorage, AK 99518** Tel (907) 562-2343 Fax (907) 561-5301
- 3180 Peger Road **Fairbanks, AK 99701** Tel. (907) 474-8656 Fax (907) 474-9685
- 255 Sand Island Access Rd , Unit 1B **Honolulu, HI 96819** Tel (808) 224-6217 Fax: (808) 845-228
- 151 James Drive West St Rose, LA 70087 Tel: (504) 469
- 1258 Greenbrier Street **Charleston, WV 25311** Tel (304
- 5500 Business Drive **Wilmington, NC 28405** Tel (910)

SGS

1081553

# JSTODY RECORD
## ıental Services Inc.

| | |
|---|---|
| CLIENT: TEC INC. | SGS Reference #: |
| CONTACT: Jeff Hart PHONE NO: 808 528.1445 | |
| PROJECT: 9121-003 SITE/PWSID#: Red Hill BFSF | |
| REPORTS TO: Jeff Hart email jshart@tecinc.com cc snmacmillan@tecinc.com | |
| INVOICE TO: TEC INC QUOTE #: P.O. NUMBER: | |

| LAB NO. | SAMPLE IDENTIFICATION | DATE | TIME | MATRIX | # CONTAINERS | Preserv. Used | SAMPLE TYPE C = COMP G = GRAB | HCL TPH-GRO (8015B) | HCL TPH-DRO (8015B) | HCl VOC's (8260B) | HNO3 PAH's (8270C-SIMS) | HNO3 Diss Pb (6020) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 A-K | RHMW02-WG-11 | 4/15/2008 | 1345 | Water | 5 | | | | X | | X | X | | | | |
| 6 A-K | RHMWA01-WG-11 | 4/15/2008 | 1205 | Water | 5 | | | | X | | X | X | | | | |

| | | | | |
|---|---|---|---|---|
| Collected/Relinquished By (1) Jeff S. Hart, R.G | Date 4/15/2008 | Time 1745 | Received By: | Shipping Carrier. |
| Relinquished By (2) | Date 4/16/08 | Time 1645 | Received By | Shipping Ticket No |
| Relinquished By (3) | Date | Time | Received By | Special Deliverable Requirements: See Contract |
| Relinquished By (4) | Date 4/16/08 | Time 1130 | Received For Laboratory By: | Requested Turnaround Time and-or Sp See Contract |

- ☐ 200 W Potter Drive **Anchorage, AK 99518** Tel. (907) 562-2343 Fax (907) 561-5301
- ☐ 3180 Peger Road **Fairbanks, AK 99701** Tel (907) 474-8656 Fax (907) 474-9685
- ☐ 255 Sand Island Access Rd , Unit 1B **Honolulu, HI 96819** Tel (808) 224-6217 Fax (808) 845-228
- ☐ 151 James Drive West **St Rose, LA 70087** Tel (504)
- ☐ 1258 Greenbrier Street **Charleston, WV 25311** Tel. (30
- ☐ 5500 Business Drive **Wilmington, NC 28405** Tel (910)

documents\forms\e

1081553

**SGS**

## SAMPLE RECEIPT FORM

SGS WO#:

| Yes | No | NA | | |
|---|---|---|---|---|
| | X | | Are samples **RUSH**, priority, or *w/n 72 hrs.* of **hold time**? | **Due Date:** 5-1-08 |
| | | X | If yes have you done *e-mail notification*? | **Received Date:** 4-28-08 |
| | X | | Are samples *within 24 hrs.* of **hold time** or **due date**? | **Received Time:** 1745 |
| | | X | If yes, have you *spoken with* Supervisor? | Is **date/time conversion** necessary? yes |
| | X | | Archiving bottles– if req., are they properly marked? | # of hours to AK Local Time: +2hr |
| | X | | Are there any **problems**? PM Notified? | **Thermometer ID:** D |
| X | | | Were samples preserved correctly and pH verified? | |
| | X | | If this is for PWS, provide **PWSID.** | |
| X | | | Will courier charges apply? | |
| | | | Method of payment? | |
| X | | | Data package required? (Level: 1 (2) 3 / 4) | |
| | | | *Notes:* | |
| X | | | Is this a DoD project? (USACE, Navy, AFCEE) | |

| Cooler ID | Temp Blank | Cooler Temp |
|---|---|---|
| #1 | 4.1 °C | °C |
| #2 | 5.6 °C | °C |
| #3 | 5.8 °C | °C |
| #4 | 4.2 °C | °C |
| #5 | 4.3 °C | °C |

*Temperature readings include thermometer correction factors

**Delivery method** (circle all that apply): (Client)
Alert Courier / UPS / FedEx / USPS / AA Goldstreak / NAC / ERA / PenAir / Carlile Lynden / SGS / Other:

**Airbill #**

Additional Sample Remarks: *(√if applicable)*
_____ Extra Sample Volume?
_____ Limited Sample Volume?
_____ Field preserved for volatiles?
_____ Field-filtered for dissolved? _____
_____ Lab-filtered for dissolved? _____
_____ Ref Lab required? _____
_____ Foreign Soil?

***This section must be filled out for DoD projects (USACE, Navy, AFCEE)***

| Yes | No | | |
|---|---|---|---|
| X | | Is received temperature 4 ± 2°C? | |
| | | Exceptions: | Samples/Analyses Affected: |
| | X | Rad Screen performed? Result: | |
| | X | Was there an airbill? *(Note # above in the right hand column)* | |
| | X | Was cooler sealed with custody seals? # / where: | |
| | N/A | Were seal(s) intact upon arrival? | |
| X | | Was there a COC with cooler? | |
| | X | Was COC sealed in plastic bag & taped inside lid of cooler? | |
| X | | Was the COC filled out properly? | |
| | X | Did the COC indicate COE / AFCEE / Navy project? | |
| X | | Did the COC and samples correspond? | |
| X | | Were all sample packed to prevent breakage? Packing material: | |
| X | | Were all samples unbroken and clearly labeled? | |
| | X | Were all samples sealed in separate plastic bags? | |
| X | | Were all VOCs free of headspace and/or MeOH preserved? | |
| X | | Were correct container / sample sizes submitted? | |
| X | | Is sample condition good? | |
| X | | Was copy of CoC, SRF, and custody seals given to PM to fax? | |

***This section must be filled if problems are found.***

| Yes | No | |
|---|---|---|
| | | Was client notified of problems? |

Individual contacted:
Via: Phone / Fax / Email *(circle one)*
Date/Time:
Reason for contact:

Change Order Required?
SGS Contact:

**Notes:**

* Short TAT DRO's
* PDF + Excel

**Completed by (sign):** _____ **(print):** _____

**Login proof** (check one): waived _____ required X performed by: _____

SGS

SGS WO# 1081553

**SAMPLE RECEIPT FORM FOR TRANSFERS**
**From**
**FAIRBANKS, ALASKA OR HONOLULU, HAWAII**
**To**
**ANCHORAGE, AK**

**TO BE COMPLETED IN ANCHORAGE UPON ARRIVAL FROM FAIRBANKS OR HAWAII.**
**NOTES RECORDED BELOW ARE ACTIONS NEEDED UPON ARRIVAL IN ANCHORAGE.**

**Notes:** _____

_____

_____

_____

_____

**Receipt Date / Time:** 4/17/08 1130

**Is Sample Date/Time Conversion Necessary?** Yes ✓ No _____

**Number of Hours From Alaska Local Time:** +2

**Foreign Soil?** Yes _____ No ✓

**Delivery method to Anchorage** (*circle all that apply*):

Alert Courier / UPS / (FedEx) / USPS / AA Goldstreak / NAC / ERA / PenAir / Carlile / Lynden / SGS

Other: _____

**Airbill #** _____

**COOLER AND TEMP BLANK READINGS***

| Cooler ID | Temp Blank (°C) | Cooler (°C) | Cooler ID | Temp Blank (°C) | Cooler (°C) |
|---|---|---|---|---|---|
| 1 | 1.1 | 4.1 | | | |
| 2 | ~~4.4~~ 1.4 | 4.0 | | | |
| 3 | 2.7 | 1.3 | | | |
| 4 | 5.3 | 2.9 | | | |

**CUSTODY SEALS INTACT:** (YES) / NO

**# / WHERE:** 2, 1 on front + 1 on back x4

**COMPLETED BY:** Joe Rut

**Temperature readings include thermometer correction factors.*