

Phase V – Remedy Operation Status
Status Report #1
Walpole Park South
Walpole, Massachusetts
Release Tracking Number 4-3021915

Submitted to:
Massachusetts Department of Environmental Protection

February 2, 2010

February 2, 2010

Massachusetts Department of Environmental Protection
Southeast Regional Office
Bureau of Waste Site Cleanup
20 Riverside Drive
Lakeville, MA 02347

**Re: Phase V – Remedy Operation Status
Status Report #1
Walpole Park South
Walpole, Massachusetts
Release Tracking Numbers 4-3021915**

Dear Sir/Madam:

On behalf of Walpole Park South, Tetra Tech, Inc. d/b/a Tetra Tech Rizzo has prepared this Phase V - Remedy Operation Status, Status Report #1 for Release Tracking Number 4-3021915 pursuant to 310 CMR 40.0892. The information presented herein is based on the Phase IV Completion Statement and Remedy Operation Status Submittal dated July 28, 2009. This report is subject to the Statement of Limitations and Conditions in Appendix A. The original Massachusetts Department of Environmental Protection BWSC-108 transmittal form has been transmitted electronically via eDEP, and a copy of the form is in Appendix D.

Please contact us if you have any questions regarding this submittal.

Very truly yours,

Raymond C. Johnson, P.G., L.S.P.
Senior Vice President

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1.0 Introduction

This Phase V – Remedy Operation Status, Status Report #1 for Release Tracking Number (RTN) 4-3021915 is being submitted to the Massachusetts Department of Environmental Protection (DEP) pursuant to the Massachusetts Contingency Plan (MCP) 310 CMR 40.0892. The purpose of the Phase V Status Report is to the type and frequency of operation, maintenance and/or monitoring activities conducted since the submission of the Phase IV Completion Statement on July 28, 2009, and present other relevant information regarding the activities implemented at the Site.

The Phase IV Completion Statement noted that additional groundwater monitoring wells, discussed in the Phase IV – Remedy Implementation Plan, were installed in December 2007 and four rounds of groundwater samples were collected prior to submission of the Phase IV Completion Statement. Since the requirements for a Class A or Class C Response Action Outcome (RAO) Statement were not met, the Phase IV Completion Statement indicated that ongoing monitoring would be performed to further characterize groundwater conditions over time. Specifically, groundwater samples would be collected at approximately six month intervals, starting in November or December 2009, and submitted for laboratory analysis for

1.1 Site Description

The Site encompasses approximately 54 acres of land, located at the intersection of US Route 1 and Pine Street in Walpole, Massachusetts, as shown on Figure 1. The Site is divided into eight lots, seven of which contain buildings occupied by office and warehouse space that are leased to commercial and/or light industrial businesses. The current configuration of the Site and the configuration of the individual building lots are depicted on Figure 2. An access road, Walpole Park South Drive, crosses the Site from Route 1 along the southeast boundary of Walpole Park South, to Pine Street on the southwest boundary of the property. The buildings, driveways and parking areas cover the majority of the Site. The remainder of the property consists of landscaped areas adjacent to the buildings, wooded land and unpaved open areas. Prior to construction of the existing buildings the Site was vacant land, portions of which were reportedly used as a gravel pit. Development of the Site and building construction commenced in 1986.

The property is abutted to the north by vacant wooded land, to the west by single-family residences, to the south by Pine Street, across which are commercial properties including a truck repair and painting facility, and to the east by Route 1, across which are commercial and industrial properties.

1.2 Responsibility for Conducting the Response Actions

The party implementing the response action is Walpole Park South. The contact information for Walpole Park South is as follows:

Mr. Donnell Murphy, Trustee
Walpole Park South
Post Office Box 123
Walpole, MA 02081-2552
508-668-1200

Walpole Park South has retained a Licensed Site Professional (LSP) to manage and oversee development and implementation of the PIP, and response actions performed to address the requirements of the MCP:

Mr. Raymond C. Johnson, P.G., L.S.P.
Rizzo Associates, Inc.
1 Grant Street
Framingham, MA 01701-9005
508-903-2356

2.0 Summary of Phase II, Phase III and Phase IV Reports

Phase II and Phase III reports were submitted for the Site in July 2006, and a Phase IV report submitted in August 2007, as summarized in the following sections.

2.1 Phase II Report

The purpose of the Phase II investigation was to obtain data to characterize the nature and extent of releases of oil and/or hazardous materials (OHM) at the Site, quantify the risks posed by such releases, and assess the need to conduct further remedial actions at the Site. The information presented in the Phase II Comprehensive Site Assessment report is summarized below.

- Monitoring wells were initially installed at the Site in December 1986 to comply with requirements issued by the Walpole Board of Health (BOH) as a part of the approval to develop the property.
- Annual groundwater sampling was performed during the period from 1987 to 2003 as required by the BOH, and samples of surface water and/or sediment in eight storm water catch basins located in the southwest portion of the Site, upgradient from monitoring well MW-6, were also collected.
- In September 2000 two additional monitoring wells, designated MW-8 and MW-9, were installed in the southwest portion of the Site. Sampling of the catch basins and the installation and sampling of MW-8 and MW-9 were implemented as part of investigations relating to the detection of chloroform and bromodichloromethane in groundwater samples collected from MW-6 in 1999 and 2000.

- In April 2002 it was noted that the lead concentrations reported by the laboratory for groundwater samples collected from monitoring wells MW-3 and MW-6 were 0.059 milligrams per liter (mg/l) and 0.023 mg/l, respectively; concentrations which exceeded the then applicable MCP reportable concentration of 0.020 mg/l for groundwater classified as RCGW-1. To further evaluate this condition confirmatory groundwater sampling was performed in May 2002. The results of this sampling indicated lead concentrations in samples collected from MW-3 and MW-6 of 0.046 mg/l and 0.018 mg/l, respectively. Based on these sampling results it was concluded that the detected lead concentrations represented a 120-day notification condition under the MCP. Therefore, a RNF was prepared and received by the DEP on July 2, 2002. In response to the notification, DEP issued a Notice of Responsibility (NOR) on August 15, 2002 and assigned RTN 3-21915 to the reported release.

- Based on further review of the historic groundwater monitoring results, it was determined that additional compounds detected at concentrations exceeding then applicable RCGW-1 reportable concentrations had not been previously reported to DEP. These compounds included methylene chloride, total chromium, arsenic, tetrachloroethene (PCE), cadmium, and antimony. Of these compounds, only lead and antimony were detected in samples collected after October 1993, the effective date of the MCP revisions which established specific reportable concentrations for oil and hazardous materials. Methylene chloride is a commonly used laboratory solvent and was only detected once at a concentration exceeding its reportable concentration, in a sample collected from MW-4 in March 1987. PCE was only detected once at a level exceeding its reportable concentration, in the sample collected from MW-1 in March 1988. Cadmium was detected above its reportable concentration once, in the sample collected in March 1991 from MW-5D. Total chromium was detected at levels exceeding its reportable concentration three times, all samples collected from MW-3, most recently in March 1991. Arsenic has been identified in samples from MW-1, MW-3 and MW-5D, but has not been reported at levels exceeding the current RCGW-1 standard since March 1988.

- In January 2004, seven additional monitoring wells were installed by GHC (GHC-1 to GHC-7) to further characterize soil and groundwater conditions and to evaluate whether a source of the compounds detected in groundwater could be identified. Groundwater samples were collected from both new and existing wells in February and April 2004.

- In general, the annual groundwater sampling has shown that the presence of elevated levels of these compounds is sporadic and intermittent, as the detected compounds have not been present in all sampled monitoring wells, and compounds detected in specific wells have not been present in all of the samples collected from those wells. The results of the testing do not indicate a plume of impacted groundwater that can be clearly delineated, nor do they identify the source or sources of the detected compounds. The data do not suggest a correlation between the groundwater conditions at the Site and the activities of the tenants in the Site buildings.

- In an internal memorandum dated July 9, 2004, the DEP Drinking Water Program (DWP) found that “the groundwater contamination levels at the site are all low, compared to most waste sites,” and “heavy metals have fairly low mobility in groundwater.” DEP concluded “the site does not appear to pose a threat to the Walpole municipal wells, because of the low groundwater contamination levels and the distance from the site to the wells.”
- To further characterize soil and groundwater conditions at the Site, and to better evaluate the source, nature and extent of impacts to soil and groundwater, a Phase II – Comprehensive Site Assessment was implemented by Rizzo Associates. The Phase II Investigation included the installation of 7 soil borings and completion of 3 of the soil borings as groundwater monitoring wells; sampling and analysis of soil and groundwater from select soil borings and monitoring wells; surveying to determine the locations and relative elevations of each newly installed monitoring well casing; gauging of groundwater elevations to evaluate the groundwater flow direction and prepare a potentiometric surface map; and hydraulic conductivity testing of three groundwater monitoring wells.
- For the 7 soil samples submitted for laboratory analysis as a part of the Phase II investigation, no VOCs or metals were reported at concentrations above the applicable MCP method 1 standards except for a reported beryllium concentration of 0.87 mg/kg in the RIZ-2 soil boring which exceeds the Method 1 S-1/GW-1, GW-2 and GW-3 standards of 0.7 mg/kg and the Method 1 S-2/GW-1, GW-2 and GW-3 standards of 0.8 mg/kg. Naturally occurring beryllium is often found in Massachusetts at concentrations similar to that found at RIZ-2. Based on the fact that this soil sample was collected from undisturbed native soil at a depth of 15 to 17 feet below the ground surface, and soil conditions elsewhere on the Site, it is believed that the beryllium is naturally occurring and not related to a release on the Site.
- For the 36 groundwater samples that were submitted for laboratory analysis over three sampling rounds performed as a part of this Phase II investigation, VOCs and/or dissolved metals concentrations greater than one or more of the applicable MCP Method 1 standards were reported in 9 wells. Compounds exceeding the MCP Method 1 standards included bromodichloromethane, chloroform, and lead; however, the detections of these compounds are distributed around the Site, and do not indicate a specific on-site source or sources, or a plume that can be readily delineated. The reported concentrations of dissolved metals have been inconsistent over the three sampling events, a pattern that is consistent with that observed previously at the Site. Lead was identified at a concentration greater than the method detection limit in well MW-9 in only one of the four Phase II groundwater sampling events.
- Chloroform and/or bromodichloromethane were detected in three monitoring wells located on the southeast portion of the Site, near and downgradient from US Route 1. Although these compounds were previously detected on the Site they were identified in a

monitoring well on the northwest property boundary, and were attributed to releases of disinfection by-products from a swimming pool on the abutting property. They have not been detected previously in wells near the southeast property boundary, and based on the well locations and direction of groundwater flow they do not appear to be related to on-site releases. Rather, they may be related to releases of chlorinated water in this area or to the use of roadway deicing compounds. Water Quality Reports for 2004 and 2005 issued by the Walpole Sewer & Water Department indicated that bromodichloromethane and chloroform are detected in samples collected from the municipal water system and state that these compounds are a “by-product of drinking water disinfection.” This is a typical occurrence in this area of Massachusetts.

- Since concentrations of several compounds in groundwater exceed the MCP Method 1 GW-1 and GW-3 standards, and the Site is located within a Zone II for a public water supply, the risk characterization concluded that a condition of No Significant Risk to human health and the environment has not been achieved at this Site for groundwater.
- The only reported exceedence of a reportable concentration for soil is the beryllium detected in one sample collected in February 2006. Although exceeding the applicable Method 1 standard, this is likely a naturally occurring background condition.
- Based on the results of the risk characterization, further Comprehensive Response Actions are necessary to attempt to achieve a Temporary Solution or a condition of No Significant Risk and a Permanent Solution at the Site.

2.2 Phase III Report

The Phase III evaluation included a review of alternative methods for treatment of groundwater to evaluate whether there are one or more financially and technically feasible remedial alternatives that could be implemented to reduce risk at the Site to a level where a Permanent Solution can be achieved, and the selection of an alternative for implementation. For the evaluation of remedial alternatives feasible technologies were considered based on their ability to address the conditions identified to date on the Site.

An initial screening evaluated nine remedial alternatives based on their ability to target these contaminant characteristics and the subsurface conditions at the Site. Alternatives evaluated during the initial screening included groundwater pump-and-treat, in-situ chemical oxidation, permeable reactive barriers, bioremediation/bio-barrier, electrical resistance heating, surfactant flushing, air sparging and vapor extraction, soil excavation and disposal/treatment, and MNA. Of these alternatives, groundwater pump-and-treat and MNA were selected for detailed evaluation.

The detailed evaluation compared the two remedial alternatives noted above in greater detail, based on the following criteria: effectiveness, reliability, difficulty, costs, risks, benefits and time for implementation. Based on the detailed evaluation MNA was selected as the remedy for the

Site. At the time the Phase III was submitted it was anticipated that while the Phase IV was not due until July 26, 2007, MNA monitoring would commence in September or October 2006.

However, because of unwillingness on the part of the Town of Walpole to cooperate with the responsible party relative to the installation of additional monitoring wells needed to implement the MNA, installation of the additional monitoring wells and commencement of the MNA sampling program was delayed until December 2007.

2.3 Phase IV – Remedy Implementation Plan

Based on the results of the Phase III, the Phase IV report indicated that MNA would be implemented at the Site to further characterize groundwater conditions over time. The Phase IV report also noted that although MNA has been identified as the appropriate remedial action for the Site, it may be determined that implementation of one or more other technologies should be considered as additional data on groundwater conditions is developed. In that case, feasible remedial alternatives would be evaluated and a determination made of whether the approach should be modified or changed. If changes to the remedial program were determined to be applicable, supplemental Phase III and Phase IV reports would be prepared to discuss the selection (Phase III) and design (Phase IV) of the remedy or remedies. The selection of MNA as the remedial approach facilitates the evaluation of groundwater conditions at a reasonable cost, and allows for ongoing characterization of changes over time. This approach is appropriate given the sporadic and intermittent detection of metals or VOCs at concentrations exceeding applicable MCP standards, and the absence of an identifiable source(s) of the detected compounds. The proposed design for MNA included the installation of additional monitoring wells upgradient from the Site, and the collection of groundwater samples from the new wells and selected existing on-site monitoring wells.

3.0 Existing Site Conditions

In general, the investigations performed to date have evaluated the physical characteristics of the Site and identified the presence of metals in soil and groundwater, and several VOCs in groundwater. The metals are compounds that can be naturally occurring and are widely found in common products used on properties near the Site. The VOCs are primarily trihalomethanes, compounds that are disinfection by-products formed by a reaction between organic material in soil or groundwater and chlorinating or brominating compounds used for disinfection, including disinfection of drinking water. Available information also documents formation of these compounds in areas where roadway deicing chemicals are used. Below is a summary of the physical characteristics and environmental fate and transport characteristics that were considered while evaluating potential alternatives for remediation of the identified VOC contamination.

3.1 Physical Characteristics

Soil borings advanced at the Site prior to and during Phase IV activities identified primarily medium to coarse sand and gravel with occasional layers of fine sand overlying bedrock at the Site. The depth to bedrock ranges from approximately 13 feet below the ground surface (bgs) in the southwest portion of the Site, to greater than 40 feet bgs on the northern and eastern portions of the Site.

The depth to groundwater at the Site has been measured at depths ranging from 5 to 18 feet below the ground surface. The direction of groundwater flow in overburden at the Site is generally to the east and northeast, toward School Meadow Brook.

3.2 Environmental Fate and Transport

The metals that have been detected in groundwater at the Site, although they exceed the applicable MCP Method 1GW-1 standards, are present at relatively low concentrations and generally have limited mobility in groundwater. The limited mobility of metals in groundwater is substantiated by the comments made by DEP in July 2004 as previously discussed in this document. The VOCs identified at the Site are more mobile than metals in the subsurface due to their solubility and volatility, but are expected to rapidly attenuate over a relatively short distance. Movement of dissolved phase VOCs is influenced by advective flow, although factors such as adsorption and dispersion can result in retardation such that VOCs migrate at a slower rate than the ambient groundwater velocity. Dense non-aqueous phase liquids (DNAPL) have not been observed at the Site, and the relatively low concentrations and specific compounds detected make the likelihood that DNAPL is present extremely low. Further, since these compounds are usually generated as disinfection by-products, or by reactions associated with roadway deicing compounds, they are by nature only present in the dissolved phase.

Based on the extensive subsurface testing completed to date, it does not appear that there is a specific on-site source of the identified compounds, historic data did not indicate a clearly definable plume, and recent results have shown the few detected analytes at concentrations well below MCP GW-1 standards.

4.0 Phase IV Completion Statement

Installation of the three additional monitoring wells, near the upgradient (southwest) property line for Walpole Park South, was completed in December 2007. Wells were installed at two locations on Walpole Park South property, adjacent to Pine Street, and at one location on MHD property within the “jug handle” intersection of Route 1 southbound and Pine Street. The drilling locations were accessed using an all-terrain vehicle mounted hollow stem auger drilling rig, equipped with the capability to drill into bedrock, since the locations on Walpole Park South property were not accessible to conventional truck-mounted drilling equipment.

Four rounds of groundwater samples were collected during Phase IV. Based on the results of those samplings and previous sampling results for the Site, it was concluded that the

requirements for a Class A or Class B RAO had not been and that ongoing monitoring would be performed to further characterize groundwater conditions over time. Specifically, it was indicated in the Phase IV Completion statement that groundwater samples would be collected at approximately six month intervals for analysis for VOCs and metals. Details of the well installation and groundwater sampling were detailed in the Phase IV Completion Statement dated July 28, 2009.

Further progress toward an RAO will be evaluated based on the results of future sampling events, including whether the total set of groundwater monitoring data for the Site indicates that concentrations of lead and VOCs decrease over time and/or the average concentration at each exposure point (e.g., each monitoring well) is below the applicable GW-1 standard(s). Phase V status reports will be submitted to DEP at six-month intervals to document and discuss the results of future sampling.

5.0 Phase V Groundwater Sampling

The first Phase V groundwater sampling was performed in December 2009. The scope of the sampling included the collection of groundwater samples from monitoring wells GHC-6, MW-3, MW-9, RIZ-8S, RIZ-8, RIZ-9, RIZ-10 and MW-2.

Tetra Tech Rizzo personnel gauged and purged the monitoring wells prior to sample collection, and the depth to water was measured relative to the PVC riser in each well using an electronic interface probe. Monitoring well RIZ-8S, located near the southern property boundary, ran dry shortly after commencement of purging, and could not be sampled during this event. We note that RIZ-8S is a shallow monitoring well installed at the bedrock – overburden interface. When installed it was anticipated that this well may be dry or contain an insufficient volume of groundwater for sample collection during some sampling events, because of seasonal fluctuations of the water table. A deeper monitoring well completed in bedrock, RIZ-8, was installed adjacent to RIZ-8S to provide the opportunity to collect groundwater samples at this location even during those periods when RIZ-8S is dry. In addition, we were unable to locate or sample MW-2 because it was buried under a snow pile.

No evidence of separate phase petroleum or odors was noted during the gauging of the monitoring wells. The depth to groundwater measured in the monitoring wells ranged from 7.67 feet bgs in GHC-6 to 39.68 feet bgs in MW-3. As noted previously, because of a limited saturated thickness and inadequate recharge while purging, a groundwater sample could not be obtained from monitoring well RIZ-8S.

Groundwater samples were collected from the monitoring wells noted above, with the exception of RIZ-8S, and submitted for laboratory analysis for dissolved MCP 14 Metals and VOCs by Method 8260.

5.1 Groundwater Analysis Results – December 2009

The laboratory analysis results for the groundwater samples collected in December 2009 indicated the presence of methyl tert-butyl ether (MTBE) in the sample from MW-9 at a concentration of 0.77 micrograms per liter ($\mu\text{g/l}$), well below the applicable RCGW-1 reportable concentration and GW-1 standard of 70 $\mu\text{g/l}$ that is applicable to the Site. No other VOCs were reported at concentrations exceeding the laboratory detection limits.

Barium was detected in five (5) samples at concentrations ranging from 0.031 milligrams per liter (mg/l) to 0.0177 mg/l, well below the RCGW-1 reportable concentration and MCP Method 1 GW-1 standard of 2 mg/l. In addition, zinc was detected in the sample from MW-9 at a concentration of 0.52 mg/l, below the applicable reportable concentrations of 0.90 mg/l. No other metals were reported at concentrations exceeding the laboratory detection limits. The laboratory certificates of analysis are in Appendix B.

The groundwater analysis results for the December 2009 samples are consistent with results observed for recent sampling events, and do not indicate the presence of VOCs or metals at concentrations exceeding MCP reportable concentrations or GW-1 standards.

6.0 Phase V Implementation

6.1 Sampling Schedule

It is anticipated that the next round of groundwater sampling will take place in June 2010, with samples collected at approximately 6 month intervals thereafter. Phase V status reports will be submitted at least every six months.

6.2 Modifications

No significant modifications have been made since the submission of the Phase IV Completion Statement for the Site.

6.3 Performance Evaluation

The remedial action is performing as expected and in accordance with the conclusions presented in the Phase IV Completion Statement. Compounds are not currently detected in groundwater at concentrations near or exceeding the applicable MCP GW-1 standards.

6.4 Permits and Approvals

A permit was issued by the Massachusetts Highway Department for installation of a monitoring well near the intersection of Route 1 south and Pine Street. No other permits or approvals are required to implement the work described herein.

7.0 Public Notifications

Pursuant to the requirements of the MCP, notices of the submission of this Phase V – Remedy Operation Status, Status Report #1 have been sent to the Walpole Board of Health and Chief Municipal Officer. Copies of the public notification letters are included in Appendix C. A copy of the Phase IV Completion Statement has also been submitted to the Public Information Repository at the Walpole Public Library. A copy of the Phase IV Transmittal Form (BWSC-108) is included as Appendix D.

Table 1 Groundwater Analytical Data (µg/L)

| Location: | RIZ-8 | RIZ-8 | RIZ-8 | RIZ-8 | RIZ-8 | RIZ-8S | RIZ-8S | RIZ-9 | RIZ-9 | RIZ-9 | RIZ-9 | RIZ-9 |
|-------------------------|-------------|--------------|------------|-------------|-------------|---------------|-------------|-------------|--------------|------------|-------------|-------------|
| Sample Name: | RIZ-8 | RIZ-8-042808 | RIZ-8-GW | RIZ-8 | RIZ-8 | RIZ-8S-042808 | RIZ-8S | RIZ-9 | RIZ-9-042808 | Riz-9-GW | RIZ-9 | RIZ-9 |
| Laboratory: | ALPHA | ALPHA | Spectrum | ALPHA | ALPHA | ALPHA | ALPHA | ALPHA | ALPHA | Spectrum | ALPHA | ALPHA |
| Laboratory I.D.: | L0718979-01 | L0806023-04 | SA87371-02 | L0907670-02 | L0918777-02 | L0806023-05 | L0907670-03 | L0718979-03 | L0806023-02 | SA87371-06 | L0907670-08 | L0918777-05 |
| Sample Date: | 19-Dec-07 | 28-Apr-08 | 11-Nov-08 | 10-Jun-09 | 21-Dec-09 | 28-Apr-08 | 10-Jun-09 | 19-Dec-07 | 28-Apr-08 | 11-Nov-08 | 10-Jun-09 | 28-Dec-09 |
| Consultant: | TTR | TTR | TTR | TTR | TTR | TTR | TTR | TTR | TTR | TTR | TTR | TTR |
| Chloroform | <0.75 | <0.50 | <1.0 | <0.50 | <0.5 | <0.50 | <0.50 | <0.75 | <0.50 | <1.0 | <0.50 | <0.5 |
| Methyl tert butyl ether | <1.0 | <0.50 | <1.0 | <0.50 | <0.5 | <0.50 | <0.50 | <1.0 | <0.50 | <1.0 | <0.50 | <0.5 |
| Toluene | <0.75 | <0.50 | <1.0 | <0.50 | <0.5 | <0.50 | 0.71 | <0.75 | <0.50 | <1.0 | <0.50 | <0.5 |
| Barium, Dissolved | 50.8 | 25.0 | 27.6 | 26 | 31 | 54.0 | 51 | 15.3 | 21.0 | 14.8 | 15 | <10 |
| Lead, Dissolved | <2.0 | <10.0 | <7.5 | <10 | <10 | <10.0 | <10 | <2.0 | <10.0 | <7.5 | <10 | <10 |
| Nickel, Dissolved | 4.8 | <25.0 | <5.0 | <25 | <25 | <25.0 | <25 | <2.0 | <25.0 | <5.0 | <25 | <25 |
| Thallium, Dissolved | <2.0 | <2.0 | <5.0 | <2.0 | <2 | <2.0 | <2.0 | <2.0 | <2.0 | <5.0 | <2.0 | <2 |
| Zinc, Dissolved | <20.0 | <50.0 | 26.4 | <50 | <50 | <50.0 | <50 | <20.0 | <50.0 | 20.0 | <50 | <50 |

Note: < or ND indicates compound not detected above Laboratory method detection limit
Bold Indicates exceedance of MCP Method 1 standard

Table 1 Groundwater Analytical Data (µg/L)

| Location: | RIZ-10 | RIZ-10 | RIZ-10 | RIZ-10 | RIZ-10 | RIZ-10 | GHC-6 | GHC-6 | GHC-6 | GHC-6 | GHC-6 | MW-9 |
|-------------------------|-------------|---------------|-------------|-------------|-------------|-------------|-------------|--------------|------------|-------------|-------------|-------------|
| Sample Name: | RIZ-10 | RIZ-10-042808 | RIZ-10-GW | RIZ-10 | RIZ-10 | RIZ-10 | GHC-6 | GHC-6-042808 | GHC-6-GW | GHC-6 | GHC-6 | MW-9 |
| Laboratory: | ALPHA | ALPHA | Spectrum | Alpha | ALPHA | ALPHA | ALPHA | ALPHA | Spectrum | ALPHA | ALPHA | ALPHA |
| Laboratory I.D.: | L0718979-02 | L0806023-01 | SA87371-01 | L0818397-01 | L0907670-01 | L0918777-06 | L0718979-04 | L0806023-06 | SA87371-08 | L0907670-05 | L0918777-03 | L0718979-05 |
| Sample Date: | 19-Dec-07 | 28-Apr-08 | 11-Nov-08 | 11-Dec-08 | 10-Jun-09 | 28-Dec-09 | 19-Dec-07 | 28-Apr-08 | 11-Nov-08 | 10-Jun-09 | 28-Dec-09 | 19-Dec-07 |
| Consultant: | TTR | TTR | TTR | TTR | TTR | TTR | TTR | TTR | TTR | TTR | TTR | TTR |
| Chloroform | <0.75 | <0.50 | <1.0 | | <0.50 | <0.5 | <0.75 | <0.50 | <1.0 | <0.50 | <0.5 | <0.75 |
| Methyl tert butyl ether | 1.2 | <0.50 | <1.0 | | <0.50 | <0.5 | <1.0 | <0.50 | <1.0 | <0.50 | <0.5 | 5.1 |
| Toluene | <0.75 | 0.73 | <1.0 | | <0.50 | <0.5 | <0.75 | <0.50 | <1.0 | <0.50 | <0.5 | <0.75 |
| Barium, Dissolved | 95.8 | 62.0 | 88.4 | | 148 | 99 | 45.9 | 59.0 | 36.8 | 66 | 39 | 7.0 |
| Lead, Dissolved | <2.0 | <10.0 | <7.5 | | <10 | <10 | <2.0 | <10.0 | <7.5 | <10 | <10 | <2.0 |
| Nickel, Dissolved | 7.9 | <25.0 | <5.0 | | <25 | <25 | <2.0 | <25.0 | <5.0 | <25 | <25 | <2.0 |
| Thallium, Dissolved | <2.0 | <2.0 | 11.6 | <2.0 | <2.0 | <2 | <2.0 | <2.0 | <5.0 | <2.0 | <2 | <2.0 |
| Zinc, Dissolved | 21.6 | <50.0 | 36.3 | | <50 | <50 | <20.0 | <50.0 | 21.6 | <50 | <50 | 25.9 |

Note: < or ND indicates compound not detected above Laboratory method detection limit
Bold Indicates exceedance of MCP Method 1 standard

Table 1 Groundwater Analytical Data (µg/L)

| Location: | MW-9 | MW-9 | MW-9 | MW-9 | RIZ-3 | RIZ-3 | RIZ-3 | RIZ-3 | RIZ-3 | MW-3 | MW-3 | MW-3 |
|-------------------------|-------------|------------|-------------|-------------|-------------|--------------|------------|-------------|-------------|-------------|-------------|------------|
| Sample Name: | MW-9-051408 | MW-9-GW | MW-9 | MW-9 | RIZ-3 | RIZ-3-051408 | RIZ-3-GW | RIZ-3 | RIZ-3 | MW-3 | MW-3-042808 | MW-3-GW |
| Laboratory: | ALPHA | Spectrum | ALPHA | ALPHA | ALPHA | ALPHA | Spectrum | ALPHA | ALPHA | ALPHA | ALPHA | Spectrum |
| Laboratory I.D.: | L0806993-02 | SA87371-04 | L0907670-04 | L0918777-01 | L0718979-06 | L0806993-01 | SA87371-03 | L0907670-06 | L0918777-04 | L0718979-07 | L0806023-03 | SA87371-07 |
| Sample Date: | 14-May-08 | 11-Nov-08 | 10-Jun-09 | 21-Dec-09 | 19-Dec-07 | 14-May-08 | 11-Nov-08 | 10-Jun-09 | 28-Dec-09 | 19-Dec-07 | 28-Apr-08 | 11-Nov-08 |
| Consultant: | TTR | TTR | TTR | TTR | TTR | TTR | TTR | TTR | TTR | TTR | TTR | TTR |
| Chloroform | 0.71 | 2.2 | 0.75 | <0.5 | <0.75 | <0.50 | <1.0 | <0.50 | <0.5 | <0.75 | <0.50 | <1.0 |
| Methyl tert butyl ether | 7.9 | 2.7 | <0.50 | 0.77 | <1.0 | <0.50 | <1.0 | <0.50 | <0.5 | 1.7 | <0.50 | <1.0 |
| Toluene | <0.50 | <1.0 | <0.50 | <0.5 | <0.75 | <0.50 | <1.0 | <0.50 | <0.5 | <0.75 | <0.50 | <1.0 |
| Barium, Dissolved | 13.0 | 18.6 | 29 | 56 | 25.6 | 44.0 | 86.2 | 13 | 177 | 15.2 | 10.0 | 11.4 |
| Lead, Dissolved | <10.0 | <7.5 | <10 | <10 | <2.0 | <10.0 | <7.5 | <10 | <10 | <2.0 | <10.0 | 8.8 |
| Nickel, Dissolved | | <5.0 | <25 | <25 | <2.0 | | <5.0 | <25 | <25 | <2.0 | <25.0 | <5.0 |
| Thallium, Dissolved | | <5.0 | <2.0 | <2 | <2.0 | | <5.0 | <2.0 | <2 | <2.0 | <2.0 | <5.0 |
| Zinc, Dissolved | | 34.7 | <50 | 52 | <20.0 | | 21.0 | <50 | <50 | <20.0 | <50.0 | 34.5 |

Note: < or ND indicates compound not detected above Laboratory method detection limit
Bold Indicates exceedance of MCP Method 1 standard

| Groundwater Analytical Data (µg/L) | | | | | | | | | |
|------------------------------------|-------------|-------------|-------------|------------|-------------|----------|----------|----------|----------|
| Table 1 | MW-3 | MW-3 | MW-2 | MW-2 | MW-2 | 2007 | 2007 | 2007 | 2007 |
| Location: | MW-3 | MW-3 | MW-2 | MW-2 | MW-2 | 2007 | 2007 | 2007 | 2007 |
| Sample Name: | MW-3 | MW-3 | MW-2-042808 | MW-2-GW | MW-2 | Method 1 | Method 1 | Method 1 | RCGW-1 |
| Laboratory: | ALPHA | ALPHA | ALPHA | Spectrum | ALPHA | Standard | Standard | Standard | Standard |
| Laboratory I.D.: | L0908197-01 | L0918777-07 | L0806023-07 | SA87371-05 | L0907670-07 | GW-1 | GW-2 | GW-3 | µg/L |
| Sample Date: | 8-Jun-09 | 28-Dec-09 | 28-Apr-08 | 11-Nov-08 | 10-Jun-09 | | | | |
| Consultant: | TTR | TTR | TTR | TTR | TTR | | | | |
| Chloroform | <0.50 | <0.5 | 2.20 | <1.0 | 1.0 | 70 | 50 | 20,000 | 50 |
| Methyl tert butyl ether | <0.50 | <0.5 | <0.50 | <1.0 | <0.50 | 70 | 50,000 | 50,000 | 70 |
| Toluene | <0.50 | <0.5 | <0.50 | <1.0 | <0.50 | 1,000 | 50,000 | 40,000 | 1,000 |
| Barium, Dissolved | 21 | <10 | 31.00 | 129 | 70 | 2,000 | NA | 50,000 | 2,000 |
| Lead, Dissolved | <10 | <10 | <10.0 | <7.5 | <10 | 15 | NA | 10 | 10 |
| Nickel, Dissolved | <25 | <25 | <25.0 | <5.0 | <25 | 100 | NA | 200 | 100 |
| Thallium, Dissolved | <2.0 | <2 | <2.0 | <5.0 | <2.0 | 2 | NA | 3000 | 2 |
| Zinc, Dissolved | <50 | <50 | <50.0 | 28.0 | <50 | 5,000 | NA | 900 | 900 |

Note: < or ND indicates compound not detected above Laboratory method detection limit
Bold Indicates exceedance of MCP Method 1 standard

Table 2. Groundwater Elevation Data - December 2010

| Monitoring Well I.D. | Relative Well Casing Elevation (ft) | Depth to Groundwater (ft) | Relative Groundwater Elevation (ft) |
|-----------------------------|--|----------------------------------|--|
| MW-2 | 240.90 | Well buried under snowpile | Well buried under snowpile |
| MW-3 | 236.67 | 39.68 | 197.08 |
| MW-9 | 256.08 | 28.81 | 227.27 |
| GHC-6 | 236.01 | 7.67 | 228.34 |
| RIZ-3 | 241.52 | 17.03 | 224.49 |
| RIZ-8 | 265.52 | 22.15 | 243.37 |
| RIZ-8S | 265.38 | 21.54 | 243.84 |
| RIZ-9 | 246.69 | 10.71 | 235.98 |
| RIZ-10 | No survey data | 37.88 | No survey data |

Notes:

1. Rim elevations for MW and GHC series wells from the "Groundwater Sampling Report, Winter-Spring 2004" Report, August 10, 2004
2. Rim elevations for RIZ-1 through RIZ-3 from April 10, 2006 Rizzo Associates survey
3. Rim elevations for RIZ-8 and RIZ-8S surveyed relative to MW-1, MW-8 and GHC-2 on April 25, 2008.
4. Rim elevations for RIZ-9 surveyed relative to RIZ-1 on April 25, 2008
5. Depth to water measured on December 21, 2009

Appendix A
Statement of Limitations and Conditions

Appendix B

Laboratory Certificates of Analysis

Appendix C

Copies of Public Notification Letters

Appendix D

BWSC-108 – Phase IV Transmittal Form