Great Salt Lake Minerals Corporation
Ogden, Utah

Steam Generation Plant
Level I Anti-Degradation Review

OCTOBER 2012

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Great Salt Lake Minerals Level I Antidegradation Review

Introduction

Great Salt Lake Minerals Corporation (GSLM) has been operating on the shores of the Great Salt Lake near Ogden, Utah since about 1970. The primary product produced by GSLM is potassium sulfate (K_2SO_4), a fertilizer commonly known as sulfate of potash. Sulfate of potash (SOP) is the most effective fertilizer for supplying vital potassium and sulfur nutrition for high crop yields and constant quality in agriculture products. Unlike other potassium sources, SOP contains virtually no chloride which can cause crop damage. GSLM also produces 2 types of salt products – sodium chloride (NaCl) and magnesium chloride ($MgCl_2$).

GSLM uses the sun as its primary energy source to naturally produce SOP. The SOP is produced by drawing brine from Gunnison Bay. The brine is diverted into solar evaporation ponds which are used to precipitate potassium salts. The sun provides the majority of the energy used to evaporate the water and produce SOP. However, additional heat in the form of steam is required to convert the potassium salts into the final SOP product. PacifiCorp, through its Little Mountain Power Plant, provides GSLM with the required steam to produce the final SOP product (in addition to supplying steam to GSLM's Magnesium Chloride Production Facility).

PacifiCorp has informed GSLM that it shall abandon the Little Mountain Power Plant rather than replace its aging equipment, and therefore shall no longer supply steam to GSLM. Thus, GSLM needs to construct and operate its own steam generation plant to continue its operations and the production of SOP (and magnesium chloride). The proposed steam generation plant replaces 40-year-old, less efficient equipment that was owned and operated by PacifiCorp.

GSLM is purchasing two (2) boilers each having a heat input capacity of 110 mmBtu/hr and an output capacity of 90,000 lb/hr steam. Both boilers will be fired with clean-burning natural gas. A discharge permit application has been submitted to the State of Utah Division of Water Quality (UDWQ). The permit application is for the wastewater generated from water pretreatment and the boiler operations.

In any boiler operation, pretreatment of the water supply source prior to input into the boiler is critical; this prevents adverse mechanical/thermal & maintenance issues to the boiler. Such is the case with the GSLM boilers and the water supply source. The water shall be supplied from the Weber Basin Water Conservancy District. This culinary-quality supply water shall undergo a 3-stage pretreatment prior to input into the boilers. The 3 stages shall be: water softening, carbon filtration, and reverse osmosis (RO). These 3 stages shall collectively provide demineralization, solids removal, and purification of the water. After input of the pretreated source water into the boiler, the boiler recycle/condensate stream shall be treated with conventional boiler treatment materials for scale control and corrosion inhibition.

A portion of the proposed wastewater discharge will come from backwashing the water softener and the carbon filters. Also the RO system is anticipated to have about a 10% reject rate and this flow will be

combined with the backwash wastewater. This wastewater will normally be consumed in the SOP production process when the SOP plant is operating.

Following pretreatment, the water will then be used in the boilers to generate the steam. A portion of the boiler water will be continually bled off to control the concentration of salts that will build up in the boiler system. This wastewater is referred to as blowdown water. In addition to the trace elements from the source water, the blowdown water is expected to contain trace amounts of the ingredients from the scaling controls and corrosion inhibitors. These ingredients include: sodium bisulfite corrosion inhibitor, sodium hydroxide buffering agent, and a polymeric dispersant with molybdate tracer – all of which are aqueous solutions and water soluble.

The peak discharge flow from water supply pretreatment and boiler operations is estimated to be 90,000 gals/day (0.09 MGD); the average discharge flow is estimated to be 53,000 gals/day (0.05 MGD). This discharge shall be to the facility's existing drainage ditch leading to Outfall 001. The facility's existing average effluent flow to Outfall 001 is 3.8 MGD (from CY2011 UPDES data). Thus, the daily flow contribution from the water supply pre-treatment and boiler operations shall be approximately 2% of the facility's existing effluent flow. Outfall 001 is located within the Bear River Bay of the Great Salt Lake.

GSLM will own and operate the new steam generation plant. The new steam generation plant is essential to the company's continued operations as the GSLM facility ...

- keeps hundreds of Utah citizens employed,
- generates millions of dollars for Utah's economy,
- generates ~$7 million/year in royalty payments to Utah,
- exports ~$40 million in SOP, thereby helping with the country's trade deficit,
- provides a beneficial fertilizer and soil nutrient for USA farmers,
- provides a useful product for controlling dust from unpaved roads and construction sites, and
- provides a valuable product for maintaining winter roadway safety.

This Level I Anti-Degradation Review evaluates the environmental impact the proposed steam plant wastewater discharge will have upon the Great Salt Lake and whether this discharge will impair any of the Lake's existing beneficial uses that are protected by state and federal regulations.

Beneficial Use

The Great Salt Lake has its own dedicated beneficial use. The Great Salt Lake is listed as a Class 5 water body (UAC R317-2, 2012). The Great Salt Lake is comprised of the five following areas: Bear River Bay, Farmington Bay, Gilbert Bay, Gunnison Bay, and the associated Great Salt Lake fringe including adjacent wetlands. The area of the Great Salt Lake where the proposed steam generation plant discharge is going to be located is within the Bear River Bay area. The Great Salt Lake / Bear River Bay beneficial use category is listed as 5C and is defined as:

- *Protected for infrequent primary and secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.* (Utah Administrative Code R317-2-6.5.c)

Water quality standards are typically developed with the intent to protect the designated beneficial uses of a surface water body, such as the Class 5C beneficial use for Great Salt Lake / Bear River Bay.

Water Quality Standards

In most waters of Utah there are both numeric water quality standards and narrative standards. The sole numeric water quality standard that has been developed to date for the Great Salt Lake is a numerical criterion for selenium within the Gilbert Bay area of the Lake.

In the Bear River Bay area of the Great Salt Lake there is only a narrative water quality standard. The current narrative standard is:

- *It shall be unlawful, and a violation of these regulations, for any person to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum or other nuisances such as color, odor or taste; or cause conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or result in concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, or undesirable human health effects, as determined by bioassay or other tests performed in accordance with standard procedures.* (Utah Administrative Code R317-2-7.2)

A conventional Level I review would compare the numeric water quality standards to the proposed discharge. Because there are no current numeric standards for the comparison, a different approach will be used in which the beneficial uses of the Great Salt Lake will be evaluated for potential impact from the proposed discharge.

Discharge Water Characteristics

Since the new boilers have not been constructed, it was not possible to test for the 126 priority pollutants per 40 CFR 122.21(k)(5). The engineering calculations done for this Level I ADR meet the intent of 40 CFR 423.15(j)(3) and 40 CFR 122.21(k)(5).

The previously-submitted permit application is reproduced in Appendix A. The mass balance for both the design peak flow and the average flow are included in the application. As noted previously, materials are added in the process to protect the boilers from scale and corrosion. The Material Safety Data Sheets (MSDS) and associated "Fact Sheets" for these materials are included in Appendix B. The process used to pretreat the boiler water and the blowdown from the boiler may concentrate the trace contaminants in the source water to a higher level. Therefore, a major part of this review is to look at the potential concentration of the contaminants in the wastewater discharge stream. The principal contaminants are metals inherently present in the Weber Basin source water in trace concentrations.

The wastewater discharge from the boilers will empty into an open ditch and flow over two miles before discharging through Outfall 001 into Bear River Bay. Because of the time needed for the wastewater to traverse this distance and the ability of the ground and air to cool the wastewater during its travel, the temperature of the boiler wastewater is expected to be ambient upon reaching the Bear River Bay.

Metals

Over many years of sampling the Bear River Bay, the UDWQ has compiled a database of laboratory analyses documenting the background concentrations for metals of concern. This ADR assumes that the list of metals analyzed and compiled in the database represents the metals of concern for protecting the beneficial use of the Bear River Bay area. Accordingly, the effluent from the steam plant will be compared to this list.

The determination of the steam plant's effluent concentrations is based on a simple mass balance from the influent water to the steam generation plant. The influent water is the facility's potable water supply from the Weber Basin Water Conservancy District, so a sample was taken from a cold water sink faucet in the administration building's break room. A separate sample, to be analyzed for mercury, was also collected for an EPA Method 1631 analysis, including a transportation blank. The break room sample was not analyzed for all background metals contained in UDWQ's database for Bear River Bay. To fill in the gap, two additional water samples were obtained from potable water sink dispensers at the existing PacifiCorp power plant and also from GSLM's Magnesium Chloride Plant. These samples were not taken using the procedure compatible with EPA Method 1631, so an ultra-low mercury analysis was not performed. Due to an oversight, potassium and nickel were not analyzed in any of the potable water samples. The results are summarized in the following table. The analytical results can be found in Appendix D.

Table 1 – GSLM Source Water Sample Results Summary

	Admin Break Room Sink (mg/L)	Power Plant Sink (mg/L)	Mag Plant Sink (mg/L)	Minimum Reporting Limit (mg/L)	Average[1] (mg/L)
Aluminum	-----	ND	ND	0.05	ND
Arsenic	0.0011	0.0009	0.0010	0.0005	0.001
Boron	-----	ND	ND	0.05	ND
Calcium	-----	69.5	63.0	0.2	66.3
Cadmium	-----	ND	ND	0.0005	ND
Chromium	0.0026	0.0037	0.0044	0.0005	0.0036
Copper	0.0086	0.0155	0.0997	0.001	0.0413
Iron	-----	0.10	ND	0.02	0.06
Lead	ND	0.0041	ND	0.0005	0.0017
Mercury	0.0000012	-----	-----	0.0000005	0.0000012
Magnesium	-----	17.7	16.0	0.2	16.9
Manganese	-----	0.0083	0.0039	0.0005	0.0061

Selenium	0.0025	0.0018	0.0021	0.0005	0.0021
Silver	-----	ND	ND	0.0005	ND
Sodium	-----	30.9	27.8	0.5	29.4
Zinc	0.03	0.37	ND	0.01	0.14

ND – Non-Detectable

(1) The MRL value was substituted for ND in the averaging for values above the MRL

The water pretreatment system for the steam generation plant has water softeners which may remove some of the metal ions and exchange these for sodium ions. However, for the mass balance it is assumed that the mass from the background trace contaminants are all discharged through the wastewater stream. The flow into the boiler pretreatment system is assumed to be 433 gpm. The combined wastewater from the pretreatment system and boiler blowdown will be about 37 gpm and is assumed to contain all of the potable water's metal contaminants.

Table 2 – Steam Plant's Mass Balance for Metals

	Potable Water Influent (mg/L)	Wastewater (RO Discharge)[1] (mg/L)	Wastewater Mass Loading[2] (lb/day)
Aluminum	ND	-----	-----
Arsenic	0.001	0.012	0.0052
Boron	ND	-----	-----
Calcium	66.3	775	345
Cadmium	ND	-----	-----
Chromium	0.0036	0.042	0.019
Copper	0.0413	0.483	0.215
Iron	0.06	0.70	0.31
Lead	0.0017	0.020	0.0088
Mercury	0.0000012	0.000014	0.0000062
Magnesium	16.9	197	87.7
Manganese	0.0061	0.071	0.032
Selenium	0.0021	0.025	0.011
Silver	ND	-----	-----
Sodium	29.4	343	153
Zinc	0.14	1.6	0.71

ND – Non-Detectable

(1) Wastewater Concentration = Influent Concentration * 433 gpm/37 gpm

(2) Mass Loading (lb/day) = WW Conc x 37 gpm x 60 min/hr x 24 hr/day x (3.785 L/gal) x (1 lb/453,600 mg)

The collection of UDWQ sample results for Bear River Bay have been compiled and sorted in Appendix C. The average was used to represent the background concentration for Bear River Bay. In calculating the average, one-half of the detection limits were assumed for non-detects, provided the sample set

included at least one analytical result above the detection limit. The data is summarized in the following table, along with the expected concentrations from the proposed steam plant discharge.

Table 3 – Comparison of Bear River Bay Background Concentrations to Proposed Discharge

Metal	Bear River Bay Background Concentration (ug/L)[1]	Steam Plant Discharge Concentration (ug/L)[1]
Aluminum	132	ND
Arsenic	87	12.9
Barium	138	936[2]
Boron	33175	ND
Cadmium	2	ND
Calcium	129 mg/L	775 mg/L
Chromium	55	42
Copper	41	483
Iron	31	700
Lead	7	20
Magnesium	3191 mg/L	197 mg/L
Manganese	92	71
Mercury	0.106	0.014
Nickel	ND	(Not Analyzed)
Potassium	1790 mg/L	(Not Analyzed)
Selenium	21.9	25
Silver	4	ND
Sodium	17043 mg/L	343 mg/L
Zinc	82	1600

ND – Non-detectable

(1) Units of measure in ug/L (ppb) unless otherwise noted

(2) Barium analysis used was from Weber Basin South's reported value (Appendix E)

From the mass balance data, the only metals discharged from the steam plant that are expected to be above the background concentration of Bear River Bay are barium, calcium, copper, iron, lead, selenium, and zinc.

Boiler Treatment Materials

The boiler recycle/condensate stream shall be treated with conventional boiler treatment materials for scale control and corrosion inhibition. The principal agents are: OptiSperse ADJ561 (sodium hydroxide buffering agent), CorTrol IS3000 (sodium bisulfate corrosion inhibitor), and OptiSperse AP0200 (polymeric dispersant with molybdate tracer) – all of which are aqueous solutions and water soluble. MSD Sheets and associated "Fact Sheets" for these materials are provided in Appendix B.

OptiSperse ADJ561 is an alkaline water-based buffering agent containing sodium hydroxide as the active ingredient. This product is designed to prevent build-up of scale within the boiler tubes. It is expected that the pH level of the boiler blowdown will be approximately 9; when coupled with the backwash from

the water softening and carbon filtration pretreatment systems and the reverse osmosis (RO) reject water, the pH value of the effluent from the steam generation plant is expected to be <9 and within the facility's existing UPDES pH effluent limitation of 6.5 – 9.0. The effluent pH shall be protective to the water quality of the Great Salt Lake / Bear River Bay.

CorTrol IS3000 is an oxygen scavenger agent containing sodium bisulfate as the active ingredient. This product is designed to inhibit corrosion within the boiler tubes. It is expected that the dissolved oxygen level of the boiler blowdown may be reduced as a result of use of this product. However, when coupled with the backwash from the water softening and carbon filtration pretreatment systems and RO reject water, the dissolved oxygen level of the effluent from the steam generation plant is expected to be protective to the water quality of the Great Salt Lake / Bear River Bay.

OptiSperse AP0200 is polymeric dispersant agent containing molybdate as a tracer. This product is designed to prevent the formation of sludge and hardness deposits within the boiler tubes. It is expected that the boiler blowdown may contain de minimis levels of molybdenum as a result of use of this product. When coupled with the backwash from the water softening and carbon filtration pretreatment systems and RO reject water, the molybdenum concentration of the effluent from the steam generation plant is expected to be de micromis and protective to the water quality of the Great Salt Lake / Bear River Bay.

The peak discharge flow from water supply pretreatment and boiler operations is estimated to be 90,000 gals/day (0.09 MGD) with approximately 13,000 gals/day (0.013 MGD) attributed to boiler blowdown; the average discharge flow is estimated to be 53,000 gals/day (0.05 MGD) with approximately 9,000 gals/day (0.009 MGD) attributed to boiler blowdown. This discharge shall be to the facility's existing drainage ditch leading to Outfall 001. The facility's existing average effluent flow to Outfall 001 is 3.8 MGD (from CY2011 UPDES data). Thus, the daily flow contribution from the water supply pre-treatment and boiler operations shall be approximately 2% of the facility's existing effluent flow. The impact of the above boiler treatment materials and the influence on pH, dissolved oxygen, and potentially detectable levels of molybdenum shall be minimized by the facility's existing effluent flow.

COD

The key ingredient in CorTrol 3000 ultimately becomes sulfite ($SO3^{-2}$) and reacts with oxygen. The stoichiometry of the reaction is 1 ppm oxygen per 5 ppm sulfite. It is assumed the maximum concentration of sulfite will be 60 mg/l at the discharge of the boilers. This will require the addition of 12 ppm of oxygen to meet the oxygen demand. The average sulfite concentration should be around 30 mg/l, which will require the addition of 6 ppm of oxygen to meet the oxygen demand. In addition it is assumed that aeration will be required to increase the dissolved oxygen to 4-5 ppm prior to discharge. This will be accomplished with a re-aeration system.

Pollutants of Concern

Based on this Level I anti-degradation review, there are a few pollutants/parameters of potential concern. These are primarily associated with the boiler treatment materials. The subject pollutants / parameters are listed below:

1. pH – already monitored within facility's existing UPDES permit and this should continue.
2. Dissolved Oxygen (DO) – potentially reduced DO levels in the effluent should require monitoring to affirm and if affirmed, consideration should be given to aeration of effluent to increase DO to acceptable level.
3. Molybdate / molybdenum – potentially detectable levels of this metal in its oxidized state should require monitoring to affirm and if affirmed, comparison be made to background concentrations in the Bear River Bay of the Great Salt Lake. This may require sampling within the Bear River Bay to establish background concentrations.

Appendix A
Permit Application

Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 characters/inch).

For Approved. OMB No. 2040-0086. Approval expires 5-31-92

FORM 1 GENERAL

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

S		T/A	C
F	UTD041571092		D
1	2 — 13	14	15

LABEL ITEMS

- I. EPA I.D. NUMBER
- III. FACILITY NAME
- V. FACILITY MAILING LIST
- VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been proved. Refer to the instructions for detailed item descriptions and for the legal authorization under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental from listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of **bold-faced terms**.

SPECIFIC QUESTIONS	MARK "X" YES	NO	FORM ATTACHED	SPECIFIC QUESTIONS	MARK "X" YES	NO	FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a **discharge** to waters of the U.S.? (FORM 2A)	☐ 16	☒ 17	☐ 18	B. Does or will this facility *(either existing or proposed)* include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)	☐ 19	☒ 20	☐ 21
C. Is this facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	☐ 22	☒ 23	☐ 24	D. Is this proposal facility *(other than those described in A or B above)* which will result in a discharge to waters of the U.S.? (FORM 2D)	☒ 25	☐ 26	☒ 27
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	☐ 28	☒ 29	☐ 30	F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)	☐ 31	☒ 32	☐ 33
G. Do you or will you inject at this facility any produced water other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)	☐ 34	☒ 35	☐ 36	H. Do you or will you inject at this facility fluids for special processes such as mining of sulfer by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)	☐ 37	☒ 38	☐ 39
I. Is this facility a proposed **stationary source** which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area**? (FORM 5)	☐ 40	☒ 41	☐ 42	J. Is this facility a proposed **stationary source** which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area**? (FORM 5)	☐ 43	☒ 44	☐ 45

III. NAME OF FACILITY

C 1 | SKIP | Great Salt Lake Minerals Corporation

15 | 16-29 | 30 — 69

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*
C 2 | Howick, Bryan; Manager EH&S (15–45)	801 (46–48) | 732 (49–51) | 3191 (52–55)

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

C 3 | 765 North 10500 West (15–45)

B. CITY OR TOWN	C. STATE	D. ZIP CODE
C 4 | Ogden (15–40)	UT (41–42)	84404 (47–51)

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

C 5 | 765 North 10500 West (15–45)

B. COUNTY NAME

Weber (46–70)

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE
C 6 | Ogden (15–40)	UT (41–42)	84404 (47–51)	(52–54)

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST		B. SECOND	
2819	(specify) Inorganic Chemicals		(specify)
C. THIRD		D. FOURTH	
	(specify)		(specify)

VIII. OPERATOR INFORMATION

A. NAME	B. Is the name listed in Item VIII-A also the owner?
Great Salt Lake Minerals Corporation	☒ YES ☐ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other," specify.)
F = FEDERAL, S = STATE, P = PRIVATE, M = PUBLIC (other than federal or state), O = OTHER (specify)

		D. PHONE (area code & no.)		
P	(specify)	801	731	3100

E. STREET OR PO BOX	F. CITY OR TOWN	G. STATE	H. ZIP CODE
765 N 10500 W	Ogden	UT	84404

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☒ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)	UT0000647	D. PSD (Air Emissions from Proposed Sources)	5700001002
B. UIC (Underground Injection of Fluids)		E. OTHER (specify)	(Specify)
C. RCRA (Hazardous Wastes)	NA	E. OTHER (specify)	(Specify)

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

Great Salt Lake Minerals Corporation (GSL) operates a mineral recovery facility on the eastern shore of the south arm of the Great Salt Lake near Ogden, Utah in Weber County. This facility produces sodium chloride (NaCl), sulfate of potash (SOP) (K2SO4), and magnesium chloride (MgCl2). The process uses crystallized salts, including halite (sodium chloride) and a mixed salt containing potassium sulfate and magnesium sulfate from solar evaporation ponds. The raw halite is washed, wet-screened, dried, cooled, dry-screened, packaged, and shipped. The mixed salt is washed, slurried, thickened, crystallized, and converted to K2SO4 which is then filtered, dried, screened, half granulated/compacted, and shipped as sulfate of potash.

XIII. CERTIFICATION (see instructions)

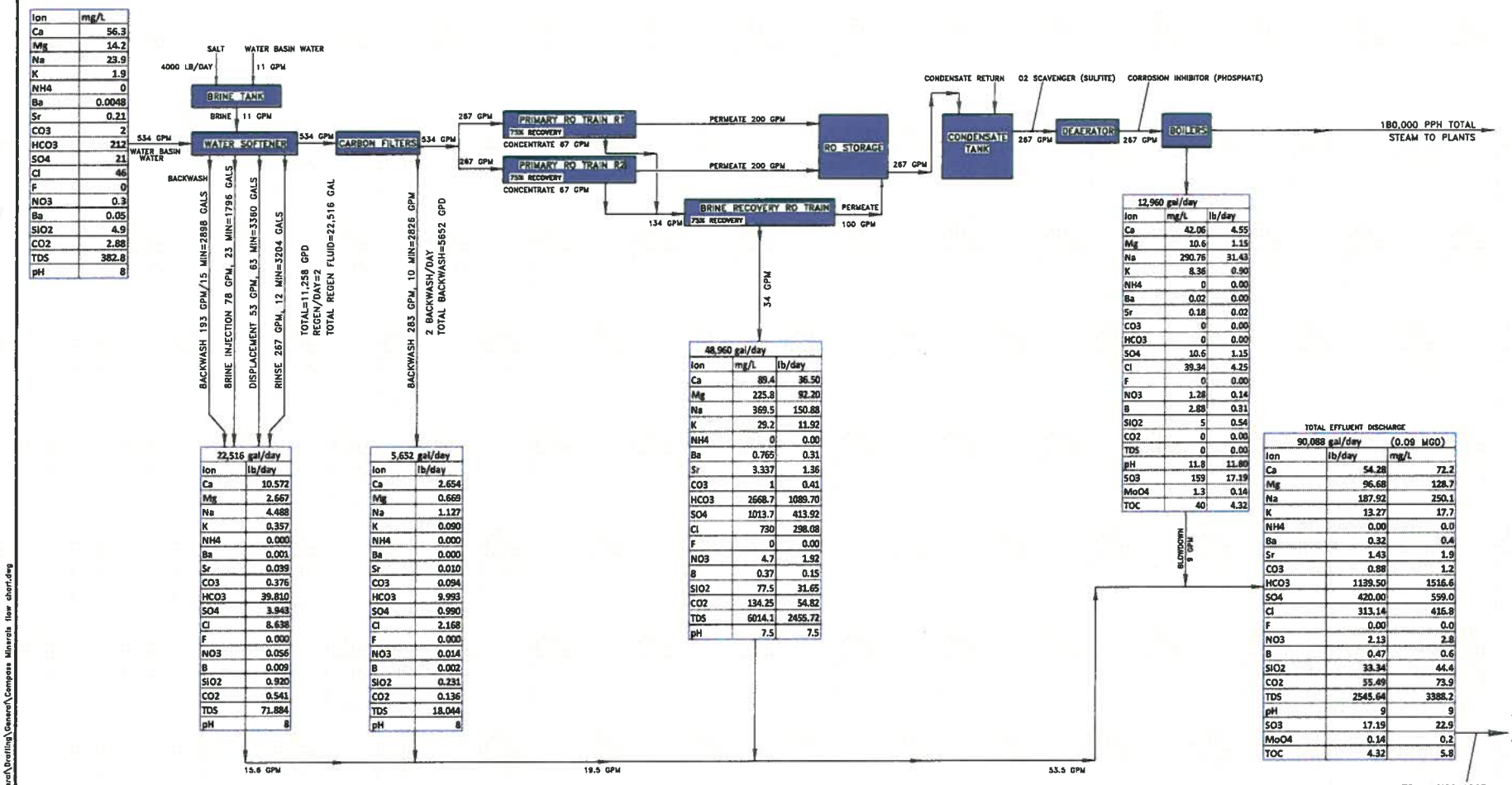
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED

COMMENTS FOR OFFICIAL USE ONLY

COMPASS MINERALS
OGDEN, UTAH
BOILER-RO SYSTEM SCHEMATIC

PEAK WASTEWATER FLOW



Ion	mg/L
Ca	56.3
Mg	14.2
Na	23.9
K	1.9
NH4	0
Ba	0.0048
Sr	0.21
CO3	2
HCO3	212
SO4	21
Cl	46
F	0
NO3	0.3
Ba	0.05
SiO2	4.9
CO2	2.88
TDS	382.8
pH	8

22,516 gal/day	
Ion	lb/day
Ca	10.572
Mg	2.667
Na	4.488
K	0.357
NH4	0.000
Ba	0.001
Sr	0.039
CO3	0.376
HCO3	39.810
SO4	3.943
Cl	8.638
F	0.000
NO3	0.056
B	0.009
SiO2	0.920
CO2	0.541
TDS	71.884
pH	8

5,652 gal/day	
Ion	lb/day
Ca	2.654
Mg	0.669
Na	1.127
K	0.090
NH4	0.000
Ba	0.000
Sr	0.010
CO3	0.094
HCO3	9.993
SO4	0.990
Cl	2.168
F	0.000
NO3	0.014
B	0.002
SiO2	0.231
CO2	0.136
TDS	18.044
pH	8

48,960 gal/day		
Ion	mg/L	lb/day
Ca	89.4	36.50
Mg	225.8	92.20
Na	369.5	150.88
K	29.2	11.92
NH4	0	0.00
Ba	0.765	0.31
Sr	3.337	1.36
CO3	1	0.41
HCO3	2668.7	1089.70
SO4	1013.7	413.92
Cl	730	298.08
F	0	0.00
NO3	4.7	1.92
B	0.37	0.15
SiO2	77.5	31.65
CO2	134.25	54.82
TDS	6014.1	2455.72
pH	7.5	7.5

12,960 gal/day		
Ion	mg/L	lb/day
Ca	42.06	4.55
Mg	10.6	1.15
Na	290.76	31.43
K	8.36	0.90
NH4	0	0.00
Ba	0.02	0.00
Sr	0.18	0.02
CO3	0	0.00
HCO3	0	0.00
SO4	10.6	1.15
Cl	39.34	4.25
F	0	0.00
NO3	1.28	0.14
B	2.88	0.31
SiO2	5	0.54
CO2	0	0.00
TDS	0	0.00
pH	11.8	11.80
SO3	159	17.19
MoO4	1.3	0.14
TOC	40	4.32

TOTAL EFFLUENT DISCHARGE		
90,088 gal/day		(0.09 MGD)
Ion	lb/day	mg/L
Ca	54.28	72.2
Mg	96.68	128.7
Na	187.92	250.1
K	13.27	17.7
NH4	0.00	0.0
Ba	0.32	0.4
Sr	1.43	1.9
CO3	0.88	1.2
HCO3	1139.50	1516.6
SO4	420.00	559.0
Cl	313.14	416.8
F	0.00	0.0
NO3	2.13	2.8
B	0.47	0.6
SiO2	33.34	44.4
CO2	55.49	73.9
TDS	2545.64	3388.2
pH	9	9
SO3	17.19	22.9
MoO4	0.14	0.2
TOC	4.32	5.8

NO	DATE	DESIGN	DRAWN	CHECKED
0	04/10/12	BR	JBM	SR

ORIGINAL
REVISIONS

Compass Minerals, Ogden, Utah
Boiler-RO System Schematic
PEAK WASTEWATER FLOW

AQUA ENGINEERING, INC.
533 W. 2600 S., SUITE 275 BOUNTIFUL, UT 84010
PHONE (801) 299-1327 FAX (801) 299-0153

DRAWING IS NOT TO SCALE IF BAR DOES NOT MEASURE 1"
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SHEET
F-1

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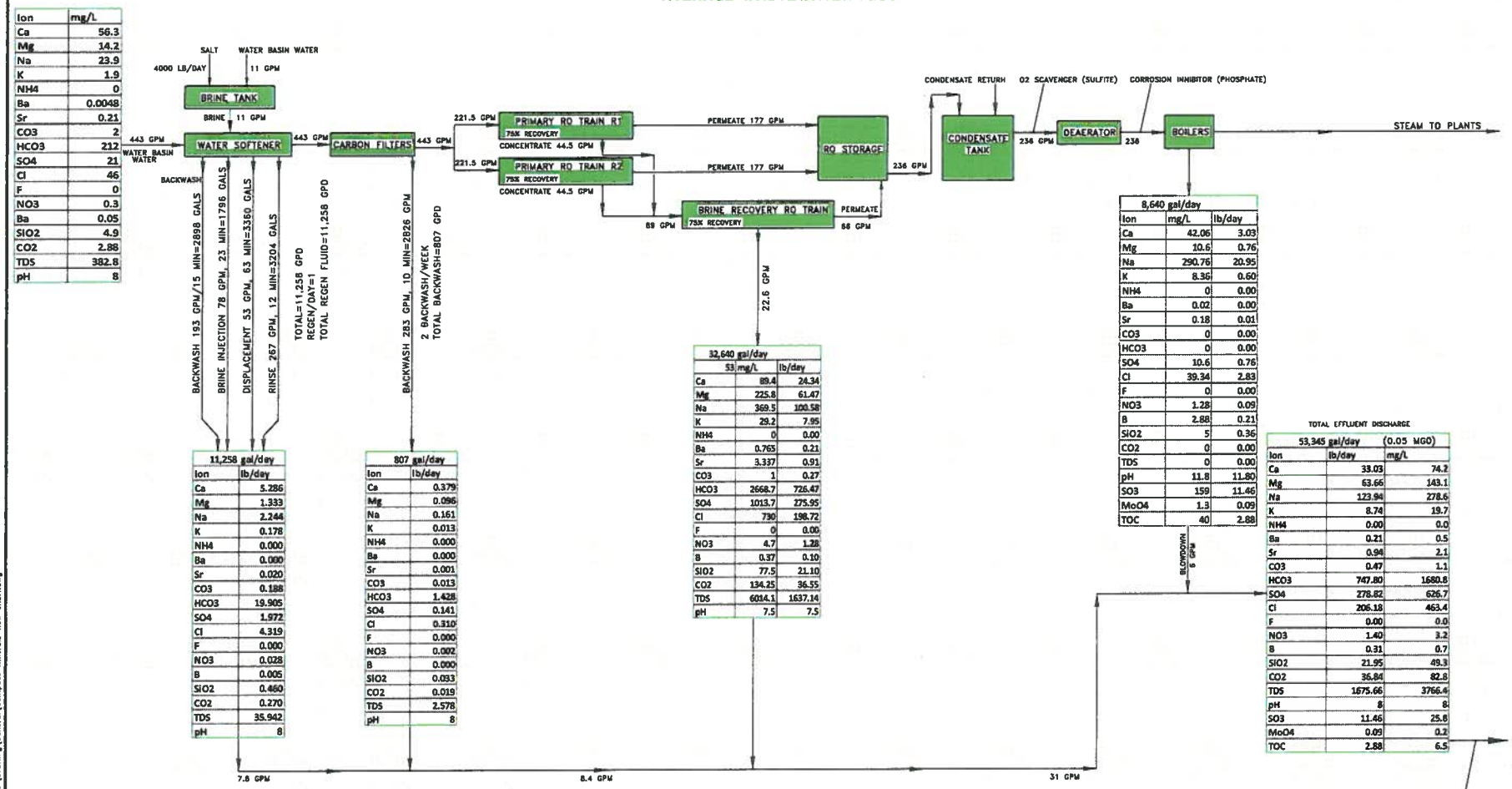
COMPASS MINERALS
OGDEN, UTAH
BOILER-RO SYSTEM SCHEMATIC
AVERAGE WASTEWATER FLOW



Ion	mg/L
Ca	56.3
Mg	14.2
Na	23.9
K	1.9
NH4	0
Ba	0.0048
Sr	0.21
CO3	2
HCO3	212
SO4	21
Cl	46
F	0
NO3	0.3
Ba	0.05
SIO2	4.9
CO2	2.88
TDS	382.8
pH	8

11,258 gal/day	
Ion	lb/day
Ca	5.286
Mg	1.333
Na	2.244
K	0.178
NH4	0.000
Ba	0.000
Sr	0.020
CO3	0.188
HCO3	19.905
SO4	1.972
Cl	4.319
F	0.000
NO3	0.028
B	0.005
SiO2	0.460
CO2	0.270
TDS	35.942
pH	8

807 gal/day	
Ion	lb/day
Ca	0.379
Mg	0.096
Na	0.161
K	0.013
NH4	0.000
Ba	0.000
Sr	0.001
CO3	0.013
HCO3	1.428
SO4	0.141
Cl	0.310
F	0.000
NO3	0.002
B	0.000
SiO2	0.033
CO2	0.019
TDS	2.578
pH	8

32,640 gal/day		
	53 mg/L	lb/day
Ca	89.4	24.34
Mg	225.8	61.47
Na	369.5	100.58
K	29.2	7.95
NH4	0	0.00
Ba	0.765	0.21
Sr	3.337	0.91
CO3	1	0.27
HCO3	2668.7	726.47
SO4	1013.7	275.95
Cl	730	198.72
F	0	0.00
NO3	4.7	1.28
B	0.37	0.10
SiO2	77.5	21.10
CO2	134.25	36.55
TDS	6014.1	1637.14
pH	7.5	7.5

8,640 gal/day		
Ion	mg/L	lb/day
Ca	42.06	3.03
Mg	10.6	0.76
Na	290.76	20.95
K	8.36	0.60
NH4	0	0.00
Ba	0.02	0.00
Sr	0.18	0.01
CO3	0	0.00
HCO3	0	0.00
SO4	10.6	0.76
Cl	39.34	2.83
F	0	0.00
NO3	1.28	0.09
B	2.88	0.21
SiO2	5	0.36
CO2	0	0.00
TDS	0	0.00
pH	11.8	11.80
SO3	159	11.46
MoO4	1.3	0.09
TOC	40	2.88

TOTAL EFFLUENT DISCHARGE

53,345 gal/day	(0.05 MGD)	
Ion	lb/day	mg/L
Ca	33.03	74.2
Mg	63.66	143.1
Na	123.94	278.6
K	8.74	19.7
NH4	0.00	0.0
Ba	0.21	0.5
Sr	0.94	2.1
CO3	0.47	1.1
HCO3	747.80	1680.8
SO4	278.82	626.7
Cl	206.18	463.4
F	0.00	0.0
NO3	1.40	3.2
B	0.31	0.7
SiO2	21.95	49.3
CO2	36.84	82.8
TDS	1675.66	3766.4
pH	8	8
SO3	11.46	25.8
MoO4	0.09	0.2
TOC	2.88	6.5

NO	DATE	ORIGINAL	CHECKED
		DESIGN	DRAWN	CHECKED
B	04/10/12	BPS	JBW	SR
		REVISIONS		

Compass Minerals, Ogden, Utah
Boiler-RO System Schematic
AVERAGE WASTEWATER FLOW

AQUA ENGINEERING, INC.
533 W. 2600 S., SUITE 275 BOUNTIFUL, UT 84010
PHONE (801) 299-1327 FAX (801) 298-0153

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F-2

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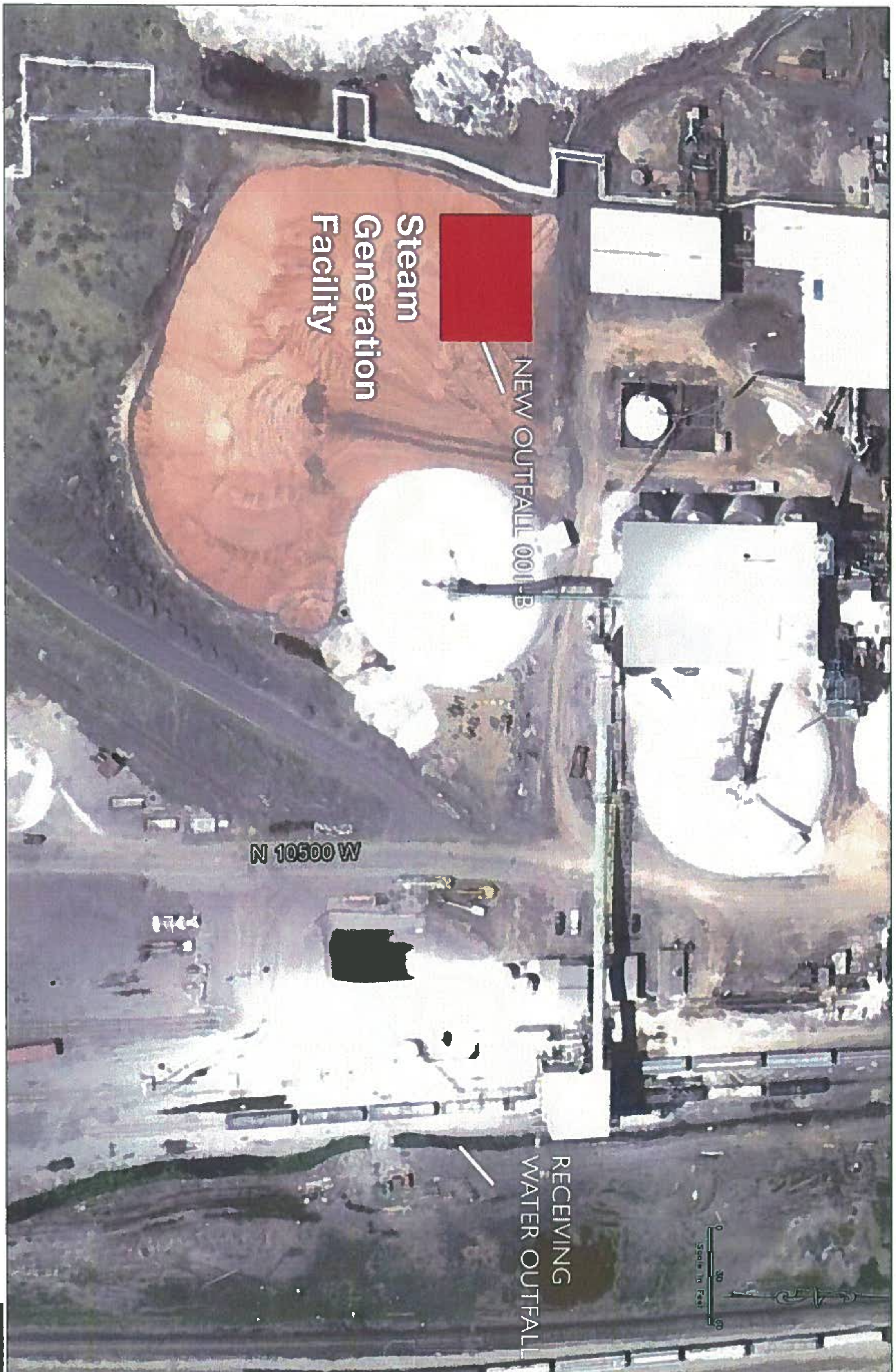

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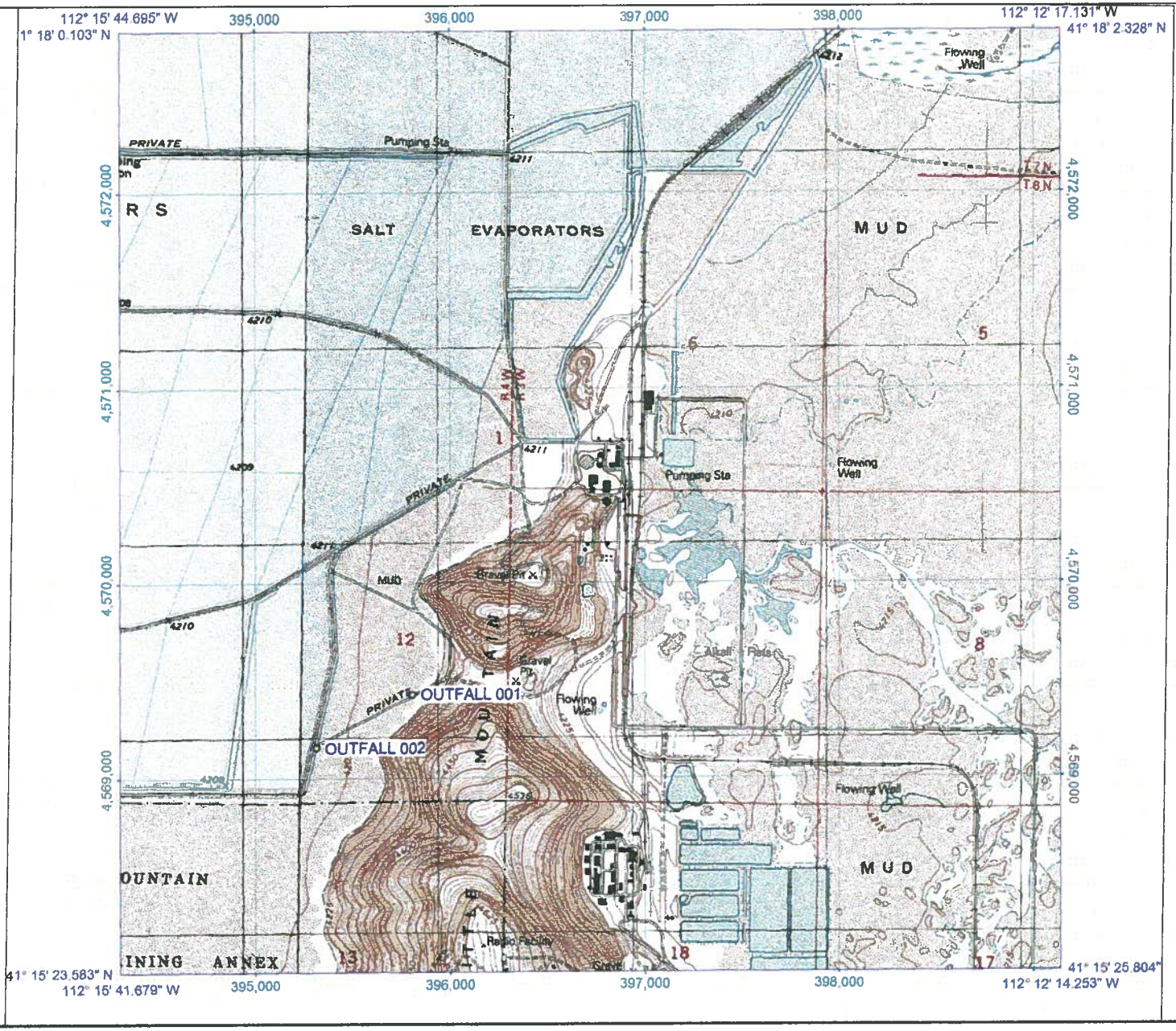
SHEET F-3

AQUA ENGINEERING, INC.
533 W. 2600 S., SUITE 275 BOUNTIFUL, UT 84010
PHONE (801) 299-1327 FAX (801) 299-0153

Compass Minerals, Ogden, Utah

AERIAL PHOTO
STEAM GENERATION FACILITY
PROPOSED OUTFALL LOCATION

ORIGINAL				
NO	DATE	DESIGN	DRAWN	CHECKED
B	04/26/12	BR	JBW	BR
REVISIONS				



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Scale in Feet

ORIGINAL			
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REVISIONS			

Compass Minerals, Ogden, Utah

ENLARGED SITE PLAN
EXISTING OUTFALL LOCATIONS

AQUA ENGINEERING, INC.
533 W. 2600 S., SUITE 275 BOUNTIFUL, UT 84010
PHONE (801) 295-1127 FAX (801) 295-0153

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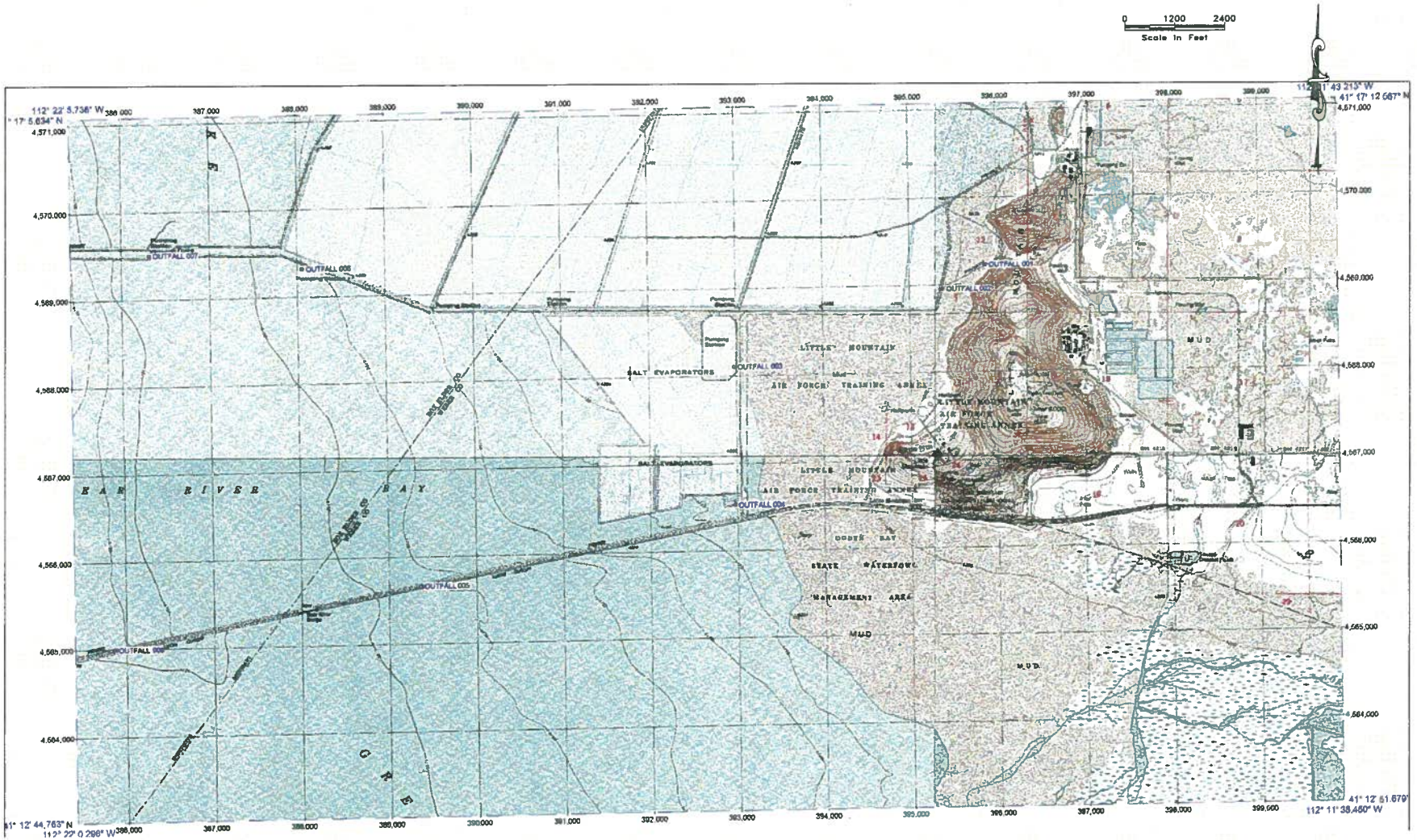

ORIGINAL			
NO.	DATE	DESIGN	DRAWN	CHECKED
B	12/28/12	BR	JBV	BR
REVISIONS				

Compass Minerals, Ogden, Utah

SITE PLAN

EXISTING OUTFALL LOCATIONS

AQUA ENGINEERING, INC.
533 W. 2600 S., SUITE 275 BOUNTIFUL, UT 84010
PHONE (801) 299-1327 FAX (801) 299-0153

0 1/2 1

DRAWING IS NOT TO SCALE IF BAR DOES NOT MEASURE 1"

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		ORIGINAL		
B	04/26/12	BR	JBN	BR
		REVISIONS		

Compass Minerals, Ogden, Utah

AERIAL PHOTO
OUTFALL LOCATIONS

AQUA ENGINEERING, INC.
533 W. 2600 S., SUITE 275 BOUNTIFUL, UT 84010
PHONE (801) 299-1327 FAX (801) 299-0153

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DRAWING IS NOT TO SCALE IF BAR DOES NOT MEASURE 1"

SHEET
F-6

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Please type or print in the unshaded areas only	EPA ID Number *(Copy from Item 1 of Form 1)* UTD041571092	*Form Approved OMB No. 2040-0086 Approval expires 7-31-88*

Form **2D** NPDES

EPA

New Sources and New Dischargers Application for Permit to Discharge Process Wastewater

I. Outfall Location

For this outfall, list the latitude and longitude, and name of the receiving water(s)

Outfall Number *(list)*	Latitude			Longitude			Receiving Water *(name)*
	Deg	Min	Sec	Deg	Min	Sec	
001-B	41	16	43	112	13	57	Great Salt Lake, Through existing outfall 001-A

II. Discharge Date *(When do you expect to begin discharging?))*

III. Flows, Sources of Pollution, and Treatment Technologies

A. For each outfall, provide a description of (1) all operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and stormwater runoff; (2) the average flow contributed by each operation; and (3) the treatment received by the wastewater. Continue on additional sheets if necessary.

Outfall Number	1. Operations Contributing Flow *(list)*	2. Average Flow *(include units)*	3. Treatment *(Description of list Codes from Table 2D-1)*
001-B	Boiler Ops. Discharge		4-A

B. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item III-A. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures. (See Sheets F1 and F2)

C. Except for storm runoff, leaks, or spills, will any of the discharges described in Item III-A be intermittent or seasonal?

☐ Yes *(complete the following table)* ☒ No *(go to Item IV)*

Outfall Number	1. Frequency		2. Flow		
	a. Days Per Week *(specify average)*	b. Months Per Year *(specify) average)*	a. Maximum Daily Flow Rate *(in mgd)*	b. Maximum Total Volume *(specify with units)*	c. Duration *(in days)*

IV. Production

If there is an applicable production-based effluent guideline or NSPS, for each outfall list the estimated level of production (projection of actual production level, not designed), expressed in the terms and units used in the applicable effluent guideline or NSPS, for each of the first 3 years of operation. If production is likely to vary, you may also submit alternative estimates (attach a separate sheet).

Year	a. Quantity Per Day	b. Units of Measure	c. Operation, Product, Material, etc *(specify)*

CONTINUED FROM THE FRONT	EPA ID Number *(cop from Item 1 of Form 1)*	Outfall Number
	UTD041571092	1A

V. Effluent Characteristics

A and B: These items require you to report estimated amounts *(both concentration and mass)* of the pollutants to be discharged from each of your outfalls. Each part of this item addresses a different set of pollutants and should be completed in accordance with the specific instruction for that part. Data for each outfall should be on a separate page. Attach additional sheets of paper if necessary.

General Instructions *(See Table 2D-2 for Pollutants)*

Each part of this item requests you to provide an estimated daily maximum and average for certain pollutants and the source of information. Data for all pollutants in Group A, for all outfalls, must be submitted unless waived by the permitting authority. For all outfalls, data for pollutants in Group B should be reported only for pollutants which you believe will be present or are limited directly by an effluent limitations guideline or NSPS or indirectly through limitations on an indicator pollutant.

1. Pollutant	2. Maximum Daily Value *(include units)*	3. Average Daily Value *(include units)*	4. Source *(see instructions)*
BOD	0	0	
COD	12 mg/l	6 mg/l	Boiler Protection Chemicals
TOC	4.32 lbs	2.88 lbs	Boiler Water Treatment
TSS	0	0	
Flow	90,088 gpd	53,345 gpd	Boiler Water Treatment
Temperature (winter)	40 C	20 C	
Temperature (summer)	40 C	20 C	
pH	9	8	
Magnesium	96.68 lbs	63.7 lbs	From source water
Barium	0.32 lbs	0.21 lbs	From source water
Sulfate	420 lbs	279 lbs	From source water
Nitrate	2.1 lbs	1.4 lbs	From source water
Sulfite	17.9 lbs	11.5 lbs	Boiler Water Treatment
Molybdate	0.14 lbs	0.09 lbs	Boiler Water Treatment

CONTINUED FROM THE FRONT	EPA ID Number *(copy from Item 1 of Form 1)* UTD041571092	

C. Use the space below to list any of the pollutants listed in Table 2D-3 of the instructions which you know or have reason to believe will be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it will be present.

1. Pollutant	2. Reason for Discharge

VI. Engineering Report on Wastewater Treatment

A. If there is any technical evaluation concerning your wastewater treatment, including engineering reports or pilot plant studies, check the appropriate box below.

☐ Report Available ☒ No Report

B. Provide the name and location of any existing plant(s) which, to the best of your knowledge, resembles this production facility with respect to production processes, wastewater constituents, or wastewater treatments.

Name	Location

EPA ID Number *(cop from Item 1 of Form 1)*
UTD041571092

VII. Other Information *(Optional)*

Use the space below to expand upon any of the above questions or to bring to the attention of the reviewer any other information you feel should be considered in establishing permit limitations for the proposed facility. Attach additional sheets if necessary.

See the attached page labeled - VII. Other Information

VIII. Certification

I Certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name and Official Title *(type or print)*	B. Phone No. ( )
C. Signature	D. Date Signed

VII. Other Information

The basis for the boilers in this permit application is the generation of steam in support of sulfate of potash (SOP) and magnesium chloride plant operations. The Little Mountain Power Plant, owned and operated by PacifiCorp, previously supplied steam to the Great Salt Lake Minerals (GSLM) facility under a long-term supply agreement. PacifiCorp is terminating its supply agreement with GSLM and permanently shutting down the Little Mountain Power Plant. This will require GSLM to install and operate boilers to sustain the steam supply needs of its facility.

GSLM shall purchase two (2) boilers each having a heat input capacity of 110 mmBtu/hr and an output capacity of 90,000 lb/hr steam. Both boilers will be fired with clean-burning natural gas.

Input streams to the boilers shall be supply water and natural gas. Output streams from the boilers shall be steam, excess water (i.e., blowdown), and emission products from natural gas combustion. GSLM has already submitted to the Utah Department of Environmental Quality, Division of Air Quality, the necessary paperwork for the air quality emissions. Issuance of that Approval Order is presently pending.

In any boiler operation, pretreatment of the water supply source prior to input into the boiler is critical; this prevents adverse mechanical/thermal & maintenance issues to the boiler. Such is the case with the GSLM boilers and the water supply source. The water shall be supplied from the Weber Basin Water Conservancy District. The supply water shall undergo a 3-stage pretreatment prior to input into the boilers. The 3 stages shall be: water softening, carbon filtration, and reverse osmosis. These 3 stages shall collectively provide demineralization, solids removal, and purification of the water. After input of the pretreated source water into the boiler, the boiler recycle/condensate stream shall be treated with conventional buffering agents for scale control and corrosion inhibition within the boiler.

The peak discharge flow from water supply pretreatment and boiler operations is estimated to be 90,000 gals/day (0.09 MGD); the average discharge flow is estimated to be 53,000 gals/day (0.05 MGD). This discharge shall be to the facility's existing drainage ditch leading to Outfall 001. The facility shall have the capability to sample and monitor the discharge from water supply pretreatment and boiler operations prior to the confluence with the outfall drainage ditch. The facility's existing average effluent flow to Outfall 001 is 3.8 MGD (from CY2011 UPDES data). Thus, the daily flow contribution from the water supply pretreatment and boiler operations shall be approximately 2% of the facility's existing effluent flow.

In comparison to the age of the Little Mountain Power Plant and its boilers (reportedly 40+ years-old), the new GSLM boilers shall be manufactured and equipped with contemporary technological advancements & controls. As a result, though not specifically quantified, it is expected that the air emissions and water discharges shall be significantly improved in terms of reduced rates and concentrations. The Anti-Degradation Review document provides more detail of such environmentally-beneficial reductions.

Appendix B
Fact Sheets & MSD Sheets for Boiler Treatment Materials

GE
Water & Process Technologies

Material Safety Data Sheet

Issue Date: 25-JAN-2012
Supercedes: 21-SEP-2011

OPTISPERSE ADJ561

1 Identification

Identification of substance or preparation
OPTISPERSE ADJ561

Product Application Area
Internal boiler treatment.

Company/Undertaking Identification
GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355-3300, F 215 953 5524

Emergency Telephone
(800) 877-1940

Prepared by Product Stewardship Group: T 215-355-3300 Prepared on: 25-JAN-2012

2 Hazard(s) identification

****

EMERGENCY OVERVIEW

DANGER

Corrosive to skin. Corrosive to the eyes. Mists/aerosols cause irritation to the upper respiratory tract.

DOT hazard: Corrosive to skin
Odor: Mild; Appearance: Colorless, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water

****

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:
Primary route of exposure; Corrosive to skin.

ACUTE EYE EFFECTS:
Corrosive to the eyes.

ACUTE RESPIRATORY EFFECTS:
Mists/aerosols cause irritation to the upper respiratory tract.

INGESTION EFFECTS:

Toxic;
May cause severe irritation or burning of mouth, throat, and gastrointestinal tract with severe chest and abdominal pain, nausea, vomiting, diarrhea, lethargy and collapse. Possible death when ingested in very large doses.

TARGET ORGANS:
Prolonged or repeated exposures may cause primary irritant dermatitis and/or tissue necrosis.

MEDICAL CONDITIONS AGGRAVATED:
Not known.

SYMPTOMS OF EXPOSURE:
Causes severe irritation, burns or tissue ulceration with subsequent scarring.

3 Composition / information on ingredients

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

Cas#	Chemical Name	Range(w/w%)
1310-73-2	SODIUM HYDROXIDE Corrosive; toxic (by ingestion)	40-70

4 First-aid measures

SKIN CONTACT:
URGENT! Wash thoroughly with soap and water. Remove contaminated clothing. Get immediate medical attention. Thoroughly wash clothing before reuse.

EYE CONTACT:
URGENT! Immediately flush eyes with plenty of low-pressure water for at least 20 minutes while removing contact lenses. Hold eyelids apart. Get immediate medical attention.

INHALATION:
If nasal, throat or lung irritation develops - remove to fresh air and get medical attention.

INGESTION:
Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Rinse mouth with plenty of water. Dilute contents of stomach using 4-10 fluid ounces (120-300 mL) of milk or water.

NOTES TO PHYSICIANS:
Material is corrosive. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage.

5 Fire-fighting measures

FIRE FIGHTING INSTRUCTIONS:
Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).
EXTINGUISHING MEDIA:
dry chemical, carbon dioxide, foam or water
HAZARDOUS DECOMPOSITION PRODUCTS:
none identifed
FLASH POINT:
> 200F > 93C SETA(CC)
MISCELLANEOUS:
Corrosive to skin
UN 1824;Emergency Response Guide #154

6 Accidental release measures

PROTECTION AND SPILL CONTAINMENT:
Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.
DISPOSAL INSTRUCTIONS:
Water contaminated with this product may be sent to a sanitary sewer treatment facility,in accordance with any local agreement,a permitted waste treatment facility or discharged under a permit. Product as is - Incinerate or land dispose in an approved landfill.

7 Handling and storage

HANDLING:
Alkaline. Corrosive(Skin/eyes). Do not mix with acidic material.
STORAGE:
Keep containers closed when not in use. Do not freeze. If frozen, thaw and mix completely prior to use.

8 Exposure controls / personal protection

EXPOSURE LIMITS
CHEMICAL NAME

SODIUM HYDROXIDE
PEL (OSHA): 2 MG/M3
TLV (ACGIH): TWA (Ceiling) = 2 MG/M3

ENGINEERING CONTROLS:
Adequate ventilation to maintain air contaminants below exposure limits.
PERSONAL PROTECTIVE EQUIPMENT:
Use protective equipment in accordance with 29CFR 1910 Subpart I
RESPIRATORY PROTECTION:
A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS.
If air-purifying respirator use is appropriate, use any of the following particulate respirators: N95, N99, N100, R95, R99, R100, P95, P99 or P100.

SKIN PROTECTION:
gauntlet-type rubber, butyl or neoprene gloves, chemical resistant apron -- Wash off after each use. Replace as necessary.

EYE PROTECTION:
splash proof chemical goggles, face shield

9 Physical and chemical properties

Spec. Grav.(70F,21C)	1.527	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	~ 50	Vapor Density (air=1)	< 1.00
Freeze Point (C)	~ 10		
Viscosity(cps 70F,21C)	124	% Solubility (water)	100.0

Odor		Mild
Appearance		Colorless
Physical State		Liquid
Flash Point	SETA(CC)	> 200F > 93C
pH 5% Sol. (approx.)		13.4
Evaporation Rate (Ether=1)		< 1.00
Percent VOC:		0.0

NA = not applicable ND = not determined

10 Stability and reactivity

CHEMICAL STABILITY:
Stable under normal storage conditions.

POSSIBILITY OF HAZARDOUS REACTIONS:
Contact with strong acids may cause a violent reaction releasing heat.

INCOMPATIBILITIES:
May react with acids.

DECOMPOSITION PRODUCTS:
none identifed

11 Toxicological information

Oral LD50 RAT:	280 mg/kg
NOTE - Calculated value according to GHS additivity formula	
Dermal LD50 RABBIT:	2700 mg/kg
NOTE - Calculated value according to GHS additivity formula	
Inhalation LC50 RAT:	>40 mg/m3/hr
Skin Irritation Score RABBIT:	CORROSIVE
NOTE - DOT HM181 Packing Group II: corrosive to skin in 60 minutes but not 3 minutes	
Eye Irritation Score RABBIT:	CORROSIVE
NOTE - Estimated value	

12 Ecological information

AQUATIC TOXICOLOGY

Ceriodaphnia 48 Hour Static Acute Bioassay (pH adjusted)
LC50= 2480; 10% Mortality= 1785 mg/L
Daphnia magna 48 Hour Static Screen
100% Mortality= 500; 5% Mortality= 100 mg/L
Daphnia magna 48 Hour Static Screen (pH adjusted)
100% Mortality= 10000; 5% Mortality= 5000 mg/L
Fathead Minnow 96 Hour Static Bioassay with 48-Hour Renewal
100% Mortality= 200; 0% Mortality= 50 mg/L
Fathead Minnow 96 Hour Static Bioassay with 48-Hour Renewal (pH adjusted)
45% Mortality= 10000; 0% Mortality= 5000 mg/L
Rainbow Trout 96 Hour Static Bioassay with 48-Hour Renewal (pH adjusted)
0% Mortality= 10000 mg/L

BIODEGRADATION

Product contains only inorganics that are not subject to typical biological degradation. Assimilation by microbes may occur in waste treatment or the environment.

13 Disposal considerations

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
D002=Corrosive(pH).

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

14 Transport information

Transportation Hazard: Corrosive to skin
DOT: SODIUM HYDROXIDE SOLUTION
8, UN1824, PG II, RQ
DOT EMERGENCY RESPONSE GUIDE #: 154
Note: Some containers may be DOT exempt, please check BOL for exact container classification
IATA: SODIUM HYDROXIDE SOLUTION
8, UN1824, PG II
IMDG: SODIUM HYDROXIDE SOLUTION
8, UN1824, PG II

15 Regulatory information

TSCA:
All components of this product are included on or are in compliance with the U.S. TSCA regulations.
CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):
157 gallons due to SODIUM HYDROXIDE;
FOOD AND DRUG ADMINISTRATION:
ALL ingredients in this product are authorized in 21CFR173.310

for use as boiler water additives where the steam may contact food.

NSF Registered and/or meets USDA (according to 1998 Guidelines):

Registration number: 140699

Category Code(s):

G1 General

G5 Cooling and retort water treatment products - all food processing areas

G6 Boiler treatment products - all food processing areas/food contact

SARA SECTION 312 HAZARD CLASS:

Immediate(acute);Delayed(Chronic);Reactive

SARA SECTION 302 CHEMICALS:

No regulated constituent present at OSHA thresholds

SARA SECTION 313 CHEMICALS:

No regulated constituent present at OSHA thresholds

CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65):

No regulated constituents present

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 Other information

HMIS vII		CODE TRANSLATION
Health	3	Serious Hazard
Fire	0	Minimal Hazard
Reactivity	1	Slight Hazard
Special	CORR	DOT corrosive
(1) Protective Equipment	D	Goggles,Face Shield,Gloves,Apron

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
MSDS status:	26-FEB-1997		** NEW **
	18-MAR-1997	15	26-FEB-1997
	03-OCT-1997	8	18-MAR-1997
	01-MAY-1998	15;EDIT:9	03-OCT-1997
	02-JUN-2000	12	01-MAY-1998
	11-OCT-2001	4,16	02-JUN-2000
	26-MAY-2006	8	11-OCT-2001
	13-MAY-2009	4,8	26-MAY-2006
	26-MAY-2009	4,5,8,10	13-MAY-2009
	17-JUN-2009	15	26-MAY-2009
	21-SEP-2011	11	17-JUN-2009
	25-JAN-2012	3,16	21-SEP-2011

GE
Water & Process Technologies

Material Safety Data Sheet

Issue Date: 17-JUN-2009
Supercedes: 15-MAY-2009

OPTISPERSE AP0200

1 Identification

Identification of substance or preparation
OPTISPERSE AP0200

Product Application Area
Water based internal boiler treatment chemical.

Company/Undertaking Identification
GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355-3300, F 215 953 5524

Emergency Telephone
(800) 877-1940

Prepared by Product Stewardship Group: T 215-355-3300 Prepared on: 17-JUN-2009

2 Hazard(s) identification

****

EMERGENCY OVERVIEW

CAUTION

May cause slight irritation to the skin. May cause slight irritation to the eyes. Mists/aerosols may cause irritation to upper respiratory tract.

DOT hazard is not applicable
Odor: Mild; Appearance: Light Yellow To Amber, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water

****

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:
Primary route of exposure; May cause slight irritation to the skin.

ACUTE EYE EFFECTS:
May cause slight irritation to the eyes.

ACUTE RESPIRATORY EFFECTS:
Mists/aerosols may cause irritation to upper respiratory tract.

INGESTION EFFECTS:
May cause slight gastrointestinal irritation.

TARGET ORGANS:
No evidence of potential chronic effects.

MEDICAL CONDITIONS AGGRAVATED:
Not known.

SYMPTOMS OF EXPOSURE:
May cause redness or itching of skin.

3 Composition / information on ingredients

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

This product is not hazardous as defined by OSHA regulations.

No component is considered to be a carcinogen by the National Toxicology Program, the International Agency for Research on Cancer, or the Occupational Safety and Health Administration at OSHA thresholds for carcinogens.

4 First-aid measures

SKIN CONTACT:
Wash thoroughly with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists.

EYE CONTACT:
Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get medical attention if irritation persists after flushing.

INHALATION:
If nasal, throat or lung irritation develops - remove to fresh air and get medical attention.

INGESTION:
Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 2-8 fluid ounces (60-240 mL) of milk or water.

NOTES TO PHYSICIANS:
No special instructions

5 Fire-fighting measures

FIRE FIGHTING INSTRUCTIONS:
Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).
EXTINGUISHING MEDIA:
dry chemical, carbon dioxide, foam or water
HAZARDOUS DECOMPOSITION PRODUCTS:
oxides of carbon
FLASH POINT:
> 200F > 93C P-M(CC)

6 Accidental release measures

PROTECTION AND SPILL CONTAINMENT:
Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.
DISPOSAL INSTRUCTIONS:
Water contaminated with this product may be sent to a sanitary sewer treatment facility,in accordance with any local agreement,a permitted waste treatment facility or discharged under a permit. Product as is - Incinerate or land dispose in an approved landfill.

7 Handling and storage

HANDLING:
Normal chemical handling.
STORAGE:
Keep containers closed when not in use. Reasonable and safe chemical storage. Protect from freezing.

8 Exposure controls / personal protection

EXPOSURE LIMITS

This product is not hazardous as defined by OSHA regulations.

ENGINEERING CONTROLS:
adequate ventilation
PERSONAL PROTECTIVE EQUIPMENT:
Use protective equipment in accordance with 29CFR 1910 Subpart I
RESPIRATORY PROTECTION:
A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS.
If air-purifying respirator use is appropriate, use any of the following particulate respirators: N95, N99, N100, R95, R99, R100, P95, P99 or P100.
SKIN PROTECTION:
rubber, butyl, viton or neoprene gloves -- Wash off after each use. Replace as necessary.
EYE PROTECTION:
splash proof chemical goggles

9 Physical and chemical properties

Specific Grav.(70F,21C)	1.085	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	19	Vapor Density (air=1)	< 1.00
Freeze Point (C)	-7		
Viscosity(cps 70F,21C)	31	% Solubility (water)	100.0

Odor		Mild
Appearance		Light Yellow To Amber
Physical State		Liquid
Flash Point	P-M(CC)	> 200F > 93C
pH As Is (approx.)		11.2
Evaporation Rate (Ether=1)		< 1.00
Percent VOC:		ND

NA = not applicable ND = not determined

10 Stability and reactivity

CHEMICAL STABILITY:
Stable under normal storage conditions.
POSSIBILITY OF HAZARDOUS REACTIONS:
Contact with strong acids may cause a violent reaction releasing heat.
INCOMPATIBILITIES:
May react with strong oxidizers.
DECOMPOSITION PRODUCTS:
oxides of carbon

11 Toxicological information

Oral LD50 RAT:	>2,000 mg/kg
NOTE - Estimated value	
Dermal LD50 RABBIT:	>2,000 mg/kg
NOTE - Estimated value	

12 Ecological information

AQUATIC TOXICOLOGY
Ceriodaphnia 48 Hour Static Acute Bioassay
LC50= 5460; 0% Mortality= 4000 mg/L
Daphnia magna 48 Hour Static Screen
0% Mortality= 5000 mg/L
Fathead Minnow 96 Hour Static Bioassay with 48-Hour Renewal
0% Mortality= 5000 mg/L

BIODEGRADATION
BOD-28 (mg/g): 0
BOD-5 (mg/g): 0
COD (mg/g): 339
TOC (mg/g): 91

13 Disposal considerations

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
Not applicable.

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

14 Transport information

DOT HAZARD: Not Applicable
PROPER SHIPPING NAME:

DOT EMERGENCY RESPONSE GUIDE #: Not applicable
Note: Some containers may be DOT exempt, please check BOL for exact container classification

15 Regulatory information

TSCA:
All components of this product are included on or are in compliance with the U.S. TSCA regulations.

CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):
No regulated constituent present at OSHA thresholds

FOOD AND DRUG ADMINISTRATION:
This product can be used as a boiler water additive in applications requiring compliance with FDA regulation 21CFR173.310

NSF Registered and/or meets USDA (according to 1998 Guidelines):
Registration number: 141068
Category Code(s):
G5 Cooling and retort water treatment products - all food processing areas
G6 Boiler treatment products - all food processing areas/food contact

SARA SECTION 312 HAZARD CLASS:
Product is non-hazardous under Section 311/312

SARA SECTION 302 CHEMICALS:
No regulated constituent present at OSHA thresholds

SARA SECTION 313 CHEMICALS:
No regulated constituent present at OSHA thresholds

CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65):
This product contains one or more ingredients at trace levels known to the state of California to cause cancer and reproductive toxicity.

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 Other information

HMIS vII		CODE TRANSLATION
Health	1	Slight Hazard
Fire	1	Slight Hazard
Reactivity	0	Minimal Hazard
Special	NONE	No special Hazard
(1) Protective Equipment	B	Goggles,Gloves

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
MSDS status:	29-JAN-1997		** NEW **
	18-MAR-1997	15	29-JAN-1997
	16-APR-1997	15	18-MAR-1997
	08-OCT-1999	12	16-APR-1997
	21-OCT-1999	12	08-OCT-1999
	05-MAY-2000	15	21-OCT-1999
	17-AUG-2000	15	05-MAY-2000
	09-AUG-2001	4	17-AUG-2000
	09-NOV-2005	15	09-AUG-2001
	20-JUN-2007	5,8,10	09-NOV-2005
	15-MAY-2009	4,15	20-JUN-2007
	17-JUN-2009	15	15-MAY-2009

GE
Water & Process Technologies

Material Safety Data Sheet

Issue Date: 15-SEP-2011
Supercedes: 19-JUN-2009

CORTROL IS3000

1 Identification

Identification of substance or preparation
CORTROL IS3000

Product Application Area
Water based dissolved oxygen scavenger.

Company/Undertaking Identification
GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355-3300, F 215 953 5524

Emergency Telephone
(800) 877-1940

Prepared by Product Stewardship Group: T 215-355-3300 Prepared on: 15-SEP-2011

2 Hazard(s) identification

****
EMERGENCY OVERVIEW

WARNING

May cause slight irritation to the skin. Skin sensitizer. Severe irritant to the eyes. May cause irritation to mucous membranes. Repeated exposure may result in respiratory sensitization.

DOT hazard: Environmentally hazardous substance: RQ
Odor: Strong; Appearance: Pink, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water
****

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:
Primary route of exposure; May cause slight irritation to the skin. Skin sensitizer.

ACUTE EYE EFFECTS:
Severe irritant to the eyes.

ACUTE RESPIRATORY EFFECTS:
May cause irritation to mucous membranes. Repeated exposure may

result in respiratory sensitization.

INGESTION EFFECTS:
May cause gastrointestinal irritation. Very large doses may cause diarrhea, depression, colic and death. May also cause severe allergic reactions in sensitive individuals.

TARGET ORGANS:
Prolonged or repeated exposures may cause primary irritant dermatitis, skin sensitization, and/or allergic respiratory reactions.

MEDICAL CONDITIONS AGGRAVATED:
Asthma.

SYMPTOMS OF EXPOSURE:
May cause local irritation or a sensitization reaction upon direct contact with skin or respiratory tract.

3 Composition / information on ingredients

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

Cas#	Chemical Name	Range (w/w%)
7631-90-5	SODIUM BISULFITE May be corrosive in aqueous solutions; irritant; sensitizer (skin and respiratory); may generate SO2; IARC=3 (carcinogen status not classifiable)	30-60

4 First-aid measures

SKIN CONTACT:
Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse. Get medical attention if irritation develops or persists.

EYE CONTACT:
Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get immediate medical attention.

INHALATION:
Remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get immediate medical attention.

INGESTION:
Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 2-8 fluid ounces (60-240 mL) of milk or water.

NOTES TO PHYSICIANS:
No special instructions

5 Fire-fighting measures

FIRE FIGHTING INSTRUCTIONS:
Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).
EXTINGUISHING MEDIA:
dry chemical, carbon dioxide, foam or water
HAZARDOUS DECOMPOSITION PRODUCTS:
elemental oxides
FLASH POINT:
> 200F > 93C P-M(CC)
MISCELLANEOUS:
Environmentally hazardous substance: RQ
NA 3082;Emergency Response Guide #171

6 Accidental release measures

PROTECTION AND SPILL CONTAINMENT:
Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.
DISPOSAL INSTRUCTIONS:
Water contaminated with this product may be sent to a sanitary sewer treatment facility,in accordance with any local agreement,a permitted waste treatment facility or discharged under a permit. Product as is - Incinerate or land dispose in an approved landfill.

7 Handling and storage

HANDLING:
Vent carefully before opening. Sulfur dioxide can be formed during the normal use and handling of this product.
STORAGE:
Keep containers closed when not in use. Protect from freezing. If frozen, thaw and mix completely prior to use. Shelf life 180 days.

8 Exposure controls / personal protection

EXPOSURE LIMITS

CHEMICAL NAME

SODIUM BISULFITE
PEL (OSHA): LIMITS HAVE NOT BEEN ESTABLISHED BY US OSHA.
TLV (ACGIH): TWA = 5 MG/M3; A4

ENGINEERING CONTROLS:
Adequate ventilation to maintain air contaminants below exposure limits.
PERSONAL PROTECTIVE EQUIPMENT:
Use protective equipment in accordance with 29CFR 1910 Subpart I
RESPIRATORY PROTECTION:
A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED

WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS.
If air-purifying respirator use is appropriate, use a respirator with acid gas cartridges and dust/mist prefilters.

SKIN PROTECTION:
gauntlet-type rubber, butyl or neoprene gloves, chemical resistant apron -- Wash off after each use. Replace as necessary.

EYE PROTECTION:
splash proof chemical goggles, face shield

9 Physical and chemical properties

Spec. Grav.(70F,21C)	1.261	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	18	Vapor Density (air=1)	< 1.00
Freeze Point (C)	-8		
Viscosity(cps 70F,21C)	7	% Solubility (water)	100.0

Odor		Strong
Appearance		Pink
Physical State		Liquid
Flash Point	P-M(CC)	> 200F > 93C
pH As Is (approx.)		3.2
Evaporation Rate (Ether=1)		< 1.00
Percent VOC:		0.0

NA = not applicable ND = not determined

10 Stability and reactivity

CHEMICAL STABILITY:
Stable under normal storage conditions.

POSSIBILITY OF HAZARDOUS REACTIONS:
No known hazardous reactions.

INCOMPATIBILITIES:
May react with strong oxidizers.

DECOMPOSITION PRODUCTS:
elemental oxides

11 Toxicological information

Oral LD50 RAT: 3030 mg/kg
NOTE - Calculated value according to GHS additivity formula

Skin Irritation Score RABBIT: 0-2.95
NOTE - Repeated studies indicate little or no irritation; not DOT corrosive

Eye Irritation Score RABBIT: 2.0
NOTE - Maximum score at 1 hour; completely reversible by 48 hours

12 Ecological information

AQUATIC TOXICOLOGY

Daphnia magna 48 Hour Static Screen
100% Mortality= 500; 0% Mortality= 100 mg/L
Fathead Minnow 96 Hour Acute Toxicity (Estimated)
LC50= 210; No Effect Level= 150 mg/L
Rainbow Trout 48 Hour Static Screen
100% Mortality= 1000; 0% Mortality= 500 mg/L

BIODEGRADATION

No Data Available.

13 Disposal considerations

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
Not applicable.

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

14 Transport information

Transportation Hazard: Environmentally hazardous substance: RQ
DOT: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.(SODIUM BISULFITE SOLUTION)
9, NA 3082, PG III, RQ
DOT EMERGENCY RESPONSE GUIDE #: 171
Note: Some containers may be DOT exempt, please check BOL for exact container classification
IATA: Not Regulated

IMDG: Not Regulated

15 Regulatory information

TSCA:

All components of this product are included on or are in compliance with the U.S. TSCA regulations.

CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):

1,443 gallons due to SODIUM BISULFITE;

FOOD AND DRUG ADMINISTRATION:

ALL ingredients in this product are authorized in 21CFR173.310 for use as boiler water additives where the steam may contact food.

NSF Registered and/or meets USDA (according to 1998 Guidelines):

Registration number: 141465
Category Code(s):
G8 Cooling and retort water treatment products - all food processing areas except meat and poultry
G9 Boiler treatment products - all food processing areas except meat and poultry/food contact

SARA SECTION 312 HAZARD CLASS:

Immediate(acute);Delayed(Chronic)

SARA SECTION 302 CHEMICALS:

No regulated constituent present at OSHA thresholds

SARA SECTION 313 CHEMICALS:

No regulated constituent present at OSHA thresholds

CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65):

No regulated constituents present

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 Other information

HMIS vII		CODE TRANSLATION
Health	2	Moderate Hazard
Fire	0	Minimal Hazard
Reactivity	0	Minimal Hazard
Special	NONE	No special Hazard
(1) Protective Equipment	D	Goggles,Face Shield,Gloves,Apron

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
MSDS status:	28-JAN-1997		** NEW **
	18-MAR-1997	15	28-JAN-1997
	25-SEP-1997	15	18-MAR-1997
	15-JUN-2000	4	25-SEP-1997
	22-JUN-2004	16	15-JUN-2000
	16-JUN-2006	7,16	22-JUN-2004
	13-JUN-2008	2,5,14	16-JUN-2006
	17-JUN-2009	10,15	13-JUN-2008
	19-JUN-2009	8	17-JUN-2009
	15-SEP-2011	11	19-JUN-2009

Appendix C
Bear River Bay
Water Quality Summary

Characteristic Name	Activity Start Date	Result or 1/2 the Detection Limit	Result Value	Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Aluminum	11/10/1999	165		ug/l	Not Detected	330	ug/l		Method Detection Level
Aluminum	1/4/2000	90		ug/l	Not Detected	180	ug/l		Lower Quantitation Limit
Aluminum	2/17/2000	90			Not Detected	180	ug/l		Lower Quantitation Limit
Aluminum	8/23/2000	45		ug/l	Not Detected	90	ug/l		Lower Quantitation Limit
Aluminum	10/3/2000	38			Not Detected	75	ug/l		Lower Quantitation Limit
Aluminum	11/2/2000	25			Not Detected	50	ug/l		Lower Quantitation Limit
Aluminum	1/23/2001	480	480	ug/l					
Aluminum	5/3/2001	95			Not Detected	190	ug/l		Lower Quantitation Limit
Aluminum	7/18/2001	148			Not Detected	295	ug/l		Lower Quantitation Limit
Aluminum	10/2/2001	276	276	ug/l					
Aluminum	11/6/2001	70			Not Detected	140	ug/l		Lower Quantitation Limit
Aluminum	1/22/2002	290	290	ug/l					
Aluminum	5/14/2002	70			Not Detected	140	ug/l		Lower Quantitation Limit
Aluminum	10/31/2002	15			Not Detected	30	ug/l		Lower Quantitation Limit
Aluminum	12/10/2002	15			Not Detected	30	ug/l		Lower Quantitation Limit
Aluminum	2/4/2003	15			Not Detected	30	ug/l		Lower Quantitation Limit
Aluminum	3/12/2003	35			Not Detected	70	ug/l		Lower Quantitation Limit
Aluminum	5/28/2003	113			Not Detected	225	ug/l		Lower Quantitation Limit
Aluminum	9/4/2003	73			Not Detected	145	ug/l		Lower Quantitation Limit
Aluminum	1/27/2004	15			Not Detected	30	ug/l		Lower Quantitation Limit
Aluminum	2/5/2004	165			Not Detected	330	ug/l		Lower Quantitation Limit
Aluminum	4/13/2004	30			Not Detected	60	ug/l		Lower Quantitation Limit
Aluminum	7/9/2009	25			Not Detected	50	ug/l	U	Lower Reporting Limit
Aluminum	7/30/2009	50			Not Detected	100	ug/l	U	Lower Reporting Limit
Aluminum	8/21/2009	500			Not Detected	1000	ug/l	U	Lower Reporting Limit
Aluminum	9/9/2009	500			Not Detected	1000	ug/l	U	Lower Reporting Limit
	Average	132	349	ug/l					

Characteristic Name	Activity Start Date	Result or 1/2 the Detection Limit	Result Value	Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Arsenic	11/10/1999	25		ug/l	Not Detected	50	ug/l		Method Detection Level
Arsenic	1/4/2000	10		ug/l	Not Detected	20	ug/l		Lower Quantitation Limit
Arsenic	2/17/2000	7			Not Detected	13	ug/l		Lower Quantitation Limit
Arsenic	8/23/2000	60		ug/l	Not Detected	120	ug/l		Lower Quantitation Limit
Arsenic	10/3/2000	130	130	ug/l					
Arsenic	11/2/2000	70	70	ug/l					
Arsenic	1/23/2001	25	25	ug/l					
Arsenic	5/3/2001	28			Not Detected	55	ug/l		Lower Quantitation Limit
Arsenic	7/18/2001	53			Not Detected	105	ug/l		Lower Quantitation Limit
Arsenic	10/2/2001	148	148	ug/l					
Arsenic	11/6/2001	60			Not Detected	120	ug/l		Lower Quantitation Limit
Arsenic	1/22/2002	13			Not Detected	25	ug/l		Lower Quantitation Limit
Arsenic	5/14/2002	23			Not Detected	45	ug/l		Lower Quantitation Limit
Arsenic	10/31/2002	22.2	22.2	ug/l					
Arsenic	12/10/2002	10			Not Detected	20	ug/l		Lower Quantitation Limit
Arsenic	2/4/2003	25			Not Detected	50	ug/l		Lower Quantitation Limit
Arsenic	3/12/2003	6			Not Detected	12	ug/l		Lower Quantitation Limit
Arsenic	5/28/2003	65			Not Detected	130	ug/l		Lower Quantitation Limit
Arsenic	9/4/2003	249	249	ug/l					
Arsenic	1/27/2004	6.2	6.2	ug/l					
Arsenic	2/5/2004	15.3	15.3	ug/l					
Arsenic	4/13/2004	10.6	10.6	ug/l					
Arsenic	7/9/2009	9.51	9.51	ug/l					
Arsenic	7/9/2009	12	12	ug/l					
Arsenic	7/30/2009	20.6	20.6	ug/l					
Arsenic	8/21/2009	113	113	ug/l					
Arsenic	8/21/2009	123	123	ug/l					
Arsenic	9/9/2009	637	637	ug/l					
Arsenic	9/9/2009	539	539	ug/l					
	Average	87	133	ug/l					

Characteristic Name	Activity Start Date	Result or 1/2 the Detection Limit	Result Value	Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Barium	11/10/1999	60		ug/l	Not Detected	120	ug/l		Method Detection Level
Barium	1/4/2000	45		ug/l	Not Detected	90	ug/l		Lower Quantitation Limit
Barium	2/17/2000	85	85	ug/l					
Barium	8/23/2000	160	160	ug/l					
Barium	10/3/2000	170	170	ug/l					
Barium	11/2/2000	126.5	126.5	ug/l					
Barium	1/23/2001	120	120	ug/l					
Barium	5/3/2001	110	110	ug/l					
Barium	7/18/2001	145	145	ug/l					
Barium	10/2/2001	178	178	ug/l					
Barium	11/6/2001	181	181	ug/l					
Barium	1/22/2002	123	123	ug/l					
Barium	5/14/2002	75			Not Detected	150	ug/l		Lower Quantitation Limit
Barium	10/31/2002	85	85	ug/l					
Barium	12/10/2002	38			Not Detected	75	ug/l		Lower Quantitation Limit
Barium	2/4/2003	48			Not Detected	95	ug/l		Lower Quantitation Limit
Barium	3/12/2003	54	54	ug/l					
Barium	5/28/2003	164	164	ug/l					
Barium	9/4/2003	83			Not Detected	165	ug/l		Lower Quantitation Limit
Barium	1/27/2004	50			Not Detected	100	ug/l		Lower Quantitation Limit
Barium	2/5/2004	50		ug/l	Present Below Quantification Limit	100	ug/l		Lower Quantitation Limit
Barium	4/13/2004	50			Not Detected	100	ug/l		Lower Quantitation Limit
Barium	7/9/2009	126	126	ug/l					
Barium	7/30/2009	425	425	ug/l					
Barium	8/21/2009	599	599	ug/l					
Barium	9/9/2009	233	233	ug/l					
	Average	138	181	ug/l					

Characteristic Name	Activity Start Date	Result Value	Result Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Boron	7/9/2009	1540	ug/l					
Boron	7/30/2009	3160	ug/l					
Boron	8/21/2009	15000	ug/l					
Boron	9/9/2009	113000	ug/l					
	Average	33175	ug/l					

Characteristic Name	Activity Start Date	Result or 1/2 the Detection Limit	Result Value	Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Cadmium	11/10/1999	4		ug/l	Not Detected	8	ug/l		Method Detection Level
Cadmium	1/4/2000	1		ug/l	Not Detected	2	ug/l		Lower Quantitation Limit
Cadmium	2/17/2000	3			Not Detected	5	ug/l		Lower Quantitation Limit
Cadmium	8/23/2000	2		ug/l	Not Detected	4	ug/l		Lower Quantitation Limit
Cadmium	10/3/2000	3			Not Detected	5	ug/l		Lower Quantitation Limit
Cadmium	11/2/2000	1			Not Detected	2	ug/l		Lower Quantitation Limit
Cadmium	1/23/2001	9	9	ug/l					
Cadmium	5/3/2001	1			Not Detected	2	ug/l		Lower Quantitation Limit
Cadmium	7/18/2001	1			Not Detected	2	ug/l		Lower Quantitation Limit
Cadmium	10/2/2001	1			Not Detected	2	ug/l		Lower Quantitation Limit
Cadmium	11/6/2001	1			Not Detected	2	ug/l		Lower Quantitation Limit
Cadmium	1/22/2002	1			Not Detected	1	ug/l		Lower Quantitation Limit
Cadmium	5/14/2002	1			Not Detected	2	ug/l		Lower Quantitation Limit
Cadmium	10/31/2002	1			Not Detected	2	ug/l		Lower Quantitation Limit
Cadmium	12/10/2002	1			Not Detected	2	ug/l		Lower Quantitation Limit
Cadmium	2/4/2003	1			Not Detected	2	ug/l		Lower Quantitation Limit
Cadmium	3/12/2003	1			Not Detected	1	ug/l		Lower Quantitation Limit
Cadmium	5/28/2003	1			Not Detected	2	ug/l		Lower Quantitation Limit
Cadmium	9/4/2003	1			Not Detected	2	ug/l		Lower Quantitation Limit
Cadmium	1/27/2004	1			Not Detected	1	ug/l		Lower Quantitation Limit
Cadmium	2/5/2004	6			Not Detected	11	ug/l		Lower Quantitation Limit
Cadmium	4/13/2004	1			Not Detected	2	ug/l		Lower Quantitation Limit
Cadmium	7/9/2009	0			Not Detected	0.5	ug/l	U	Lower Reporting Limit
Cadmium	7/30/2009	1			Not Detected	1	ug/l	U	Lower Reporting Limit
Cadmium	8/21/2009	5			Not Detected	10	ug/l	U	Lower Reporting Limit
Cadmium	9/9/2009	5			Not Detected	10	ug/l	U	Lower Reporting Limit
	Average	2	9	ug/l					

Characteristic Name	Activity Start Date	Result Value	Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Calcium	9/2/1999	95.6	mg/l					
Calcium	11/10/1999	89.6	mg/l					
Calcium	1/4/2000	76.6	mg/l					
Calcium	2/17/2000	97	mg/l					
Calcium	6/20/2000	146	mg/l					
Calcium	8/23/2000	113	mg/l					
Calcium	10/3/2000	158	mg/l					
Calcium	11/2/2000	115	mg/l					
Calcium	1/23/2001	79.5	mg/l					
Calcium	5/3/2001	84.9	mg/l					
Calcium	7/18/2001	170	mg/l					
Calcium	10/2/2001	1.18	mg/l					
Calcium	11/6/2001	265	mg/l					
Calcium	1/22/2002	92.6	mg/l					
Calcium	2/19/2002	83.7	mg/l					
Calcium	5/14/2002	115	mg/l					
Calcium	6/25/2002	193	mg/l					
Calcium	10/31/2002	45.8	mg/l					
Calcium	12/10/2002	47.4	mg/l					
Calcium	2/4/2003	97.7	mg/l					
Calcium	3/12/2003	71.8	mg/l					
Calcium	5/28/2003	194	mg/l					
Calcium	6/27/2003	296	mg/l					
Calcium	9/4/2003	301	mg/l					
Calcium	9/30/2003	201	mg/l					
Calcium	12/9/2003	207	mg/l					
Calcium	1/27/2004	67.9	mg/l					
Calcium	2/5/2004	80.4	mg/l					
Calcium	2/24/2004	70.6	mg/l					
Calcium	3/23/2004	27.6	mg/l					
Calcium	4/13/2004	33.8	mg/l					

Characteristic Name	Activity Start Date	Result Value	Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Calcium	5/4/2004	128	mg/l					
Calcium	7/9/2009	50.6	mg/l					
Calcium	7/30/2009	182	mg/l					
Calcium	8/21/2009	250	mg/l					
Calcium	9/9/2009	318	mg/l					
	Average	129	mg/l					

Characteristic Name	Activity Start Date	Result or 1/2 the Detection Limit	Result Value	Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Chromium	11/10/1999	195		ug/l	Not Detected	390	ug/l		Method Detection Level
Chromium	1/4/2000	40		ug/l	Not Detected	80	ug/l		Lower Quantitation Limit
Chromium	2/17/2000	33			Not Detected	65	ug/l		Lower Quantitation Limit
Chromium	8/23/2000	35		ug/l	Not Detected	70	ug/l		Lower Quantitation Limit
Chromium	10/3/2000	60			Not Detected	120	ug/l		Lower Quantitation Limit
Chromium	11/2/2000	66	66	ug/l					
Chromium	1/23/2001	11	11	ug/l					
Chromium	5/3/2001	240	240	ug/l					
Chromium	7/18/2001	35			Not Detected	70	ug/l		Lower Quantitation Limit
Chromium	10/2/2001	106	106	ug/l					
Chromium	11/6/2001	40			Not Detected	80	ug/l		Lower Quantitation Limit
Chromium	1/22/2002	15			Not Detected	30	ug/l		Lower Quantitation Limit
Chromium	5/14/2002	13			Not Detected	25	ug/l		Lower Quantitation Limit
Chromium	10/31/2002	113	113	ug/l					
Chromium	12/10/2002	15			Not Detected	30	ug/l		Lower Quantitation Limit
Chromium	2/4/2003	43			Not Detected	85	ug/l		Lower Quantitation Limit
Chromium	3/12/2003	5			Not Detected	10	ug/l		Lower Quantitation Limit
Chromium	5/28/2003	30			Not Detected	60	ug/l		Lower Quantitation Limit
Chromium	9/4/2003	78			Not Detected	155	ug/l		Lower Quantitation Limit
Chromium	1/27/2004	3			Not Detected	5	ug/l		Lower Quantitation Limit
Chromium	2/5/2004	28			Not Detected	55	ug/l		Lower Quantitation Limit
Chromium	4/13/2004	5			Not Detected	10	ug/l		Lower Quantitation Limit
Chromium	7/9/2009	5			Not Detected	10	ug/l	U	Lower Reporting Limit
Chromium	7/30/2009	10			Not Detected	20	ug/l	U	Lower Reporting Limit
Chromium	8/21/2009	100			Not Detected	200	ug/l	U	Lower Reporting Limit
Chromium	9/9/2009	100			Not Detected	200	ug/l	U	Lower Reporting Limit
	Average	55	107.2	ug/l					

Characteristic Name	Activity Start Date	Result or 1/2 the Detection Limit	Result Value	Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Copper	11/10/1999	15		ug/l	Not Detected	30	ug/l		Method Detection Level
Copper	1/4/2000	25		ug/l	Not Detected	50	ug/l		Lower Quantitation Limit
Copper	2/17/2000	6			Not Detected	12	ug/l		Lower Quantitation Limit
Copper	8/23/2000	25		ug/l	Not Detected	50	ug/l		Lower Quantitation Limit
Copper	10/3/2000	45			Not Detected	90	ug/l		Lower Quantitation Limit
Copper	11/2/2000	6			Not Detected	12	ug/l		Lower Quantitation Limit
Copper	1/23/2001	75	75	ug/l					
Copper	5/3/2001	203	203	ug/l					
Copper	7/18/2001	6			Not Detected	12	ug/l		Lower Quantitation Limit
Copper	10/2/2001	6			Not Detected	12	ug/l		Lower Quantitation Limit
Copper	11/6/2001	38			Not Detected	75	ug/l		Lower Quantitation Limit
Copper	1/22/2002	125	125	ug/l					
Copper	5/14/2002	6			Not Detected	12	ug/l		Lower Quantitation Limit
Copper	10/31/2002	15.2	15.2	ug/l					
Copper	12/10/2002	80			Not Detected	160	ug/l		Lower Quantitation Limit
Copper	2/4/2003	38			Not Detected	75	ug/l		Lower Quantitation Limit
Copper	3/12/2003	6			Not Detected	12	ug/l		Lower Quantitation Limit
Copper	5/28/2003	48			Not Detected	95	ug/l		Lower Quantitation Limit
Copper	9/4/2003	30			Not Detected	60	ug/l		Lower Quantitation Limit
Copper	1/27/2004	6			Not Detected	12	ug/l		Lower Quantitation Limit
Copper	2/5/2004	65			Not Detected	130	ug/l		Lower Quantitation Limit
Copper	4/13/2004	12			Not Detected	24	ug/l		Lower Quantitation Limit
Copper	7/9/2009	3			Not Detected	5	ug/l	U	Lower Reporting Limit
Copper	7/30/2009	5			Not Detected	10	ug/l	U	Lower Reporting Limit
Copper	8/21/2009	50			Not Detected	100	ug/l	U	Lower Reporting Limit
Copper	9/9/2009	119	119	ug/l					
	Average	41	107	ug/l					

Characteristic Name	Activity Start Date	Result or 1/2 the Detection Limit	Result Value	Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Iron	11/10/1999	28.2	28.2	ug/l					
Iron	1/4/2000	21	21	ug/l					
Iron	2/17/2000	26.6	26.6	ug/l					
Iron	8/23/2000	76.1	76.1	ug/l					
Iron	10/3/2000	53.6	53.6	ug/l					
Iron	11/2/2000	53.3	53.3	ug/l					
Iron	1/23/2001	26.7	26.7	ug/l					
Iron	5/3/2001	41.3	41.3	ug/l					
Iron	7/18/2001	36.1	36.1	ug/l					
Iron	10/2/2001	70.6	70.6	ug/l					
Iron	11/6/2001	31.3	31.3	ug/l					
Iron	1/22/2002	33.6	33.6	ug/l					
Iron	5/14/2002	43.8	43.8	ug/l					
Iron	10/31/2002	10			Not Detected	20	ug/l		Lower Quantitation Limit
Iron	12/10/2002	10			Not Detected	20	ug/l		Lower Quantitation Limit
Iron	2/4/2003	10			Not Detected	20	ug/l		Lower Quantitation Limit
Iron	3/12/2003	10			Not Detected	20	ug/l		Lower Quantitation Limit
Iron	5/28/2003	10			Not Detected	20	ug/l		Lower Quantitation Limit
Iron	9/4/2003	20.3	20.3	ug/l					
Iron	1/27/2004	10			Not Detected	20	ug/l		Lower Quantitation Limit
Iron	2/5/2004	10			Not Detected	20	ug/l		Lower Quantitation Limit
Iron	4/13/2004	10			Not Detected	20	ug/l		Lower Quantitation Limit
Iron	7/9/2009	20			Not Detected	40	ug/l	U	Lower Reporting Limit
Iron	7/30/2009	10			Not Detected	20	ug/l	U	Lower Reporting Limit
Iron	8/21/2009	100			Not Detected	200	ug/l	U	Lower Reporting Limit
Iron	9/9/2009	40			Not Detected	80	ug/l	U	Lower Reporting Limit
	Average	31	40	ug/l					

Characteristic Name	Activity Start Date	Result or 1/2 the Detection Limit	Result Value	Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Lead	11/10/1999	4		ug/l	Not Detected	8	ug/l		Method Detection Level
Lead	1/4/2000	28		ug/l	Not Detected	55	ug/l		Lower Quantitation Limit
Lead	2/17/2000	10			Not Detected	20	ug/l		Lower Quantitation Limit
Lead	8/23/2000	4		ug/l	Not Detected	7	ug/l		Lower Quantitation Limit
Lead	10/3/2000	3			Not Detected	6	ug/l		Lower Quantitation Limit
Lead	11/2/2000	55	55	ug/l					
Lead	1/23/2001	20	20	ug/l					
Lead	5/3/2001	2			Not Detected	3	ug/l		Lower Quantitation Limit
Lead	7/18/2001	2			Not Detected	3	ug/l		Lower Quantitation Limit
Lead	10/2/2001	2			Not Detected	3	ug/l		Lower Quantitation Limit
Lead	11/6/2001	2			Not Detected	3	ug/l		Lower Quantitation Limit
Lead	1/22/2002	3			Not Detected	5	ug/l		Lower Quantitation Limit
Lead	5/14/2002	2			Not Detected	3	ug/l		Lower Quantitation Limit
Lead	10/31/2002	2			Not Detected	3	ug/l		Lower Quantitation Limit
Lead	12/10/2002	2			Not Detected	3	ug/l		Lower Quantitation Limit
Lead	2/4/2003	2			Not Detected	3	ug/l		Lower Quantitation Limit
Lead	3/12/2003	2			Not Detected	3	ug/l		Lower Quantitation Limit
Lead	5/28/2003	8			Not Detected	15	ug/l		Lower Quantitation Limit
Lead	9/4/2003	4			Not Detected	7	ug/l		Lower Quantitation Limit
Lead	1/27/2004	2			Not Detected	3	ug/l		Lower Quantitation Limit
Lead	2/5/2004	18			Not Detected	35	ug/l		Lower Quantitation Limit
Lead	4/13/2004	3			Not Detected	6	ug/l		Lower Quantitation Limit
Lead	7/9/2009	0			Not Detected	0.5	ug/l	U	Lower Reporting Limit
Lead	7/30/2009	1			Not Detected	1	ug/l	U	Lower Reporting Limit
Lead	8/21/2009	5			Not Detected	10	ug/l	U	Lower Reporting Limit
Lead	9/9/2009	5			Not Detected	10	ug/l	U	Lower Reporting Limit
	Average	7	37.5	ug/l					

Characteristic Name	Activity Start Date	Result Value	Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Magnesium	9/2/1999	814	mg/l					
Magnesium	11/10/1999	713	mg/l					
Magnesium	1/4/2000	549	mg/l					
Magnesium	2/17/2000	1480	mg/l					
Magnesium	6/20/2000	1920	mg/l					
Magnesium	8/23/2000	2670	mg/l					
Magnesium	10/3/2000	2980	mg/l					
Magnesium	11/2/2000	1600	mg/l					
Magnesium	1/23/2001	401	mg/l					
Magnesium	5/3/2001	745	mg/l					
Magnesium	7/18/2001	3110	mg/l					
Magnesium	10/2/2001	22.2	mg/l					
Magnesium	11/6/2001	4910	mg/l					
Magnesium	1/22/2002	457	mg/l					
Magnesium	2/19/2002	101	mg/l					
Magnesium	5/14/2002	1070	mg/l					
Magnesium	6/25/2002	4000	mg/l					
Magnesium	10/31/2002	367	mg/l					
Magnesium	12/10/2002	306	mg/l					
Magnesium	2/4/2003	11.3	mg/l					
Magnesium	3/12/2003	614	mg/l					
Magnesium	5/28/2003	3420	mg/l					
Magnesium	6/27/2003	5030	mg/l					
Magnesium	9/4/2003	5810	mg/l					
Magnesium	9/30/2003	32000	mg/l					
Magnesium	12/9/2003	636	mg/l					
Magnesium	1/27/2004	105	mg/l					
Magnesium	2/5/2004	607	mg/l					
Magnesium	2/24/2004	158	mg/l					
Magnesium	3/23/2004	147	mg/l					

Characteristic Name	Activity Start Date	Result Value	Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Magnesium	4/13/2004	152	mg/l					
Magnesium	5/4/2004	1960	mg/l					
Magnesium	7/9/2009	387	mg/l					
Magnesium	7/30/2009	1100	mg/l					
Magnesium	8/21/2009	4130	mg/l					
Magnesium	9/9/2009	30400	mg/l					
	Average	3191	mg/l					

Characteristic Name	Activity Start Date	Result or 1/2 the Detection Limit	Result Value	Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Manganese	11/10/1999	670	670	ug/l					
Manganese	1/4/2000	27.5		ug/l	Not Detected	55	ug/l		Lower Quantitation Limit
Manganese	2/17/2000	10			Not Detected	20	ug/l		Lower Quantitation Limit
Manganese	8/23/2000	40		ug/l	Not Detected	80	ug/l		Lower Quantitation Limit
Manganese	10/3/2000	230	230	ug/l					
Manganese	11/2/2000	8.5			Not Detected	17	ug/l		Lower Quantitation Limit
Manganese	1/23/2001	25	25	ug/l					
Manganese	5/3/2001	60			Not Detected	120	ug/l		Lower Quantitation Limit
Manganese	7/18/2001	150	150	ug/l					
Manganese	10/2/2001	173	173	ug/l					
Manganese	11/6/2001	179	179	ug/l					
Manganese	1/22/2002	15			Not Detected	30	ug/l		Lower Quantitation Limit
Manganese	5/14/2002	27.5			Not Detected	55	ug/l		Lower Quantitation Limit
Manganese	10/31/2002	12.5			Not Detected	25	ug/l		Lower Quantitation Limit
Manganese	12/10/2002	12.5			Not Detected	25	ug/l		Lower Quantitation Limit
Manganese	2/4/2003	17.5			Not Detected	35	ug/l		Lower Quantitation Limit
Manganese	3/12/2003	25.3	25.3	ug/l					
Manganese	5/28/2003	65			Not Detected	130	ug/l		Lower Quantitation Limit
Manganese	9/4/2003	52.5			Not Detected	105	ug/l		Lower Quantitation Limit
Manganese	1/27/2004	2.5			Not Detected	5	ug/l		Lower Quantitation Limit
Manganese	2/5/2004	27.5			Not Detected	55	ug/l		Lower Quantitation Limit
Manganese	4/13/2004	14.8	14.8	ug/l					
Manganese	7/9/2009	12.5			Not Detected	25	ug/l	U	Lower Reporting Limit
Manganese	7/30/2009	25			Not Detected	50	ug/l	U	Lower Reporting Limit
Manganese	8/21/2009	250			Not Detected	500	ug/l	U	Lower Reporting Limit
Manganese	9/9/2009	250			Not Detected	500	ug/l	U	Lower Reporting Limit
	Average	92	183	ug/l					

Characteristic Name	Activity Start Date	Result or 1/2 the Detection Limit	Result Value	Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Mercury	11/10/1999	0.100		ug/l	Not Detected	0.2	ug/l		Method Detection Level
Mercury	1/4/2000	0.100		ug/l	Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	2/17/2000	0.100			Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	8/23/2000	0.100		ug/l	Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	10/3/2000	0.100			Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	11/2/2000	0.100			Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	1/23/2001	0.100			Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	5/3/2001	0.100			Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	7/18/2001	0.100			Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	10/2/2001	0.100			Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	11/6/2001	0.100			Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	1/22/2002	0.100			Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	5/14/2002	0.100			Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	10/31/2002	0.100			Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	12/10/2002	0.100			Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	2/4/2003	0.100			Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	3/12/2003	0.100			Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	5/28/2003	0.100			Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	9/4/2003	0.100			Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	1/27/2004	0.100			Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	2/5/2004	0.100			Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	4/13/2004	0.100			Not Detected	0.2	ug/l		Lower Quantitation Limit
Mercury	7/9/2009	0.100			Not Detected	0.2	ug/l	U	Lower Reporting Limit
Mercury	7/9/2009	0.100			Not Detected	0.2	ug/l	U	Lower Reporting Limit
Mercury	7/30/2009	0.100			Not Detected	0.2	ug/l	U	Lower Reporting Limit
Mercury	7/30/2009	0.100			Not Detected	0.2	ug/l	U	Lower Reporting Limit
Mercury	8/21/2009	0.100			Not Detected	0.2	ug/l	U	Lower Reporting Limit
Mercury	8/21/2009	0.100			Not Detected	0.2	ug/l	U	Lower Reporting Limit
Mercury	9/9/2009	0.276	0.276	ug/l				J	
Mercury	9/9/2009	0.100			Not Detected	0.2	ug/l	U	Lower Reporting Limit
	Average	0.106	0.276	ug/l					

Characteristic Name	Activity Start Date	Result Value	Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Nickel	7/9/2009			Not Detected	25	ug/l	U	Lower Reporting Limit
Nickel	7/30/2009			Not Detected	50	ug/l	U	Lower Reporting Limit
Nickel	8/21/2009			Not Detected	500	ug/l	U	Lower Reporting Limit
Nickel	9/9/2009			Not Detected	500	ug/l	U	Lower Reporting Limit

Characteristic Name	Activity Start Date	Result Value	Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Potassium	9/2/1999	606	mg/l					
Potassium	11/10/1999	468	mg/l					
Potassium	1/4/2000	328	mg/l					
Potassium	2/17/2000	913	mg/l					
Potassium	6/20/2000	1250	mg/l					
Potassium	8/23/2000	1610	mg/l					
Potassium	10/3/2000	1860	mg/l					
Potassium	11/2/2000	927	mg/l					
Potassium	1/23/2001	265	mg/l					
Potassium	5/3/2001	561	mg/l					
Potassium	7/18/2001	1950	mg/l					
Potassium	10/2/2001	13.2	mg/l					
Potassium	11/6/2001	2980	mg/l					
Potassium	1/22/2002	311	mg/l					
Potassium	2/19/2002	74.5	mg/l					
Potassium	5/14/2002	701	mg/l					
Potassium	6/25/2002	2300	mg/l					
Potassium	10/31/2002	233	mg/l					
Potassium	12/10/2002	188	mg/l					
Potassium	2/4/2003	6.77	mg/l					
Potassium	3/12/2003	308	mg/l					
Potassium	5/28/2003	1970	mg/l					
Potassium	9/4/2003	3390	mg/l					
Potassium	9/30/2003	17100	mg/l					
Potassium	12/9/2003	452	mg/l					
Potassium	1/27/2004	65.7	mg/l					
Potassium	2/5/2004	341	mg/l					
Potassium	2/24/2004	99.8	mg/l					
Potassium	3/23/2004	91.3	mg/l					
Potassium	4/13/2004	87.1	mg/l					
Potassium	5/4/2004	1090	mg/l					

Characteristic Name	Activity Start Date	Result Value	Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Potassium	7/9/2009	230	mg/l					
Potassium	7/30/2009	545	mg/l					
Potassium	8/21/2009	2330	mg/l					
Potassium	9/9/2009	17000	mg/l					
	Average	1790	mg/l					

Characteristic Name	Activity Start Date	Result Value	Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Selenium	1/23/2001	20	ug/l					
Selenium	10/31/2002	14.3	ug/l					
Selenium	1/27/2004	2.7	ug/l					
Selenium	7/9/2009	27.6	ug/l					
Selenium	7/30/2009	45	ug/l					
	Average	21.9	ug/l					

Characteristic Name	Activity Start Date	Result or 1/2 the Detection Limit	Result Value	Result Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Silver	7/9/2009	1.3			Not Detected	2.5	ug/l	U	Lower Reporting Limit
Silver	7/30/2009	2.5			Not Detected	5	ug/l	U	Lower Reporting Limit
Silver	7/30/2009	2.5			Not Detected	5	ug/l	U	Lower Reporting Limit
Silver	8/21/2009	25.0			Not Detected	50	ug/l	U	Lower Reporting Limit
Silver	9/9/2009	25.0			Not Detected	50	ug/l	U	Lower Reporting Limit
Silver	11/10/1999	5.5		ug/l	Not Detected	11	ug/l		Method Detection Level
Silver	9/4/2003	3.5			Not Detected	7	ug/l		Lower Quantitation Limit
Silver	12/10/2002	1.0			Not Detected	2	ug/l		Lower Quantitation Limit
Silver	4/13/2004	2.0			Not Detected	4	ug/l		Lower Quantitation Limit
Silver	1/27/2004	1.0			Not Detected	2	ug/l		Lower Quantitation Limit
Silver	1/23/2001	7	7	ug/l					
Silver	10/31/2002	1.0			Not Detected	2	ug/l		Lower Quantitation Limit
Silver	1/22/2002	1.0			Not Detected	2	ug/l		Lower Quantitation Limit
Silver	1/4/2000	1.5		ug/l	Not Detected	3	ug/l		Lower Quantitation Limit
Silver	2/4/2003	1.0			Not Detected	2	ug/l		Lower Quantitation Limit
Silver	11/2/2000	1.0			Not Detected	2	ug/l		Lower Quantitation Limit
Silver	8/23/2000	1.5		ug/l	Not Detected	3	ug/l		Lower Quantitation Limit
Silver	10/3/2000	2.0			Not Detected	4	ug/l		Lower Quantitation Limit
Silver	11/6/2001	1.0			Not Detected	2	ug/l		Lower Quantitation Limit
Silver	7/18/2001	1.0			Not Detected	2	ug/l		Lower Quantitation Limit
Silver	3/12/2003	1.0			Not Detected	2	ug/l		Lower Quantitation Limit
Silver	10/2/2001	1.0			Not Detected	2	ug/l		Lower Quantitation Limit
Silver	5/3/2001	1.0			Not Detected	2	ug/l		Lower Quantitation Limit
Silver	5/14/2002	1.5			Not Detected	3	ug/l		Lower Quantitation Limit
Silver	5/28/2003	2.0			Not Detected	4	ug/l		Lower Quantitation Limit
Silver	2/5/2004	11.0			Not Detected	22	ug/l		Lower Quantitation Limit
Silver	2/17/2000	2.0			Not Detected	4	ug/l		Lower Quantitation Limit
	Average	4.0	7	ug/l					

Characteristic Name	Activity Start Date	Result Value	Result Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Sodium	7/9/2009	1620	mg/l					
Sodium	7/30/2009	4090	mg/l					
Sodium	8/21/2009	16400	mg/l					
Sodium	9/9/2009	78900	mg/l					
Sodium	9/2/1999	9090	mg/l					
Sodium	11/10/1999	7400	mg/l					
Sodium	9/4/2003	54700	mg/l					
Sodium	12/10/2002	1690	mg/l					
Sodium	5/4/2004	10800	mg/l					
Sodium	2/24/2004	893	mg/l					
Sodium	3/23/2004	852	mg/l					
Sodium	4/13/2004	802	mg/l					
Sodium	12/9/2003	4780	mg/l					
Sodium	1/27/2004	677	mg/l					
Sodium	1/23/2001	3590	mg/l					
Sodium	10/31/2002	3110	mg/l					
Sodium	1/22/2002	6670	mg/l					
Sodium	1/4/2000	4570	mg/l					
Sodium	2/4/2003	98.4	mg/l					
Sodium	9/30/2003	77300	mg/l					
Sodium	11/2/2000	13600	mg/l					
Sodium	6/25/2002	71500	mg/l					
Sodium	8/23/2000	25500	mg/l					
Sodium	10/3/2000	28700	mg/l					
Sodium	11/6/2001	47700	mg/l					
Sodium	7/18/2001	31900	mg/l					
Sodium	2/19/2002	1060	mg/l					
Sodium	3/12/2003	4390	mg/l					
Sodium	10/2/2001	215	mg/l					
Sodium	5/3/2001	8170	mg/l					
Sodium	5/14/2002	9750	mg/l					

Characteristic Name	Activity Start Date	Result Value	Result Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Sodium	6/20/2000	18300	mg/l					
Sodium	5/28/2003	29700	mg/l					
Sodium	2/5/2004	3400	mg/l					
Sodium	2/17/2000	14600	mg/l					
	Average	17043	mg/l					

Characteristic Name	Activity Start Date	Result or 1/2 the Detection Limit	Result Value	Unit	Result Detection Condition	Result Detection or Quantitation Limit Measure	Unit	Result Qualifier	Result Detection or Quantitation Limit Type
Zinc	11/10/1999	95		ug/l	Not Detected	190	ug/l		Method Detection Level
Zinc	1/4/2000	30		ug/l	Not Detected	60	ug/l		Lower Quantitation Limit
Zinc	2/17/2000	15			Not Detected	30	ug/l		Lower Quantitation Limit
Zinc	8/23/2000	35		ug/l	Not Detected	70	ug/l		Lower Quantitation Limit
Zinc	10/3/2000	40			Not Detected	80	ug/l		Lower Quantitation Limit
Zinc	11/2/2000	15			Not Detected	30	ug/l		Lower Quantitation Limit
Zinc	1/23/2001	80	80	ug/l					
Zinc	5/3/2001	28			Not Detected	55	ug/l		Lower Quantitation Limit
Zinc	7/18/2001	15			Not Detected	30	ug/l		Lower Quantitation Limit
Zinc	10/2/2001	30	30	ug/l					
Zinc	11/6/2001	50			Not Detected	100	ug/l		Lower Quantitation Limit
Zinc	1/22/2002	230	230	ug/l					
Zinc	5/14/2002	15			Not Detected	30	ug/l		Lower Quantitation Limit
Zinc	10/31/2002	15			Not Detected	30	ug/l		Lower Quantitation Limit
Zinc	12/10/2002	30			Not Detected	60	ug/l		Lower Quantitation Limit
Zinc	2/4/2003	30			Not Detected	60	ug/l		Lower Quantitation Limit
Zinc	3/12/2003	15			Not Detected	30	ug/l		Lower Quantitation Limit
Zinc	5/28/2003	63			Not Detected	125	ug/l		Lower Quantitation Limit
Zinc	9/4/2003	23			Not Detected	45	ug/l		Lower Quantitation Limit
Zinc	1/27/2004	15			Not Detected	30	ug/l		Lower Quantitation Limit
Zinc	2/5/2004	165			Not Detected	330	ug/l		Lower Quantitation Limit
Zinc	4/13/2004	30			Not Detected	60	ug/l		Lower Quantitation Limit
Zinc	7/9/2009	25			Not Detected	50	ug/l	U	Lower Reporting Limit
Zinc	7/30/2009	50			Not Detected	100	ug/l	U	Lower Reporting Limit
Zinc	8/21/2009	500			Not Detected	1000	ug/l	U	Lower Reporting Limit
Zinc	9/9/2009	500			Not Detected	1000	ug/l	U	Lower Reporting Limit
	Average	82	113	ug/l					

Appendix D
Source Water Sampling Results

CHEMTECH-FORD
LABORATORIES

6/19/2012

Work Order: 1205242

Great Salt Lake Minerals Corp.

Attn: Rod Smith

765 North 10500 West

Ogden, UT 84404

Client Service Contact: Linda Daniels 801.262.7299

The analyses presented on this report were performed in accordance with the National Environmental Laboratory Accreditation Program (NELAP) unless noted in the comments, flags or case narrative. If the report is to be used for regulatory compliance, it should be presented in its entirety, and not be altered.

Approved By:

Dave Gayer, Laboratory Director

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1205242-01

Name:	**Great Salt Lake Minerals Corp.**	***Sample Date:***	**6/15/2012 11:40 AM**
Sample Site:	**Boiler Supply**	***Receipt Date:***	**6/15/2012 1:25 PM**
Comments:	**Breakroom Sink**	***Sampler:***	**Rod Smith**
Sample Matrix:	**Water**	***Project:***	

Parameter	Sample Result	Minimum Reporting Limit	Units	Analysis Date/Time	Analyst Initials	Analytical Method	CAS No.	Flag
Metals								
Mercury, Total	1.2	0.5	ng/L	6/18/2012 12:00	PNM	EPA 1631	7439-97-6	

6100 South Stratler
Murray, UT 84107
801-262-7299 Office

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1205242-02

Name:	**Great Salt Lake Minerals Corp.**	***Sample Date:***	**6/15/2012 11:40 AM**
Sample Site:	**Transfer Blank**	***Receipt Date:***	**6/15/2012 1:25 PM**
Comments:	**Breakroom Sink**	***Sampler:***	**Rod Smith**
Sample Matrix:	**Water**	***Project:***	

Parameter	Sample Result	Minimum Reporting Limit	Units	Analysis Date/Time	Analyst Initials	Analytical Method	CAS No.	Flag
Metals								
Mercury, Total	0.5	0.5	ng/L	6/18/2012 12:00	PNM	EPA 1631	7439-97-6	

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Murray, UT 84107
801-262-7299 Office

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Abbreviations

ND = Not detected at the corresponding Minimum Reporting Limit.
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1 ug/L = one microgram per liter or 1 ug/Kg = one microgram per kilogram = 1 part per billion.
1 ng/L = one nanogram per liter or 1 ng/Kg = one nanogram per kilogram = 1 part per trillion.

Flag Descriptions

6100 South Stratler
Murray, UT 84107
801-262-7299 Office

CHEMTECH-FORD
LABORATORIES

6/19/2012

Work Order: 1205227

Great Salt Lake Minerals Corp.

Attn: Rod Smith

765 North 10500 West

Ogden, UT 84404

Client Service Contact: Linda Daniels 801.262.7299

The analyses presented on this report were performed in accordance with the National Environmental Laboratory Accreditation Program (NELAP) unless noted in the comments, flags or case narrative. If the report is to be used for regulatory compliance, it should be presented in its entirety, and not be altered.

Approved By: Dave Gayer, Laboratory Director

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1206227-01

Name:	Great Salt Lake Minerals Corp.	**Sample Date:**	6/15/2012 7:45 AM
Sample Site:	Boiler Supply	**Receipt Date:**	6/15/2012 10:07 AM
Comments:	Breakroom Sink	**Sampler:**	Rod Smith
Sample Matrix:	Water	**Project:**	

Parameter	Sample Result	Minimum Reporting Limit	Units	Analysis Date/Time	Analyst Initials	Analytical Method	CAS No.	Flag
Metals								
Arsenic, Total	0.0011	0.0005	mg/L	6/18/2012 15:40	MJB	EPA 200.8	7440-38-2	
Chromium, Total	0.0026	0.0005	mg/L	6/18/2012 15:40	MJB	EPA 200.8	7440-47-3	
Copper, Total	0.0086	0.0010	mg/L	6/18/2012 15:40	MJB	EPA 200.8	7440-50-8	
Lead, Total	ND	0.0005	mg/L	6/18/2012 15:40	MJB	EPA 200.8	7439-92-1	
Mercury, Total	ND	0.0002	mg/L	6/19/2012 12:00	AKL	EPA 245.1	7439-97-6	
Selenium, Total	0.0025	0.0005	mg/L	6/18/2012 15:40	MJB	EPA 200.8	7782-49-2	
Zinc, Total	0.03	0.01	mg/L	6/19/2012 13:36	PNM	EPA 200.7	7440-66-6	

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Murray, UT 84107
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CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

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1 ng/L = one nanogram per liter or 1 ng/Kg = one nanogram per kilogram = 1 part per trillion.

Flag Descriptions

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Murray, UT 84107
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CHEMTECH-FORD
LABORATORIES

7/6/2012

Work Order: 1205775

Great Salt Lake Minerals Corp.
Attn: Rod Smith
765 North 10500 West
Ogden, UT 84404

Client Service Contact: Linda Daniels 801.262.7299

The analyses presented on this report were performed in accordance with the National Environmental Laboratory Accreditation Program (NELAP) unless noted in the comments, flags or case narrative. If the report is to be used for regulatory compliance, it should be presented in its entirety, and not be altered.

Approved By: Dave Gayer, Laboratory Director

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1205775-01

Name:	**Great Salt Lake Minerals Corp.**	***Sample Date:***	**7/2/2012 10:45 AM**
Sample Site:	**Power Plant Sink**	***Receipt Date:***	**7/2/2012 1:20 PM**
Comments:		***Sampler:***	**Rod Smith**
Sample Matrix:	**Water**	***Project:***	**WW**

Parameter	Sample Result	Minimum Reporting Limit	Units	Analysis Date/Time	Analyst Initials	Analytical Method	CAS No.	Flag
Metals								
Aluminum, Total	ND	0.05	mg/L	7/3/2012 14:12	MJB	EPA 200.7	7429-90-5	
Arsenic, Total	0.0009	0.0005	mg/L	7/3/2012 17:31	MJB	EPA 200.8	7440-38-2	
Boron, Total	ND	0.05	mg/L	7/3/2012 14:12	MJB	EPA 200.7	7440-42-8	
Calcium, Total	69.5	0.2	mg/L	7/3/2012 14:12	MJB	EPA 200.7	7440-43-9	
Cadmium, Total	ND	0.0005	mg/L	7/3/2012 17:31	MJB	EPA 200.8	7440-43-9	
Chromium, Total	0.0037	0.0005	mg/L	7/3/2012 17:31	MJB	EPA 200.8	7440-47-3	
Copper, Total	0.0155	0.0010	mg/L	7/3/2012 17:31	MJB	EPA 200.8	7440-50-8	
Iron, Total	0.10	0.02	mg/L	7/3/2012 14:12	MJB	EPA 200.7	7439-89-6	
Lead, Total	0.0041	0.0005	mg/L	7/3/2012 17:31	MJB	EPA 200.8	7439-92-1	
Mercury, Total	ND	0.0002	mg/L	7/6/2012 14:30	AKL	EPA 245.1	7439-97-6	
Magnesium, Total	17.7	0.2	mg/L	7/3/2012 14:12	MJB	EPA 200.7	7439-95-4	
Manganese, Total	0.0083	0.0005	mg/L	7/3/2012 17:31	MJB	EPA 200.8	7439-96-5	
Selenium, Total	0.0018	0.0005	mg/L	7/3/2012 17:31	MJB	EPA 200.8	7782-49-2	
Silver, Total	ND	0.0005	mg/L	7/3/2012 17:31	MJB	EPA 200.8	7440-22-4	
Sodium, Total	30.9	0.5	mg/L	7/3/2012 14:12	MJB	EPA 200.7	7440-23-5	
Zinc, Total	0.37	0.01	mg/L	7/3/2012 14:12	MJB	EPA 200.7	7440-66-6	

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801-262-7299 Office

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1205775-02

Name:	**Great Salt Lake Minerals Corp.**	***Sample Date:***	7/2/2012 11:00 AM
Sample Site:	Mag Plant Sink	***Receipt Date:***	7/2/2012 1:20 PM
Comments:		***Sampler:***	Rod Smith
Sample Matrix:	Water	***Project:***	WW

Parameter	Sample Result	Minimum Reporting Limit	Units	Analysis Date/Time	Analyst Initials	Analytical Method	CAS No.	Flag
Metals								
Aluminum, Total	ND	0.05	mg/L	7/3/2012 14:24	MJB	EPA 200.7	7429-90-5	
Arsenic, Total	0.0010	0.0005	mg/L	7/3/2012 17:34	MJB	EPA 200.8	7440-38-2	
Boron, Total	ND	0.05	mg/L	7/3/2012 14:24	MJB	EPA 200.7	7440-42-8	
Calcium, Total	63.0	0.2	mg/L	7/3/2012 14:24	MJB	EPA 200.7	7440-43-9	
Cadmium, Total	ND	0.0005	mg/L	7/3/2012 17:34	MJB	EPA 200.8	7440-43-9	
Chromium, Total	0.0044	0.0005	mg/L	7/3/2012 17:34	MJB	EPA 200.8	7440-47-3	
Copper, Total	0.0997	0.0010	mg/L	7/3/2012 17:34	MJB	EPA 200.8	7440-50-8	
Iron, Total	ND	0.02	mg/L	7/3/2012 14:24	MJB	EPA 200.7	7439-89-6	
Lead, Total	ND	0.0005	mg/L	7/3/2012 17:34	MJB	EPA 200.8	7439-92-1	
Mercury, Total	ND	0.0002	mg/L	7/6/2012 14:30	AKL	EPA 245.1	7439-97-6	
Magnesium, Total	16.0	0.2	mg/L	7/3/2012 14:24	MJB	EPA 200.7	7439-95-4	
Manganese, Total	0.0039	0.0005	mg/L	7/3/2012 17:34	MJB	EPA 200.8	7439-96-5	
Selenium, Total	0.0021	0.0005	mg/L	7/3/2012 17:34	MJB	EPA 200.8	7782-49-2	
Silver, Total	ND	0.0005	mg/L	7/3/2012 17:34	MJB	EPA 200.8	7440-22-4	
Sodium, Total	27.8	0.5	mg/L	7/3/2012 14:24	MJB	EPA 200.7	7440-23-5	
Zinc, Total	ND	0.01	mg/L	7/3/2012 14:24	MJB	EPA 200.7	7440-66-6	

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CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Abbreviations

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1 ng/L = one nanogram per liter or 1 ng/Kg = one nanogram per kilogram = 1 part per trillion.

Flag Descriptions

Appendix E
Weber Basin Water Conservancy District
Consumer Confidence Report, February 2012

WEBER BASIN WATER CONSERVANCY DISTRICT
2837 East Highway 193 • Layton, Utah 84040 • Phone (801) 771-1677 • (SLC) 359-4494 • Fax (801) 544-0103

Consumer 2011 Confidence REPORT

Thirteenth Edition February 2012

This report is intended to be a snapshot of drinking water quality delivered during 2011. Included in this report are details about where your water comes from, what it contains, what we are doing to protect your water sources and how it compares to EPA and State of Utah standards. Weber Basin Water Conservancy District is committed to providing you with safe, high quality drinking water that meets or exceeds all state and federal regulations. Weber Basin Water Conservancy District is committed to providing you with reliable and accurate information because informed customers are our best allies.

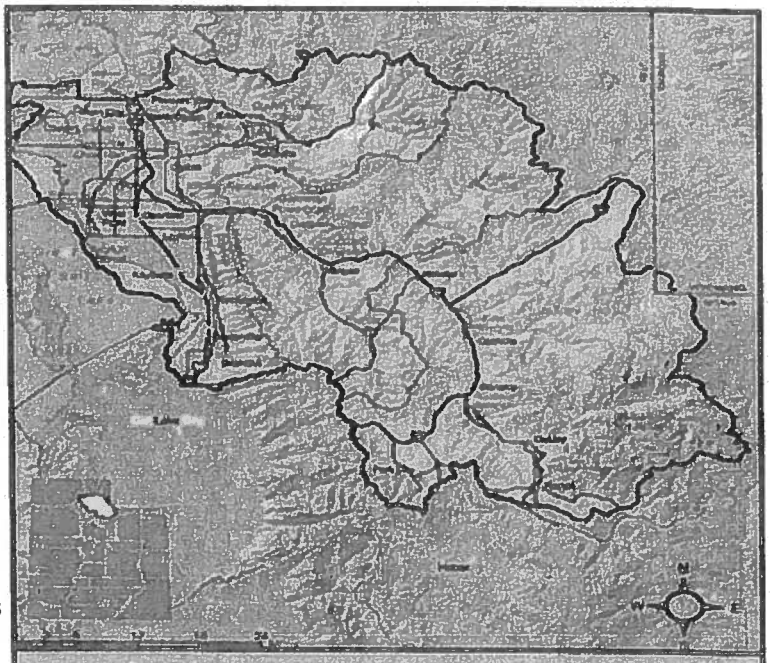
WHERE DOES OUR WATER COME FROM?

Surface water and groundwater

The Weber Basin Water Conservancy District's (District) drinking water supply comes from the Weber River and from several creeks along the Wasatch Front. Groundwater, primarily from the Delta Aquifer, is used to supplement surface water sources.

How drinking water gets to you?

Although a portion of drinking water originates as groundwater and is extracted from deep wells, the majority of the drinking water supply begins as surface water from the headwaters of the Weber River. Water is directed into a large canal by a diversion dam. The water then flows through this canal whereupon it enters two large aqueducts. Several creeks along the Wasatch Front can also feed into this aqueduct system. From there, water is transported to each of the District's water treatment plants. After complete treatment, water is delivered to the cities or water improvement districts for final distribution to individual users.



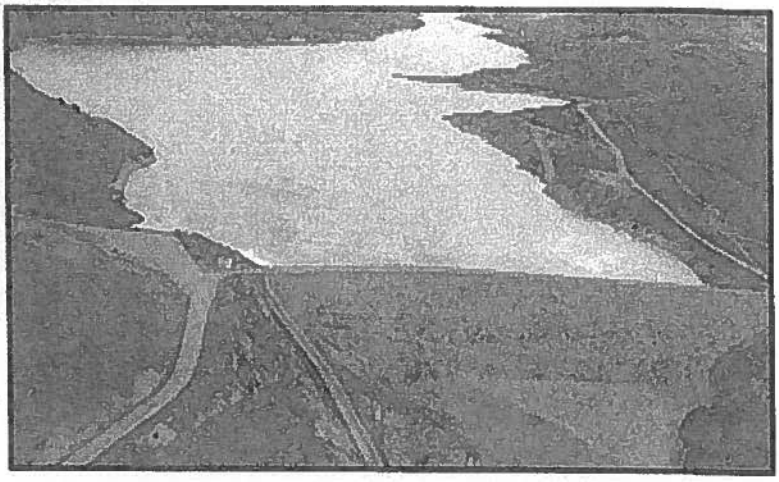
Atención! Muy Importante!
Este reporte de Calidad del Agua potable contiene valiosa información sobre la calidad del agua que usted consume. Por favor, que alguien de su confianza se lo traduzca.

LARGE SCALE WATER STORAGE

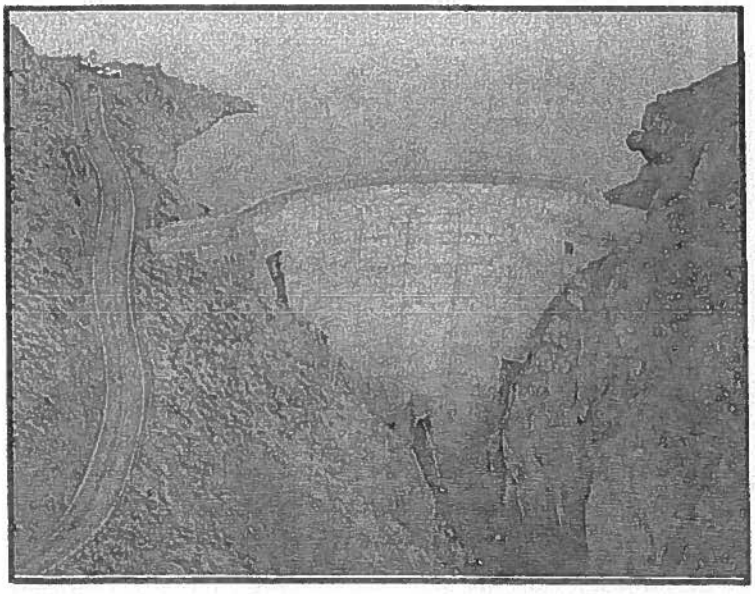
Why water storage is necessary?

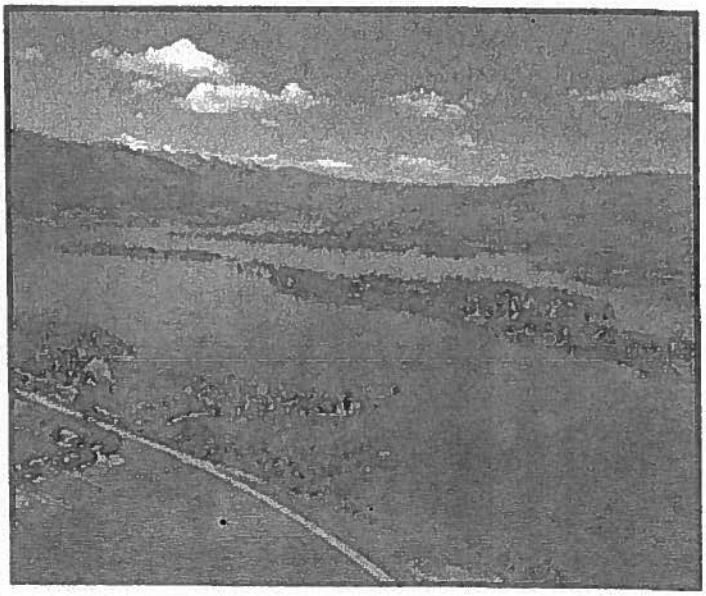
Storage reservoirs on the Weber and Ogden river systems play a critical role in ensuring adequate and constant water supply to all water users throughout the year. Dams have been built to store water during the annual spring runoff of winter snow. Without this storage, those of us living downstream along the rivers and streams would experience extreme high flows during the runoff periods and extreme low flows in the late summer months. There would be much more flooding due to unregulated flows in the river during the spring, and there would be insufficient water to provide for drinking and irrigation needs during the late summer and fall.

Reservoirs have allowed growth to continue within the District's service area, which otherwise could not have occurred due to the lack of sufficient and consistent available water.



Reservoirs also play a vital role in reducing the effects of drought. During the past decade the effects of multi-year drought periods have been felt throughout the country. With the available water storage projects these effects have been greatly minimized, whereas without these reservoirs it could have been devastating. Storage reservoirs also have other useful functions in generating hydro-electric power, economic benefits through tourism, habitat for wildlife, and many forms or recreational activities. They have allowed for many communities to thrive and prosper, while continuing to ensure adequate water for agricultural irrigation, industry, commercial uses and all residential uses.

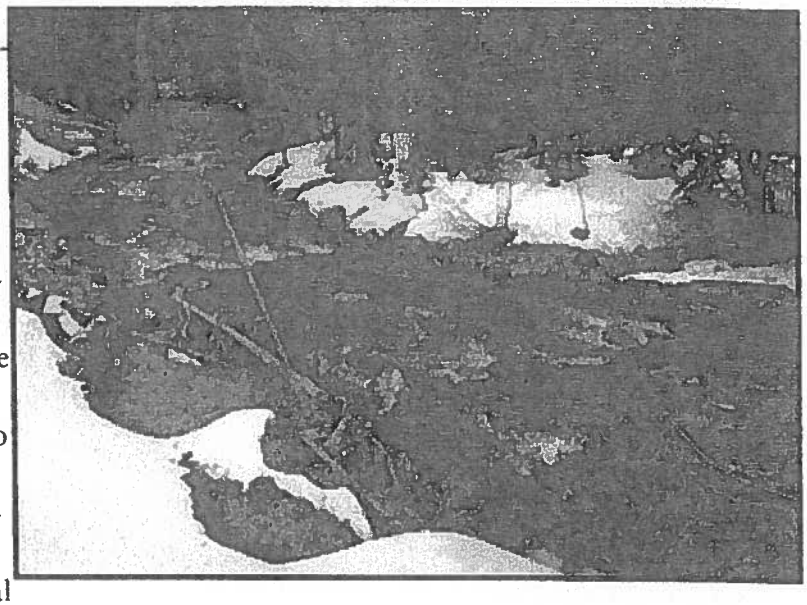




SOURCE WATER PROTECTION

Protection Plan

The District has completed a Drinking Water Source Protection Plan for all of its surface public drinking water sources. The Drinking Water Source Protection program includes identification of the area from which the drinking water source receives water, an assessment of the potential contamination threats to the source within this area, and management programs to help control both existing and future potential sources of contamination. Copies of this plan may be obtained from the District office for a nominal fee. The State Division of Drinking Water also has a copy on file.



Each significant potential source of contamination has been analyzed and assigned a qualitative susceptibility rating according to its potential to impact the water supply. This rating includes such factors as the likelihood of a release of potential contaminants, the ability of the potential contaminant to travel to the river or stream, and the ability of the intake to bypass contamination. Significant potential sources of contamination located within the area tributary to the District's surface water sources include from greatest potential risk to surface water to least potential risk to surface water: transportation of hazardous materials along roadways and railroads; industrial manufacturers and related companies and large commercial production and maintenance operations; rural residential areas; agricultural activities; mineral producers; sewage treatment facilities; camping areas and other recreational activities; and underground fuel storage. Based upon this qualitative susceptibility rating, the Weber River Watershed was ranked "high" due to the presence of many potential sources of contamination. The Wasatch Front creeks were ranked "moderate to low" due to the presence of a few to no potential sources of contamination.

Wellhead Protection Plan

A Wellhead Protection Plan has been written and implemented for all of the District's groundwater sources. These plans define the protection zones for each of the wells, list the potential contamination sources within the zones, and identify what safeguards are in place to protect the aquifer (natural underground water storage formations made of silts, sands, gravels, and cobbles) from the contamination sources. The wellhead protection plans also consist of steps to further monitor the contamination sources and educate those businesses or industries that may become sources. Copies of these plans may be obtained from the office for a nominal fee. The State Division of Drinking Water also has a copy of each protection plan on file

You Can Help Prevent Water Pollution

The water you drink comes from reservoirs and pumped from deep wells. Residents can help to prevent water pollution by employing best management practices when storing, using, and discarding fertilizers, pesticides, and other household hazardous wastes. The following best management practices should be employed when utilizing fertilizers and pesticides to reduce the risk of surface and groundwater contamination:

- Only purchase the amount and kind of fertilizer or pesticide needed and store in locked, dry cabinets.
- Keep fertilizers and pesticides on separate shelves.
- Do not allow fertilizer and pesticide spills to be washed off into the storm drain system.
- Pesticides and fertilizers should always be applied in accordance with manufacturer's directions.
- Dry pesticide and fertilizer spills should be swept up and later applied at the rate specified on an area where needed.
- Liquid pesticide and fertilizer spills should be soaked up using absorbent material (such as soil, saw dust, and cat litter) and then taken to a household hazardous waste collection site.
- Never apply fertilizers near wells.
- Do not spray or apply pesticides near walks or driveways to prevent pesticides from washing off into the storm drain system.

Household hazardous wastes (HHWs) are discarded materials that are ignitable, corrosive, reactive, toxic or otherwise listed as hazardous by the EPA. Paint, used motor oil, gasoline, antifreeze, or lawn and garden chemicals that you dispose of in the gutter or your backyard can migrate to the rivers or filter down through the ground and pollute aquifers. The following best management practices should be employed when handling HHWs:

- Completely use the product before disposing of the container.
- Return unused portions to community household hazardous waste collection programs.
- Do not flush HHWs down the toilet, pour HHWs down the sink, pour HHWs down a storm drain, or pour HHWs on the ground.

Please don't spoil the water supply for yourself and everyone else! Dispose of paint, used motor oil, and other hazardous chemicals in a proper and safe manner. You can call the Division of Environmental Health at 801-944-6697 for the nearest location for hazardous waste disposal.

If you would like additional information on best management practices, please visit the Utah Division of Drinking Water website at http://www.drinkingwater.utah.gov/source_protection_intro.htm for links to Fact Sheets describing ways to minimize the impact of potential contamination sources on our water resources.

POSSIBLE CONTAMINANTS IN THE WATER

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

The sources of our drinking water include rivers, streams, reservoirs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Below are some of these contaminants that may be present in source water.

Microbial contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, can be naturally-occurring or result from urban storm water runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming.

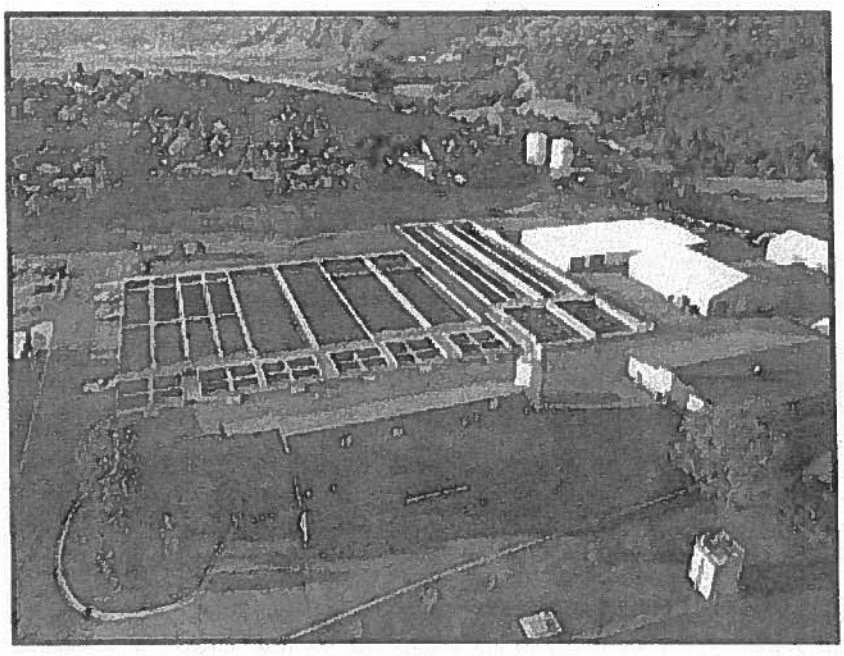
Pesticides and herbicides may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants can be naturally-occurring or be the result of oil and gas production and mining activities.

CONTAMINANT REMOVAL FROM OUR WATER

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.



Raw water typically contains varying amounts of dissolved constituents and suspended particles. Complete water treatment is simply the process of trying to remove these dissolved constituents and suspended particles.

The District operates three water treatment plants. The basic stages of water treatment employed at each of these plants are coagulation and flocculation, sedimentation, filtration and disinfection.

Coagulation and flocculation is the first stage in water treatment. The goal of this stage is to bind up the suspended particles included in the raw water by adding a coagulant to the raw water as it first enters the water treatment plant. Floc, which is a tuft-like aggregate, is produced from the mixing of the coagulant in the raw water. This process is called flocculation. Over time, as more suspended matter is bound, the smaller aggregates of floc become larger particles of floc.

Sedimentation is the second stage of water treatment. The objective of this stage is to remove the floc. This is accomplished as the floc settles out of the water in long sedimentation basins. The cleaner water is drained off the surface of the sedimentation basin and sent to filtration.

Filtration is the third stage of water treatment. The purpose of this stage is to remove the remaining suspended particles and dissolved constituents. This is accomplished by passing the water through a filter composed of different layers of sand and gravel.

Disinfection is the final stage of water treatment. A small amount of chlorine, or other disinfecting chemical, is added. This is used to kill any remaining germs and to keep the water safe as it travels to the public.

SPECIAL PRECAUTIONS TO CONSIDER

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplant, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infections by Cryptosporidium and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

WATER QUALITY INSIDE YOUR HOME

Weber Basin delivers water that is cleaner than required by state and federal law. However,once the water passes from our system and through your meter, you become a partner with us inmaking sure it stays that way. Here are some things to consider:

Water Heaters

Check the temperature setting for your water heater. Water that is too hot can create a burn hazard, while water that is too cool can create a perfect environment for bacteria to grow. You may also want to consider installing a pressure regulator to prevent any sudden surges to your water heater. These can be found at any general plumbing supply store, or you can have a plumber install one for you.

Filters and Purifiers

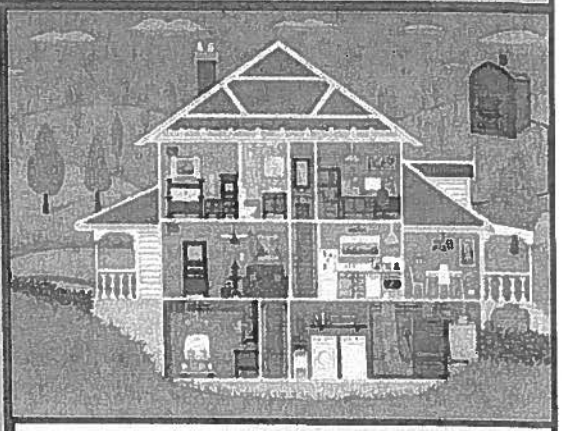
All types of filters and purifiers (point of use devices) need to be properly maintained and monitored. Neglected devices may not work as intended, can become a haven for microbial growth, or shed filter material into your home's tap water. Even the filter in the door of your refrigerator needs to be properly maintained to protect your family.

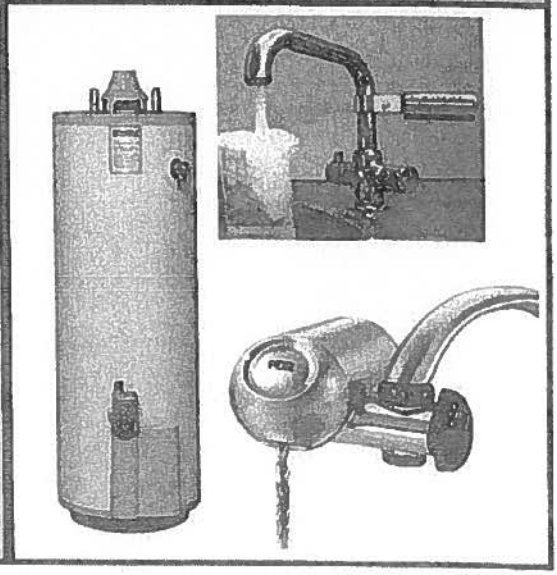
Water Softeners

Since the hardness of your water can range anywhere from 1 to 12 grains per gallon, it is important to monitor the settings on your water softener regularly to make sure that you are treating your water properly. Over treating your water is wasted money, while under treating is not effective.

Unused Rooms

If you have a kitchen or bathroom that rarely gets used, you should make a point of running water through the faucets on a frequent basis. Stagnant pipes and fixtures are susceptible to microbial growth. Flushing unused water lines regularly will help prevent this.





WATER QUALITY INFORMATION

The water treated and provided by Weber Basin Water Conservancy District meets and exceeds all state and federal regulations for water quality.

The tables on the following pages list all of the regulated and unregulated drinking water contaminants that we detected during this year. Unregulated contaminant monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.

Some of our data, though representative, are more than one year old. Because the concentrations of certain contaminants do not change frequently, the state allows less frequent monitoring. **Note that the presence of contaminants in the water does not necessarily indicate that the water poses a health risk.**

The detected contaminants tables have been divided into three different groups representing the District's three culinary distribution systems. These systems are **Weber Basin NORTH** (covers the area north of Ogden City), **Weber Basin CENTRAL** (the area from Ogden City south to Farmington), and **Weber Basin SOUTH** (the area from Centerville to North Salt Lake).

Important Drinking Water Definitions:

Detected Contaminant - Any contaminant detected at or above its minimum detection limit (MDL).
Minimum Detection Limit - The lowest level at which a particular contaminant is detected with a specified degree of certainty.
MCL - Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
MCLG - Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
NA - Not applicable - there is no Federal or State MCL and/or MCLG.
ND - Not detected.
NTU - Nephelometric Turbidity Unit – a measure of the cloudiness of the water.
ppm - parts per million, or milligrams per liter (mg/l).
ppb - parts per billion, or micrograms per liter (µg/l).
pCi/L - picocuries per liter (a measure of radioactivity).

Results of cryptosporidium monitoring

Cryptosporidium and giardia are microbial pathogens found in surface water throughout the U.S. Although filtration removes cryptosporidium and giardia, the most commonly-used filtration methods cannot guarantee 100 percent removal. Monitoring conducted by the District indicates the presence of cryptosporidium and giardia in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Due to these results, the District does use UV light in water treatment which inhibits these organisms from reproducing and causing sickness. Ingestion of cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

Results of radon monitoring

Radon is a radioactive gas that you can't see, taste, or smell. If is found throughout the U.S. At this time, radon monitoring is not required by the EPA; however, the EPA is considering making radon monitoring a requirement. The proposed MCL for radon is 4,000 pCi/L for systems which have a public education program for radon. For additional information, call your state radon program or call EPA's Radon Hotline (800-SOS-RADON)

Get Involved

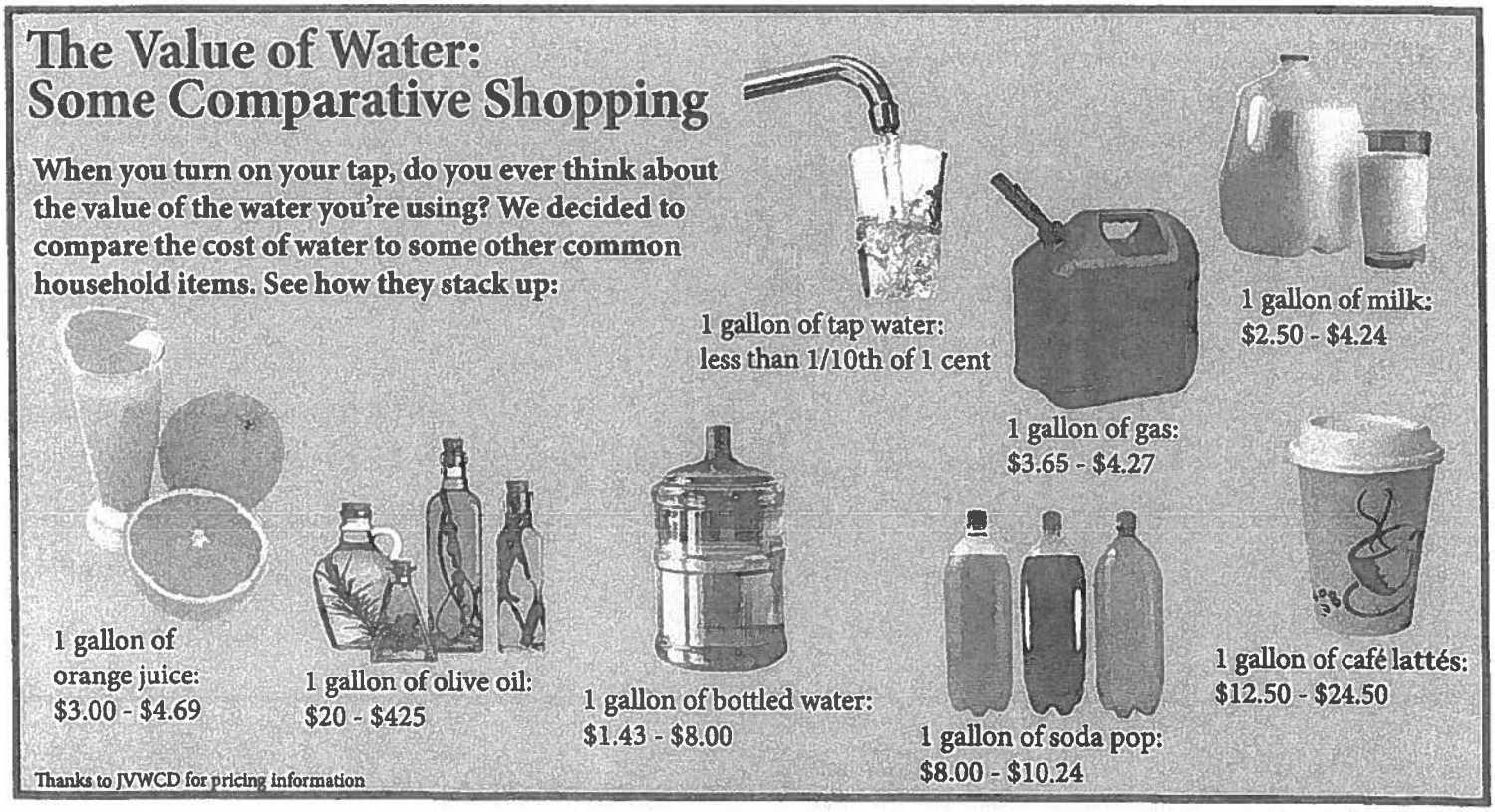
The District has regularly scheduled Board of Trustee meetings. These meetings are typically held at the District headquarters in Layton, Utah. If you would like to attend, please call for information about the meeting schedule and location. The District is open each standard working day and welcomes public input. You may call us at (801)-771-1677, write to us at Weber Basin Water Conservancy District, 2837 East Highway 193, Layton, Utah, 84040, or visit our web site at:
http://www.weberbasin.com.

Contact Person

If you have any questions concerning the content of this report please contact Brad Nelson at 801-771-1677 or speak to one of our receptionists

Water Web Sites:

www.weberbasin.com
www.drinkingwater.utah.gov
www.epa.gov/safewater



REGULATED INORGANIC CONTAMINANTS

Weber Basin NORTH - This data is derived from samples collected from 2005 through 2011.

Contaminants (units)	Average	Range Low	Range High	MCL	MCLG	Typical Source
Arsenic (ppb)	0.6	ND	1.2	10	NA	Erosion of natural deposits; runoff from orchards
Barium (ppm)	0.07	0.05	0.097	2	2	Erosion of natural deposits; discharge of drilling wastes
Total Chromium (ppm)	0.0004	ND	0.001	0.2	0.1	
Fluoride [3]* (ppm)	0.1	0.1	0.2	4	4	Erosion of natural deposits
Nitrate (ppm)	1.0	0.3	1.9	10	10	Runoff from fertilizer use; erosion of natural deposits
Selenium (ppb)	0.7	0	1.2	50	50	Erosion of natural deposits; discharge from mines
Sodium (ppm)	13.4	12.5	14.3	NA[1]	NA	Erosion of natural deposits
Sulfate (ppm)	9.2	5	12	1,000[2]	NA	Erosion of natural deposits
Total Dissolved Solids (ppm)	209	188	249	2,000[2]	NA	Erosion of natural deposits

Weber Basin CENTRAL - This data is derived from samples collected from 2005 through 2011.

Contaminants (units)	Average	Range Low	Range High	MCL	MCLG	Typical Source
Antimony (ppb)	0.6	ND	0.6	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic (ppb)	0.6	ND	1.2	10	NA	Erosion of natural deposits; runoff from orchards
Barium (ppm)	0.15	0.08	0.26	2	2	Erosion of natural deposits; discharge of drilling wastes
Fluoride[4]* (ppm)	0.71	0.5	1.1	4	4	Erosion of natural deposits
Nitrate (ppm)	0.5	0.1	1.6	10	10	Runoff from fertilizer use; erosion of natural deposits
Selenium (ppb)	1.1	0.6	2.1	50	50	Erosion of natural deposits; discharge from mines
Sodium (ppm)	29.1	19.6	38.6	NA[1]	NA	Erosion of natural deposits
Sulfate (ppm)	38.7	25	48	1,000[2]	NA	Erosion of natural deposits
Thallium (ppb)	0.6	ND	1.0	2	0.5	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
Total Dissolved Solids (ppm)	372	315	416	2,000[2]	NA	Erosion of natural deposits

Weber Basin SOUTH - This data is derived from samples collected from 2005 through 2011.

Contaminants (units)	Average	Range Low	Range High	MCL	MCLG	Typical Source
Arsenic (ppb)	0.5	0	1.1	10	NA	Erosion of natural deposits; runoff from orchards
Barium (ppm)	0.08	0.06	0.1	2	2	Erosion of natural deposits; discharge of drilling wastes
Total Chromium (ppm)	0.003	ND	0.01	0.1	0.1	
Fluoride[4] (ppm)	0.7	0.2	0.9	4	4	Erosion of natural deposits
Nitrate (ppm)	1.8	0.1	3.4	10	10	Runoff from fertilizer use; erosion of natural deposits
Selenium (ppb)	1.3	0.001	3.3	50	50	Erosion of natural deposits; discharge from mines
Sodium (ppm)	49.3	33.4	80.2	NA[1]	NA	Erosion of natural deposits
Sulfate (ppm)	34.8	28	39.0	1,000[2]	NA	Erosion of natural deposits
Thallium (ppb)	0.2	ND	0.7	2	0.5	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
Total Dissolved Solids (ppm)	361	290	432	2,000[2]	NA	Erosion of natural deposits

1) The State of Utah requires monitoring for sodium even though no MCL has been established.
2) The MCL for sulfate and total dissolved solids is established by the State of Utah.
3) This value represents naturally occurring flouride consentrations.
4) Fluoride levels in Davis County have been adjusted to an optimal level of 0.7 ppm.

*** The District does not add fluoride to water deliverd to Weber County**

REGULATED ORGANIC CONTAMINANTS - Disinfection Byproducts

Weber Basin CENTRAL - This data is derived from samples collected in 2011.

Contaminants (units)	RRA[1]	Range[2] Low	High	MCL	MCLG	Typical Source
Total Trihalomethanes (ppb)	27.6	21.1	36.5	80	NA	By-product of drinking water chlorination
Haloacetic Acids (ppb)	25.2	16.5	27.7	60	NA	By-product of drinking water chlorination

Weber Basin SOUTH - This data is derived from samples collected in 2011.

Contaminants (units)	RRA[1]	Range[2] Low	High	MCL	MCLG	Typical Source
Total Trihalomethanes (ppb)	24.1	15.6	38.5	80	NA	By-product of drinking water chlorination
Haloacetic Acids (ppb)	23.6	13.1	34.2	60	NA	By-product of drinking water chlorination

1) This value represents the highest running annual average for 2011.
2) Values in the "Range" columns are actual concentrations measured in ppb and reflect the range of detected levels.

REGULATED RADIOLOGIC CHEMICALS

Weber Basin CENTRAL - This data is derived from samples collected from 2005 through 2011.

Contaminants (units)	Average	Range Low	High	MCL	MCLG	Typical Source
Gross Alpha Particles (pCi/L)	2.7	0.8	3.6	15	0	Erosion of natural deposits
Combined Radium (pCi/L)	0.7	0.6	1.0	5	0	Erosion of natural deposits

Weber Basin SOUTH - This data is derived from samples collected from 2005 through 2011.

Contaminants (units)	Average	Range Low	High	MCL	MCLG	Typical Source
Gross Alpha Particles (pCi/L)	5.8	3.2	8.3	15	0	Erosion of natural deposits
Combined Radium (pCi/L)	1.0	0.2	2.4	5	0	Erosion of natural deposits

REGULATED MICROBIOLOGICAL CONTAMINANTS

Weber Basin CENTRAL

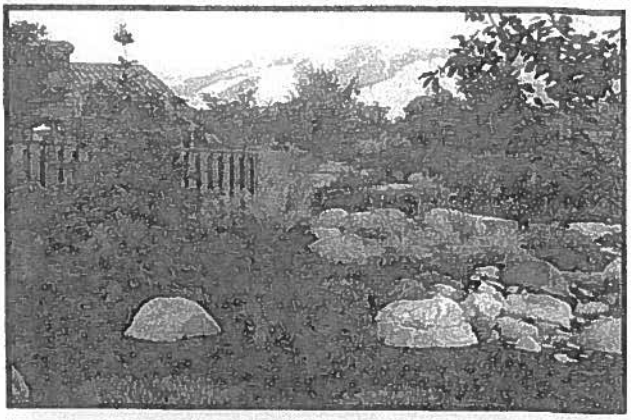
Contaminant	Percentage	Average	High[3]	MCL
Turbidity (Weber South WTP)	100%[2]	0.03 NTU	0.11 NTU	0.3 NTU
Turbidity (Davis North WTP)	100 %[2]	0.04 NTU	0.12 NTU	0.3 NTU

Weber Basin SOUTH

Contaminant	Percentage	Average	High[3]	MCL
Turbidity (Davis South WTP)	100 %[2]	0.05 NTU	0.09 NTU	0.3 NTU

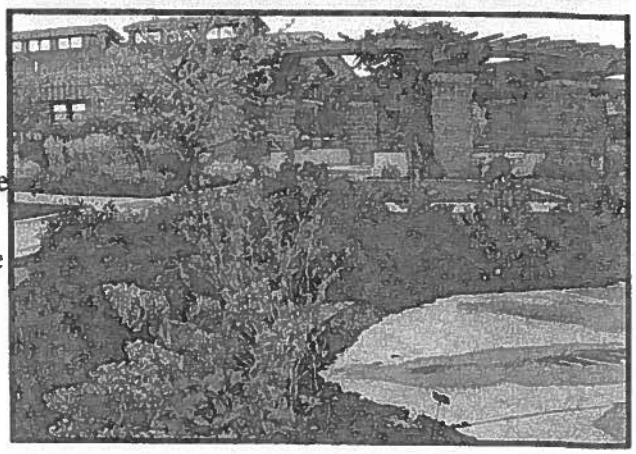
1) This value represents the highest percentage of positive samples collected within the distribution system in any one month during 2011.
2) This value represents the lowest monthly percentage of combined filter readings meeting less than 0.3 NTU in at least 95% of the measurements taken each month during 2011.
3) This value represents the highest single measurement of combined filter readings taken every four hours during 2011.

WATER CONSERVATION



With ever increasing growth and the nature of the regional climate, there is no question that we will encounter future drought years. Future drought cycles will have an even greater effect than pervious drought because of the increased population and higher demands on water systems. Conservation and improved water efficiency needs to become a way of life for all of us by incorporating better water use practices and valuing this precious resource more than ever.

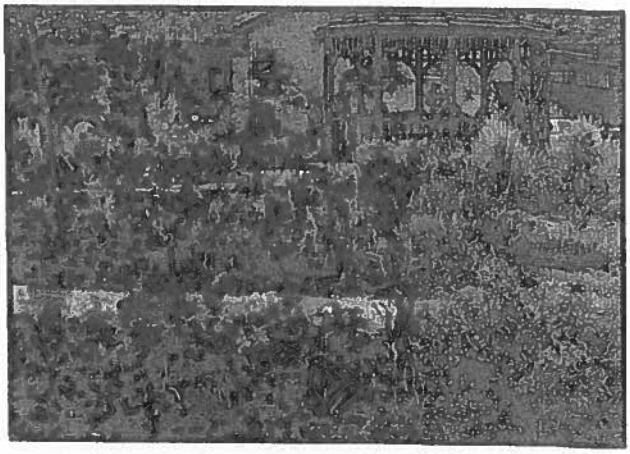
Weber Basin Water Conservancy District has a goal of reducing per capita water use 25% by the year 2050. Our thanks to those who have made and are making any effort to improve efficiency and conserve our water resources. It is still necessary to continue this effort to conserve water by educating ourselves on proper irrigation practices and changing attitudes and behaviors to reduce water waste.



Conservation alone will not meet future water needs and the District will continue to develop water supplies, build new infrastructure and maintain the current infrastructure. However, future water projects are costly and limited so we all need to be more efficient with our current water supply which will help delay these costly future projects while maintaining your current lifestyle. If we each save a little, we all save a lot!

Conservation Programs and Resources

Weber Basin Water Conservancy District offers services and resources for the general public to help improve water efficiency especially with regards to landscape water use. Programs available include:



- **The Water Conservation Learning Garden**
- **Free Water Checks**
- **Free Landscape Classes**
- **Brochures and Educational Information**
- **Participant in Slow the Flow and Statewide Governor's Conservation Team**
- **Slow the Flow**

Visit our website **www.weberbasin.com/conservation** for more information on any of these programs.

Visit the Water Conservation Learning Garden for great ideas and learn how easy it is to have a beautiful yard while still being very water efficient. The Learning Garden is open daily 8:00 am to 8:00 pm from May through October and open 8:00 am to 5:00 pm through the winter months. The Learing Garden is easy to find, located at 2837 E. Highway 193 in Layton. Come and visit us, and participate in free classes, garden fairs, or just come for a leisurly walk. Don't miss it. For more information please visit www.weberbasin.com or call 801-771-1677.