

**January 2019 Annual Ground Water  
Monitoring and Corrective Action  
Summary Report**

Intermountain Generating Facility  
Delta, Utah



Prepared for:  
Intermountain Power Service Corporation  
850 West Brush Wellman Road  
Delta, Utah 84624

Prepared by:  
Stantec Consulting Services, Inc.  
8160 South Highland Drive  
Sandy, UT 84093

Project No.: 203709098

January 28, 2019

# Sign-off Sheet and Signatures of Environmental Professionals

This document was prepared by Stantec Consulting Services Inc. ("Stantec") for Intermountain Power Service Corporation (the "Client"). The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by:



John G. Russell, III  
Utah PG #5216074-2250  
Sr. Hydrogeologist, Environmental Risk Manager



Reviewed by:



J. Clinton Rogers, PE  
Sr. Principal, Water



# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

## Table of Contents

<b>ABBREVIATIONS</b> .....	<b>I</b>
<b>1.0 INTRODUCTION</b> .....	<b>1.1</b>
1.1 BACKGROUND, DETECTION MONITORING PROGRAM 2015-2017 ACTIVITIES .....	1.1
<b>2.0 ASSESSMENT MONITORING PROGRAM, 2018 ACTIVITIES</b> .....	<b>2.1</b>
2.1 ASSESSMENT MONITORING RESULTS, MARCH AND JUNE 2018.....	2.1
2.1.1 Water Quality Analytical Results and Statistical Evaluation .....	2.1
2.1.2 Regional Ground Water Quality.....	2.3
2.2 APPENDIX IV CONSTITUENT CHARACTERIZATION OF NATURE AND EXTENT, OCTOBER 2018.....	2.4
2.3 SUMMARY HYDRAULIC CHARACTERISTICS .....	2.6
<b>3.0 PROPOSED 2019 GROUND WATER MONITORING AND CORRECTIVE ACTIONS</b> .....	<b>3.1</b>
3.1 ONGOING GROUND WATER RECOVERY AT EXISTING RECOVERY WELLS WR- 101, WR-102, AND WR-103 .....	3.1
3.2 SUMMARY OF PROPOSED ACTIONS .....	3.2

## LIST OF FIGURES

- Figure 1 General Site Location Map
- Figure 2 CCR Unit Monitoring Well Network
- Figure 3 March 2018 Potentiometric Map
- Figure 4 June 2018 Potentiometric Map
- Figure 5 October 2018 Potentiometric Map
- Figure 6 Appendix IV Constituent Exceedances
- Figure 7 Proposed, Supplemental Monitoring Wells

## LIST OF TABLES

- Table 1 Ground Water Monitoring Well Construction Details
- Table 2 Ground Water Monitoring Analytical Results

## LIST OF APPENDICES

- Appendix A Copies of Drilling Logs and Well Schematic Diagrams
- Appendix B A Copy of Stantec's Tabulation of UTL, GWPS, and Confidence Limit Data

# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

## Abbreviations

ASTM	American Standard for Testing and Materials
CCR	Coal Combustion Residuals
CB Landfill	Combustion By-Products Landfill
ft	Foot or feet
GWPS	Ground Water Protection Standard
IGF	Intermountain Generating Facility
IPSC	Intermountain Power Service Corporation
LCL	Lower Confidence Limit
MCL	Maximum Contaminant Level
mg/l	milligrams per liter
msl	mean sea level
PVC	Polyvinyl chloride
QA/QC	Quality Assurance and Quality Control
QAPP	Quality Assurance Project Plan
SAP	Sampling and Analysis Plan
SOPs	Standard Operating Procedures
Stantec	Stantec Consulting Services Inc.
SSI	Statistically Significant Increase
SSL	Statistically Significant Level
TDS	Total Dissolved Solids
UDEQ	Utah Department of Environmental Quality
UTL	Upper Tolerance Limit
US EPA	United States Environmental Protection Agency
USGS	United States Geological Survey

# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

INTRODUCTION  
January 28, 2019

## 1.0 INTRODUCTION

On behalf of Intermountain Power Service Corporation ("IPSC"), Stantec Consulting Services Inc. ("Stantec") has prepared this report to summarize IPSC's 2018 ground water monitoring program pursuant to the United States Environmental Protection Agency's ("US EPA") Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals (CCR) from Electric Utilities, 40 CFR 257 Subpart D (the "Federal CCR Rule") (and the corresponding Utah CCR Rule at Utah Admin. Code R315-319 (the "State CCR Rule") (collectively, the "CCR Rules")) at IPSC's Intermountain Generating Facility ("IGF") located approximately 10 miles north of Delta, Millard County, Utah. The monitoring program addresses elements prescribed by CCR Rule Parts §257.90 (R315-319-90) Applicability; §257.91 (R315-319-91) Ground Water Monitoring Systems; §257.93 (R315-319-93) Ground Water Sampling and Analysis Requirements; §257.94 (R315-319-94) Detection Monitoring Program; §257.95 (R315-319-95) Assessment Monitoring Program; and §257.96 (R315-319-96) Assessment of Corrective Measures.

This report is formatted in general accordance with reporting requisites prescribed within §257.90(e) (R315-319-90(e)). The report provides a summary of investigative activities implemented at the site by IPSC subsequent to IPSC's January 2018 *Annual Summary Report*. Activities conducted during 2018 entailed implementation of an Assessment Monitoring Program prescribed by §257.95 (315-319-95), including evaluation of ongoing, semi-annual, ground water monitoring data; establishment of Ground Water Protection Standards for Appendix IV constituents; and assessment of corrective measures, if and where needed.

### 1.1 BACKGROUND, DETECTION MONITORING PROGRAM 2015-2017 ACTIVITIES

As detailed within IPSC's November 2015 *CCR Unit Monitoring Well Design and Installation Summary Report*, IPSC installed a series of ground water monitoring wells to monitor uppermost ground water quality in up-gradient (e.g., 'background water quality') and down-gradient directions in relation to each of IPSC's three (3) CCR-regulated units, specifically including (reference Figures 1 and 2 for regional and site-specific, location maps):

- Combustion By-Products Landfill (CB Landfill);
- Bottom Ash Basin; and
- Waste Water Basin.

During late-October 2015, IPSC initiated its CCR Unit-specific monitoring, sampling, and analysis program for background and down-gradient monitoring wells, in accordance with IPSC's November 2015 *Ground Water Sampling and Analysis Plan*. As prescribed by §257.94(b) (R315-319-94(b)) for existing CCR-regulated landfills and surface impoundments, IPSC analyzed all ground water samples for Appendix III and Appendix IV constituents. As of October 17, 2017, IPSC completed eight (8) independent sampling events from each background and down-gradient monitoring well.

# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

## INTRODUCTION

January 28, 2019

In accordance with §257.90(e) (315-319-90(e)), IPSC's January 2018 *Annual Ground Water Monitoring Summary Report* presented the results of IPSC's eight ground water monitoring and sampling events that comprised IPSC's Detection Monitoring Program. All monitoring and sampling procedures were implemented in accordance with IPSC's November 2015 *CCR Unit Monitoring Well Design and Installation Summary Report* and corollary *Ground Water Sampling and Analysis Plan* report. All three predecessor reports are stand-alone documents that are incorporated by reference herein.

# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

ASSESSMENT MONITORING PROGRAM, 2018 ACTIVITIES  
January 28, 2019

## 2.0 ASSESSMENT MONITORING PROGRAM, 2018 ACTIVITIES

### 2.1 ASSESSMENT MONITORING RESULTS, MARCH AND JUNE 2018

As reported in IPSC's January 2018 *Annual Summary Report*, statistical analyses indicated potential statistically significant increases over background concentrations of certain Appendix III constituents associated with each of the three CCR Units. Therefore, IPSC implemented an Assessment Monitoring Program at each of the three CCR Units in accordance with measures and timeframes prescribed by §257.95 (315-319-95).

Background and down-gradient CCR unit-specific, ground water monitoring wells were purged and sampled as part of the Assessment Monitoring Program during March and June 2018. All purging, sampling, laboratory analysis, and Quality Assurance/Quality Control (QA/QC) protocols were administered as specified within IPSC's November 2015 Ground Water Sampling and Analysis Plan.

Table 1 presents a summary of all ground water monitoring well construction details and completion dates. Appendix A includes copies of drilling logs and well schematic diagrams. Tabulated analytical results and water level measurement data associated with the monitoring events are presented in Table 2 herein.

Figures 3 and 4 depict estimated regional ground water flow patterns based on March and June 2018 water level measurements at the CCR unit-specific monitoring wells. Regional and localized ground water flow patterns were similar to those observed during the 2015-2017 Detection Monitoring Program. The predominant ground water flow direction is from the east/northeast toward the west/southwest, with more prevalent southwesterly component of flow in the vicinity of the Bottom Ash Basin and the Waste Water Basin areas.

Stantec's review of natural topographic elevations presented on the 1971 United States Geological Survey (USGS) *Rain Lake, Utah Quadrangle* topographic map indicates that the natural topography grades generally toward the west across the generalized vicinity of the CB Landfill (T15S, R7W, Section 11), while the natural grade becomes more southwesterly in the vicinity of the Bottom Ash Basin (T15S, R7W, Section 14) and the Waste Water Basin (T15S, R7W, Sections 14 and 23) and lands located south and southwest of the surface impoundments [i.e., on-site lands located north of the Brush Wellman Highway (i.e., State Route 174)].

#### 2.1.1 Water Quality Analytical Results and Statistical Evaluation

On behalf of IPSC, Detection and Assessment Monitoring Program ground water quality results were utilized by Stantec to establish Ground Water Protection Standards ("GWPSs") for each Appendix IV constituent and each CCR-regulated unit, in accordance with CCR Rule §257.95(d)(2) and §257.95(h) (R315-319-95(d)(2) and R315-319-95(h)) and the following general guidance sources:



# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

ASSESSMENT MONITORING PROGRAM, 2018 ACTIVITIES  
January 28, 2019

- US EPA "Unified Guidance" document (*Statistical Analysis of Ground Water Monitoring Data at RCRA Facilities, Unified Guidance*, March 2009, EPA 530/R-09-007);
- the Interstate Technology and Regulatory Council's ("ITRC") 2013, *Groundwater Statistics for Monitoring and Compliance, Statistical Tools for the Project Lifecycle*, Online Guidance; and
- Ofungwu, J. (2014) *Statistical Applications for Environmental Analysis and Risk Assessment*. Hoboken, New Jersey: John Wiley and Sons, Inc.

The Unified Guidance recommends the use of Upper Tolerance Limits ("UTLs") for Assessment Monitoring. Tolerance limits consist of two values expected to contain a pre-specified proportion of the underlying data population with a specified level of confidence. For example, a 95% tolerance interval with a 95% confidence level, there is 95% confidence that, on average, 95% of the data population is contained within the interval. The upper, one-sided UTL is used commonly in environmental monitoring and is constructed using background data (Ofungwu 2014).

In the context of the CCR Rules, data from all background wells is used to estimate a 95% UTL with 95% coverage for each Appendix IV constituent at each CCR-regulated unit. This represents a 95% upper confidence limit on the 95th percentile. In Assessment Monitoring, the UTL may be used to represent the GWPS if: 1) the constituent does not have an established Maximum Contaminant Level ("MCL"); or 2) the background UTL exceeds the established MCL.

Three Appendix IV constituents do not have a US EPA-promulgated MCL: Cobalt, Lithium, and Molybdenum. However, the US EPA amended the original CCR rule in July 2018 and established the following alternate regulatory limits for these compounds: Cobalt (0.006 milligrams per liter, mg/L), Lithium (0.04 mg/L), and Molybdenum (0.1 mg/L).

As specified by CCR Rule §257.95(d)(2) and §257.95(h) (R315-319-95(d)(2) and R315-319-95(h)), each constituent-specific GWPS shall be either the MCL for that constituent (or above-referenced, CCR Rule-established alternate regulatory limits for Cobalt, Lithium, and Molybdenum) or the UTL in instances where the UTL exceeds the established MCL. Appendix B presents a tabulation of UTL and GWPS data for each CCR unit and each monitoring well.

During Assessment Monitoring, the site is assumed to be free of impacts, unless proven otherwise through statistical testing. The statistical null hypothesis ( $H_0$ ) represents a mean downgradient concentration less than or equal to the GWPS, while the alternate hypothesis ( $H_a$ ) represents a mean downgradient concentration greater than the GWPS (ITRC, 2013). To test this hypothesis, the Lower Confidence Limits (LCL) around the mean downgradient Appendix IV concentrations are estimated using data collected during the Detection Monitoring and Assessment Monitoring programs. The LCL for each constituent/well pair are then compared to their respective GWPS. If the LCL exceeds the GWPS, then downgradient concentrations are at a statistically significant level (SSL) above the GWPS, which *may* trigger corrective action at the Site.

It should be noted that individual sample results of Appendix IV constituents above the GWPS during Assessment Monitoring are not necessarily a demonstration of statistically significant exceedances of the GWPS. The LCL must exceed the GWPS to conclude a statistically significant



# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

ASSESSMENT MONITORING PROGRAM, 2018 ACTIVITIES  
January 28, 2019

increase. However, if individual constituent concentrations exceed GWPSs, then Assessment Monitoring is to continue at that specific CCR unit. Appendix B presents a tabulation of UTL, GWPS, and Confidence Limit data for each CCR unit and each monitoring well.

In summary, the quantitative analytical results associated with monitoring under the CCR Rule indicated the following Appendix IV constituent-specific LCL exceedances above corollary GWPS concentrations at ground water monitoring wells located at each CCR-regulated unit (all concentrations in mg/L):

<u>CCR Unit</u>	<u>Well</u>	<u>Appendix IV Constituent</u>	<u>LCL Concentration</u>	<u>GWPS Concentration</u>
CB Landfill		NONE	-----	-----
Bottom Ash Basin	BAC-2	Molybdenum	0.1506	0.1
	BAC-3	Lithium	0.812	0.7415
Waste Water Basin	WWC-1	Arsenic	0.01496	0.01275
	WWC-2	Arsenic	0.01415	0.01275
	WWC-3	Arsenic	0.02045	0.01275

## 2.1.2 Regional Ground Water Quality

The site is located within the Basin and Range Physiographic Province and the Sevier Desert on a more localized scale. It is well-documented throughout arid Utah that localized, historical Lake Bonneville basin-fill sediments (that underlie the site) and associated uppermost ground water located in close proximity to igneous/volcanic and metamorphic formations contain high concentrations of abundant, naturally-occurring Arsenic (typically attributable to chemical and physical weathering of arsenopyrite). Likewise, Basin and Range Physiographic Province sediments, surface water, and ground water can also exhibit elevated concentrations of natural Lithium – especially in areas that are characterized by hydrologically-closed basins and thermal ground water.

Arsenic and Lithium concentrations within uppermost ground water can vary considerably, over short, lateral distances in many instances. Indeed, ground water quality data associated with the site exhibits considerable variation in Arsenic and Lithium concentrations across relatively-short, lateral distances, including up-gradient monitoring wells.

Stantec's familiarity with the regional geology surrounding the site, as well as review of United States Geological Survey (USGS) geologic maps associated with areas surrounding, and in a presumed up-gradient direction (northeast of) in relation to the site, indicate vast acreages encompassing square miles of volcanic and metamorphic mountainous areas with interspersed Lake Bonneville-related sediments, which could provide source material for soluble Arsenic and Lithium to impact localized, uppermost ground water quality. Baker Hot Springs and the mountainous Butte Fumarole formation are located a few miles northwest of the site, for instance. Reportedly, there are third-party companies investigating the possibility of Lithium mining/brine processing within nearby areas such as the Sevier Lake watershed and Tule Valley, areas located several miles southwest and west of the site.



# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

ASSESSMENT MONITORING PROGRAM, 2018 ACTIVITIES  
January 28, 2019

## 2.2 APPENDIX IV CONSTITUENT CHARACTERIZATION OF NATURE AND EXTENT, OCTOBER 2018

Upon review of Appendix IV constituent analytical results, and in accordance with §257.95(g)(1)(iii), during late-March 2018 IPSC contracted Stantec and Cascade Drilling, Environmental Drilling Services of Salt Lake City, Utah (a Utah-certified, water well driller), to install supplemental, monitoring wells at the facility property boundaries located in presumed, down-gradient directions in relation to the three CCR units. The wells were drilled, soil sampled, installed, developed, and surveyed in relation to all other monitoring wells in similar fashion as the original CCR Unit boundary monitoring wells.

One (1) ground water monitoring well was installed at the property boundary located in a presumed, down-gradient direction in relation to the CB Landfill (well CL-U-9), while two (2) ground water monitoring wells were installed in a presumed, down-gradient direction in relation to the Waste Water Basin (wells WWC-6 and WWC-7). Additionally, new monitoring well CL-U-3 was installed in a presumed up-gradient direction in relation to the CB Landfill to provide additional up-gradient/background information, supplemental to the other up-gradient monitoring wells CL-U-1 and CL-U-2.

Reference Figure 5 for the locations of these property boundary, ground water monitoring wells, a potentiometric map that is based on October 2018 water level measurement data. Water levels were not measured at monitoring wells CL-U-3 and CL-W-9 during October 2018. Copies of Drilling Logs and schematic well diagrams and/or well construction details are presented in Appendix A herein. As may be noted by review of the drill logs, subsurface lithologic characteristics were similar to those encountered during the installation of the original monitoring wells. Well screen intervals were placed to permit monitoring of the uppermost aquifer at each location.

Also identified on Figure 5 are other ground water monitoring wells, independent of those used as part of CCR Rule compliance, that IPSC has been monitoring while complying with UDEQ regulatory requirements specified by the facility's DWQ Ground Water Discharge Permit No. UGW270004. The most recent permit renewal was issued by the UDEQ to IPSC's Intermountain Generating Facility, effective May 24, 2016. The Ground Water Discharge Permit does not require monitoring of all the CCR Rule-specified analytes such as Appendix IV constituents.

In an effort to investigate Appendix IV constituent concentrations in uppermost ground water located in apparent down-gradient directions in relation to the Bottom Ash Basin and Waste Water Basin as part of CCR Rule compliance, IPSC began monitoring/sampling some of the ground water monitoring wells associated with IPSC's Ground Water Discharge Permit monitoring program, specifically wells: RW-3, RW-4, RW-5, RW-6, RW-7, and RW-9, identified on Figure 5. Monitoring wells RW-4 and RW-7 are located in close proximity to, and in presumed, down-gradient directions in relation to the Waste Water Basin, while the RW-3, -5, -6, and -9 wells are located in presumed, down-gradient directions in relation to the Bottom Ash Basin. Well RW-6 is

## ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

ASSESSMENT MONITORING PROGRAM, 2018 ACTIVITIES  
January 28, 2019

located down-gradient of the Bottom Ash Basin and in close proximity to the property boundary, as prescribed by §257.95(g)(1)(iii) (R315-319-95(g)).

The RW wells were drilled, soil sampled, installed, developed, and surveyed in relation to all other monitoring wells in similar fashion as the original CCR Unit boundary, monitoring wells, as approved by the UDEQ as part of IPSC's compliance with its Ground water Discharge Permit. The installations of the RW wells were observed and logged by JBR Environmental Consultants, an environmental engineering firm acquired by Stantec in 2014. Mr. John Russell was a long-time employee with JBR Environmental Consultants and continues supporting IPSC with Stantec currently. Copies of Drilling Logs associated with the RW wells are presented in Appendix A herein. As may be noted by review of the drill logs, subsurface lithologic characteristics were similar to those encountered during the during and installation of the original monitoring wells. Well screen intervals were placed to permit monitoring of the uppermost aquifer at each location.

During October 2018, IPSC monitored/sampled all of the historical CCR Rule monitoring wells, as wells as down-gradient monitoring wells WWC-6, WWC-7, and the RW wells. All ground water monitoring wells were purged and sampled in accordance with measures detailed in IPSC's November 2015 *Ground Water Sampling and Analysis Plan*. There were no exceedances of GWPSs at CB Landfill boundary, monitoring wells. As noted on Figure 6, the only Appendix IV exceedances of respective GWPSs were Bottom Ash Basin monitoring wells BAC-2 (Molybdenum) and BAC-3 (Lithium) and Waste Water Basin monitoring wells WWC-1, WWC-2, and WWC-3 (Arsenic).

Although down-gradient property boundary, monitoring wells WWC-6, WWC-7, and RW-6 did not contain elevated Appendix IV constituent concentrations during the lone October 2018 sampling event, it must be noted that in order to establish appropriate trend-analysis and comparison to Appendix IV constituent GWPSs, additional sampling events and water quality data at these specific wells are necessary; i.e., a one-time sampling event, such as in October 2018, is insufficient for appropriate statistical analysis. Additional future sampling events will help generate supplemental data that will be evaluated statistically and provide for more definitive investigation of water quality located down-gradient of the Bottom Ash Basin and the Waste Water Basin.

IPSC's January 2019 *Assessment of Corrective Measures and Amended Corrective Action Plan* report, which was submitted to the UDEQ in January 2019, outlines IPSC's proposed approach for ongoing ground water quality monitoring and corrective action compliance. IPSC anticipates installing additional ground water monitoring wells during 2019 to help define more precisely Appendix IV concentrations in ground water located down-gradient of the Bottom Ash Basin and the Waste Water Basin. IPSC will also continue semi-annual ground water monitoring, sampling, and statistical analysis in accordance with §257.95(d)(1) (R315-319-95(d)(1)).

# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

ASSESSMENT MONITORING PROGRAM, 2018 ACTIVITIES  
January 28, 2019

## 2.3 SUMMARY HYDRAULIC CHARACTERISTICS

As detailed within IPSC's November 2015 *CCR Unit Monitoring Well Design and Installation Summary Report*, and as also identified during subsequent, supplemental monitoring well installations, the lithologic characteristics comprising the uppermost aquifer beneath the site vary significantly between monitoring well locations. Typically, the 20-foot well screen interval of each monitoring well intersects the following example, subsurface, lithologic materials: clays; silty clays; sandy clays; silts within a clay-rich matrix; sands within a clay-rich matrix; silts; and fine- to medium-grained sands with intervening clay layers of a few inches to a few feet in thickness.

Hydraulic characteristics will vary significantly, both vertically and horizontally, due to the heterogenous nature of the variable, subsurface lithologies comprising the uppermost aquifer. For instance, the effective porosity (e.g., specific yield), hydraulic conductivity, transmissivity, and linear ground water flow velocity of the uppermost aquifer beneath the site will vary considerably, depending on site-specific location.

As detailed in IPSC's January 2019 *Assessment of Corrective Measures and Amended Corrective Action Plan* report, historical ground water flow characteristics were used to identify proposed supplemental monitoring and recovery well locations, anticipated to be positioned in down-gradient locations in relation to the Bottom Ash Basin and the Waste Water Basin. The locations of the proposed wells are based in part on historical data generated during IPSC's compliance with its Ground Water Discharge Permit program, which included ground water modeling based on pump-testing of three wells located in close proximity to, and down-gradient of, the Bottom Ash Basin. Each of the well screen intervals of the three pump-tested wells are located within the uppermost aquifer, as will the well screens of all proposed monitoring wells.

Stantec constructed and calibrated a three-dimensional, numerical model to simulate ground water flow and fate and transport of TDS in ground water beneath the Site, based on pump-testing of existing, ground water recovery wells. The model was developed generally in accordance with ASTM International's (American Standard for Testing and Materials) *Standard Guide for Application of Groundwater Model to a Site-Specific Problem* and the current version of United States Geological Survey (USGS) *Modular Three-Dimensional Finite Difference Groundwater Flow Model (MODFLOW-2005)*.

Stantec extrapolated that the down-gradient leading edge of the TDS plume located down-gradient of the Bottom Ash Basin appears to be migrating naturally toward the southwest at an approximate rate of 150 to 180 feet per year. However, this is a generalized plume migration rate estimate, considering the relatively large, lateral distances between water quality monitoring well locations and the highly-varied, lithologic characteristics of the uppermost aquifer underlying the site. The TDS plume remains within IPSC property boundaries and currently poses no significant risk to human health or the environment.

In light of the clay-rich nature of the uppermost aquifer beneath the site, Stantec anticipates that Appendix IV constituents, such as Arsenic, Molybdenum, and Lithium, would not be expected to migrate at the same velocity as natural ground water or TDS. Such constituents



# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

ASSESSMENT MONITORING PROGRAM, 2018 ACTIVITIES

January 28, 2019

would be expected to be retarded to varying degrees and move at a much slower pace within the aquifer, as a result of natural attenuation processes, such as adsorption, cationic exchange, dispersion, dilution, and biological degradation, etc.

# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

PROPOSED 2019 GROUND WATER MONITORING AND CORRECTIVE ACTIONS  
January 28, 2019

## 3.0 PROPOSED 2019 GROUND WATER MONITORING AND CORRECTIVE ACTIONS

IPSC's January 2019 *Assessment of Corrective Measures and Amended Corrective Action Plan* report, which was approved by the UDEQ in January 2019, details IPSC's proposed approach for ongoing ground water quality monitoring and corrective action compliance. IPSC anticipates installing additional ground water monitoring wells during 2019 to help define more precisely Appendix IV concentrations in ground water located down-gradient of the Bottom Ash Basin and the Waste Water Basin. Additional ground water recovery wells will also be installed, pump-tested, and monitored to help provide control of the down-gradient leading edge of TDS, as well as any Appendix IV constituent plume that might also warrant control. Reference Figure 7 herein for locations of proposed wells located down-gradient of the Bottom Ash Basin and the Waste Water Basin.

Proposed wells will be installed and constructed in similar fashion as existing wells were designed and constructed to satisfy the requirements of CCR Rule Title 40, Part §257.91 (R315-319-91). Existing and proposed wells will be monitored and sampled in accordance with protocol outlined within IPSC's November 2015 *Ground Water Sampling and Analysis Plan*. IPSC will continue semi-annual, ground water monitoring, sampling, and statistical analysis in accordance with §257.95(d)(1) (R315-319-95(d)(1)). The following report sections provide a summary of IPSC's proposed ground water monitoring and corrective action program.

### 3.1 ONGOING GROUND WATER RECOVERY AT EXISTING RECOVERY WELLS WR-101, WR-102, AND WR-103

IPSC intends to continue operation of existing ground water recovery wells WR-101, WR-102, and WR-103 identified on Figure 7. The three wells are recovering ground water that contains elevated concentrations of TDS, located in relatively close proximity to the apparent historical TDS release areas associated with the Bottom Ash Basin. Wells WR-102 and WR-103 are located generally along the apparent TDS plume centerline, as explained in detail in IPSC's 2016 *Updated Corrective Action Plan*. Continued removal of TDS-enriched ground water from each of these three wells is helping reduce the total mass of TDS within the uppermost aquifer beneath the site in a generalized down-gradient/southwesterly direction in relation to the Bottom Ash Basin.

# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

PROPOSED 2019 GROUND WATER MONITORING AND CORRECTIVE ACTIONS  
January 28, 2019

## 3.2 SUMMARY OF PROPOSED ACTIONS

IPSC and Stantec have reviewed analytical data and are proposing supplemental ground water recovery and investigative Tasks designed to:

- 1) Expand the current network of recovery wells intended to control the down-gradient, leading edge of the TDS plume associated with historical releases from the Bottom Ash Basin.

Additional recovery wells will be installed at approximate 100-ft. lateral spacings, generally northeast of existing well RW-6, which currently contains TDS concentrations representative of background TDS concentrations. The proposed wells will be installed to intercept ground water near the down-gradient leading edge of the TDS plume, along a generalized northwest-southeast oriented line of wells (i.e., perpendicular to the predominant, southwesterly ground water flow direction), as discussed in detail in IPSC's 2016 *Updated Corrective Action Plan*. The line of wells will be positioned approximately 600 feet due northeast of well RW-6. Each proposed recovery well will be constructed of 6-inch diameter, Schedule 40 polyvinyl chloride (PVC) piping, approximately 80-feet deep with well screen intervals of approximately 25 feet. The wells will be located in close proximity to the apparent, centerline of the TDS plume.

Additionally, 6-inch diameter, 76-ft. deep, well RW-5 (20-ft. well screen interval) is anticipated to be a suitable recovery well in light of its total depth, well screen interval, and static water level measurements (~ 46-ft. below grade) to date. Once supplemental recovery wells are installed northeast of well RW-6, IPSC intends to conduct a series of pump-tests to investigate well yields and radial cones of influence/capture associated with the newly-installed wells and existing well RW-5. The respective well yields will be analyzed using the ground water model to extrapolate potential lateral extent of capture for each well and help extrapolate yields and possible capture zones for supplemental ground water recovery wells.

- 2) Delineate ground water quality more thoroughly in apparent down-gradient directions in relation to recently-discovered, apparent release areas (west and south sides) at the Waste Water Basin by installing additional monitoring wells located: south of WWC-1; east of WWC-6; and between wells WWC-6 and WWC-7.

Well installations would be sequenced such that initial wells will be installed on-site, followed-by off-site wells located farther south/southwest, depending on water quality and ground water flow characteristics identified during the sequenced phases of investigation. Select wells will be pump-tested to help investigate local hydrogeologic characteristics, in similar fashion as proposed above and conducted at the site in the past.

Well RW-4 (4-inch diameter, 36-ft. deep; well screen: 26-36 feet; static water level approximates 20.5-ft. below top of casing), which is located in close proximity to and



# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

## PROPOSED 2019 GROUND WATER MONITORING AND CORRECTIVE ACTIONS

January 28, 2019

down-gradient from, the northwestern-most corner of the Waste Water Basin, would also be pump-tested in similar fashion as other wells. The respective well yield will be analyzed using the ground water model to extrapolate potential lateral extent of capture for each well and help extrapolate yields and possible capture zones for supplemental ground water recovery wells.

- 3) Following the sequential TDS plume investigation proposed in above Task #2, IPSC intends to initiate ground water recovery to control the migration of the TDS plume down-gradient of the Waste Water Basin. Select ground water recovery wells will be installed based on Task #2 findings. The intent of the recovery well program will be to control the down-gradient leading edge of the TDS plume associated with the Waste Water Basin.
- 4) For the foreseeable future, the following wells will be monitored as part of CCR Rule compliance. It is recommended that the following list be amended, as site conditions and future monitoring results warrant (reference Figure 7):
  - Monitoring of CB Landfill: wells CLU-1; CLU-2; CLW-1 through CLW-9; and WDB-19.
  - Monitoring of Bottom Ash Basin: wells BAU-1; BAU-2; BAC-1 through BAC-7; RW-1; RW-3; RW-5, RW-8; WDB-5; EMW-4U; and EMW-5U.
  - Monitoring of Waste Water Basin: WWU-1; WWU-2; WWC-1 through WWC-7; RW-4; and RW-7.

Upon implementation of the enhanced ground water recovery and monitoring program proposed in this report, IPSC will evaluate the degree to which ground water recovery and natural attenuation processes control the down-gradient leading edges of TDS plumes located down-gradient of the Bottom Ash Basin and the Waste Water Basin. IPSC also intends to evaluate potential alternative means for ongoing enhancement of remediating TDS mass from the uppermost aquifer beneath the site. IPSC will continue to conduct and report to the UDEQ its routine, semi-annual, ground water monitoring and remediation program in formal Summary Reports.



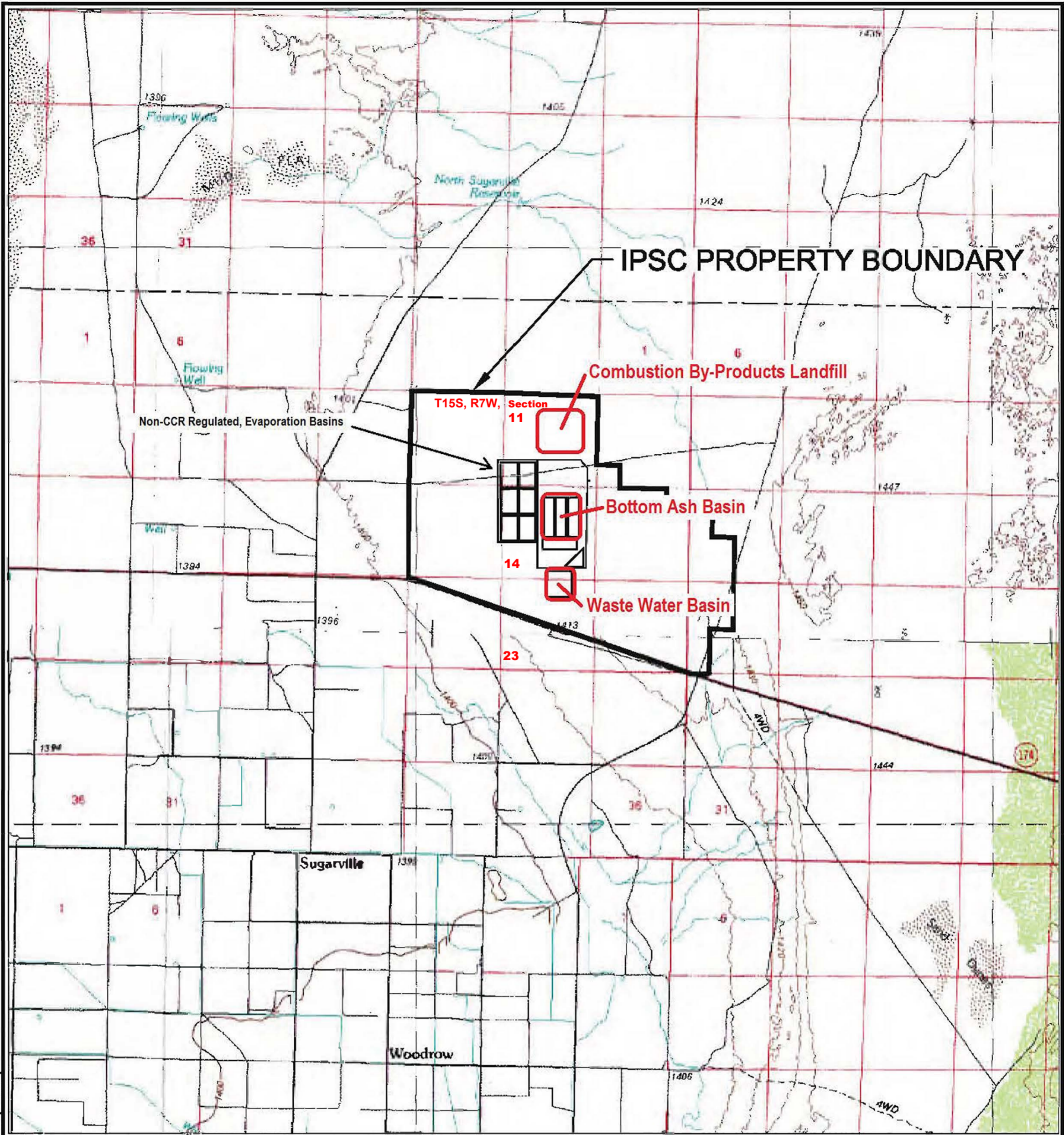
# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

January 28, 2019

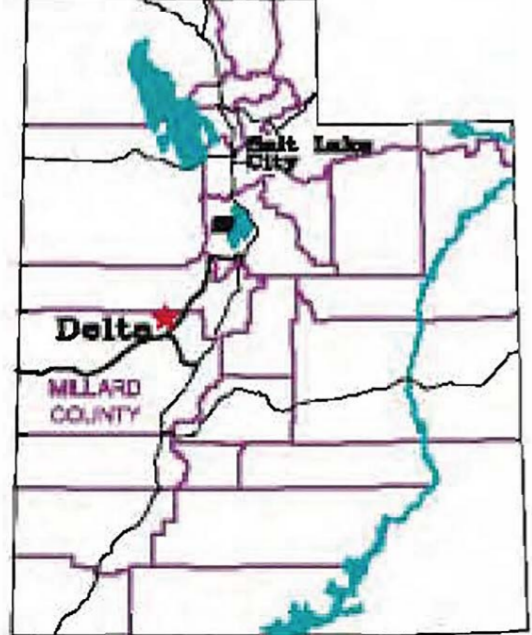
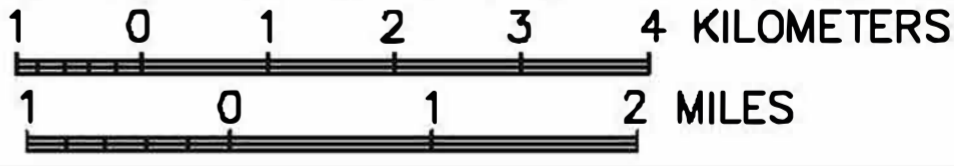
## Figure 1 General Site Location Map



drawings\ipsc-04\Fig2 Site Topographic Map.dwg



BASE FROM USGS 1:100,000 SCALE METRIC TOPOGRAPHIC MAPS: LYNN DAL, UTAH, 1979 AND DELTA, UTAH, 1989.



CCR-Regulated Units  
DELTA, UTAH

FIGURE 1  
SITE TOPOGRAPHIC MAP



DESIGN BY JR    DRAWN BY CP    G/D BY    SCALE 1"=1000'

DATE DRAWN	1-26-17
REVISION	



# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

January 28, 2019

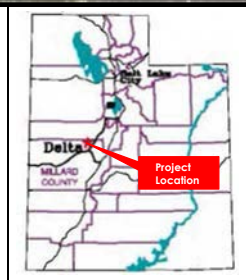
## Figure 2. CCR Units Location Map



**Legend**

**CCR Unit**

N  
↑  
↓



**INTERMOUNTAIN GENERATING FACILITY**

**FIGURE 2**  
**Site-Specific Location Map**

<small>DRAWN BY</small> JR	<small>DATE DRAWN</small> 9/30/2016
<small>SCALE</small> 1 in. approx. 1700 ft.	
<small>PROJECT</small> 203709098.409	

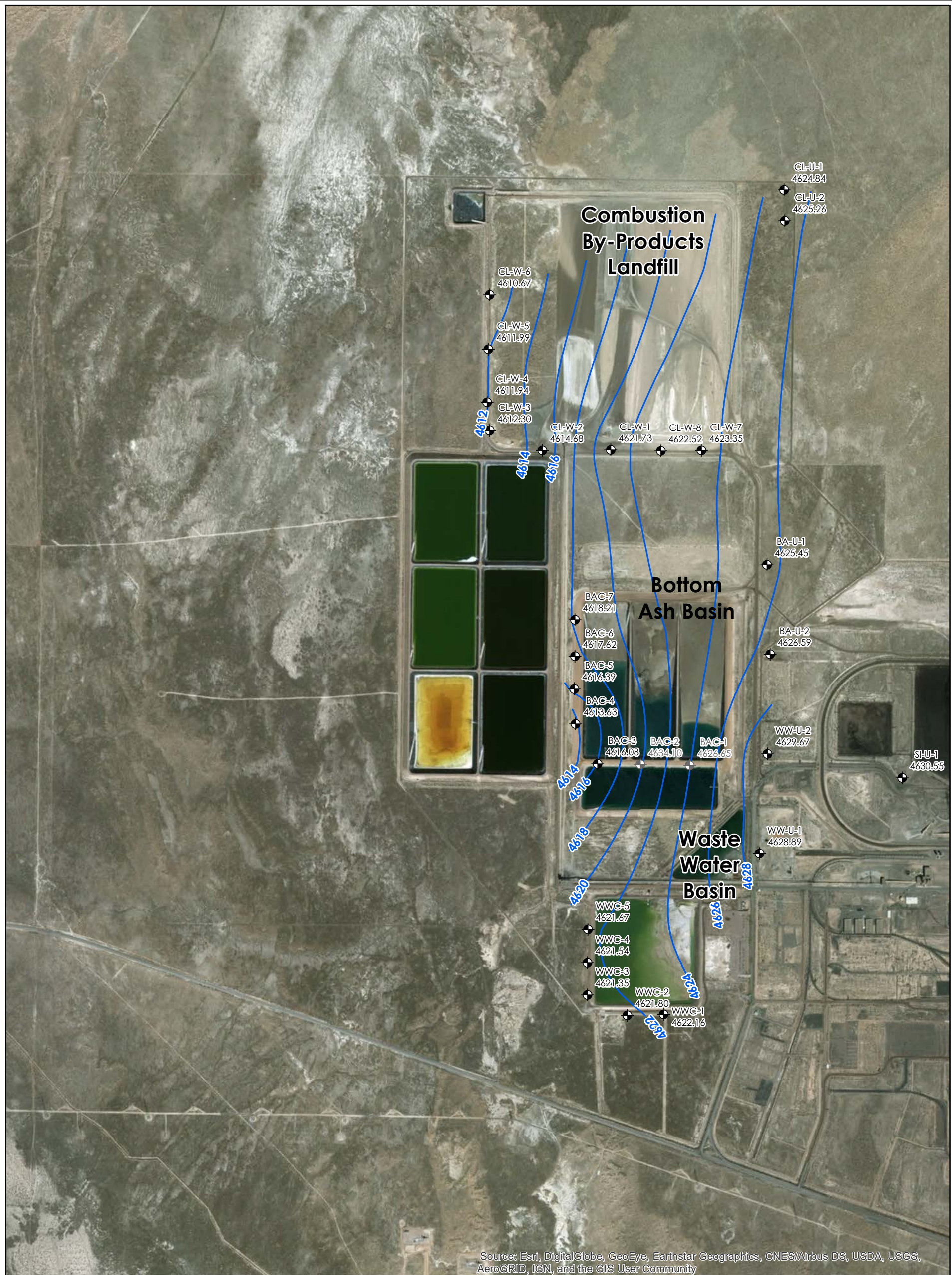
**Stantec**

# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

January 28, 2019

## **Figures 3 through 5. Potentiometric Maps for Assessment Monitoring Program, Ground Water Monitoring Events**



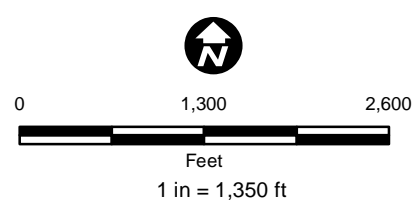


**LEGEND:**

- MONITORING WELL
- GROUND WATER CONTOUR

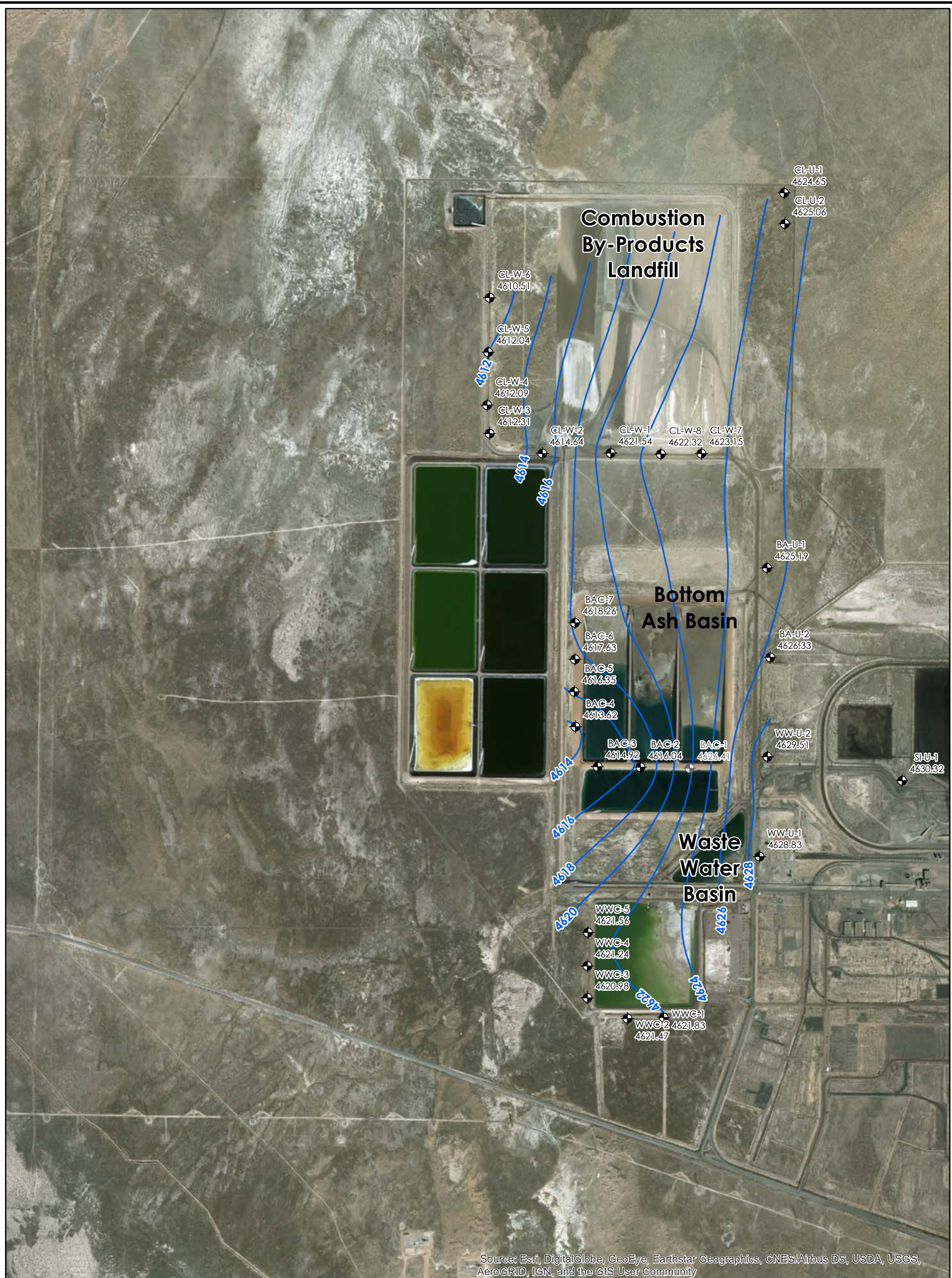
**NOTE:**

- 1) DATA COLLECTED MARCH 2018
- 2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL



	FOR: INTERMOUNTAIN POWER SERVICE CORP. INTERMOUNTAIN GENERATION FACILITY DELTA, UTAH		<b>FIRST QUARTER 2018 POTENTIOMETRIC SURFACE MAP</b>		FIGURE:  <b>3</b>
	JOB NUMBER: 203709098	DRAWN BY: CK	CHECKED BY: ALL	APPROVED BY:	DATE: 08/13/18



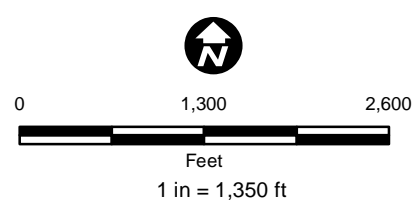


**LEGEND:**

- MONITORING WELL
- GROUND WATER CONTOUR

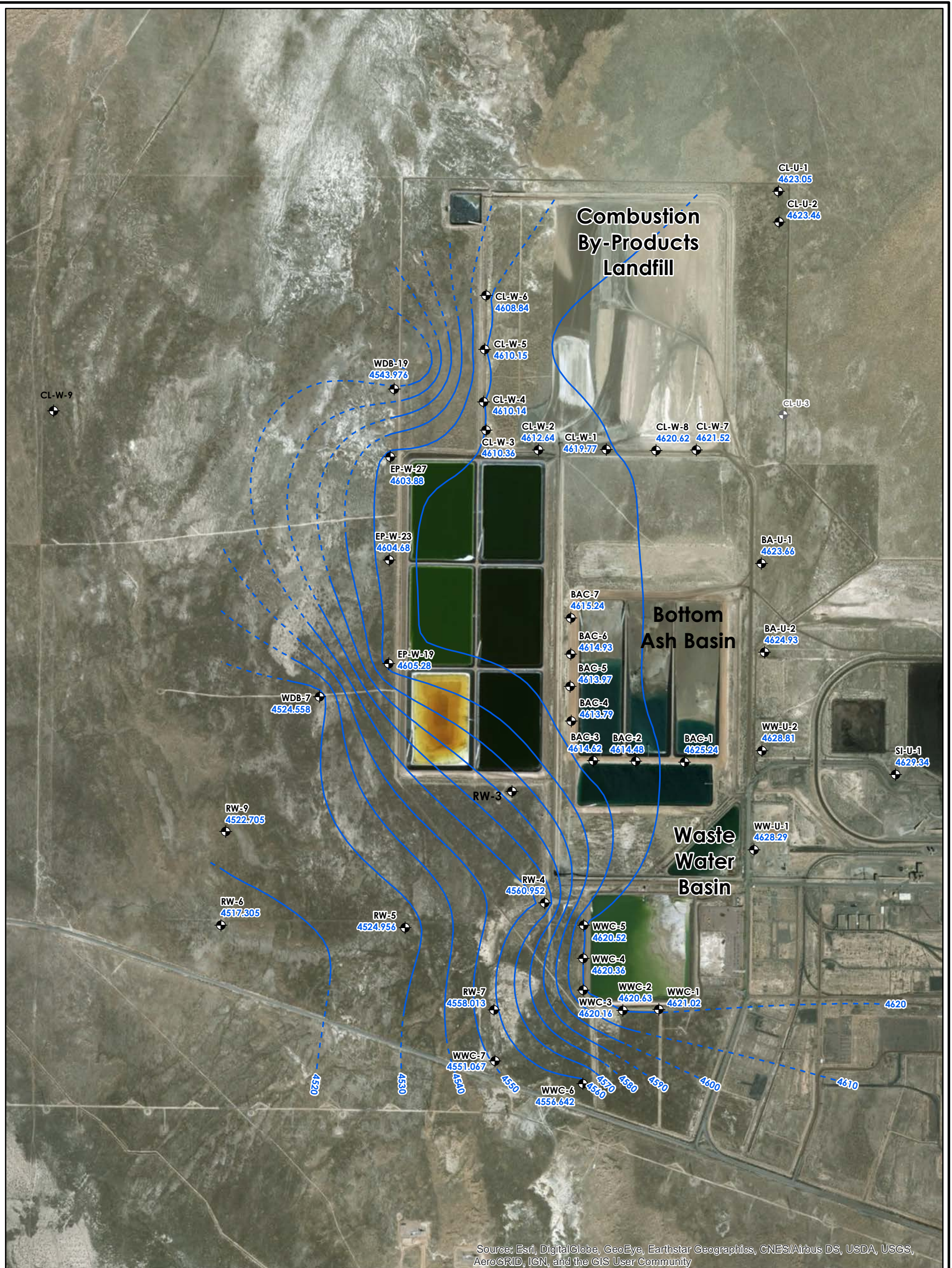
**NOTE:**

- 1) DATA COLLECTED JUNE 2018
- 2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL



	FOR:		SECOND QUARTER 2018 POTENTIOMETRIC SURFACE MAP		FIGURE:
	INTERMOUNTAIN POWER SERVICE CORP. INTERMOUNTAIN GENERATION FACILITY DELTA, UTAH		4		
JOB NUMBER: 203709098	DRAWN BY: CK	CHECKED BY: ALL	APPROVED BY:	DATE: 08/13/18	





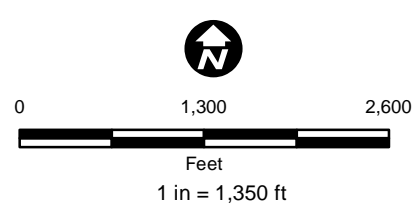
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**LEGEND:**

- MONITORING WELL (GREYED WHEN NOT USED FOR CONTOURING)
- GROUND WATER CONTOUR

**NOTE:**

- 1) DATA COLLECTED OCTOBER 2018
- 2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL



	FOR:		OCTOBER 2018 POTENTIOMETRIC SURFACE MAP		FIGURE:
	INTERMOUNTAIN POWER SERVICE CORP. INTERMOUNTAIN GENERATION FACILITY DELTA, UTAH		ALL		5
JOB NUMBER: 203709098	DRAWN BY: CK	CHECKED BY:	APPROVED BY:	DATE:	11/12/18

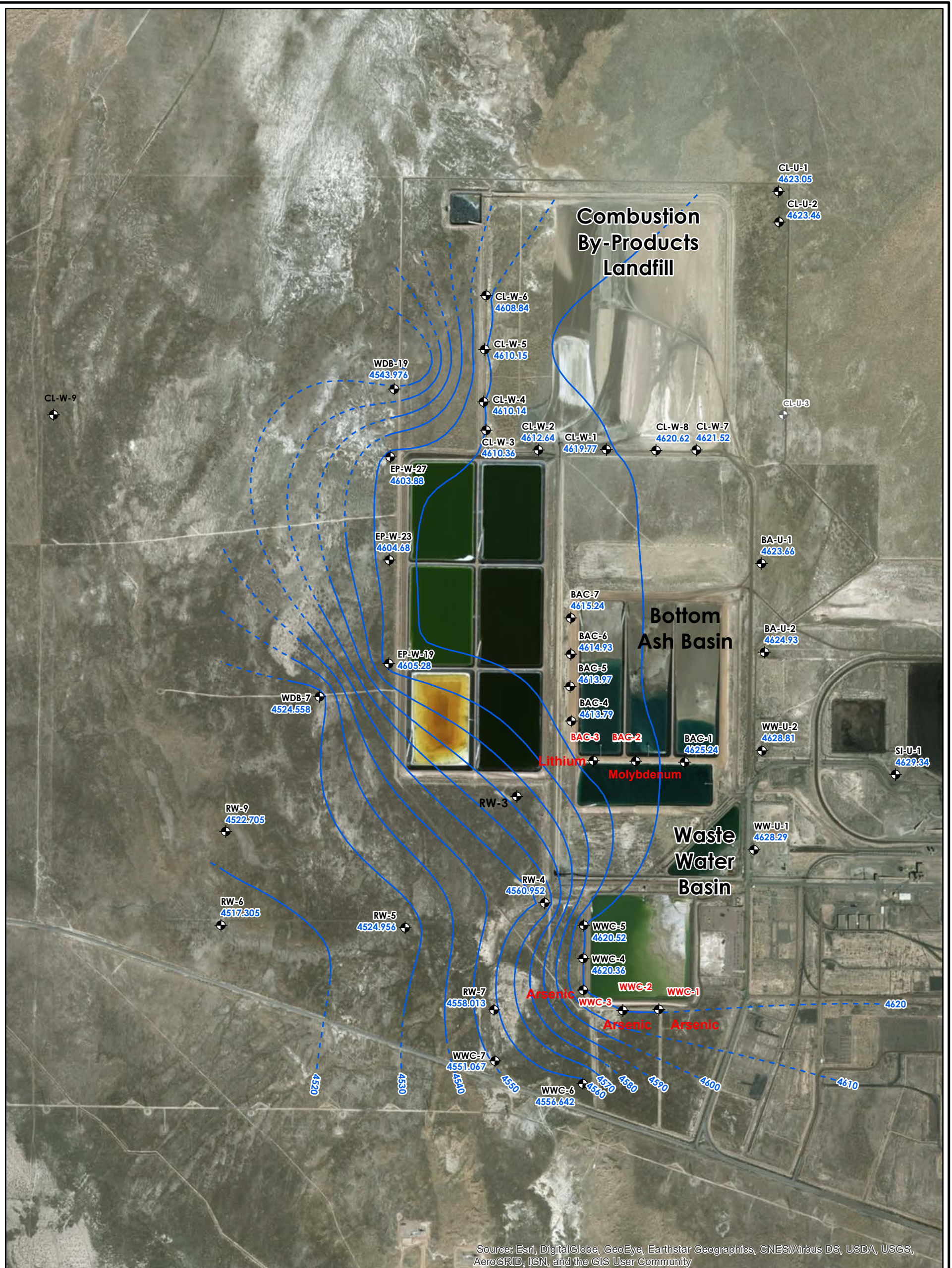


# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

January 28, 2019

## Figure 6. Appendix IV Constituent Exceedances





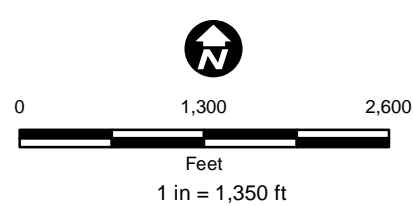
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**LEGEND:**

- MONITORING WELL (GREYED WHEN NOT USED FOR CONTOURING) Red Constituents Exceed GWPS.
- GROUND WATER CONTOUR

**NOTE:**

- 1) DATA COLLECTED OCTOBER 2018
- 2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL



	FOR: INTERMOUNTAIN POWER SERVICE CORP. INTERMOUNTAIN GENERATION FACILITY DELTA, UTAH		<b>Appendix IV Constituent Exceedances</b> superimposed on <b>OCTOBER 2018 POTENTIOMETRIC SURFACE MAP</b>		FIGURE:  <b>6</b>
	JOB NUMBER: 203709098	DRAWN BY: CK	CHECKED BY: ALL	APPROVED BY:	DATE: 11/12/18

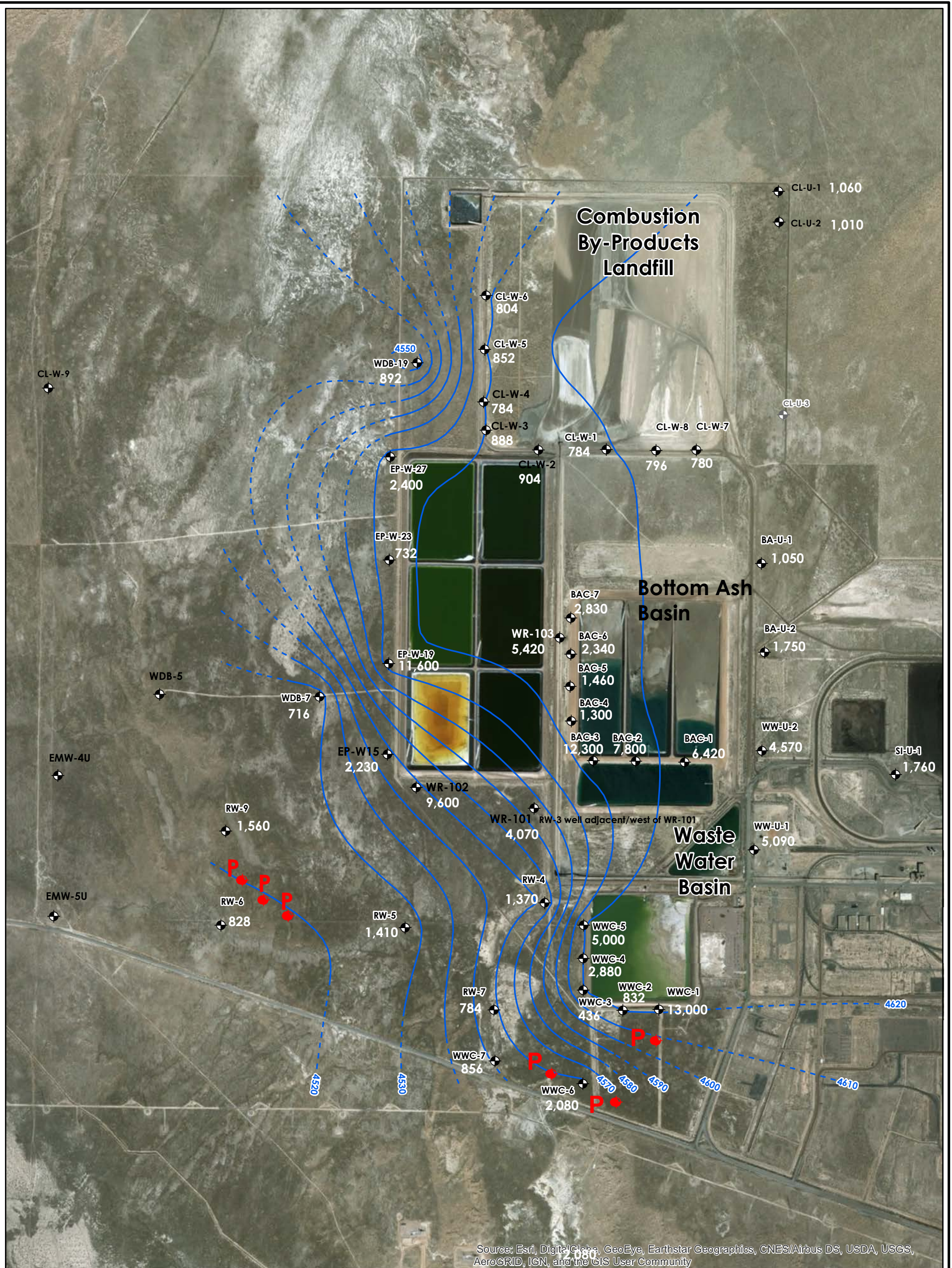


# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

January 28, 2019

## Figure 7. PROPOSED SUPPLEMENTAL MONITORING WELLS





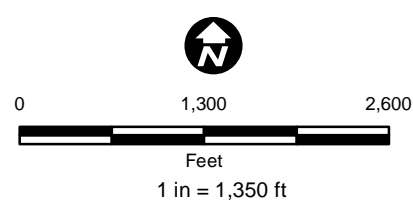
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**LEGEND:**

- MONITORING WELL TDS Concentration (milligrams per Liter; i.e., ppm)
- GROUND WATER CONTOUR
- P** PROPOSED, SUPPLEMENTAL MONITORING WELL

**NOTE:**

- 1) BASE MAP INCLUDES OCTOBER 2018 POTENTIOMETRIC MAP AND OCTOBER 2018 TDS RESULTS.
- 2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL.
- 3) Existing 6-in. dia. wells RW-4 and RW-5 will be pump-tested to investigate if either or both might be used as recovery wells.
- 4) If and where needed, additional 6-in. dia. monitoring and recovery wells will be installed - depending on pump-test results associated with installation/testing of proposed, supplemental monitoring wells.
- 5) Existing recovery wells WR-101, WR-102, and WR-103 will continue to recover ground water near historical source areas.



	FOR:		<b>PROPOSED SUPPLEMENTAL MONITORING WELLS</b>		FIGURE:
	INTERMOUNTAIN POWER SERVICE CORP. INTERMOUNTAIN GENERATION FACILITY DELTA, UTAH		Superimposed atop Oct. 2018 Potentiometric & TDS Concentration Map		<b>7</b>
JOB NUMBER: 203709098	DRAWN BY: JR	CHECKED BY: ALL	APPROVED BY:	DATE: 1/15/19	



# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

January 28, 2019

## Table 1 Ground Water Monitoring Well Construction Details

**Table 1**  
**WELL CONSTRUCTION SUMMARY**  
**Intermountain Generating Facility**  
**Delta, Utah**

MONITOR WELL I.D.	DATE COMPLETED	WELL DIAMETER / MATERIAL	TOTAL DEPTH (feet BGS)	WELL SCREENING INTERVAL (feet BGS)	TOP OF PVC CASING ELEVATION (feet MSL*)
Combustion By-Products Landfill Wells					
CLW-1	5/12/2015	4-inch PVC	65	55-65	4653.46
CLW-2	5/14/2015	4-inch PVC	80	70-80	4648.17
CLW-3	5/13/2015	4-inch PVC	80	70-80	4644.03
CLW-4	5/26/2015	4-inch PVC	82	72-82	4642.88
CLW-5	7/27/2015	4-inch PVC	82	72-82	4640.99
CLW-6	7/26/2015	4-inch PVC	88	78-88	4639.63
CLW-7	7/24/2015	4-inch PVC	72	52-72	4659.34
CLW-8	7/24/2015	4-inch PVC	72	62-72	4655.63
CLW-9	3/25/2018	4-inch PVC	97	87-97	4555.98
CL-U-1	7/23/2015	4-inch PVC	80	68-78	4657.48
CL-U-2	7/22/2015	4-inch PVC	80	70-80	4663.48
CL-U-3	3/27/2018	4-inch PVC	77	67-77	4606.01
Bottom Ash Basin Wells					
BAC-1	7/31/2015	4-inch PVC	70	60-70	4668.70
BAC-2	7/29/2015	4-inch PVC	65	55-65	4668.72
BAC-3	7/28/2015	4-inch PVC	72	52-72	4668.84
BAC-4	8/10/2015	4-inch PVC	75	55-75	4649.45
BAC-5	8/9/2015	4-inch PVC	68	58-68	4649.67
BAC-6	8/8/2015	4-inch PVC	65	55-65	4648.15
BAC-7	8/7/2015	4-inch PVC	67	57-68	4650.09
BA-U-1	7/24/2015	4-inch PVC	55	45-55	4665.73
BA-U-2	7/25/2015	4-inch PVC	70	60-70	4661.33

**Table 1**  
**WELL CONSTRUCTION SUMMARY**  
**Intermountain Generating Facility**  
**Delta, Utah**

MONITOR WELL I.D.	DATE COMPLETED	WELL DIAMETER / MATERIAL	TOTAL DEPTH (feet BGS)	WELL SCREENING INTERVAL (feet BGS)	TOP OF PVC CASING ELEVATION (feet MSL*)
Waste Water Basin Wells					
WWC-1	7/26/2015	4-inch PVC	60	48-58	4644.72
WWC-2	7/27/2015	4-inch PVC	70	60-70	4645.11
WWC-3	7/30/2015	4-inch PVC	65	55-65	4638.90
WWC-4	7/29/2015	4-inch PVC	75	65-75	4640.58
WWC-5	7/28/2015	4-inch PVC	74	64-74	4641.75
WC-U-1	8/11/2015	4-inch PVC	70	60-70	4665.03
WC-U-2	8/11/2015	4-inch PVC	75	65-75	4665.46
WWC-6	3/24/2018	4-inch PVC	87	67-77	4576.26
WWC-7	3/22/2018	4-inch PVC	87	77-87	4570.78
SI-U-1	8/12/2015	4-inch PVC	79	69-79	4664.59

BGS = Below Ground Surface

MSL = Mean Sea Level

# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

January 28, 2019

## **Table 2**            **CCR Rule Compliance, Analytical Results and Water Levels, 2015-2018**



## CCR Well Levels

Well	Depth	Date
WW-U-1	33.23	12/7/2015
WW-U-2	23.42	12/7/2015
SI-U-1	32.47	12/7/2015
CL-U-1	32.02	12/7/2015
CL-U-2	37.55	12/7/2015
CL-W-1	31.05	12/7/2015
CL-W-2	33.14	12/7/2015
CL-W-3	31.54	12/7/2015
CL-W-4	30.56	12/7/2015
CL-W-5	29.76	12/7/2015
CL-W-6	28.71	12/7/2015
CL-W-7	35.23	12/7/2015
CL-W-8	32.37	12/7/2015
BA-U-1	39.21	12/7/2015
BA-U-2	33.26	12/7/2015
BAC-1	39.32	12/7/2015
BAC-2	51.38	12/7/2015
BAC-3	51.02	12/7/2015
BAC-4	35.35	12/7/2015
BAC-5	32.62	12/7/2015
BAC-6	29.76	12/7/2015
BAC-7	31.26	12/7/2015
WWC-1	21.16	12/7/2015
WWC-2	22.16	12/7/2015
WWC-3	16.42	12/7/2015
WWC-4	17.85	12/7/2015
WWC-5	18.78	12/7/2015

## CCR Well Levels

Well	Depth	Date
WW-U-1	33.08	3/3/2016
WW-U-2	23.52	3/3/2016
SI-U-1	32.45	3/3/2016
CL-U-1	31.53	3/3/2016
CL-U-2	37.09	3/3/2016
CL-W-1	31.56	3/3/2016
CL-W-2	32.59	3/3/2016
CL-W-3	30.91	3/3/2016
CL-W-4	30.02	3/3/2016
CL-W-5	28.17	3/3/2016
CL-W-6	28.13	3/3/2016
CL-W-7	34.75	3/3/2016
CL-W-8	31.89	3/3/2016
BA-U-1	38.82	3/3/2016
BA-U-2	33.05	3/3/2016
BAC-1	39.85	3/3/2016
BAC-2	51.31	3/3/2016
BAC-3	51.29	3/3/2016
BAC-4	34.97	3/3/2016
BAC-5	32.07	3/3/2016
BAC-6	29.27	3/3/2016
BAC-7	29.78	3/3/2016
WWC-1	20.92	3/3/2016
WWC-2	21.79	3/3/2016
WWC-3	16.12	3/3/2016
WWC-4	17.56	3/3/2016
WWC-5	18.5	3/3/2016

## CCR Well Levels

Well	Depth	Date
WW-U-1	34.2	6/24/2016
WW-U-2	24.21	6/24/2016
SI-U-1	32.93	6/24/2016
CL-U-1	31.88	6/24/2016
CL-U-2	37.41	6/24/2016
CL-W-1	30.67	6/24/2016
CL-W-2	32.49	6/24/2016
CL-W-3	30.78	6/24/2016
CL-W-4	29.86	6/24/2016
CL-W-5	27.97	6/24/2016
CL-W-6	27.9	6/24/2016
CL-W-7	34.98	6/24/2016
CL-W-8	32.07	6/24/2016
BA-U-1	39.13	6/24/2016
BA-U-2	33.49	6/24/2016
BAC-1	40.42	6/24/2016
BAC-2	51.38	6/24/2016
BAC-3	51.35	6/24/2016
BAC-4	34.85	6/24/2016
BAC-5	31.79	6/24/2016
BAC-6	28.86	6/24/2016
BAC-7	30.26	6/24/2016
WWC-1	21.47	6/24/2016
WWC-2	22.33	6/24/2016
WWC-3	16.63	6/24/2016
WWC-4	18.07	6/24/2016
WWC-5	19.03	6/24/2016

## CCR Well Levels

Well	Depth	Date
WW-U-1	34.42	8/30/2016
WW-U-2	24.57	8/30/2016
SI-U-1	33.49	8/30/2016
CL-U-1	32.74	8/30/2016
CL-U-2	38.31	8/30/2016
CL-W-1	31.52	8/30/2016
CL-W-2	33.5	8/30/2016
CL-W-3	31.81	8/30/2016
CL-W-4	30.89	8/30/2016
CL-W-5	28.99	8/30/2016
CL-W-6	28.95	8/30/2016
CL-W-7	35.84	8/30/2016
CL-W-8	32.93	8/30/2016
BA-U-1	39.95	8/30/2016
BA-U-2	34.24	8/30/2016
BAC-1	40.97	8/30/2016
BAC-2	52.1	8/30/2016
BAC-3	51.94	8/30/2016
BAC-4	35.68	8/30/2016
BAC-5	32.67	8/30/2016
BAC-6	29.64	8/30/2016
BAC-7	31.09	8/30/2016
WWC-1	22.4	8/30/2016
WWC-2	22.87	8/30/2016
WWC-3	17.17	8/30/2016
WWC-4	18.61	8/30/2016
WWC-5	19.6	8/30/2016

## CCR Well Levels

Well	Depth	Date
WW-U-1	34.74	11/9/2016
WW-U-2	24.81	11/9/2016
SI-U-1	33.74	11/9/2016
CL-U-1	33.04	11/9/2016
CL-U-2	38.59	11/9/2016
CL-W-1	31.89	11/9/2016
CL-W-2	34.00	11/9/2016
CL-W-3	32.34	11/9/2016
CL-W-4	31.43	11/9/2016
CL-W-5	29.58	11/9/2016
CL-W-6	29.55	11/9/2016
CL-W-7	36.20	11/9/2016
CL-W-8	33.28	11/9/2016
BA-U-1	40.27	11/9/2016
BA-U-2	34.59	11/9/2016
BAC-1	41.51	11/9/2016
BAC-2	52.61	11/9/2016
BAC-3	52.10	11/9/2016
BAC-4	35.98	11/9/2016
BAC-5	32.90	11/9/2016
BAC-6	29.81	11/9/2016
BAC-7	30.92	11/9/2016
WWC-1	22.27	11/9/2016
WWC-2	23.22	11/9/2016
WWC-3	17.43	11/9/2016
WWC-4	18.88	11/9/2016
WWC-5	19.85	11/9/2016

## CCR Well Levels

Well	Depth	Date
WW-U-1	33.88	3/30/2017
WW-U-2	22.19	3/30/2017
SI-U-1	32.89	3/30/2017
CL-U-1	31.99	3/30/2017
CL-U-2	37.56	3/30/2017
CL-W-1	32.84	3/30/2017
CL-W-2	32.72	3/30/2017
CL-W-3	31.08	3/30/2017
CL-W-4	30.25	3/30/2017
CL-W-5	28.41	3/30/2017
CL-W-6	28.40	3/30/2017
CL-W-7	35.15	3/30/2017
CL-W-8	32.04	3/30/2017
BA-U-1	39.29	3/30/2017
BA-U-2	33.67	3/30/2017
BAC-1	40.89	3/30/2017
BAC-2	51.32	3/30/2017
BAC-3	51.94	3/30/2017
BAC-4	34.73	3/30/2017
BAC-5	31.71	3/30/2017
BAC-6	28.74	3/30/2017
BAC-7	30.03	3/30/2017
WWC-1	18.91	3/30/2017
WWC-2	22.21	3/30/2017
WWC-3	16.53	3/30/2017
WWC-4	17.97	3/30/2017
WWC-5	17.94	3/30/2017

## CCR Well Levels

Well	Depth	Date
WW-U-1	34.70	6/21/2017
WW-U-2	24.75	6/21/2017
SI-U-1	33.46	6/21/2017
CL-U-1	32.13	6/21/2017
CL-U-2	37.72	6/21/2017
CL-W-1	30.74	6/21/2017
CL-W-2	32.35	6/21/2017
CL-W-3	30.72	6/21/2017
CL-W-4	29.90	6/21/2017
CL-W-5	28.06	6/21/2017
CL-W-6	28.01	6/21/2017
CL-W-7	35.16	6/21/2017
CL-W-8	32.21	6/21/2017
BA-U-1	39.41	6/21/2017
BA-U-2	33.90	6/21/2017
BAC-1	41.29	6/21/2017
BAC-2	50.94	6/21/2017
BAC-3	51.14	6/21/2017
BAC-4	34.08	6/21/2017
BAC-5	30.98	6/21/2017
BAC-6	28.03	6/21/2017
BAC-7	29.30	6/21/2017
WWC-1	21.95	6/21/2017
WWC-2	22.74	6/21/2017
WWC-3	17.04	6/21/2017
WWC-4	18.48	6/21/2017
WWC-5	19.44	6/21/2017

## CCR Well Levels

Well	Depth	Date
WW-U-1	35.43	10/4/2017
WW-U-2	25.49	10/5/2017
SI-U-1	34.28	10/6/2017
CL-U-1	33.25	10/7/2017
CL-U-2	38.81	10/8/2017
CL-W-1	31.80	10/9/2017
CL-W-2	33.60	10/10/2017
CL-W-3	31.93	10/11/2017
CL-W-4	31.09	10/12/2017
CL-W-5	29.26	10/13/2017
CL-W-6	29.26	10/14/2017
CL-W-7	36.23	10/15/2017
CL-W-8	33.28	10/16/2017
BA-U-1	40.42	10/17/2017
BA-U-2	34.85	10/18/2017
BAC-1	41.78	10/19/2017
BAC-2	52.03	10/20/2017
BAC-3	52.31	10/21/2017
BAC-4	35.29	10/22/2017
BAC-5	32.19	10/23/2017
BAC-6	29.24	10/24/2017
BAC-7	30.48	10/25/2017
WWC-1	22.69	10/26/2017
WWC-2	23.51	10/27/2017
WWC-3	17.80	10/28/2017
WWC-4	19.27	10/29/2017
WWC-5	20.26	10/30/2017



## CCR Well Levels

Well	Depth	Date
WW-U-1	36.14	3/26/2018
WW-U-2	25.79	3/26/2018
SI-U-1	34.04	3/26/2018
CL-U-1	32.64	3/26/2018
CL-U-2	38.22	3/26/2018
CL-W-1	31.73	3/26/2018
CL-W-2	33.49	3/26/2018
CL-W-3	31.73	3/26/2018
CL-W-4	30.94	3/26/2018
CL-W-5	29.00	3/26/2018
CL-W-6	28.96	3/26/2018
CL-W-7	35.99	3/26/2018
CL-W-8	33.11	3/26/2018
BA-U-1	40.28	3/26/2018
BA-U-2	34.74	3/26/2018
BAC-1	42.05	3/26/2018
BAC-2	34.62	3/26/2018
BAC-3	52.76	3/26/2018
BAC-4	35.82	3/26/2018
BAC-5	33.28	3/26/2018
BAC-6	30.53	3/26/2018
BAC-7	31.88	3/26/2018
WWC-1	22.56	3/26/2018
WWC-2	23.31	3/26/2018
WWC-3	17.55	3/26/2018
WWC-4	19.04	3/26/2018
WWC-5	20.08	3/26/2018

## CCR Well Levels

Well	Depth	Date
WW-U-1	36.20	6/13/2018
WW-U-2	25.95	6/13/2018
SI-U-1	34.27	6/13/2018
CL-U-1	32.83	6/13/2018
CL-U-2	38.42	6/13/2018
CL-W-1	31.92	6/13/2018
CL-W-2	33.53	6/13/2018
CL-W-3	31.72	6/13/2018
CL-W-4	30.79	6/13/2018
CL-W-5	28.95	6/13/2018
CL-W-6	29.12	6/13/2018
CL-W-7	36.19	6/13/2018
CL-W-8	33.31	6/13/2018
BA-U-1	40.54	6/13/2018
BA-U-2	35.00	6/13/2018
BAC-1	42.29	6/13/2018
BAC-2	52.68	6/13/2018
BAC-3	53.92	6/13/2018
BAC-4	35.83	6/13/2018
BAC-5	33.32	6/13/2018
BAC-6	30.52	6/13/2018
BAC-7	31.83	6/13/2018
WWC-1	22.89	6/13/2018
WWC-2	23.64	6/13/2018
WWC-3	17.92	6/13/2018
WWC-4	19.34	6/13/2018
WWC-5	20.19	6/13/2018

## CCR Well Levels

Well	Depth	Date
WW-U-1	36.74	10/24/2018
WW-U-2	26.65	10/24/2018
SI-U-1	35.25	10/24/2018
CL-U-1	34.43	10/24/2018
CL-U-2	40.02	10/24/2018
CL-W-1	33.69	10/24/2018
CL-W-2	35.53	10/24/2018
CL-W-3	33.67	10/24/2018
CL-W-4	32.74	10/24/2018
CL-W-5	30.84	10/24/2018
CL-W-6	30.79	10/24/2018
CL-W-7	37.82	10/24/2018
CL-W-8	35.01	10/24/2018
BA-U-1	42.07	10/24/2018
BA-U-2	36.40	10/24/2018
BAC-1	43.46	10/24/2018
BAC-2	54.24	10/24/2018
BAC-3	54.22	10/24/2018
BAC-4	35.66	10/24/2018
BAC-5	35.70	10/24/2018
BAC-6	33.22	10/24/2018
BAC-7	34.85	10/24/2018
WWC-1	23.70	10/24/2018
WWC-2	24.48	10/24/2018
WWC-3	18.74	10/24/2018
WWC-4	20.22	10/24/2018
WWC-5	21.23	10/24/2018

## Assessment Well Levels

Well	Depth	Date
RW-4	20.49	10/24/2018
RW-5	46.01	10/24/2018
RW-7	14.55	10/24/2018
WDB-19	28.97	10/24/2018
WWC-6	19.62	10/24/2018
WWC-7	19.71	10/24/2018

Round 1 Detection Monitoring - December 2-10, 2015

Landfill Wells	Results																						
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined
CL-U-1	0	68.9	418	0.813	7.82	131	1040	0	0.0378	0.126	0	0	0.00537	0	0	0.346	0	0.00459	0	0	0.52	0.5	1.02
CL-U-2	0	73.8	404	0.611	7.73	132	1020	0	0.0317	0.129	0	0	0.00613	0	0	0.325	0	0.00406	0	0	0.55	1.2	1.75
CLW-1	0	55.7	322	0.844	7.95	76.5	832	0	0.0264	0.105	0	0	0.00814	0	0	0.3	0	0.00574	0	0	0.56	1.6	2.16
CLW-2	0	53.9	432	0.695	7.75	108	976	0	0.0283	0.0937	0	0	0.00576	0	0	0.36	0	0.00472	0	0	0.51	1.1	1.61
CLW-3	0	45	367	0.948	7.86	123	928	0	0.0275	0.111	0	0	0.00346	0	0	0.337	0	0.00492	0	0	0.4	1.3	1.7
CLW-4	0	44.5	320	1.37	7.87	73.3	828	0	0.0308	0.122	0	0	0.00336	0	0	0.319	0	0.00584	0	0	0.34	1.9	2.24
CLW-5	0	38.4	345	1.51	7.81	88.3	872	0	0.0188	0.0864	0	0	0	0	0	0.0325	0	0.00841	0	0	0.37	1.6	1.97
CLW-6	0	33.6	325	1.38	7.71	74.5	820	0	0.0249	0.0879	0	0	0.00335	0	0	0.316	0	0.0104	0	0	0.37	0.63	1
CLW-7	0	47.3	339	0.792	7.81	66.4	812	0	0.0234	0.0593	0	0	0.00421	0	0	0.282	0	0.00331	0	0	0.14	0.52	0.66
CLW-8	0	43.6	324	0.797	7.8	70.5	772	0	0.0155	0.107	0	0	0.00463	0	0	0.285	0	0.00626	0	0	0.4	0.74	1.14
CLW-9																							
CL-U-3																							

Round 1

Landfill Wells	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
CL-U-1	13.46	7.74	-42	1720	443	2.12	-
CL-U-2	14.72	6.92	-38	1750	604	2.6	-
CLW-1	14.84	7.69	-45	1490	383	2.28	0.952
CLW-2	9.95	7.86	-144	1810	99.6	1.76	1.16
CLW-3	11.24	7.95	-158	1740	128	1.9	1.11
CLW-4	14.9	7.95	-165	1540	25.1	1.67	0.98
CLW-5	15.12	7.96	-134	1620	46.4	1.6	1.04
CLW-6	15.3	8	-193	1550	30.8	0.98	0.998
CLW-7	16.38	7.54	8	1430	90.9	7.01	0.917
CLW-8	15.01	7.58	0	1530	11.3	2.09	0.976
CLW-9							
CL-U-3							

Bottom Ash	Results																						
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined
BA-U-1	0	51.4	430	1.21	8.06	121	984	0	0.0163	0.133	0	0	0.00305	0	0	0.313	0	0.0408	0	0	0.66	0.7	1.36
BA-U-2	0	53	343	0.727	8.9	48.9	82.4	0	0.0154	0.148	0	0	0.00971	0	0	0.297	0	0.0121	0	0	0.32	2.1	2.42
BAC-1	7.49	274	3280	0.299	7.37	3060	8866	0.00287	0.0146	0.1	0	0	0.00503	0.00605	0	1.52	0	0.149	0.0204	0	0.71	1.6	2.31
BAC-2	10.7	267	2000	0.741	7.29	3620	7820	0	0.0386	0.0472	0	0	0.0116	0	0	1.38	0	0.151	0.0164	0	0.48	0.94	1.42
BAC-3	6.09	387	2900	0.648	7.6	3840	9800	0	0.0191	0.0827	0	0	0.0615	0	0	2.13	0	0.0367	0.019	0	0.99	1.1	2.09
BAC-4	0	53	473	1.35	7.96	181	1150	0	0.0407	0.0821	0	0	0.0022	0	0	0.476	0	0.0104	0	0	0.19	0.5	0.69
BAC-5	0	51.1	483	1.11	7.83	129	1010	0	0.0357	0.0928	0	0	0.0161	0	0	0.479	0	0.00926	0	0	0.29	0.96	1.25
BAC-6	4.36	142	516	0.754	7.68	1080	2410	0	0.0134	0.0622	0	0	0.0363	0	0	0.599	0	0.0968	0	0	0.39	1.4	1.79
BAC-7	4.65	148	665	1.01	7.77	1360	2910	0	0.0191	0.0577	0	0	0.0264	0	0	0.681	0	0.0699	0.00276	0	0.46	0.92	1.38

Bottom Ash	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
BA-U-1	14.56	7.93	-67	1590	106	2.51	-
BA-U-2	13.58	8.33	-85	1510	96.4	2.9	-
BAC-1	11.8	7.32	111	15100	54.8	1.84	9.35
BAC-2	15.7	7.12	79	11800	100	1.82	7.33
BAC-3	16.24	7.51	75	15000	34.2	1.36	9.28
BAC-4	14.36	7.93	12	2230	12.5	2.07	1.43
BAC-5	13.96	7.88	-18	2020	113	0.97	1.29
BAC-6	12.49	7.69	-157	3610	96.1	1.2	2.31
BAC-7	14.17	7.76	-96	4430	789	1.12	2.84

Waste Water	Results																							
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined	
SI-U-1	0.594	171	667	0	7.4	918	2300	0	0.00266	0.112	0	0	0.0099	0	0	0.49	0	0.00554	0	0	0.56	1.7	2.3	
WW-U-1	1.05	374	2180	0	7.06	1470	5430	0	0.00453	0.178	0	0	0.0032	0	0	0.983	0	0.00619	0.00549	0	1	2.3	3.6	
WW-U-2	1.6	358	2430	0	7.23	1370	5540	0	0.00309	0.123	0	0	0.00582	0.0072	0	0.934	0	0.0237	0.00543	0	0.84	2.1	2.94	
WWC-1	9.62	561	4840	0	7.19	3150	11800	0	0.0181	0.0536	0	0	0.0139	0	0	2.69	0.00031	0.00701	0.0152	0	0.31	0.83	1.14	
WWC-2	0	66.5	381	0.158	7.91	147	940	0	0.0155	0.0511	0	0	0.00348	0	0	0.241	0	0.00383	0	0	0.12	7.88	1.1	1.22
WWC-3	0	34.5	284	1.01	8.11	82.2	688	0	0.0102	0.0638	0	0	0.00577	0	0	0.243	0	0.0459	0	0	0.32	0.55	0.87	
WWC-4	1.09	247	1270	0.387	7.61	800	3250	0	0.0116	0.09	0	0	0.00877	0	0	0.909	0	0.00467	0.00207	0	0.5	0.45	0.95	
WWC-5	2.4	345	1810	0.331	7.47	1610	5020	0	0.00783	0.103	0	0	0.00892	0.0055	0	4.41	0	0.0265	0	0	0.51	1.1	1.61	
WWC-6																								
WWC-7																								

Waste Water	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
SI-U-1	10.79	7.27	-14	3720	74	6.93	-
WW-U-1	13.11	7.01	2	7920	32.9	3.2	-
WW-U-2	12.59	7.23	-11	7920	93.4	5.09	-
WWC-1	14.94	7.06	15	1850	110	1.28	11.5
WWC-2	17.36	7.88	-44	1680	79.9	1.08	1.07
WWC-3	13.92	8.1	-249	1430	121	1.29	0.918
WWC-4	14.73	7.4	-20	5230	61.1	1.52	3.3
WWC-5	15.55	7.3	-122	7740	348	0.97	4.88
WWC-6							
WWC-7							

Results below reporting limit are recorded as 0.

Round 2 Detection Monitoring - February 23-March 8, 2016

Landfill Wells	Results																					Field Results									
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS	
	CL-U-1	0	47.7	391	0.839	8.52	123	908	0	0.0415	0.0953	0	0	0	0	0	0.401	0	0.00733	0	0	0.27	1.6	1.87	14.18	8.74	-209	1750	4.3	2.15	1.12
CL-U-2	0	59.9	372	0.873	7.75	119	940	0	0.0243	0.0934	0	0	0	0	0	0.387	0	0.00414	0	0	0.28	1	1.28	14.41	7.75	-89	1820	4.6	1.85	1.17	
CLW-1	0	35.1	304	0.834	7.89	71.6	808	0	0.0256	0.0648	0	0	0.00235	0	0	0.361	0	0.00506	0	0	0.36	1.5	1.86	15.84	7.95	-60	1560	3.8	1.4	0.996	
CLW-2	0	45.9	378	1.18	7.66	90.5	936	0	0.0243	0.0882	0	0	0	0	0	0.438	0	0.00481	0	0	0.51	0.53	1.04	17.52	7.81	-137	1840	2	9.35	1.17	
CLW-3	0	40.5	336	1.35	7.92	96	884	0	0.0437	0.103	0	0	0	0	0	0.435	0	0.0049	0	0	0.47	1.1	1.57	14.99	7.87	-203	1710	0	3.96	1.09	
CLW-4	0	32.1	282	1.53	7.87	80.9	776	0	0.0271	0.109	0	0	0	0	0	0.375	0	0.00762	0	0	0.37	0.7	1.07	17.08	7.81	-211	1490	11.5	1.82	0.955	
CLW-5	0	35.4	318	1.82	7.91	85.7	824	0	0.0214	0.0869	0	0	0	0	0	0.411	0	0.00922	0	0	0.27	0.32	0.59	17.06	7.82	-168	1650	10.9	8.45	1.06	
CLW-6	0	32.1	306	1.72	7.97	75.4	816	0	0.0246	0.095	0	0	0	0	0	0.4	0	0.0117	0	0	0.02	0.96	0.98	15.83	7.91	-194	1600	6.2	0.95	1.02	
CLW-7	0	42.8	290	0.825	7.65	67.6	832	0	0.0239	0.0794	0	0	0	0	0	0.327	0	0.146	0	0	0.14	0.29	0.43	16.53	7.75	9	1560	3.5	2.67	0.996	
CLW-8	0	41.5	293	0.782	7.8	70.3	808	0	0.022	0.0839	0	0	0.00224	0	0	0.35	0	0.00499	0	0	0.32	0.32	0.64	15.86	7.81	-25	1560	8	1.92	0.996	
CLW-9																															
CL-U-3																															

Bottom Ash	Results																					Field Results								
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
	BA-U-1	0	28.7	258	1.67	8.55	64.2	852	0	0.023	0.0969	0	0	0	0	0	0.376	0	0.0359	0	0	0.33	1.3	1.63	13.53	8.63	5	1550	11.3	2.59
BA-U-2	0	67.4	529	0.938	8.02	55.7	1230	0	0.0199	0.175	0	0	0	0	0	0.514	0	0.00298	0	0	0.2	1	1.2	15.78	7.94	-167	2240	19.7	1.06	1.44
BAC-1	2.85	155	1730	0	7.86	1390	5240	0	0.0174	0.39	0	0	0.00536	0	0	0.63	0	0.0607	0.0131	0	0.96	1.6	2.56	17.51	8.16	39	6.5	10.7	3	4.11
BAC-2	9.83	196	1600	0	7.35	2900	7640	0	0.0411	0.0385	0	0	0.00742	0	0.00221	1.22	0	0.167	0.0128	0	0.4	2.5	2.9	16.74	7.2	322	9.96	3.2	2.59	6.26
BAC-3	6.55	406	3240	0	7.62	3960	10400	0	0.0192	0.0553	0	0	0.00676	0	0	1.12	0	0.0337	0.0184	0	0.44	0.68	1.12	14.4	7.36	29	1590	3.8	3.35	9.84
BAC-4	0	57.4	488	1.36	7.87	191	1290	0	0.0371	0.0806	0	0	0	0	0	0.532	0	0.0106	0	0	0.48	0.5	0.98	15.9	7.81	-55	2370	3.9	2.08	1.51
BAC-5	0	41.3	433	1.34	7.95	111	1010	0	0.0392	0.0736	0	0	0	0	0	0.476	0	0.00758	0	0	0.25	-0.03	0.22	16.34	7.92	-23	1980	4	2.89	1.27
BAC-6	2.67	98.4	491	0.734	7.72	636	1880	0	0.0144	0.0736	0	0	0	0	0	0.597	0	0.0569	0	0	0.61	0.6	1.21	18.19	7.67	-8	2.94	0	1.73	1.88
BAC-7	4.43	132	623	1.07	7.89	1230	2980	0	0.0225	0.0372	0	0	0	0	0	0.699	0	0.0681	0.00274	0	0.16	0.51	0.67	14.22	7.9	-9	4560	3.9	2.46	2.92

Waste Water	Results																					Field Results									
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS	
	SI-U-1	0	168	752	0.557	7.65	665	2320	0	0.00781	0.0846	0	0	0.00346	0	0	0.634	0	0.00671	0	0	0.43	-0.16	0.27	12.99	7.49	11	3790	7.4	1.37	2.42
WW-U-1	1.03	346	2430	0	7.23	1440	5330	0	0.00446	0.123	0	0	0	0	0	1.33	0	0.00669	0.00432	0	1	2.2	3.2	15.75	7.21	-117	8030	19.6	4.07	5.06	
WW-U-2	1.59	362	2410	0	7.34	1370	5780	0	0.00846	0.0761	0	0	0.00735	0	0	1.35	0	0.0126	0.0108	0	0.51	1.2	1.71	14.5	7.34	-22	9240	12.9	2.4	5.82	
WWC-1	6.01	458	4530	0.256	7.24	2710	10800	0	0.00331	0.072	0	0	0.00369	0.00842	0	1.08	0	0.0103	0.00919	0	0.91	1.6	2.51	15.29	7.11	-108	1400	11.8	7.82	8.62	
WWC-2	0	61.3	352	0.208	7.97	131	932	0	0.0147	0.0421	0	0	0.00335	0	0	0.162	0	0.00391	0	0	0.18	1	1.18	14.19	7.75	-86	1720	9.1	2.37	1.1	
WWC-3	0	29.2	203	0.845	8.2	78.5	660	0	0.021	0.0357	0	0	0	0	0	0.172	0	0.00593	0	0	0.16	0.52	0.68	15.63	8.1	-183	1190	2	1.36	0.759	
WWC-4	0.826	185	1100	0.39	7.31	716	3100	0	0.00923	0.101	0	0	0	0	0	0.75	0	0.00783	0	0	0.6	0.84	1.44	15.58	7.37	-8	5004	4.7	1.61	3.18	
WWC-5	1.59	320	1640	0.319	7.22	1210	4790	0	0.00371	0.0882	0	0	0	0	0	1.41	0	0.0205	0.00345	0	0.52	1.9	2.42	15	7.22	19	7510	6.4	2	4.75	
WWC-6																															
WWC-7																															

Results below reporting limit are recorded as 0.

Round 3 Detection Monitoring - June 6-15, 2016

Landfill Wells	Results																						
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228 228 combined	
CL-U-1	0	51.2	414	1.01	7.83	122	1080	0	0.0507	0.0887	0	0	0	0	0	0.378	0	0.00491	0	0	0.11	0.72	0.83
CL-U-2	0	53.7	390	1.14	7.75	121	976	0	0.0245	0.0933	0	0	0	0	0	0.346	0	0.00391	0	0	0.26	1.5	1.76
CLW-1	0	34.6	312	1.13	7.9	70.1	716	0	0.0285	0.0621	0	0	0	0	0	0.318	0	0.00428	0	0	0.28	0.89	1.17
CLW-2	0	43.9	402	1.21	7.84	87.9	976	0	0.0264	0.0819	0	0	0	0	0	0.396	0	0.00427	0	0	0.25	1.1	1.35
CLW-3	0	36.2	346	1.3	7.86	104	876	0	0.0402	0.0992	0	0	0	0	0	0.375	0	0.00463	0	0	0.35	1.2	1.55
CLW-4	0	30.6	294	1.58	7.79	77.9	748	0	0.0196	0.119	0	0	0	0	0	0.338	0	0.0092	0	0	0.45	0.72	1.17
CLW-5	0	33	336	1.81	7.86	84.9	848	0	0.0182	0.0851	0	0	0	0	0	0.352	0	0.00868	0	0	0.27	0.65	0.92
CLW-6	0	29.8	313	1.73	7.9	73.2	756	0	0.0181	0.0901	0	0	0	0	0	0.333	0	0.0105	0	0	0.34	1.4	1.74
CLW-7	0	39.3	328	1.16	7.64	67.4	732	0	0.0246	0.0581	0	0	0.00891	0	0	0.331	0	0.00638	0	0	0.19	0.55	0.74
CLW-8	0	40.3	312	1.08	7.82	69.7	808	0	0.0225	0.0797	0	0	0	0	0	0.32	0	0.00435	0	0	0.27	0.32	0.59
CLW-9																							
CL-U-3																							

Round 3

Landfill Wells	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
CL-U-1	18.94	8.04	-204	1910	22.6	1.2	1.22
CL-U-2	18.47	7.7	-136	1900	1	2.72	1.22
CLW-1	23.71	7.77	62	1550	0	1.34	0.99
CLW-2	22.15	7.66	-169	1840	0	1.31	1.17
CLW-3	20.8	7.71	-225	1720	0.8	1.8	1.1
CLW-4	19.51	7.8	-235	1480	0	4.39	0.95
CLW-5	21.24	7.77	-209	1570	11.5	4.22	1.01
CLW-6	18.81	7.87	-235	1600	0	1.7	1.02
CLW-7	16.73	7.62	66	1580	8.9	3.82	1.01
CLW-8	20.93	7.66	55	1510	0	12.58	0.966
CL-U-3							

Bottom Ash	Results																						
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228 228 combined	
BA-U-1	0	195	1130	0.801	7.63	339	2520	0	0.0177	0.0935	0	0	0	0	0	0.773	0	0.00317	0.00426	0	0.3	1.6	1.9
BA-U-2	0	15.9	284	0.865	12	40.6	720	0	0	0.128	0	0	0.0032	0	0	0.315	0	0.016	0	0	0.22	1.5	1.72
BAC-1	4.73	191	2240	0.402	7.59	1840	6420	0	0.0164	0.081	0	0	0.0033	0	0	1.3	0	0.0669	0.0168	0	0.51	1.3	1.81
BAC-2	11.2	216	1650	0.986	7.17	3220	7520	0	0.0416	0.0248	0	0	0.00488	0	0	1.32	0	0.14	0.0142	0	0.17	1.6	1.77
BAC-3	6.82	445	3230	0.794	7.42	4490	10900	0	0.0158	0.048	0	0	0.00707	0	0	2.53	0	0.0269	0.0198	0	0.25	1.6	1.85
BAC-4	0	66.1	551	1.38	7.73	223	1280	0	0.0334	0.0772	0	0	0.00461	0	0	0.509	0	0.0122	0	0	0.16	0.68	0.84
BAC-5	0	50.4	541	1.26	7.79	122	1220	0	0.0337	0.0839	0	0	0	0	0	0.494	0	0.00738	0	0	0.11	1.7	1.81
BAC-6	1.7	89.5	521	1.04	7.72	448	1560	0	0.0122	0.0859	0	0	0	0	0	0.542	0	0.0359	0	0	0.27	0.76	1.03
BAC-7	4.51	132	685	1.31	7.69	1370	2870	0	0.0234	0.0315	0	0	0	0	0	0.674	0	0.0749	0.00319	0	0.17	2.4	2.57

Bottom Ash	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
BA-U-1	18.51	7.48	-114	4730	4.9	1.73	3.03
BA-U-2	20.17	11.9	-206	1980	5.1	4.04	1.26
BAC-1	20.91	7.43	-5	10.3	33.2	3.43	6.41
BAC-2	19.81	7.01	33	11.6	2	0.69	7.18
BAC-3	18.81	7.19	16	16.6	2.6	1.26	10.3
BAC-4	18.21	7.71	83	2490	2.6	3.05	1.59
BAC-5	18.58	7.75	51	2260	0	13.20	1.45
BAC-6	20.42	7.7	50	2740	0.4	21.84	1.75
BAC-7	21.43	7.63	-7	4510	8	15.04	2.89

Waste Water	Results																						
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228 228 combined	
SI-U-1	0	129	901	0.564	7.6	318	1880	0	0.00989	0.0929	0	0	0.0156	0	0	0.499	0	0.00411	0	0	0.45	0.64	1.09
WW-U-1	1.18	296	2030	0.386	7.21	1300	5820	0	0.0052	0.115	0	0	0	0	1	0	0.00888	0.00637	0	0.64	0.92	1.56	
WW-U-2	1.49	412	2300	0.534	7.33	1180	5400	0	0.00538	0.0746	0	0	0.0114	0	0	1.08	0	0.0126	0.0107	0	0.64	1.1	1.74
WWC-1	3.59	526	3950	0	7.12	1990	8820	0	0.00401	0.077	0	0	0	0.00532	0	2.18	0	0.00653	0.00824	0	0.47	2	2.47
WWC-2	0	59.1	369	0.833	7.79	145	956	0	0.0151	0.0408	0	0	0	0	0.225	0	0.00402	0	0	0.22	0.39	0.61	
WWC-3	0	26.4	197	1.02	8.12	85.6	664	0	0.0213	0.0328	0	0	0	0	0.23	0	0.00574	0	0	0.13	3.3	3.43	
WWC-4	0.627	138	902	0.576	7.57	406	2010	0	0.00498	0.0768	0	0	0	0	0	0.606	0	0.0082	0	0	0.27	1.7	1.97
WWC-5	1.65	406	1730	0.3	7.24	1140	5060	0	0.00608	0.067	0	0	0	0	1.4	0	0.0119	0.00363	0	0.42	0.85	1.27	
WWC-6																							
WWC-7																							

Waste Water	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
SI-U-1	18	7.54	-69	3350	0.3	8.11	2.14
WW-U-1	22.73	7.15	34	7560	0	4.74	4.76
WW-U-2	18.42	7.25	-66	8820	25.9	1.6	5.56
WWC-1	18.38	6.9	62	14.7	1.6	1.86	9.13
WWC-2	18.22	7.74	-101	1.74	1.9	5.2	1.12
WWC-3	16.62	7.99	-168	1.2	0	0.59	0.765
WWC-4	16.85	7.43	-8	3.63	1.2	0.85	2.32
WWC-5	17.35	7.01	15	7.44	1	0.78	4.69
WWC-6							
WWC-7							

Results below reporting limit are recorded as 0.

Round 4 Detection Monitoring - August 22-September 1, 2016

Landfill Wells	Results																						Field Results								
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS	
	CL-U-1	0	54.8	424	1.03	7.63	124	1030	0	0.0301	0.0911	0	0	0	0	0	0.375	0	0.00428	0	0	0.36	0.44	0.8	17.53	7.66	-180	1.84	4.1	1.72	1.18
CL-U-2	0	57.7	406	1.17	7.69	113	948	0	0.0265	0.0961	0	0	0.00227	0	0	0.351	0	0.00508	0	0	0.31	1.1	1.41	19.27	7.65	-151	1.81	0	9.25	1.16	
CLW-1	0	35	315	1.18	7.89	65.4	832	0	0.0279	0.0594	0	0	0	0	0	0.316	0	0.00554	0	0	0.52	0.86	1.38	18.96	7.85	34	1.55	0	5.66	0.992	
CLW-2	0	46.8	424	1.29	7.75	89.2	992	0	0.0284	0.0823	0	0	0	0	0	0.391	0	0.00462	0	0	0.31	0.62	0.93	19.41	7.7	-177	1.81	0	10.68	1.16	
CLW-3	0	38.7	349	1.33	7.75	109	896	0	0.0412	0.0995	0	0	0	0	0	0.368	0	0.00472	0	0	0.3	0.15	0.45	19.1	7.74	-225	1.66	0	10.74	1.07	
CLW-4	0	32.1	318	1.53	7.81	84.5	808	0	0.0316	0.104	0	0	0	0	0	0.336	0	0.00577	0	0	0.39	0.62	1.01	21.52	7.8	-244	1.54	0	5.07	0.985	
CLW-5	0	34.3	350	1.83	7.75	92.1	860	0	0.0189	0.0803	0	0	0	0	0	0.346	0	0.00798	0	0	0.24	0.27	0.51	20.36	7.74	-195	1.67	45.2	9.17	1.07	
CLW-6	0	31.5	331	1.73	7.84	77.1	812	0	0.0164	0.0966	0	0	0	0	0	0.342	0	0.011	0	0	0.2	1	1.2	18.53	7.79	-235	1.61	0	4.22	1.03	
CLW-7	0	42.1	336	1.1	7.71	70	760	0	0.024	0.0529	0	0	0	0	0	0.302	0	0.00396	0	0	0.17	0.33	0.5	19.86	7.62	-71	1.57	0.01	12.06	1.01	
CLW-8	0	40.1	327	1.08	7.73	75	720	0	0.0224	0.0761	0	0	0	0	0	0.308	0	0.00459	0	0	0.35	1	1.35	20.81	7.7	-78	1.53	0	5.02	0.976	
CLW-9																															
CL-U-3																															

Bottom Ash	Results																						Field Results							
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
	BA-U-1	0	180	1170	0.888	7.62	327	2390	0	0.0191	0.0802	0	0	0	0	0	0.684	0	0.00386	0.00384	0	0.45	0.84	1.29	20.11	7.46	-160	4.24	0	3.38
BA-U-2	0	10.4	317	0.975	11.8	39.9	748	0	0.00225	0.114	0	0	0.00216	0	0	0.337	0	0.0147	0	0	0.26	1.1	1.36	17.77	11.83	-224	2.11	9.1	8.94	1.35
BAC-1	4.95	221	2520	0.401	7.52	2380	7210	0	0.0146	0.0643	0	0	0.0028	0	0	1.42	0	0.0603	0.0148	0	0.63	0.64	1.27	22.39	7.33	10	11.8	8.7	2.54	7.3
BAC-2	10.5	203	1640	1.03	7.22	3180	7620	0	0.0431	0.0237	0	0	0.0081	0	0	1.17	0	0.166	0.0136	0	0.33	0.23	0.56	21.36	7.04	0	10200	0	2.17	6.33
BAC-3	6.77	399	3350	1.28	7.36	4630	11700	0	0.0213	0.0436	0	0	0.00386	0	0	2.37	0	0.0294	0.019	0	0.38	0.76	1.14	22.52	7.22	34	15.4	0	2.18	9.58
BAC-4	0	56.1	498	1.35	7.62	210	1460	0	0.0358	0.0757	0	0	0	0	0	0.508	0	0.0103	0	0	0.19	0.83	1.02	19.45	7.62	-94	2350	0	11.45	1.51
BAC-5	0	49.4	561	1.25	7.68	127	1200	0	0.0331	0.0879	0	0	0	0	0	0.538	0	0.0077	0	0	0.1	0.46	0.56	19.21	7.62	-96	2340	0	10.71	1.5
BAC-6	1.38	80.2	546	0.901	7.61	502	1540	0	0.0115	0.0781	0	0.000677	0.00283	0	0	0.54	0	0.034	0	0	0.31	0.24	0.55	19.95	7.59	9	2650	0	24.99	1.7
BAC-7	3.96	126	612	1.28	7.68	1370	2770	0	0.0232	0.0274	0	0	0	0	0	0.669	0	0.0942	0.00257	0	0.37	-0.17	0.2	19.38	7.56	-77	4270	0	2.75	2.73

Waste Water	Results																						Field Results									
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS		
	SI-U-1	0	131	922	0.564	7.57	281	1880	0	0.00926	0.0858	0	0	0.00217	0	0	0.467	0	0.00295	0	0	0.45	0.96	1.41	21.31	7.57	-21	3.25	1.6	14.7	2.08	
WW-U-1	1.25	304	2200	0.327	7.21	1280	5270	0	0.00439	0.0916	0	0	0.00337	0	0	1.01	0	0.00835	0.00689	0	0.54	2	2.54	20.96	7.12	34	8.06	10.9	3.52	5.08		
WW-U-2	0.641	308	2140	0.614	7.42	854	4550	0	0.00258	0.117	0	0	0.00424	0	0	0.994	0	0.0342	0.00617	0	0.82	1.6	2.42	19.51	7.41	-63	7.34	4.7	8.24	4.62		
WWC-1	10.2	457	4680	0.213	7.11	3130	12100	0	0.02	0.0335	0	0	0	0	2.41	0.00019	0.00966	0.0145	0	0	0.33	0.86	1.19	20.69	6.94	-34	18400	0	0.54	11.4		
WWC-2	0	57.9	389	0.508	7.86	151	960	0	0.0152	0.0406	0	0	0	0	0	0.243	0	0.0034	0	0	0.69	1.2	1.89	17.91	7.64	-153	1720	2.6	3.57	1.1		
WWC-3	0	27.3	220	1.03	8.02	78	628	0	0.0217	0.0342	0	0	0	0	0	0.241	0	0.00559	0	0	0.2	-0.34	-0.14	17.39	7.97	-176	1200	0	0.54	0.766		
WWC-4	1.17	225	1330	0.422	7.37	868	3230	0	0.0131	0.065	0	0	0	0	0	0.879	0	0.00237	0.00238	0	0.27	0.48	0.75	17.14	7.22	-68	5320	0	2.25	3.35		
WWC-5	2.87	326	1920	0.366	7.18	1700	5440	0	0.00717	0.0439	0	0	0	0	0	1.33	0	0.00742	0.00312	0	0.41	0.51	0.92	17.85	7.01	-89	7790	0.9	0.59	4.91		
WWC-6																																
WWC-7																																

Results below reporting limit are recorded as 0.



Round 5 Detection Monitoring - October 17-26, 2016

Landfill Wells	Results																						
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228 228 combined	
CL-U-1	0	57.4	424	0.959	7.7	115	912	0	0.037	0.089	0	0	0	0	0	0.217	0	0.00404	0	0	0.25	0.38	0.43
CL-U-2	0	59.5	395	0.99	7.73	113	864	0	0.0269	0.101	0	0	0	0	0	0.206	0	0.00401	0	0	0.36	0.84	1.2
CLW-1	0	38.9	325	1.15	7.8	67.8	824	0	0.0295	0.0668	0	0	0	0	0	0.189	0	0.0043	0	0	0.27	0.19	0.46
CLW-2	0	49.2	422	1.13	7.82	85.3	984	0	0.0258	0.0855	0	0	0	0	0	0.223	0	0.00456	0	0	0.31	0.34	0.65
CLW-3	0	40.8	366	1.19	7.83	100	944	0	0.0412	0.104	0	0	0	0	0	0.214	0	0.00508	0	0	0.35	0.13	0.48
CLW-4	0	34.6	335	1.39	7.84	85.9	828	0	0.0385	0.0932	0	0	0	0	0	0.203	0	0.00414	0	0	0.59	-0.37	0.22
CLW-5	0	35.3	339	1.69	7.89	82.1	928	0	0.0206	0.0812	0	0	0	0	0	0.204	0	0.00723	0	0	0.31	0.84	1.15
CLW-6	0	33.9	325	1.46	7.85	77.9	972	0	0.0287	0.0908	0	0	0	0	0	0.203	0	0.00638	0	0	0.35	0.18	0.53
CLW-7	0	42.8	343	1.14	7.9	68.6	796	0	0.0235	0.0551	0	0	0.00234	0	0	0.182	0	0.00413	0	0	0.27	0.32	0.59
CLW-8	0	41.7	334	1.11	7.77	68.9	744	0	0.0258	0.0797	0	0	0	0	0	0.189	0	0.00428	0	0	0.37	-0.28	0.09
CLW-9																							
CL-U-3																							

Bottom Ash	Results																						
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228 228 combined	
BA-U-1	0	16.7	327	1.65	9.08	60.2	832	0	0.0362	0.0679	0	0	0	0	0	0.215	0	0.0163	0	0	0.67	0.13	0.8
BA-U-2	0	38.1	357	1.02	8.56	51.9	824	0	0.0234	0.131	0	0	0	0	0	0.21	0	0.00449	0	0	0.57	0.42	0.99
BAC-1	3.42	131	1850	0.437	8.8	1610	7720	0	0.0103	0.049	0	0	0.00612	0	0	0.402	0	0.0498	0.00852	0	0.34	0.27	0.61
BAC-2	9.71	216	1620	1.11	7.34	2980	7040	0	0.0444	0.0228	0	0	0.00644	0	0	0.414	0	0.165	0.0131	0	0.25	-0.03	0.22
BAC-3	7.04	401	3160	0.76	7.39	4260	11400	0	0.0226	0.0404	0	0	0.00362	0	0	0.812	0	0.0275	0.0195	0	0.24	0.14	0.38
BAC-4	0	59.2	534	1.34	7.8	222	1230	0	0.0352	0.0723	0	0	0.00212	0	0	0.243	0	0.00992	0	0	0.09	0.4	0.49
BAC-5	0	40.5	479	1.33	7.85	110	1070	0	0.0359	0.0909	0	0	0	0	0	0.219	0	0.00715	0	0	0.2	-0.01	0.19
BAC-6	4.35	133	606	0.97	7.61	1080	2620	0	0.022	0.0287	0	0	0.00257	0	0	0.266	0	0.0858	0.00369	0	0.13	0.69	0.82
BAC-7	3.97	135	628	1.42	7.69	1340	2880	0	0.0241	0.026	0	0	0.00217	0	0	0.279	0	0.0944	0.00279	0	0.26	1.1	1.36

Waste Water	Results																						
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228 228 combined	
SI-U-1	0	132	863	0.514	7.52	286	1850	0	0.00895	0.0871	0	0	0	0	0	0.254	0	0.00276	0	0	0.32	0.11	0.43
WW-U-1	1.23	348	2190	0.346	7.18	1230	5370	0	0.0041	0.0771	0	0	0.00538	0	0	0.479	0	0.00891	0.00579	0	0.73	0.17	0.9
WW-U-2	1.47	383	2340	0.416	7.22	1120	5540	0	0.00573	0.0704	0	0	0.00396	0	0	0.512	0	0.0111	0.0116	0	0.78	0.46	1.24
WWC-1	9.83	513	4540	0.133	7.04	2960	12500	0	0.0197	0.0317	0	0	0.00348	0	0	0.819	0.000198	0.00936	0.0153	0	0.23	0.73	0.96
WWC-2	0	58.5	369	0.42	7.88	140	960	0	0.0129	0.0543	0	0	0.0243	0	0	0.112	0	0.00809	0	0	0.1	0.45	0.55
WWC-3	0	27.7	224	1.08	8.01	86.1	612	0	0.0218	0.0332	0	0	0	0	0	0.123	0	0.00543	0	0	0.07	0.1	0.17
WWC-4	1.19	227	1200	0.509	7.32	763	3200	0	0.0136	0.0629	0	0	0	0	0	0.351	0	0.00222	0.00216	0	0.08	0.75	0.83
WWC-5	3.02	343	1850	0.401	0.71	1570	5300	0	0.00778	0.0389	0	0	0.00238	0	0	0.497	0	0.00498	0.0041	0	0.43	1.1	1.53
WWC-6																							
WWC-7																							

Results below reporting limit are recorded as 0.

Round 5

Landfill Wells	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
CL-U-1	16.15	7.72	-195	1900	0.7	2.79	1.22
CL-U-2	16.89	7.67	-102	1820	0.4	0.82	1.17
CLW-1	16.85	7.77	-50	1520	2	1.57	0.974
CLW-2	17.05	7.76	-202	1900	0.4	3.82	1.21
CLW-3	15.28	7.75	-231	1720	1.8	1.29	1.1
CLW-4	14.67	7.78	-235	1620	7	1.4	1.04
CLW-5	17.4	7.71	-209	1690	8.1	1.41	1.08
CLW-6	15.85	7.83	-249	1620	1.1	1.72	1.04
CLW-7	17.42	7.7	-73	564	0	13.65	0.361
CLW-8	17.18	7.7	-100	1530	2.2	1.03	0.978
CLW-9							
CL-U-3							

Bottom Ash	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
BA-U-1	16.41	9.07	6	1660	3.2	1.88	1.06
BA-U-2	16.67	8.77	-318	1600	1.7	1.76	1.03
BAC-1	18.66	7.57	-144	8800	7.7	0.55	6.19
BAC-2	19.51	7.01	-2	10200	0.6	0.46	6.34
BAC-3	18.63	7.15	2	16700	20	4.99	10.4
BAC-4	16.35	7.72	-120	0.859	3	4.2	0.55
BAC-5	16.43	7.85	-64	726	1.4	12.41	0.464
BAC-6	16.07	7.62	-86	1370	11.4	1.77	0.879
BAC-7	16.64	7.59	-67	1560	4.6	12.42	0.998

Waste Water	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
SI-U-1	16.62	7.47	-22	3370	1	9	2.16
WW-U-1	17.72	6.99	7	8330	3	1.89	5.25
WW-U-2	17.84	7.19	-10	8400	2.6	1.89	5.29
WWC-1	15.78	6.93	-22	18600	0	0.51	11.6
WWC-2	15.91	7.75	-210	1680	6	1.08	1.07
WWC-3	16.26	7.94	-166	1210	0	0.24	0.772
WWC-4	16.51	7.22	-41	5140	0.2	1.09	3.24
WWC-5	15.83	7.02	-87	7930	0.2	0.37	4.99
WWC-6							
WWC-7							

Round 6 Detection Monitoring - March 20-30, 2017

Landfill Wells	Results																				Field Results									
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
	CL-U-1	0	57.1	403	0.876	7.83	113	908	0	0.0322	0.0867	0	0	0	0	0	0.214	0	0.00365	0	0	0.62	0.22	0.62	17.27	7.52	-194	957	4.2	2.53
CL-U-2	0	61.2	374	0.903	7.89	110	852	0	0.0272	0.0976	0	0	0	0	0.208	0	0.00386	0	0	0.4	0.39	0.4	15.81	7.48	-139	929	0	10.45	0.598	
CLW-1	0	38.4	295	1.05	7.83	62.4	768	0	0.0309	0.0631	0	0	0.0187	0	0.185	0	0.00654	0	0	0.41	0.78	1.2	14.45	7.6	-173	1540	0	5.98	0.984	
CLW-2	0	49.7	377	1.07	7.85	92.9	936	0	0.0277	0.0811	0	0	0	0	0.219	0	0.00437	0	0	0.31	0.72	1	16.63	7.58	-221	950	0	9.29	0.609	
CLW-3	0	42.4	333	1.23	7.87	94.4	876	0	0.0423	0.103	0	0	0	0	0.214	0	0.00473	0	0	0.35	0.7	1.1	16.58	7.66	-235	840	0	10.64	0.539	
CLW-4	0	35.2	306	1.27	8.02	79.1	808	0	0.0388	0.0898	0	0	0	0	0.202	0	0.00499	0	0	0.39	0.12	0.39	16.67	7.68	-253	785	0	2.14	0.502	
CLW-5	0	36	320	1.71	7.88	79.9	748	0	0.0216	0.0801	0	0	0.00214	0	0	0.025	0	0.00666	0	0	0.4	0.38	0.4	16.63	7.6	-222	834	0	2.29	0.534
CLW-6	0	33.4	302	1.48	7.91	66	752	0	0.0164	0.0976	0	0	0	0	0.193	0	0.00805	0	0	0.25	-0.35	0.25	15.51	7.65	-245	790	0	8.85	0.505	
CLW-7	0	46.4	312	1.02	7.68	61	824	0	0.0257	0.0545	0	0	0.00772	0	0	0.182	0	0.00425	0	0	0.14	0.18	0.14	15.48	7.52	-150	1600	0	1.94	1.02
CLW-8	0	42.8	301	1.03	7.71	63.8	772	0	0.0255	0.0707	0	0	0.012	0	0	0.189	0	0.00526	0	0	0.25	0.29	0.25	15.08	7.57	-159	1550	0	1.55	0.991
CLW-9																														
CL-U-3																														

Bottom Ash	Results																				Field Results									
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
	BA-U-1	0	24.5	259	1.57	8.59	48.8	648	0	0.0359	0.0856	0	0	0	0	0.193	0	0.0124	0	0	0.28	0.15	0.28	16.08	8.22	55	783	1.8	6.02	0.501
BA-U-2	0	3.76	328	0.886	12.1	39.2	728	0	0.00254	0.122	0	0	0	0	0.221	0	0.00986	0	0	0.3	0.47	0.3	17.77	11.71	-250	2120	1.9	7.87	1.36	
BAC-1	4.01	188	2170	0	7.47	1650	6320	0	0.0202	0.279	0	0	0.0412	0	0	0.429	0	0.0391	0.0152	0	1.1	1.5	2.6	16.44	7.24	-131	9640	11.2	2.14	6.07
BAC-2	10.5	193	1480	0.871	7.2	2780	7320	0	0.0469	0.022	0	0	0.0145	0	0	0.44	0	0.194	0.0144	0	0.34	0.22	0.56	15.89	6.86	-53	10400	0.1	0.6	6.44
BAC-3	7.57	408	3140	0	7.36	4290	13000	0	0.0239	0.0376	0	0	0.00447	0	0	0.974	0	0.026	0.0211	0	0.2	0.5	0.7	15.61	7.1	-44	18000	3.4	0.5	11.2
BAC-4	0	59	461	1.13	7.68	206	1260	0	0.0362	0.0705	0	0	0.011	0	0	0.237	0	0.012	0	0	0.13	0.18	0.13	14.42	7.58	-165	2400	0	2.76	1.53
BAC-5	0	59.5	576	0.994	7.73	190	1430	0	0.032	0.0893	0	0	0.00204	0	0	0.277	0	0.00666	0	0	0.21	0.24	0.45	15.18	7.53	-155	2550	0.1	0.57	1.63
BAC-6	4.44	128	594	0.763	7.6	1040	2500	0	0.0237	0.0269	0	0	0.00205	0	0	0.28	0	0.0873	0.0045	0	0.12	-0.21	-0.09	16.07	7.42	-115	4030	0	0.32	2.58
BAC-7	3.31	151	591	0.936	7.43	1140	3120	0	0.0237	0.0253	0	0	0	0	0.327	0	0.0702	0.007	0	0.21	0.7	0.91	16.54	7.34	-124	4780	1.5	0.38	3.06	

Waste Water	Results																				Field Results									
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
	SI-U-1	0	131	785	0.458	7.54	247	1760	0	0.00941	0.08	0	0	0	0	0.25	0	0.00227	0	0	0.33	0.24	0.33	17.03	7.37	-45	3340	1.1	8.42	2.14
WW-U-1	1.15	336	1880	0.2	7.26	1180	4890	0	0.00593	0.0568	0	0	0	0	0.477	0	0.00558	0.00583	0	0.53	0.89	1.42	18.15	6.96	-57	7980	11.5	1.02	5.02	
WW-U-2	0.6	317	1860	0.438	7.38	734	4300	0	0.00355	0.095	0	0	0	0	0.479	0	0.021	0.00749	0	0.51	1.6	2.11	17.03	7.29	-15	7470	2.3	1.36	4.71	
WWC-1	11.2	479	4510	0	6.98	2940	12200	0	0.0213	0.0288	0	0	0	0	0.932	0.000328	0.00995	0.0149	0	0.26	1.1	1.36	15.08	6.74	-32	19700	0.3	1.8	12.2	
WWC-2	0	52	318	0.405	7.79	125	856	0	0.0149	0.0361	0	0	0	0	0.122	0	0.00357	0	0	0.17	0.61	0.78	15.4	7.75	-134	1650	1	0.44	1.06	
WWC-3	0	25.7	195	0.852	8.13	76	680	0	0.0227	0.0302	0	0	0.00309	0	0	0.137	0	0.00537	0	0	0.24	-0.21	0.03	15.31	8.09	-207	1230	1.2	0.22	0.784
WWC-4	1.3	233	1250	0.319	7.38	819	3230	0	0.0135	0.061	0	0	0	0	0.382	0	0	0.00239	0	0.18	-0.2	-0.02	15.85	7.18	-70	5390	0.5	3.15	3.39	
WWC-5	1.72	318	1520	0.292	7.13	1190	4560	0	0.01	0.0501	0	0	0	0	0.555	0	0.00523	0.00399	0	0.23	0.95	1.18	16.2	6.84	-61	7180	0	0.62	4.52	
WWC-6																														
WWC-7																														

Results below reporting limit are recorded as 0.

Round 7 Detection Monitoring - June 5-21, 2017

Landfill Wells	Results																						
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined
CL-U-1	0	53	480	0.996	7.74	132	1010	0	0.0344	0.0826	0	0.0065	0	0	0	0.19	0	0.00402	0	0	0.36	0.95	1.31
CL-U-2	0	55.1	444	1	7.8	134	952	0	0.0247	0.0938	0	0	0	0	0	0.19	0	0.00408	0	0	2.7	1	3.7
CLW-1	0	36.4	322	1.06	7.85	68.2	772	0	0.0289	0.0615	0	0	0	0	0	0.173	0	0.00389	0	0	0.2	0.14	0.34
CLW-2	0	44.7	436	1.19	7.83	102	964	0	0.0246	0.0754	0	0	0.00411	0	0	0.211	0	0.00461	0	0	0.24	1	1.24
CLW-3	0	37.3	380	1.23	7.85	106	856	0	0.0378	0.0951	0	0	0	0	0	0.197	0	0.00498	0	0	0.27	0.29	0.56
CLW-4	0	30.6	345	1.44	7.89	86.3	816	0	0.0352	0.0885	0	0	0	0	0	0.189	0	0.00481	0	0	0.29	0.3	0.59
CLW-5	0	32.4	358	1.82	7.86	91.6	860	0	0.0203	0.0732	0	0	0	0	0	0.188	0	0.00572	0	0	1.4	1.2	2.6
CLW-6	0	31	336	1.61	7.9	77.5	768	0	0.02	0.0893	0	0	0	0	0	0.183	0	0.0068	0	0	0.01	0.5	0.51
CLW-7	0	41.5	352	1.01	7.88	70.4	832	0	0.0241	0.0514	0	0	0	0	0	0.169	0	0.0033	0	0	0.14	0.75	0.89
CLW-8	0	38.4	339	1.02	7.81	73.1	812	0	0.0239	0.0681	0	0	0	0	0	0.176	0	0.00391	0	0	0.18	0.81	0.99
CL-U-9																							
CL-U-3																							

Landfill Wells	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
CL-U-1	16.35	7.59	-206	1920	0	1.51	1.23
CL-U-2	15.98	7.5	-177	1860	0	1.62	1.19
CLW-1	18.47	7.79	-160	768	0	0.9	0.491
CLW-2	16.77	7.73	-210	945	0	1.52	0.605
CLW-3	17.35	7.78	-246	879	0	2.13	0.562
CLW-4	17.86	7.75	-252	1580	0	4.35	1.01
CLW-5	18.97	7.66	-232	1680	0	2.65	1.08
CLW-6	16.95	7.75	-258	1590	0	5.1	1.02
CLW-7	18.07	7.7	-131	805	0	2.21	0.516
CLW-8	17.59	7.74	-130	776	0	1.58	0.497
CL-U-9							
CL-U-3							

Bottom Ash	Results																						
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined
BA-U-1	0	26.3	317	1.75	8.32	52.9	776	0	0.0323	0.0901	0	0	0	0	0	0.191	0	0.0109	0	0	0.15	0.73	0.88
BA-U-2	0	3.58	366	0.821	11.8	39.6	748	0	0	0.0899	0	0	0	0	0	0.215	0	0.0086	0	0	0.09	0.98	1.07
BAC-1	1.91	88.7	914	0.266	8.92	702	2920	0	0.0145	0.0563	0	0	0.00666	0	0	0.305	0	0.0317	0.00643	0	0.2	0.99	1.19
BAC-2	10.6	216	1730	0	7.21	3260	7720	0	0.042	0.0211	0	0	0.00799	0	0	0.586	0	0.177	0.0138	0	0.14	0.64	0.78
BAC-3	7.76	401	3510	0	7.29	4900	13200	0	0.0251	0.0316	0	0	0.00858	0	0	1.17	0	0.0292	0.0212	0	0.3	0.76	1.06
BAC-4	0	56.1	612	1.13	7.84	212	1220	0	0.0329	0.0666	0	0	0	0	0	0.228	0	0.0113	0	0	0.37	0.47	0.84
BAC-5	0	58.3	654	1.1	7.76	217	1180	0	0.0297	0.0881	0	0	0	0	0	0.259	0	0.00728	0	0	0.31	0.28	0.59
BAC-6	4.25	135	697	0.779	7.63	1110	2810	0	0.0229	0.0256	0	0	0	0	0	0.257	0	0.0921	0.00414	0	0.24	0.76	1
BAC-7	3.4	146	632	0.864	7.78	1290	3170	0	0.0154	0.0288	0	0	0.00398	0	0	0.36	0	0.0888	0.00457	0	2.5	0.88	3.38

Bottom Ash	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
BA-U-1	18.46	8.13	-138	1500	0	2.32	0.963
BA-U-2	19.9	11.43	-301	1870	0	0.58	1.2
BAC-1	22.57	9.92	-118	5180	15.6	2.32	3.27
BAC-2	19.02	7.09	-80	10900	2.2	0.84	6.76
BAC-3	18.87	7.1	-69	17800	3.2	1.02	11
BAC-4	17.01	7.62	-158	2380	0	1.61	1.52
BAC-5	17.31	7.69	-131	2560	0	2.62	1.64
BAC-6	19.46	7.59	-128	3900	35.2	0.85	2.5
BAC-7	17.97	7.5	-147	4610	2.9	1.16	2.95

Waste Water	Results																						
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined
SI-U-1	0	116	763	0.522	7.56	427	1800	0	0.0101	0.0599	0	0.00128	0.00274	0	0	0.235	0	0.00233	0	0	0.2	1.3	1.5
WW-U-1	1.18	312	2340	0.181	7.41	1450	4540	0	0.00568	0.0521	0	0	0.00212	0	0	0.441	0	0.00556	0.00625	0	1.2	1.5	2.7
WW-U-2	0.741	338	2590	0.287	7.36	1040	12500	0	0.00325	0.0803	0	0	0.067	0	0	0.512	0	0.0226	0.00846	0	0.52	1.6	2.12
WWC-1	9.88	413	4410	0	7.14	2770	11000	0	0.0173	0.0326	0	0	0	0	1.11	0.000175	0.0147	0.0147	0	0	0.39	1.5	1.89
WWC-2	0	49.5	326	0.447	7.85	134	832	0	0.0141	0.0339	0	0	0	0	0	0.138	0	0.00405	0	0	0.24	0.24	0.48
WWC-3	0	25.9	220	0.974	8.12	84.3	696	0	0.0214	0.0281	0	0	0	0	0	0.146	0	0.00504	0	0	0.1	0.45	0.55
WWC-4	1.33	229	1330	0.466	7.22	912	3060	0	0.013	0.0545	0	0	0	0	0	0.421	0	0	0.00241	0	0.22	0.74	0.96
WWC-5	2.25	287	1790	0	7.49	1420	4810	0	0.00753	0.0379	0	0	0.00202	0	0	0.567	0	0.00531	0.00336	0	0.2	1.5	1.7
WWC-6																							
WWC-7																							

Waste Water	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
SI-U-1	17.96	7.27	-138	3170	0	0.57	2.03
WW-U-1	18.63	6.87	-32	8050	0	1	5.07
WW-U-2	18.21	7.22	-161	7610	0.1	0.91	4.79
WWC-1	16.96	6.95	-34	15200	0.1	0.67	9.48
WWC-2	16.11	7.72	-169	1500	1.3	0.94	0.96
WWC-3	16.94	7.99	-194	1210	0.7	0.63	0.773
WWC-4	16.15	7.16	-73	5.48	0.5	0.6	3.46
WWC-5	16.54	7.01	-42	7225	0.9	0.76	4.57
WWC-6							
WWC-7							

Results below reporting limit are recorded as 0.

Round 8 Detection Monitoring - September 25-October 4, 2017

Landfill Wells	Results																						
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined
CL-U-1	0	52.1	422	1.07	7.73	116	1130	0	0.0291	0.088	0	0	0	0	0	0.212	0	0.00398	0	0	0.25	1.6	1.85
CL-U-2	0	53.8	390	1.1	7.67	120	1060	0	0.0262	0.0941	0	0	0	0	0	0.212	0	0.00415	0	0	0.17	1.4	1.57
CLW-1	0	35.7	310	1.15	7.85	71.7	808	0	0.0308	0.0614	0	0	0	0	0	0.192	0	0.00407	0	0	0.21	1.7	1.91
CLW-2	0	43.5	407	1.23	7.76	97.3	1040	0	0.0257	0.0793	0	0	0	0	0	0.229	0	0.00467	0	0	0.12	3	3.12
CLW-3	0	36.2	347	1.34	7.8	100	884	0	0.0408	0.102	0	0	0	0	0	0.223	0	0.00474	0	0	0.16	1.1	1.26
CLW-4	0	30.5	313	1.6	7.81	85.1	856	0	0.0333	0.09	0	0	0.0516	0	0	0.199	0	0.0115	0	0	0.24	1.8	2.04
CLW-5	0	33.2	344	1.82	7.8	88.5	824	0	0.023	0.0727	0	0	0	0	0	0.211	0	0.0052	0	0	0.2	2.2	2.4
CLW-6	0	30.5	317	1.73	7.82	74.5	828	0	0.0143	0.0961	0	0	0	0	0	0.199	0	0.00721	0	0	0.29	1.7	1.99
CLW-7	0	45.5	319	1.11	7.7	64.5	868	0	0.0244	0.0539	0	0	0	0	0	0.189	0	0.00389	0	0	0.45	0.95	1.4
CLW-8	0	37.9	319	1.13	7.77	70.6	788	0	0.0252	0.0689	0	0	0	0	0	0.192	0	0.00431	0	0	0.25	1.6	1.85
CL-U-9																							
CL-U-3																							

Round 8

Landfill Wells	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
CL-U-1	16.07	7.45	-199	1990	0.4	0.56	1.24
CL-U-2	15.67	7.43	-176	1880	0.8	0.58	1.2
CLW-1	20.49	7.68	-172	1448	0	0.41	0.949
CLW-2	16.63	7.63	-199	1880	0.7	0.64	1.2
CLW-3	16.82	7.59	-251	1750	1.5	2.9	1.12
CLW-4	17.63	7.56	-269	1620	1.6	1.56	1.03
CLW-5	17.21	7.71	-244	1690	3.7	1.12	1.09
CLW-6	15.97	7.75	-259	1.6	2.3	3.3	1.02
CLW-7	16.72	7.59	-147	1640	0	0.86	1.05
CLW-8	18.26	7.65	-145	1.53	1.1	1.89	0.975
CL-U-9							
CL-U-3							

Bottom Ash	Results																						
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined
BA-U-1	0	169	1040	1.02	7.53	343	2310	0	0.0215	0.0745	0	0	0	0	0.368	0	0.00296	0.00375	0	0	0.07	1.3	1.37
BA-U-2	0	46.3	479	0.993	8.04	53.7	1140	0	0.0249	0.156	0	0	0	0	0.241	0	0.00294	0	0	0.24	1.5	1.74	
BAC-1	4.86	229	2620	0.854	7.4	2150	8400	0	0.0148	0.702	0	0	0.114	0.00461	0	0.52	0	0.0467	0.0174	0	0.39	1.6	1.99
BAC-2	10.1	221	1690	1.33	7.62	2970	7940	0	0.0469	0.202	0	0	0.00547	0	0	0.431	0	0.154	0.0149	0	0.11	0.14	0.25
BAC-3	8.76	353	3370	2.51	7.43	5340	12700	0	0.054	0.0306	0	0	0.0114	0	0	0.897	0	0.0525	0.0287	0	0.23	1.3	1.53
BAC-4	0	62.4	482	1.26	7.76	231	1280	0	0.0359	0.0703	0	0	0	0	0	0.262	0	0.0139	0	0	0.1	2.5	2.6
BAC-5	0	67.5	593	1.17	7.74	269	1450	0	0.0325	0.0877	0	0	0	0	0	0.294	0	0.00838	0	0	0.26	2.7	2.96
BAC-6	0.978	77.2	516	1.01	7.97	301	1510	0	0.0156	0.0833	0	0	0	0	0	0.265	0	0.0213	0	0	0.27	3.8	4.07
BAC-7	3.41	144	633	1.15	7.65	1220	2990	0	0.0191	0.0223	0	0	0	0	0	0.285	0	0.074	0.00446	0	0.15	0.84	0.99

Bottom Ash	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
BA-U-1	16.04	7.21	-166	4300	1.7	0.78	2.75
BA-U-2	16.58	8.07	-272	2030	0	1.63	1.3
BAC-1	15.36	6.93	-28	7170	1	0.54	4.52
BAC-2	16.95	6.92	-20	11500	2	0.9	7.11
BAC-3	16.87	7.07	-102	18.7	43.3	0.94	11.6
BAC-4	16.67	7.68	-148	2470	1.1	0.62	1.58
BAC-5	16.66	7.71	-140	2740	0.8	1.12	1.75
BAC-6	17.02	7.83	-47	2610	0.9	2.54	1.67
BAC-7	15.97	7.45	-121	4500	3.3	2.56	2.88

Waste Water	Results																						
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined
SI-U-1	0	110	820	0.618	7.55	263	1810	0.002	0.00969	0.0783	0	0	0	0	0.257	0	0.00251	0	0	0.44	0.56	1	
WW-U-1	1.2	311	2130	0.539	7.23	1280	5260	0	0.0055	0.0545	0	0	0.003309	0	0	0.459	0	0.00792	0.00697	0	0.34	1.2	1.54
WW-U-2	1.66	314	2280	0.721	7.31	1220	5510	0	0.0104	0.0659	0	0	0.00415	0	0	0.485	0	0.00647	0.0122	0	0.24	1.3	1.54
WWC-1	9.55	492	4430	0.507	7.37	2990	11500	0	0.0177	0.0272	0	0	0	0	0	0.755	0.000262	0.0068	0.014	0	0.26	1.2	1.46
WWC-2	0	53.6	347	0.452	7.78	137	936	0	0.0142	0.0361	0	0	0	0	0	0.112	0	0.00341	0	0	0.24	1.2	1.24
WWC-3	0	25.3	207	1.13	8.14	84	704	0	0.0207	0.0242	0	0	0	0	0	0.127	0	0.00477	0	0	0.08	2	2.08
WWC-4	1.11	201	1100	0.57	7.38	744	3280	0	0.0135	0.0529	0	0	0	0	0	0.313	0	0	0.00214	0	0.38	0.4	0.78
WWC-5	1.48	327	1620	0.544	7.16	1240	4590	0	0.0104	0.0438	0	0	0	0	0	0.496	0	0.00395	0.00407	0	0.41	0.65	1.06
WWC-6																							
WWC-7																							

Waste Water	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
SI-U-1	17.02	7.36	-123	3490	0	1.25	2.24
WW-U-1	16.41	6.96	-135	8820	0.7	1.56	5.56
WW-U-2	16.68	7.09	-34	9.23	0.6	3.75	5.82
WWC-1	16.21	6.78	48	18900	0.8	1.92	11.7
WWC-2	16.38	7.64	-110	1740	1	2.87	1.12
WWC-3	15.49	8.16	-207	1220	1.3	0.45	0.781
WWC-4	16.11	7.17	-77	4980	1.2	0.46	3.19
WWC-5	15.42	6.94	-31	7180	1.3	0.53	4.52
WWC-6							
WWC-7							

Results below reporting limit are recorded as 0.

Round 9 Assessment Monitoring - March 26-30, 2018

Landfill Wells	Results																				Field Results									
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
	CL-U-1	0	62.6	402	0.971	7.66	94.9	1090	0	0.0283	0.0758	0	0	0.000529	0	0	0.209	0	0.00359	0	0	0.18	0.81	0.99	14.91	7.28	-193	1940	0.6	0.54
CL-U-2	0	64.1	352	0.895	7.65	92.7	980	0	0.0236	0.0873	0	0	0	0	0	0.194	0	0.00376	0	0	0.34	0.16	0.5	14.84	7.24	-174	1890	0.2	0.67	1.21
CLW-1	0	37.8	318	1.02	7.67	59.5	720	0	0.0265	0.0531	0	0	0.0271	0	0	0.179	0	0.00668	0	0	0.09	0.53	0.62	16.76	7.7	-186	1530	0.2	0.7	0.98
CLW-2	0	51.4	421	1.13	7.8	79.4	1020	0	0.0258	0.0711	0	0	0	0	0	0.212	0	0.00439	0	0	0.24	0.94	1.18	15.47	7.6	-204	1880	0.4	0.96	1.22
CLW-3	0	42.8	334	1.23	7.86	82.3	956	0	0.0364	0.089	0	0	0.000505	0	0	0.2	0	0.00464	0	0	0.37	0.94	1.31	16.64	7.49	-236	1720	0	1.61	1.1
CLW-4	0	35.8	301	1.35	7.77	70.4	864	0	0.0352	0.0788	0	0	0.000762	0	0	0.189	0	0.00477	0	0	0.46	0.59	1.05	16.15	7.51	-259	1610	0	2.2	1.03
CLW-5	0	37.4	354	1.71	7.66	79.9	876	0	0.021	0.0671	0	0	0.000712	0	0	0.194	0	0.0054	0	0	0.15	0.96	1.11	16.46	7.43	-239	1720	3	1	1.1
CLW-6	0	34.2	292	1.62	7.74	60.4	916	0	0.0104	0.0885	0	0	0.000612	0	0	0.182	0	0.00729	0	0	0.56	0.48	1.04	15.56	7.47	-250	1600	0.1	3.61	1.03
CLW-7	0	47	316	0.972	7.59	51.3	792	0	0.0215	0.0475	0	0	0	0	0	0.183	0	0.00341	0	0	0.28	0.22	0.5	18.88	7.52	-123	1570	0	1.89	1
CLW-8	0	44.1	303	0.981	7.63	54.2	792	0	0.0231	0.0609	0	0	0	0	0	0.188	0	0.00376	0	0	0.25	0.8	1.05	18.47	7.58	-129	1520	0	0.45	0.973
CLW-9																														
CL-U-3																														

Bottom Ash	Results																				Field Results									
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
	BA-U-1	0	33.5	296	1.64	8.05	50.7	872	0	0.0276	0.0837	0	0	0.00126	0	0	0.199	0	0.00914	0.0022	0	0.07	0.31	0.38	15.13	7.78	-33	1600	0.6	3.82
BA-U-2	0	46.2	399	0.943	8.2	46.9	1080	0	0.0227	0.125	0	0	0	0	0	0.209	0	0.00311	0.000691	0	0.12	0.34	0.46	16.14	8.65	-281	1750	0.2	0.25	1.12
BAC-1	3.88	192	1890	0.507	7.63	1470	6120	0.00138	0.0127	0.0501	0	0	0.00451	0	0	0.581	0	0.028	0.00924	0	0.31	0.48	0.79	16.99	7.23	-189	9190	8.1	0.52	5.79
BAC-2	9.89	283	1940	1.32	7.72	3070	8590	0	0.0508	0.0238	0	0	0.00777	0	0	0.524	0	0.142	0.0173	0	0.29	0.89	1.18	15.94	6.82	-77	12000	1.2	0.51	7.44
BAC-3	7.91	417	3480	1.62	7.84	4460	13000	0	0.0441	0.0331	0	0	0.00468	0	0	1.05	0	0.0396	0.0228	0	0.28	1.25	1.53	15.37	7.03	-82	18900	5	3.65	11.7
BAC-4	0	67.4	489	1.14	7.74	221	1300	0	0.0316	0.0605	0	0	0	0	0	0.249	0	0.0143	0	0	0.1	0.81	0.91	15.79	7.47	-150	2500	0.5	0.7	1.6
BAC-5	0	74.8	524	1.07	7.68	234	1480	0	0.0275	0.0706	0	0	0	0	0	0.284	0	0.00915	0	0	0.24	0.5	0.74	18.41	7.47	-149	2570	0.5	3.97	1.63
BAC-6	4.58	145	595	1.15	7.48	1100	2600	0	0.0214	0.0227	0	0	0	0	0	0.28	0	0.0898	0.00249	0	0.08	0.72	0.8	19.15	7.32	-92	3810	0.5	0.55	2440
BAC-7	4.51	137	1980	0.388	7.57	1100	2730	0	0.0235	0.0195	0	0	0	0	0	0.288	0	0.0752	0.0048	0	0.14	0.71	0.85	19.26	7.4	-101	4190	3	3.14	2.68

Waste Water	Results																				Field Results									
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
	SH-U-1	0	129	739	0.506	7.5	201	1840	0	0.00929	0.0741	0	0	0.00137	0	0	0.241	0	0.00227	0	0	0.04	0.73	0.77	16.11	7.56	-31	3240	0	0.71
WW-U-1	1.34	339	1900	0.406	7.05	1050	5280	0	0.005	0.0486	0	0	0.00193	0	0	0.436	0	0.00702	0.00653	0	0.45	0.91	1.36	16.35	7.11	-75	8010	0.7	0.4	5.03
WW-U-2	1.47	370	2010	0.532	7.16	925	5260	0	0.00642	0.0499	0	0	0.00144	0	0	0.475	0	0.00467	0.0115	0	0.34	0.94	1.28	16.11	7.27	-10	8450	0.2	0.47	5.32
WWC-1	11.9	638	4100	0.236	6.89	2640	12700	0	0.02	0.0209	0	0	0	0	0	0.805	0.000205	0.00596	0.015	0	0.25	1.21	1.46	16.03	6.65	-17	19900	0	2.51	12.4
WWC-2	0	57.2	308	0.41	7.62	111	784	0	0.014	0.031	0	0	0	0	0	0.104	0	0.00356	0	0	0.1	0.55	0.65	15.75	7.52	-124	1650	0.4	0.55	1.05
WWC-3	0	28.9	200	0.985	7.96	67.8	628	0	0.0214	0.0245	0	0	0	0	0	0.131	0	0.00464	0	0	0.07	0.27	0.34	14.89	7.81	-190	1250	1.1	0.79	0.8
WWC-4	1.19	200	1010	0.365	7.3	593	2790	0	0.0128	0.0463	0	0	0	0	0	0.355	0	0	0	0	0.22	0.58	0.8	16.17	7.26	-64	4600	2.3	0.37	2.92
WWC-5	2.86	321	1600	0.384	6.92	1450	5030	0	0.0096	0.0302	0	0	0	0	0	0.511	0	0.00301	0.00415	0	0.2	1.64	1.84	17.27	7.02	-36	7300	0	0.34	4.6
WWC-6																														
WWC-7																														

Results below reporting limit are recorded as 0.

Round 10 Assessment Monitoring - June 4-13, 2018

Landfill Wells	Results																						
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined
CL-U-1	0	54.7	372	0.853	7.7	98	984	0	0.0272	0.0799	0	0	0	0	0.208	0	0.00361	0	0	0.18	0.67	0.85	
CL-U-2	0	56.4	365	0.862	7.64	108	952	0	0.0242	0.09	0	0	0	0	0.195	0	0.0038	0	0	-0.02	0.67	0	
CLW-1	0	35.2	298	1.02	7.93	57.8	748	0	0.0285	0.0568	0	0	0.00102	0	0	0.184	0	0.00388	0.000928	0	0.29	1.01	1.3
CLW-2	0	44.6	399	1.14	7.79	86.8	980	0	0.0247	0.072	0	0	0	0	0.222	0	0.00433	0	0	0.25	0.96	1.21	
CLW-3	0	37.5	323	1.16	7.91	94.2	876	0	0.0382	0.0948	0	0	0	0	0.214	0	0.00483	0	0	0.18	0.55	0	
CLW-4	0	31.8	289	1.35	7.91	76.4	836	0	0.0358	0.0801	0	0	0	0	0.204	0	0.00459	0	0	0.13	0.85	0.85	
CLW-5	0	33.1	318	1.59	7.79	75.3	804	0	0.0215	0.0689	0	0	0	0	0.21	0	0.00519	0	0	0.11	0.76	0	
CLW-6	0	29.9	292	1.45	7.88	66.3	796	0	0.0109	0.0902	0	0	0	0	0.199	0	0.00711	0	0	0.27	0.85	1.12	
CLW-7	0	40.6	321	0.945	7.68	58.6	900	0	0.0234	0.0514	0	0	0	0	0.186	0	0.00329	0	0	0.16	0.97	0.97	
CLW-8	0	38.8	314	0.933	7.73	63.5	768	0	0.0244	0.0632	0	0	0	0	0.188	0	0.00359	0	0	0.18	1.26	1.26	
CLW-9																							
CL-U-3																							

Bottom Ash	Results																						
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined
BA-U-1	0	140	799	0.818	7.54	254	1970	0	0.0199	0.0636	0	0	0.000506	0	0	0.337	0	0.00279	0.00324	0	0.39	1.94	2.33
BA-U-2	0	70.1	578	0.73	7.68	63.5	1330	0	0.0208	0.145	0	0	0	0	0.279	0	0.00215	0.00201	0	0.16	1.13	1.13	
BAC-1	2.16	113	1190	0.315	7.92	971	3120	0.00158	0.0141	0.0393	0	0	0.00714	0	0	0.314	0	0.0288	0.00694	0	0.24	1.06	1.3
BAC-2	8.44	263	2210	0.684	7.1	3430	7720	0	0.0445	0.021	0	0	0.00483	0	0	0.463	0	0.143	0.0154	0	0.12	1.03	1.03
BAC-3	7.26	347	3870	1.52	7.42	5080	12700	0	0.0588	0.0327	0	0	0.00511	0	0	0.944	0	0.0467	0.0329	0	0.27	1.44	1.71
BAC-4	0	62.8	510	1.01	7.95	221	1290	0	0.0322	0.0672	0	0	0	0	0.247	0	0.0165	0	0	0.06	0.92	0	
BAC-5	0	73.5	591	0.916	7.82	302	1180	0	0.0292	0.0763	0	0	0	0	0.288	0	0.0128	0	0	0.19	1.56	1.75	
BAC-6	4.12	134	694	0.582	7.65	1120	2980	0	0.0217	0.0235	0	0	0	0	0.25	0	0.0938	0.00229	0	0.14	1.02	1.02	
BAC-7	4.36	130	709	1.09	7.74	1280	2760	0	0.0275	0.0204	0	0	0	0	0.269	0	0.0757	0.00541	0	0.06	0.87	0	

Waste Water	Results																						
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined
SI-U-1	0	123	873	0.499	7.62	209	2040	0	0.00839	0.0653	0	0	0.000602	0	0	0.254	0	0.00182	0	0	0.32	1.34	1.66
WW-U-1	1.19	289	1940	0.265	7.17	1140	5450	0	0.00477	0.0479	0	0	0.00124	0	0	0.443	0	0.00591	0.00663	0	0.23	1.49	1.72
WW-U-2	1.23	337	2130	1.01	7.3	985	5120	0	0.0102	0.0459	0	0	0.00137	0	0	0.508	0	0.00277	0.0112	0	0.05	0.93	0.93
WWC-1	8.22	504	4710	0.114	7.2	2730	11100	0	0.0173	0.0268	0	0	0	0	0.831	0.000168	0.00896	0.0139	0	0.25	1.16	1.16	
WWC-2	0	50	340	0.358	7.91	119	852	0	0.0143	0.0338	0	0	0	0	0.11	0	0.00372	0	0	0.08	0.27	0	
WWC-3	0	27.3	230	0.897	8.05	88.4	644	0	0.0226	0.0278	0	0	0	0	0.125	0	0.00527	0	0	-0.03	0.15	0	
WWC-4	0.998	184	1080	0.435	7.43	620	2640	0	0.0129	0.0495	0	0	0	0	0.309	0	0.00215	0.00201	0	0.28	0.35	0	
WWC-5	2.64	314	1820	0.219	7.26	1660	5200	0	0.0104	0.0327	0	0	0	0	0.472	0	0.00324	0.00395	0	0.1	1.58	1.58	
WDB-7																							

Results below reporting limit are recorded as 0.

Round 10

Landfill Wells	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
CL-U-1	17.54	7.56	-196	1888	1.7	0.39	1.2
CL-U-2	17.81	7.55	-171	1830	0.7	2.53	1.17
CLW-1	19.97	7.67	-159	1480	2.1	4.08	9.45
CLW-2	17.54	7.63	-220	1830	4.5	0.63	1.18
CLW-3	17.95	7.73	-260	1680	5.5	1.57	1.07
CLW-4	17.85	7.73	-278	1570	2.8	1.64	1
CLW-5	17.16	7.72	-276	1660	8.2	1.29	1.07
CLW-6	17.86	7.83	-280	1570	8	2.56	1.01
CLW-7	17.32	7.6	-150	1610	15.7	3.84	1.03
CLW-8	17.1	7.61	-194	1550	2	0.73	0.985
CLW-9							
CL-U-3							

Bottom Ash	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
BA-U-1	19.26	7.41	-163	3640	1	0.46	2.33
BA-U-2	18.16	7.63	-187	2370	2.1	1.31	1.51
BAC-1	17.87	8.86	-418	6480	53.2	2.95	4.04
BAC-2	16.94	6.98	-63	12400	2.3	4.29	7.68
BAC-3	17.19	7.16	-356	18300	15.2	0.87	11.4
BAC-4	17.11	7.64	-149	2500	1.5	0.75	1.6
BAC-5	17.63	7.61	-126	2850	1.2	0.65	1.83
BAC-6	17.58	7.51	-112	4210	0	0.51	2.63
BAC-7	17.32	7.6	-127	4440	0	0.56	2.84

Waste Water	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
SI-U-1	18.38	7.39	-108	3510	1.7	0.79	2.25
WW-U-1	21.81	6.92	-77	8180	0.1	0.51	5.14
WW-U-2	18.76	7.09	-16	8130	7.6	1.06	5.12
WWC-1	16.92	6.94	-84	15600	1.5	4.48	9.65
WWC-2	17.4	7.75	-163	1570	1.2	0.4	1
WWC-3	17.01	7.89	-191	1220	2.6	0.42	0.782
WWC-4	18.39	7.27	-106	4320	2.4	1.17	2.77
WWC-5	15.81	6.98	-84	7740	0.8	0.58	4.88
WWC-6							
WWC-7							



Round 11 (all results ppm) Assessment Monitoring - October 8-18, 2018

Landfill Wells	Results																						
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined
CL-U-1	0	61.9	415	0.981	7.79	122	1060	0	0.029	0.0796	0	0	0	0	0	0.229	0	0.00383	0	0	0.09	0.32	0
CL-U-2	0	67.5	414	0.995	7.73	128	1010	0	0.0255	0.0919	0	0	0	0	0	0.212	0	0.00408	0	0	0.12	0.94	0.94
CLW-1	0	39.6	288	1.06	7.76	61.9	784	0	0.0298	0.0582	0	0	0.0157	0	0	0.194	0	0.00589	0	0	0.11	1.2	1.2
CLW-2	0	49.7	475	1.19	7.72	88.1	904	0	0.0244	0.0716	0	0	0.014	0	0	0.227	0	0.00593	0	0	0.17	0.38	0
CLW-3	0	42	325	1.27	7.79	95	888	0	0.0384	0.0941	0	0	0	0	0	0.217	0	0.0052	0	0	0.33	0.68	0
CLW-4	0	35.2	297	1.45	7.85	80.7	792	0	0.0375	0.0786	0	0	0	0	0	0.211	0	0.00525	0	0	1.89	0.65	1.89
CLW-5	0	36.9	320	1.7	7.72	85.3	852	0	0.0229	0.0714	0	0	0.00999	0	0	0.213	0	0.00679	0	0	1.87	0.17	1.87
CLW-6	0	33.8	292	1.6	7.82	73.3	804	0	0.0152	0.0873	0	0	0.0116	0	0	0.204	0	0.00746	0	0	0.18	0.41	0
CLW-7	0	46.5	399	1.02	7.65	73.2	780	0	0.0232	0.0491	0	0	0	0	0	0.19	0	0.00416	0	0	0.05	0.07	0
CLW-8	0	43	300	1.04	7.71	66.5	796	0	0.0254	0.0643	0	0	0	0	0	0.192	0	0.00503	0	0	0.19	1.2	1.2
CLW-9																							
CL-U-3																							

Bottom Ash	Results																						
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined
BA-U-1	0	73.9	561	0.881	7.97	62.2	1050	0	0.0216	0.149	0	0	0	0	0	0.276	0	0.00237	0	0	0.44	0.74	1.18
BA-U-2	0	143	885	0.977	7.58	298	1750	0	0.0209	0.0728	0	0	0.0125	0	0	0.321	0	0.00574	0	0	0.22	0.62	0
BAC-1	4.87	225	1840	0.582	7.57	1760	6420	0	0.0129	0.0391	0	0	0.0184	0	0	0.629	0	0.0232	0.00818	0	0.45	0.88	0
BAC-2	9.98	255	1660	1.1	7.35	2730	7800	0	0.0565	0.0204	0	0	0.0111	0	0	0.472	0	0.156	0.0157	0	0.08	0.96	0.96
BAC-3	8.33	469	3280	1.63	7.31	4450	12300	0	0.0496	0.0317	0	0	0.00968	0	0	1.06	0	0.038	0.022	0	0.39	1.06	1.45
BAC-4	0.523	68.1	501	1.15	7.96	273	1300	0	0.00882	0.0171	0	0	0	0	0	0.267	0	0.017	0	0	-0.16	0.48	0
BAC-5	0	82.2	557	1.04	7.86	353	1460	0	0.0325	0.0714	0	0	0	0	0	0.323	0	0.0134	0	0	0.26	0.81	0
BAC-6	4.57	138	624	0.847	7.75	1080	2340	0	0.0248	0.0245	0	0	0	0	0	0.276	0	0.0842	0	0	0.17	1.02	0
BAC-7	4.24	143	649	1.51	7.75	1210	2830	0	0.0434	0.0214	0	0	0	0	0	0.303	0	0.075	0.00579	0	0.19	0.71	0

Waste Water	Results																						
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium 226 and 228 combined
SI-U-1	0	139	805	0.533	7.63	394	1760	0	0.0103	0.0575	0	0	0	0	0	0.265	0	0.00241	0	0	0.07	0.85	0.85
WW-U-1	1.36	357	2150	0.41	7.28	1360	5090	0	0	0.0449	0	0	0.0258	0	0	0.456	0	0.0101	0.00682	0	0.43	1.2	1.63
WW-U-2	1.23	380	2160	0.604	7.31	1090	4570	0	0.0109	0.0446	0	0	0	0	0	0.519	0	0.00338	0.0105	0	0.14	0.83	0.83
WWC-1	12	607	4430	0.331	7.25	3210	13000	0	0.0243	0.0223	0	0	0	0	0	0.964	0.000312	0.00835	0.0145	0	0.15	1.2	0
WWC-2	0	59.5	344	0.448	7.85	139	832	0	0.0152	0.0344	0	0	0	0	0	0.124	0	0.00304	0	0	0.17	0.03	0
WWC-3	0	29.7	209	1.06	7.92	84.2	436	0	0.0247	0.0289	0	0	0	0	0	0.139	0	0.00482	0	0	0	0.76	0
WWC-4	1.34	219	1030	0.481	7.46	692	2880	0	0.0145	0.0507	0	0	0	0	0	0.36	0	0	0	0	0.03	0.8	0
WWC-5	3.07	364	1720	0.431	7.38	1620	5000	0	0.0131	0.034	0	0	0	0	0	0.523	0	0.0031	0.00478	0	0.2	-0.56	0
WDB-7																							

Results below reporting limit are recorded as 0.

Round 11

Landfill Wells	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
CL-U-1	17.4	7.85	-132	1800	40.9	0.61	1.15
CL-U-2	18.15	7.83	-97	1770	0	3.95	1.13
CLW-1	17.83	7.93	-114	1490	0	1.48	0.951
CLW-2	16.04	7.84	-184	1850	0.6	2.72	1.18
CLW-3	17.52	7.98	-178	1660	3.6	3.1	1.06
CLW-4	18.53	8.02	-192	1530	7.2	1.63	0.983
CLW-5	21	7.94	-175	1640	0	1.29	1.05
CLW-6	16.49	8.02	-210	1560	0	2.23	1
CLW-7	17.12	7.83	-81	1560	2.4	2.97	1
CLW-8	17.05	7.91	-130	1510	0	1.37	0.963
CLW-9							
CL-U-3							

Bottom Ash	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
BA-U-1	16.4	7.71	-41	3010	0	0.7	1.94
BA-U-2	18.72	8.31	-138	2010	0	0.56	1.28
BAC-1	16.12	7.43	-228	9840	77.8	0.85	6.2
BAC-2	16.79	7.15	-22	11200	2.5	1.3	6.93
BAC-3	16.79	7.31	42	18300	7	5.15	11.3
BAC-4	15.08	7.77	-69	2500	0.2	0.61	1.6
BAC-5	16.95	7.88	-43	2860	0	0.52	1.83
BAC-6	17.13	7.74	-35	3970	0	0.49	2.54
BAC-7	17	7.76	-71	4420	1.9	0.48	2.84

Waste Water	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
SI-U-1	17.1	7.65	-6	3290	0	0.58	2.11
WW-U-1	16.29	7.25	-7	8350	0.6	0.87	5.27
WW-U-2	16.41	7.44	55	7730	0	1.5	4.87
WWC-1	16.6	7.11	40	19600	0	4.49	12.1
WWC-2	17.73	7.91	-84	1600	2.1	0.62	1.03
WWC-3	16.97	8.12	-179	1190	0.2	0.56	0.759
WWC-4	16.27	7.4	-32	4780	0.7	0.54	3.06
WWC-5	15.76	7.16	-11	7580	1	3.51	4.77
WWC-6	15.05	7.63	-148	3550	1.8	0.7	2.27
WWC-7	15.18	8.07	-195	1510	8.4	0.65	0.967

Engineering Assessment

Assessment Wells	Results																				Radium 226 and 228 combined	Assessment Wells	Field Results								
	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium			Radium 226	Radium 228	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
RW-4	0.659	65.4	150	0.556	7.84	109	508	0	0.0298	0.0857	0	0	0	0	0	0	0	0.00311	0	0											
RW-5	0	32.1	569	0.86	7.73	224	1410	0	0.0308	0.0253	0	0	0.00472	0	0	0	0	0.00486	0	0											
RW-7	0	46.9	308	0.576	7.8	128	784	0	0.0217	0.033	0	0	0.00366	0	0	0.146	0	0.00436	0	0											
WDB-19	0	35	339	1.46	7.9	784	892	0	0.0287	0.0501	0	0	0.016	0	0	0.209	0	0.00623	0	0	0.16										
WWC-6	0.509	142	802	0.244	7.57	370	1920	0	0.0142	0.0795	0	0	0.00296	0	0	0.207	0	0.00542	0	0											
WWC-7	0	63.7	298	0.415	7.76	146	728	0	0.0141	0.046	0	0	0.00407	0	0	0.112	0	0.00473	0	0											
RW-5																						15.56	7.92	72	2630		2.5	0.51	1.69		
RW-4																						15.98	8.2	-64	0.96		0.3	0.96	0.615		
RW-7																						14.72	7.83	-79	1550		7	0.72	0.99		
WDB-19																						15.61	7.94	-197	1580		0	0.9	1.01		
EMW-9																						15.05	7.63	-148	3550		1.8	0.7	2.27		
EMW-4u																						15.18	8.07	-195	1510		8.4	0.65	0.967		

# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

January 28, 2019

## Appendix A Copies of Drilling Logs and Well Schematic Diagrams

Above-grade, 5-feet. long, 8-in. dia., steel Wellhead Protective Monument set in a 2X2 Concrete Pad ~ 2.5-feet. stick-up

Ground Surface

8-inch diameter, from 0 to 80-feet bgs

4-inch diameter, Sch. 40 PVC, from ~ 2.0 feet above ground surface (ags) to 68 feet below ground surface (bgs)

Cement-Bentonite gel (~ 10:1) Grout, Tremie-Pipe Slurry, from 0 to 61.5-feet bgs

At Time of Drilling, Depth to main Groundwater: ~ 66.5-feet bgs

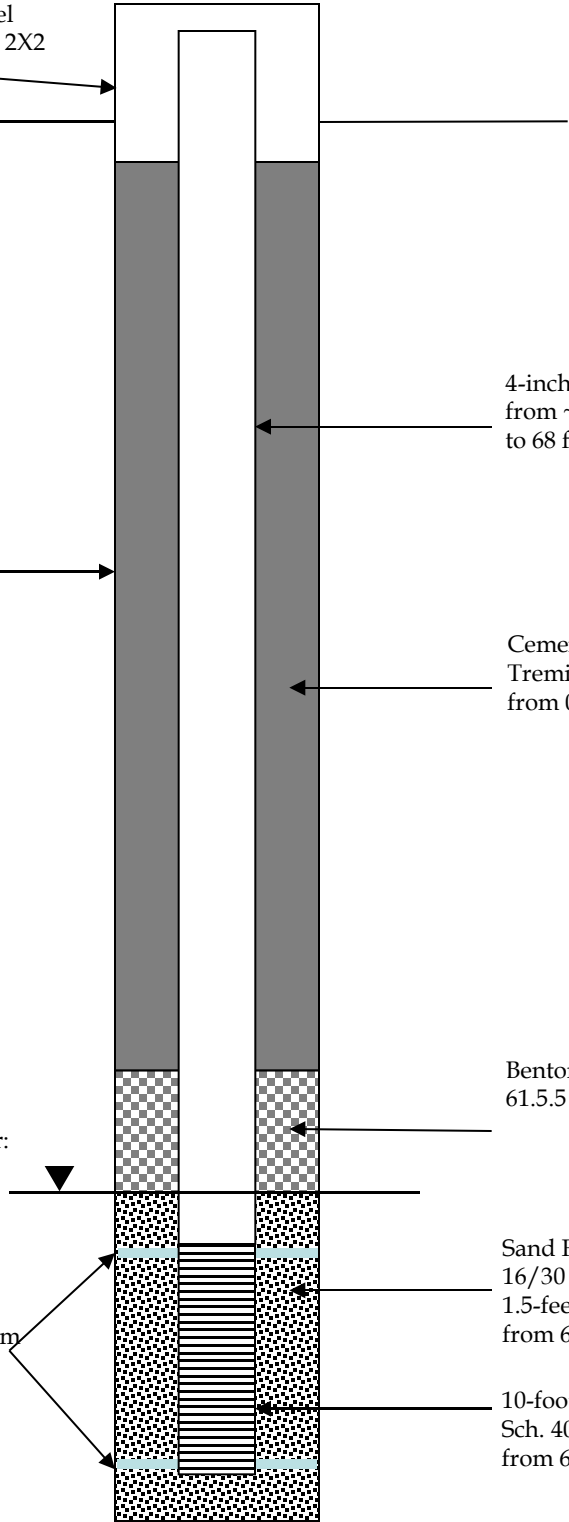
Bentonite medium chips, from 61.5 to 66.5 feet bgs

Centralizers - placed at the bottom and the top of the well screen.

Sand Filter Pack: 16/30 washed silica sand, 1.5-feet above screen from 66.5 to 80 feet bgs

10-foot length; 4-inch diameter Sch. 40 PVC, 0.020"-slotted, from 68 to 78 feet bgs

Total Depth (TD) = 80 feet bgs



IPSC – COMBUSTION BYPRODUCT LANDFILL AREA  
DELTA, UTAH

Well CL-U-1 Schematic

Date Drawn  
7/23/15

Design by

Drawn by MS

Scale

Last Revision  
Date

Above-grade, 5-feet long, 8-in. dia., steel Wellhead Protective Monument ~ 2.5-feet stick-up

Ground Surface

4-inch Diameter, Sch. 40 PVC Well Casing from ~ 2.0 - 80 feet bgs

Cement-Bentonite (~ 10:1) Grout, Tremie-Pipe Slurry from 0 to 63-feet below ground surface (bgs)

8-inch boring from 0 to 80-feet bgs

Medium bentonite chips From 63 to 67 feet bgs)

Sand Filter Pack (16/30 washed, silica sand, 3 feet above screen from 67 to 80 feet bgs)

At Time of Drilling, Depth to Uppermost Ground Water ~ 70-fbgs

Centralizers placed ~ the bottom and the top of the well screen

10-feet; 4-inch 0.020-slotted, PVC well screen from 70 to 80-feet bgs

Total Depth (TD) = 80 feet bgs



IPSC- CB LANDFILL AREA  
DELTA, UTAH

Well CLU-2 Schematic

Date Drawn  
9/1/15

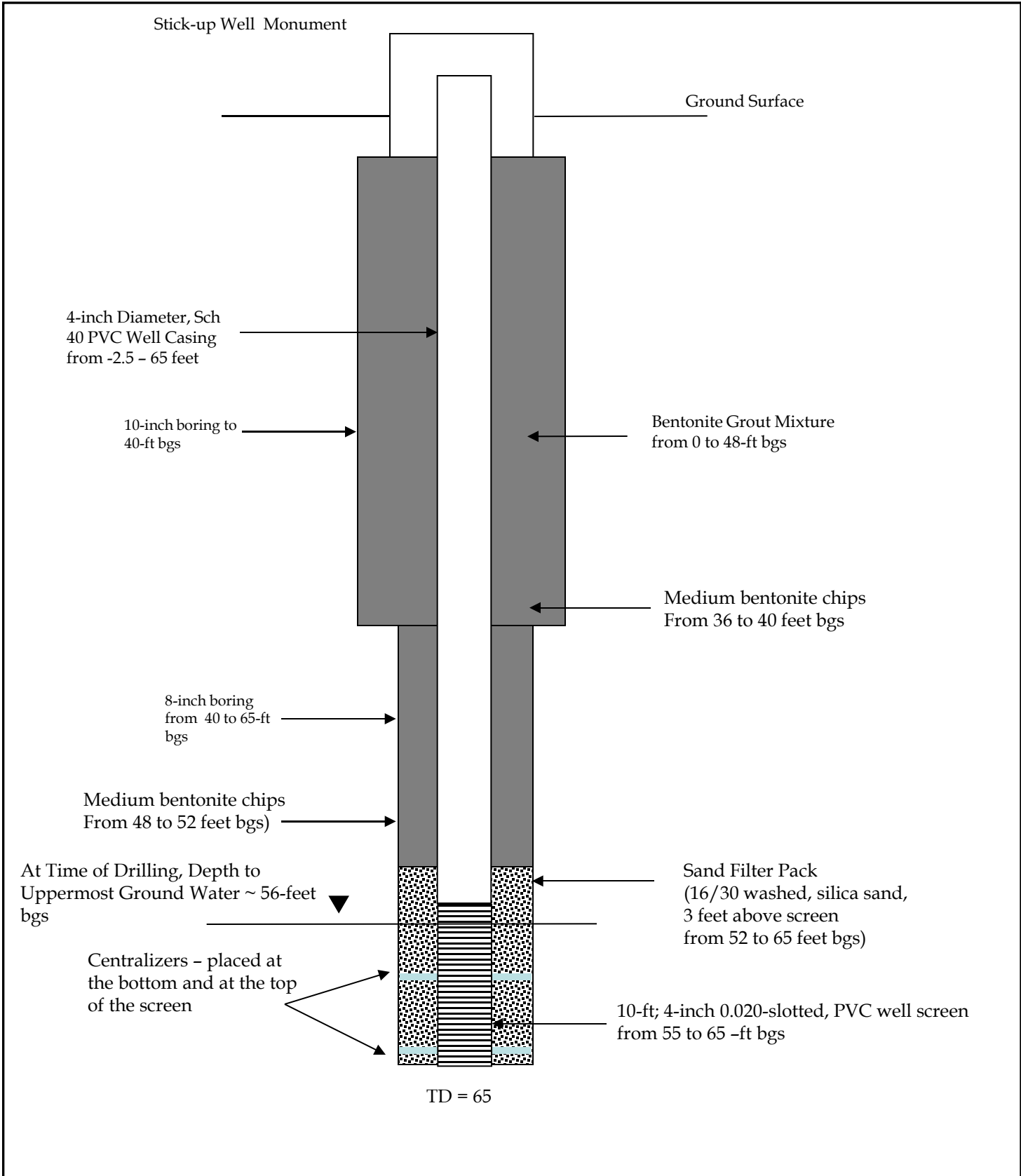
Design by

Drawn by

TH

Scale

Last Revision  
Date



ISPC- LANDFILL AREA  
DELTA, UTAH

Figure 1 - CLW-1 Schematic

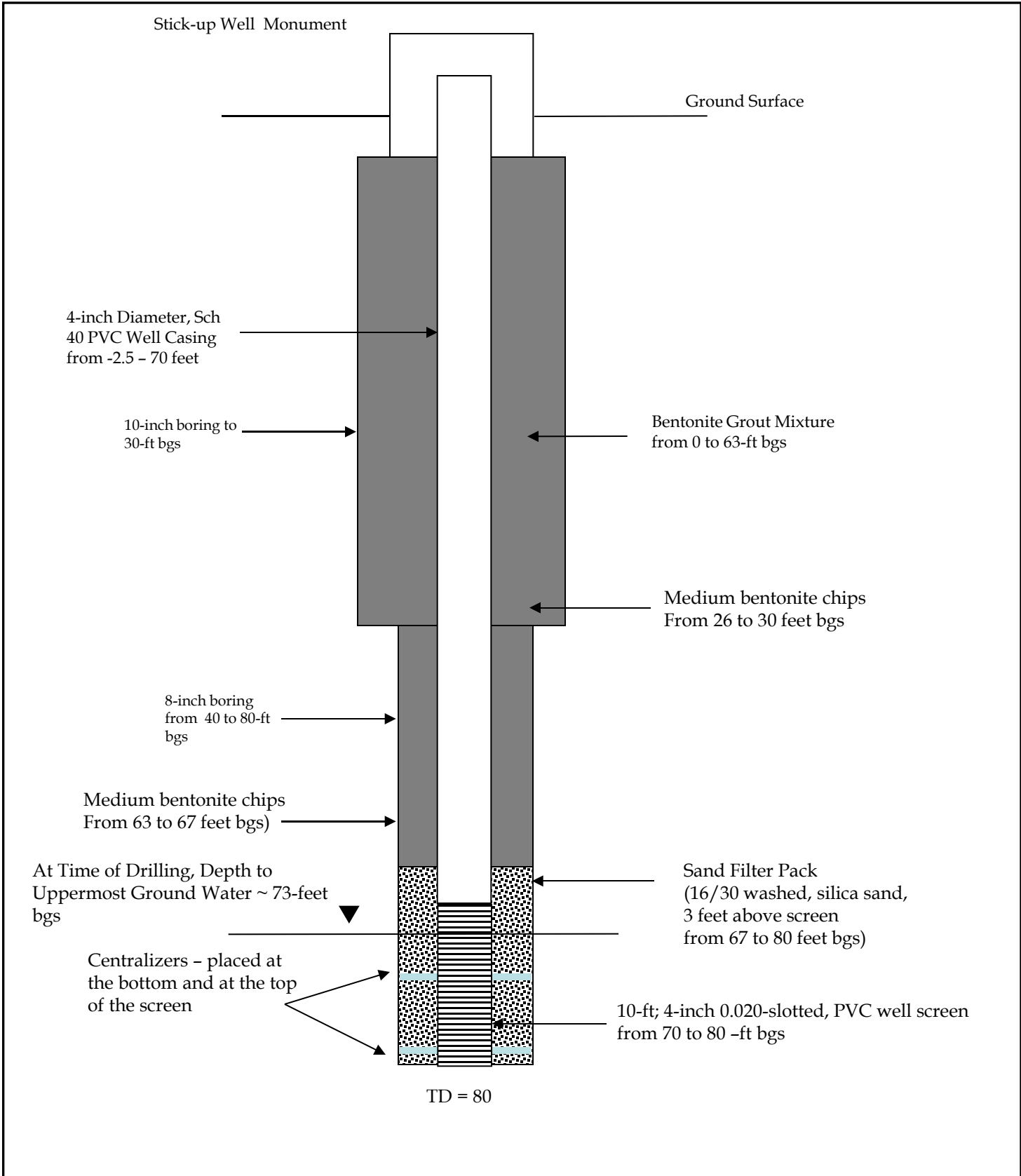
Design by

Drawn by

Scale

Date Drawn

Last Revision  
Date



ISPC- LANDFILL AREA  
DELTA, UTAH

Figure 1 - CLW-2 Schematic

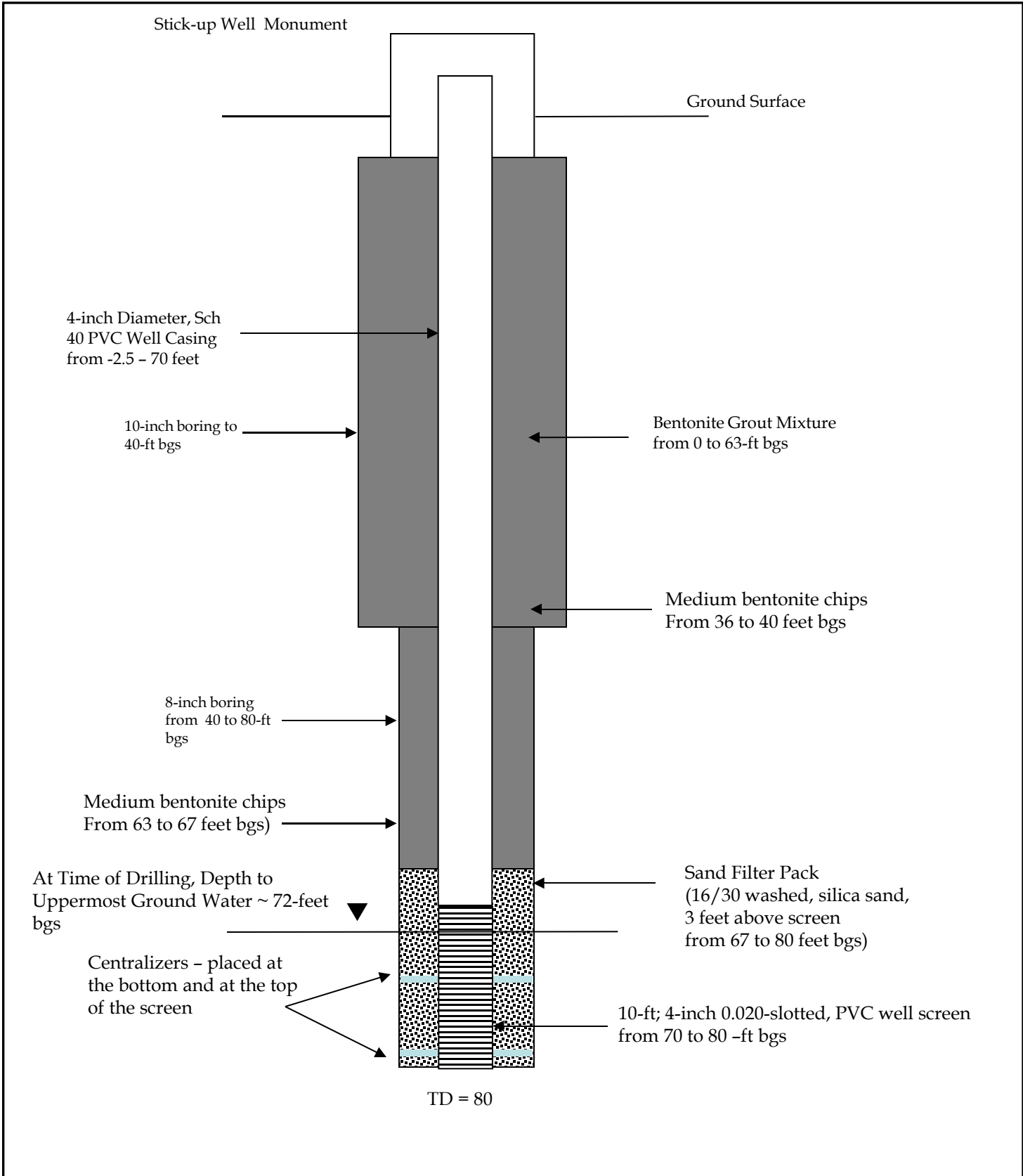
Design by

Drawn by

Scale

Date Drawn

Last Revision  
Date



ISPC- LANDFILL AREA  
DELTA, UTAH

Figure 1 - CLW-3 Schematic

Design by

Drawn by

Scale

Date Drawn

Last Revision Date



Above-grade, 5-feet long, 6-in. dia., steel Wellhead Protective Monument  
~ 2.5-feet. stick-up

Ground Surface

4-inch Diameter, Sch 40 PVC Well Casing from -2.0 - 82 feet

10-inch dia. boring to 39-feet bgs

Cement-Bentonite (~ 10:1) Grout, Tremie-Pipe Slurry from 0 to 63-feet below ground surface (bgs)

Medium bentonite chips From 35 to 39 feet bgs

8-inch boring from 39 to 82-feet bgs

Medium bentonite chips From 63 to 69 feet bgs)

Sand Filter Pack (16/30 washed, silica sand, 3 feet above screen from 69 to 82 feet bgs)

At Time of Drilling, Depth to Uppermost Ground Water ~ 73-feet bgs

Centralizers - placed at the bottom and at the top of the screen

10-feet; 4-inch 0.020-slotted, PVC well screen from 72 to 82 -feet bgs

Total Depth (TD) = 82 feet bgs



ISPC- CB LANDFILL AREA  
DELTA, UTAH

CLW-4 Schematic

Date Drawn  
9/1/15

Design by

Drawn by TH

Scale

Last Revision  
Date

Above-grade, 5-feet long, 6-in. dia., steel Wellhead Protective Monument  
~ 2.5-feet stick-up

Ground Surface

4-inch Diameter, Sch 40 PVC Well Casing from -2.0 - 82 feet

10-inch dia. boring to 39-feet bgs

Cement-Bentonite (~ 10:1) Grout, Tremie-Pipe Slurry from 0 to 65-feet below ground surface (bgs)

Medium bentonite chips From 35 to 39 feet bgs

8-inch boring from 39 to 82-feet bgs

Medium bentonite chips From 65 to 69 feet bgs)

Sand Filter Pack (16/30 washed, silica sand, 3 feet above screen from 69 to 82 feet bgs)

At Time of Drilling, Depth to Uppermost Ground Water ~ 72-feet bgs

Centralizers - placed at the bottom and at the top of the screen

10-feet; 4-inch 0.020-slotted, PVC well screen from 72 to 82 -feet bgs

Total Depth (TD) = 82 feet bgs



ISPC- CB LANDFILL AREA  
DELTA, UTAH

CLW-5 Schematic

Date Drawn  
9/1/15

Design by

Drawn by

TH

Scale

Last Revision  
Date

Above-grade, 5-feet long, 6-in. dia., steel Wellhead Protective Monument  
~ 2.5-feet stick-up

Ground Surface

4-inch Diameter, Sch 40 PVC Well Casing from -2.0 - 82 feet

10-inch dia. boring to 39-feet bgs

Cement-Bentonite (~ 10:1) Grout, Tremie-Pipe Slurry from 0 to 70-feet below ground surface (bgs)

Medium bentonite chips From 35 to 39 feet bgs

8-inch boring from 39 to 88-feet bgs

Medium bentonite chips From 70 to 74 feet bgs)

Sand Filter Pack (16/30 washed, silica sand, 4 feet above screen from 74 to 88 feet bgs)

At Time of Drilling, Depth to Uppermost Ground Water ~ 78-feet bgs

Centralizers - placed at the bottom and at the top of the screen

10-feet; 4-inch 0.020-slotted, PVC well screen from 78 to 88 -feet bgs

Total Depth (TD) = 88 feet bgs



ISPC- CB LANDFILL AREA  
DELTA, UTAH

CLW-6 Schematic

Date Drawn  
9/1/15

Design by

Drawn by TH

Scale

Last Revision  
Date

Above-grade, 5-feet long, 6-in. dia., steel Wellhead Protective Monument  
~ 2.5-feet stick-up

Ground Surface

4-inch Diameter, Sch 40 PVC Well Casing from -2.0 - 70 feet

10-inch dia. boring to 39-feet bgs

Cement-Bentonite (~ 10:1) Grout, Tremie-Pipe Slurry from 0 to 45-feet below ground surface (bgs)

Medium bentonite chips From 35 to 39 feet bgs

8-inch boring from 39 to 72-feet bgs

Medium bentonite chips From 45 to 49 feet bgs)

Sand Filter Pack (16/30 washed, silica sand, 3 feet above screen from 49 to 72 feet bgs)

At Time of Drilling, Depth to Uppermost Ground Water ~ 52-feet bgs

Centralizers - placed at the bottom and at the top of the screen

10-feet; 4-inch 0.020-slotted, PVC well screen from 52 to 72 -feet bgs

Total Depth (TD) = 72 feet bgs



ISPC- CB LANDFILL AREA  
DELTA, UTAH

CLW-7 Schematic

Date Drawn  
9/1/15

Design by

Drawn by TH

Scale

Last Revision  
Date

Above-grade, 5-ft. long, 6-in. dia., steel Wellhead Protective Monument  
~ 2.5-ft. stick-up

Ground Surface

4-inch Diameter, Sch 40 PVC Well Casing from -2.0 - 62 feet

10-inch dia. boring to 39-ft bgs

Cement-Bentonite (~ 10:1) Grout, Tremie-Pipe Slurry from 0 to 45-ft below ground surface (bgs)

Medium bentonite chips From 35 to 39 feet bgs

8-inch boring from 39 to 72-ft bgs

Medium bentonite chips From 45 to 49 feet bgs)

Sand Filter Pack (16/30 washed, silica sand, 3 feet above screen from 49 to 62 feet bgs)

At Time of Drilling, Depth to Uppermost Ground Water ~ 52-ft bgs

Centralizers - placed at the bottom and at the top of the screen

10-ft; 4-inch 0.020-slotted, PVC well screen from 52 to 62 -ft bgs

Total Depth (TD) = 62 feet bgs



ISPC- CB LANDFILL AREA  
DELTA, UTAH

CLW-8 Schematic

Date Drawn  
9/1/15

Design by

Drawn by TH

Scale

Last Revision  
Date

Flush-mount, Wellhead Protective Vault, 8-inch diameter, steel lid

Ground Surface

Concrete Apron

Borehole:  
8-inch diameter,  
from 0 to 70-feet bgs

4-inch diameter, Sch. 40 PVC,  
from ~ 0.25 - 60 feet bgs

Cement-Bentonite (~ 10:1) Grout,  
Tremie-Pipe Slurry,  
from 0 to 53-feet bgs

Bentonite medium chips, from 53  
to 58 feet bgs

At Time of Drilling, Depth to  
Uppermost Ground Water ~ 60-feet  
bgs

Centralizers placed ~ the bottom  
and the top of the well screen.

Sand Filter Pack:  
(16/30 washed silica sand,  
2-feet above screen  
from 58 to 70 feet bgs)

10-foot length; 4-inch diameter  
Sch. 40 PVC, 0.020"-slotted,  
from 60 to 70 feet bgs

Total Depth (TD) = 70 feet bgs



IPSC – BOTTOM ASH SURFACE IMPOUNDMENT AREA  
DELTA, UTAH

Well BAC-1 Schematic

Date Drawn  
7/31/15

Design by

Drawn by MS

Scale

Last Revision  
Date

Above-grade, 5-feet long, 6-in. dia., steel Wellhead Protective Monument  
~ 2.5-feet stick-up

Ground Surface

4-inch Diameter, Sch 40 PVC Well Casing from -2.0 - 65 feet

Cement-Bentonite (~ 10:1) Grout, Tremie-Pipe Slurry from 0 to 48-feet below ground surface (bgs)

8-inch boring from 0 to 65-feet bgs

Medium bentonite chips From 48 to 52 feet bgs

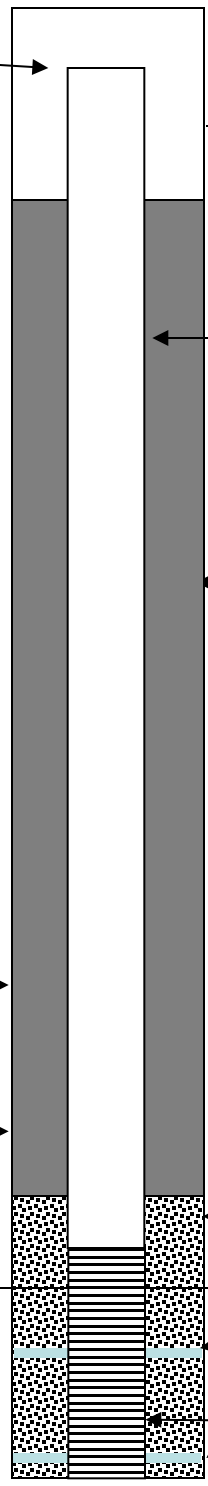
Sand Filter Pack (16/30 washed, silica sand, 3 feet above screen from 52 to 65 feet bgs)

At Time of Drilling, Depth to Uppermost Ground Water ~ 56-feet bgs

Centralizers - placed at the bottom and at the top of the screen

10-feet; 4-inch 0.020-slotted, PVC well screen from 55 to 65 -feet bgs

Total Depth (TD) = 65 feet bgs



ISPC- BOTTOM ASH AREA  
DELTA, UTAH

BAC-2 Schematic

Date Drawn  
9/1/15

Design by

Drawn by TH

Scale

Last Revision  
Date

Above-grade, 5-feet long, 6-in. dia., steel Wellhead Protective Monument  
 ~ 2.5-feet stick-up

Ground Surface

4-inch Diameter, Sch 40 PVC Well Casing from -2.0 - 72 feet

Cement-Bentonite (~ 10:1) Grout, Tremie-Pipe Slurry from 0 to 45-feet below ground surface (bgs)

8-inch boring from 0 to 72-feet bgs

Medium bentonite chips From 45 to 49 feet bgs

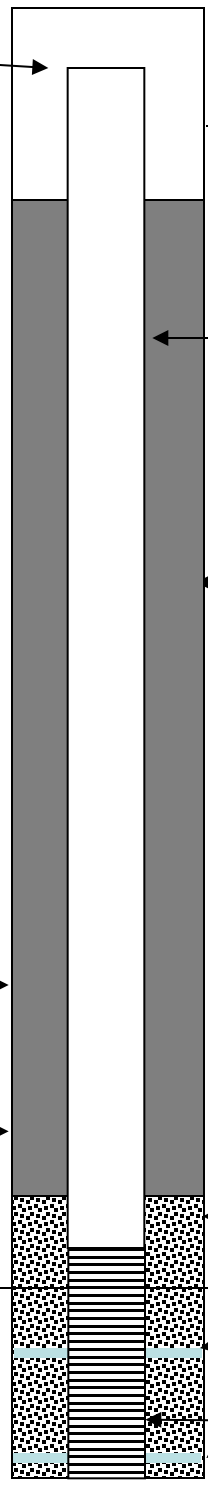
Sand Filter Pack (16/30 washed, silica sand, 3 feet above screen from 49 to 72 feet bgs)

At Time of Drilling, Depth to Uppermost Ground Water ~ 55-feet bgs

Centralizers - placed at the bottom and at the top of the screen

20-feet; 4-inch 0.020-slotted, PVC well screen from 52 to 72 -feet bgs

Total Depth (TD) = 72 feet bgs



ISPC- BOTTOM ASH AREA  
 DELTA, UTAH

BAC-3 Schematic

Date Drawn  
 9/1/15

Design by

Drawn by TH

Scale

Last Revision  
 Date



Above-grade, 5-feet long, 8-in. dia., steel Wellhead Protective Monument set in a 2X2 Concrete Pad ~ 2.5-feet. stick-up

Ground Surface

Blank Well Casing Riser:  
4-inch diameter, Sch. 40 PVC,  
from ~ 2.0 feet above ground surface (ags)  
to 55 feet below ground surface (bgs)

8-inch diameter,  
from 0 to 75-feet bgs

Cement-Bentonite gel (~ 10:1) Grout, Tremie-  
Pipe Slurry,  
from 0 to 48-feet below ground surface (bgs)

Bentonite medium chips,  
from 48 to 53 feet bgs

At Time of Drilling,  
Depth to Uppermost Ground  
Water ~ 55-feet bgs

Sand Filter Pack:  
(16/30 washed silica sand,  
2-feet above screen  
from 53 to 75 feet bgs)

Centralizers placed ~ the bottom  
and the top of the well screen.

20-foot length; 4-inch diameter  
Sch. 40 PVC, 0.020"-slotted,  
from 55 to 75 feet bgs

Total Depth (TD) = 75 feet bgs



IPSC – BOTTOM ASH BASIN AREA  
DELTA, UTAH

Well BAC-4 Schematic

Date Drawn  
8/10/15

Design by

Drawn by

MS

Scale

Last Revision  
Date

Above-grade, 5-feet. long, 8-in. dia., steel Wellhead Protective Monument set in a 2X2 Concrete Pad ~ 2.5-feet. stick-up

Ground Surface

8-inch diameter, from 0 to 70-feet bgs

4-inch diameter, Sch. 40 PVC, from ~ 2.0 feet above ground surface (ags) to 58 feet below ground surface (bgs)

Cement-Bentonite gel (~ 10:1) Grout, Tremie-Pipe Slurry, from 1 to 51-feet bgs

Bentonite medium chips, from 51 to 56 feet bgs

At Time of Drilling, Depth to Uppermost Ground Water ~ 59-feet bgs

Sand Filter Pack (16/30 washed silica sand, 2-feet above screen from 56 to 70 feet bgs)

Centralizers placed ~ the bottom and the top of the well screen.

Well Screen: 10-foot length; 4-inch diameter Sch. 40 PVC, 0.020"-slotted, from 58 to 68 feet bgs

Total Depth (TD) = 70 feet bgs



IPSC – BOTTOM ASH BASIN AREA  
DELTA, UTAH

Well BAC-5 Schematic

Date Drawn  
8/09/15

Design by

Drawn by

MS

Scale

Last Revision  
Date

Above-grade, 5-feet long, 8-in. dia., steel Wellhead Protective Monument set in a 2X2 Concrete Pad ~ 2.5-feet stick-up

Ground Surface

8-inch diameter, from 0 to 65-feet bgs

4-inch diameter, Sch. 40 PVC, from ~ 2.0 feet above ground surface (ags) to 55 feet below ground surface (bgs)

Cement-Bentonite gel (~ 10:1) Grout, Tremie-Pipe Slurry, from 1 to 48-feet bgs

At Time of Drilling, Depth to Uppermost Ground Water ~ 55-feet bgs

Bentonite medium chips, hydrated 5-foot length; from 48 to 53 feet bgs

Centralizers placed ~ the bottom and the top of the well screen.

Sand Filter Pack: 16/30 washed silica sand, 2-feet above screen from 53 to 65 feet bgs

10-foot; 4-inch 0.0200 Slotted, PVC well screen from 55 to 65 feet bgs

Total Depth (TD) = 65 feet bgs



IPSC – BOTTOM ASH BASIN AREA  
DELTA, UTAH

Well BAC-6 Schematic

Date Drawn  
8/08/15

Design by

Drawn by

MS

Scale

Last Revision  
Date

Above-grade, 5-feet. long, 8-in. dia., steel Wellhead Protective Monument set in a 2X2 Concrete Pad ~ 2.5-feet. stick-up

Ground Surface

8-inch diameter, from 0 to 70-feet bgs

4-inch diameter, Sch. 40 PVC, from ~ 2.0 feet above ground surface (ags) to 57 feet below ground surface (bgs)

Cement-Bentonite gel (~ 10:1) Grout, Tremie-Pipe Slurry, from 0 to 50-feet bgs

Bentonite medium chips, from 50 to 55 feet bgs

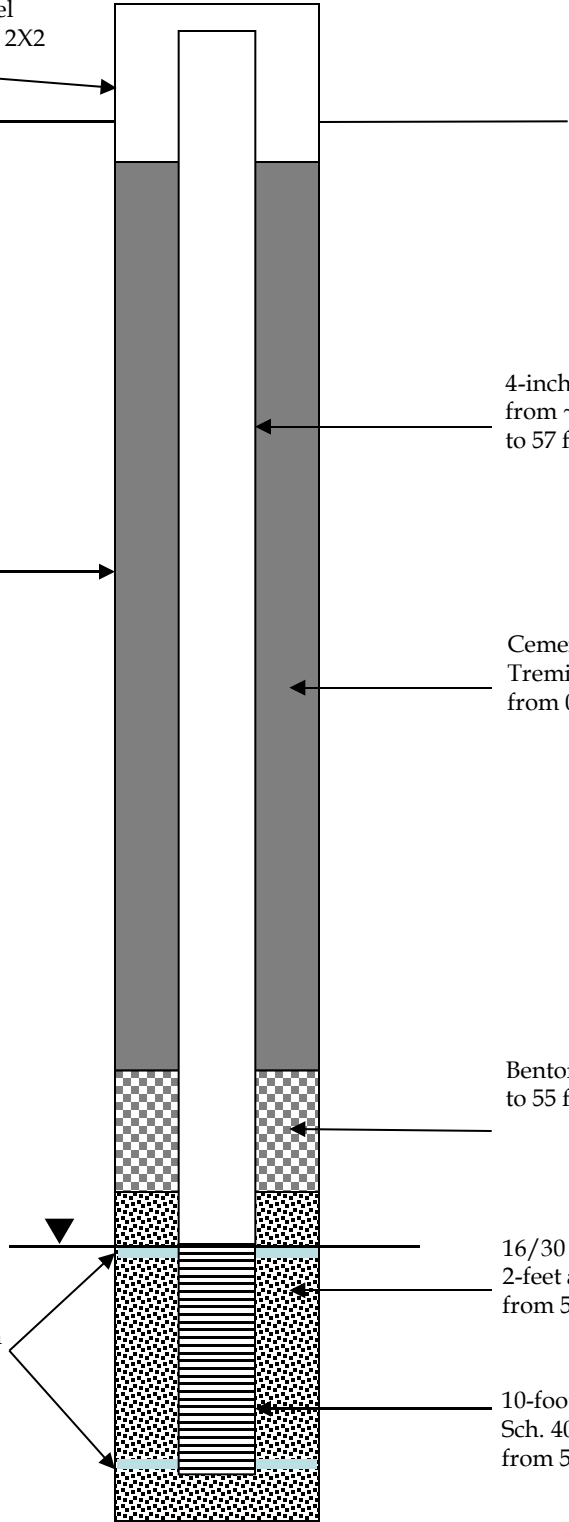
At Time of Drilling, Depth to Uppermost Ground Water ~ 57.5-feet bgs

16/30 washed silica sand, 2-feet above screen from 55 to 70 feet bgs

Centralizers placed ~ the bottom and the top of the well screen.

10-foot length; 4-inch diameter Sch. 40 PVC, 0.020"-slotted, from 57 to 67 feet bgs

Total Depth (TD) = 70 feet bgs



IPSC – BOTTOM ASH BASIN AREA  
DELTA, UTAH

Well BAC-7 Schematic

Date Drawn  
8/07/15

Design by

Drawn by

MS

Scale

Last Revision  
Date

Above-grade, 5-feet. long, 8-in. dia., steel Wellhead Protective Monument set in a 2X2 Concrete Pad ~ 2.5-feet. stick-up

Ground Surface

8-inch diameter, from 0 to 55-feet bgs

4-inch diameter, Sch. 40 PVC, from ~ 2.0 feet above ground surface (ags) to 45 feet below ground surface (bgs)

Portland Cement-Bentonite gel (~ 10:1) Grout, Tremie-Pipe Slurry, from 0 to 38-feet bgs

Bentonite medium chips, from 38 to 43 feet bgs

At Time of Drilling, Depth to Uppermost Ground Water ~ 46.25-feet bgs

16/30 washed silica sand, 2-feet above screen from 43 to 55 feet bgs

Centralizers placed ~ the bottom and the top of the well screen.

10-foot length; 4-inch diameter Sch. 40 PVC, 0.020"-slotted, from 45 to 55 feet bgs

Total Depth (TD) = 55 feet bgs



IPSC – BOTTOM ASH BASIN AREA  
DELTA, UTAH

Well BA-U-1 Schematic

Date Drawn  
7/24/15

Design by

Drawn by

MS

Scale

Last Revision  
Date

Above-grade, 5-feet. long, 8-in. dia., steel Wellhead Protective Monument set in a 2X2 Concrete Pad ~ 2.5-feet. stick-up

Ground Surface

8-inch diameter, from 0 to 70-feet bgs

4-inch diameter, Sch. 40 PVC, from ~ 2.0 feet above ground surface (ags) to 60 feet below ground surface (bgs)

Portland Cement-Bentonite gel (~ 10:1) Grout, Tremie-Pipe Slurry, from 0 to 52.5-feet bgs

At Time of Drilling, Depth to Uppermost Ground Water ~ 60.0-feet bgs

Bentonite medium chips, from 52.5 to 57.5 feet bgs

16/30 washed silica sand, 2-feet above screen from 57.5 to 70 feet bgs

Centralizers - placed at the bottom and the top of the well screen.

10-foot length; 4-inch diameter Sch. 40 PVC, 0.020"-slotted, from 60 to 70 feet bgs

Total Depth (TD) = 70 feet bgs



IPSC – BOTTOM ASH BASIN AREA  
DELTA, UTAH

Well BA-U-2 Schematic

Date Drawn  
7/25/15

Design by

Drawn by

MS

Scale

Last Revision  
Date

Above-grade, 5-foot long, 6-inch diameter, steel Wellhead Protective Monument set in Concrete

~ 2.5-foot. stick-up

Ground Surface

8-inch diameter,  
from 0 to 60-feet bgs

4-inch diameter, Sch. 40 PVC,  
from ~ 2.0 feet above ground surface (ags)  
to 48 feet below ground surface (bgs)

Cement-Bentonite gel (~ 10:1 ) Grout,  
Tremie-Pipe Slurry,  
from 0 to 41-feet bgs

At Time of Drilling,  
Depth to Uppermost Ground  
Water ~ 47.5-feet bgs

Bentonite medium chips,  
from 41 to 46 feet bgs

16/30 washed silica sand,  
2-feet above screen  
from 46 to 60 feet bgs

Centralizers - placed at the bottom  
and the top of the well screen.

10-foot length; 4-inch diameter  
Sch. 40 PVC, 0.020"-slotted,  
from 48 to 58 feet bgs

Total Depth (TD) = 60 feet bgs



IPSC – WASTEWATER HOLDING BASIN AREA  
DELTA, UTAH

Well WWC-1 Schematic

Date Drawn  
7/26/15

Design by

Drawn by

MS

Scale

Last Revision  
Date

Above-grade, 5-foot long, 6-inch diameter, steel Wellhead Protective Monument set in Concrete

~ 2.5-foot stick-up

Ground Surface

8-inch diameter,  
from 0 to 75-feet bgs

4-inch diameter, Sch. 40 PVC,  
from ~ 2.0 feet above ground surface (ags)  
to 60 feet below ground surface (bgs)

Cement-Bentonite gel (~ 10:1) Grout,  
Tremie-Pipe Slurry,  
from 1 to 53-feet bgs

At Time of Drilling,  
Depth to Uppermost Ground  
Water ~ 57.5-feet bgs

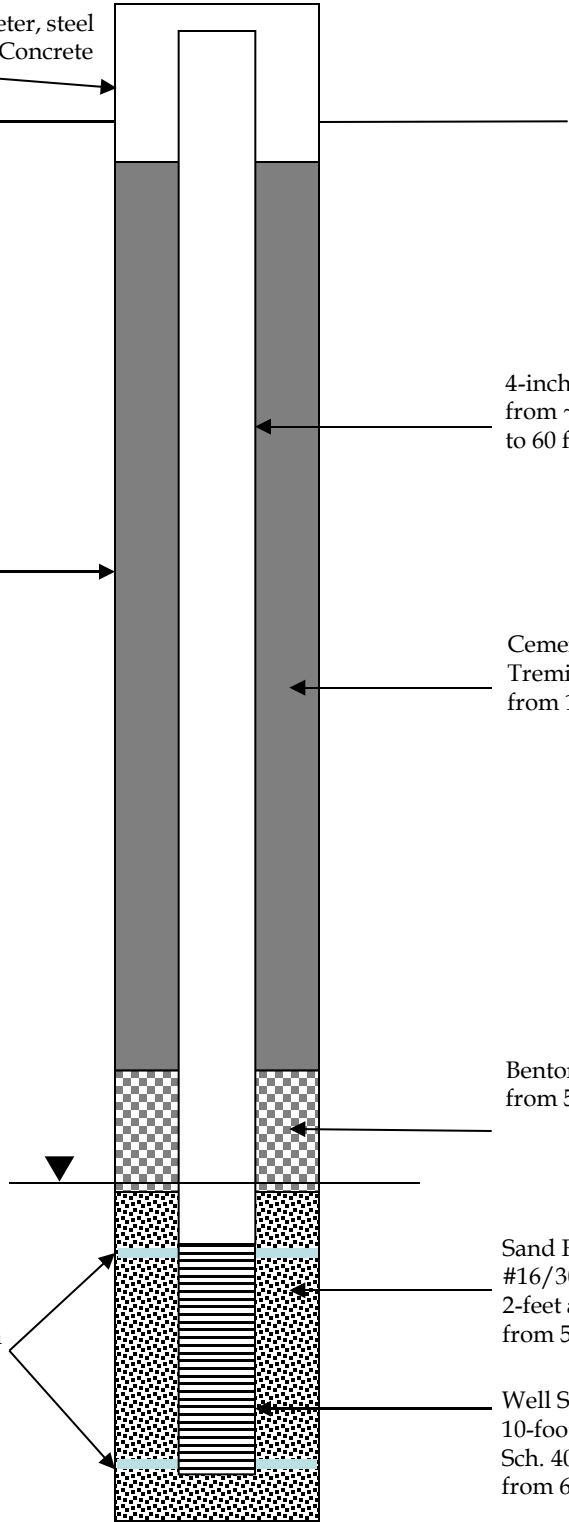
Bentonite medium chips,  
from 53 to 58 feet bgs

Centralizers placed ~ the bottom  
and the top of the well screen.

Sand Filter Pack:  
#16/30 washed silica sand,  
2-feet above screen  
from 58 to 75 feet bgs

Well Screen:  
10-foot length; 4-inch diameter  
Sch. 40 PVC, 0.020"-slotted,  
from 60 to 70 feet bgs

Total Depth (TD) = 75 feet bgs



IPSC – WASTEWATER HOLDING BASIN AREA  
DELTA, UTAH

Well WWC-2 Schematic

Date Drawn  
7/27/15

Design by

Drawn by

MS

Scale

Last Revision  
Date



Above-grade, 5-foot long, 6-inch diameter, steel Wellhead Protective Monument set in Concrete

~ 2.5-foot stick-up

Ground Surface

8-inch diameter, from 0 to 70-feet bgs

4-inch diameter, Sch. 40 PVC, from ~ 2.0 feet above ground surface (ags) to 55 feet below ground surface (bgs)

Cement-Bentonite gel (~ 10:1) Grout, Tremie-Pipe Slurry, from 0 to 48-feet bgs

At Time of Drilling, Depth to Uppermost Ground Water ~ 52.5-feet bgs

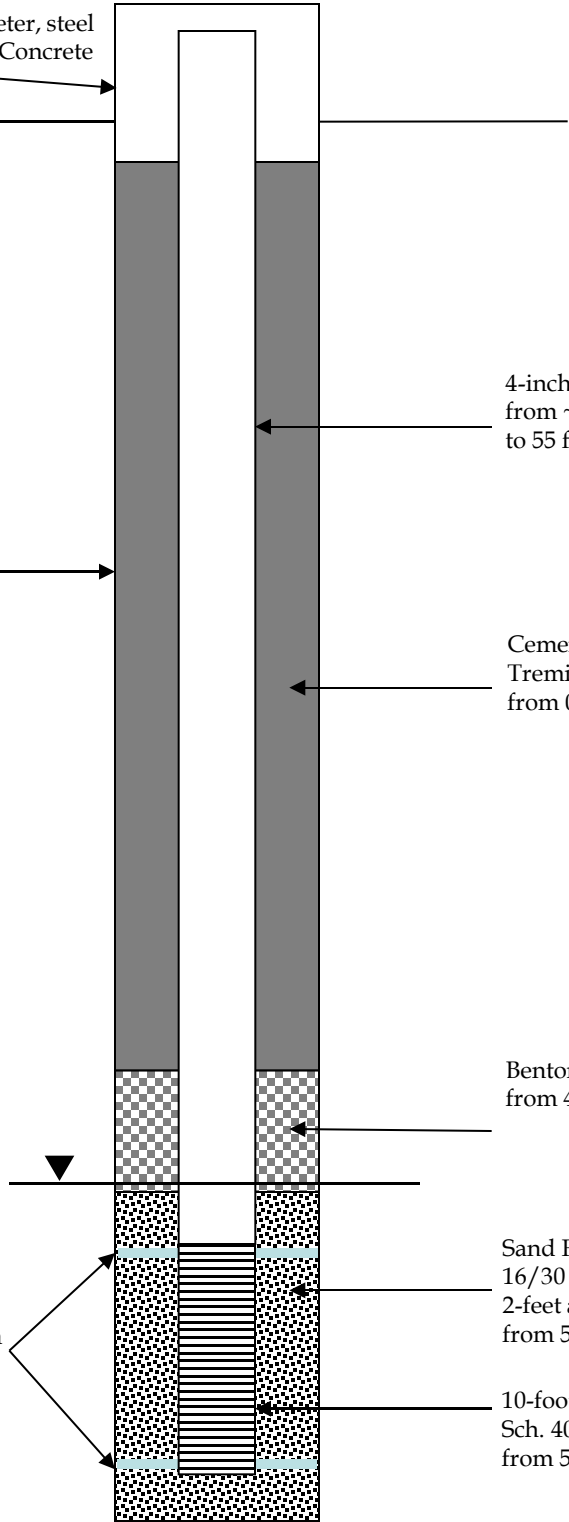
Bentonite medium chips, from 48 to 53 feet bgs

Centralizers - placed at the bottom and the top of the well screen.

Sand Filter Pack: 16/30 washed silica sand, 2-feet above screen from 53 to 70 feet bgs

10-foot length; 4-inch diameter Sch. 40 PVC, 0.020"-slotted, from 55 to 65 feet bgs

Total Depth (TD) = 70 feet bgs



IPSC – WASTEWATER HOLDING BASIN AREA  
DELTA, UTAH

Well WWC-3 Schematic

Date Drawn  
7/30/15

Design by

Drawn by

MS

Scale

Last Revision  
Date

Above-grade, 5-foot long, 6-inch diameter, steel Wellhead Protective Monument set in Concrete

~ 2.5-foot. stick-up

Ground Surface

8-inch diameter,  
from 0 to 80-feet bgs

4-inch diameter, Sch. 40 PVC,  
from ~ 2.0 feet above ground surface (ags)  
to 65 feet below ground surface (bgs)

Cement-Bentonite gel (~ 10:1) Grout,  
Tremie-Pipe Slurry,  
from 0 to 58-feet bgs

Bentonite medium chips,  
from 58 to 63 feet bgs

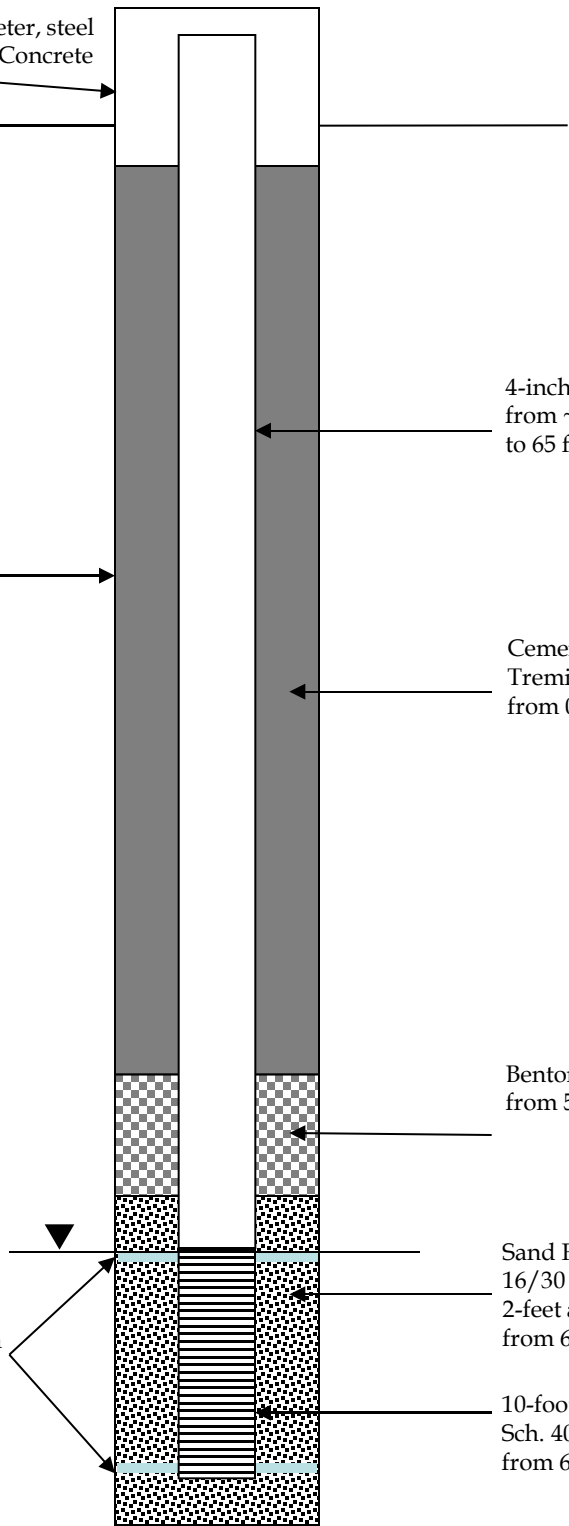
At Time of Drilling,  
Depth to Uppermost Ground  
Water ~ 65-feet bgs

Centralizers placed ~ the bottom  
and the top of the well screen.

Sand Filter Pack:  
16/30 washed silica sand,  
2-feet above screen  
from 63 to 80 feet bgs

10-foot length; 4-inch diameter  
Sch. 40 PVC, 0.020"-slotted,  
from 65 to 75 feet bgs

Total Depth (TD) = 80 feet bgs



IPSC – WASTEWATER HOLDING BASIN AREA  
DELTA, UTAH

Well WWC-4 Schematic

Date Drawn  
7/29/15

Design by

Drawn by

MS

Scale

Last Revision  
Date

Above-grade, 5-foot long, 6-inch diameter, steel Wellhead Protective Monument set in Concrete

~ 2.5-foot stick-up

Ground Surface

8-inch diameter,  
from 0 to 75-feet bgs

4-inch diameter, Sch. 40 PVC,  
from ~ 2.0 feet above ground surface (ags)  
to 64 feet below ground surface (bgs)

Cement-Bentonite gel (~ 10:1) Grout,  
Tremie-Pipe Slurry,  
from 0 to 57-feet bgs

At Time of Drilling,  
Depth to Uppermost Ground  
Water ~ 61.5-feet bgs

Bentonite medium chips,  
from 57 to 62 feet bgs

16/30 washed silica sand,  
2-feet above screen  
from 62 to 75 feet bgs

Centralizers - placed at the bottom  
and the top of the well screen.

10-foot length; 4-inch diameter  
Sch. 40 PVC, 0.020"-slotted,  
from 64 to 74 feet bgs

Total Depth (TD) = 75 feet bgs



IPSC – WASTEWATER HOLDING BASIN AREA  
DELTA, UTAH

Well WWC-5 Schematic

Date Drawn  
7/28/15

Design by

Drawn by

MS

Scale

Last Revision  
Date

Above-grade, 5-foot long, 6-inch diameter, steel Wellhead Protective Monument set in Concrete

~ 2.5-foot. stick-up

Ground Surface

8-inch diameter,  
from 0 to 70-feet bgs

4-inch diameter, Sch. 40 PVC,  
from ~ 2.0 feet above ground surface (ags)  
to 60 feet below ground surface (bgs)

Portland Cement-Bentonite gel (~ 10:1)  
Grout, Tremie-Pipe Slurry,  
from 0 to 53-feet bgs

Bentonite medium chips,  
from 53 to 58 feet bgs

At Time of Drilling,  
Depth to Uppermost Ground  
Water ~ 61-feet bgs

Sand Filter Pack  
16/30 washed silica sand,  
2-feet above screen  
from 58 to 70 feet bgs

Centralizers - placed at the bottom  
and the top of the well screen.

10-foot length; 4-inch diameter  
Sch. 40 PVC, 0.020"-slotted,  
from 60 to 70 feet bgs

Total Depth (TD) = 70 feet bgs



IPSC – WASTEWATER HOLDING BASIN AREA  
DELTA, UTAH

Well WW-U-1 Schematic

Date Drawn  
8/11/15

Design by

Drawn by

MS

Scale

Last Revision  
Date

Above-grade, 5-feet. long, 8-in. dia., steel Wellhead Protective Monument set in a 2X2 Concrete Pad ~ 2.5-feet. stick-up

Ground Surface

8-inch diameter, from 0 to 75-feet bgs

4-inch diameter, Sch. 40 PVC, from ~ 2.0 feet above ground surface (ags) to 65 feet below ground surface (bgs)

Cement-Bentonite gel (~ 10:1) Grout, Tremie-Pipe Slurry, from 0 to 58-feet bgs

At Time of Drilling, Depth to Uppermost Ground Water ~ 61-feet bgs

Bentonite medium chips, from 58 to 63 feet bgs

Sand Filter Pack: 16/30 washed silica sand, 2-feet above screen from 63 to 75 feet bgs

Centralizers - placed at the bottom and the top of the well screen.

10-foot length; 4-inch diameter Sch. 40 PVC, 0.020"-slotted, from 65 to 75 feet bgs

Total Depth (TD) = 75 feet bgs



IPSC – WASTEWATER HOLDING BASIN AREA  
DELTA, UTAH

Well WW-U-2 Schematic

Date Drawn  
8/11/15

Design by

Drawn by

MS

Scale

Last Revision  
Date

Flush-mount, Wellhead Protective Vault, 8-inch diameter, steel lid

Ground Surface

Concrete Apron

Borehole:  
8-inch diameter,  
from 0 to 87-feet bgs

4-inch diameter, Sch. 40 PVC,  
from ~ 0.25 - 67 feet bgs

Cement-Bentonite (~ 10:1) Grout,  
Tremie-Pipe Slurry,  
from 0 to 57-feet bgs

Bentonite medium chips, from 57  
to 62 feet bgs

At Time of Drilling, Depth to  
Uppermost Ground Water ~ 72 to 77-  
feet bgs

Sand Filter Pack:  
(16/30 washed silica sand,  
2-feet above screen  
from 62 to 87 feet bgs)

Centralizers placed ~ the bottom  
and the top of the well screen.

10-foot length; 4-inch diameter  
Sch. 40 PVC, 0.020" -slotted,  
from 67 to 77 feet bgs... with 10-ft. solid  
PVC sump at 77 to 87 feet bgs.

Total Depth (TD) = 87 feet bgs



IPSC – BOTTOM ASH SURFACE IMPOUNDMENT AREA  
DELTA, UTAH

Well WWC-6 Schematic

Date Drawn  
10/24/1

Design by

Drawn by JR

Scale

Last Revision  
8  
Date



Flush-mount, Wellhead Protective Vault, 8-inch diameter, steel lid

Ground Surface

Concrete Apron

Borehole:  
8-inch diameter,  
from 0 to 87-feet bgs

4-inch diameter, Sch. 40 PVC,  
from ~ 0.25 - 77 feet bgs

Cement-Bentonite (~ 10:1) Grout,  
Tremie-Pipe Slurry,  
from 0 to 67-feet bgs

Bentonite medium chips, from 67  
to 72 feet bgs

At Time of Drilling, Depth to  
Uppermost Ground Water ~ 72 to 77-  
feet bgs

Sand Filter Pack:  
(16/30 washed silica sand,  
2-feet above screen  
from 72 to 87 feet bgs)

Centralizers placed ~ the bottom  
and the top of the well screen.

10-foot length; 4-inch diameter  
Sch. 40 PVC, 0.020" -slotted,  
from 77 to 87 feet bgs

Total Depth (TD) = 87 feet bgs



IPSC – BOTTOM ASH SURFACE IMPOUNDMENT AREA  
DELTA, UTAH

Well WWC-7 Schematic

Date Drawn	10/24/1
Last Revision	8
Date	

Design by

Drawn by

JR

Scale

Boring Logs  
 IPSC  
 Delta, Utah

CLW-1

Interval (feet)	Drilling Method	Sample Description
		5/11/2015
0-3	10" Sonic	Brown fine grained Sand with gravel, dry
3-6	10" Sonic	Light to Dark Brown fine to medium grained Sand, no gravel present, dry
6-8	10" Sonic	Light Brown fine grained Sand
8-11.5	10" Sonic	Grayish white fine grained Sand, gravels present, rounded, dry
11.5-13.5	10" Sonic	Tan SILT with clay matrix, slightly moist
13.5-17	10" Sonic	Grayish Tan CLAY with small amount of silt present, slightly moist
17-23	10" Sonic	Grayish Tan SILT with fine grain sand present, trace amounts of clay, slightly moist
23-27	10" Sonic	Tannish Gray CLAY, denser, dry
27-32	10" Sonic	Tan CLAY, slightly moist
32-35	10" Sonic	Tan CLAY, denser material, slightly moist
		5/12/2015
35-48	10" Sonic to 40 feet	Tannish gray CLAY, moist
48-51	8" Sonic	Tannish gray CLAY, moist, softer
51-52	8" Sonic	Orangish, Brown, black fine grained Sand, moist
52-54	8" Sonic	Orangish, Brown, Red CLAY, slightly moist
54-56	8" Sonic	Orangish Brown CLAY with a fine grained sand matrix, slightly moist
56-62	8" Sonic	Light Brown fine grained Sand, saturated
62-63	8" Sonic	Light Brown CLAY, slightly moist
63-63.5	8" Sonic	Fine to medium grained Sand, slightly moist
63.5-64	8" Sonic	Light Brown CLAY, dry to slightly moist
64-65	8" Sonic	Light Brown fine grained Sand with clay matrix, moist

TD = 65; PVC 4-inch screen from 55 to 65; PVC 4-inch riser from -2.5 to 55

Drilling Company - Cascade Drilling  
 Driller - Rick Mallett  
 Geologist - Thomas Hedrick

Boring Logs  
 IPSC  
 Delta, Utah

CLW-2

Interval (feet)	Drilling Method	Sample Description
		5/14/2015
0-8	10" Sonic	Brown fine grained Sand, clay present with gravel, dry
8-10	10" Sonic	Light to Dark Brown medium to course grained SAND, gravel present, dry
10-17	10" Sonic	Light Brown to Brown clayey SILT, slightly moist
17-25	10" Sonic	Light Brown Silty CLAY, moist
25-46	10" Sonic to 30 feet	Brown CLAY, slightly moist, from 40 to 45 feet transitioned to a Tan to Light Gray color
46-46.5	8" Sonic	Very moist to saturated zone, very soft clay , very sticky
46.5-50	8" Sonic	Light Gray CLAY, moist
50-51	8" Sonic	Tan to Light Gray with Orange zones, CLAY, slightly moist
51-51.5	8" Sonic	Very moist zone, CLAY
62	8" Sonic	Transitioning to a Orangish Red CLAY, Slightly moist
66-66.5	8" Sonic	Moist zone, transitioning from an Orangish Red to a Brown CLAY
66.5-73	8" Sonic	Reddish brown fine grained Sand with a clay matrix, very moist
73-80	8" Sonic	Brown fine gained Sand, trace amounts of clay, saturated.

TD = 80; PVC 4-inch screen from 70 to 80; PVC 4-inch riser from -2.5 to 70

Drilling Company - Cascade Drilling  
 Driller - Rick Mallett  
 Geologist - Thomas Hedrick

Boring Logs  
 IPSC  
 Delta, Utah

CLW-3

Interval (feet)	Drilling Method	Drill Time	Sample Description
			5/13/2015
0-3	10" Sonic		Brown fine grained Sand , clay present with gravel, dry
3-6	10" Sonic		Light to Dark Brown fine to medium grained Sand, no gravel present, dry
6-11	10" Sonic		Grayish White fine grained Sand, gravels present, rounded, dry
11-13	10" Sonic		Brownish Orange SILT, with fine grained sand present, soft
13-16	10" Sonic		Tannish Gray SILT with a clay present, very moist, sticky
16-21	10" Sonic		Tannish Gray SILT with a clay matrix, very moist, sticky
21-24	10" Sonic		Light Gray CLAY, with silt present, very moist
24-33	10" Sonic		Light Gray to Orange CLAY, with silt present, slightly moist
32-40	10" Sonic to 40 feet		Tan CLAY, denser material, slightly moist
40-66	8" Sonic		Tan to Light Brown CLAY, slightly moist to Dry
63	8" Sonic		Transiting into a Darker Gray CLAY, Moist
66-72	8" Sonic		Very moist to saturated, clay very plastic, firm and sticky
72-73	8" Sonic		Dark Gray fine to medium grained Sand, saturated
73-74	8" Sonic		Dark Gray CLAY, sticky firm, very moist
74-80	8" Sonic		Dark Gray fine to medium grained Sand, saturated

TD = 80; PVC 4-inch screen from 70 to 80; PVC 4-inch riser from -2.5 to 70

Drilling Company - Cascade Drilling  
 Driller - Rick Mallett  
 Geologist - Thomas Hedrick

Boring Logs  
 IPSC  
 Delta, Utah

CLW-4

Interval (feet)	Drilling Method	Sample Description
		7/24/2015
0-2	10" Sonic	Light Brown fine grained Sands with silts and gravel, dry
2-5	10" Sonic	Light Brown fine grained Sands, dry
5-11	10" Sonic	Light Brown to gray fine grained SAND, dry to slightly moist
11-13	10" Sonic	Light Brown silty CLAY, slightly moist, good plasticity
13-14	10" Sonic	Light Brown fine grained SAND, with clays present, poor plasticity, dry
14-16	10" Sonic	Light Brown clayey SILT, dry
16-18	10" Sonic	Light Brown to Brown silty CLAY, slightly moist, good plasticity
18-21	10" Sonic	Light Brown to Gray silty CLAY, slightly moist to moist, good plasticity
21-24	10" Sonic	Brownish Gray CLAY, moist, high plasticity
34-32	10" Sonic	Brownish Gray CLAY, moist to very moist, high plasticity
32-53	10" Sonic to 39 feet	Brownish Gray CLAY, denser, slightly moist,
		44 - thin layer of brownish orange fine grained sand
		47 - transitioning into a gray clay
		49 - thin layer of brownish orange fine grained sand
53-55	8" Sonic	Brownish Gray CLAY, dense, very plastic, slightly moist
55-73	8" Sonic	Brown CLAY, very plastic, slightly moist
73-82	8" Sonic	Brown fine grained SAND with a clay matrix, saturated

TD = 82; PVC 4-inch screen from 72 to 82; PVC 4-inch riser from -2.5 to 72

Drilling Company - Cascade Drilling  
 Driller - Rick Mallett  
 Geologist - Thomas Hedrick

Boring Logs  
 IPSC  
 Delta, Utah

CLW-5

Interval (feet)	Drilling Method	Sample Description
		7/26/2015
0-3	10" Sonic	Light Brown fine grained Sands with silts and gravel, dry
3-4	10" Sonic	Gravels with medium to fine grand sands, moist
4-7.5	10" Sonic	Light Brown sitly CLAY, slightly moist, good plasticity
7.5-10	10" Sonic	Light Brown fine to medium grained SAND, dry
10-12	10" Sonic	Light Brown to Gray fine to medium grained SAND, gravels present, slightly moist
12-13	10" Sonic	Light Brown clayey SILT, slightly moist,
13-15	10" Sonic	Brown fine to medium grained SAND, wht clays and silts, slightly moist
		7/27/2015
15-22	10" Sonic	Brown silty CLAY, slightly moist, good plasticity
22-32	10" Sonic	Light Brown CLAY, moistgood plasticity
32-38	10" Sonic	Brown CLAY, slightly moist, high plasticity
38-40	10" Sonic to 39 feet	Light Gray CLAY, slightly moist, hight plasticity
40-44	8" Sonic	Light Brown to Brown CLAY, slightly moist, high plasticity
44-52	8" Sonic	Light Gray CLAY, hight plasticity, slighly moist
52-53	8" Sonic	Brown CLAY, high plasticity, slightly moist
53-55	8" Sonic	Gray CLAY, high plasticity, slightly moist
55-72	8" Sonic	Gray CLAY, high plasticity, moist
72-74	8" Sonic	Gray fine grained SAND, with clay matrix, moist to saturated
74-75	8" Sonic	Gray CLAY with fine grained sandy matrix, poor plasticity, moist
75-78	8" Sonic	Gray fine grained SAND wht a clayey matrix, poor plasticity, saturated
78-80	8" Sonic	Gray CLAY with fine grained sandy matrix, poor plasticity, moist
80-82	8" Sonic	Gray fine grained SAND wht a clayey matrix, poor plasticity, saturated

TD = 82; PVC 4-inch screen from 72 to 82; PVC 4-inch riser from -2.5 to 72

Drilling Company - Cascade Drilling  
 Driller - Rick Mallett  
 Geologist - Thomas Hedrick



Boring Logs  
 IPSC  
 Delta, Utah

CLW-6

Interval (feet)	Drilling Method	Sample Description
		7/26/2015
0-3	10" Sonic	Light Brown fine grained Sands with silts and gravel, dry
3-5	10" Sonic	Light Brown silty fine grained SAND, dry
5-7	10" Sonic	Light Brown fine grained sandy SILT, dry
7-12	10" Sonic	Light Brown fine to medium grained SAND, dry
12-15	10" Sonic	Light Brown fine grained sand, with a clay matrix, dry
15-21	10" Sonic	Light Brown to Brown clayey SILT, slightly moist, poor plasticity
21-22	10" Sonic	Light Brown fine grained sand, with a clay matrix, dry
21-23		Light Brown to Brown clayey SILT, slightly moist, poor plasticity
23-32	10" Sonic	Light Brown CLAY, moist, sticky, high plasticity
32-38	10" Sonic	Light Brown to Gray CLAY, moist, high plasticity
38-47	10" Sonic	Light Gray to Gray CLAY, slightly moist, high plasticity
47-55	10" Sonic to 39 feet	Transitioned to a Brownish gray CLAY, high plasticity, slight moist
55-72	8" Sonic	Brown CLAY, high plasticity, slightly moist
		58 - 58.5 very moist to saturated, 59 - slightly moist
72-78	8" Sonic	Gray CLAY, very moist, high plasticity
78-82	8" Sonic	Gray fine grained SAND with a clay matrix, poor plasticity, saturated
82-84	8" Sonic	Gray CLAY, high plasticity, very moist
84-85	8" Sonic	Gray fine grained SAND with a clay matrix, poor plasticity, saturated
85-88	8" Sonic	Gray CLAY, high plasticity, very moist

TD = 88; PVC 4-inch screen from 78 to 88; PVC 4-inch riser from -2.5 to 78

Drilling Company - Cascade Drilling  
 Driller - Rick Mallett  
 Geologist - Thomas Hedrick

Boring Logs  
 IPSC  
 Delta, Utah

CLW-7

Interval (feet)	Drilling Method	Sample Description
		7/24/2015
0-8	10" Sonic	Light Brown fine grained Sands with silts and gravel, angular, Dry
8-12	10" Sonic	Light Brown fine grained Sands with silts and clay, No gravel, Dry
12-15	10" Sonic	Tan SILT with a clay matrix, Dry
15-17	10" Sonic	Light Brown to Gray CLAY, medium plasticity, silty present, Dry
17-22	10" Sonic	Light Brown Clayey SILT, slightly moist
22-24	10" Sonic	Light Brown to Grayish silty CLAY, Dry
24-32	10" Sonic	Light Brown to Grayish CLAY, Brown silts and fine grained sands present, , Dry
32-40	10" Sonic to 39 feet	Light Brown CLAY, slightly moist, became denser at 35 feet
40-43	8" Sonic	Light Brown to Grayish CLAY, very dense, slightly moist
43-48	8" Sonic	Gray CLAY, slightly moist, some layers of a brown fine grained sand present every 3 to 4 inches along the core
48-50	8" Sonic	Gray CLAY, slightly moist, some Iron Oxide present
50-51.5	8" Sonic	Brown fine to medium grained SANDS, saturated
51.5-58	8" Sonic	Brown CLAY, moist to slightly moist
58-58.5	8" Sonic	Brown fine grained SANDS, with a clay matrix, saturated
58.5-61	8" Sonic	Brown CLAY, moist to slightly moist
61-68	8" Sonic	Brown fine to medium grained SANDS, saturated
68-70	8" Sonic	Brown CLAY, moist to slightly moist
70-72	8" Sonic	Brown fine to medium grained SANDS, saturated

TD = 72; PVC 4-inch screen from 52 to 72; PVC 4-inch riser from -2.5 to 52

Drilling Company - Cascade Drilling  
 Driller - Rick Mallett  
 Geologist - Thomas Hedrick

Boring Logs  
 IPSC  
 Delta, Utah

CLW-8

Interval (feet)	Drilling Method	Sample Description
		7/24/2015
0-3	10" Sonic	Light Brown fine grained Sands with silts and gravel, dry
3-5	10" Sonic	Light Brown fine grained Sands, slightly moist
5-7	10" Sonic	Tannish white fine grained Sand, with smooth, rounded pebbles, slightly moist
7-10	10" Sonic	Tannish white silty, fine grained Sand, slightly moist
10-13	10" Sonic	Tan SILT with a clay matrix, slightly most, slightly plastic
13-15	10" Sonic	Tan Clayey SILT, dry, plastic
15-18	10" Sonic	Light Brown to tan silty CLAY, slightly moist, good plasticity
18-24	10" Sonic	Light Brown CLAY with silts present, slightly moist, good plasticity
24-32	10" Sonic	Brown silty CLAY, slightly moist, good plasticity
32-37	10" Sonic	Brown CLAY, dence, dry to slighthly moist, very plastic
37-52	10" Sonic to 39 feet	Transitioned fomrthe Brown CLAY to a Gray CLAY, with interbeds of brown fine gran sand layers, highly plastic, slihgltly moist
52-62	8" Sonic	Brown fine grained SAND with a clay matrix, saturated

TD = 62; PVC 4-inch screen from 52 to 62; PVC 4-inch riser from -2.5 to 52

Drilling Company - Cascade Drilling  
 Driller - Rick Mallett  
 Geologist - Thomas Hedrick

CL-U-1

Interval (feet)	Drilling Method	USCS	Sample Description
7/22/2015			
0-0.5	8" Sonic	TOPSOIL	Surface - Sand, Gravel, roots, coal ash.
0.5-2	8" Sonic	SP/SM	SAND with silt:
2-2.5	8" Sonic	SM/ML	Silty SAND/Sandy Silt:
2.5-5	8" Sonic	SM	Silty SAND:
5-6	8" Sonic	CL	CLAY:
6-7.5	8" Sonic	SM/ML	Silty SAND/Sandy SILT with clay:
7.5-10	8" Sonic	CH	CLAY:
10-11	8" Sonic		CLAY:
11-12.5	8" Sonic		CLAY:
12.5-13.5	8" Sonic		CLAY:
13.5-15	8" Sonic	ML	Sandy SILT:
15-16.5	8" Sonic	SP/SM	SAND with silt:
16.5-17.5	8" Sonic	SM	Silty SAND:
17.5-20	8" Sonic	SP	SAND:
20-21	8" Sonic		SAND:
21-22	8" Sonic	ML	Sandy SILT:
22-23	8" Sonic	SP	SAND:
23-24	8" Sonic	ML	Sandy SILT:
24-25	8" Sonic	SP	SAND:
25-26	8" Sonic	ML	Sandy SILT:
26-28	8" Sonic		Sandy SILT:
28-30	8" Sonic		SILT with clay:
30-32	8" Sonic		Sandy SILT:
32-34	8" Sonic	SP	SAND:
34-35	8" Sonic	ML	Sandy SILT with clay:
35-40	8" Sonic	CL	CLAY:
40-42	8" Sonic	ML	SILT with clay:
42-45	8" Sonic	CH	CLAY:
45-55	8" Sonic		CLAY:
55-65	8" Sonic		CLAY:
7/23/2015			
65-66.5	8" Sonic	CH	Sandy CLAY:
66.5-67.5	8" Sonic	SP/SM	SAND with silt:
67.5-72.5	8" Sonic		SAND with silt:
72.5-73.5	8" Sonic	SP	SAND:
73.5-75	8" Sonic	SC	Clayey SAND:
75-76.5	8" Sonic	SW	SAND:
76.5-79	8" Sonic	SP	SAND:
79-80	8" Sonic	CH	CLAY:

TD = 80'; PVC 4-inch screen from 68 to 78; PVC 4-inch riser from -2.5 to 68

Drilling Method: Guspech GS24-300RS 8" Rotasonic

Drilling Company - Cascade Drilling

Driller - Daniel Dodge

Geologist - Michael Sauerwein

Boring Logs  
 IPSC  
 Delta, Utah

CLU-2

Interval (feet)	Drilling Method	Sample Description
		7/22/2015
0-6	8" Sonic	Light Brown fine grained SAND with silt, dry
6-7.5	8" Sonic	Light Brown to Tan CLAY with silt, slightly moist
7.5-13	8" Sonic	Light Brown fine grained SAND with silt, dry
13-16	8" Sonic	Brown fine grained SAND with clayey matrix, slightly moist, some plasticity
16-24	8" Sonic	Light Brown fine grained SAND, dry
24-35	8" Sonic	Light Brown clayey SILT, dry
35-44	8" Sonic	Light Brown Silty CLAY, dry, good plasticity
44-48	8" Sonic	Gray Clayey SILT, dry, slightly plastic
48-49	8" Sonic	Brownish Orange CLAY, with a silty matrix, dry, good plasticity
49-60	8" Sonic	Brownish Orange CLAY, slightly moist
	8" Sonic	53-55 soil becomes slightly moist and Iron Oxide present
	8" Sonic	57-61 soil is dry
61-67	8" Sonic	Brownish Gray CLAY, at 61 feet very moist, very plastic
67-70	8" Sonic	Gray CLAY, moist, very plastic
70-75	8" Sonic	Gray fine to medium grained SAND, saturated, nonplastic
75-77	8" Sonic	Greenish Gray to Brown Clay fine grained SAND with a CLAY matrix, saturated
77-80	8" Sonic	Brownish Gray, fine to medium grained SAND, saturated

TD = 80; PVC 4-inch screen from 70 to 80; PVC 4-inch riser from -2.5 to 70

Drilling Company - Cascade Drilling  
 Driller - Rick Mallett  
 Geologist - Thomas Hedrick

BAC-1

Interval (feet)	Drilling Method	USCS	Sample Description
7/31/2015			
0-0.75	8" Sonic	Concrete	Surface - concrete soil mixture
0.75-2.5	8" Sonic	SM	Silty SAND:
2.5-3.25	8" Sonic		Silty SAND:
3.25-5	8" Sonic	SP/SM	SAND with silt:
5-12.5	8" Sonic		SAND with silt:
12.5-13.5	8" Sonic		SAND with silt:
13.5-14.5	8" Sonic	ML	Sandy SILT:
14.5-15	8" Sonic		Sandy SILT:
15-17.5	8" Sonic	SP	SAND:
17.5-19	8" Sonic	SP/SW	SAND:
19-20	8" Sonic	SP/SM	SAND with silt:
20-21.5	8" Sonic	SP	SAND:
21.5-22.5	8" Sonic	ML	Sandy SILT:
22.5-24	8" Sonic		Sandy SILT:
24-25	8" Sonic	SP	SAND:
25-26.75	8" Sonic	SM	Silty SAND:
26.75-27.5	8" Sonic	SP	SAND:
27.5-28.5	8" Sonic		SAND:
28.5-30	8" Sonic	SM	Silty SAND:
30-31.5	8" Sonic	SP	SAND:
31.5-32.25	8" Sonic	SM	Silty SAND:
32.25-33.75	8" Sonic	SP/SM	SAND with silt:
33.75-35	8" Sonic	SM	Silty SAND:
35-36	8" Sonic	SP/SM	SAND with silt:
36-37.5	8" Sonic	SM	Silty SAND:
37.5-38	8" Sonic	SP/SM	SAND with silt:
38-38.5	8" Sonic	SM	Silty SAND:
38.5-40	8" Sonic	ML	Sandy SILT:
40-42.5	8" Sonic	SC	Clayey SAND:
42.5-43.5	8" Sonic	CL	Sandy CLAY:
43.5-44.5	8" Sonic		Sandy CLAY:
44.5-45	8" Sonic		Sandy CLAY:
45-46	8" Sonic		Sandy CLAY:
46-47	8" Sonic		Sandy CLAY:
47-47.75	8" Sonic	SW	SAND:
47.75-48.5	8" Sonic	CH	Sandy CLAY:
48.5-50	8" Sonic		Sandy CLAY:
50-51.5	8" Sonic		CLAY:
51.5-53.5	8" Sonic		Sandy CLAY:
53.5-56	8" Sonic		CLAY:
56-57.5	8" Sonic		Sandy CLAY:
57.5-58	8" Sonic	SC	Clayey SAND:
58-59.5	8" Sonic	CH	CLAY:
59.5-60	8" Sonic	SC	Clayey SAND:
60-64.5	8" Sonic	SM	Silty SAND with clay:
64.5-65.5	8" Sonic	SC	Clayey SAND:
65.5-67.5	8" Sonic	SP	SAND:
67.5-70	8" Sonic	SW	SAND:

TD = 70'; PVC 4-inch screen from 60 to 70; PVC 4-inch riser from 0 to 60  
Drilling Method: Guspech GS24-300RS, 8" Rotasonic

Drilling Company - Cascade Drilling  
Driller - Daniel Dodge  
Geologist - Michael Sauerwein



Boring Logs  
 IPSC  
 Delta, Utah

BAC-2

Interval (feet)	Drilling Method	Sample Description
		7/29/2015
0-6	8" Sonic	Light Brown fine grained Sand, gravels, dry
6-12	8" Sonic	Light Brown fine grained SAND, moist
12-18	8" Sonic	Light Brown fine to medium grained sand, dry
18-23	8" Sonic	Light Brown fine to medium grained sand, with a clay matrix, dry
23-24	8" Sonic	Light Brown fine to medium grained sand, very moist, trace amount of clay
24-26	8" Sonic	Brown fine to medium grained sand, slightly moist
26-30	8" Sonic	Brown fine to medium grained sand, with gravels present, slightly moist
30-33	8" Sonic	Light Brown fine grained sand, slightly moist
33-34	8" Sonic	Light Brown CLAY, very moist, high plasticity
34-36	8" Sonic	Light Brown fine grained sand, with a clay matrix, moist
36-38	8" Sonic	Light Brown Silty CLAY, moderately plastic, slightly moist
38-40	8" Sonic	Brownish Red silty CLAY, good plasticity, slightly moist
40-41	8" Sonic	Brown fine grained SAND, saturated
41-42	8" Sonic	Brown SILT with a clay matrix, slightly moist
42-52	8" Sonic	Reddish brown CLAY, high plasticity, dry to slightly moist
52-55	8" Sonic	Reddish brown CLAY, high plasticity, dry to slightly moist, very dense
55-56	8" Sonic	Brown fine grained SAND with a clay matrix very moist to saturated
56-57	8" Sonic	Reddish brown CLAY, high plasticity, slightly moist to moist
57-65	8" Sonic	Brown fine grained SAND with a clay matrix, saturated

TD = 65; PVC 4-inch screen from 55 to 65; PVC 4-inch riser from -2.5 to 55

Drilling Company - Cascade Drilling  
 Driller - Rick Mallett  
 Geologist - Thomas Hedrick

Boring Logs  
 IPSC  
 Delta, Utah

BAC-3

Interval (feet)	Drilling Method	Sample Description
		7/28/2015
0-8.5	8" Sonic	Light Brown fine grained Sand, dry
8.5-11	8" Sonic	Light Brown fine to medium grained SAND, moist
11-14	8" Sonic	Light Brown fine grained sand, with a clay matrix, dry
14-17	8" Sonic	Gravels with fine to medium grained SAND, slightly moist
17-20	8" Sonic	Brown fine grained sand, slightly moist
20-22	8" Sonic	Brown fine to medium grained sand, with a clay matrix, slightly moist
22-26	8" Sonic	Brown fine to medium grained sand, with a clay matrix, moist
26-30	8" Sonic	Brown fine grained sand, moist
30-43	8" Sonic	Light Brown CLAY, slightly moist to moist, high plasticity
		30-33 Silty CLAY, poor plasticity
		33-35 Silty CLAY, moderately plastic
		35-43 very little silt present, high plasticity
43-45	8" Sonic	Transitioned to a Reddish Brown CLAY, dry, high plasticity
45-50	8" Sonic	Transitioned to a Brown CLAY, dry, high plasticity
50-55	8" Sonic	Light Brown CLAY, moist, high plasticity
55-58	8" Sonic	Light Brown fine grained SAND, with a clay matrix, slightly moist to moist
58-72	8" Sonic	Light Brown CLAY, with a sandy matrix medium to poor plasticity, moist

TD = 72; PVC 4-inch screen from 52 to 72; PVC 4-inch riser from -2.5 to 52

Drilling Company - Cascade Drilling  
 Driller - Rick Mallett  
 Geologist - Thomas Hedrick

BAC-4

Interval (feet)	Drilling Method	USCS	Sample Description
8/10/2015			
0-0.5	8' Sonic	TOPSOIL	Surface - Sand, Gravel, roots, coal ash.
0.5-2.5	8' Sonic	SP/SM	SAND with silt:
2.5-5	8' Sonic	SP	SAND:
5-9	8' Sonic		SAND:
9-10	8' Sonic	SP/SM	SAND with silt:
10-15	8' Sonic	SP	SAND:
15-17.5	8' Sonic	SP/SM	SAND with silt:
17.5-19	8' Sonic		SAND with silt:
19-2	8' Sonic	SC	Clayey SAND:
20-21	8' Sonic		Clayey SAND:
21-22	8' Sonic	CL	Sandy CLAY:
22-22.5	8' Sonic	ML	Sandy SILT:
22.5-25	8' Sonic	CL	Sandy CLAY:
25-32.5	8' Sonic	CH	CLAY:
32.5-33.75	8' Sonic	SP	SAND:
33.75-35	8' Sonic	SM	Silty SAND:
35-36.5	8' Sonic	SP/SM	SAND with silt:
36.5-37.5	8' Sonic		SAND with silt:
37.5-38	8' Sonic	SM	Silty SAND:
38-38.75	8' Sonic	CH	Sandy CLAY:
38.75-39	8' Sonic	SP/SM	SAND with silt:
39-40	8' Sonic	CH	Sandy CLAY:
40-42.5	8' Sonic	ML	Sandy SILT with clay:
42.5-43.5	8' Sonic	SM	Silty SAND and clay:
43.5-45	8' Sonic	CH	CLAY:
45-47.5	8' Sonic		CLAY:
47.5-48.5	8' Sonic		CLAY:
48.5-50	8' Sonic	ML	Clayey SILT with sand:
50-51.25	8' Sonic		Clayey SILT:
51.25-52.5	8' Sonic	CH	CLAY:
52.5-55	8' Sonic	SC	Clayey SAND:
55-56.5	8' Sonic	SM	Silty SAND:
56.5-57	8' Sonic	ML	Clayey SILT with sand:
57-57.5	8' Sonic	CH	CLAY:
57.5-58.5	8' Sonic		CLAY:
58.5-59.5	8' Sonic	ML	Clayey SILT with sand:
59.5-61	8' Sonic		Clayey SILT with sand:
61-64	8' Sonic		Clayey SILT with sand:
64-65	8' Sonic		Clayey SILT with sand:
65-65.5	8' Sonic	SM	Silty SAND:
65.5-67	8' Sonic	CL	Silty CLAY:
67-67.5	8' Sonic	ML	Clayey SILT:
67.5-69	8' Sonic	CH	CLAY:
69-69.5	8' Sonic		CLAY:
69.5-70	8' Sonic		CLAY:
70-72.5	8' Sonic	ML	Sandy SILT with clay:
72.5-74	8' Sonic	CH	Silty CLAY:
74-75	8' Sonic	SM	Silty SAND:

TD = 75'; PVC 4-inch screen from 55 to 75; PVC 4-inch riser from -2.5 to 55

Drilling Method: Prosonic T600, 8" Rotosonic

Drilling Company - Cascade Drilling

Driller - Rick Mallett

Geologist - Michael Sauerwein

BAC-5

Interval (feet)	Drilling Method	USCS	Sample Description
8/9/2015			
0-0.5	8" Sonic	TOPSOIL	Surface - Sand, Gravel, roots, coal ash.
0.5-2.5	8" Sonic	SP/SM	Gravelly SAND with silt:
2.5-3	8" Sonic	SP	SAND:
3-6.5	8" Sonic		SAND:
6.5-10	8" Sonic		SAND:
10-12.5	8" Sonic		SAND:
12.5-15	8" Sonic	SP/SM	SAND with silt:
15-19	8" Sonic	SM	Silty SAND:
19-19.5	8" Sonic	SC	Clayey SAND:
19.5-20	8" Sonic	SP/SM	SAND with silt:
20-22.5	8" Sonic	CL	Sandy CLAY:
22.5-23.75	8" Sonic		Sandy CLAY:
23.75-25	8" Sonic		Sandy CLAY:
25-27.5	8" Sonic		Sandy CLAY:
27.5-30	8" Sonic		CLAY:
30-32.5	8" Sonic	CL/CH	CLAY:
32.5-33.5	8" Sonic	SP	SAND:
33.5-35	8" Sonic		SAND:
35-36	8" Sonic	SC	Clayey SAND:
36-37.5	8" Sonic	ML	Sandy SILT:
37.5-38.5	8" Sonic		Sandy SILT:
38.5-40	8" Sonic	SM	Silty SAND with clay:
40-42.5	8" Sonic		Silty SAND:
42.5-44.25	8" Sonic		Silty SAND with clay:
44.25-45	8" Sonic	CH	CLAY:
45-46.5	8" Sonic		CLAY:
46.5-47.5	8" Sonic		CLAY:
47.5-49	8" Sonic		CLAY:
49-50.75	8" Sonic	SM	Silty SAND:
50.75-52.5	8" Sonic	CH	CLAY:
52.5-53.5	8" Sonic		CLAY:
53.5-55.5	8" Sonic	SP	SAND:
55.5-57.5	8" Sonic	CH	CLAY:
57.5-59	8" Sonic		CLAY:
59-60	8" Sonic	SM	Silty SAND with clay:
60-62.5	8" Sonic	SP	SAND:
62.5-63	8" Sonic	SC	Clayey SAND:
63-65	8" Sonic	SP	SAND:
65-65.75	8" Sonic	SC	Clayey SAND:
65.75-66.5	8" Sonic	CH	CLAY:
66.5-67.5	8" Sonic	SC	Clayey SAND:
67.5-69	8" Sonic	CH	CLAY:
69-70	8" Sonic		CLAY:

TD = 70; PVC 4-inch screen from 58 to 68; PVC 4-inch riser from -2.5 to 58

Drilling Method: Prosonic T600, 8" Rotasonic

Drilling Company - Cascade Drilling

Driller - Rick Mallett

Geologist - Michael Sauerwein

BAC-6

Interval (feet)	Drilling Method	USCS	Sample Description
8/8/2015			
0-0.5	8" Sonic	TOPSOIL	Surface - Sand, Gravel, roots, coal ash.
0.5-2.5	8" Sonic	SP/SM	Gravelly SAND with silt:
2.5-5	8" Sonic	SP	SAND:
5-6.5	8" Sonic	SP/SM	SAND with silt:
6.5-7.5	8" Sonic	SP	SAND:
7.5-10	8" Sonic		SAND:
10-13.5	8" Sonic		SAND:
13.5-15	8" Sonic	SM	Silty SAND:
15-16	8" Sonic	SP	SAND:
16-17.5	8" Sonic	SM	Silty SAND:
17.5-18.25	8" Sonic	SP/SM	SAND with silt:
18.25-18.75	8" Sonic	CL	Sandy CLAY:
18.75-20	8" Sonic	SC	Clayey SAND:
20-21.5	8" Sonic	CH	Sandy CLAY:
21.5-23	8" Sonic	SM	Silty SAND:
23-25	8" Sonic	CL	CLAY:
25-27.5	8" Sonic	CH	CLAY:
27.5-30	8" Sonic		CLAY:
30-32.5	8" Sonic		CLAY:
32.5-33.5	8" Sonic		CLAY:
33.5-35	8" Sonic	SW	SAND:
35-36	8" Sonic	SM	Silty SAND:
36-37.5	8" Sonic	SP/SM	SAND with silt:
37.5-38.5	8" Sonic	CH	CLAY:
38.5-40	8" Sonic	SM	Silty SAND with clay:
40-42.5	8" Sonic		Silty SAND:
42.5-43.5	8" Sonic	CH	Sandy CLAY:
43.5-45	8" Sonic		CLAY:
45-45.5	8" Sonic	SC	Clayey SAND:
45.5-47.5	8" Sonic	CH	CLAY:
47.5-48	8" Sonic	SP	SAND:
48-49.5	8" Sonic	SM	Silty SAND with clay:
49.5-50	8" Sonic	CH	Sandy CLAY:
50-52.5	8" Sonic		CLAY:
52.5-55	8" Sonic		CLAY:
55-56	8" Sonic	SM	Silty SAND:
56-60	8" Sonic	SW	SAND:
60-61	8" Sonic		SAND:
61-62.5	8" Sonic	CH	Sandy CLAY:
62.5-63.5	8" Sonic		CLAY:
63.5-65	8" Sonic	SC	Clayey SAND:

TD = 65; PVC 4-inch screen from 55 to 65; PVC 4-inch riser from -2.5 to 55  
Drilling Method: Guspech GS24-300RS, 8" Rotasonic

Drilling Company - Cascade Drilling  
Driller - Daniel Dodge  
Geologist - Michael Sauerwein

BAC-7

Interval (feet)	Drilling Method	USCS	Sample Description
8/7/2015			
0-0.5	8" Sonic	TOPSOIL	Surface - Sand, Gravel, roots, coal ash.
0.5-2	8" Sonic	SP/SM	Gravelly SAND:
2-2.5	8" Sonic	SP	Gravelly SAND:
2.5-5	8" Sonic		SAND:
5-7	8" Sonic		SAND:
7-8.5	8" Sonic		SAND:
8.5-9	8" Sonic	SP/SM	SAND with silt:
9-9.5	8" Sonic	SP	SAND:
9.5-11	8" Sonic	SP/SM	SAND with silt:
11-13	8" Sonic		SAND with silt:
13-17	8" Sonic	SM	Silty SAND:
17-18.5	8" Sonic		Silty SAND:
18.5-19	8" Sonic	ML	Sandy SILT:
19-20.25	8" Sonic	SP/SM	SAND with silt:
20.25-22	8" Sonic	CL	Sandy CLAY:
22-24	8" Sonic		Sandy CLAY:
24-25	8" Sonic	SC	Clayey SAND:
25-27.5	8" Sonic	CH	CLAY:
27.5-36.5	8" Sonic		CLAY:
36.5-40	8" Sonic	SP	SAND:
40-41.25	8" Sonic		SAND:
41.25-43.75	8" Sonic	SP/SM	SAND with silt:
43.75-45	8" Sonic	CH	CLAY:
45-47.5	8" Sonic		CLAY:
47.5-49	8" Sonic		CLAY:
49-50	8" Sonic	SM	Silty SAND:
50-57.5	8" Sonic	CH	CLAY:
57.5-60	8" Sonic	SW	SAND:
60-62.5	8" Sonic		SAND:
62.5-64	8" Sonic	SP	SAND:
64-65	8" Sonic	CH	CLAY:
65-66.25	8" Sonic		Sandy CLAY:
66.25-67.5	8" Sonic		CLAY:
67.5-70	8" Sonic		CLAY:

TD = 70'; PVC 4-inch screen from 57 to 67; PVC 4-inch riser from -2.5 to 57  
Drilling Method: Guspech GS24-300RS, 8" Rotasonic

Drilling Company - Cascade Drilling  
Driller - Daniel Dodge  
Geologist - Michael Sauerwein

BA-U-1

Interval (feet)	Drilling Method	USCS	Sample Description
7/24/2015			
0-0.5	8" Sonic	TOPSOIL	Surface - Sand, Gravel, roots, coal ash.
0.5-1.5	8" Sonic	SM	Silty SAND:
1.5-2.5	8" Sonic	SC	Clayey SAND:
2.5-3.5	8" Sonic	ML	Sandy SILT:
3.5-5	8" Sonic	SM/ML	Silty SAND/Sandy Silt:
5-6	8" Sonic	SP	SAND:
6-9.5	8" Sonic		SAND:
9.5-11	8" Sonic		SAND:
11-11.5	8" Sonic	SM	Silty SAND:
11.5-12	8" Sonic		Silty SAND:
12-13	8" Sonic	SP/SM	SAND with silt:
13-17	8" Sonic	SP	SAND:
17-17.5	8" Sonic	SP/SM	SAND with silt:
17.5-20	8" Sonic	SP	SAND:
20-22.5	8" Sonic		SAND:
22.5-25	8" Sonic	SM	Silty SAND:
25-26	8" Sonic	SP	SAND:
26-27.5	8" Sonic	SP/SM	SAND with silt:
27.5-28.25	8" Sonic	SM	Silty SAND with clay:
28.25-29.25	8" Sonic	SP/SM	SAND with silt:
29.25-30	8" Sonic	CL	CLAY:
30-31.5	8" Sonic		Sandy CLAY:
31.5-33	8" Sonic	ML	Sandy SILT:
33-35	8" Sonic	SM	Silty SAND with clay:
35-36.25	8" Sonic	SP/SM	SAND with silt:
36.25-40	8" Sonic	CH	CLAY:
40-46.5	8" Sonic		CLAY:
46.5-47.5	8" Sonic	SP/SM	SAND with silt:
47.5-50	8" Sonic	SM	Silty SAND with clay:
50-51	8" Sonic	SC	Clayey SAND:
51-51.75	8" Sonic	SW	SAND:
51.75-52.5	8" Sonic	SP	SAND:
52.5-53	8" Sonic	CH	Sandy CLAY:
53-54	8" Sonic		Sandy CLAY:
54-55	8" Sonic		CLAY:

TD = 55; PVC 4-inch screen from 45 to 55; PVC 4-inch riser from -2.5 to 45  
Drilling Method: Guspech GS24-300RS, 8" Rotasonic

Drilling Company - Cascade Drilling  
Driller - Daniel Dodge  
Geologist - Michael Sauerwein



Boring Logs  
ISPC  
Delta, Utah

BA-U-2

Interval (feet)	Drilling Method	USCS	Sample Description
7/25/2015			
0-0.5	8" Sonic	TOPSOIL	Surface - Sand, Gravel, roots, coal ash.
0.5-1.5	8" Sonic	ML	Sandy SILT:
1.5-2.5	8" Sonic	SP/SM	SAND with silt:
2.5-4	8" Sonic		SAND with silt:
4-5	8" Sonic	ML	SILT with sand and clay:
5-6	8" Sonic	SP/SM	SAND with silt:
6-7	8" Sonic	SP	SAND:
7-9	8" Sonic	SW	Gravelly SAND:
9-9.75	8" Sonic		Gravelly SAND:
9.75-10.25	8" Sonic	SP	Gravelly SAND:
10.25-11	8" Sonic	SP/SM	SAND with silt:
11-12.5	8" Sonic	CL	CLAY:
12.5-13	8" Sonic	SP	SAND:
13-15.5	8" Sonic		SAND:
15.5-18	8" Sonic		SAND:
18-22.5	8" Sonic		SAND:
22.5-23	8" Sonic		SAND:
23-23.5	8" Sonic	SM	Silty SAND:
23.5-25	8" Sonic	SP/SM	SAND with silt:
25-30	8" Sonic	SM	Silty SAND:
30-32.5	8" Sonic	SC	Clayey SAND:
32.5-35	8" Sonic	SM	Silty SAND with clay:
35-37.5	8" Sonic		Silty SAND:
37.5-40	8" Sonic	CL	Sandy CLAY:
40-42	8" Sonic	SC	Clayey SAND:
42-45	8" Sonic	CH	CLAY:
45-47.5	8" Sonic		Sandy CLAY:
47.5-51.75	8" Sonic		CLAY:
51.75-53	8" Sonic	SM	Silty SAND:
53-54	8" Sonic		Silty SAND:
54-55	8" Sonic	SC/SM	Clayey SAND with silt:
55-56.5	8" Sonic	CH	CLAY:
56.5-57.5	8" Sonic		CLAY:
57.5-60	8" Sonic	SC	Clayey SAND:
60-60.75	8" Sonic	SM	Silty SAND with clay:
60.75-61.5	8" Sonic	SC	Clayey SAND:
61.5-62.5	8" Sonic	SP	SAND:
62.5-63.5	8" Sonic		SAND:
63.5-65	8" Sonic	SW	SAND:
65-67.5	8" Sonic	SP	SAND:
67.5-70	8" Sonic		SAND:

TD = 70'; PVC 4-inch screen from 60 to 70; PVC 4-inch riser from -2.5 to 60  
Drilling Method: Guspech GS24-300RS, 8" Rotasonic

Drilling Company - Cascade Drilling  
Driller - Daniel Dodge  
Geologist - Michael Sauerwein

WWC-1

Interval (feet)	Drilling Method	USCS	Sample Description
7/26/2015			
0-0.5	8" Sonic	TOPSOIL	Surface - Sand, Gravel, roots, coal ash.
0.5-2	8" Sonic	ML	Sandy SILT:
2-2.5	8" Sonic	SP	SAND:
2.5-5	8" Sonic		SAND:
5-6.75	8" Sonic	SM	Silty SAND:
6.75-7.5	8" Sonic	ML	Sandy SILT:
7.5-10	8" Sonic		Sandy SILT:
10-12	8" Sonic		Sandy SILT:
12-12.5	8" Sonic	SP/SM	SAND with silt:
12.5-13	8" Sonic	SM	Silty SAND:
13-15	8" Sonic	CL	Silty CLAY:
15-17.5	8" Sonic		Silty CLAY:
17.5-18.5	8" Sonic		Silty CLAY:
18.5-19	8" Sonic		Sandy CLAY:
19-20	8" Sonic		Silty CLAY:
20-22	8" Sonic	CH	CLAY:
22-24.5	8" Sonic		Sandy CLAY:
24.5-25.5	8" Sonic		Sandy CLAY:
25.5-27	8" Sonic		Sandy CLAY:
27-31	8" Sonic		CLAY:
31-31.5	8" Sonic		CLAY:
31.5-33	8" Sonic		CLAY:
33-34.5	8" Sonic		Sandy CLAY:
34.5-35	8" Sonic	Sandy CLAY:	
35-37.5	8" Sonic	SM	Silty SAND:
37.5-40	8" Sonic		Silty SAND:
40-41.5	8" Sonic	SP	SAND:
41.5-42.5	8" Sonic		SAND:
42.5-44	8" Sonic		SAND:
44-45	8" Sonic	CH	SAND:
45-46.5	8" Sonic		CLAY:
46.5-47.5	8" Sonic		Sandy CLAY:
47.5-50.5	8" Sonic	SC/SM	SAND with silt and clay:
50.5-52.5	8" Sonic	SW	SAND:
52.5-53.5	8" Sonic		SAND:
53.5-55	8" Sonic	SM	Silty SAND:
55-57	8" Sonic		Silty SAND:
57-57.5	8" Sonic	CH	CLAY:
57.5-60			CLAY:

TD = 60'; PVC 4-inch screen from 48 to 58; PVC 4-inch riser from -2.5 to 48  
 Drilling Method: Guspech GS24-300RS, 8" Rotosonic

Drilling Company - Cascade Drilling  
 Driller - Daniel Dodge  
 Geologist - Michael Sauerwein

Boring Logs  
 IPSC  
 Delta, Utah

WWC-2

Interval (feet)	Drilling Method	USCS	Sample Description
7/27/2015			
0-0.5	8" Sonic	TOPSOIL	Surface - Sand, Gravel, roots, coal ash.
0.5-2.5	8" Sonic	SM	Silty SAND:
2.5-5	8" Sonic	SP	SAND:
5-7	8" Sonic		SAND:
7-9.5	8" Sonic	SW	Gravelly SAND:
9.5-10	8" Sonic	SW/SP	SAND:
10-12	8" Sonic	SP	SAND:
12-12.5	8" Sonic	SP/SW	Gravelly SAND:
12.5-14.5	8" Sonic	SW	Gravelly SAND:
14.5-15	8" Sonic	SP	SAND with gravel:
15-16	8" Sonic		SAND:
16-17.5	8" Sonic	CL	Sandy CLAY:
17.5-19	8" Sonic	SC	Clayey SAND:
19-20	8" Sonic		Clayey SAND:
20-21	8" Sonic		Clayey SAND:
21-22	8" Sonic	CH	CLAY:
22-24	8" Sonic		CLAY:
24-25	8" Sonic	SM	Silty SAND with clay:
25-26.5	8" Sonic	SM/SC	Silty SAND and clay:
26.5-27.5	8" Sonic	SC	Clayey SAND with silt:
27.5-31.5	8" Sonic	CH	CLAY:
31.5-34	8" Sonic		Silty CLAY:
34-35.5	8" Sonic	SP	SAND:
35.5-37	8" Sonic	ML	Sandy SILT with clay:
37-38.5	8" Sonic	CL	Silty CLAY:
38.5-40	8" Sonic	SM	Silty SAND:
40-42	8" Sonic	CH	CLAY:
42-42.5	8" Sonic		Silty CLAY:
42.5-45	8" Sonic	SC	Clayey SAND:
45-46.25	8" Sonic	CH	CLAY:
46.25-46.75	8" Sonic	SW/SM	SAND with silt:
46.75-47	8" Sonic	ML	Sandy SILT:
47-47.5	8" Sonic	SM	Silty SAND:
47.5-50	8" Sonic	CH	CLAY:
50-51.5	8" Sonic	SM	Silty SAND:
51.5-52	8" Sonic	CH	Sandy CLAY:
52-52.5	8" Sonic	SM	CLAY:
52.5-53.5	8" Sonic	CH	Sandy CLAY:
53.5-55	8" Sonic	SM	Silty SAND:
55-56.25	8" Sonic	ML	Sandy SILT:
56.25-57.5	8" Sonic		SILT:
57.5-60	8" Sonic	SP/SM	SAND with silt:
60-61.5	8" Sonic	SM	Silty SAND:
61.5-62.5	8" Sonic	CH	CLAY:
62.5-63.75	8" Sonic	SP/SM	SAND with silt:
63.75-65	8" Sonic	SW	SAND:
65-67.5	8" Sonic		SAND:
67.5-70	8" Sonic		Gravelly SAND:
70-70.5	8" Sonic	SC/SM	Silty SAND and clay:
70.5-72.5	8" Sonic	CH	CLAY:
72.5-75	8" Sonic		CLAY:

TD = 75'; PVC 4-inch screen from 60 to 70; PVC 4-inch riser from -2.5 to 60  
 Drilling Method: Guspech GS24-300RS, 8" Rotasonic

Drilling Company - Cascade Drilling  
 Driller - Daniel Dodge  
 Geologist - Michael Sauerwein

Boring Logs  
ISPC  
Delta, Utah

WWC-3

Interval (feet)	Drilling Method	USCS	Sample Description
7/30/2015			
0-0.5	8" Sonic	TOPSOIL	Surface - Sand, Gravel, roots, coal ash.
0.5-1	8" Sonic	SP	Gravelly SAND:
1-2.5	8" Sonic	SM	Silty SAND:
2.5-3.5	8" Sonic		Silty SAND:
3.5-5	8" Sonic	SP/SM	SAND with silt:
5-6.5	8" Sonic	ML	Sandy SILT:
6.5-7.5	8" Sonic	CL	Sandy CLAY:
7.5-8	8" Sonic	SM	Silty SAND:
8-10	8" Sonic	SC	Clayey SAND:
10-11	8" Sonic	SM	Silty SAND:
11-12.5	8" Sonic		Silty SAND with clay:
12.5-13.5	8" Sonic		Silty SAND:
13.5-14	8" Sonic	SC	Clayey SAND:
14-15	8" Sonic	SM	Silty SAND:
15-15.5	8" Sonic	CH	CLAY:
15.5-16	8" Sonic		CLAY:
16-16.5	8" Sonic		Sandy CLAY:
16.5-17.5	8" Sonic		Sandy CLAY:
17.5-20	8" Sonic		CLAY:
20-21	8" Sonic		CLAY:
21-22	8" Sonic		CLAY:
22-24	8" Sonic		CLAY:
24-25	8" Sonic	SM	Silty SAND:
25-26.25	8" Sonic	SP/SM	SAND with silt:
26.25-27	8" Sonic	SP	SAND:
27-29	8" Sonic	SM	Silty SAND:
29-30	8" Sonic	CH	CLAY:
30-31	8" Sonic		CLAY:
31-32.5	8" Sonic	SP	SAND:
32.5-34	8" Sonic		SAND:
34-36	8" Sonic	CH	CLAY:
36-37	8" Sonic		CLAY:
37-39.5	8" Sonic	SP/SM	SAND with silt:
39.5-40.5	8" Sonic	SP	SAND:
40.5-41.5	8" Sonic		SAND:
41.5-43	8" Sonic	CH	CLAY:
43-44	8" Sonic	SP/SM	SAND with silt:
44-45	8" Sonic	SM	Silty SAND:
45-47.5	8" Sonic	SP	SAND:
47.5-50	8" Sonic		CLAY:
50-52.5	8" Sonic	CH	CLAY:
52.5-55	8" Sonic	SP	SAND:
55-61	8" Sonic		SAND:
61-62.5	8" Sonic		SAND:
62.5-65	8" Sonic	SW	SAND:
65-67.5	8" Sonic	SP	SAND:
67.5-69.5	8" Sonic	SW	SAND:
69.5-70	8" Sonic	CH	CLAY:

TD = 70'; PVC 4-inch screen from 55 to 65; PVC 4-inch riser from -2.5 to 55

Drilling Method: Guspech GS24-300RS, 8" Rotasonic

Drilling Company - Cascade Drilling

Driller - Daniel Dodge

Geologist - Michael Sauerwein

WWC-4

Interval (feet)	Drilling Method	USCS	Sample Description
7/29/2015			
0-0.5	8" Sonic	TOPSOIL	Surface - Sand, Gravel, roots, coal ash.
0.5-2.5	8" Sonic	SP/SM	SAND with silt:
2.5-5	8" Sonic		SAND with silt:
5-6.25	8" Sonic	ML	Sandy SILT:
6.25-7.25	8" Sonic	CL	CLAY:
7.25-8	8" Sonic	SC	Clayey SAND:
8-9	8" Sonic	SP/SC	SAND with clay:
9-10	8" Sonic	SP	SAND:
10-11	8" Sonic	ML	SILT:
11-12.5	8" Sonic	ML/CL	Clayey SILT:
12.5-14	8" Sonic	CL	CLAY:
14-15	8" Sonic		Sandy CLAY:
15-16	8" Sonic	SC	Clayey SAND:
16-18	8" Sonic		Clayey SAND:
18-19.5	8" Sonic	SM	Silty SAND:
19.5-20	8" Sonic	CH	CLAY:
20-21.25	8" Sonic		Sandy CLAY:
21.25-22.5	8" Sonic	SM	Silty SAND:
22.5-23.75	8" Sonic	CH	CLAY:
23.75-25	8" Sonic	SM	Silty SAND:
25-25.75	8" Sonic	SC	Clayey SAND:
25.75-27.5	8" Sonic	CL	Sandy CLAY:
27.5-29	8" Sonic	CH	CLAY:
29-30.5	8" Sonic		CLAY:
30.5-31.5	8" Sonic	SM	Silty SAND:
31.5-32.25	8" Sonic	CL	Sandy CLAY:
32.25-32.5	8" Sonic		Sandy CLAY:
32.5-33	8" Sonic	CH	CLAY:
33-36	8" Sonic	SP/SM	SAND with silt:
36-37	8" Sonic	SM	Silty SAND:
37-40	8" Sonic	SP	SAND:
40-42.5	8" Sonic		SAND:
42.5-45	8" Sonic		SAND:
45-46	8" Sonic	SP/SW	SAND:
46-46.5	8" Sonic	CH	CLAY:
45.5-47.5	8" Sonic		Sandy CLAY:
47.5-48.5	8" Sonic		CLAY:
48.5-50	8" Sonic		CLAY:
50-50.5	8" Sonic		CLAY:
50.5-52.5	8" Sonic	SM	Silty SAND:
52.5-54	8" Sonic	CH	CLAY:
54-55	8" Sonic	SP	SAND:
55-57	8" Sonic	CH	Sandy CLAY:
57-57.5	8" Sonic	SP	SAND:
57.5-60	8" Sonic	SM	Silty SAND:
60-62	8" Sonic		Silty SAND:
62-62.5	8" Sonic	SC	Clayey SAND:
62.5-63	8" Sonic	CH	Sandy CLAY:
63-65	8" Sonic	SM	Silty SAND:
65-67.5	8" Sonic	SW	SAND:
67.5-69.5	8" Sonic	SP	SAND:
69.5-70	8" Sonic	SW	SAND:
70-72	8" Sonic		SAND:
72-72.5	8" Sonic	SP/SM	SAND with silt:
72.5-75	8" Sonic	SM	Silty SAND:
75-80	8" Sonic	CH	CLAY:

TD = 80'; PVC 4-inch screen from 65 to 75; PVC 4-inch riser from -2.5 to 65  
Drilling Method: Guspech GS24-300RS, 8" Rotasonic

Drilling Company - Cascade Drilling  
Driller - Daniel Dodge  
Geologist - Michael Sauerwein

WWC-5

Interval (feet)	Drilling Method	USCS	Sample Description
7/28/2015			
0-0.5	8" Sonic	TOPSOIL	Surface - Sand, Gravel, roots, coal ash.
0.5-2	8" Sonic	ML	Sandy SILT:
2-2.5	8" Sonic	SP/SM	SAND with silt:
2.5-4.25	8" Sonic	SM	Silty SAND:
4.25-5	8" Sonic	SP	SAND:
5-7.5	8" Sonic	ML	Clayey SILT:
7.5-9	8" Sonic	CL	Silty CLAY:
9-10	8" Sonic		Sandy CLAY:
10-10.5	8" Sonic	SC	Clayey SAND:
10.5-11.25	8" Sonic	CL	CLAY:
11.25-12.5	8" Sonic	ML	Clayey SILT:
12.5-13.25	8" Sonic	SM	Silty SAND:
13.25-13.75	8" Sonic	SC	Clayey SAND:
13.75-15	8" Sonic	CL	CLAY:
15-16	8" Sonic		CLAY:
16-17.5	8" Sonic	CH	CLAY:
17.5-19	8" Sonic	SC	Clayey SAND:
19-20.5	8" Sonic	CH	CLAY:
20.5-21.25	8" Sonic		Sandy CLAY:
21.25-22	8" Sonic		CLAY:
22-22.5	8" Sonic	SC	Clayey SAND:
22.5-24	8" Sonic	SM	Silty SAND:
24-25	8" Sonic	CH	CLAY:
25-26	8" Sonic	SM/CH	Silty SAND / CLAY:
26-27.5	8" Sonic	CH	CLAY:
27.5-28	8" Sonic		Sandy CLAY:
28-28.25	8" Sonic	SM	Silty SAND:
28.25-30	8" Sonic	CH	CLAY:
30-32.5	8" Sonic	SP	SAND:
32.5-34	8" Sonic		SAND:
34-37.5	8" Sonic		SAND:
37.5-40	8" Sonic	SP/SM	SAND with silt:
40-42.5	8" Sonic	CH	CLAY:
42.5-42.75	8" Sonic	SM	Silty SAND:
42.75-44	8" Sonic	CH	Sandy CLAY:
44-44.5	8" Sonic	SM	Silty SAND:
44.5-45	8" Sonic		Silty SAND:
45-45.5	8" Sonic		Silty SAND:
45.5-46.75	8" Sonic		Silty SAND:
46.75-47.5	8" Sonic	CH	CLAY:
47.5-50	8" Sonic		CLAY:
50-50.5	8" Sonic		Sandy CLAY:
50.5-51.5	8" Sonic	SM	CLAY:
51.5-52	8" Sonic		Silty SAND:
52-53.25	8" Sonic	CH	CLAY:
53.25-53.5	8" Sonic		CLAY:
53.5-54	8" Sonic	SC	Clayey SAND:
54-55	8" Sonic	SM/SC	Silty SAND and clay:
55-57.5	8" Sonic	SP	SAND:
57.5-60	8" Sonic		SAND:
60-60.75	8" Sonic		SAND:
60.75-61.5	8" Sonic	CH	CLAY:
61.5-62.5	8" Sonic	SP/SM	SAND with silt:
62.5-64	8" Sonic		SAND with silt:
64-65	8" Sonic	SW	SAND:
65-67.5	8" Sonic		SAND with gravel:
67.5-70	8" Sonic		Gravelly SAND:
70-72.5	8" Sonic		SAND:
72.5-75	8" Sonic		SAND:

TD = 75'; PVC 4-inch screen from 64 to 74; PVC 4-inch riser from -2.5 to 64  
Drilling Method: Guspech GS24-300RS, 8" Rotasonic

Drilling Company - Cascade Drilling  
Driller - Daniel Dodge  
Geologist - Michael Sauerwein

WWU-1

Interval (feet)	Drilling Method	USCS	Sample Description
8/11/2015			
0-0.5	8" Sonic	TOPSOIL	Surface - Sand and Gravel.
0.5-1.5	8" Sonic	SM	Silty SAND:
1.5-2.5	8" Sonic	SP/SM	SAND with silt:
2.5-3.5	8" Sonic	ML	Sandy SILT:
3.5-4.75	8" Sonic	SP	SAND:
4.75-5	8" Sonic	SC	Clayey SAND:
5-7	8" Sonic	SP/SM	SAND with silt:
7-10.75	8" Sonic	SC	Clayey SAND:
10.75-12.5	8" Sonic	SP/SM	SAND with silt:
12.5-13	8" Sonic	SC	Clayey SAND:
13-14	8" Sonic	SM	Silty SAND:
14-15	8" Sonic	SP	SAND:
15-17.5	8" Sonic	SP/SM	SAND with silt:
17.5-20	8" Sonic	SP	SAND:
20-22	8" Sonic	SP/SM	SAND with silt:
22-22.5	8" Sonic	SC	Clayey SAND:
22.5-25	8" Sonic	CL	Sandy CLAY:
25-27.5	8" Sonic		Sandy CLAY:
27.5-28	8" Sonic	SC	Clayey SAND:
28-30	8" Sonic	SW	Gravelly SAND:
30-32.5	8" Sonic	SP/SM	SAND with silt:
32.5-35	8" Sonic	SM	Silty SAND:
35-37.5	8" Sonic	SP	SAND:
37.5-40	8" Sonic		SAND:
40-42.5	8" Sonic	SW/SM	SAND with silt:
42.5-43.25	8" Sonic	SM	Silty SAND:
43.25-44.25	8" Sonic		Silty SAND:
44.25-45	8" Sonic	SP/SW	SAND:
45-47.5	8" Sonic	SW	SAND:
47.5-50	8" Sonic	SP	SAND:
50-50.5	8" Sonic		SAND:
50.5-51.75	8" Sonic	ML	Sandy SILT:
51.75-52.5	8" Sonic	SP	SAND:
52.5-53.25	8" Sonic	SC	Clayey SAND:
53.25-55	8" Sonic		Clayey SAND:
55-56.5	8" Sonic		Clayey SAND:
56.5-57.5	8" Sonic		Clayey SAND:
57.5-60	8" Sonic		Clayey SAND:
60-61	8" Sonic	ML	Clayey SILT with sand:
61-62.5	8" Sonic	SM	Silty SAND:
62.5-63.75	8" Sonic	CL	Sandy CLAY:
63.75-64.75	8" Sonic	SM	Silty SAND:
64.75-65.5	8" Sonic	SP	SAND:
65.5-66.5	8" Sonic	ML	Clayey SILT with sand:
66.5-67.5	8" Sonic	SC	Clayey SAND:
67.5-70	8" Sonic	SM	Silty SAND with clay:

TD = 70'; PVC 4-inch screen from 60 to 70; PVC 4-inch riser from -2.5 to 60

Drilling Method: Prosonic T600, 8" Rotasonic

Drilling Company - Cascade Drilling

Driller - Rick Mallett

Geologist - Michael Sauerwein



WWU-2

Interval (feet)	Drilling Method	USCS	Sample Description
8/11/2015			
0-0.5	8" Sonic	TOPSOIL	Surface - Sand and Gravel.
0.5-2.5	8" Sonic	ML	Gravelly SILT with sand:
2.5-4	8" Sonic	SP	SAND:
4-5	8" Sonic		SAND:
5-5.5	8" Sonic		SAND:
5.5-7.5	8" Sonic		SAND:
7.5-9.5	8" Sonic	SP/SW	SAND:
9.5-10	8" Sonic	SP	SAND:
10-11	8" Sonic	SW	SAND:
11-12.5	8" Sonic	SP/SM	SAND with silt:
12.5-13	8" Sonic	SM	Silty SAND:
13-15	8" Sonic	ML	Sandy SILT:
15-15.5	8" Sonic	SP	SAND:
15.5-17	8" Sonic	SC	Clayey SAND with gravel:
17-17.5	8" Sonic	SW	Gravelly SAND with sand:
17.5-19	8" Sonic		SAND:
19-20	8" Sonic		SAND:
20-22.5	8" Sonic	GW	Sandy GRAVEL:
22.5-23.5	8" Sonic	SW	SAND:
23.5-25	8" Sonic	SP/SM	SAND with silt:
25-32.5	8" Sonic		SAND with silt:
32.5-33.5	8" Sonic	SW/SC	Gravelly SAND with clay:
33.5-35	8" Sonic	SP/SM	SAND with silt:
35-37.5	8" Sonic		SAND with silt:
37.5-39	8" Sonic	SC/CL	Clayey SAND/Sandy CLAY:
39-40	8" Sonic	SC	Clayey SAND:
40-45	8" Sonic	SC/CL	Clayey SAND/Sandy CLAY:
45-45.5	8" Sonic	SM	Silty SAND with clay:
45.5-47.5	8" Sonic	SC/CL	Clayey SAND/Sandy CLAY:
47.5-49.5	8" Sonic	CH/SC	Sandy CLAY/Clayey SAND:
49.5-50	8" Sonic	SP/SM	SAND with silt:
50-51.5	8" Sonic	SC	Clayey SAND:
51.5-52.5	8" Sonic	SP/SC	SAND with clay:
52.5-55	8" Sonic	SP	SAND:
55-56.5	8" Sonic	CH	Sandy CLAY:
56.5-57.5	8" Sonic	SC	Clayey SAND:
57.5-59	8" Sonic	ML	Clayey SILT with sand:
59-60	8" Sonic	CH	Sandy CLAY:
60-62.5	8" Sonic	SC	Clayey SAND:
62.5-64	8" Sonic	CH	Sandy CLAY:
64-65	8" Sonic	SM	Silty SAND:
65-66.5	8" Sonic	SP	SAND:
66.5-67.5	8" Sonic	SM	Silty SAND:
67.5-75	8" Sonic	SW	SAND:

TD = 75'; PVC 4-inch screen from 65 to 75; PVC 4-inch riser from -2.5 to 65

Drilling Method: Prosonic T600, 8" Rotasonic

Drilling Company - Cascade Drilling

Driller - Rick Mallett

Geologist - Michael Sauerwein

Boring Logs

ISPC

Delta, Utah

WWC-6

Interval (feet)	Drilling Method	USCS	Sample Description
03/23/2018 - 03/24/2018			
0-0.5	8" Sonic	SM	Silty sand
0.7-7	8" Sonic	SP	Sand, poorly graded, dry
7-12.5	8" Sonic	CH	Silty clay
12.5-15.5	8" Sonic	SM	Sand, some silt
15.5-19.5	8" Sonic	SP	Sand, poorly graded
19.5-21.5	8" Sonic	SW/GW	Sand and gravel
21.5-27	8" Sonic	SP	Sand, poorly graded, running sands @ ~26
27-29.5	8" Sonic	SP	Sand, poorly graded, running sands
29.5-30	8" Sonic	SW	Sand with gravel
30.37	8" Sonic	CH	Clay, stiff
37-41	8" Sonic	CH	Clay, trace silt, moist, stiff
41-47	8" Sonic	CH	Clay, stiff, moist
47-48	8" Sonic	SP	Sand
48-57	8" Sonic	SW	Sand, silt and gravel
57-59	8" Sonic	SP	Sand
59-60.5	8" Sonic	CH	Clay wet
60.5-64.5	8" Sonic	MH	Silt, trace clay
64.5-67	8" Sonic	CH	Clay wet
67-72	8" Sonic	CH	Clay wet
72-77	8" Sonic	SP	Sand, saturated
77-87	8" Sonic	CH	Clay

TD = 87'; PVC sump 87-77; 4" screen 77-67; sand 87-62 centralizers 67.5 and 76.5 Drilling Method: Sonic

Drilling Company - Cascade Drilling Driller - David  
 Donnelly  
 Geologist - Tom Fendler

**Boring Logs****ISPC****Delta, Utah****WWC-7**

Interval (feet)	Drilling Method	USCS	Sample Description
03/20/2018 - 03/23/2018			
0-1.5	8" Sonic	SM	Silty sand, dry
1.5-8.5	8" Sonic	SP	Sand, poorly graded, saturated at 7.5
8.5-9	8" Sonic	CH	Sandy clay
9-14	8" Sonic	SC	Clay with trace sand
14-24	8" Sonic	SP	Sand, poorly graded, saturated with heaving sands at 17'
24-25	8" Sonic	SW/GW	Gravel/sand and gravel
25-27	8" Sonic	CH	Clay, moist
27-34.5	8" Sonic	SP	Sandy, wet
34.5-35.5	8" Sonic	SW/GW	Sand, some gravel
35.5-37	8" Sonic	CH	Clay, moist, stiff
37-47	8" Sonic	CH	Clay, moist, stiff
47-49.5	8" Sonic	CH	Clay, moist, stiff
49.5-50.5	8" Sonic	SP	Sand, poorly sorted, moist
50.5-57	8" Sonic	CH	Clay, moist, stiff
57-67	8" Sonic	CH	Clay, moist, stiff
67-72	8" Sonic	CH	Clay, moist, stiff
72-77	8" Sonic	SP	Sand, poorly graded, saturated @76.5
77-87	8" Sonic	SP	Sand, poorly graded, saturated

TD = 87'; PVC 4-inch screen from 77 to 87; sand pack 72-87; bentonite pellets 67-72; grout 67-grade

Drilling Method: Sonic

Drilling Company - Cascade Drilling

Driller - David Donnelly

Geologist - Tom Fendler



## DRILLING LOG

PROJECT NAME: Intermountain Power Plant  
BORING/MONITORING WELL: RW-3

PROJECT No.: 07.00408.01  
COMPLETION DATE: 12/16/2007

DRILLING FIRM: Boart Longyear  
BORING METHOD: Sonic  
BORING DIAMETER: 6.0-inch

DRILLER: Robert  
LOGGED BY: Thomas Hedrick  
DEPTH TO WATER (at drilling): ~ 40 ft.  
DEPTH TO WATER (static > 24-hrs.): ~ 30 ft.

### RW-3

Interval (feet)	Drilling Method	Sample Description
0 - 9	SDM	Light Brown fine grained SAND with clay matrix
9 - 17	SDM	Light Brown clayey SILT
16 - 28	SDM	Light Brown silty CLAY
28 - 31	SDM	Light Brown fine grained SAND, moist
31 - 39	SDM	Light Brown CLAY
39 - 41	SDM	Light Brown fine grained SAND, with clay matrix, slightly moist
41 - 43	SDM	Light Brown fine grained SAND, moist
43 - 46	SDM	Light Brown fine to medium grained SAND, moist
46 - 48	SDM	Brown CLAY, Dry
48 - 51	SDM	Brown medium grained SAND with clay matrix, very moist
51 - 66	SDM	Brown medium grained SAND, saturated
Total Depth = 62 feet BGS, Screened from 47 - 62 feet, Sand 43-62', Bentonite 40-43		

### Well Completion Materials and Depth Intervals (ft.)

**Surface Completion:** Stick-up

**Top of 2 in PVC Casing Elevation (Relative Datum Survey):** NA

**Casing, solid:** 0 - 47 ft.

**Top of Manhole Cover (Relative Datum Survey):** NA

**Screen:** 47 - 62 ft.

**Sand Pack:** Oglebay Norton "Colorado Si Sand" Industrial Sands Inc. 43 - 62 ft.

**Bentonite Seal:** "Pure Gold" Bentonite Pellets 40 - 43 ft.



## DRILLING LOG

PROJECT NAME: Intermountain Power Plant  
BORING/MONITORING WELL: RW-4

PROJECT No.: 07.00408.01  
COMPLETION DATE: 12/14/2007

DRILLING FIRM: Boart Longyear  
BORING METHOD: Sonic  
BORING DIAMETER: 8.0-inch

DRILLER: Robert  
LOGGED BY: Thomas Hedrick  
DEPTH TO WATER (at drilling): ~ 26 ft.  
DEPTH TO WATER (static > 24-hrs.): ~ 30 ft.

### RW-4

Interval (feet)	Drilling Method	Sample Description
0 - 8	SDM	Light Brown fine grained SAND with clay matrix
8 - 13	SDM	Light Brown CLAY
13 - 18	SDM	Brown medium grained SAND, Moist
18 - 26	SDM	Reddish brown CLAY, dry
26 - 32	SDM	Brown fine grained SAND, saturated
32 - 36	SDM	Brown course to medium grained SAND, saturated
Total Depth = 36 feet BGS, Screened from 26 - 36 feet, Sand 23-36', Bentonite 21-23		

#### Well Completion Materials and Depth Intervals (ft.)

**Surface Completion:** Stick-up

**Top of 4 in PVC Casing Elevation (Relative Datum Survey):** NA

**Casing, solid:** 0 - 26 ft.

**Top of Manhole Cover (Relative Datum Survey):** NA

**Screen:** 26 – 36 ft.

**Sand Pack:** Oglebay Norton "Colorado Si Sand" Industrial Sands Inc. 23 – 36 ft.

**Bentonite Seal:** "Pure Gold" Bentonite Pellets 21 – 23 ft.



## DRILLING LOG

PROJECT NAME: Intermountain Power Plant  
BORING/MONITORING WELL: RW-5

PROJECT No.: 07.00408.01  
COMPLETION DATE: 12/12/2007

DRILLING FIRM: Boart Longyear  
BORING METHOD: Sonic  
BORING DIAMETER: 10.0-inch

DRILLER: Robert  
LOGGED BY: Thomas Hedrick  
DEPTH TO WATER (at drilling): ~ 60 ft.  
DEPTH TO WATER (static > 24-hrs.): ~ 30 ft.

### RW-5

Interval (feet)	Drilling Method	Sample Description
0 - 7	SDM	Light Brown fine grained SAND with clay matrix
7 - 16	SDM	Light Brown fine grained Sand
16 - 21	SDM	Dark course grained Sand
21 - 28	SDM	Brown medium grained SAND with pebbles (23-26 no pebbles)
28 - 30	SDM	Light Brown silty CLAY, very tight, slight moist
30 - 37	SDM	Light Brown clayey SILT, slight moist
37 - 43	SDM	Light Brown CLAY
43 - 54	SDM	Reddish brown CLAY
54 - 56	SDM	Light Brown silty CLAY, Dry
56 - 58	SDM	Brown fine grained SAND, very moist
58 - 60	SDM	Brown Medium grained SAND, very moist
60 - 61	SDM	Brown fine grained SAND, saturated
61 - 66	SDM	Brown course grained SAND with pebbles, saturated
66 - 73	SDM	Brown fine grained SAND, saturated
73 - 76	SDM	Brown CLAY, dry
Total Depth = 76 feet BGS, Screened from 56 - 76 feet, Sand 53.5 - 76', Bentonite 53.5 - 49.5'		

#### Well Completion Materials and Depth Intervals (ft.)

**Surface Completion:** Stick-up

**Casing, solid:** 0 - 56 ft.

**Screen:** 56 - 76 ft.

**Sand Pack:** Oglebay Norton "Colorado Si Sand" Industrial Sands Inc. 53.5 - 76 ft.

**Bentonite Seal:** "Pure Gold" Bentonite Pellets 53.5 - 49.5 ft.

**Top of 6 in PVC Casing Elevation (Relative Datum Survey):** NA

**Top of Manhole Cover (Relative Datum Survey):** NA



## DRILLING LOG

PROJECT NAME: Intermountain Power Plant  
BORING/MONITORING WELL: RW-6

PROJECT No.: 07.00408.01  
COMPLETION DATE: 12/13/2007

DRILLING FIRM: Boart Longyear  
BORING METHOD: Sonic  
BORING DIAMETER: 8.0-inch

DRILLER: Robert  
LOGGED BY: Thomas Hedrick  
DEPTH TO WATER (at drilling): ~ 47 ft.  
DEPTH TO WATER (static > 24-hrs.): ~ 30 ft.

### RW-6

Interval (feet)	Drilling Method	Sample Description
0 - 9	SDM	Light Brown fine grained SAND with clay matrix
9 - 17	SDM	Light Brown clayey SILT
17 - 20	SDM	Light Brown silty CLAY, dry
20 - 33	SDM	Brown medium grained SAND, dry
30 - 33	SDM	Light Brown CLAY, Moist
33 - 37	SDM	Brown medium grained SAND, with pebbles, slightly moist
37 - 39	SDM	Brown fine grained SAND , moist
39 - 44	SDM	Reddish gray CLAY, dry
44 - 47	SDM	Gray CLAY, dry
47 - 56	SDM	Brown fine grained SAND, Saturated
Total Depth = 56 feet BGS, Screened from 46 - 56 feet, Sand 42-56', Bentonite 38-42		

### Well Completion Materials and Depth Intervals (ft.)

**Surface Completion:** Stick-up

**Casing, solid:** 0 - 46 ft.

**Screen:** 46 – 56 ft.

**Sand Pack:** Oglebay Norton “Colorado Si Sand” Industrial Sands Inc. 42 – 56 ft.

**Bentonite Seal:** “Pure Gold” Bentonite Pellets 38 – 42 ft.

**Top of 4 in PVC Casing Elevation (Relative Datum Survey):** NA

**Top of Manhole Cover (Relative Datum Survey):** NA





## DRILLING LOG

PROJECT NAME: Intermountain Power Plant  
BORING/MONITORING WELL: RW-7

PROJECT No.: 07.00408.01  
COMPLETION DATE: 12/14/2007

DRILLING FIRM: Boart Longyear  
BORING METHOD: Sonic  
BORING DIAMETER: 8.0-inch

DRILLER: Robert  
LOGGED BY: Thomas Hedrick  
DEPTH TO WATER (at drilling): ~ 36 ft.  
DEPTH TO WATER (static > 24-hrs.): ~ 30 ft.

### RW-7

Interval (feet)	Drilling Method	Sample Description
0 - 8	SDM	Light Brown fine grained SAND with clay matrix
8 - 12	SDM	Brown silty CLAY
12 - 13	SDM	White fine grained SAND
13 - 19	SDM	Reddish brown CLAY
19 - 22	SDM	Brown silty CLAY
22 - 28	SDM	Course to medium grained SAND with Pebbles, moist
28 - 31	SDM	Brown silty fine grained SAND, moist
31 - 32	SDM	Brown silty CLAY, moist
32 - 36	SDM	Brown CLAY, dry
36 - 46	SDM	Brown medium to course grained SAND, Saturated
46-76		Reddish brown CLAY, dry
Total Depth = 46 feet BGS, Screened from 36 - 46 feet, Sand 33-46', Bentonite 29-33'		

### Well Completion Materials and Depth Intervals (ft.)

**Surface Completion:** Stick-up

**Top of 4 in PVC Casing Elevation (Relative Datum Survey):** NA

**Casing, solid:** 0 - 36 ft.

**Top of Manhole Cover (Relative Datum Survey):** NA

**Screen:** 36 – 46 ft.

**Sand Pack:** Oglebay Norton "Colorado Si Sand" Industrial Sands Inc. 33 – 46 ft.

**Bentonite Seal:** "Pure Gold" Bentonite Pellets 29 – 33 ft.



## DRILLING LOG

PROJECT NAME: Intermountain Power Plant  
 BORING/MONITORING WELL: RW-9  
 DRILLING FIRM: WDC Exploration & Wells  
 BORING METHOD: Hollow Stem Auger  
 BORING DIAMETER: 8.0-inch

PROJECT No.: 08.00463.01  
 COMPLETION DATE: 9/30/2008  
 DRILLER: Dennis  
 LOGGED BY: Thomas Hedrick  
 DEPTH TO WATER (at drilling): ~ 45 ft.  
 DEPTH TO WATER (static > 24-hrs.): ~ 40 ft.

### RW-9

Interval (feet)	Drilling Method	Sample Description
5 - 6.5	HSA	Brown to orange fine grained sand with pebbles, Dry
10 - 11.5	HSA	Brown silty CLAY, dry
15 - 16.5	HSA	Light brown fine grained silty SAND, dry
20 - 21.5	HSA	Light brown to light gray silty CLAY, dry,
25 - 26.5	HSA	Light brown to light gray CLAY, with interbeds of silty SAND, dry
30 - 31.5	HSA	Brown to black medium grained SAND, with pebbles, dry
35 - 35.5	HSA	Light brown fine grained SAND, dry
35.5 - 36.5	HSA	Dark brown, black to orange medium grained SAND, moist
40 - 41.5	HSA	Same as above, moist
45 - 46.5	HSA	Same as above, saturated
50 - 51.5	HSA	NA Heaving sands
		Diameter = 4 inch, Total Depth = 50 feet BGS, Screened from 35 - 50 feet, Sand 33-50', Bentonite 31-33'

### Well Completion Materials and Depth Intervals (ft.)

**Surface Completion:** Stick-up

**Casing, solid:** 0 - 35 ft.

**Screen:** 35 – 50 ft.

**Sand Pack:** Oglebay Norton “Colorado Si Sand” Industrial Sands Inc. 33 – 50 ft.

**Bentonite Seal:** “Pure Gold” Bentonite Pellets 31 – 33 ft.

**Top of 4 in PVC Casing Elevation (Relative Datum Survey):** NA

**Top of Manhole Cover (Relative Datum Survey):** NA

# ANNUAL GROUND WATER MONITORING AND CORRECTIVE ACTION SUMMARY REPORT

January 28, 2019

## Appendix B A Copy of Stantec's Tabulation of UTL, GWPS, and Confidence Limit Data

**Assessment Monitoring - Statistically Significant Levels above Groundwater Protection Standards  
Intermountain Power Service Corporation - Intermountain Generation Facility  
Delta, Utah**

Constituent	Downgradient Well ID	N	Mean	SD	SE	Median	1st Quartile	3rd Quartile	Minimum	Maximum	% Non-Detects	UTL	MCL	GWPS	LCL	LCL Exceeds GWPS
<b>BOTTOM ASH BASIN</b>																
<b>lithium (mg/L)</b>	BAC-3	11	1.369	0.6401	0.193	1.06	0.944	2.13	0.812	2.53	0.0%	0.7415	0.04	0.7415	0.812	YES
<b>molybdenum (mg/L)</b>	BAC-2	11	0.1595	0.01643	0.004953	0.156	0.143	0.167	0.14	0.194	0.0%	0.04038	0.1	0.1	0.1506	YES
<b>COMBUSTION BY-PRODUCTS LANDFILL</b>																
<b>NO STATISTICALLY SIGNIFICANT LEVELS ABOVE GWPS</b>																
<b>WASTE WATER BASIN</b>																
<b>arsenic (mg/L)</b>	WWC-1	11	0.01664	0.006735	0.002031	0.0181	0.0173	0.02	0.00331	0.0243	0.0%	0.01275	0.01	0.01275	0.01496	YES
<b>arsenic (mg/L)</b>	WWC-2	11	0.01455	0.0007488	0.0002258	0.0147	0.0141	0.0152	0.0129	0.0155	0.0%				0.01415	YES
<b>arsenic (mg/L)</b>	WWC-3	11	0.02086	0.003704	0.001117	0.0214	0.021	0.0226	0.0102	0.0247	0.0%				0.02045	YES

All units micrograms per liter (mg/L)

N: Number of Samples

SD: Standard Deviation

SE: Standard Error

UTL: Upper Tolerance Limit, calculated using samples collected from upgradient wells

Bottom Ash upgradient wells: BA-U-1, BA-U-2 (n=22)

Waste Water upgradient wells: WW-U-1, WW-U-2, SI-U-1 (n=33)

GWPS: Ground water Protection Standard = the greater value of the UTL or MCL

LCL: Lower Confidence Limit of the Mean, If the LCL exceeds the GWPS it is evidence of a statistically significant level above background

Constituent Name	Well	N	Mean	Standard Deviation	Standard Error	Median	Lower Quartile	Upper Quartile	Minimum	Maximum	% Non-Detects	UTL	MCL	GWPS	LCL	UCL	LCL Exceeds GWPS2	UCL Exceeds GWPS
antimony (mg/L)	Background	33	0.00103	0.0001741	0.0000303	0.001	0.001	0.001	0.001	0.002	96.97	0.001	0.006	0.006				
antimony (mg/L)	WWC-1	11	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100				0.001	0.001	NO	NO
antimony (mg/L)	WWC-2	11	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100				0.001	0.001	NO	NO
antimony (mg/L)	WWC-3	11	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100				0.001	0.001	NO	NO
antimony (mg/L)	WWC-4	11	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100				0.001	0.001	NO	NO
antimony (mg/L)	WWC-5	11	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100				0.001	0.001	NO	NO
arsenic (mg/L)	Background	33	0.006554	0.002831	0.0004929	0.00573	0.004425	0.00935	0.001	0.0109	3.03	0.01275	0.01	0.01275				
arsenic (mg/L)	WWC-1	11	0.01664	0.006735	0.002031	0.0181	0.0173	0.02	0.00331	0.0243	0				0.01496	0.0203	YES	YES
arsenic (mg/L)	WWC-2	11	0.01455	0.0007488	0.0002258	0.0147	0.0141	0.0152	0.0129	0.0155	0				0.01415	0.01496	YES	YES
arsenic (mg/L)	WWC-3	11	0.02086	0.003704	0.001117	0.0214	0.021	0.0226	0.0102	0.0247	0				0.02045	0.02262	YES	YES
arsenic (mg/L)	WWC-4	11	0.01206	0.002721	0.0008204	0.013	0.0116	0.0135	0.00498	0.0145	0				0.01147	0.01344	NO	YES
arsenic (mg/L)	WWC-5	11	0.008509	0.002536	0.0007647	0.00783	0.00717	0.0104	0.00371	0.0131	0				0.007123	0.009895	NO	NO
barium (mg/L)	Background	33	0.07908	0.02935	0.005109	0.0761	0.05565	0.09225	0.0446	0.178	0	0.1481	2	2				
barium (mg/L)	WWC-1	11	0.03876	0.01967	0.00593	0.0317	0.0268	0.0536	0.0209	0.077	0				0.02755	0.04481	NO	NO
barium (mg/L)	WWC-2	11	0.03947	0.007406	0.002233	0.0361	0.0339	0.0421	0.031	0.0543	0				0.03543	0.04352	NO	NO
barium (mg/L)	WWC-3	11	0.03304	0.01088	0.003279	0.0302	0.0278	0.0342	0.0242	0.0638	0				0.0242	0.0357	NO	NO
barium (mg/L)	WWC-4	11	0.0646	0.01769	0.005334	0.061	0.0507	0.0768	0.0463	0.101	0				0.05493	0.07427	NO	NO
barium (mg/L)	WWC-5	11	0.05179	0.00727	0.002411	0.0438	0.034	0.067	0.0302	0.103	0				0.03844	0.06223	NO	NO
beryllium (mg/L)	Background	33	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100	0.002	0.004	0.004				
beryllium (mg/L)	WWC-1	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
beryllium (mg/L)	WWC-2	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
beryllium (mg/L)	WWC-3	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
beryllium (mg/L)	WWC-4	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
beryllium (mg/L)	WWC-5	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
cadmium (mg/L)	Background	33	0.004887	0.0006476	0.0001127	0.005	0.005	0.005	0.00128	0.005	96.97	0.005	0.005	0.005				
cadmium (mg/L)	WWC-1	11	0.005	0	0	0.005	0.005	0.005	0.005	0.005	100				0.002	0.002	NO	NO
cadmium (mg/L)	WWC-2	11	0.005	0	0	0.005	0.005	0.005	0.005	0.005	100				0.002	0.002	NO	NO
cadmium (mg/L)	WWC-3	11	0.005	0	0	0.005	0.005	0.005	0.005	0.005	100				0.002	0.002	NO	NO
cadmium (mg/L)	WWC-4	11	0.005	0	0	0.005	0.005	0.005	0.005	0.005	100				0.002	0.002	NO	NO
cadmium (mg/L)	WWC-5	11	0.005	0	0	0.005	0.005	0.005	0.005	0.005	100				0.002	0.002	NO	NO
chromium (mg/L)	Background	33	0.00627	0.012	0.002088	0.00217	0.002	0.00481	0.000602	0.067	27.27	0.067	0.1	0.1				
chromium (mg/L)	WWC-1	11	0.00337	0.00355	0.00107	0.002	0.002	0.00348	0.002	0.0139	72.73				0.002	0.00369	NO	NO
chromium (mg/L)	WWC-2	11	0.004285	0.006663	0.002009	0.002	0.002	0.00335	0.002	0.0243	72.73				0.002	0.00348	NO	NO
chromium (mg/L)	WWC-3	11	0.002442	0.001151	0.0003471	0.002	0.002	0.002	0.002	0.00577	81.82				0.002	0.00309	NO	NO
chromium (mg/L)	WWC-4	11	0.002615	0.002041	0.0006155	0.002	0.002	0.002	0.002	0.00877	90.91				0.002	0.002	NO	NO
chromium (mg/L)	WWC-5	11	0.002665	0.002078	0.0006264	0.002	0.002	0.00202	0.002	0.00892	72.73				0.002	0.00238	NO	NO
cobalt (mg/L)	Background	33	0.004097	0.000557	0.00009697	0.004	0.004	0.004	0.004	0.0072	96.97	0.0072	0.006	0.0072				
cobalt (mg/L)	WWC-1	11	0.004522	0.001352	0.0004077	0.004	0.004	0.004	0.004	0.00842	81.82				0.004	0.00532	NO	NO
cobalt (mg/L)	WWC-2	11	0.004	0	0	0.004	0.004	0.004	0.004	0.004	100				0.004	0.004	NO	NO
cobalt (mg/L)	WWC-3	11	0.004	0	0	0.004	0.004	0.004	0.004	0.004	100				0.004	0.004	NO	NO
cobalt (mg/L)	WWC-4	11	0.004	0	0	0.004	0.004	0.004	0.004	0.004	100				0.004	0.004	NO	NO
cobalt (mg/L)	WWC-5	11	0.004136	0.0004523	0.0001364	0.004	0.004	0.004	0.004	0.0055	90.91				0.004	0.004	NO	NO
fluoride (mg/L)	Background	33	0.4106	0.04058	0.2331	0	0	0.548	0	1.01	15.15	0.9086	4	4				
fluoride (mg/L)	WWC-1	11	0.1627	0.1651	0.04978	0.133	0.076	0.256	0	0.507	36.36				0.0767	0.2488	NO	NO
fluoride (mg/L)	WWC-2	11	0.4225	0.1728	0.0521	0.42	0.358	0.158	0.833	0					0.328	0.5169	NO	NO
fluoride (mg/L)	WWC-3	11	0.9894	0.09192	0.02772	1.01	0.897	1.06	0.845	1.13	0				0.9391	1.04	NO	NO
fluoride (mg/L)	WWC-4	11	0.4473	0.08237	0.02484	0.435	0.387	0.509	0.319	0.576	0				0.4023	0.4923	NO	NO
fluoride (mg/L)	WWC-5	11	0.3261	0.1374	0.04143	0.331	0.292	0.401	0	0.544	9.091				0.251	0.4012	NO	NO
lead (mg/L)	Background	33	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100	0.002	0.015	0.015				
lead (mg/L)	WWC-1	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
lead (mg/L)	WWC-2	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
lead (mg/L)	WWC-3	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
lead (mg/L)	WWC-4	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
lead (mg/L)	WWC-5	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
lithium (mg/L)	Background	33	0.5821	0.3149	0.05482	0.479	0.4385	0.784	0.235	1.35	0	1.35	0.04	1.35				
lithium (mg/L)	WWC-1	11	1.325	0.7251	0.2186	0.964	0.819	2.18	0.755	2.69	0				0.755	2.41	NO	YES
lithium (mg/L)	WWC-2	11	0.1539	0.05544	0.01672	0.124	0.112	0.225	0.104	0.243	0				0.104	0.241	NO	NO
lithium (mg/L)	WWC-3	11	0.1649	0.04891	0.01475	0.139	0.127	0.23	0.123	0.243	0				0.123	0.241	NO	NO
lithium (mg/L)	WWC-4	11	0.5123	0.2318	0.0699	0.382	0.351	0.75	0.309	0.909	0				0.309	0.879	NO	NO
lithium (mg/L)	WWC-5	11	1.106	1.165	0.3513	0.555	0.497	1.4	0.472	4.41	0				0.472	1.41	NO	YES
mercury (mg/L)	Background	33	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100	0.00015	0.002	0.002				
mercury (mg/L)	WWC-1	11	0.0002225	0.00006787	0.00002046	0.000198	0.000168	0.00031	0.00015	0.000328	18.18				0.0001872	0.0002579	NO	NO
mercury (mg/L)	WWC-2	11	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100				0.00015	0.00015	NO	NO
mercury (mg/L)	WWC-3	11	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100				0.00015	0.00015	NO	NO
mercury (mg/L)	WWC-4	11	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100				0.00015	0.00015	NO	NO
mercury (mg/L)	WWC-5	11	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100				0.00015	0.00015	NO	NO
molybdenum (mg/L)	Background	33	0.008239	0.00735	0.001279	0.00619	0.00286	0.00935	0.00182	0.0342	0	0.02676	0.1	0.1				
molybdenum (mg/L)	WWC-1	11	0.008871	0.00245	0.0007387	0.00896	0.0068	0.00995	0.00596	0.0147	0				0.007532	0.01021	NO	NO
molybdenum (mg/L)	WWC-2	11	0.004055	0.001372	0.0004137	0.00372	0.00341	0.00402	0.00304	0.00809	0				0.00304	0.00405	NO	NO
molybdenum (mg/L)	WWC-3	11	0.008955	0.01226	0.003697	0.00537	0.00482	0.00574	0.00464	0.0459	0				0.00464	0.00593	NO	NO
molybdenum (mg/L)	WWC-4	11	0.002949	0.002736	0.0008249	0.00215	0.001	0.00467	0.002	0.0082	45.45				0.001	0.00783	NO	NO
molybdenum (mg/L)	WWC-5	11	0.008649	0.007883	0.002377	0.00523	0.00324	0.0119	0.00301	0.0265	0				0.004262	0.009735	NO	NO
radium226and228combined (pCi/L)	Background	30	1.633	0.7959	0.1453	1.54	1.045	2.19	0.27	3.3	0	3.4	5	5				
radium226and228combined (pCi/L)	WWC-1	10	1.56	0.551	0.174													

thallium (mg/L)	Background	33	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100	0.002	0.02	0.02				
thallium (mg/L)	WWC-1	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
thallium (mg/L)	WWC-2	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
thallium (mg/L)	WWC-3	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
thallium (mg/L)	WWC-4	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
thallium (mg/L)	WWC-5	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO

Constituent Name	Well	N	Mean	Standard Deviation	Standard Error	Median	Lower Quartile	Upper Quartile	Minimum	Maximum	% Non-Detects	UTLs	MCL	GWPS	LC L	UCL	LCL Exceed GWPS	UCL Exceed GWPS
antimony (mg/L)	Background	22	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100							
antimony (mg/L)	CLW-1	11	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100	0.001	0.006	0.006	0.001	0.001	NO	NO
antimony (mg/L)	CLW-2	11	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100				0.001	0.001	NO	NO
antimony (mg/L)	CLW-3	11	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100				0.001	0.001	NO	NO
antimony (mg/L)	CLW-4	11	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100				0.001	0.001	NO	NO
antimony (mg/L)	CLW-5	11	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100				0.001	0.001	NO	NO
antimony (mg/L)	CLW-6	11	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100				0.001	0.001	NO	NO
antimony (mg/L)	CLW-7	11	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100				0.001	0.001	NO	NO
antimony (mg/L)	CLW-8	11	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100				0.001	0.001	NO	NO
arsenic (mg/L)	Background	22	0.03012	0.006689	0.001426	0.02775	0.0251	0.0333	0.0236	0.0507	0	0.047	0.01	0.047				
arsenic (mg/L)	CLW-1	11	0.02857	0.001619	0.0004882	0.0285	0.0266	0.0298	0.0264	0.0309	0				0.02769	0.02946	NO	NO
arsenic (mg/L)	CLW-2	11	0.02601	0.001529	0.0004609	0.0258	0.0246	0.0277	0.0243	0.0284	0				0.02517	0.02684	NO	NO
arsenic (mg/L)	CLW-3	11	0.03979	0.002278	0.000687	0.0402	0.0378	0.0412	0.0364	0.0437	0				0.03855	0.04104	NO	NO
arsenic (mg/L)	CLW-4	11	0.03304	0.005682	0.001713	0.0352	0.0308	0.0375	0.0196	0.0388	0				0.02993	0.03614	NO	NO
arsenic (mg/L)	CLW-5	11	0.02075	0.001594	0.0004806	0.021	0.0189	0.0216	0.0182	0.023	0				0.01987	0.02162	NO	NO
arsenic (mg/L)	CLW-6	11	0.01817	0.005867	0.001769	0.0164	0.0143	0.0246	0.0104	0.0287	0				0.01497	0.02138	NO	NO
arsenic (mg/L)	CLW-7	11	0.02379	0.00104	0.0003135	0.0239	0.0234	0.0244	0.0215	0.0257	0				0.02322	0.02436	NO	NO
arsenic (mg/L)	CLW-8	11	0.02325	0.00291	0.0008773	0.0239	0.0224	0.0254	0.0155	0.0258	0				0.0222	0.02476	NO	NO
barium (mg/L)	Background	22	0.09319	0.0127	0.002708	0.0915	0.087	0.0957	0.0758	0.129	0	0.129	2	2				
barium (mg/L)	CLW-1	11	0.06474	0.01389	0.004187	0.0615	0.0582	0.0648	0.053	0.105	0				0.053	0.0668	NO	NO
barium (mg/L)	CLW-2	11	0.08037	0.007668	0.002312	0.0811	0.072	0.0855	0.0711	0.0957	0				0.07618	0.08456	NO	NO
barium (mg/L)	CLW-3	11	0.09952	0.006035	0.00182	0.0995	0.0948	0.103	0.089	0.111	0				0.09622	0.1028	NO	NO
barium (mg/L)	CLW-4	11	0.08573	0.01558	0.004697	0.09	0.0801	0.109	0.0786	0.122	0				0.08721	0.1042	NO	NO
barium (mg/L)	CLW-5	11	0.07757	0.007172	0.002163	0.0801	0.0714	0.0851	0.0671	0.0869	0				0.07365	0.08149	NO	NO
barium (mg/L)	CLW-6	11	0.09176	0.003801	0.001146	0.0902	0.0885	0.0961	0.0873	0.0976	0				0.08969	0.09384	NO	NO
barium (mg/L)	CLW-7	11	0.05569	0.008609	0.002596	0.0539	0.0514	0.0581	0.0475	0.0794	0				0.0475	0.0593	NO	NO
barium (mg/L)	CLW-8	11	0.07477	0.01305	0.003936	0.0707	0.0643	0.0797	0.0609	0.107	0				0.06764	0.08191	NO	NO
beryllium (mg/L)	Background	22	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100	0.002	0.004	0.004				
beryllium (mg/L)	CLW-1	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
beryllium (mg/L)	CLW-2	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
beryllium (mg/L)	CLW-3	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
beryllium (mg/L)	CLW-4	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
beryllium (mg/L)	CLW-5	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
beryllium (mg/L)	CLW-6	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
beryllium (mg/L)	CLW-7	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
beryllium (mg/L)	CLW-8	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
cadmium (mg/L)	Background	22	0.004802	0.0009274	0.0001977	0.005	0.005	0.005	0.00065	0.005	95.45	0.005	0.005	0.005				
cadmium (mg/L)	CLW-1	11	0.005	0	0	0.005	0.005	0.005	0.005	0.005	100				0.005	0.005	NO	NO
cadmium (mg/L)	CLW-2	11	0.005	0	0	0.005	0.005	0.005	0.005	0.005	100				0.005	0.005	NO	NO
cadmium (mg/L)	CLW-3	11	0.005	0	0	0.005	0.005	0.005	0.005	0.005	100				0.005	0.005	NO	NO
cadmium (mg/L)	CLW-4	11	0.005	0	0	0.005	0.005	0.005	0.005	0.005	100				0.005	0.005	NO	NO
cadmium (mg/L)	CLW-5	10	0.005	0	0	0.005	0.005	0.005	0.005	0.005	100				0.005	0.005	NO	NO
cadmium (mg/L)	CLW-6	11	0.005	0	0	0.005	0.005	0.005	0.005	0.005	100				0.005	0.005	NO	NO
cadmium (mg/L)	CLW-7	10	0.005	0	0	0.005	0.005	0.005	0.005	0.005	100				0.005	0.005	NO	NO
cadmium (mg/L)	CLW-8	11	0.005	0	0	0.005	0.005	0.005	0.005	0.005	100				0.005	0.005	NO	NO
chromium (mg/L)	Background	22	0.002286	0.001172	0.0002499	0.002	0.002	0.002	0.000529	0.00613	81.82	0.00613	0.1	0.1				
chromium (mg/L)	CLW-1	11	0.007546	0.008927	0.002692	0.002	0.002	0.0157	0.0102	0.0271	45.45				0.00102	0.0187	NO	NO
chromium (mg/L)	CLW-2	11	0.003625	0.003655	0.001102	0.002	0.002	0.00411	0.002	0.014	72.73				0.002	0.00576	NO	NO
chromium (mg/L)	CLW-3	11	0.001997	0.0006608	0.0001992	0.002	0.002	0.000505	0.00346	81.82	0.000505				0.000505	0.002	NO	NO
chromium (mg/L)	CLW-4	11	0.00652	0.01496	0.004511	0.002	0.002	0.002	0.000762	0.0516	72.73				0.000762	0.00336	NO	NO
chromium (mg/L)	CLW-5	11	0.002622	0.002475	0.0007463	0.002	0.002	0.002	0.000712	0.00999	72.73				0.000712	0.00214	NO	NO
chromium (mg/L)	CLW-6	11	0.002869	0.00296	0.0008924	0.002	0.002	0.002	0.000612	0.0116	72.73				0.000612	0.00335	NO	NO
chromium (mg/L)	CLW-7	11	0.00338	0.00254	0.0007658	0.002	0.002	0.00421	0.002	0.00891	63.64				0.002	0.00772	NO	NO
chromium (mg/L)	CLW-8	11	0.00317	0.003032	0.0009141	0.002	0.002	0.00224	0.002	0.012	72.73				0.002	0.00463	NO	NO
cobalt (mg/L)	Background	22	0.004	0	0	0.004	0.004	0.004	0.004	0.004	100	0.004	0.006	0.006				
cobalt (mg/L)	CLW-1	11	0.004	0	0	0.004	0.004	0.004	0.004	0.004	100				0.004	0.004	NO	NO
cobalt (mg/L)	CLW-2	11	0.004	0	0	0.004	0.004	0.004	0.004	0.004	100				0.004	0.004	NO	NO
cobalt (mg/L)	CLW-3	11	0.004	0	0	0.004	0.004	0.004	0.004	0.004	100				0.004	0.004	NO	NO
cobalt (mg/L)	CLW-4	11	0.004	0	0	0.004	0.004	0.004	0.004	0.004	100				0.004	0.004	NO	NO
cobalt (mg/L)	CLW-5	11	0.004	0	0	0.004	0.004	0.004	0.004	0.004	100				0.004	0.004	NO	NO
cobalt (mg/L)	CLW-6	11	0.004	0	0	0.004	0.004	0.004	0.004	0.004	100				0.004	0.004	NO	NO
cobalt (mg/L)	CLW-7	11	0.004	0	0	0.004	0.004	0.004	0.004	0.004	100				0.004	0.004	NO	NO
cobalt (mg/L)	CLW-8	11	0.004	0	0	0.004	0.004	0.004	0.004	0.004	100				0.004	0.004	NO	NO
fluoride (mg/L)	Background	22	0.9517	0.1236	0.02635	0.976	0.8675	1.02	0.611	1.17	0	1.242	4	4				
fluoride (mg/L)	CLW-1	11	1.045	0.1158	0.03492	1.06	1.02	1.15	0.834	1.18	0				0.982	1.109	NO	NO
fluoride (mg/L)	CLW-2	11	1.132	0.1564	0.04715	1.18	1.13	1.21										

lithium (mg/L)	Background	22	0.2651	0.07813	0.01666	0.2155	0.207	0.3485	0.19	0.401	0	0.401	0.04	0.401						
lithium (mg/L)	CLW-1	11	0.2355	0.07161	0.02159	0.192	0.184	0.316	0.173	0.361	0				0.173	0.318			NO	NO
lithium (mg/L)	CLW-2	11	0.2844	0.09059	0.02731	0.227	0.219	0.391	0.211	0.438	0				0.211	0.396			NO	NO
lithium (mg/L)	CLW-3	11	0.2722	0.08772	0.02645	0.217	0.214	0.368	0.197	0.435	0				0.197	0.375			NO	NO
lithium (mg/L)	CLW-4	11	0.2514	0.07328	0.02209	0.204	0.199	0.336	0.189	0.375	0				0.189	0.338			NO	NO
lithium (mg/L)	CLW-5	11	0.217	0.1204	0.03631	0.21	0.188	0.346	0.025	0.411	0				0.1511	0.2828			NO	NO
lithium (mg/L)	CLW-6	11	0.2383	0.09904	0.02986	0.203	0.193	0.333	0.05	0.4	9.091				0.1841	0.2924			NO	NO
lithium (mg/L)	CLW-7	11	0.2294	0.06576	0.01983	0.189	0.182	0.302	0.169	0.331	0				0.169	0.327			NO	NO
lithium (mg/L)	CLW-8	11	0.2343	0.06641	0.02002	0.192	0.188	0.308	0.176	0.35	0				0.176	0.32			NO	NO
mercury (mg/L)	Background	22	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100	0.00015	0.002	0.002						
mercury (mg/L)	CLW-1	11	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100				0.00015	0.00015			NO	NO
mercury (mg/L)	CLW-2	11	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100				0.00015	0.00015			NO	NO
mercury (mg/L)	CLW-3	11	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100				0.00015	0.00015			NO	NO
mercury (mg/L)	CLW-4	11	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100				0.00015	0.00015			NO	NO
mercury (mg/L)	CLW-5	11	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100				0.00015	0.00015			NO	NO
mercury (mg/L)	CLW-6	11	0.01677	0.05513	0.01662	0.00015	0.00015	0.00015	0.00015	0.183	90.91				0.00015	0.00015			NO	NO
mercury (mg/L)	CLW-7	11	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100				0.00015	0.00015			NO	NO
mercury (mg/L)	CLW-8	11	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100				0.00015	0.00015			NO	NO
molybdenum (mg/L)	Background	22	0.004216	0.000791	0.0001686	0.00403	0.003815	0.004215	0.00359	0.00733	0	0.00733	0.1	0.1						
molybdenum (mg/L)	CLW-1	11	0.005008	0.001067	0.0003218	0.00454	0.00407	0.00589	0.00388	0.0068	0				0.004425	0.005591			NO	NO
molybdenum (mg/L)	CLW-2	11	0.004662	0.0004551	0.0001372	0.00461	0.00472	0.00472	0.00427	0.00593	0				0.00427	0.00481			NO	NO
molybdenum (mg/L)	CLW-3	11	0.004852	0.0001833	0.00005526	0.00483	0.00472	0.00498	0.00463	0.0052	0				0.004752	0.004952			NO	NO
molybdenum (mg/L)	CLW-4	11	0.006171	0.002332	0.0007033	0.00525	0.00459	0.00762	0.00414	0.0115	0				0.004892	0.007143			NO	NO
molybdenum (mg/L)	CLW-5	11	0.006953	0.00147	0.0004431	0.00679	0.0054	0.00841	0.00519	0.00922	0				0.00615	0.007756			NO	NO
molybdenum (mg/L)	CLW-6	11	0.008009	0.002976	0.0008972	0.00746	0.00711	0.0105	0.001	0.0117	9.091				0.006383	0.009635			NO	NO
molybdenum (mg/L)	CLW-7	11	0.01692	0.04282	0.01291	0.00396	0.00331	0.00425	0.00329	0.146	0				0.00329	0.00638			NO	NO
molybdenum (mg/L)	CLW-8	11	0.004575	0.0007728	0.000233	0.00435	0.00291	0.00503	0.00359	0.00626	0				0.004153	0.004998			NO	NO
radium226and228combined (pCi/L)	Background	20	1.207	0.7924	0.1772	1.11	0.71	1.66	0	3.7	5	3.106	5	5						
radium226and228combined (pCi/L)	CLW-1	10	1.24	0.6247	0.1975	1.25	0.54	1.885	0.34	2.16	0				0.8779	1.602			NO	NO
radium226and228combined (pCi/L)	CLW-2	10	1.333	0.6785	0.2146	1.195	0.965	1.48	0.65	3.12	0				0.9641	1.603			NO	NO
radium226and228combined (pCi/L)	CLW-3	10	0.998	0.5829	0.1843	1.18	0.465	1.56	0	1.7	10				0.6601	1.336			NO	NO
radium226and228combined (pCi/L)	CLW-4	10	1.063	0.6487	0.2051	1.03	0.49	1.605	0.22	2.24	0				0.687	1.439			NO	NO
radium226and228combined (pCi/L)	CLW-5	10	1.165	0.8818	0.2788	1.015	0.455	2.185	0	2.6	10				0.6538	1.676			NO	NO
radium226and228combined (pCi/L)	CLW-6	10	1.036	0.5369	0.1698	1.02	0.52	1.47	0.25	1.99	0				0.7248	1.347			NO	NO
radium226and228combined (pCi/L)	CLW-7	10	0.682	0.346	0.1094	0.625	0.465	0.93	0.14	1.4	0				0.4814	0.8826			NO	NO
radium226and228combined (pCi/L)	CLW-8	10	0.921	0.5334	0.1687	1.02	0.42	1.305	0.09	1.85	0				0.6118	1.23			NO	NO
selenium (mg/L)	Background	22	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100	0.002	0.05	0.05						
selenium (mg/L)	CLW-1	11	0.001903	0.0003232	0.00009745	0.002	0.002	0.002	0.000928	0.002	90.91				0.000928	0.002			NO	NO
selenium (mg/L)	CLW-2	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002			NO	NO
selenium (mg/L)	CLW-3	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002			NO	NO
selenium (mg/L)	CLW-4	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002			NO	NO
selenium (mg/L)	CLW-5	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002			NO	NO
selenium (mg/L)	CLW-6	11	0.002436	0.001447	0.0004364	0.002	0.002	0.002	0.002	0.0068	90.91				0.002	0.002			NO	NO
selenium (mg/L)	CLW-7	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002			NO	NO
selenium (mg/L)	CLW-8	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002			NO	NO
thallium (mg/L)	Background	22	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100	0.002	0.02	0.02						
thallium (mg/L)	CLW-1	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002			NO	NO
thallium (mg/L)	CLW-2	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002			NO	NO
thallium (mg/L)	CLW-3	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002			NO	NO
thallium (mg/L)	CLW-4	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002			NO	NO
thallium (mg/L)	CLW-5	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002			NO	NO
thallium (mg/L)	CLW-6	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002			NO	NO
thallium (mg/L)	CLW-7	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002			NO	NO
thallium (mg/L)	CLW-8	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002			NO	NO



Constituent Name	Well	N	Mean	Standard Deviation	Standard Error	Median	Lower Quartile,	Upper Quartile,	Minimum	Maximum	% Non-Detects	UTL	MCL	GWPS	LCL	UCL	LCL Exceeds GWPS	UCL Exceeds GWPS
antimony (mg/L)	Background	22	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100	0.001	0.006	0.006				
antimony (mg/L)	BAC-1	11	0.001212	0.0004318	0.0001302	0.001	0.001	0.00138	0.001	0.00237	72.73				0.001	0.00158	NO	NO
antimony (mg/L)	BAC-2	11	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100				0.001	0.001	NO	NO
antimony (mg/L)	BAC-3	11	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100				0.001	0.001	NO	NO
antimony (mg/L)	BAC-4	11	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100				0.001	0.001	NO	NO
antimony (mg/L)	BAC-5	11	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100				0.001	0.001	NO	NO
antimony (mg/L)	BAC-6	11	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100				0.001	0.001	NO	NO
antimony (mg/L)	BAC-7	11	0.001	0	0	0.001	0.001	0.001	0.001	0.001	100				0.001	0.001	NO	NO
arsenic (mg/L)	Background	22	0.01936	0.01013	0.00216	0.02085	0.01585	0.02415	0.001	0.0362	9.091	0.04317	0.01	0.04317				
arsenic (mg/L)	BAC-1	11	0.01477	0.002596	0.0007828	0.0146	0.0129	0.0164	0.0103	0.0202	0				0.01335	0.01619	NO	NO
arsenic (mg/L)	BAC-2	11	0.04513	0.005039	0.001519	0.0444	0.0416	0.0469	0.0386	0.0565	0				0.04237	0.04788	NO	YES
arsenic (mg/L)	BAC-3	11	0.03214	0.01602	0.004831	0.0239	0.0192	0.0496	0.0158	0.0588	0				0.02259	0.03865	NO	NO
arsenic (mg/L)	BAC-4	11	0.03271	0.00833	0.002512	0.0352	0.0322	0.0362	0.00882	0.0407	0				0.03142	0.03659	NO	NO
arsenic (mg/L)	BAC-5	11	0.03282	0.003337	0.001006	0.0325	0.0297	0.0357	0.0275	0.0392	0				0.03099	0.03464	NO	NO
arsenic (mg/L)	BAC-6	11	0.01851	0.005069	0.001528	0.0214	0.0134	0.0229	0.0115	0.0248	0				0.01574	0.02128	NO	NO
arsenic (mg/L)	BAC-7	11	0.02408	0.00717	0.002162	0.0234	0.0191	0.0241	0.0154	0.0434	0				0.02023	0.02683	NO	NO
barium (mg/L)	Background	22	0.1102	0.03251	0.006932	0.1055	0.08195	0.139	0.0636	0.175	0	0.1866	2	2				
barium (mg/L)	BAC-1	11	0.1682	0.2106	0.06349	0.0643	0.049	0.279	0.0391	0.702	0				0.0391	0.39	NO	NO
barium (mg/L)	BAC-2	11	0.02595	0.008703	0.002624	0.0228	0.021	0.0248	0.0202	0.0472	0				0.0202	0.0385	NO	NO
barium (mg/L)	BAC-3	11	0.04248	0.0155	0.004672	0.0376	0.0317	0.048	0.0306	0.0827	0				0.03428	0.04787	NO	NO
barium (mg/L)	BAC-4	11	0.06728	0.01782	0.005373	0.0705	0.0666	0.0772	0.0171	0.0821	0				0.06453	0.07578	NO	NO
barium (mg/L)	BAC-5	11	0.08295	0.008322	0.002509	0.0877	0.0736	0.0893	0.0706	0.0928	0				0.07841	0.0875	NO	NO
barium (mg/L)	BAC-6	11	0.04864	0.02748	0.008286	0.0287	0.0245	0.0781	0.0227	0.0859	0				0.0227	0.0833	NO	NO
barium (mg/L)	BAC-7	11	0.02886	0.0109	0.003288	0.026	0.0214	0.0315	0.0195	0.0577	0				0.0231	0.03327	NO	NO
beryllium (mg/L)	Background	22	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100	0.002	0.004	0.004				
beryllium (mg/L)	BAC-1	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
beryllium (mg/L)	BAC-2	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
beryllium (mg/L)	BAC-3	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
beryllium (mg/L)	BAC-4	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
beryllium (mg/L)	BAC-5	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
beryllium (mg/L)	BAC-6	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
beryllium (mg/L)	BAC-7	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
cadmium (mg/L)	Background	22	0.005	0	0	0.005	0.005	0.005	0.005	0.005	100	0.005	0.005	0.005				
cadmium (mg/L)	BAC-1	11	0.005	0	0	0.005	0.005	0.005	0.005	0.005	100				0.005	0.005	NO	NO
cadmium (mg/L)	BAC-2	11	0.005	0	0	0.005	0.005	0.005	0.005	0.005	100				0.005	0.005	NO	NO
cadmium (mg/L)	BAC-3	11	0.005	0	0	0.005	0.005	0.005	0.005	0.005	100				0.005	0.005	NO	NO
cadmium (mg/L)	BAC-4	11	0.005	0	0	0.005	0.005	0.005	0.005	0.005	100				0.005	0.005	NO	NO
cadmium (mg/L)	BAC-5	11	0.005	0	0	0.005	0.005	0.005	0.005	0.005	100				0.005	0.005	NO	NO
cadmium (mg/L)	BAC-6	11	0.004607	0.001303	0.000393	0.005	0.005	0.005	0.000677	0.005	90.91				0.000677	0.005	NO	NO
cadmium (mg/L)	BAC-7	11	0.005	0	0	0.005	0.005	0.005	0.005	0.005	100				0.005	0.005	NO	NO
chromium (mg/L)	Background	22	0.002836	0.002757	0.0005879	0.002	0.002	0.00208	0.000506	0.0125	68.18	0.0125	0.1	0.1				
chromium (mg/L)	BAC-1	11	0.0195	0.03328	0.01003	0.00612	0.00451	0.0184	0.0028	0.114	0				0.0028	0.0412	NO	NO
chromium (mg/L)	BAC-2	11	0.008191	0.003057	0.0009216	0.00777	0.00547	0.0111	0.00483	0.0145	0				0.00652	0.009861	NO	NO
chromium (mg/L)	BAC-3	11	0.01152	0.01677	0.005055	0.00676	0.00447	0.00968	0.00362	0.0615	0				0.00362	0.0114	NO	NO
chromium (mg/L)	BAC-4	11	0.003085	0.002737	0.0008253	0.002	0.002	0.0022	0.002	0.011	63.64				0.002	0.00461	NO	NO
chromium (mg/L)	BAC-5	11	0.003285	0.00425	0.001281	0.002	0.002	0.002	0.002	0.0161	81.82				0.002	0.00204	NO	NO
chromium (mg/L)	BAC-6	11	0.00525	0.0103	0.003106	0.002	0.002	0.00257	0.002	0.0363	63.64				0.002	0.00283	NO	NO
chromium (mg/L)	BAC-7	11	0.004414	0.007316	0.002206	0.002	0.002	0.00217	0.002	0.0264	72.73				0.002	0.00398	NO	NO
cobalt (mg/L)	Background	22	0.004	0	0	0.004	0.004	0.004	0.004	0.004	100	0.004	0.006	0.006				
cobalt (mg/L)	BAC-1	11	0.004242	0.000627	0.000189	0.004	0.004	0.004	0.004	0.00605	81.82				0.004	0.00461	NO	NO
cobalt (mg/L)	BAC-2	11	0.004	0	0	0.004	0.004	0.004	0.004	0.004	100				0.004	0.004	NO	NO
cobalt (mg/L)	BAC-3	11	0.004	0	0	0.004	0.004	0.004	0.004	0.004	100				0.004	0.004	NO	NO
cobalt (mg/L)	BAC-4	11	0.004	0	0	0.004	0.004	0.004	0.004	0.004	100				0.004	0.004	NO	NO
cobalt (mg/L)	BAC-5	11	0.004	0	0	0.004	0.004	0.004	0.004	0.004	100				0.004	0.004	NO	NO
cobalt (mg/L)	BAC-6	11	0.004	0	0	0.004	0.004	0.004	0.004	0.004	100				0.004	0.004	NO	NO
cobalt (mg/L)	BAC-7	11	0.004	0	0	0.004	0.004	0.004	0.004	0.004	100				0.004	0.004	NO	NO
fluoride (mg/L)	Background	22	1.081	0.3373	0.07191	0.959	0.843	1.39	0.727	1.75	0	1.75	4	4				
fluoride (mg/L)	BAC-1	11	0.3694	0.2444	0.07368	0.401	0.266	0.507	0	0.854	18.18				0.242	0.4967	NO	NO
fluoride (mg/L)	BAC-2	11	0.8338	0.4598	0.1386	0.986	0.684	1.11	0	1.33	18.18				0.5942	1.073	NO	NO
fluoride (mg/L)	BAC-3	11	0.9784	0.8142	0.2455	0.794	0	1.62	0	2.51	27.27				0.5541	1.403	NO	NO
fluoride (mg/L)	BAC-4	11	1.236	0.1279	0.03857	1.26	1.13	1.35	1.01	1.38	0				1.166	1.306	NO	NO
fluoride (mg/L)	BAC-5	11	1.144	0.1387	0.04181	1.11	1.04	1.26	0.916	1.34	0				1.068	1.219	NO	NO
fluoride (mg/L)	BAC-6	11	0.8664	0.1652	0.04981	0.847	0.754	1.01	0.582	1.15	0				0.7761	0.9566	NO	NO
fluoride (mg/L)	BAC-7	11	1.093	0.3078	0.09282	1.09	0.936	1.31	0.388	1.51	0				0.9252	1.262	NO	NO
lead (mg/L)	Background	22	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100	0.002	0.015	0.015				
lead (mg/L)	BAC-1	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002			

lead (mg/L)	BAC-5	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
lead (mg/L)	BAC-6	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
lead (mg/L)	BAC-7	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
lithium (mg/L)	Background	22	0.322	0.1536	0.03275	0.288	0.2125	0.3525	0.191	0.773	0	0.7415	0.04	0.7415				
lithium (mg/L)	BAC-1	11	0.7318	0.4543	0.137	0.581	0.402	1.3	0.305	1.52	0				0.4639	0.8974	NO	YES
lithium (mg/L)	BAC-2	11	0.7655	0.408	0.123	0.524	0.44	1.22	0.414	1.38	0				0.414	1.32	NO	YES
lithium (mg/L)	BAC-3	11	1.369	0.6401	0.193	1.06	0.944	2.13	0.812	2.53	0				0.812	2.37	YES	YES
lithium (mg/L)	BAC-4	11	0.3416	0.1315	0.03966	0.262	0.243	0.508	0.228	0.532	0				0.228	0.509	NO	NO
lithium (mg/L)	BAC-5	11	0.3574	0.1144	0.03449	0.294	0.277	0.479	0.219	0.538	0				0.2914	0.4126	NO	NO
lithium (mg/L)	BAC-6	11	0.3775	0.1536	0.04631	0.28	0.265	0.542	0.25	0.599	0				0.25	0.597	NO	NO
lithium (mg/L)	BAC-7	11	0.4395	0.193	0.0582	0.327	0.285	0.674	0.269	0.699	0				0.269	0.681	NO	NO
mercury (mg/L)	Background	22	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100	0.00015	0.002	0.002				
mercury (mg/L)	BAC-1	11	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100				0.00015	0.00015	NO	NO
mercury (mg/L)	BAC-2	11	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100				0.00015	0.00015	NO	NO
mercury (mg/L)	BAC-3	11	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100				0.00015	0.00015	NO	NO
mercury (mg/L)	BAC-4	11	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100				0.00015	0.00015	NO	NO
mercury (mg/L)	BAC-5	11	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100				0.00015	0.00015	NO	NO
mercury (mg/L)	BAC-6	11	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100				0.00015	0.00015	NO	NO
mercury (mg/L)	BAC-7	11	0.00015	0	0	0.00015	0.00015	0.00015	0.00015	0.00015	100				0.00015	0.00015	NO	NO
molybdenum (mg/L)	Background	22	0.01015	0.01031	0.002198	0.00717	0.00297	0.01355	0.00215	0.0408	0	0.04038	0.1	0.1				
molybdenum (mg/L)	BAC-1	11	0.05256	0.03347	0.01009	0.0467	0.0288	0.0607	0.0232	0.143	0				0.03483	0.06541	NO	NO
molybdenum (mg/L)	BAC-2	11	0.1595	0.01643	0.004953	0.156	0.143	0.167	0.14	0.194	0				0.1506	0.1685	YES	YES
molybdenum (mg/L)	BAC-3	11	0.03511	0.008635	0.002604	0.0337	0.0275	0.0396	0.026	0.0525	0				0.03039	0.03983	NO	NO
molybdenum (mg/L)	BAC-4	11	0.01258	0.002503	0.0007548	0.012	0.0104	0.0143	0.00992	0.017	0				0.01122	0.01395	NO	NO
molybdenum (mg/L)	BAC-5	11	0.008795	0.00228	0.0006875	0.0077	0.00728	0.00926	0.00666	0.0134	0				0.00666	0.0128	NO	NO
molybdenum (mg/L)	BAC-6	11	0.07072	0.02813	0.008481	0.0858	0.0359	0.0921	0.0213	0.0968	0				0.07083	0.08867	NO	NO
molybdenum (mg/L)	BAC-7	11	0.07822	0.00959	0.002892	0.075	0.0702	0.0888	0.0681	0.0944	0				0.0681	0.0944	NO	NO
radium226and228combined (pCi/L)	Background	20	1.231	0.6188	0.1384	1.245	0.84	1.675	0.28	2.42	0	2.713	5	5				
radium226and228combined (pCi/L)	BAC-1	10	1.643	0.7154	0.2262	1.555	0.99	2.435	0.61	2.6	0				1.228	2.058	NO	NO
radium226and228combined (pCi/L)	BAC-2	10	1.067	0.8147	0.2576	0.905	0.405	1.595	0.22	2.9	0				0.5947	1.539	NO	NO
radium226and228combined (pCi/L)	BAC-3	10	1.311	0.5293	0.1674	1.335	0.88	1.78	0.38	2.09	0				1.004	1.618	NO	NO
radium226and228combined (pCi/L)	BAC-4	10	0.85	0.7078	0.2238	0.84	0.31	1	0	2.6	10				0.3394	1.157	NO	NO
radium226and228combined (pCi/L)	BAC-5	10	1.052	0.8877	0.2807	0.665	0.335	1.78	0.19	2.96	0				0.5374	1.567	NO	NO
radium226and228combined (pCi/L)	BAC-6	10	1.22	1.109	0.3508	1.01	0.675	1.5	-0.09	4.07	0				-0.09	1.79	NO	NO
radium226and228combined (pCi/L)	BAC-7	10	1.231	1.035	0.3274	0.95	0.435	1.975	0	3.38	10				0.6308	1.831	NO	NO
selenium (mg/L)	Background	22	0.002272	0.0007933	0.0001691	0.002	0.002	0.002105	0.000691	0.00426	68.18	0.00426	0.05	0.05				
selenium (mg/L)	BAC-1	11	0.01246	0.004803	0.001448	0.0131	0.00818	0.0168	0.00643	0.0204	0				0.009831	0.01508	NO	NO
selenium (mg/L)	BAC-2	11	0.01469	0.001404	0.0004233	0.0144	0.0136	0.0157	0.0128	0.0173	0				0.01392	0.01546	NO	NO
selenium (mg/L)	BAC-3	11	0.02131	0.002908	0.0008769	0.0211	0.019	0.0228	0.0184	0.0287	0				0.01973	0.02278	NO	NO
selenium (mg/L)	BAC-4	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
selenium (mg/L)	BAC-5	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
selenium (mg/L)	BAC-6	11	0.002646	0.0009703	0.0002925	0.002	0.002	0.00369	0.002	0.0045	54.55				0.002	0.00414	NO	NO
selenium (mg/L)	BAC-7	11	0.004189	0.001492	0.0004499	0.00446	0.00276	0.00541	0.00257	0.007	0				0.003374	0.005005	NO	NO
thallium (mg/L)	Background	22	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100	0.002	0.02	0.02				
thallium (mg/L)	BAC-1	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
thallium (mg/L)	BAC-2	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
thallium (mg/L)	BAC-3	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
thallium (mg/L)	BAC-4	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
thallium (mg/L)	BAC-5	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
thallium (mg/L)	BAC-6	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO
thallium (mg/L)	BAC-7	11	0.002	0	0	0.002	0.002	0.002	0.002	0.002	100				0.002	0.002	NO	NO