Annual Ground Water Monitoring Summary Report

Intermountain Generating Facility
Delta, Utah

Prepared for:
Intermountain Power Service Corporation
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Project No.: 203709098

January 29, 2018

Sign-off Sheet and Signatures of Environmental Professionals

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Abbreviations

CB Landfill	Combustion By-Products Landfill
CoC	Chain-of-Custody
DQO	Data Quality Objective
ft	Foot or feet
IGF	Intermountain Generating Facility
IPSC	Intermountain Power Service Corporation
mg/l	milligrams per liter
msl	mean sea level
ORP	Oxygen Reduction Potential
QA/QC	Quality Assurance and Quality Control
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
SAP	Sampling and Analysis Plan
SOPs	Standard Operating Procedures
Stantec	Stantec Consulting Services Inc.
SSI	Statistically Significant Increase
UDEQ	Utah Department of Environmental Quality
USEPA	United States Environmental Protection Agency

1.0 INTRODUCTION

On behalf of Intermountain Power Service Corporation (IPSC), Stantec Consulting Services Inc. ("Stantec") has prepared this report to summarize IPSC's first annual, ground water monitoring program pursuant to the United States Environmental Protection Agency's (USEPA) Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals (CCR) from Electric Utilities, 40 CFR 257 Subpart D (the "CCR Rule") 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 Applicability; §257.91 Ground Water Monitoring Systems; §257.93 Ground Water Sampling and Analysis Requirements; and §257.94 Detection Monitoring Program.

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.

IPSC's November 2015 *Ground Water Sampling and Analysis Plan* report outlined the proposed water monitoring and sampling protocol that was to be used for IPSC's future ground water monitoring program prescribed by the CCR Rule Parts §257.90 – 257.95. Additionally, the above-listed IPSC reports also addressed relevant standards presented in the following USEPA and Utah Department of Environmental Quality (UDEQ) rules and guidance documents:

- UDEQ, Division of Water Quality *Rule R317-6. Ground Water Quality Protection*;
- UDEQ, Division of Waste Management and Radiation Control's Solid and Hazardous Waste *Rule R315-308. Ground Water Monitoring Requirements*;
- UDEQ, Division of Waste Management and Radiation Control's Solid and Hazardous Waste's *Ground Water Monitoring Plan Guidance* document; and
- USEPA *QA/G-5. Guidance for Quality Assurance Project Plans (QAPPs)*.

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 §257.94 "Detection Monitoring Program." As prescribed by §257.94(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 in accordance with §257.94(b).

INTRODUCTION
January 29, 2018

In accordance with §257.90(e), this *Annual Ground Water Monitoring Summary Report* presents the results of IPSC's eight ground water monitoring and sampling events that comprised §257.94 Detection Monitoring Program pursuant to §257.94. 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. Both reports are stand-alone documents that are incorporated by reference herein.

2.0 GROUND WATER LEVEL MONITORING PROGRAM

2.1 GROUND WATER MONITORING WELL NETWORK, MONITORING PROTOCOL, AND FINDINGS

Figures 1 and 2 are generalized site location maps, depicting the general site vicinity and the three CCR-regulated units, namely:

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

Figures 3 through 10 herein identify the locations of ground water quality monitoring wells and estimated potentiometric ground water flow maps associated with each of the eight, independent, Detection Monitoring events, which included the following monitoring dates:

- December 2015
- March, June, August, and November 2016; and
- March, June, and October 2017.

During each ground water monitoring and sampling event, field personnel implemented consistent water level measurement procedures, field techniques, and quality assurance/quality control (QA/QC) protocol in accordance with methodologies specified within IPSC's *Ground Water Sampling and Analysis Plan*. Water levels were measured prior to purging and sampling of each well with field data recorded in a dedicated, project notebook for archiving.

The depth to static water in each well was measured utilizing an electronic meter, capable of measuring to 0.01-foot (ft.). The meter was decontaminated prior to each use to minimize the potential for cross-well contamination, when using the meter between wells. During each sampling event, static ground water level measurements were made to the nearest 0.01-ft. from a consistent, reference point established on the northern top of each PVC monitoring well casing.

Table 1 presents a summary of all ground water monitoring well construction details and completion dates pursuant to CCR Rule § 257.90(e)(2). Tabulated water level measurement data associated with each of the eight Detection Monitoring Program monitoring events are presented in Attachment 1 herein, pursuant to § 257.90(e)(3).

As may be noted by review of the potentiometric maps, the predominant, regional ground water flow direction appears to be generally from the east toward the west, with more southwesterly, localized components of flow near the Bottom Ash Basin. There is a slight elevated potentiometric surface in the vicinity of well BAC-1 located near the southeastern corner of the Bottom Ash Basin. The potentiometric surface elevations are relatively consistent during the approximate two-year, monitoring timeframe. Although there are localized changes in hydraulic

gradient across the site during each individual monitoring event, in totem, the gradient patterns appear relatively similar to one another during each of the eight different monitoring events.

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)].

2.2 EXTRAPOLATION OF LINEAR GROUND WATER FLOW VELOCITIES BENEATH THE SITE

Ground water flow velocities may be estimated by means of extrapolating hydraulic conductivity, hydraulic gradient, and soil effective porosity, generally as follows:

$$V_{trans} = \frac{k * (h/i)}{n}$$

where:

V_{trans} is ground water flow velocity (ft/day; etc.)
k is hydraulic conductivity (ft/day; etc.)
h is hydraulic head differential (ft; etc.)
i is distance across which hydraulic head is measured (ft; etc.)
n is effective porosity (unitless).

As detailed within IPSC's November 2015 *CCR Unit Monitoring Well Design and Installation Summary Report*, the lithologic characteristics comprising the uppermost aquifer beneath the site vary significantly between monitoring well locations. The well screen intervals of monitoring wells intersect 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. In turn, the effective porosity (e.g., specific yield) of the uppermost aquifer beneath the site also varies considerably, possibly within an estimated range between 0.15 to 0.25 (unitless), with an approximated average of 0.2.

As noted in the preceding report sub-section, the hydraulic gradients were relatively consistent throughout the two-year monitoring timeframe; however, localized gradients varied considerably across the site during each monitoring event. Hydraulic gradients are estimated to approximate a range between 0.001 feet per feet (ft/ft) to 0.005 ft/ft, with an approximated average of 0.003 ft/ft. Stantec's review of lithologic characteristics and published data related to generic hydraulic conductivities indicates that the uppermost aquifer most probably has highly-varied, horizontal hydraulic conductivity values, possibly within a range between 50 to 90 feet per day (ft/day), with an average approximating 70 ft/day.

In summary, Stantec estimates an average linear ground water flow velocity of the uppermost aquifer beneath the site to approximate an average of between 0.75 ft/day to 1.05 ft/day (e.g., 270 to 380 ft/year). However, in consideration of the relatively significant, localized variability of hydraulic gradients and lithologic characteristics, it must be emphasized that this projected range of average linear ground water flow velocity is only a generalized estimate and will vary considerably, depending on site-specific location beneath the site.

Moreover, any contaminant constituent that might be released from either the landfill or the impoundments to the uppermost aquifer would not be expected to migrate at the same velocity as natural ground water. Any such constituent would be expected to be retarded to varying degrees, as a result of natural attenuation processes, such as adsorption, dispersion, dilution, and biological degradation, etc.

3.0 GROUND WATER DETECTION SAMPLING AND ANALYSIS PROGRAM

3.1 GROUND WATER PURGING AND DETECTION SAMPLING PROTOCOL

Field personnel conducted monitoring well purging and sampling in accordance with Standard Operating Procedures (SOPs) and Data Quality Objectives (DQOs) specified within IPSC's *Ground Water Sampling and Analysis Plan*. In summary, prior to ground water sample collection, each monitoring well was purged to remove static, standing water from each well casing and sand pack, thereby allowing collection of individual water samples representative of ground water within the aquifer surrounding each well. In accordance with CCR Rule § 257.93(i), no water samples were filtered in the field.

Purging and sampling were conducted using similar protocol prescribed within the USEPA's *Standard Operating Procedure for Low-Stress (Low Flow)/Minimal Drawdown Ground Water Sample Collection* – a SOP developed by the Superfund/Resource Conservation and Recovery Act (RCRA) Ground Water Forum, drawing from an USEPA Ground Water Issue Paper, entitled "Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedure" by Robert W. Puls and Michael J. Barcelona (1996). A copy of the USEPA SOP is retained by IPSC at the IGF for field personnel reference.

The intent of the 'low-flow' purging and sampling methodology is to minimize drawdown, turbidity, and purge volumes encountered during routine ground water sampling, so that a ground water sample may be collected that is representative of true geochemical conditions in the aquifer. IPSC used a hand-held, water quality analyzer for monitoring of dissolved oxygen, turbidity, Oxygen Reduction Potential (ORP), conductivity, and pH, prior to each sample collection. During purging, water level and pump rate data were recorded in a dedicated, field logbook.

Following purging, each water sample was collected by reducing the pumping rate slightly and then collecting a sample directly within the laboratory-provided, sample containers. Sample containers were placed directly within a cooler with ice for delivery to the laboratory. The sampler used new, disposable Nitrile® gloves during all purging and sampling activities.

All samples were submitted to American West Analytical Laboratories, Inc. (AWAL) of Salt Lake City, Utah for quantitative analysis of Appendix III and Appendix IV parameters, except for the radiological samples (i.e., Radium) which were analyzed by ACZ Laboratories, Inc. of Steamboat Springs, Colorado. Duplicate samples were analyzed by either AWAL or ChemTech-Ford Laboratories of Salt Lake City, Utah.

3.2 DETECTION SAMPLING RESULTS AND PRELIMINARY STATISTICAL ANALYSES

3.2.1 Summary Data and Statistical Analysis Evaluation

Tabulated summaries of analytical data associated with each of the three CCR Units and corollary, eight sampling events are presented in Attachment 1 herein.

As part of the CCR Rule, ground water quality data are to be assessed statistically to: 1) Determine "Background" concentrations, 2) Conduct Detection Monitoring - identify statistically significant increases (SSIs) over background for Appendix III analytes and then if triggered, 3) implement an Assessment Monitoring Program.

On behalf of IPSC, Stantec reviewed the five alternative, statistical methods specified by §257.93(f)(1) through (5) for evaluation of ground water monitoring data and selected use of upper tolerance or prediction limit procedures as IPSC's statistical testing methodology [i.e., test method §257.93(f)(3)]. Statistical analyses were conducted consistent with §257.90-257.94 using the USEPA ProUCL software version 5.1.00 and spreadsheet tools where appropriate. Formal Professional Engineer (PE) certification and rationale for selecting this specific statistical analysis methodology was provided to IPSC under separate cover in accordance with §257.93(f)(6).

Statistical analyses for the eight sampling events were completed for constituents listed in Appendix III of 40 CFR 257.93. Statistical analyses associated with each of the three separate CCR Units consisted of:

- Laboratory analytical data organization and reduction;
- Preparation of plots of constituent concentrations versus time from each monitoring well within a CCR Unit-specific, monitoring well network;
- Testing statistical assumptions of normality, seasonality, and presence of outliers; and
- Statistical analysis of each of the constituents to determine 'upper limits' (Upper Prediction Limits [UPLs]) for Appendix III constituents.

UPLs are statistics calculated using historical background data from up-gradient wells (e.g. data from the initial eight rounds of sampling). UPLs represent a statistical tool to identify potential SSIs in downgradient wells. During the Detection Monitoring phase, constituent concentrations in downgradient wells are compared to the UPL; an exceedance is evidence of a *potential* SSI.

Concentrations of constituents in down-gradient wells that exceed UPLs in the first eight rounds of detection monitoring do not necessarily indicate the presence of SSIs. Conclusions based on the following synopses should be made with caution - because the eight rounds of sampling were conducted for the purpose of establishing background conditions only and water quality data associated with the initial 8 sampling events are not necessarily used to identify SSIs. Potential SSIs may be identified upon review of water quality data collected in the future (e.g.,

2018 and beyond, after the initial 8 sampling events) in comparison to UPLs estimated from historical background data.

3.2.2 Preliminary Statistical Results

The results of the preliminary statistical analyses from each CCR Unit area are presented below:

Combustion By-Products Landfill Area

The monitoring well network representing the Combustion By-Products Landfill area consists of two up-gradient monitoring wells (CLU-1 and CLU-2) and eight down-gradient, monitoring wells (CLW-1, CLW-2, CLW-3, CLW-4, CLW-5, CLW-6, CLW-7 and CLW-8).

Based on preliminary statistical analyses of eight rounds of ground water monitoring:

- Down-gradient wells exhibited concentrations that exceeded the associated UPL for two Appendix III constituents: Fluoride (wells CLW-3, 4, and 5) and pH (wells CLW-1, 3, 4, 5, 6, and 7).

Bottom Ash Basin Area

The monitoring well network representing the Bottom Ash Basin Area consists of two up-gradient monitoring wells (BAU-1 and BAU-2), and seven down-gradient, monitoring wells (BAC-1, BAC-2, BAC-3, BAC-4, BAC-5, BAC-6 and BAC-7).

Based on preliminary statistical analyses of eight rounds of ground water monitoring:

- Down-gradient wells exhibited concentrations that exceeded the associated UPL for six Appendix III constituents: Boron (wells BAC-1, 2, 3, 6, and 7), Calcium (well BAC-3), Chloride (BAC-1, 2, and 3), Fluoride (wells BAC-2, 3, 4, 5, and 7), Sulfate (wells BAC-1 through 7), and TDS (wells BAC-1, 2 ,3, and 7).

Waste Water Basin Area

The monitoring well network representing the Waste Water Basin Area consists of two up-gradient monitoring wells (WWU-1 and WWU-2), and five down-gradient, monitoring wells (WWC-1, WWC-2, WWC-3, WWC-4 and WWC-5). Ground water monitoring data collected from up-gradient, monitoring well SIU-1 was not used for statistical analysis, based on results of statistical tests that indicated significant differences in characteristics of SIU-1 and other up-gradient wells. It is anticipated that future ground water monitoring of this well will help clarify water quality in this area and background conditions in relation to this CCR Unit.

Based on preliminary statistical analyses of eight rounds of ground water monitoring:

- Down-gradient wells exhibited concentrations that exceeded the associated UPL for seven Appendix III constituents: Boron, Calcium, and Sulfate (wells WWC-1 and 5), Chloride (well WWC-1), Fluoride (wells WWC-2 and 3), pH (wells WWC-2, 3, and 4), and TDS (well WWC-1).

4.0 PROPOSED IMPLEMENTATION OF AN ASSESSMENT MONITORING PROGRAM

In summary, preliminary statistical analyses indicate potential SSI exceedances of certain Appendix III constituents associated with each of the three CCR Units. Therefore, IPSC is pursuing implementation of an Assessment Monitoring Program at each of the three CCR Units in accordance with §257.94(e)(1). All purging, sampling, and QA/QC protocol will be administered as specified by §257.95.

January 29, 2018

Figure 1 General Site Location Map

IPSC PROPERTY BOUNDARY

Combustion By-Products Landfill

Non-CCR Regulated, Evaporation Basins

Bottom Ash Basin

Waste Water Basin

Flowing Wells

North Sugarville Reservoir

Flowing Well

Sugarville

Woodrow

4WD

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

1 0 1 2 3 4 KILOMETERS

1 0 1 2 MILES

N

CCR-Regulated Units
DELTA, UTAH

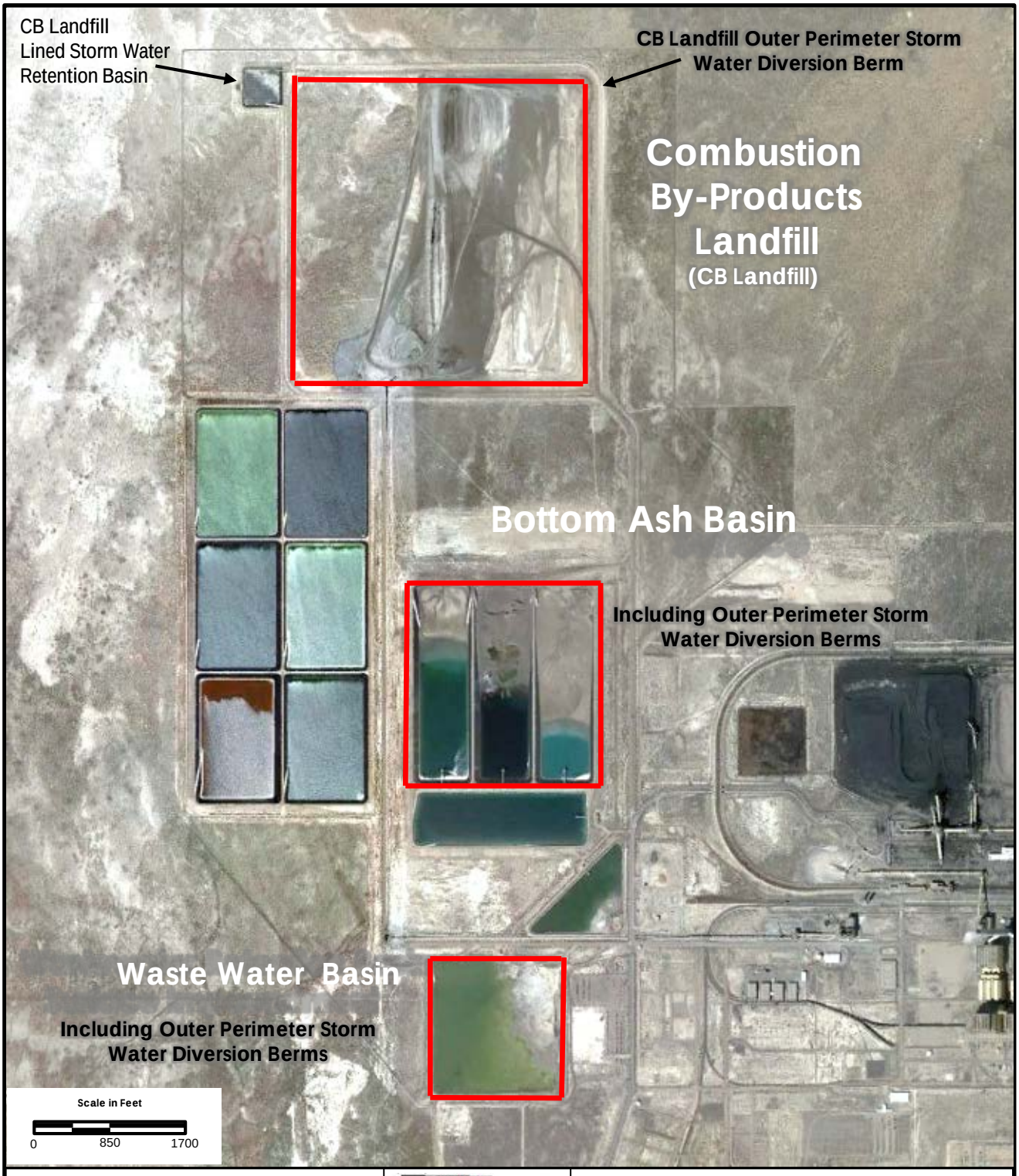
FIGURE 1
SITE TOPOGRAHIC MAP

Stantec

DESIGN BY	DRAWN BY	CH'D BY	SCALE	DATE DRAWN	REVISION
JR	CP		1"=1000'	1-26-17	

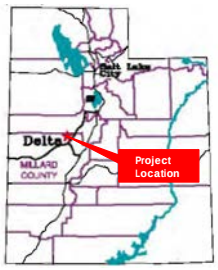
drawings\ipsc-04\Fig2 Site Topographic Map.dwg

Figure 2. CCR Units Location Map



Legend

CCR Unit



INTERMOUNTAIN GENERATING FACILITY

FIGURE 2
Site-Specific Location Map

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DATE DRAWN	9/30/2016
SCALE	1 in. approx. 1700 ft.
PROJECT	203709098.409

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Figures 3 through 10. Potentiometric Maps for All Eight Detection Monitoring Program, Ground Water Monitoring Events

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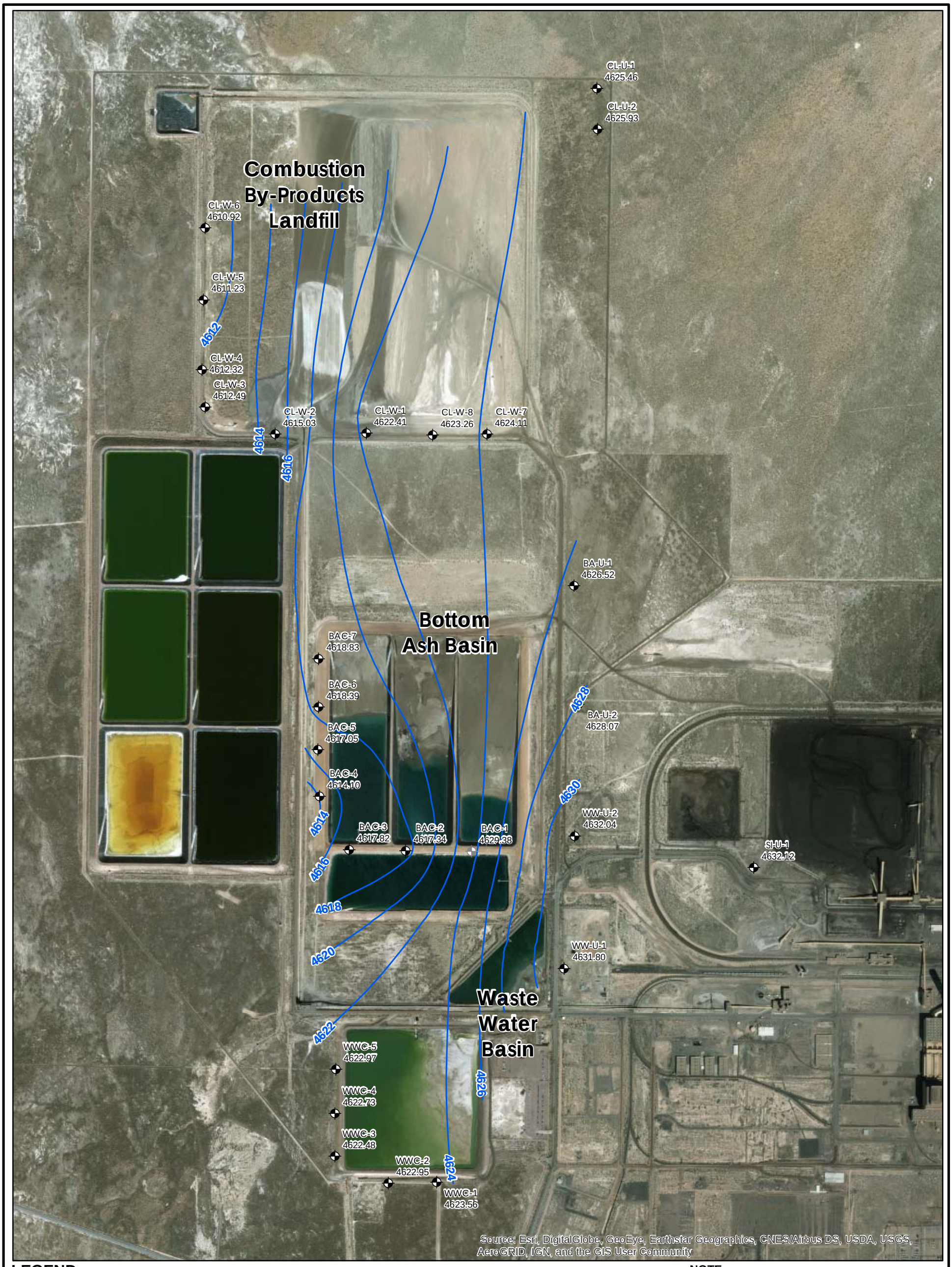

LEGEND:

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

NOTE:

1) DATA COLLECTED DECEMBER 2015
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 950 1,900
Feet
1 in = 1,000 ft

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FOR:
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INTERMOUNTAIN GENERATION FACILITY
DELTA, UTAH

FOURTH QUARTER 2015
POTENTIOMETRIC SURFACE MAP

FIGURE: 3

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Combustion By-Products Landfill

CL-W-6 4611.50
CL-W-5 4612.82
CL-W-4 4612.86
CL-W-3 4613.12
CL-W-2 4615.58
CL-W-1 4621.90
CL-W-8 4623.74
CL-W-7 4624.59
CL-U-1 4625.95
CL-U-2 4626.39

4612
4614
4616

Bottom Ash Basin

BAC-7 4620.31
BAC-6 4618.88
BAC-5 4617.60
BAC-4 4614.48
BAC-3 4617.55
BAC-2 4617.41
BAC-1 4628.85
BA-U-1 4626.91
BA-U-2 4628.28
WW-U-2 4631.94
SI-U-1 4632.14
WW-U-1 4631.95

4618
4620
4622
4624
4626
4628
4630

Waste Water Basin

WWC-5 4623.25
WWC-4 4623.02
WWC-3 4622.78
WWC-2 4623.32
WWC-1 4623.80

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)
- GROUNDWATER CONTOUR

NOTE:

1) DATA COLLECTED MARCH 2016
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 950 1,900
Feet
1 in = 1,000 ft

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FIRST QUARTER 2016 POTENTIOMETRIC SURFACE MAP

FIGURE: 4

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Combustion By-Products Landfill

CL-U-1 4625.60
CL-U-2 4626.07
CL-W-6 4611.73
CL-W-5 4613.02
CL-W-4 4613.02
CL-W-3 4613.25
CL-W-2 4615.68
CL-W-1 4622.79
CL-W-8 4623.56
CL-W-7 4624.36
4612
4614
4616

Bottom Ash Basin

BAC-7 4619.83
BAC-6 4619.29
BAC-5 4617.88
BAC-4 4614.6
BAC-3 4617.49
BAC-2 4617.34
BAC-1 4628.28
BA-U-1 4626.60
BA-U-2 4627.84
WW-U-2 4631.25
SI-U-1 4631.66
WW-U-1 4630.83
4618
4620
4622
4624
4626
4628
4630

Waste Water Basin

WWC-5 4622.72
WWC-4 4622.51
WWC-3 4622.27
WWC-2 4622.78
WWC-1 4623.25

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)
- GROUNDWATER CONTOUR

NOTE:

1) DATA COLLECTED JUNE 2016
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

N

0 950 1,900
Feet
1 in = 1,000 ft

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INTERMOUNTAIN GENERATION FACILITY
DELTA, UTAH

SECOND QUARTER 2016 POTENTIOMETRIC SURFACE MAP

FIGURE: 5

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203709098	ZE	ALL		01/29/18

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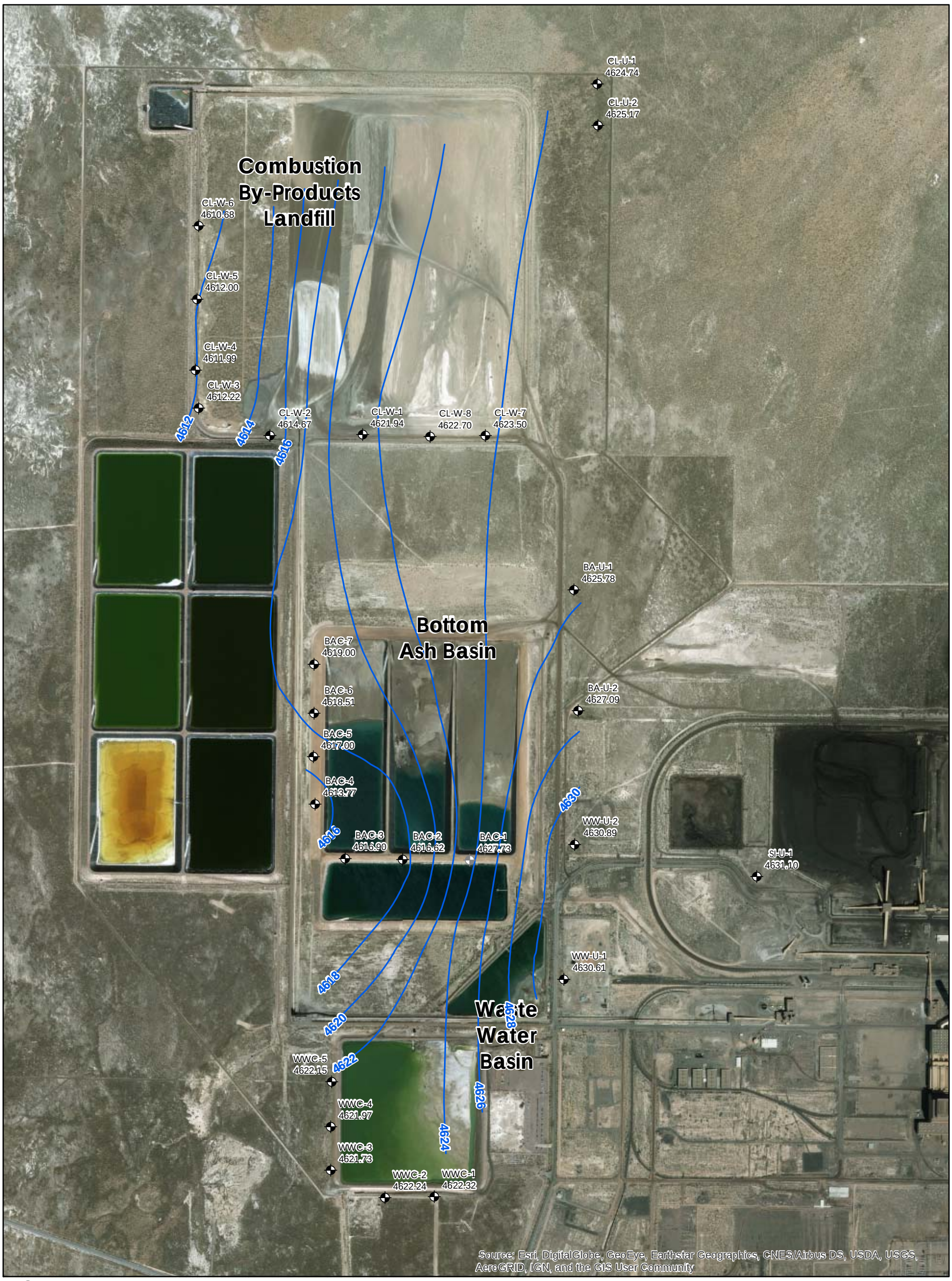

LEGEND:

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

NOTE:

1) DATA COLLECTED AUGUST 2016
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 950 1,900
Feet
1 in = 1,000 ft

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INTERMOUNTAIN GENERATION FACILITY
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THIRD QUARTER 2016 POTENTIOMETRIC SURFACE MAP

FIGURE: 6

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Combustion By-Products Landfill

Bottom Ash Basin

Waste Water Basin

CL-U-1 4624.44
CL-U-2 4624.89
CL-W-6 4610.08
CL-W-5 4611.41
CL-W-4 4611.45
CL-W-3 4611.69
CL-W-2 4614.17
CL-W-1 4621.57
CL-W-8 4622.35
CL-W-7 4623.14
BA-U-1 4625.46
BA-U-2 4626.74
BAC-7 4619.17
BAC-6 4618.34
BAC-5 4616.77
BAC-4 4613.47
BAC-3 4616.74
BAC-2 4616.11
BAC-1 4627.19
WW-U-2 4630.65
SI-U-1 4630.85
WW-U-1 4630.29
WWC-5 4621.90
WWC-4 4621.70
WWC-3 4621.47
WWC-2 4621.89
WWC-1 4622.45

4612 4614 4616 4618 4620 4622 4624 4626 4628 4630

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)
- GROUNDWATER CONTOUR

NOTE:

1) DATA COLLECTED NOVEMBER 2016
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 950 1,900
Feet
1 in = 1,000 ft

Stantec
2335 HIGHWAY 36 WEST
ST. PAUL, MINNESOTA 55113
PHONE: (651) 636-4600 FAX: (651) 636-1311

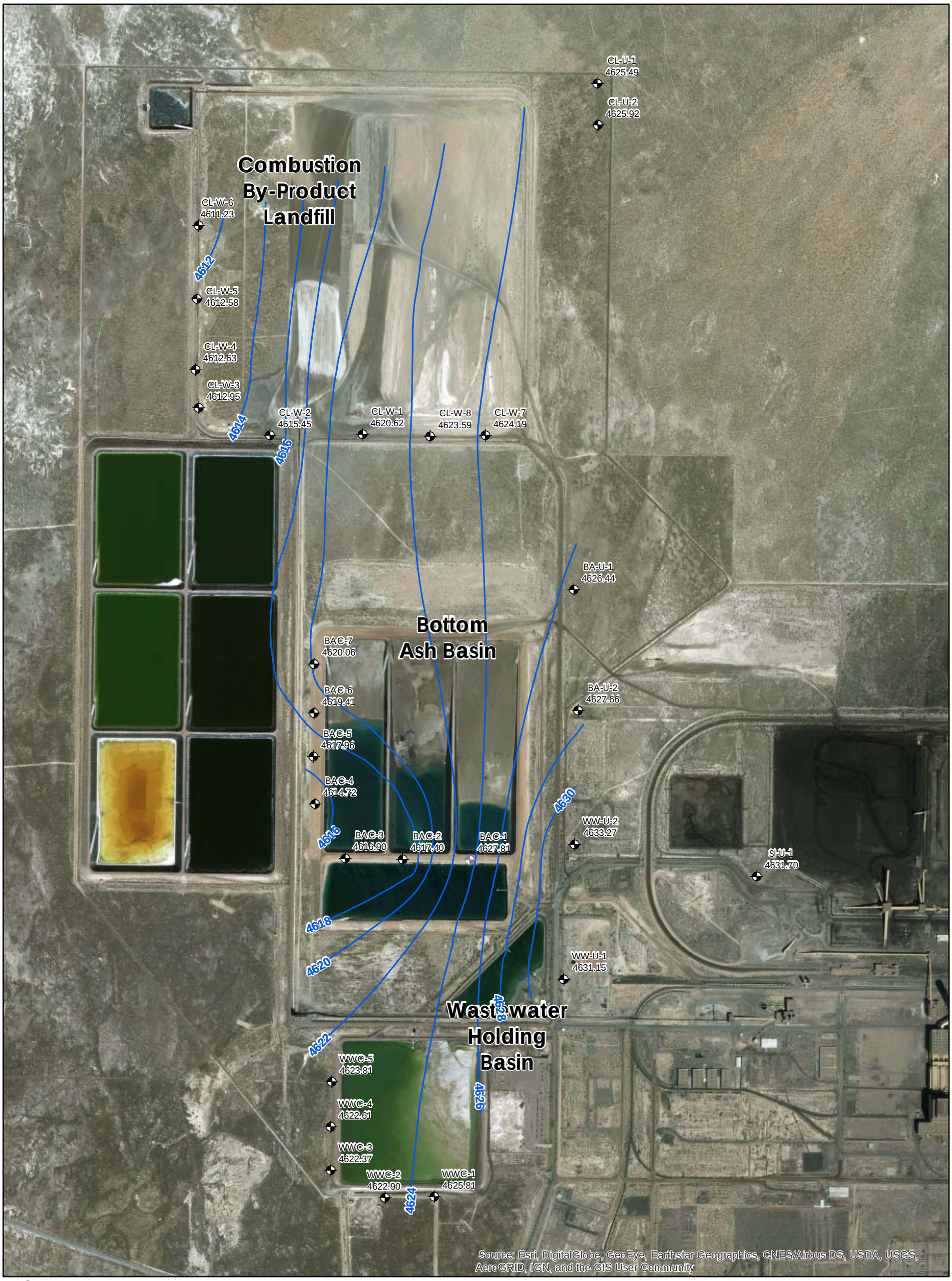
FOR:
INTERMOUNTAIN POWER SERVICE CORP.
INTERMOUNTAIN GENERATION FACILITY
DELTA, UTAH

FOURTH QUARTER 2016 POTENTIOMETRIC SURFACE MAP

FIGURE: 7

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
203709098	ZE	ALL		01/29/18

C:\ZEprojecttemplutahpowerplantfig8_2017q1gwe.mxd



LEGEND:

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

NOTE:

1) DATA COLLECTED MARCH 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 950 1,900
Feet
1 in = 1,000 ft

Stantec
2335 HIGHWAY 36 WEST
ST. PAUL, MINNESOTA 55113
PHONE: (651) 636-4600 FAX: (651) 636-1311

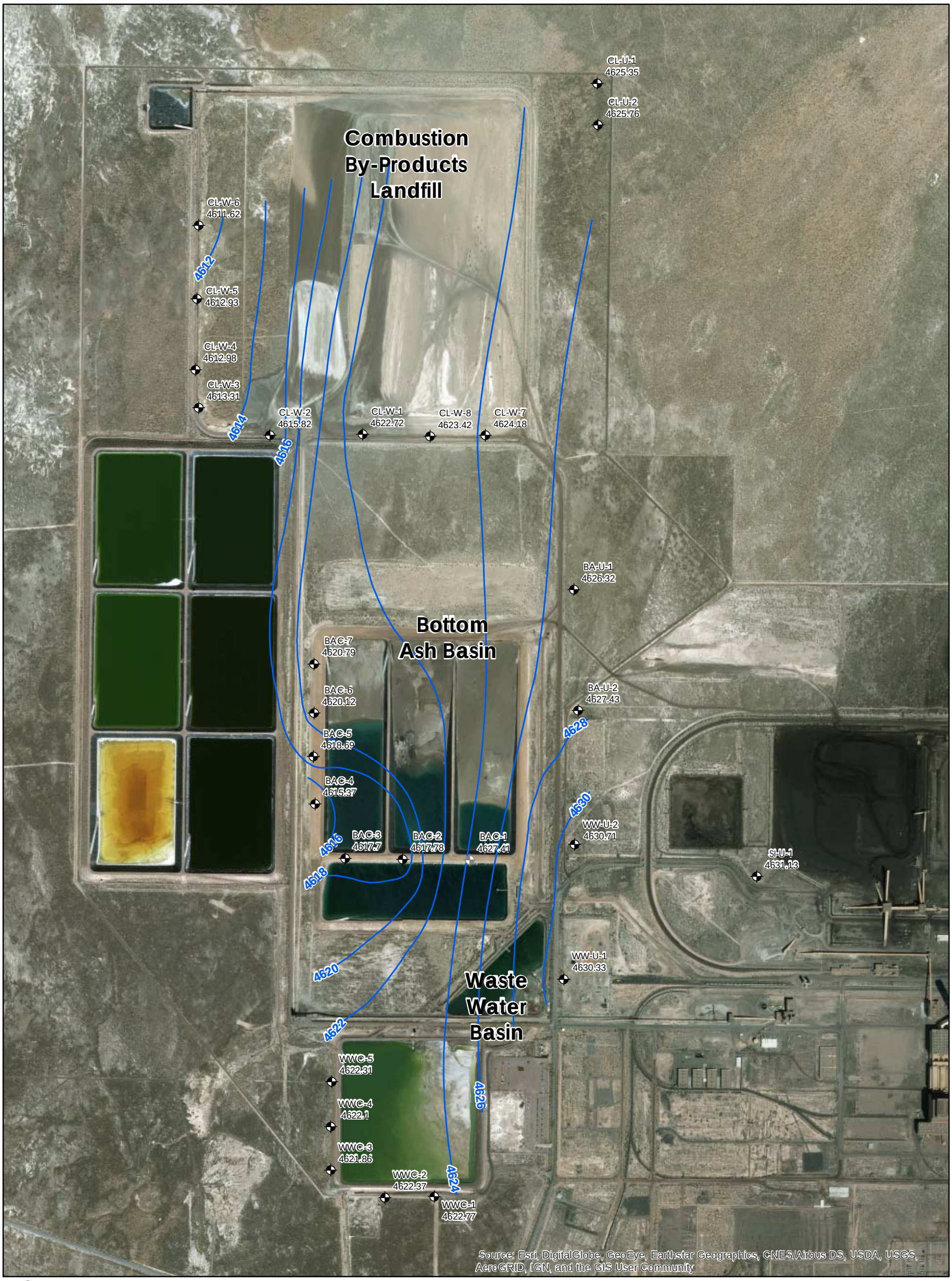
FOR:
INTERMOUNTAIN POWER SERVICE CORP.
INTERMOUNTAIN GENERATION FACILITY
DELTA, UTAH

FIRST QUARTER 2017 POTENTIOMETRIC SURFACE MAP

FIGURE: 8

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
203709098	ZE	ALL		01/29/18

C:\ZEprojecttemplutahpowerplantfig9_2017q2gwe.mxd



LEGEND:

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

NOTE:

1) DATA COLLECTED JUNE 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 950 1,900
Feet
1 in = 1,000 ft

Stantec
2335 HIGHWAY 36 WEST
ST. PAUL, MINNESOTA 55113
PHONE: (651) 636-4600 FAX: (651) 636-1311

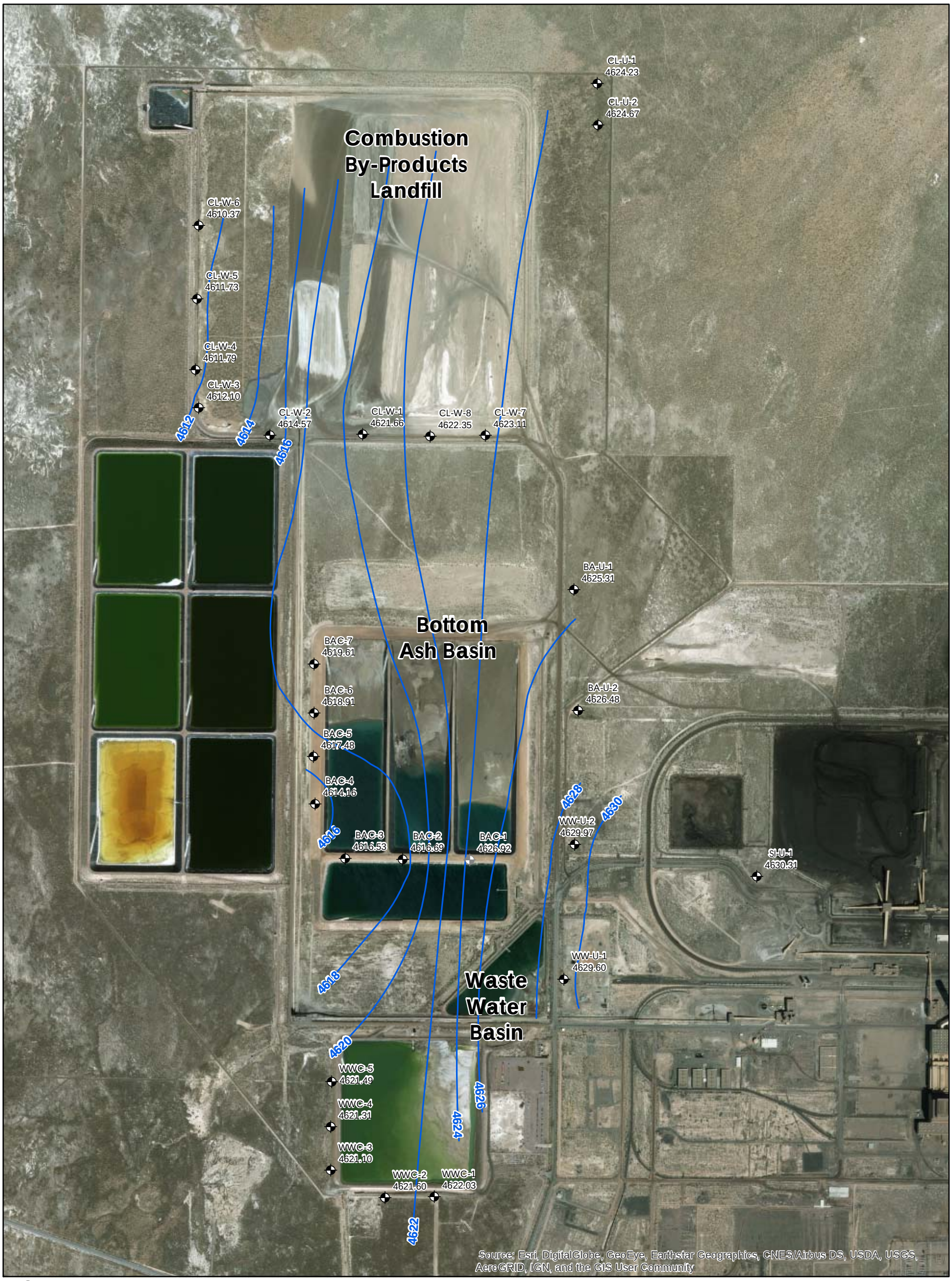
FOR:
INTERMOUNTAIN POWER SERVICE CORP.
INTERMOUNTAIN GENERATION FACILITY
DELTA, UTAH

SECOND QUARTER 2017 POTENTIOMETRIC SURFACE MAP

FIGURE: 9

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
203709098	ZE	ALL		01/29/18

C:\ZEprojecttemplutahpowerplantfig10_2017q3gwe.mxd



LEGEND:

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

NOTE:

1) DATA COLLECTED OCTOBER 2017
2) ALL ELEVATIONS ARE FEET ABOVE MEAN SEA LEVEL

0 950 1,900
Feet
1 in = 1,000 ft

Stantec
2335 HIGHWAY 36 WEST
ST. PAUL, MINNESOTA 55113
PHONE: (651) 636-4600 FAX: (651) 636-1311

FOR:
INTERMOUNTAIN POWER SERVICE CORP.
INTERMOUNTAIN GENERATION FACILITY
DELTA, UTAH

THIRD QUARTER 2017 POTENTIOMETRIC SURFACE MAP

FIGURE: 10

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
203709098	ZE	ALL		01/29/18

January 29, 2018

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
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
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
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	7/28/22015	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	46655.46
SI-U-1	8/12/2015	4-inch PVC	79	69-79	4664.59

BGS = Below Ground Surface
MSL = Mean Sea Level

Attachment 1 Tabulated Detection Monitoring Data

Round 1

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	0.0957	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	0.0375	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	0.0325	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

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	8860	0.00237	0.0146	0.1	0	0	0.00503	0.00605	0	1.52	0	0.143	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

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	2.26
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	3.3
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	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

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

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	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	15.35	7.3	-122	7740	348	0.97	4.88

Round 2

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	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
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
CLW-1	0	35.1	301	0.834	7.89	71.6	808	0	0.0266	0.0648	0	0	0.00235	0	0	0.361	0	0.00506	0	0	0.36	1.5	1.86
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
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
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
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
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
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
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

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	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
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
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
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
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
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
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
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
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

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	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
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
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
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
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
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
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
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

Round 2

Landfill Wells	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
CL-U-1	14.18	8.74	-209	1750	4.3	2.15	1.12
CL-U-2	14.41	7.75	-89	1820	4.6	1.85	1.17
CLW-1	15.84	7.95	-60	1560	3.8	1.4	0.996
CLW-2	17.53	7.81	-137	1840	2	9.35	1.17
CLW-3	14.99	7.87	-203	1710	0	3.96	1.09
CLW-4	17.08	7.81	-211	1490	11.5	1.82	0.955
CLW-5	17.06	7.82	-168	1650	10.9	8.45	1.06
CLW-6	15.83	7.91	-194	1600	6.2	0.95	1.02
CLW-7	16.53	7.75	9	1560	3.5	2.67	0.996
CLW-8	15.86	7.81	-25	1560	8	1.92	0.996

Bottom Ash	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
BA-U-1	13.53	8.63	5	1550	11.3	2.59	0.995
BA-U-2	15.78	7.94	-167	2240	19.7	1.06	1.44
BAC-1	17.51	8.16	39	6.5	10.7	3	4.11
BAC-2	16.74	7.2	322	9.96	3.2	2.59	6.26
BAC-3	14.4	7.36	29	1590	3.8	3.35	9.84
BAC-4	15.9	7.81	-55	2370	3.9	2.08	1.51
BAC-5	16.34	7.92	-23	1980	4	2.89	1.27
BAC-6	18.19	7.67	-8	2.94	0	1.73	1.88
BAC-7	14.22	7.9	-9	4560	3.9	2.46	2.92

Waste Water	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
SI-U-1	12.99	7.49	11	3790	7.4	1.37	2.42
WW-U-1	15.75	7.21	-117	8030	19.6	4.07	5.06
WW-U-2	14.5	7.34	-22	9240	12.9	2.4	5.82
WWC-1	15.29	7.11	-108	1400	11.8	7.82	8.62
WWC-2	14.19	7.75	-86	1720	9.1	2.37	1.1
WWC-3	15.63	8.1	-183	1190	2	1.36	0.759
WWC-4	15.58	7.37	-8	5004	4.7	1.61	3.18
WWC-5	15	7.22	19	7510	6.4	2	4.75

Round 3

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	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	0.00438	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

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	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

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	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	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	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	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	0	1.4	0	0.0119	0.00363	0	0.42	0.85	1.27

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

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	1320	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	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

Round 4

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	54.8	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
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
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	0.00454	0	0	0.52	0.86	1.38
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
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
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
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
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
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
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

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	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
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
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
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
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
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
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
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
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

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	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
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
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
WWC-1	10.2	457	4680	0.213	7.11	3130	12100	0	0.02	0.0335	0	0	0	0	0	2.41	0.00019	0.00966	0.0145	0	0.33	0.86	1.19
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
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
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
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

Round 4

Landfill Wells	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
CL-U-1	17.53	7.66	-180	1.84	4.1	1.72	1.18
CL-U-2	19.27	7.65	-151	1.81	0	9.25	1.16
CLW-1	18.96	7.85	34	1.55	0	5.66	0.992
CLW-2	19.41	7.7	-177	1.81	0	10.68	1.16
CLW-3	19.1	7.74	-225	1.66	0	10.74	1.07
CLW-4	21.52	7.8	-244	1.54	0	5.07	0.985
CLW-5	20.36	7.74	-195	1.67	45.2	9.17	1.07
CLW-6	18.53	7.79	-235	1.61	0	4.22	1.03
CLW-7	19.86	7.62	-71	1.57	0.01	12.06	1.01
CLW-8	20.81	7.7	-78	1.53	0	5.02	0.976

Bottom Ash	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
BA-U-1	20.11	7.46	-160	4.24	0	3.38	2.72
BA-U-2	17.77	11.83	-224	2.11	9.1	8.94	1.35
BAC-1	22.39	7.33	10	11.8	8.7	2.54	7.3
BAC-2	21.36	7.04	0	10200	0	2.17	6.33
BAC-3	22.52	7.22	34	15.4	0	2.18	9.58
BAC-4	19.45	7.62	-94	2350	0	11.45	1.51
BAC-5	19.21	7.62	-96	2340	0	10.71	1.5
BAC-6	19.95	7.59	9	2650	0	24.99	1.7
BAC-7	19.38	7.56	-77	4270	0	2.75	2.73

Waste Water	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
SI-U-1	21.31	7.57	-21	3.25	1.6	14.7	2.08
WW-U-1	20.96	7.12	34	8.06	10.9	3.52	5.08
WW-U-2	19.51	7.41	-63	7.34	4.7	8.24	4.62
WWC-1	20.69	6.94	-34	18400	0	0.54	11.4
WWC-2	17.91	7.64	-153	1720	2.6	3.57	1.1
WWC-3	17.39	7.97	-176	1200	0	0.54	0.766
WWC-4	17.14	7.22	-68	5320	0	2.25	3.35
WWC-5	17.85	7.01	-89	7790	0.9	0.59	4.91

Round 5

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	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	0.18	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

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	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	Radium 226 and 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

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

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

Round 6

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	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
CL-U-2	0	61.2	374	0.903	7.89	110	852	0	0.0272	0.0976	0	0	0	0	0	0.208	0	0.00386	0	0	0.4	0.39	0.4
CLW-1	0	38.4	295	1.05	7.83	62.4	768	0	0.0309	0.0631	0	0	0.0187	0	0	0.185	0	0.00654	0	0	0.41	0.78	1.2
CLW-2	0	49.7	377	1.07	7.85	92.9	936	0	0.0277	0.0811	0	0	0	0	0	0.219	0	0.00437	0	0	0.31	0.72	1
CLW-3	0	42.4	333	1.23	7.87	94.4	876	0	0.0423	0.103	0	0	0	0	0	0.214	0	0.00473	0	0	0.35	0.7	1.1
CLW-4	0	35.2	306	1.27	8.02	79.1	808	0	0.0388	0.0898	0	0	0	0	0	0.202	0	0.00439	0	0	0.39	0.12	0.39
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
CLW-6	0	33.4	302	1.48	7.91	66	752	0	0.0164	0.0976	0	0	0	0	0	0.193	0	0.00805	0	0	0.25	-0.35	0.25
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
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

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	24.5	259	1.57	8.59	48.8	648	0	0.0359	0.0856	0	0	0	0	0	0.193	0	0.0124	0	0	0.28	0.15	0.28
BA-U-2	0	3.76	328	0.886	12.1	39.2	728	0	0.00254	0.122	0	0	0	0	0	0.221	0	0.00986	0	0	0.3	0.47	0.3
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
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
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
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
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
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
BAC-7	3.31	151	591	0.936	7.43	1140	3120	0	0.0237	0.0253	0	0	0	0	0	0.327	0	0.0702	0.007	0	0.21	0.7	0.91

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	131	785	0.458	7.54	247	1760	0	0.00941	0.08	0	0	0	0	0	0.25	0	0.00227	0	0	0.33	0.24	0.33
WW-U-1	1.15	336	1880	0.2	7.26	1180	4890	0	0.00593	0.0568	0	0	0	0	0	0.477	0	0.00558	0.00583	0	0.53	0.89	1.42
WW-U-2	0.6	317	1860	0.438	7.38	734	4300	0	0.00355	0.095	0	0	0	0	0	0.479	0	0.021	0.00749	0	0.51	1.6	2.11
WWC-1	11.2	479	4510	0	6.98	2940	12200	0	0.0213	0.0288	0	0	0	0	0	0.932	0.000328	0.00995	0.0149	0	0.26	1.1	1.36
WWC-2	0	52	318	0.405	7.79	125	856	0	0.0149	0.0361	0	0	0	0	0	0.122	0	0.00357	0	0	0.17	0.61	0.78
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
WWC-4	1.3	233	1250	0.319	7.38	819	3230	0	0.0135	0.061	0	0	0	0	0	0.382	0	0	0.00239	0	0.18	-0.2	-0.02
WWC-5	1.72	318	1520	0.292	7.13	1190	4560	0	0.01	0.0501	0	0	0	0	0	0.555	0	0.00523	0.00399	0	0.23	0.95	1.18

Round 6

Landfill Wells	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
CL-U-1	17.27	7.52	-194	957	4.2	2.53	0.613
CL-U-2	15.81	7.48	-139	929	0	10.45	0.598
CLW-1	14.45	7.6	-173	1540	0	5.98	0.984
CLW-2	16.63	7.58	-221	950	0	9.29	0.609
CLW-3	16.58	7.66	-235	840	0	10.64	0.539
CLW-4	16.67	7.68	-253	785	0	2.14	0.502
CLW-5	16.63	7.6	-222	834	0	2.29	0.534
CLW-6	15.51	7.65	-245	790	0	8.85	0.505
CLW-7	15.48	7.52	-150	1600	0	1.94	1.02
CLW-8	15.08	7.57	-159	1550	0	1.55	0.991

Bottom Ash	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
BA-U-1	16.08	8.22	55	783	1.8	6.02	0.501
BA-U-2	17.77	11.71	-250	2120	1.9	7.87	1.36
BAC-1	16.44	7.24	-131	9640	11.2	2.14	6.07
BAC-2	15.89	6.86	-53	10400	0.1	0.6	6.44
BAC-3	15.61	7.1	-44	18000	3.4	0.5	11.2
BAC-4	14.42	7.58	-165	2400	0	2.76	1.53
BAC-5	15.18	7.53	-155	2550	0.1	0.57	1.63
BAC-6	16.07	7.42	-115	4030	0	0.32	2.58
BAC-7	16.54	7.34	-124	4780	1.5	0.38	3.06

Waste Water	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
SI-U-1	17.03	7.37	-45	3340	1.1	8.42	2.14
WW-U-1	18.15	6.96	-57	7980	11.5	1.02	5.02
WW-U-2	17.03	7.29	-15	7470	2.3	1.36	4.71
WWC-1	15.08	6.74	-32	19700	0.3	1.8	12.2
WWC-2	15.4	7.75	-134	1650	1	0.44	1.06
WWC-3	15.31	8.09	207	1230	1.2	0.22	0.784
WWC-4	15.85	7.18	-70	5390	0.5	3.15	3.39
WWC-5	16.2	6.84	-61	7180	0	0.62	4.52

Round 7

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	0.00065	0	0	0	0.202	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	0.183	0	0.0068	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

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

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	0	1.11	0.000175	0.0147	0.0147	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

Round 7

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	213	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

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	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	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

Round 8

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	0.228	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

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	0.368	0	0.00296	0.00375	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	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	0.0202	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

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	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	0.04	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

Round 8

Landfill Wells	Field Results						
	Temp	pH	REDOX	Conductance	Turbidity (NTUs)	DO	TDS
CL-U-1	16.07	7.45	-199	1930	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	1.48	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

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	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