Monitoring Report Submittal Transmittal Form

Attn: Harold Hold (916) 464-4676
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Discharger:	Bear Valley Water District
Name of Facility:	Bear Valley Wastewater Treatment and Disposal Facility
WDRs Order Number:	***5-201-208***
County:	Alpine County
Regulator Program:	Waste Discharge to Land (Non15)
Unit:	Compliance
CIWQS Place ID:	209035

The Bear Valley Water District is hereby submitting to the Central Valley Regional Water Quality Control Board the following information:

Check all that apply:

Annual Monitoring Report for the year _____

1st / 2nd / 3rd / 4th (**circle one**) Quarterly Monitoring Report for the year of_____

1st / 2nd /3rd (**circle one**) Tri-annual Monitoring Report for the year ____2015_____

Monthly Monitoring Report for the year _____

Violation Notification

During the monitoring period, there were / were not **(circle one)** any violations of the WDRs.

1. The violations were:
   See attached report

2. The actions to correct the violations were:
   See attached report

Certification Statement

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, 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."

Signature: _____ Phone: 209-753-2112

Printed Name: Jeff Gouveia
General Manager

Date: January 28, 2016

Bear Valley Water District – Third Tri-Annual 2015 Groundwater Monitoring Report

Prepared for:
Bear Valley Water District
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January 28, 2016

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1.0 Executive Summary

- Groundwater elevation monitoring during the third tri-annual monitoring event of 2015 indicates flow that was roughly perpendicular to site topography and generally towards to the west and northwest at a horizontal gradient ranging from 0.061 to 0.074;

- Groundwater quality monitoring indicates pH (MW-2, MW-3, and MW-6), manganese (MW-1, MW-2, and MW-6), and total coliform organisms (MW-1 and MW-2) exceeded water quality goals for agricultural or potable use during the third tri-annual monitoring event. Note that there was an insufficient volume of water available to sample MW-5 for total and fecal coliform organisms;

- Revised background statistics were computed and the site specific groundwater limitations updated. Of all the constituents assessed tri-annually in 2015, only manganese (MW-6) was present at concentrations that may be considered above background, at statistically significant levels. Conditions that naturally favor manganese mobilization are present in shallow groundwater in the area, including acidic soils and naturally low pH, thus these exceedances should not be considered as irrefutable proof that an impact has occurred;

- All of the other parameters statistically assessed, including salts such as sodium, chloride, TDS, EC, and nitrate, as well as total coliform, were in compliance with site specific groundwater limitations, indicating further compliance with State's Anti-Degradation Policy;

- It is important to note that as only one background well exists and thus computed background statistics cannot reasonably account for natural special variations in water chemistry common in shallow groundwater systems. Furthermore, surface water from a nearby stream may influence groundwater quality due to its close proximity to the shallow background monitoring well; and,

- Lack of a groundwater monitoring network that adequately accounts for spatial variations in background groundwater quality remains the most significant monitoring deficiency at the wastewater treatment and disposal facility.

2.0 Introduction and Background

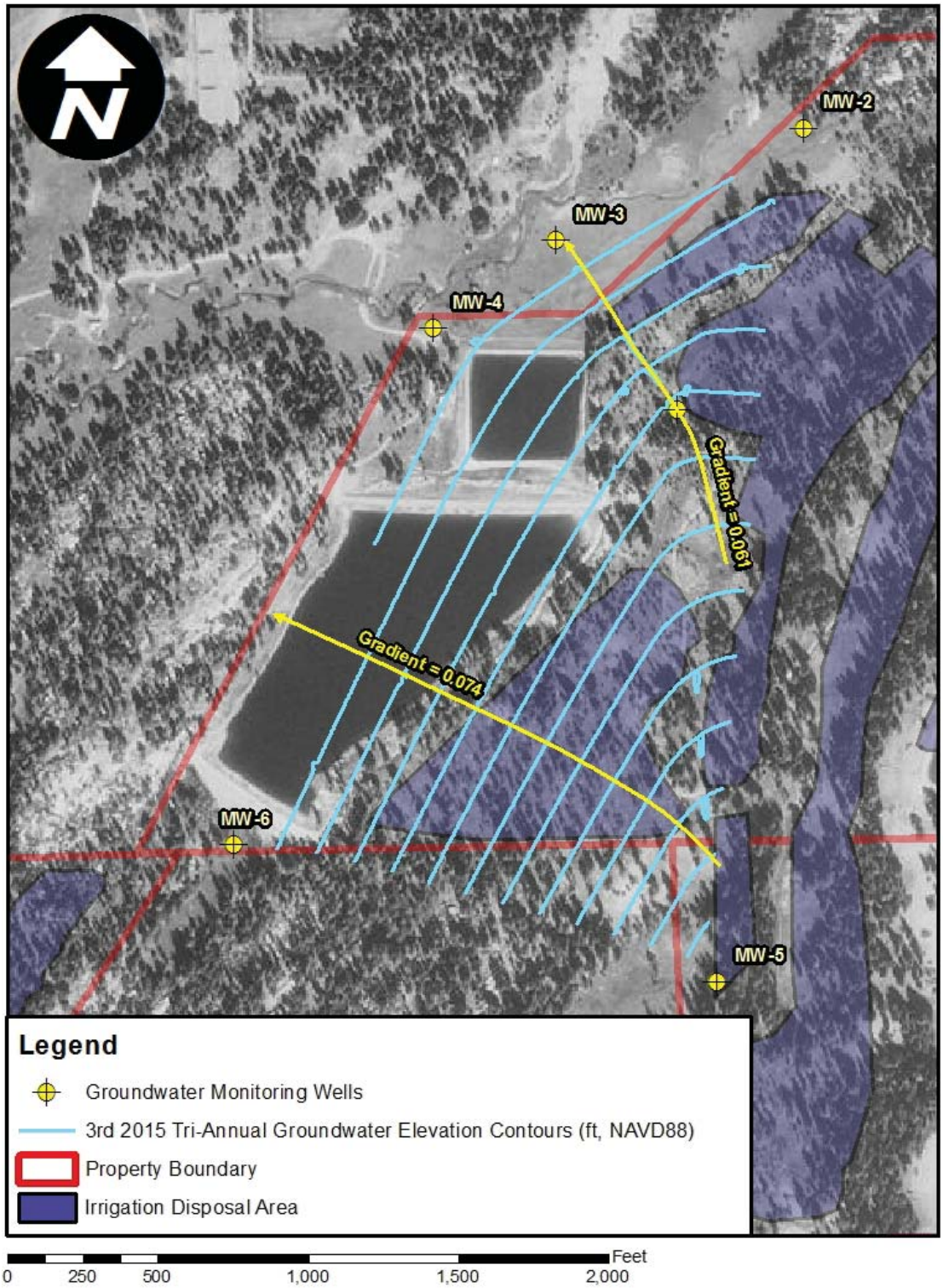
2.1 INTRODUCTION

The Bear Valley Water District (District) provides sanitary sewer collection, treatment and disposal for approximately 600 residential and commercial connections in the Alpine County community of Bear Valley, including the Lake Alpine basin area and the Mt. Reba Ski Area. The District's service area is primarily north of State Highway 4 serving the developed private lands in the Bear Valley village area and US Forest Service campgrounds and special use permitted areas. The District wastewater treatment and disposal facility (WWTF) is regulated by the Central Valley Regional Water Quality Control Board (Regional Board) and the Regional Board's Waste Discharge Requirements Order No. R5-2005-0139 and Order No. 5-01-208 (WDRs). The WWTF is located south of Highway 4 and is shown in Figure 1.

The District's WDRs contain monitoring and reporting requirements, which include tri-annual monitoring of groundwater. This report presents groundwater monitoring data obtained during the third tri-annual monitoring event, which was conducted on October 14, 2015 and satisfies the Tri-Annual Groundwater Monitoring Report reporting requirements as specified in the District's Revised Monitoring and Reporting Program for WDR Order No. R5-2005-0139 (MRP). The revised MRP states that groundwater monitoring reports shall be submitted "by the 1st day of February, July, and September of each year", corresponding to combined annual/third tri-annual, first tri-annual, and second tri-annual reporting periods, respectively. It should be noted that these reporting periods do not correspond to climate and related environmental conditions that prohibit site access and well sampling during certain times of the year and therefore the actual report submittal may vary from that which is stipulated in the MRP.

Regional Board staff's recognition of these climate controls was memorialized in the *July 31, 2012* email correspondence. In summary, that correspondence stated that Regional Board staff will not recommend enforcement to the Executive Officer so long as the 1st and 2nd tri-annual monitoring reports are submitted by September 1st and November 1st of each year, respectively, instead of the dates currently required in the MRP. The third tri-annual report remains due by February 1st. Although Regional Board staff have informally agreed to extend tri-annual monitoring report due dates by not seeking enforcement (provided the 1st and 2nd tri-annual reports are submitted by September 1st and November 1st, respectively), we further recommend that Regional Board staff formally memorialize these changes in the MRP at their earliest convenience, in order to assure further violations and potential related enforcement actions against the District do not occur.

Figure 1 Third Tri-Annual 2015 Groundwater Elevation Contour Map



2.2 BACKGROUND

An average flow of 0.04 million gallons per day (MGD) entered the District WWTF during the 2014-2015 water year, which was then treated in a series of aerated treatment ponds where the biodegradable constituents are consumed and/or sequestered. Effluent from the aerated ponds was then stored in a 106 MG reservoir (effluent storage pond) or applied directly to land (summer months only). During the summer months, the stored effluent may be disposed of through spray irrigation to approximately 120 acres of permitted land, including approximately 80 acres of leased land and approximately 40 acres of land authorized by a Special Use Permit from the US Forest Service. Of the 120 gross acres of land, approximately 80 acres (40 from each disposal area) are currently suitable and/or used for effluent disposal purposes. The leased disposal area and permitted US Forest Service land have been in service before the installation of the groundwater monitoring wells (approximately 25 years for the leased land) at the site.

Effluent disposal via spray irrigation involves the disbursement of the effluent through low impact sprinklers upon soils and vegetation within the disposal area. The water is allowed to percolate into the soil and evapotranspirate into the atmosphere. The WDRs currently limit influent flow to 0.1 MGD (annual average basis) and limit application of wastewater to reasonable rates considering soil, climate and the irrigation management system.

2.3 GEOLOGY

The District's WWTF is located west of the Sierra crest along Bloods Creek, a tributary of the North Fork of the Stanislaus River. The elevations range from 7080 ft (msl) at the treatment pond to 7480 ft (msl) at the ballast pond on top of the ridge, east of the treatment and storage ponds. The geologic map for the Sacramento quadrangle (Wagner, Jennings, Bedrossian and Bortugno, 1981) indicates that Mesozoic granites underlie the area. This was confirmed by the presence of numerous granite outcrops in the meadows and at the base of the ridge. The map also shows traces of the Tertiary Mehrten Formation, described as an andesitic conglomerate, sandstone, and breccia. Although a competent outcrop of andesitic rock was not observed, the ridge does contain numerous andesitic fragments, produced by parent rock weathering. Just below the eastern side of the ridge crest are numerous large granite boulders, potentially representing glacial transport and deposition.

2.4 SOILS

The following soil descriptions are taken from the 1981 U.S. Forest Service soil survey of the Stanislaus National Forest. The descriptions are in agreement with field observations at the site and include the following:

2.4.1 Ridge Top

The soil along the southern end of the ridge top is classified as a lithic cryumbrept. This soil is described as a tan, moderately acid, loam about 5 inches thick, and containing no substantive

subsoil. Rock content can range up to 60 percent from the substratum of fractured hard andesitic tuff or tuff-breccia. The soil has excessive drainage with moderately rapid permeability and a very high maximum erosion hazard. The soil supports basin sagebrush, mule's ear, perennial grasses, and scattered lodgepole pine.

2.4.2 Ridge Side

The soil along the disposal area, on the west side of the ridge, is classified as a gerle family generally found on 5 to 35 percent slopes. The surface soil is described as a dark gray, slightly acid, sandy loam, about 10 inches thick. The subsoil is described as a moderately acid, light brownish gray, sandy loam. The substratum is extremely stony (rock content can exceed 35%) consisting of glacial debris derived from granitic parent rocks. Additionally, the soil has excessive drainage, rapid permeability, and a moderate to high maximum erosion hazard, typically supporting mixed conifer forests.

2.4.3 Valley Floor

The valley floor soil, north of and below the treatment pond, is classified as an entic cryumbrept and described as a brown, moderately acid loam, sandy loam, and loamy sand, about 40 inches in thickness. The substratum is recent alluvium from granitic rocks and is well drained with moderately rapid to rapid permeability. It supports annual grasses, perennial grasses or sedge, and brush.

2.4.4 Field Observations

There is a good correlation between the topography of the disposal area and soil development and thickness. Mass wasting and in place weathering/deposition created a soil continuum that one can easily recognize and follow from the ridge top to the valley floor. Starting at the top of the ridge the soil is thin and scarcely present. What soil exists is very shallow, poorly developed, poorly sorted, contains no appreciable organic matter, and has a large percentage of andesitic rock fragments. The thickness of the soil increases as one moves down slope with more organic content being observed, correlating well with increased vegetation. Although the soil is still poorly sorted, it increasingly becomes more uniform towards a sandy loam with granitics composing more of the parent material. On the valley floor the soil contains organic material and is at its maximum development and thickness within the disposal area. The alluvial substratum is well-sorted sand with the parent material consisting of mostly granitic rock, with only a minor andesitic contribution. The granitic origin is marked by numerous small mica flakes, found within the soil profile.

3.0 Groundwater Regulatory Requirements

Discharge at the Bear Valley Water District WWTF is subject to requirements contained in the wastewater permit (Waste Discharge Requirements, or WDRs), Standard Provisions and Reporting Requirements for Waste Discharge Requirements 1 March 1991, the Water Quality Control Plan for the California Regional Water Quality Control Board, Central Valley Region and associated documents (Basin Plan). These requirements and policies are discussed below as they relate to discharges to land and the groundwater limitations at the WWTF.

3.1 WATER QUALITY OBJECTIVES AND BASIN PLAN REQUIREMENTS

The Central Valley Basin Plan contains water quality objectives for groundwater. These water quality objectives apply to all groundwater in the San Joaquin River Basin, though they do not require improvement over naturally occurring background concentrations. The groundwater objectives are:

- Bacteria – total coliform organisms shall be less than 2.2 MPN/100ml over any seven-day period.
- Groundwater shall not contain chemical constituents that adversely affect beneficial uses.
- At a minimum, groundwater designated for municipal use shall not contain chemical constituents in concentrations greater than the maximum contaminant levels (MCLs) contained in Title 22 of the California Code of Regulations. To protect all beneficial uses, the Regional Board may apply limits more stringent than the MCLs.
- At a minimum, groundwater designated for municipal use shall not contain concentrations of radionuclides in excess of the MCLs contained in Title 22 of the California Code of Regulations.
- Groundwater shall not contain taste or odor constituents that cause nuisance or adversely affect beneficial uses.
- Groundwater shall be maintained free of toxic substances in concentrations that produce detrimental physiological response...

In conjunction with the Basin Plan groundwater objectives, the Regional Board has compiled water quality goals in the Regional Board staff report *A Compilation of Water Quality Goals*, updated in August of 2007. This report is intended to assist interpretation of the above narrative water quality objectives.

3.2 ANTIDEGRADATION POLICY

In 1968, the State Water Resources Control Board adopted Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California, or the State

Antidegradation Policy. The Antidegradation policy requires that whenever the quality of waters is better than the water quality standards or water quality objectives, and a discharge does or reasonably has the potential to degrade the high quality water, then such degradation must:

- Not unreasonably affect beneficial uses, i.e., cause the water to exceed water quality standards or water quality objectives; and
- Be consistent with the best practicable treatment and control technology such that the highest water quality is maintained consistent with the maximum benefit to the people of the State.

The Antidegradation Policy applies to surface water and groundwater.

3.3 BEAR VALLEY WATER DISTRICT WASTE DISCHARGE REQUIREMENTS

The current District WDRs (Order No. 5-01-208 section D) have groundwater limitations that state:

1. Release of waste constituents from any storage or treatment component associated with the WWTF shall not cause groundwater under and beyond the storage or treatment component, as determined by an approved monitoring network, to:

   a. Contain any of the constituents (identified in Table 1) in concentrations greater than as listed or greater than background quality, whichever is greater.

   b. Contain any constituent identified in Groundwater Limitation D.1.a in concentrations greater than background quality (whether chemical, physical, biological, bacteriological, radiological, or some other property of characteristic).

   c. Exhibit a pH of less than 6.5 or greater than 8.5 pH Units.

   d. Impart taste, odor, or color that creates nuisance or impairs any beneficial use.

2. a. Release of waste constituents from any land disposal area associated with the WWTF shall not cause groundwater under and beyond the land disposal area to contain waste constituents in concentrations statistically greater than background water quality, except for coliform bacteria. For coliform bacteria, increases shall not cause the most probable number of total coliform organisms to exceed 2.2 MPN/100ml of any 7-day period.

   b. If groundwater monitoring shows that waste constituents are present in concentrations greater than background, then upon the request of the Executive Officer, the Discharger shall complete the report described in Provision F.3.

Groundwater Regulatory Requirements
January 28, 2016

Table 1 Regional Board Interim Groundwater Limitations

Parameter	Units	Interim Limitation*
pH	Std. units	6.5 – 8.4**
Boron	mg/l	0.6
Chloride	mg/l	142
Iron	mg/l	0.3
Manganese	mg/l	0.05
Sodium	mg/l	69
Total Coliform Organisms	MPN/100ml	Non-Detect
Total Dissolved Solids	mg/l	450
Total Nitrogen	mg/l	10
Nitrite as N	mg/l	1
Nitrate as N	mg/l	10
Ammonia as N	mg/l	0.5

* From Waste Discharge Requirements Order No. 5-01-208
**From a Compilation of Water Quality Goals, July 2008

4.0 Groundwater Monitoring Results

4.1 MONITORING SUMMARY

The third tri-annual groundwater monitoring event occurred on November 12 and 13, 2015 with sampling and analytical activities being performed by J.L. Analytical Services, Inc. The sampling procedure utilized in monitoring the District's wells is included as Appendix A of this report for reference. Field measurements of depth to groundwater, electrical conductivity (EC), pH, oxidation reduction potential (ORP), dissolved oxygen (DO), and groundwater temperature were conducted in addition to the laboratory analysis of the parameters identified in Table 2 and according to the revised Monitoring and Reporting Program (MRP) No. 5-01-208, dated June 20, 2002. Groundwater samples were also collected for expanded general mineral chemistry, the results of which are summarized in Table 3. The field logs and laboratory results for the third tri-annual sampling event are included as Appendix B of this report.

Table 2 Groundwater Monitoring Requirements

Parameter	Units	Frequency[1]
Total Dissolved Solids	mg/l	3 times per year
Nitrate as Nitrogen	mg/l	3 times per year
pH	pH units	3 times per year
Total Coliform Organisms[2]	MPN/100ml	3 times per year
Ammonia	mg/l	3 times per year
Total Kjeldahl Nitrogen	mg/l	3 times per year
General Minerals[3]	mg/l	1 time per year

1. Immediately after snowmelt, in the middle of the summer, and in the fall (shortly before wells become inaccessible due to snow cover.)
2. Method No. 9221E, using a minimum of three dilutions of 15 tubes.
3. General minerals include boron, chloride, iron, manganese, and sodium, collected during the fall.

Table 3 Third Tri-Annual 2015 Groundwater Quality Summary

Parameter	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
Field pH	6.5	6.1	6.0	6.8	6.6	6.2
Field EC (µS/cm)	161	60	68	189	108	209
Temp. (C)	8.3	12.1	10.6	8.9	7.7	8.1
ORP (mV)	270	349	243	253	200	93
Dissolved Oxygen (mg/L)	--	--	--	--	--	--
Lab SC (µS/cm)	160	60	68	190	110	210
Cl (mg/L)	3.7	0.9	4.1	7.7	6.7	9.7
NO3-N (mg/L)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TKN (mg/L)	<1	<1	<1	<1	<1	<1
Ammonia as N	<1	<1	<1	<1	<1	<1
TDS (mg/L)	160	90	67	130	220	120
B (mg/L)	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Ca (mg/L)	17.3	5.9	5.3	18.4	9.5	23.8
Fe (mg/L)	<0.03	<0.03	<0.03	<0.03	<0.03	0.176
Mg (mg/L)	4.6	1.9	1.5	5.7	3.7	6.0
Mn (mg/L)	**0.205**	0.023	<0.01	<0.01	**0.071**	**0.815**
K (mg/L)	3.0	1.0	1.1	11.4	1.4	1.4
Na (mg/L)	5.1	2.4	5.1	8.2	4.2	7.5
HCO_3 as $CaCO_3$ (mg/L)	68	26	24	78	42	90
HCO_3 as HCO_3 (mg/L)	83	32	29	95	51	110
CO_3 as $CaCO_3$ (mg/L)	<1	<1	<1	<1	<1	<1
OH as $CaCO_3$ (mg/L)	<1	<1	<1	<1	<1	<1
Total Alkalinity as $CaCO_3$ (mg/L)	68	26	24	78	42	90
Sulfate (mg/L)	4.2	<0.5	1.3	5.3	1.0	0.8
Total Coliform (MPN/100ml)	**17**	**6.8**	<1.8	<1.8	IVS	<1.8
Fecal Coliform (MPN/100ml)	<1.8	2	<1.8	<1.8	IVS	<1.8
Hardness as CaCO3 (mg/l)	62.0	22.5	19.1	69.5	39.1	84.0

Bold data indicates and simple exceedance of a water quality goal, not to be confused with a statistically significant exceedances. IVS – Insufficient volume of water available to sample.

4.2 GROUNDWATER ELEVATIONS, GRADIENTS, AND FLOW DIRECTION

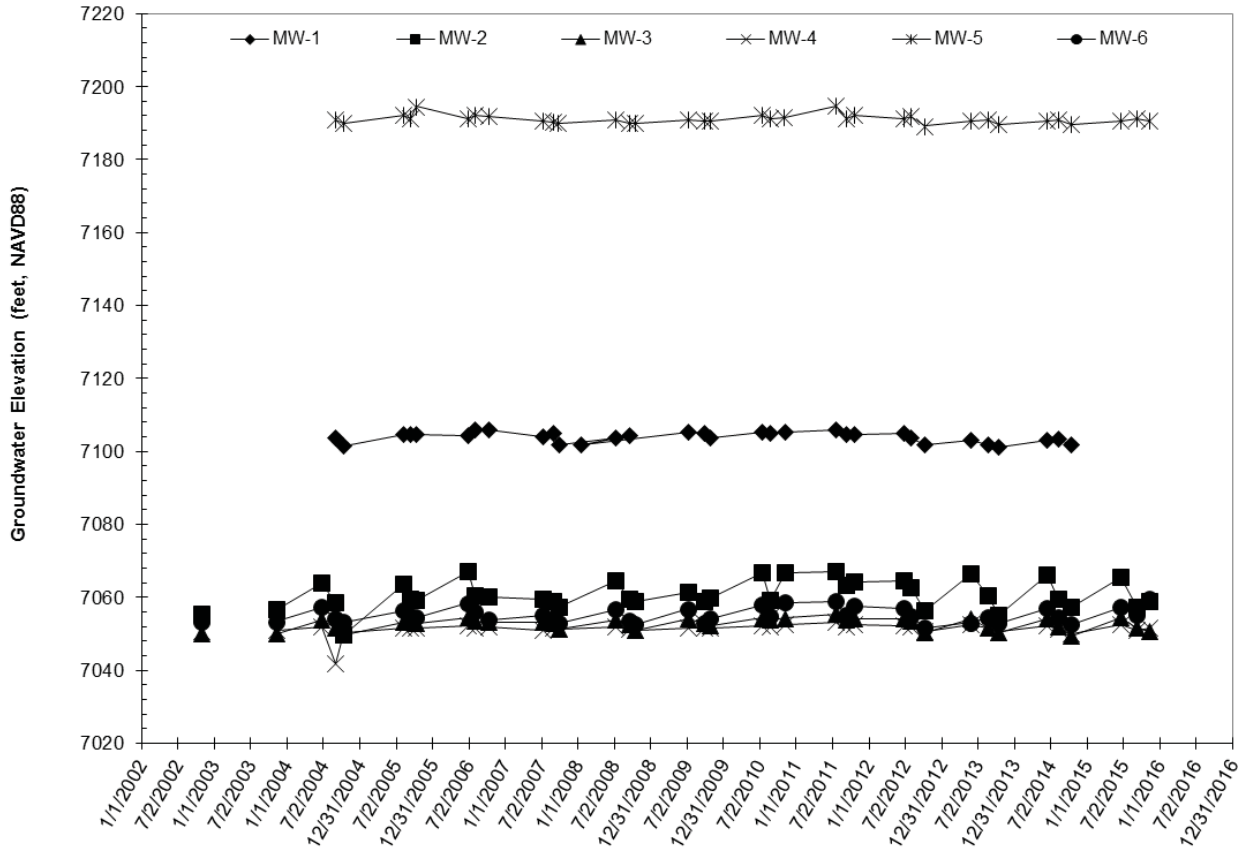
Depth to groundwater was measured on November 12 and 13, 2015 relative to the surveyed top north quadrant of the PVC well casing. Groundwater elevations were subsequently calculated for the third tri-annual monitoring event and summarized in Table 4 below. Table 4 also contains groundwater elevations from the three previous monitoring events and provides the

computed change in elevation at each well (in parentheses) relative to the previous monitoring event, illustrating recent temporal variability in groundwater elevation at the WWTF. Calculated groundwater elevations for the third tri-annual 2015 monitoring event were utilized to construct a contour map (Figure 1), which was subsequently used to estimate both groundwater flow direction and horizontal gradient. Interpreted groundwater flow direction during the third tri-annual monitoring was found to be roughly perpendicular to site topography and generally towards the northwest at a horizontal gradient ranging from 0.061 to 0.074 (Figure 1). Historical groundwater elevations are provided as Appendix C, while a time series plot for computed groundwater elevations is provided as Figure 2, for further reference.

Table 4 Groundwater Elevation Summary

Monitoring Well	Reference Point Elevation (ft, NAVD88)	Groundwater Elevation (feet , NAVD88)			
		10/14/2014	6/17/2015	9/9/2015	11/12/15
MW-1	7114.08	7101.69 (-1.72)	7103.36 (+1.67)	7103.89 (+0.53)	7103.08 (-0.81)
MW-2	7067.53	7057.25 (-2.34)	7065.59 (+8.34)	7057.22 (-8.37)	7058.72 (+1.50)
MW-3	7056.37	7049.25 (-2.50)	7054.39 (+5.14)	7051.50 (-2.89)	7050.59 (-0.91)
MW-4	7054.79	7050.10 (-1.12)	7052.38 (+2.28)	7051.07 (-1.31)	7051.63 (+0.56)
MW-5	7203.78	7189.55 (-1.22)	7190.59 (+1.04)	7191.34 (+0.75)	7190.55 (-0.79)
MW-6	7059.49	7052.53 (-2.06)	7057.37 (+4.86)	7054.99 (-2.38)	7059.49 (+4.50)

Figure 2 Groundwater Elevation Time Series Chart



4.3 GROUNDWATER QUALITY

Groundwater samples for the third tri-annual monitoring event were collected on November 12 and 13, 2015. A summary of the lab and field results for this monitoring event are provided above in Table 3, while historical groundwater quality data are provided in Appendix C for further reference. Historical and third tri-annual data were compiled in time series plots for TDS (Figure 3) and chloride (Figure 4) to illustrate temporal variations in groundwater salinity at the site.

Figure 3 TDS Time Series Chart

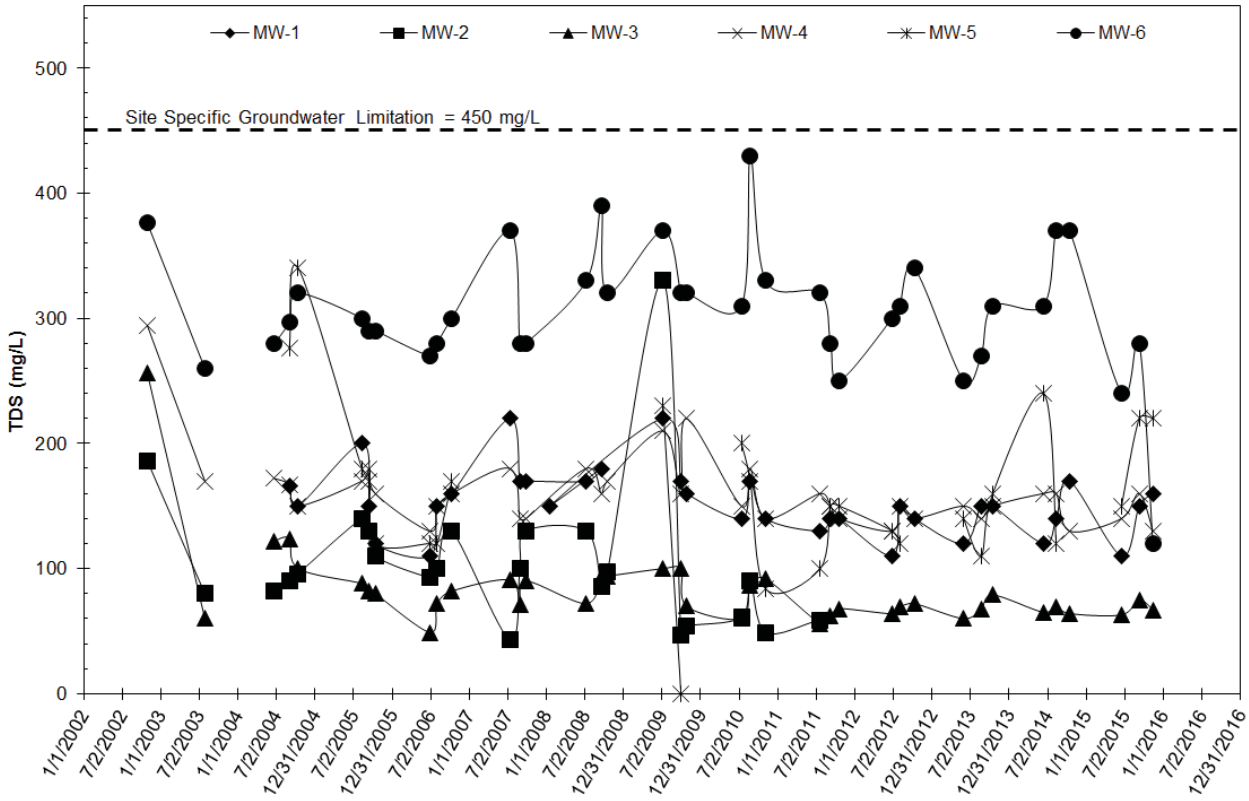
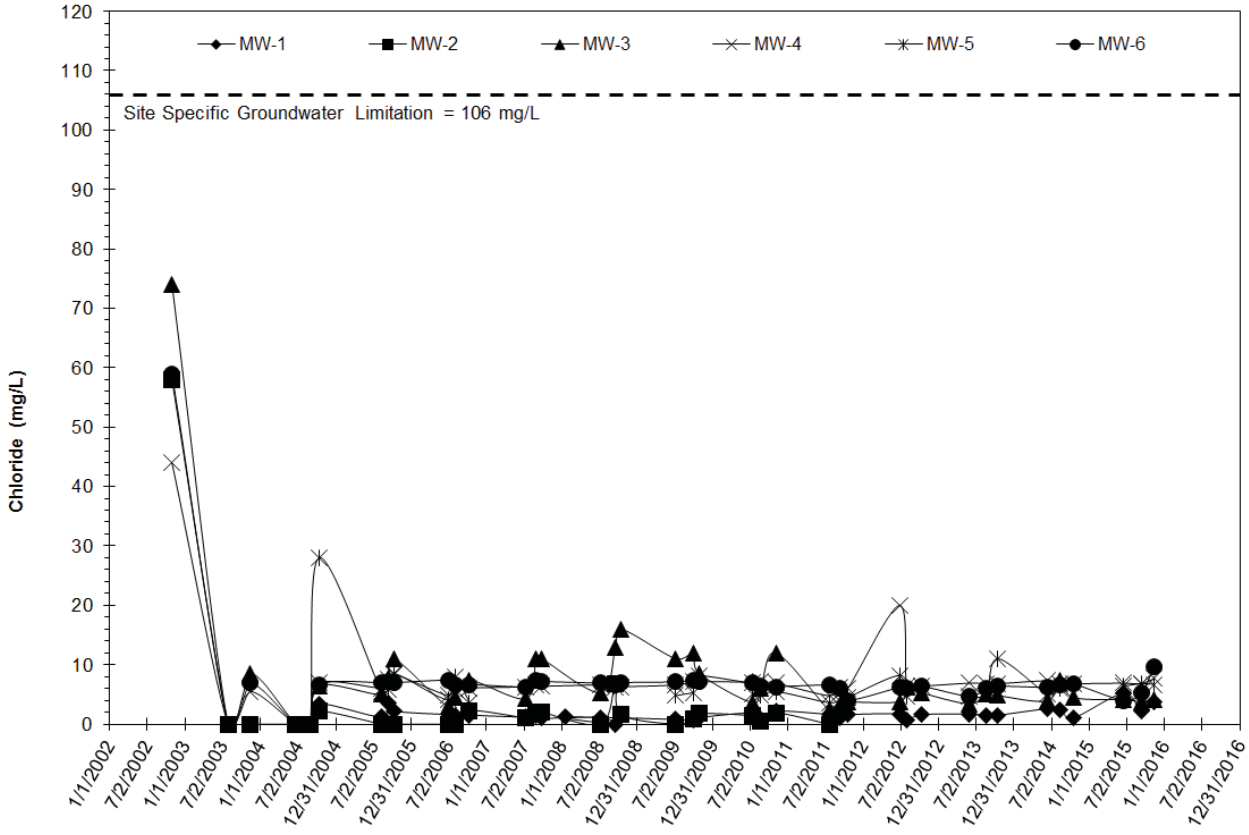


Figure 4 Chloride Time Series Chart



4.3.1 Compliance Monitoring Well MW-1

Monitoring well MW-1 is generally located hydrogeologically down gradient of wastewater disposal operations and hydrogeologically up gradient of the eastern portion of the treatment pond (Figure 1). Field pH, field EC, ORP, and laboratory determined TDS measured during the third tri-annual monitoring event were reported at values of 6.5, 161 µS/cm, 270 mV, and 160 mg/l, respectively. Nitrate as N and ammonia as N were not detected above their respective laboratory reporting limits of 0.2 and 1 mg/l. Furthermore, total coliform organisms were detected at a density of 17 MPN/100ml, while fecal coliform organisms were not detected above the laboratory reporting limit of 1.8 MPN/100ml. The general minerals sodium, chloride, and manganese were detected at concentrations of 5.1, 3.7, and 0.205 mg/l, respectively, while boron and iron were not detected above the laboratory reporting limit of 0.03 mg/l. Additional parameters monitored during the third tri-annual monitoring event of 2015 are summarized in Table 3 for reference.

4.3.2 Background Monitoring Well MW-2

Monitoring well MW-2 is located hydrogeologically up gradient of the disposal areas and serves as the background monitoring well for the WWTF (Figure 1). Field pH, field EC, ORP, and laboratory determined TDS measured during the third tri-annual monitoring event were reported at values of 6.1, 60 µS/cm, 349 mV, and 90 mg/l, respectively. Nitrate as N and ammonia as N were not detected above their respective laboratory reporting limits. Furthermore, total coliform organisms were detected at a density of 6.8 MPN/100ml, while fecal coliform organisms were detected at a density of 2 MPN/100ml. The general minerals sodium, chloride, and manganese were reported at concentrations of 2.4, 0.9, and 0.023 mg/l, respectively, while boron and iron were not detected above their laboratory reporting limit. Additional parameters monitored during the third tri-annual monitoring event of 2015 are summarized in Table 3 for reference.

4.3.3 Compliance Monitoring Well MW-3

Monitoring well MW-3 is located hydrogeologically down gradient of wastewater disposal operations, near the northwestern portion of the WWTF property (Figure 1). Field pH, EC, ORP, and laboratory determined TDS measured during the third tri-annual monitoring event were reported at values of 6.0, 68 µS/cm, 243 mV, and 67 mg/l, respectively. Nitrate as N and ammonia as N were not detected above their respective laboratory reporting limits. Furthermore, total and fecal coliform organisms were not detected above the laboratory reporting limit of 1.8 MPN/100ml. The general minerals sodium and chloride were reported at concentrations of 5.1 and 4.1 mg/l respectively, while boron, iron, and manganese were not detected above their respective laboratory reporting limits. Additional parameters monitored during the third tri-annual monitoring event of 2015 are summarized in Table 3 for reference.

4.3.4 Compliance Monitoring Well MW-4

Monitoring well MW-4 is located hydrogeologically down gradient of wastewater disposal operations and the wastewater treatment pond, near the northwestern portion of the WWTF property (Figure 1). Field pH, EC, ORP, and laboratory determined TDS measured during the third tri-annual monitoring event were reported at values of 6.8, 189 µS/cm, 253 mV, and 130 mg/l, respectively. Nitrate as N and ammonia as N were not detected above their respective laboratory reporting limits. Furthermore, total and fecal coliform organisms were not detected above the laboratory reporting limit of 1.8 MPN/100ml. The general minerals sodium and chloride were detected at concentrations of 8.2 and 7.7 mg/l, respectively, while boron, iron, and manganese were not detected above their laboratory reporting limits. Additional parameters monitored during the third tri-annual monitoring event of 2015 are summarized in Table 3 for reference.

4.3.5 Compliance Monitoring Well MW-5

Monitoring well MW-5 is located hydrogeologically down gradient of wastewater disposal operations, near the south-central portion of the WWTF property (Figure 1). Field pH, EC, ORP, and laboratory determined TDS measured during the third tri-annual monitoring event were reported at values of 6.6, 108 µS/cm, 200 mV, and 220 mg/l, respectively. Nitrate as N and ammonia as N were not detected above their respective laboratory reporting limits. The general minerals sodium, chloride, and manganese were detected at concentrations of 4.2, 6.7, and 0.071 mg/l, respectively, while boron and iron were not detected above their laboratory reporting limits. Note that there was not sufficient water available to sample for total and fecal coliform organism. Additional parameters monitored during the third tri-annual monitoring event of 2015 are summarized in Table 3 for reference.

4.3.6 Compliance Monitoring Well MW-6

Monitoring well MW-6 is located hydrogeologically down to cross gradient of wastewater disposal operations and down gradient/adjacent to the effluent storage pond, near the southwestern portion of the WWTF property (Figure 1). Field pH, EC, ORP, and laboratory determined TDS measured during the third tri-annual monitoring event were reported at values of 6.2, 209 µS/cm, 93 mV, and 120 mg/l, respectively. Nitrate as N and ammonia as N were not detected above their respective laboratory reporting limits. Furthermore, total and fecal coliform organisms were not detected above the laboratory reporting limit of 1.8 MPN/100ml. The general minerals sodium, chloride, iron, and manganese were detected at concentrations of 7.5, 9.7, 0.176, and 0.815 mg/l, respectively, while boron was not detected above its laboratory reporting limit. Additional parameters monitored during the third tri-annual monitoring event of 2015 are summarized in Table 3 for reference.

5.0 Background Groundwater Quality

5.1 STATISTICAL ANALYSIS INTRODUCTION

On behalf of the District, ECO:LOGIC Engineering (now Stantec) submitted a Groundwater Characterization Report (GCR), in *January 2005*. This report was submitted in accordance with the District's WDRs and the Regional Board's *July 8, 2004* Technical Report Review and Comments letter requesting a statistical determination of background groundwater quality, pursuant to Title 27, Section 20415(e)(10) of the California Code of Regulations. The report compared actual COPC concentration at each of the compliance wells to both the Regional Board's Interim Groundwater Limitations and calculated background COPC using the 95% Confidence Limit (CL). As part of the 2006 Annual Report, the statistical assessment was revised via an alternative methodology utilizing the 99% upper prediction limit (UPL) for parametrically distributed data, combined with alternative tests for non-parametric data. The background groundwater quality assessment has been updated annually since 2006. The analysis provided below represents the most current update to the statistical assessment of background groundwater quality, utilizing data collected through the third tri-annual monitoring event of 2015.

The following provides a summary of the assumptions used to compute the 99% UPL of background groundwater quality:

- Statistical analysis performed annually;
- Statistical test performed for the parameters TDS, nitrate, ammonia, pH, total coliform, boron, chloride, iron, sodium, and manganese;
- Data collected during the years of 2003 and earlier were not assessed due in part to several factors including the influence of well drilling activities and lack of filtration for metals. All data following 2003 were included in the statistical analysis;
- A pass 1 of 3 re-sampling strategy was employed; and,
- Maximum reported value, not reflective of an unreasonable anomaly, used to represent background groundwater quality for non-parametric data.

5.2 OUTLIER ANALYSIS

Prior to the evaluation of background groundwater quality, all background data (MW-2) were reviewed using Dixon's test (where n is between 3 and 25) or Rosner's test (for n > 25) for statistically significant outliers at the 99% confidence limit. The following provides a summary of the identified outliers and any actions taken.

Background Groundwater Quality
January 28, 2016

Field pH: No outliers identified.

TDS: One statistical outlier was identified during the 7/7/09 monitoring event. The results are anomalously high and do not correspond with the reported EC values, suggesting a laboratory error. The reported outlier was subsequently removed.

Nitrate as N: One outlier was identified and during the 10/26/09 monitoring event. This outlier was reviewed, determined to be reasonable, and subsequently retained for further analysis.

Ammonias as N: Three outliers were identified and during the 9/1/04, 6/22/04, and 9/15/05. These outliers were reviewed, determined to be reasonable, and retained for further analysis

Total Coliform: Three outliers were identified and during the 7/8/08, 10/26/09, and 11/4/10 monitoring events. Of these outliers, one was notably higher than all of the rest (10/26/09). For 10/26/09, no known cause of the outlier could be identified, however many of the other monitoring wells, that do not typically contain elevated coliform, also reported high values during this event, suggesting potential sampling or laboratory bias. Accordingly, this outlier was removed from further analysis. All other outliers were determined to be reasonable and retained for further analysis.

Boron: No outliers identified.

Chloride: Two statistical outlier were identified and during the 9/18/08 and 10/9/2012 monitoring events. These data were reviewed and no anthropogenic cause could be attributed to the anomalies. Accordingly, they were retained for further analysis.

Iron: No outliers identified.

Sodium: Two statistical outliers were identified and during 9/18/08 and 10/9/12 monitoring events. These outliers were reviewed and no anthropogenic cause could be attributed to the anomalies. Accordingly, they were retained for further analysis.

Manganese: Six statistical outliers were identified during the 10/13/04, 8/29/07, 7/21/11, 10/9/12, 8/21/13, and 10/14/14 monitoring events. These outliers were reviewed and no anthropogenic cause could be attributed to the anomalies. Accordingly, they were retained for further analysis.

5.3 NORMALITY TEST

Following the outlier analysis a normality test was performed using Shapiro-Wilks Test at the 99% level of confidence. If the background monitoring data were normally distributed, or could be made normal through an appropriate transformation, parametric tests were applied. Alternatively, if the data were found to be non-parametrically distributed, non-parametric statistical tests were used. Following the initial data review, as summarized above, 99% background UPLs were computed, based on inclusion of the most recent 2015 monitoring data the results of which are summarized in Table 5.

Table 5 2015 Statistical Assessment of Background Groundwater Quality

COPC	Background 99% UPL	Data Distribution/Method	Data Points
TDS (mg/l)	125	Parametric UPL	35
Nitrate as N (mg/l)	0.5	Non-Parametric UPL	36
Ammonia as N (mg/l)	1	Non-Parametric UPL	36
pH	7.4 – **5.7**	Parametric UPL	36
Total Coliform (MPN/100ml)	**500**	Non-Parametric UPL	35
Boron (mg/l)	0.03	Non-Parametric UPL	34
Chloride (mg/l)	7.3	Parametric UPL (Natural Log. Transformed)	34
Iron (mg/l)	**1.54**	Non-Parametric UPL	36
Sodium (mg/l)	8.6	Non-Parametric UPL	34
Manganese (mg/l)	**0.22**	Non-Parametric UPL	36

Bold data indicate an exceedance of the Regional Board's Interim Groundwater Limitations

5.4 SITE SPECIFIC GROUNDWATER LIMITATIONS

For COPC's where the background 99% UPL or non-parametric statistics are greater than the Regional Board's Interim Groundwater Limitation, the background statistic should be used for facility compliance. Of the COPCs analyzed, computed background (MW-2) statistics for iron, manganese, and total coliform exceeded the Regional Board's Interim Groundwater Limitations of 0.3 mg/l, 0.05 mg/l, and non-detect, respectively. Furthermore, background pH values were statistically lower than the lower limit of the groundwater goal of 6.5. Conversely, where an Interim Groundwater Limitation is greater than the background statistic, the Interim Groundwater Limitation should be used to assess facility compliance, as was the case for all the remaining parameters, provided the facility is implementing best practicable treatment and control measures for the constituent of potential concern. It should be noted however, that the WDR Interim Groundwater Limitations for boron and chloride are inconsistent with agricultural water quality goals and were revised accordingly. Table 6 presents the recommended site specific groundwater limitations for the facility.

Table 6 2015 Recommended Site Specific Groundwater Limitations

COPC	Site Specific Groundwater Limitation	Basis for Limitation	Compliance Assessment Methodology
TDS (mg/l)	450	Agricultural Water Quality Goal	95% LCL
Nitrate as N (mg/l)	10	Primary Maximum Contaminant Level	Not to exceed
Ammonia as N (mg/l)	1.5	Taste and Odor Threshold	95% LCL
pH	**5.7** – 8.4	STAT Parametric UPL/Agricultural Water Quality Goal	Pass 1 of 3/ 95% LCL
Total Coliform (MPN/100ml)	**500**	STAT Non-Parametric UPL	Not to exceed
Boron (mg/l)	0.7	Agricultural Water Quality Goal	95% LCL
Chloride (mg/l)	106	Agricultural Water Quality Goal	95% LCL
Iron (mg/l)	**1.54**	STAT Non-Parametric UPL	Not to exceed
Sodium (mg/l)	69	Agricultural Water Quality Goal	95% LCL
Manganese (mg/l)	**0.22**	STAT Non-Parametric UPL	Not to exceed

Bold data indicate an exceedance of the Regional Board's Interim Groundwater Limitations

5.5 ANTI-DEGRADATION ASSESSMENT

In evaluating facility compliance, the UPL methodology is not appropriate for statistically assessing compliance with water quality goals based on MCLs or agricultural limitations (such as those used in determining Interim Groundwater Limitations) because many of these goals are based on long term averages of water quality. Accordingly the 95% lower confidence interval (LCL) about the mean is recommended (95% LCL for two-tailed test such as pH) and is appropriate for assessing compliance with the parameters TDS, ammonia, upper pH, boron, chloride, and sodium, which were based on unrestricted agricultural use or taste and odor thresholds. However, where a parametric 99% UPL serves as the site specific groundwater limitation, the pass 1 of 3 re-sampling should be used to assess compliance (that is if one sample of the past three is less than the limitation, no statistically significant impact is noted). Alternatively, for non-parametric tests, a simple exceedance of the site specific groundwater limitation may indicate a statistically significant impact. Table 7 summarizes the results of the compliance assessment.

Table 7 2015 Groundwater Monitoring Compliance Summary

COPC	Site Specific Groundwater Limitation	Compliance Assessment Methodology	2015 Statistically Significant Exceedance
TDS (mg/l)	450	95% LCL	None
Nitrate as N (mg/l)	10	Not to Exceed	None
Ammonia as N (mg/l)	1.5	95% LCL	None
pH	**5.7** – 8.4	Pass 1 of 3/ 95% LCL	None
Total Coliform (MPN/100ml)	**500**	Not to Exceed	None
Boron (mg/l)	0.7	95% LCL	None
Chloride (mg/l)	106	95% LCL	None
Iron (mg/l)	**1.54**	Not to Exceed	None
Sodium (mg/l)	69	95% LCL	None
Manganese (mg/l)	**0.22**	Not to Exceed	MW-6

Of the parameters assessed, manganese was detected in groundwater at levels that statistically exceed site specific groundwater limitations during 2015. The exceedances occurred at monitoring well MW-6. Manganese is an element that forms pH and redox sensitive minerals in the subsurface, which can become mobile under reducing conditions and in groundwater with low pH, both of which are not uncommon in alpine groundwater environments. For instance, the dilute nature and lack of buffering capacity of alpine groundwater (primarily snowmelt) and presences of acidic surface soils bode well for low pH groundwater, a condition that naturally favors manganese mobilization. Therefore, the presence of manganese in groundwater should not in of itself be considered irrefutable proof of wastewater impacts.

Caution should also be exercised when evaluating computed "background" groundwater values to that of down gradient monitoring locations as the computed background statistics only consider one datum (MW-2) and thus, does not account for natural spatial variations in groundwater quality in the area. Spatial variability of the quality of shallow groundwater is more the norm than the exception and can be attributed to a host of issues including, but not limited to, soil column thickness, soil composition, bedrock composition, grain size distribution, organic matter content, groundwater elevation, acidity/alkalinity, land use, and redox potential. As such quantitative interpretation or comparison of groundwater data collected at "down gradient" monitoring locations to only one background location for the purpose of assessing facility compliance is not recommended. The computed background statistics and site specific groundwater goals should thus be used only to identify areas which *may have* been impacted with current or historic wastewater disposal practices. If improved background statistics are required, additional monitoring wells should be installed at locations up and cross gradient of the waste discharge.

All of the parameters assessed, with the potential exception of manganese, were in compliance with the site specific groundwater limitations, indicating further compliance with regards to the State's Anti-Degradation Policy.

6.0 Summary and Conclusions

Groundwater was assessed during the third tri-annual monitoring event, pursuant to the District's WDRs and MRP, issued by the Regional Board. During the third tri-annual monitoring event, reported water quality values for pH (MW-2, MW-3, and MW-6), manganese (MW-1, MW-2, and MW-6), and total coliform organisms (MW-1 and MW-2) exceeded a Regional Board interim groundwater quality goal, which consists of goals for agricultural or potable use. Of these parameters, a revised statistical analysis indicates statistically significant exceedances of site specific groundwater limitations occurred for only one parameter, manganese and at MW-6. Dissolved manganese is commonly spatially transient and can be influenced by variables other than the disposal of effluent. It should be noted that the current groundwater monitoring network contains only one background monitoring well (MW-2) making it impossible to incorporate potential spatial variations into the background statistics. Accordingly, a statistically significant impact should not be considered irrefutable proof that the impact originated as a result of the discharge. Regardless, a revised statistical assessment will be conducted as part of the 2015 Annual Report, which will also include a revised assessment of background groundwater quality.

7.0 Professional Seals and Certifications

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, 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.

Thomas W. Butler, PG, CHG, CEG
Senior Hydrogeologist/Geochemist

Appendix A Groundwater Monitoring Protocol

Bear Valley Water District
Groundwater Monitoring Well Sampling Procedures

1) The covers of the monitoring wells were opened and loose material cleared from the edged. A propane torch was used to briefly burn the frame of the cover and any debris inside the box and around the well casing (i.e., eliminating potential contamination of samples from ants). The wells are 2-in PVC approximately 13.5 to 23.5 feet deep with the lower 10 to 15 feet screened. The compression cap was removed and placed top down on the well cover.

2) Water surface depth was measured to within 0.01 feet by lowering an electronic tape into the well while passing it through a cloth soaked in hypochlorite solution (the tape was cleaned and disinfected in the lab prior to bringing it to the field). The water depth was measured relative the top of the north quadrant of the PVC well casing. More than three well volumes were purged from the wells until pH, EC and temperature stabilized. The volume to purge was calculated based on the well casing diameter (area) times the water column height (well depth from well logs minus depth to water surface times three. no annular space estimate was included).

3) Dedicated 12V submersible plastic pumps (ES 60) with a vinyl discharge hose were used for purging and sampling the wells. The pump, hose and cord were decontaminated prior to transport to the field in deionized (D.I.) water plus detergent, and then rinsed three times in D.I. water (running the pump during each to flush water through the impeller and hose) and finally the pump and appurtenances were placed in a dilute hypochlorite solution (running the pump to flush the solution through the impeller and hose). The pump and hose were removed from sealed bins and lowered into the well, avoiding pump or hose touching the cover frame, ground etc. The technician used rubber gloves during sampling and changed them each time anything "dirty" was touched. New gloves were rinsed in chlorine solution prior to handling equipment.

4) After priming and pumping a small amount of water through the hose (to remove and remaining liquid in the hose), the discharge rate was measured, by measuring the time to fill a one-gallon container. This time was them multiplied by the well purge volume as calculated in step 2) above. The time to purge three volumes was rounded up by approximately 5 minutes.

5) The pump was started and time recorded while it discharged. Approximately every three minutes a roughly 200 ml sample was collected in a glass container from the discharge pump hose and pH, EC and Temperature were measured with a multimeter. All wells stabilized with regards to pH EC, and Temperature.

6) Prelabled sample bottles, were introduced into the discharge stream of the pump after pumping 3-well volumes and stabilized pH, EC and Temperature. These were sealed and placed in an ice chest on ice for shipment to the lab.

7) The pump was shut off and all equipment was removed, the well cap was rinsed with dilute chlorine solution and replaced and the well cover replaced on the well.

8) After measurement, the measuring tape was rolled onto the reel while it was wiped.

Appendix B Third Tri-Annual 2015 Analytical Results and Field Logs

IEH - JL ANALYTICAL
217 Primo Way • Modesto, California 95358 • Office (209) 538-8111 • FAX (209) 538-3966

December 10, 2015

Bear Valley Water District
Attn: Mr. Gouveia
P.O. Box 5027
Bear Valley, CA 95223

Dear Mr. Gouveia:

On November 12 and 13, 2015, technicians from IEH-JL Analytical tested the monitoring wells at the Bear Valley Water Treatment facility. The wells at this site are located adjacent to the water treatment plant.

The two-inch wells were sampled and purged with a SS Monsoon 12 volt DC Submersible pump. Purging volumes were measured using a calibrated and graduated five-gallon container. Before and after each sampling, the pump was sanitized and rinsed with DI water. All water level measurements were taken from the PVC pipe at the top of the well casing. The samples were placed immediately into a refrigerated ice chest for transport to the laboratory.

No major new issues were found during this sampling period, other than Wells 1 and 5 would not pump due to icy conditions prior to the first purge. Samples were taken after the wells had regenerated. All other wells had sufficient water for normal purges and sample collection.

Sincerely,

Richard A. Jacobs, Ph.D.

Richard Jacobs Ph.D.,

IEH - JL ANALYTICAL
217 Primo Way • Modesto, California 95358 • Office (209) 538-8111 • FAX (209) 538-3966

GROUNDWATER MONITORING REPORT

Bear Valley Water District
Bear Valley, CA
3rd Monitoring Event of 2015

Bear Valley Water District
P.O. Box 5027
Bear Valley, CA 95223

Prepared for:
Bear Valley Water District
Attn: Mr. Gouveia
P.O. Box 5027
Bear Valley, CA 95223

Prepared by:
IEH-JL Analytical
217 Primo Way
Modesto, CA 95358
(209) 538-8111

November 2015

IEH - JL ANALYTICAL
217 Primo Way • Modesto, California 95358 • Office (209) 538-8111 • FAX (209) 538-3966

Bear Valley Water District
Bear Valley, CA
3rd Monitoring Event of 2015
GROUNDWATER MONITORING REPORT

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November 2015

IEH - JL ANALYTICAL
217 Primo Way • Modesto, California 95358 • Office (209) 538-8111 • FAX (209) 538-3966

Bear Valley Water District
Bear Valley, CA
3rd Monitoring Event of 2015

GROUNDWATER MONITORING REPORT

Section 1.

Bear Valley Report Body

November 2015

IEH - JL ANALYTICAL
217 Primo Way • Modesto, California 95358 • Office (209) 538-8111 • FAX (209) 538-3966

December 15, 2015

Bear Valley Water District
Attn: Mr. Gouveia
P.O. Box 5027
Bear Valley, CA 95223

Dear Mr. Gouveia:

On November 12 and 13, 2015, technicians from IEH-JL Analytical sampled the six monitoring wells at Bear Valley Water District. The Bear Valley Water District monitoring wells, at this site, are located around the wastewater treatment plant. The wells were sampled and purged with a SS Monsoon 12 volt DC Submersible pump. Purging volumes were measured using a calibrated and graduated five-gallon container. Before and after each sampling, the pump was cleaned and disinfected. All water level measurements were taken from the top of the well casing (PCV pipe), using a cleaned and disinfected water level meter. The wells were sampled according to accepted protocols. Specifically, they were purged a minimum of three volumes and the temperature, conductivity, and pH were allowed to stabilize. The samples were decanted into appropriate containers and immediately placed into a refrigerator for transport to the laboratory.

Wells 1 and 5 would not pump before acquiring a full purge due to the frozen conditions. Any remaining available water for these wells was tested at the laboratory. All other wells had sufficient water for normal purges, site testing and for sample submission to the laboratory.

All well locks were in acceptable condition and were locked prior to our departure.

Enclosed are the field notes and the analytical data, which represent this sampling event.

Sincerely,

Richard A. Jacobs, Ph.D.

Richard A. Jacobs, Ph.D.

IEH-JL Analytical

IEH - JL ANALYTICAL
217 Primo Way • Modesto, California 95358 • Office (209) 538-8111 • FAX (209) 538-3966

Bear Valley Water District
Bear Valley, CA
3rd Monitoring Event of 2015
GROUNDWATER MONITORING REPORT

Section 2.

Monitoring Well Field Data

Original Monitoring Well Work Sheets

November 2015

IEH - JL ANALYTICAL
WATER SAMPLE – FIELD DATA SHEET

Forms/ MW Bear 12-06

Client: **BEAR VALLEY Water District – Bear Valley, CA** Site Description: **Monitoring Well # 1**

Instrument Calibration Data: Meter: **YSI 556 MPS** Date: 11-12-15 Time: 1045

PH: Primary calibration: pH4 pH7 pH10 **EC:** 100 200 250 1000 1413 2060 10,000

pH meter reading: 4 7 10 EC meter reading: 10,000 µs/cm

System purged with X DI Water (check appropriately)

WELL INFORMATION:

Well Depth (WD) (ft): 27.29 Ft.

Depth to Water (DTW) (ft): (-) 11.0 Ft.

Water Column (WD – DTW): (=) 16.29 Linear Ft.

Final Depth to Water: 12.30 Ft. @ 1320 AM/PM

Casing Diameter	Gal/Lin. Ft (GPLF)	Casing Diameter	Gal/Lin. Ft (GPLF)
X 2" →	0.17	☐ 4.5" →	0.83
☐ 3" →	0.38	☐ 5" →	1.02
☐ 4 →	0.66	☐ 6 →	1.50
		☐ 8 →	2.60

16.29 (Water Column) X 0.17 (Gal per Linear Ft.) = 2.7693 (1 purge volume (before rounding)) | 3.0 (Adjusted Purge volume (round **up** to nearest **0.5**)) X 3 (Number of Casing Volumes) = 9.0 gal (Total Purge Volume, gal.)

PURGING DATA: {record pH, EC, & Temp **before purging**} **then** [Express all data per purge volume]

Time purging started: 1250 Time Sampled: 1251 Date: 11-12-15

Time	Purge Volume (gal)	pH	EC (µS/cm)	ORP (mv)	D.O. (mg/l)	Temp (C.)	Color	Turbidity	Odor	Pumped Dry
1250	0	6.48	161	270.1		8.32	clear	clear	none	NO
	3.0									
	6.0									
	9.0									

clear, cloudy, Yellow, Brown	Clear, Trace, Light, Moderate, Heavy	None, Faint, Moderate, Strong	Yes/No

Other Notes: 24.30 well Depth Half Frozen no suction to pump out water only 1 Purge

PURGING EQUIPMENT
Submersible Pump X
Bailer (Teflon) (PVC) _____

SAMPLING EQUIPMENT
Submersible Pump X
Bailer (Teflon) (PVC) _____

WEATHER Below 20 Degrees
Ambient Temperature: _____
Rain ____ Dust ____ Wind ____

Well integrity: ☐ Good ☐ Fair ☒ Poor snow QC Samples collected at this well: _____

Unfiltered Sample Bottles	1 1 L BOD 2 300 ml DO	2 Coliform	___1L Nalgene Base	___1L Amber Glass
Field Filtered Bottles	2 1 L BOD 1 1l TKN	___Coliform	1 1L Nalgene Base	___1L Amber Glass

Sampler(s): Mike Tsuromaki Signature: [signature] Date: 11-12-15

IEH - JL ANALYTICAL
WATER SAMPLE – FIELD DATA SHEET

Forms/ MW Bear 12-06

Client: **BEAR VALLEY Water District – Bear Valley, CA** Site Description: **Monitoring Well # 2**

Instrument Calibration Data: Meter: **YSI 556 MPS** Date: 11-13-15 Time: 0825

PH: Primary calibration: pH4 pH7 pH10 **EC:** 100 200 250 1000 1413 2060 10,000

pH meter reading: 4 7 10 EC meter reading: 10,000 µS/cm

System purged with X DI Water (check appropriately)

WELL INFORMATION:

Well Depth (WD) (ft): 17.90 Ft.

Depth to Water (DTW) (ft): (-) 8.81 Ft.

Water Column (WD – DTW): (=) 9.09 Linear Ft.

Final Depth to Water: 9.25 Ft. @ 1000 AM/PM

Casing Diameter	Gal/Lin. Ft (GPLF)	Casing Diameter	Gal/Lin. Ft (GPLF)
X 2" →	0.17	☐ 4.5" →	0.83
☐ 3" →	0.38	☐ 5" →	1.02
☐ 4 →	0.66	☐ 6 →	1.50
		☐ 8 →	2.60

9.09 (Water Column) X 0.17 (Gal per Linear Ft.) = 1.5453 (1 purge volume before rounding) | 2.0 (Adjusted Purge volume round **up** to nearest **0.5**) X 3 (Number of Casing Volumes) = 6.0 gal (Total Purge Volume, gal.)

PURGING DATA: {record pH, EC, & Temp **before purging**} **then** [Express all data per purge volume]

Time purging started: 0930 Time Sampled: 0947 Date: 11-13-15

Time	Purge Volume (gal)	pH	EC (µS/cm)	ORP (mv)	D.O. (mg/l)	Temp (C.)	Color	Turbidity	Odor	Pumped Dry
0930	0	8.18	57	684.1		8.98	yellow	Mod	None	No
0936	2.0	6.39	58	502.4		11.57	yellow	Mod	None	NO
0941	4.0	6.13	59	408.8		12.55	yellow	Mod	None	NO
0946	6.0	6.05	60	349.2		12.12	yellow	Light	None	NO

clear, cloudy, Yellow, Brown | Clear, Trace, Light, Moderate, Heavy | None, Faint, Moderate, Strong | Yes/No

Other Notes: 17.60 well Depth

PURGING EQUIPMENT
Submersible Pump X
Bailer (Teflon) (PVC) _____

SAMPLING EQUIPMENT
Submersible Pump X
Bailer (Teflon) (PVC) _____

WEATHER Below 20 Degrees
Ambient Temperature: _____
Rain ____ Dust ____ Wind ____

Well integrity: ☐ Good ☐ Fair ☒ Poor Snow QC Samples collected at this well: _____

Unfiltered Sample Bottles	1 1 L BOD 2 300 ml DO	2 Coliform	___1L Nalgene Base	___1L Amber Glass
Field Filtered Bottles	2 1 L BOD 1 1l TKN	___Coliform	1 1L Nalgene Base	___1L Amber Glass

Sampler(s): Mike Tsuromaki Signature: _____ Reviewed by: _____ Date: 11-13-15

IEH - JL ANALYTICAL
WATER SAMPLE – FIELD DATA SHEET

Forms/ MW Bear 12-06

Client: **BEAR VALLEY Water District – Bear Valley, CA** Site Description: **Monitoring Well # 3**

Instrument Calibration Data: Meter: **YSI 556 MPS** Date: 11-13-15 Time: 0825
PH: Primary calibration: pH4 pH7 pH10 **EC:** 100 200 250 1000 1413 2060 10,000
pH meter reading: 4 7 10 EC meter reading: 10,000 µS/cm
System purged with X DI Water (check appropriately)

WELL INFORMATION:

Well Depth (WD) (ft): 13.56 Ft.
Depth to Water (DTW) (ft): (-) 5.78 Ft.
Water Column (WD – DTW): (=) 7.78 Linear Ft.
Final Depth to Water: 8.13 Ft. @ 1137 (AM/PM)

Casing Diameter	Gal/Lin. Ft (GPLF)	Casing Diameter	Gal/Lin. Ft (GPLF)
X 2" →	0.17	☐ 4.5" →	0.83
☐ 3" →	0.38	☐ 5" →	1.02
☐ 4 →	0.66	☐ 6 →	1.50
		☐ 8 →	2.60

7.78 (Water Column) X 0.17 (Gal per Linear Ft.) = 0.9826 (1 purge volume (before rounding)) | 1.0 (Adjusted Purge volume (round **up** to nearest **0.5**)) X 3 (Number of Casing Volumes) = 3.0 gal (Total Purge Volume, gal.)

PURGING DATA: {record pH, EC, & Temp **before purging**} **then** [Express all data per purge volume]
Time purging started: 1116 Time Sampled: 1126 Date: 11-13-15

Time	Purge Volume (gal)	pH	EC (µS/cm)	ORP (mv)	D.O. (mg/l)	Temp (C.)	Color	Turbidity	Odor	Pumped Dry
1116	Ø	8.29	88	227.6		14.06	clear	clear	None	NO
1121	1.0	6.42	68	246.8		10.25	clear	clear	None	NO
1123	2.0	6.12	68	243.4		10.29	clear	clear	None	NO
1125	3.0	5.97	68	243.4		10.57	clear	clear	None	NO

clear, cloudy, Yellow, Brown | Clear, Trace, Light, Moderate, Heavy | None, Faint, Moderate, Strong | Yes/No

Other Notes: 13.10 Well Depth

PURGING EQUIPMENT
Submersible Pump X
Bailer (Teflon) (PVC) _____

SAMPLING EQUIPMENT
Submersible Pump X
Bailer (Teflon) (PVC) _____

WEATHER Below 20 Degrees
Ambient Temperature: _____
Rain ____ Dust _____ Wind _____

Well integrity: ☐ Good ☐ Fair ☒ Poor Snow QC Samples collected at this well: _____

Unfiltered Sample Bottles	1 1 L BOD 2 300 ml DO	2 Coliform	___1L Nalgene Base	___1L Amber Glass
Field Filtered Bottles	2 1 L BOD 1 1l TKN	___Coliform	___1L Nalgene Base	___1L Amber Glass

Sampler(s): Mike Tsuromaki Signature: [signature] Date: 11-13-15

IEH - JL ANALYTICAL
WATER SAMPLE – FIELD DATA SHEET

Forms/ MW Bear 12-06

Client: **BEAR VALLEY Water District – Bear Valley, CA** Site Description: **Monitoring Well # 4**

Instrument Calibration Data: Meter: **YSI 556 MPS** Date: 11-13-15 Time: 0825
PH: Primary calibration: pH4 pH7 pH10 **EC:** 100 200 250 1000 1413 2060 10,000
pH meter reading: 4 7 10 EC meter reading: 10,000 µS/cm
System purged with X DI Water (check appropriately)

WELL INFORMATION:

Well Depth (WD) (ft): 17.10 Ft.
Depth to Water (DTW) (ft): (-) 3.16 Ft.
Water Column (WD – DTW): (=) 13.94 Linear Ft.
Final Depth to Water: 3.53 Ft. @ 1300 AM/PM

Casing Diameter	Gal/Lin. Ft (GPLF)	Casing Diameter	Gal/Lin. Ft (GPLF)
X 2" →	0.17	☐ 4.5" →	0.83
☐ 3" →	0.38	☐ 5" →	1.02
☐ 4 →	0.66	☐ 6 →	1.50
		☐ 8 →	2.60

13.94 (Water Column) X 0.17 (Gal per Linear Ft.) = 2.3698 (1 purge volume before rounding) | 2.5 (Adjusted Purge volume round **up** to nearest **0.5**) X 3 (Number of Casing Volumes) = 7.5 gal (Total Purge Volume, gal.)

PURGING DATA: {record pH, EC, & Temp **before purging**} **then** [Express all data per purge volume]
Time purging started: 1224 Time Sampled: 1251 Date: 11-13-15

Time	Purge Volume (gal)	pH	EC (µS/cm)	ORP (mv)	D.O. (mg/l)	Temp (C.)	Color	Turbidity	Odor	Pumped Dry
1224	0	7.85	152	217.8		9.47	clear	clear	None	No
1227	2.5	6.56	195	108.1		9.03	clear	clear	None	NO
1229	5.0	6.41	190	227.7		9.07	clear	clear	None	No
1250	7.5	6.83	189	253.1		8.90	clear	clear	None	NO

clear, cloudy, Yellow, Brown | Clear, Trace, Light, Moderate, Heavy | None, Faint, Moderate, Strong | Yes/No

Other Notes: 15.81 well Depth

PURGING EQUIPMENT
Submersible Pump X
Bailer (Teflon) (PVC) _____

SAMPLING EQUIPMENT
Submersible Pump X
Bailer (Teflon) (PVC) _____

WEATHER Below 20 Degrees
Ambient Temperature: _____
Rain ____ Dust ____ Wind ____

Well integrity: ☐ Good ☐ Fair ☒ Poor snow QC Samples collected at this well: _____

Unfiltered Sample Bottles	1 1 L BOD 2 300 ml DO	2 Coliform	___1L Nalgene Base	___1L Amber Glass
Field Filtered Bottles	2 1 L BOD 1 1l TKN	___Coliform	___1L Nalgene Base	___1L Amber Glass

Sampler(s): Mike Borumaki Signature: [signature] Date: 11-13-15

IEH - JL ANALYTICAL
WATER SAMPLE – FIELD DATA SHEET

Forms/ MW Bear 12-06

Client: **BEAR VALLEY Water District – Bear Valley, CA** Site Description: **Monitoring Well # 5**

Instrument Calibration Data: Meter: **YSI 556 MPS** Date: 11-12-15 Time: 1045

PH: Primary calibration: pH4 pH7 pH10 **EC:** 100 200 250 1000 1413 2060 10,000

pH meter reading: 4 7 10 EC meter reading: 10,000 µS/cm

System purged with X DI Water (check appropriately)

WELL INFORMATION:

Well Depth (WD) (ft): 20.19 Ft.

Depth to Water (DTW) (ft): (-) 13.23 Ft.

Water Column (WD – DTW): (=) 6.96 Linear Ft.

Final Depth to Water: 15.81 Ft. @ 1415 AM/PM

Casing Diameter	Gal/Lin. Ft (GPLF)	Casing Diameter	Gal/Lin. Ft (GPLF)
X 2" →	0.17	☐ 4.5" →	0.83
☐ 3" →	0.38	☐ 5" →	1.02
☐ 4 →	0.66	☐ 6 →	1.50
		☐ 8 →	2.60

6.96 (Water Column) X 0.17 (Gal per Linear Ft.) = 1.1832 (1 purge volume (before rounding)) | 1.5 (Adjusted Purge volume (round **up** to nearest **0.5**)) X 3 (Number of Casing Volumes) = 4.5 gal (Total Purge Volume, gal.)

PURGING DATA: {record pH, EC, & Temp **before purging**} **then** [Express all data per purge volume]

Time purging started: 1351 Time Sampled: 1352 Date: 11-12-15

Time	Purge Volume (gal)	pH	EC (µS/cm)	ORP (mv)	D.O. (mg/l)	Temp (C.)	Color	Turbidity	Odor	Pumped Dry
1351	0	6.57	108	200.1		7.72	Brown	Heavy	None	No
	1.5									
	3.0									
	4.5									

	Color	Turbidity	Odor	Pumped Dry
	clear cloudy Yellow Brown	Clear Trace Light Moderate Heavy	None Faint Moderate Strong	Yes/No

Other Notes: 19.78 Well Depth Half Frozen & muddy could only pump 1 purge

PURGING EQUIPMENT
Submersible Pump X
Bailer (Teflon) (PVC) _____

SAMPLING EQUIPMENT
Submersible Pump X
Bailer (Teflon) (PVC) _____

WEATHER Below 20 Degrees
Ambient Temperature: _____
Rain ____ Dust ____ Wind ____

Well integrity: ☐ Good ☐ Fair ☒ Poor Snow QC Samples collected at this well: _____

Unfiltered Sample Bottles	1 1 L BOD 2 300 ml DO	2 Coliform	___1L Nalgene Base	___1L Amber Glass
Field Filtered Bottles	2 1 L BOD 1 1l TKN	___Coliform	___1L Nalgene Base	___1L Amber Glass

Sampler(s): Mike Tsuruoka Signature: _____ Date: 11-12-15

IEH - JL ANALYTICAL
WATER SAMPLE – FIELD DATA SHEET

Forms/ MW Bear 12-06

Client: **BEAR VALLEY Water District – Bear Valley, CA** Site Description: **Monitoring Well # 6**

Instrument Calibration Data: Meter: **YSI 556 MPS** Date: 11-12-15 Time: 1045
PH: Primary calibration: pH4 pH7 pH10 **EC:** 100 200 250 1000 1413 2060 10,000
pH meter reading: 4 7 10 EC meter reading: 10,000 µS/cm
System purged with X DI Water (check appropriately)

WELL INFORMATION:

Well Depth (WD) (ft): 22.59 Ft.
Depth to Water (DTW) (ft): (-) 0.0 Ft.
Water Column (WD – DTW): (=) 22.59 Linear Ft.
Final Depth to Water: 3.19 Ft. @ 1640 AM/PM

Casing Diameter	Gal/Lin. Ft (GPLF)	Casing Diameter	Gal/Lin. Ft (GPLF)
X 2" →	0.17	☐ 4.5" →	0.83
☐ 3" →	0.38	☐ 5" →	1.02
☐ 4 →	0.66	☐ 6 →	1.50
		☐ 8 →	2.60

22.59 (Water Column) X 0.17 (Gal per Linear Ft.) = 3.8403 (1 purge volume (before rounding)) | 4.0 (Adjusted Purge volume (round **up** to nearest **0.5**)) X 3 (Number of Casing Volumes) = 12.0 gal (Total Purge Volume, gal.)

PURGING DATA: {record pH, EC, & Temp **before purging**} **then** [Express all data per purge volume]
Time purging started: 1617 Time Sampled: 1632 Date: 11-12-15

Time	Purge Volume (gal)	pH	EC (µS/cm)	ORP (mv)	D.O. (mg/l)	Temp (C.)	Color	Turbidity	Odor	Pumped Dry
1617	0	7.60	170	168.1		6.86	clear	clear	None	NO
1627	4.0	6.21	199	100.1		8.06	clear	clear	None	NO
1629	8.0	6.19	205	95.8		8.08	clear	clear	None	NO
1631	12.0	6.20	209	93.3		8.07	clear	clear	None	NO

clear, cloudy, Yellow, Brown | Clear, Trace, Light, Moderate, Heavy | None, Faint, Moderate, Strong | Yes/No

Other Notes: 22.10 well Depth

PURGING EQUIPMENT
Submersible Pump X
Bailer (Teflon) (PVC) _____

SAMPLING EQUIPMENT
Submersible Pump X
Bailer (Teflon) (PVC) _____

WEATHER Below 20 Degrees
Ambient Temperature: _____
Rain ____ Dust ____ Wind ____

Well integrity: ☐ Good ☐ Fair ☒ Poor Snow QC Samples collected at this well: _____

Unfiltered Sample Bottles	1 1 L BOD 2 300 ml DO	2 Coliform	___1L Nalgene Base	___1L Amber Glass
Field Filtered Bottles	2 1 L BOD 1 1l TKN	___Coliform	___1L Nalgene Base	___1L Amber Glass

Sampler(s): Mike Tsuromaki Signature: _____ Date: 11-12-15

IEH - JL ANALYTICAL
WATER SAMPLE – FIELD DATA SHEET

Monitoring Well -- Lock Report

Client: **BEAR VALLEY WD Bear Valley, CA** Date: 11-12-15 & 11-13-15

Well Number	Is there a lock?	Condition of the lock?	Does it Work?	Was it Locked upon arrival?	Was it locked upon departure?
	Yes / No	Acceptable / Bad	Yes / No	Yes / No	Yes / No
1	yes	Acceptable	yes	yes	yes
2	yes	Acceptable	yes	yes	yes
3	yes	Acceptable	yes	yes	yes
4	yes	Acceptable	yes	yes	yes
5	yes	Acceptable	yes	yes	yes
6	yes	Acceptable	yes	yes	yes

Comments:

All locks were good but hard to open because of the snow about 1½ ft of snow on top had to chip the ice off.

Sampler: Mike Tsurumaki

Form: Lock Report 4-04

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Bear Valley Water District
Bear Valley, CA
3rd Monitoring Event of 2015
GROUNDWATER MONITORING REPORT

Section 3.

Monitoring Well Field Data

Table 1. Bear Valley Monitoring Well Field Data

Table 2. Bear Valley Monitoring Well Purge Data

November 2015

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TABLE 1

Field Data Bear Valley Water District

Monitoring Well Field Data

November 12 & 13, 2015

Well Number	Initial Well Depth	Depth to Ground Water	Linear Feet of Water	Final Depth to Water	Measured Well Depth	Casing Diameter	Adjusted Purge Volume	Total Required Purge volume	Total Actual Purge volume
	(Ft)	(Ft)	(Ft)	(Ft)	(Ft)	(In)	(Gal)	(Gal)	(Gal)
	(b)	(c)	(b - c)						
1	27.29	11.00	16.29	12.30	24.30	2	3.0	9.0	<1.0
2	17.90	8.81	9.09	9.25	17.60	2	2.0	6.0	6.0
3	13.56	5.78	7.78	8.13	13.10	2	1.0	3.0	3.0
4	17.10	3.16	13.94	3.53	15.81	2	2.5	7.5	7.5
5	20.19	13.23	6.96	15.81	19.78	2	1.5	4.5	<1.0
6	22.59	0.00	22.59	3.19	22.10	2	4.0	12.0	12.0

For 2” Casing - Casing Volume (gal) = Height of Water Column X 0.17 Gallons per linear foot

Well would not pump

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TABLE 2
FIELD DATA
BEAR VALLEY WATER DISTRICT
Monitoring Well - Purge Data Summary

November 12 & 13, 2015

Well Number	Sampling Date	Time	Purge Volume (Gal)	pH (pH units)	EC (µS/cm)	O.R.P. (Millivolts)	D.O. (Mg/L)	Temp (C)	Color	Turbidity	Odor
1	11/12/2015	*** Insufficient Water**									
2	11/13/2015	9:36	2.0	6.4	58	500		11.6	Yellow	Moderate	None
		9:41	4.0	6.1	59	410		12.6	Yellow	Moderate	None
		9:46	6.0	6.1	60	350		12.1	Yellow	Light	None
3	11/13/2015	11:21	1.0	6.4	68	250		10.3	Clear	Clear	None
		11:23	2.0	6.1	68	240		10.3	Clear	Clear	None
		11:25	3.0	6.0	68	240		10.6	Clear	Clear	None
4	11/13/2015	12:27	2.5	6.6	200	110		9.0	Clear	Clear	None
		12:29	5.0	6.4	190	230		9.1	Clear	Clear	None
		12:50	7.5	6.8	190	250		8.9	Clear	Clear	None
5	11/12/2015	*** Insufficent Water**									
6	11/12/2015	16:27	4.0	6.2	200	100		8.1	Clear	Clear	None
		16:29	8.0	6.2	210	96		8.1	Clear	Clear	None
		16:31	12.0	6.2	210	93		8.1	Clear	Clear	None

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Bear Valley Water District
Bear Valley, CA
3rd Monitoring Event of 2015
GROUNDWATER MONITORING REPORT

Section 4.

Certificate of Analysis
(Analytical Reports)

Metals Report

November 2015

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Bear Valley Water Dist.

P.O. Box 5027
Bear Valley,CA 95223

Report #	L2.2-14R35625
Report Date:	12/04/2015
Received Date:	11/14/2015
Work Order:	362527

Laboratory Number: 36252701
Description: Waste Water, MW #1, 11-12-15, 1251

Analytical Results

Constituent		Result		Minimum Level	Method Detection Limit	Method Reference	Analysis Date	Analysis Time	Analyst
Total Dissolved Solids (TDS)		160	mg/l	20	6.8	SM 2540C	11/19/2015	15:25	JG
pH		6.5	SU	0.5	0.2	SM 4500-H B	11/12/2015	12:50	AS
Total Alkalinity (as CaCO3)		68	mg/l	5.0	3.0	SM 2320B	12/01/2015	09:50	NH
Bicarbonate Alkalinity (as CaCO3)		68	mg/l			SM 2320B	12/01/2015	09:50	NH
Carbonate Alkalinity (as CaCO3)	<	1	mg/l			SM 2320B	12/01/2015	09:50	NH
Hydroxide Alkalinity (as CaCO3)	<	1	mg/l			SM 2320B	12/01/2015	09:50	NH
Ammoniacal Nitrogen by Kjeldahl	<	1	mg/l	1.0	0.8	SM 4500 NH3 C	12/02/2015	08:30	SKS
Total Kjeldahl Nitrogen (TKN)	<	1	mg/l	1.0	0.8	SM 4500-Norg B	11/18/2015	08:30	SKS
Electrical Conductivity (E.C.)		160	umho/cm	1.0	1.0	SM 2510B[5]	11/12/2015	12:50	AS
Chloride		3.7	mg/l	0.2	0.01	EPA 300.0	11/13/2015	17:54	JA
Sulfate		4.2	mg/l	0.5	0.1	EPA 300.0	11/13/2015	17:54	JA
Nitrate Nitrogen	<	0.2	mg/l	0.1	0.014	EPA 300.0	11/13/2015	17:54	JA
Total Coliform (20 T LST)		17	MPN/100ml			SM 9221B	11/14/2015	NA	SM
Fecal Coliform (20 T LST)	<	1.8	MPN/100ml			SM 9221E	11/14/2015	NA	SM
Boron		See Report				See Attached Report	11/19/2015	14:55	CM

QC Results

Constituent	QC Units	Blank		Matrix	Theoretical Spike	Matrix Spike	Matrix Spike Duplicate	Lab Control Spike	Precision %	Accuracy %	Response %
Total Dissolved Solids (TDS)	mg/l	< 20		510	3000	3500	3500	3000	0.9	100.5	100.0
pH	SU	NA		NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity (as CaCO3)	mg/l	< 5		280	300	570	570	300	0.0	98.6	100.6
Bicarbonate Alkalinity (as CaCO3)	mg/l	NA		NA	NA	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity (as CaCO3)	mg/l	NA		NA	NA	NA	NA	NA	NA	NA	NA
Hydroxide Alkalinity (as CaCO3)	mg/l	NA		NA	NA	NA	NA	NA	NA	NA	NA
Ammoniacal Nitrogen by Kjeldahl	mg/l	< 1	<	1	28	28	28	28	0.0	99.2	99.2
Total Kjeldahl Nitrogen (TKN)	mg/l	< 1	<	1	28	28	28	28	0.2	99.6	99.2
Electrical Conductivity (E.C.)	umho/cm	NA		NA	NA	NA	NA	NA	NA	NA	NA
Chloride	mg/l	< 0.2		7.9	0.8	8.7	8.7	0.8	0.5	101.3	100.0
Sulfate	mg/l	< 0.5		18	5.0	23	23	4.8	0.3	91.8	95.6
Nitrate Nitrogen	mg/l	< 0.1		0.6	0.9	1.4	1.4	0.9	0.6	92.0	94.3
Total Coliform (20 T LST)	MPN/100ml	NA		NA	NA	NA	NA	NA	NA	NA	NA
Fecal Coliform (20 T LST)	MPN/100ml	NA		NA	NA	NA	NA	NA	NA	NA	NA
Boron		NA		NA	NA	NA	NA	NA	NA	NA	NA

Notes

At 25 °C

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Bear Valley Water Dist.

P.O. Box 5027
Bear Valley,CA 95223

Report #	L2.2-14R35625
Report Date:	12/04/2015
Received Date:	11/14/2015
Work Order:	362527

Laboratory Number: 36252701
Description: Waste Water, MW #1, 11-12-15, 1251

Analytical Results

Constituent	Result	Minimum Level	Method Detection Limit	Method Reference	Analysis Date	Analysis Time	Analyst
Calcium	See Report			See Attached Report	11/19/2015	14:55	CM
Iron	See Report			See Attached Report	11/19/2015	14:55	CM
Magnesium	See Report			See Attached Report	11/19/2015	14:55	CM
Manganese	See Report			See Attached Report	11/19/2015	14:55	CM
Potassium	See Report			See Attached Report	11/19/2015	14:55	CM
Sodium	See Report			See Attached Report	11/19/2015	14:55	CM

QC Results

Constituent	QC Units	Blank	Matrix	Theoretical Spike	Matrix Spike	Matrix Spike Duplicate	Lab Control Spike	Precision %	Accuracy %	Response %
Calcium		NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron		NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium		NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese		NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium		NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium		NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes

Authorized By: Amos Snider 12/04/2015

Amos Snider Laboratory Supervisor

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Bear Valley Water Dist.

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Report #	L2.2-14R35625
Report Date:	12/04/2015
Received Date:	11/14/2015
Work Order:	362527

Laboratory Number: 36252702
Description: Waste Water, MW #2, 11-13-15, 947

Analytical Results

Constituent		Result		Minimum Level	Method Detection Limit	Method Reference	Analysis Date	Analysis Time	Analyst
Total Dissolved Solids (TDS)		90	mg/l	20	6.8	SM 2540C	11/19/2015	15:25	JG
pH		6.1	SU	0.5	0.2	SM 4500-H B	11/13/2015	09:46	AS
Total Alkalinity (as CaCO3)		26	mg/l	5.0	3.0	SM 2320B	12/01/2015	09:50	NH
Bicarbonate Alkalinity (as CaCO3)		26	mg/l			SM 2320B	12/01/2015	09:50	NH
Carbonate Alkalinity (as CaCO3)	<	1	mg/l			SM 2320B	12/01/2015	09:50	NH
Hydroxide Alkalinity (as CaCO3)	<	1	mg/l			SM 2320B	12/01/2015	09:50	NH
Ammoniacal Nitrogen by Kjeldahl	<	1	mg/l	1.0	0.8	SM 4500 NH3 C	12/02/2015	08:30	SKS
Total Kjeldahl Nitrogen (TKN)	<	1	mg/l	1.0	0.8	SM 4500-Norg B	11/18/2015	08:30	SKS
Electrical Conductivity (E.C.)		60	umho/cm	1.0	1.0	SM 2510B[5]	11/13/2015	09:46	AS
Chloride		0.9	mg/l	0.2	0.01	EPA 300.0	11/13/2015	17:54	JA
Sulfate	<	0.5	mg/l	0.5	0.1	EPA 300.0	11/13/2015	17:54	JA
Nitrate Nitrogen	<	0.2	mg/l	0.1	0.014	EPA 300.0	11/13/2015	17:54	JA
Total Coliform (20 T LST)		6.8	MPN/100ml			SM 9221B	11/14/2015	NA	SM
Fecal Coliform (20 T LST)		2.0	MPN/100ml			SM 9221E	11/14/2015	NA	SM
Boron		See Report				See Attached Report	11/19/2015	14:55	CM

QC Results

Constituent	QC Units	Blank		Matrix	Theoretical Spike	Matrix Spike	Matrix Spike Duplicate	Lab Control Spike	Precision %	Accuracy %	Response %
Total Dissolved Solids (TDS)	mg/l	< 20		510	3000	3500	3500	3000	0.9	100.5	100.0
pH	SU	NA		NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity (as CaCO3)	mg/l	< 5		280	300	570	570	300	0.0	98.6	100.6
Bicarbonate Alkalinity (as CaCO3)	mg/l	NA		NA	NA	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity (as CaCO3)	mg/l	NA		NA	NA	NA	NA	NA	NA	NA	NA
Hydroxide Alkalinity (as CaCO3)	mg/l	NA		NA	NA	NA	NA	NA	NA	NA	NA
Ammoniacal Nitrogen by Kjeldahl	mg/l	< 1	<	1	28	28	28	28	0.0	99.2	99.2
Total Kjeldahl Nitrogen (TKN)	mg/l	< 1	<	1	28	28	28	28	0.2	99.6	99.2
Electrical Conductivity (E.C.)	umho/cm	NA		NA	NA	NA	NA	NA	NA	NA	NA
Chloride	mg/l	< 0.2		7.9	0.8	8.7	8.7	0.8	0.5	101.3	100.0
Sulfate	mg/l	< 0.5		18	5.0	23	23	4.8	0.3	91.8	95.6
Nitrate Nitrogen	mg/l	< 0.1		0.6	0.9	1.4	1.4	0.9	0.6	92.0	94.3
Total Coliform (20 T LST)	MPN/100ml	NA		NA	NA	NA	NA	NA	NA	NA	NA
Fecal Coliform (20 T LST)	MPN/100ml	NA		NA	NA	NA	NA	NA	NA	NA	NA
Boron		NA		NA	NA	NA	NA	NA	NA	NA	NA

Notes

At 25 °C

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Bear Valley Water Dist.

P.O. Box 5027
Bear Valley,CA 95223

Report #	L2.2-14R35625
Report Date:	12/04/2015
Received Date:	11/14/2015
Work Order:	362527

Laboratory Number: 36252702
Description: Waste Water, MW #2, 11-13-15, 947

Analytical Results

Constituent	Result	Minimum Level	Method Detection Limit	Method Reference	Analysis Date	Analysis Time	Analyst
Calcium	See Report			See Attached Report	11/19/2015	14:55	CM
Iron	See Report			See Attached Report	11/19/2015	14:55	CM
Magnesium	See Report			See Attached Report	11/19/2015	14:55	CM
Manganese	See Report			See Attached Report	11/19/2015	14:55	CM
Potassium	See Report			See Attached Report	11/19/2015	14:55	CM
Sodium	See Report			See Attached Report	11/19/2015	14:55	CM

QC Results

Constituent	QC Units	Blank	Matrix	Theoretical Spike	Matrix Spike	Matrix Spike Duplicate	Lab Control Spike	Precision %	Accuracy %	Response %
Calcium		NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron		NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium		NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese		NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium		NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium		NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes

Authorized By: Amos Snider 12/04/2015

Amos Snider Laboratory Supervisor

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Bear Valley Water Dist.

P.O. Box 5027
Bear Valley,CA 95223

Report #	L2.2-14R35625
Report Date:	12/04/2015
Received Date:	11/14/2015
Work Order:	362527

Laboratory Number: 36252703
Description: Waste Water, MW #3, 11-13-15, 1126

Analytical Results

Constituent		Result		Minimum Level	Method Detection Limit	Method Reference	Analysis Date	Analysis Time	Analyst
Total Dissolved Solids (TDS)		67	mg/l	20	6.8	SM 2540C	11/19/2015	15:25	JG
pH		6.0	SU	0.5	0.2	SM 4500-H B	11/13/2015	11:25	AS
Total Alkalinity (as CaCO3)		24	mg/l	5.0	3.0	SM 2320B	12/01/2015	09:50	NH
Bicarbonate Alkalinity (as CaCO3)		24	mg/l			SM 2320B	12/01/2015	09:50	NH
Carbonate Alkalinity (as CaCO3)	<	1	mg/l			SM 2320B	12/01/2015	09:50	NH
Hydroxide Alkalinity (as CaCO3)	<	1	mg/l			SM 2320B	12/01/2015	09:50	NH
Ammoniacal Nitrogen by Kjeldahl	<	1	mg/l	1.0	0.8	SM 4500 NH3 C	12/02/2015	08:30	SKS
Total Kjeldahl Nitrogen (TKN)	<	1	mg/l	1.0	0.8	SM 4500-Norg B	11/18/2015	08:30	SKS
Electrical Conductivity (E.C.)		68	umho/cm	1.0	1.0	SM 2510B[5]	11/12/2015	11:25	AS
Chloride		4.1	mg/l	0.2	0.01	EPA 300.0	11/13/2015	17:54	JA
Sulfate		1.3	mg/l	0.5	0.1	EPA 300.0	11/13/2015	17:54	JA
Nitrate Nitrogen	<	0.2	mg/l	0.1	0.014	EPA 300.0	11/13/2015	17:54	JA
Total Coliform (20 T LST)	<	1.8	MPN/100ml			SM 9221B	11/14/2015	NA	SM
Fecal Coliform (20 T LST)	<	1.8	MPN/100ml			SM 9221E	11/14/2015	NA	SM
Boron		See Report				See Attached Report	11/19/2015	14:55	CM

QC Results

Constituent	QC Units	Blank		Matrix	Theoretical Spike	Matrix Spike	Matrix Spike Duplicate	Lab Control Spike	Precision %	Accuracy %	Response %
Total Dissolved Solids (TDS)	mg/l	< 20		510	3000	3500	3500	3000	0.9	100.5	100.0
pH	SU	NA		NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity (as CaCO3)	mg/l	< 5		280	300	570	570	300	0.0	98.6	100.6
Bicarbonate Alkalinity (as CaCO3)	mg/l	NA		NA	NA	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity (as CaCO3)	mg/l	NA		NA	NA	NA	NA	NA	NA	NA	NA
Hydroxide Alkalinity (as CaCO3)	mg/l	NA		NA	NA	NA	NA	NA	NA	NA	NA
Ammoniacal Nitrogen by Kjeldahl	mg/l	< 1	<	1	28	28	28	28	0.0	99.2	99.2
Total Kjeldahl Nitrogen (TKN)	mg/l	< 1	<	1	28	28	28	28	0.2	99.6	99.2
Electrical Conductivity (E.C.)	umho/cm	NA		NA	NA	NA	NA	NA	NA	NA	NA
Chloride	mg/l	< 0.2		7.9	0.8	8.7	8.7	0.8	0.5	101.3	100.0
Sulfate	mg/l	< 0.5		18	5.0	23	23	4.8	0.3	91.8	95.6
Nitrate Nitrogen	mg/l	< 0.1		0.6	0.9	1.4	1.4	0.9	0.6	92.0	94.3
Total Coliform (20 T LST)	MPN/100ml	NA		NA	NA	NA	NA	NA	NA	NA	NA
Fecal Coliform (20 T LST)	MPN/100ml	NA		NA	NA	NA	NA	NA	NA	NA	NA
Boron		NA		NA	NA	NA	NA	NA	NA	NA	NA

Notes

At 25 °C

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Bear Valley Water Dist.

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Report #	L2.2-14R35625
Report Date:	12/04/2015
Received Date:	11/14/2015
Work Order:	362527

Laboratory Number: 36252703
Description: Waste Water, MW #3, 11-13-15, 1126

Analytical Results

Constituent	Result	Minimum Level	Method Detection Limit	Method Reference	Analysis Date	Analysis Time	Analyst
Calcium	See Report			See Attached Report	11/19/2015	14:55	CM
Iron	See Report			See Attached Report	11/19/2015	14:55	CM
Magnesium	See Report			See Attached Report	11/19/2015	14:55	CM
Manganese	See Report			See Attached Report	11/19/2015	14:55	CM
Potassium	See Report			See Attached Report	11/19/2015	14:55	CM
Sodium	See Report			See Attached Report	11/19/2015	14:55	CM

QC Results

Constituent	QC Units	Blank	Matrix	Theoretical Spike	Matrix Spike	Matrix Spike Duplicate	Lab Control Spike	Precision %	Accuracy %	Response %
Calcium		NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron		NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium		NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese		NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium		NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium		NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes

Authorized By: Amos Snider 12/04/2015

Amos Snider Laboratory Supervisor

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Report #	L2.2-14R35625
Report Date:	12/04/2015
Received Date:	11/14/2015
Work Order:	362527

Laboratory Number: 36252704
Description: Waste Water, MW #4, 11-13-15, 1251

Analytical Results

Constituent		Result		Minimum Level	Method Detection Limit	Method Reference	Analysis Date	Analysis Time	Analyst
Total Dissolved Solids (TDS)		130	mg/l	20	6.8	SM 2540C	11/19/2015	15:25	JG
pH		6.8	SU	0.5	0.2	SM 4500-H B	11/13/2015	12:50	AS
Total Alkalinity (as CaCO3)		78	mg/l	5.0	3.0	SM 2320B	12/01/2015	09:50	NH
Bicarbonate Alkalinity (as CaCO3)		78	mg/l			SM 2320B	12/01/2015	09:50	NH
Carbonate Alkalinity (as CaCO3)	<	1	mg/l			SM 2320B	12/01/2015	09:50	NH
Hydroxide Alkalinity (as CaCO3)	<	1	mg/l			SM 2320B	12/01/2015	09:50	NH
Ammoniacal Nitrogen by Kjeldahl	<	1	mg/l	1.0	0.8	SM 4500 NH3 C	12/02/2015	08:30	SKS
Total Kjeldahl Nitrogen (TKN)	<	1	mg/l	1.0	0.8	SM 4500-Norg B	11/18/2015	08:30	SKS
Electrical Conductivity (E.C.)		190	umho/cm	1.0	1.0	SM 2510B[5]	11/13/2015	12:50	AS
Chloride		7.7	mg/l	0.2	0.01	EPA 300.0	11/13/2015	17:54	JA
Sulfate		5.3	mg/l	0.5	0.1	EPA 300.0	11/13/2015	17:54	JA
Nitrate Nitrogen	<	0.2	mg/l	0.1	0.014	EPA 300.0	11/13/2015	17:54	JA
Total Coliform (20 T LST)	<	1.8	MPN/100ml			SM 9221B	11/14/2015	NA	SM
Fecal Coliform (20 T LST)	<	1.8	MPN/100ml			SM 9221E	11/14/2015	NA	SM
Boron		See Report				See Attached Report	11/19/2015	14:55	CM

QC Results

Constituent	QC Units	Blank		Matrix	Theoretical Spike	Matrix Spike	Matrix Spike Duplicate	Lab Control Spike	Precision %	Accuracy %	Response %
Total Dissolved Solids (TDS)	mg/l	< 20		510	3000	3500	3500	3000	0.9	100.5	100.0
pH	SU	NA		NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity (as CaCO3)	mg/l	< 5		280	300	570	570	300	0.0	98.6	100.6
Bicarbonate Alkalinity (as CaCO3)	mg/l	NA		NA	NA	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity (as CaCO3)	mg/l	NA		NA	NA	NA	NA	NA	NA	NA	NA
Hydroxide Alkalinity (as CaCO3)	mg/l	NA		NA	NA	NA	NA	NA	NA	NA	NA
Ammoniacal Nitrogen by Kjeldahl	mg/l	< 1	<	1	28	28	28	28	0.0	99.2	99.2
Total Kjeldahl Nitrogen (TKN)	mg/l	< 1	<	1	28	28	28	28	0.2	99.6	99.2
Electrical Conductivity (E.C.)	umho/cm	NA		NA	NA	NA	NA	NA	NA	NA	NA
Chloride	mg/l	< 0.2		7.9	0.8	8.7	8.7	0.8	0.5	101.3	100.0
Sulfate	mg/l	< 0.5		18	5.0	23	23	4.8	0.3	91.8	95.6
Nitrate Nitrogen	mg/l	< 0.1		0.6	0.9	1.4	1.4	0.9	0.6	92.0	94.3
Total Coliform (20 T LST)	MPN/100ml	NA		NA	NA	NA	NA	NA	NA	NA	NA
Fecal Coliform (20 T LST)	MPN/100ml	NA		NA	NA	NA	NA	NA	NA	NA	NA
Boron		NA		NA	NA	NA	NA	NA	NA	NA	NA

Notes

At 25 °C

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Bear Valley Water Dist.

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Report #	L2.2-14R35625
Report Date:	12/04/2015
Received Date:	11/14/2015
Work Order:	362527

Laboratory Number: 36252704
Description: Waste Water, MW #4, 11-13-15, 1251

Analytical Results

Constituent	Result	Minimum Level	Method Detection Limit	Method Reference	Analysis Date	Analysis Time	Analyst
Calcium	See Report			See Attached Report	11/19/2015	14:55	CM
Iron	See Report			See Attached Report	11/19/2015	14:55	CM
Magnesium	See Report			See Attached Report	11/19/2015	14:55	CM
Manganese	See Report			See Attached Report	11/19/2015	14:55	CM
Potassium	See Report			See Attached Report	11/19/2015	14:55	CM
Sodium	See Report			See Attached Report	11/19/2015	14:55	CM

QC Results

Constituent	QC Units	Blank	Matrix	Theoretical Spike	Matrix Spike	Matrix Spike Duplicate	Lab Control Spike	Precision %	Accuracy %	Response %
Calcium		NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron		NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium		NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese		NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium		NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium		NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes

Authorized By: Amos Snider 12/04/2015

Amos Snider Laboratory Supervisor

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Report #	L2.2-14R35625
Report Date:	12/04/2015
Received Date:	11/14/2015
Work Order:	362527

Laboratory Number: 36252705
Description: Waste Water, MW #5, 11-12-15, 1352

Analytical Results

Constituent		Result		Minimum Level	Method Detection Limit	Method Reference	Analysis Date	Analysis Time	Analyst
Total Dissolved Solids (TDS)		220	mg/l	20	6.8	SM 2540C	11/19/2015	15:25	JG
pH		6.6	SU	0.5	0.2	SM 4500-H B	11/12/2015	13:51	AS
Total Alkalinity (as CaCO3)		42	mg/l	5.0	3.0	SM 2320B	12/01/2015	09:50	NH
Bicarbonate Alkalinity (as CaCO3)		42	mg/l			SM 2320B	12/01/2015	09:50	NH
Carbonate Alkalinity (as CaCO3)	<	1	mg/l			SM 2320B	12/01/2015	09:50	NH
Hydroxide Alkalinity (as CaCO3)	<	1	mg/l			SM 2320B	12/01/2015	09:50	NH
Ammoniacal Nitrogen by Kjeldahl	<	1	mg/l	1.0	0.8	SM 4500 NH3 C	12/02/2015	08:30	SKS
Total Kjeldahl Nitrogen (TKN)	<	1	mg/l	1.0	0.8	SM 4500-Norg B	11/18/2015	08:30	SKS
Electrical Conductivity (E.C.)		110	umho/cm	1.0	1.0	SM 2510B[5]	11/13/2015	13:51	AS
Chloride		6.7	mg/l	0.2	0.01	EPA 300.0	11/13/2015	17:54	JA
Sulfate		1.0	mg/l	0.5	0.1	EPA 300.0	11/13/2015	17:54	JA
Nitrate Nitrogen	<	0.2	mg/l	0.1	0.014	EPA 300.0	11/13/2015	17:54	JA
Boron		See Report				See Attached Report	11/19/2015	14:55	CM
Calcium		See Report				See Attached Report	11/19/2015	14:55	CM
Iron		See Report				See Attached Report	11/19/2015	14:55	CM

QC Results

Constituent	QC Units	Blank		Matrix	Theoretical Spike	Matrix Spike	Matrix Spike Duplicate	Lab Control Spike	Precision %	Accuracy %	Response %
Total Dissolved Solids (TDS)	mg/l	< 20		510	3000	3500	3500	3000	0.9	100.5	100.0
pH	SU	NA		NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity (as CaCO3)	mg/l	< 5		280	300	570	570	300	0.0	98.6	100.6
Bicarbonate Alkalinity (as CaCO3)	mg/l	NA		NA	NA	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity (as CaCO3)	mg/l	NA		NA	NA	NA	NA	NA	NA	NA	NA
Hydroxide Alkalinity (as CaCO3)	mg/l	NA		NA	NA	NA	NA	NA	NA	NA	NA
Ammoniacal Nitrogen by Kjeldahl	mg/l	< 1	<	1	28	28	28	28	0.0	99.2	99.2
Total Kjeldahl Nitrogen (TKN)	mg/l	< 1	<	1	28	28	28	28	0.2	99.6	99.2
Electrical Conductivity (E.C.)	umho/cm	NA		NA	NA	NA	NA	NA	NA	NA	NA
Chloride	mg/l	< 0.2		7.9	0.8	8.7	8.7	0.8	0.5	101.3	100.0
Sulfate	mg/l	< 0.5		18	5.0	23	23	4.8	0.3	91.8	95.6
Nitrate Nitrogen	mg/l	< 0.1		0.6	0.9	1.4	1.4	0.9	0.6	92.0	94.3
Boron		NA		NA	NA	NA	NA	NA	NA	NA	NA
Calcium		NA		NA	NA	NA	NA	NA	NA	NA	NA
Iron		NA		NA	NA	NA	NA	NA	NA	NA	NA

Notes

At 25 °C

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Report #	L2.2-14R35625
Report Date:	12/04/2015
Received Date:	11/14/2015
Work Order:	362527

Laboratory Number: 36252705
Description: Waste Water, MW #5, 11-12-15, 1352

Analytical Results

Constituent	Result	Minimum Level	Method Detection Limit	Method Reference	Analysis Date	Analysis Time	Analyst
Magnesium	See Report			See Attached Report	11/19/2015	14:55	CM
Manganese	See Report			See Attached Report	11/19/2015	14:55	CM
Potassium	See Report			See Attached Report	11/19/2015	14:55	CM
Sodium	See Report			See Attached Report	11/19/2015	14:55	CM

QC Results

Constituent	QC Units	Blank	Matrix	Theoretical Spike	Matrix Spike	Matrix Spike Duplicate	Lab Control Spike	Precision %	Accuracy %	Response %
Magnesium		NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese		NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium		NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium		NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes

Authorized By: Amos Snider 12/04/2015

Amos Snider Laboratory Supervisor

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Report #	L2.2-14R35625
Report Date:	12/04/2015
Received Date:	11/14/2015
Work Order:	362527

Laboratory Number: 36252706
Description: Waste Water, MW #6, 11-12-15, 1632

Analytical Results

Constituent		Result		Minimum Level	Method Detection Limit	Method Reference	Analysis Date	Analysis Time	Analyst
Total Dissolved Solids (TDS)		120	mg/l	20	6.8	SM 2540C	11/19/2015	15:25	JG
pH		6.2	SU	0.5	0.2	SM 4500-H B	11/12/2015	16:31	AS
Total Alkalinity (as CaCO3)		90	mg/l	5.0	3.0	SM 2320B	12/01/2015	09:50	NH
Bicarbonate Alkalinity (as CaCO3)		90	mg/l			SM 2320B	12/01/2015	09:50	NH
Carbonate Alkalinity (as CaCO3)	<	1	mg/l			SM 2320B	12/01/2015	09:50	NH
Hydroxide Alkalinity (as CaCO3)	<	1	mg/l			SM 2320B	12/01/2015	09:50	NH
Ammoniacal Nitrogen by Kjeldahl	<	1	mg/l	1.0	0.8	SM 4500 NH3 C	12/02/2015	08:30	SKS
Total Kjeldahl Nitrogen (TKN)	<	1	mg/l	1.0	0.8	SM 4500-Norg B	11/18/2015	08:30	SKS
Electrical Conductivity (E.C.)		210	umho/cm	1.0	1.0	SM 2510B[5]	11/12/2015	16:31	AS
Chloride		9.7	mg/l	0.2	0.01	EPA 300.0	11/13/2015	17:54	JA
Sulfate		0.8	mg/l	0.5	0.1	EPA 300.0	11/13/2015	17:54	JA
Nitrate Nitrogen	<	0.2	mg/l	0.1	0.014	EPA 300.0	11/13/2015	17:54	JA
Total Coliform (20 T LST)	<	1.8	MPN/100ml			SM 9221B	11/14/2015	NA	SM
Fecal Coliform (20 T LST)	<	1.8	MPN/100ml			SM 9221E	11/14/2015	NA	SM
Boron		See Report				See Attached Report	11/19/2015	14:55	CM

QC Results

Constituent	QC Units	Blank		Matrix	Theoretical Spike	Matrix Spike	Matrix Spike Duplicate	Lab Control Spike	Precision %	Accuracy %	Response %
Total Dissolved Solids (TDS)	mg/l	< 20		510	3000	3500	3500	3000	0.9	100.5	100.0
pH	SU	NA		NA	NA	NA	NA	NA	NA	NA	NA
Total Alkalinity (as CaCO3)	mg/l	< 5		280	300	570	570	300	0.0	98.6	100.6
Bicarbonate Alkalinity (as CaCO3)	mg/l	NA		NA	NA	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity (as CaCO3)	mg/l	NA		NA	NA	NA	NA	NA	NA	NA	NA
Hydroxide Alkalinity (as CaCO3)	mg/l	NA		NA	NA	NA	NA	NA	NA	NA	NA
Ammoniacal Nitrogen by Kjeldahl	mg/l	< 1	<	1	28	28	28	28	0.0	99.2	99.2
Total Kjeldahl Nitrogen (TKN)	mg/l	< 1	<	1	28	28	28	28	0.2	99.6	99.2
Electrical Conductivity (E.C.)	umho/cm	NA		NA	NA	NA	NA	NA	NA	NA	NA
Chloride	mg/l	< 0.2		7.9	0.8	8.7	8.7	0.8	0.5	101.3	100.0
Sulfate	mg/l	< 0.5		18	5.0	23	23	4.8	0.3	91.8	95.6
Nitrate Nitrogen	mg/l	< 0.1		0.6	0.9	1.4	1.4	0.9	0.6	92.0	94.3
Total Coliform (20 T LST)	MPN/100ml	NA		NA	NA	NA	NA	NA	NA	NA	NA
Fecal Coliform (20 T LST)	MPN/100ml	NA		NA	NA	NA	NA	NA	NA	NA	NA
Boron		NA		NA	NA	NA	NA	NA	NA	NA	NA

Notes

At 25 °C

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Report #	L2.2-14R35625
Report Date:	12/04/2015
Received Date:	11/14/2015
Work Order:	362527

Laboratory Number: 36252706
Description: Waste Water, MW #6, 11-12-15, 1632

Analytical Results

Constituent	Result	Minimum Level	Method Detection Limit	Method Reference	Analysis Date	Analysis Time	Analyst
Calcium	See Report			See Attached Report	11/19/2015	14:55	CM
Iron	See Report			See Attached Report	11/19/2015	14:55	CM
Magnesium	See Report			See Attached Report	11/19/2015	14:55	CM
Manganese	See Report			See Attached Report	11/19/2015	14:55	CM
Potassium	See Report			See Attached Report	11/19/2015	14:55	CM
Sodium	See Report			See Attached Report	11/19/2015	14:55	CM

QC Results

Constituent	QC Units	Blank	Matrix	Theoretical Spike	Matrix Spike	Matrix Spike Duplicate	Lab Control Spike	Precision %	Accuracy %	Response %
Calcium		NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron		NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium		NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese		NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium		NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium		NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes

Authorized By: Amos Snider 12/04/2015

Amos Snider Laboratory Supervisor

IEH ANALYTICAL LABORATORIES

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: JLA052-63 **PAGE 1**

REPORT DATE: 11/23/15

DATE SAMPLED: 11/13/15 **DATE RECEIVED:** 11/17/15

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM JL ANALYTICAL / BEAR VALLEY WATER DISTRICT

CASE NARRATIVE

Six water samples were received by the laboratory in good condition and analyzed according to the chain of custody. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on the subsequent page.

SAMPLE DATA

		DISSOLVED METALS					
SAMPLE DESCRIPTION	LAB ID	MAGNESIUM (mg/L)	SODIUM (mg/L)	BORON (mg/L)	POTASSIUM (mg/L)	IRON (mg/L)	MANGANESE (mg/L)
MW #1	362527-01	4.57	5.09	<0.030	2.99	<0.030	0.205
MW #2	362527-02	1.91	2.35	<0.030	0.965	<0.030	0.023
MW #3	362527-03	1.45	5.08	<0.030	1.12	<0.030	<0.010
MW #4	362527-04	5.74	8.15	<0.030	11.4	<0.030	<0.010
MW #5	362527-05	3.71	4.21	<0.030	2.60	<0.030	0.071
MW #6	362527-06	5.95	7.50	<0.030	1.42	0.176	0.815

		DISS. METALS	
SAMPLE DESCRIPTION	LAB ID	CALCIUM (mg/L)	HARDNESS (mgCaCO3/L)
MW #1	362527-01	17.3	62.0
MW #2	362527-02	5.87	22.5
MW #3	362527-03	5.25	19.1
MW #4	362527-04	18.4	69.5
MW #5	362527-05	9.54	39.1
MW #6	362527-06	23.8	84

IEH ANALYTICAL LABORATORIES

LABORATORY & CONSULTING SERVICES

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PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: JLA052-63 **PAGE 2**

REPORT DATE: 11/23/15

DATE SAMPLED: 11/13/15 **DATE RECEIVED:** 11/17/15

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM JL ANALYTICAL / BEAR VALLEY WATER DISTRICT

QA/QC DATA

QC PARAMETER	MAGNESIUM (mg/L)	SODIUM (mg/L)	BORON (mg/L)	POTASSIUM (mg/L)	IRON (mg/L)	MANGANESE (mg/L)
METHOD	EPA 200.7	EPA 200.7	EPA 200.7	EPA 200.7	EPA 200.7	EPA 200.7
DATE ANALYZED	11/19/15	11/19/15	11/19/15	11/19/15	11/19/15	11/19/15
REPORTING LIMIT	0.100	0.500	0.030	0.500	0.030	0.010
DUPLICATE						
SAMPLE ID	BATCH	BATCH	BATCH	BATCH	BATCH	BATCH
ORIGINAL	1.88	9.68	0.084	3.58	0.204	<0.010
DUPLICATE	1.87	9.59	0.083	3.52	0.203	<0.010
RPD	0.69%	0.98%	0.96%	1.66%	0.39%	NC
SPIKE SAMPLE						
SAMPLE ID	BATCH	BATCH	BATCH	BATCH	BATCH	BATCH
ORIGINAL	1.88	9.68	0.084	3.58	0.204	<0.010
SPIKED SAMPLE	12.2	20.5	0.582	13.8	5.11	0.496
SPIKE ADDED	10.0	10.0	0.500	10.0	5.00	0.500
% RECOVERY	103.40%	107.81%	99.50%	102.64%	98.10%	99.20%
QC CHECK						
FOUND	9.75	9.47	0.464	9.24	0.503	0.495
TRUE	10.0	10.0	0.500	10.0	0.500	0.500
% RECOVERY	97.50%	94.70%	92.80%	92.40%	100.60%	99.00%
BLANK	<0.100	<0.500	<0.030	<0.500	<0.030	<0.010

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

IEH ANALYTICAL LABORATORIES

LABORATORY & CONSULTING SERVICES
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CASE FILE NUMBER: JLA052-63 **PAGE 3**
REPORT DATE: 11/23/15
DATE SAMPLED: 11/13/15 **DATE RECEIVED:** 11/17/15
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM JL ANALYTICAL / BEAR VALLEY WATER DISTRICT

QA/QC DATA

QC PARAMETER	CALCIUM (mg/L)	HARDNESS (mgCaCO3/L)
METHOD	EPA 200.7	SM18 2340B
DATE ANALYZED	11/19/15	11/19/15
REPORTING LIMIT	0.100	0.700
DUPLICATE		
SAMPLE ID	BATCH	BATCH
ORIGINAL	185	469
DUPLICATE	184	466
RPD	0.65%	0.65%
SPIKE SAMPLE		
SAMPLE ID	BATCH	
ORIGINAL	185	
SPIKED SAMPLE	196	
SPIKE ADDED	10.0	
% RECOVERY	107.00%	NA
QC CHECK		
FOUND	9.81	64.6
TRUE	10.0	66.2
% RECOVERY	98.10%	97.73%
BLANK	<0.100	<0.700

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:

Damien Gadomski

Damien Gadomski, PhD
Laboratory Manager

Appendix C Historical Groundwater Elevations and Quality

Bear Valley Water District
Historic Groundwater Quality

Well	Date	Depth To GW (ft)	GW Elev. (ft, NAVD88)	Field pH	Field EC (µS/cm)	Temp. (C)	ORP (mV)	Dissolved Oxygen (mg/L)	Lab SC (µS/cm)	Cl (mg/L)	NO3-N (mg/L)	TKN (mg/L)	Ammonia as N	TDS (mg/L)	B (mg/L)	Ca (mg/L)	Fe (mg/L)	Mg (mg/L)	Mn (mg/L)	K (mg/L)	Na (mg/L)	HCO3 as CaCO3 (mg/L)
MW-1	9/1/2004	10.29	7103.79	6.7	221	4.8				NR[3]	<0.050	<1.0		166	NR[3]		**0.940**		**0.370**		NR[3]	
MW-1	10/13/2004	12.73	7101.35	6.9	180	6.2				3.4	<0.1	1	<1	150	0.05		<0.02		**0.350**		7.0	
MW-1	8/11/2005	9.32	7104.76	6.5	150	6.4	71	5.5	160	1.2	<0.1	2	<1	200	<0.03	19.0	0.210	5.2	**0.280**	2.0	6.0	71
MW-1	9/15/2005	9.54	7104.54	7.0	150	6.4	56	7.9	160	3.6	<0.1	<1	<1	150	<0.03	20.0	**0.730**	5.3	**0.300**	4.0	6.0	76
MW-1	10/13/2005	9.50	7104.58	6.6	1482	7.1	138	7.5	170	2.2	<0.1	<1	<1	120	0.03	18.0	0.150	4.8	**0.260**	3.0	6.0	61
MW-1	6/29/2006	9.60	7104.48	6.9	125	5.1	103	1.7	140	1.6	<0.1	<1	<1	110	<0.03	14.0	0.060	3.9	**0.140**	<1	5.0	55
MW-1	8/2/2006	8.25	7105.83	7.7	156	6.9	65	4.3	170	1.4	<0.1	<1	<1	150	<0.03	20.0	<0.02	5.0	**0.280**	4.0	7.0	75
MW-1	10/10/2006	8.08	7106.00	6.8	171	5.9	70	2.7	180	1.5	<0.1	<1	<1	160	<0.03	22.0	0.130	5.7	**0.360**	2.0	7.0	70
MW-1	7/12/2007	10.10	7103.98	7.0	173	7.0	110	6.7	180	1.2	<0.1	<1	<1	220	<0.03	23.0	0.130	5.8	**0.370**	5.0	6.0	87.8
MW-1	8/29/2007	9.00	7105.08	7.1	180	7.7	-2	4.9	200	1.5	<0.1	<1	<1	170	0.037	25.0	**0.340**	5.8	**0.430**	4.4	6.0	96
MW-1	9/26/2007	12.30	7101.78	7.2	189	7.4	-121	4.7	200	1.0	<0.1	<1	<1	170	<0.03	23.0	0.140	6.0	**0.380**	4.0	6.7	100
MW-1	7/8/2008	10.25	7103.83	7.2	168	7.4	141	1.9	180	1.1	<0.1	<1	<1	170	<0.03	21.0	0.060	6.0	**0.270**	4.0	6.0	65
MW-1	9/18/2008	9.70	7104.38	7.3	189	6.9	156	7.4	200	<1.0	<0.1	<1	<1	180	<0.03	22.0	0.060	5.1	**0.330**	4.0	7.0	95
MW-1	1/16/2008	12.30	7101.78	7.6	180	6.4	78	7.1	190	1.2	<0.1	<0.1	<1	150	<0.03	26.0	0.180	7.7	**0.360**	4.0	11.0	90
MW-1	7/7/2009	8.95	7105.13	7.2	168	6.8	469	6.2	180	0.8	<0.1	<1	<1	220	<0.03	23.0	0.140	5.8	**0.260**	4.0	7.0	75
MW-1	9/30/2009	9.00	7105.08	6.2	194	6.8	52	1.9	190	0.6	<0.1	<1	<1	170	<0.03	25.0	0.120	5.5	**0.420**	5.0	7.0	110
MW-1	10/26/2009	10.30	7103.78	2.7	142	6.3	281	1.0	190	1.1	0.3	1	<1	160	<0.03	23.0	0.110	6.2	**0.280**	4.0	9.0	100
MW-1	7/13/2010	8.80	7105.28	6.4	150	6.0	402	1.7	150	1.9	<0.1	<1	<1	140	<0.03	19.0	0.040	4.7	**0.220**	3.0	6.0	65
MW-1	8/24/2010	9.03	7105.05	7.0	185	6.1	43	0.9	190	0.9	<0.1	<1	<1	170	<0.03	20.0	<0.02	5.4	**0.300**	3.0	7.0	78
MW-1	11/4/2010	8.80	7105.28	5.9	173	6.3	132	2.0	170	2.2	<0.1	6	<1	140	<0.03	18.0	<0.02	4.3	**0.310**	3.0	6.0	76
MW-1	7/21/2011	8.10	7105.98	5.6	148	5.7	101	1.1	150	1.6	<0.1	<1	<1	130	<0.03	14.7	0.017	4.1	**0.200**	2.9	4.6	76
MW-1	9/8/2011	9.54	7104.54	7.0	177	6.2	38	1.3	180	1.1	<0.1	2	<1	140	<0.03	17.2	0.040	5.1	**0.272**	3.1	5.7	76
MW-1	10/20/2011	9.44	7104.64	6.6	167	5.7	61	1.5	170	1.6	<0.1	2	<1	140	<0.03	17.3	0.060	4.3	**0.280**	3.3	5.4	87
MW-1	6/26/2012	9.00	7105.08	6.7	93	5.4	63	2.1	93	1.7	0.2	<1	<1	110	<0.03	15.9	<0.02	4.1	**0.190**	2.5	5.6	54
MW-1	7/31/2012	10.30	7103.78	7.0	197	8.5	103	0.1	200	0.7	<0.1	1	<1	150	<0.03	23.9	0.081	5.8	**0.263**	3.6	6.6	99
MW-1	10/9/2012	12.40	7101.68	6.5	184	5.8	87	1.5	180	1.6	<0.2	2	<1	140	<0.03	20.4	0.105	5.0	**0.322**	3.5	6.5	85
MW-1	5/30/2013	11.00	7103.08	6.4	153	6.1	198	--	150	1.7	<0.2	<1	<1	120	<0.03	16.7	<0.02	4.5	**0.143**	3.1	5.3	80
MW-1	8/21/2013	12.39	7101.69	6.6	177	8.1	276	2.3	180	1.5	<0.1	<1	<1	150	<0.03	18.6	0.080	4.6	**0.280**	3.3	5.3	85
MW-1	10/15/2013	12.95	7101.13	6.4	193	7.1	514	1.3	190	1.5	<0.2	<1	<1	150	<0.03	25.7	0.093	5.9	**0.300**	4.7	6.8	100
MW-1	6/12/2014	11.04	7103.04	6.2	130	6.4	266	2.9	130	2.6	<0.2	<1	<1	120	<0.03	14.4	<0.02	4.1	**0.052**	2.5	5.0	58
MW-1	8/12/2014	10.67	7103.41	7.4	157	6.7	258	2.3	160	2.4	<0.2	<1	<1	140	<0.03	18.9	<0.02	4.6	**0.206**	3.6	5.6	86
MW-1	10/14/2014	12.39	7101.69	7.2	189	6.7	264	0.3	190	1.0	<0.2	<1	<1	170	<0.03	21.8	<0.02	5.6	**0.299**	3.7	6.2	86
MW-1	6/17/2015	10.72	7103.36	7.2	138	6.8	306	1.8	140	5.2	<0.2	<1	<1	110	<0.03	12.5	<0.02	3.7	0.046	2.0	4.6	42
MW-1	9/9/2015	10.19	7103.89	6.6	165	6.7	241	2.7	170	2.2	<0.2	<1	<1	150	0.034	19.4	<0.03	5.0	**0.203**	3.7	5.9	80
MW-1	11/12/2015	11.00	7103.08	6.5	161	8.3	270	--	160	3.7	<0.2	<1	<1	160	<0.03	17.3	<0.03	4.6	**0.205**	3.0	5.1	68
MW-2	10/30/2002	12.25	7055.28	6.7						58.0	<0.050	NR[1]	<0.4	186	<0.10[T]		**79[T]**		**1.13[T]**		19.8[T]	
MW-2	7/29/2003			7.1	112	9.2				NR[3]	<0.1	1	<0.2	80	NR[3]		NR[3]		NR[3]		NR[3]	
MW-2	11/13/2003	10.95	7056.58	7.7						<1.0	<0.050*	NR[1]	<0.4		<0.10[T]		**37[T]**		**0.82[T]**		5.7[T]	
MW-2	6/22/2004	3.76	7063.77	6.7	70	4.8				NR[3]	<0.050	2	<0.4	82	NR[3]		**0.920**		<0.02		NR[3]	
MW-2	9/1/2004	8.86	7058.67	6.9	68	7.2				NR[3]	<0.050	1	<0.4	90	NR[3]		**0.590**		<0.02		NR[3]	
MW-2	10/13/2004	17.80	7049.73	6.5	63	11.4				2.2	<0.1	10	<1	96	0.03		0.020		**0.110**		3.0	
MW-2	8/11/2005	3.82	7063.71	6.2	50	11.9	11	1.1	54	<1	<0.1	2	<1	140	<0.03	5.5	**0.310**	1.8	0.040	1.0	2.0	25
MW-2	9/15/2005	8.00	7059.53	7.1	51	12.3	99	NS	56	<1	0.1	2	0.5	130	<0.03	6.1	**0.680**	2.1	0.010	2.0	3.0	30
MW-2	10/13/2005	8.35	7059.18	6.8	59	10.0	1	9.4	67	<1	<0.1	<1	<1	110	<0.03	6.4	0.280	2.2	0.010	2.0	3.0	25

Bear Valley Water District
Historic Groundwater Quality

Well	Date	Depth To GW (ft)	GW Elev. (ft, NAVD88)	Field pH	Field EC (µS/cm)	Temp. (C)	ORP (mV)	Dissolved Oxygen (mg/L)	Lab SC (µS/cm)	Cl (mg/L)	NO3-N (mg/L)	TKN (mg/L)	Ammonia as N	TDS (mg/L)	B (mg/L)	Ca (mg/L)	Fe (mg/L)	Mg (mg/L)	Mn (mg/L)	K (mg/L)	Na (mg/L)	HCO3 as CaCO3 (mg/L)
MW-2	6/29/2006	0.50	7067.03	7.9	45	12.5	133	0.6	48	<1	<0.1	<1	<1	93	<0.03	4.6	0.100	1.5	<0.01	<1	2.0	20
MW-2	8/2/2006	7.24	7060.29	7.8	45	13.1	37	1.8	53	<1	<0.1	<1	<1	100	<0.03	5.0	0.070	1.7	**0.060**	2.0	4.0	20
MW-2	10/10/2006	7.30	7060.23	6.8	66	7.9	160	7.6	75	2.3	<0.1	<1	<1	130	<0.03	8.0	**0.440**	2.8	0.020	<1	4.0	25
MW-2	7/12/2007	8.10	7059.43	6.8	41	15.9	229	8.5	49	1.1	<0.1	0.7	<1	43	<0.03	5.5	**1.200**	1.7	0.049	2.0	3.0	25
MW-2	8/29/2007	8.70	7058.83	7.3	67	16.0	150	6.4	75	1.9	0.1	<1	<1	100	<0.03	7.8	**0.970**	2.2	**0.100**	2.2	3.0	35
MW-2	9/26/2007	10.30	7057.23	6.7	54	11.0	-121	12.0	65	2.0	0.1	<1	<1	130	<0.03	5.2	0.023	1.7	0.015	2.0	3.0	30
MW-2	7/8/2008	2.90	7064.63	6.6	45	13.8	137	4.1	49	<1	<0.1	<1	<1	130	<0.03	5.0	**0.450**	2.0	0.020	1.0	2.0	25
MW-2	9/18/2008	7.95	7059.58	6.7	115	13.1	764	13.1	99	6.8	0.2	3	<1	86	<0.03	5.2	**0.510**	1.7	0.010	2.0	7.0	25
MW-2	10/16/2008	8.78	7058.75	7.5	52	18.3	214	7.6	56	1.6	0.2	<0.1	<1	97	<0.03	5.7	0.220	1.7	0.010	1.0	3.0	25
MW-2	7/7/2009	6.30	7061.23	6.9	44	9.4	363	8.5	48	<0.2	<0.1	<1	<1	330	<0.03	6.1	**0.910**	1.8	0.020	1.0	3.0	25
MW-2	9/30/2009	8.70	7058.83	6.0	59	8.4	85	0.0	61	0.9	<0.1	<1	<1	47	<0.03	6.9	**0.620**	1.6	0.020	2.0	3.0	30
MW-2	10/26/2009	7.85	7059.68	6.1	47	9.0	480	4.2	61	1.8	0.5	<1	<1	54	<0.03	6.8	**0.520**	1.9	0.040	2.0	3.0	25
MW-2	7/13/2010	0.80	7066.73	6.1	43	9.3	134	0.3	43	1.4	<0.1	<1	<1	61	<0.03	4.7	0.200	1.5	<0.01	<1	2.0	20
MW-2	8/24/2010	8.34	7059.19	6.3	47	9.8	136	7.9	47	0.5	<0.1	<1	<1	90	<0.03	4.7	<0.02	1.5	<0.01	<1	2.0	22
MW-2	11/4/2010	0.70	7066.83	5.8	57	9.5	201	4.0	57	1.9	<0.1	3	<1	49	<0.03	6.4	0.080	1.8	0.010	<1	3.0	25
MW-2	7/21/2011	0.40	7067.13	6.2	42	7.2	179	0.4	42	<0.2	<0.1	<1	<1	59	<0.03	4.5	0.116	1.4	**0.200**	0.8	1.8	22
MW-2	9/8/2011	4.40	7063.13	6.4	56	10.2	77	1.7	56	0.6	<0.1	2	<1	70	<0.03	5.3	**1.540**	2.1	0.014	1.0	2.6	27
MW-2	10/20/2011	3.30	7064.23	6.1	67	10.8	121	2.1	67	1.0	<0.1	1	<1	60	<0.03	6.5	0.034	2.0	<0.01	1.0	2.5	33
MW-2	6/26/2012	2.95	7064.58	6.2	40	9.9	70	0.7	40	0.3	<0.1	2	<1	53	<0.03	6.0	<0.02	1.9	<0.01	0.9	2.5	30
MW-2	7/31/2012	4.75	7062.78	6.3	74	9.7	139	0.9	74	0.8	<0.2	<1	<1	67	<0.03	8.4	0.054	2.7	<0.01	1.0	3.7	35
MW-2	10/9/2012	11.24	7056.29	5.9	100	9.0	691	2.6	100	8.7	<0.2	<1	<1	81	<0.03	7.0	0.029	2.1	**0.220**	1.4	8.6	30
MW-2	5/30/2013	1.00	7066.53	6.1	43	8.3	150	--	43	0.4	<0.2	<1	<1	53	<0.03	4.3	<0.02	1.4	<0.01	0.8	2.1	18
MW-2	8/21/2013	7.00	7060.53	5.2	50	11.8	231	2.2	50	0.8	<0.2	<1	<1	160	<0.03	5.8	0.197	1.8	**0.168**	1.4	3.0	28
MW-2	10/15/2013	12.41	7055.12	5.6	56	9.6	571	3.1	56	0.7	<0.2	<1	<1	87	<0.03	4.9	0.044	1.4	0.023	1.4	3.2	22
MW-2	6/12/2014	1.54	7065.99	5.9	47	7.7	83	4.1	47	0.3	<0.2	<1	<1	65	<0.03	4.5	<0.02	1.2	<0.01	0.9	2.3	18
MW-2	8/12/2014	7.94	7059.59	6.7	54	11.4	155	4.1	54	0.3	<0.2	<1	<1	85	<0.03	5.5	<0.02	1.7	0.023	5.8	2.6	28
MW-2	10/14/2014	10.28	7057.25	5.9	55	10.1	616	2.6	55	0.7	<0.2	<1	<1	120	<0.03	7.1	0.101	2.1	0.115	1.1	3.2	24
MW-2	6/17/2015	1.94	7065.59	7.7	47	9.2	78	0.4	47	0.3	<0.2	<1	<1	45	<0.03	4.8	<0.02	1.5	<0.01	1.0	2.4	30
MW-2	9/9/2015	10.31	7057.22	6.9	50	11.6	201	2.7	50	0.6	<0.2	<1	<1	70	<0.03	5.1	<0.03	1.6	0.042	1.6	2.8	40
MW-2	11/13/2015	8.81	7058.72	6.1	60	12.1	349	--	60	0.9	<0.2	<1	<1	90	<0.03	5.9	<0.03	1.9	0.023	1.0	2.4	26
MW-3	10/30/2002	6.38	7049.99	6.3						74.0	<0.050	NR[1]		256	<0.10[T]		**63[T]**		**0.92[T]**		32[T]	
MW-3	7/29/2003			6.4	98	6.9				NR[3]	0.3	1		60	NR[3]		NR[3]		NR[3]		NR[3]	
MW-3	11/13/2003	6.30	7050.07	6.3						8.6	0.06*	NR[1]			<0.10[T]		**46[T]**		**0.73[T]**		10.7[T]	
MW-3	6/22/2004	2.45	7053.92	6.1	94	4.2				NR[3]	0.52	2		122	NR[3]		**0.650**		<0.02		NR[3]	
MW-3	9/1/2004	4.75	7051.62	6.6	100	7.2				NR[3]	0.63	<1.0		124	NR[3]		**0.380**		<0.02		NR[3]	
MW-3	10/13/2004	6.59	7049.78	6.1	85	8.9				6.5	0.3	<1	<1	100	0.04		<0.02		<0.01		7.0	
MW-3	8/11/2005	3.12	7053.25	6.3	70	7.5	59	4.4	75	5.0	0.5	<1	<1	88	<0.03	6.2	0.040	1.7	<0.01	<1	6.0	20
MW-3	9/15/2005	2.97	7053.40	6.1	78	10.8	100	9.1	70	7.7	<0.1	<1	<1	82	<0.03	5.9	0.070	1.5	<0.02	2.0	6.0	25
MW-3	10/13/2005	3.48	7052.89	6.8	NM	10.1	84	4.4	92	11	0.4	2	<1	80	<0.03	7.3	0.030	2.2	0.040	2.0	7.0	20
MW-3	6/29/2006	2.02	7054.35	7.6	50	6.3	180	2.7	56	3	<0.1	<1	<1	49	<0.03	4.3	0.030	1.2	<0.01	<1	4.0	20

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Well	Date	Depth To GW (ft)	GW Elev. (ft, NAVD88)	Field pH	Field EC (µS/cm)	Temp. (C)	ORP (mV)	Dissolved Oxygen (mg/L)	Lab SC (µS/cm)	Cl (mg/L)	NO3-N (mg/L)	TKN (mg/L)	Ammonia as N	TDS (mg/L)	B (mg/L)	Ca (mg/L)	Fe (mg/L)	Mg (mg/L)	Mn (mg/L)	K (mg/L)	Na (mg/L)	HCO3 as CaCO3 (mg/L)
MW-3	8/2/2006	2.75	7053.62	7.7	88	7.9	70	3.6	68	5	0.2	<1	<1	72	<0.03	5.4	<0.02	1.5	<0.01	2.0	6.0	20
MW-3	10/10/2006	3.15	7053.22	6.4	76	8.7	169	2.6	82	7.4	<0.1	2	<1	82	<0.03	6.6	<0.02	2.0	<0.01	<1	6.0	20
MW-3	7/12/2007	3.17	7053.20	6.2	59	10.4	249	4.2	66	4.3	0.2	<1	<1	91	<0.03	5.9	0.053	1.6	<0.01	2.0	8.0	28
MW-3	8/29/2007	3.40	7052.97	6.4	89	13.6	176	4.5	97	11.0	<0.1	<1	<1	71	<0.03	7.5	0.024	1.8	<0.01	1.7	6.0	25
MW-3	9/26/2007	5.00	7051.37	5.8	89	10.9	-109	7.8	96	11.0	0.1	<1	<1	90	<0.03	7.5	<0.02	2.1	<0.01	2.0	7.0	30
MW-3	7/8/2008	2.50	7053.87	6.4	47	8.8	218	2.5	66	5.3	0.1	<1	<1	72	<0.03	5.0	0.210	2.0	<0.01	1.0	6.0	35
MW-3	9/18/2008	3.85	7052.52	6.0	93	12.8	681	3.9	97	13.0	<0.1	<1	<1	94	<0.03	6.8	<0.02	1.9	<0.01	2.0	7.0	20
MW-3	10/16/2008	5.54	7050.83	7.0	101	11.6	109	5.1	110	16.0	<0.1	0.15	<1	94	<0.03	10.0	<0.02	2.7	<0.01	2.0	7.0	30
MW-3	7/7/2009	2.40	7053.97	6.1	77	6.0	680	1.4	81	11.0	0.5	<1	<1	100	<0.03	7.1	0.060	1.9	<0.01	1.0	6.0	20
MW-3	9/30/2009	3.65	7052.72	5.5	106	12.4	211	1.7	110	12.0	<0.1	<1	<1	100	<0.03	9.3	0.060	2.0	<0.01	3.0	8.0	40
MW-3	10/26/2009	4.10	7052.27	5.7	61	10.5	239	6.1	77	8.6	0.9	<1	<1	70	<0.03	4.9	0.100	1.4	<0.01	2.0	6.0	15
MW-3	7/13/2010	2.10	7054.27	6.1	58	3.8	116	1.8	58	3.6	<0.1	<1	<1	60	<0.03	3.8	0.030	0.6	<0.01	<1	5.0	20
MW-3	8/24/2010	2.65	7053.72	5.8	79	11.8	153	0.8	79	6.1	<0.1	<1	<1	87	<0.03	6.3	<0.02	1.8	<0.01	<1	7.0	27
MW-3	11/4/2010	2.10	7054.27	5.6	105	9.8	157	0.7	110	12.0	<0.1	3.00	<1	92	<0.03	8.5	0.020	2.2	<0.01	<1	8.0	25
MW-3	7/21/2011	0.90	7055.47	6.2	52	3.6	113	2.3	52	2.4	<0.1	<1	<1	56	<0.03	3.9	<0.02	1.0	<0.01	0.9	3.8	16
MW-3	9/8/2011	2.45	7053.92	6.1	71	9.5	122	0.5	71	3.1	<0.1	2.00	<1	62	<0.03	5.1	<0.02	1.6	<0.01	1.1	5.3	22
MW-3	10/20/2011	2.14	7054.23	6.1	76	8.2	123	0.9	76	3.7	<0.1	1.00	<1	68	<0.03	5.7	0.032	1.5	<0.01	1.2	5.5	27
MW-3	6/26/2012	2.35	7054.02	6.0	48	6.3	84	0.4	48	3.8	<0.1	<1	<1	64	<0.03	6.1	<0.02	1.7	<0.01	1.3	6.4	30
MW-3	7/31/2012	2.86	7053.51	6.0	89	12.1	157	0.0	89	6.3	<0.2	<1	<1	69	<0.03	7.7	**0.330**	2.0	0.029	1.4	6.1	35
MW-3	10/9/2012	5.98	7050.39	5.7	85	9.4	436	1.2	85	5.3	<0.2	<1	<1	72	<0.03	6.5	0.067	1.8	0.017	1.3	6.2	35
MW-3	5/30/2013	2.20	7054.17	5.9	54	7.0	147	--	54	3.4	<0.2	<1	<1	60	<0.03	4.3	0.039	1.2	0.031	0.9	4.7	20
MW-3	8/21/2013	4.90	7051.47	4.2	73	9.3	359	1.6	73	5.0	<0.2	<1	<1	68	<0.03	5.2	0.042	1.4	0.017	1.1	5.3	18
MW-3	10/15/2013	6.11	7050.26	5.4	76	9.4	588	2.2	76	4.8	<0.2	<1	<1	79	<0.03	6.2	<0.02	1.5	<0.01	1.5	6.1	32
MW-3	6/12/2014	2.33	7054.04	5.7	61	5.2	66	0.6	61	3.9	<0.2	<1	<1	65	<0.03	4.5	<0.02	1.0	<0.01	1.1	5.3	20
MW-3	8/12/2014	4.62	7051.75	5.6	62	10.5	224	2.8	62	7.3	0.3	<1	<1	69	<0.03	5.5	0.072	1.4	0.033	4.6	5.8	20
MW-3	10/14/2014	7.12	7049.25	5.5	70	9.1	187	0.1	70	4.5	<0.2	<1	<1	64	<0.03	5.7	0.052	1.5	0.011	1.2	6.4	22
MW-3	6/17/2015	1.98	7054.39	7.8	68	6.7	197	4.6	68	4.1	0.3	<1	<1	63	<0.03	5.5	<0.02	1.4	<0.01	1.3	5.2	28
MW-3	9/9/2015	4.87	7051.50	7.4	67	9.0	164	3.3	67	3.8	<0.2	<1	<1	75	<0.03	5.1	<0.03	1.4	<0.01	1.6	5.5	42
MW-3	11/13/2015	5.78	7050.59	6.0	68	10.6	243	--	68	4.1	<0.2	<1	<1	67	<0.03	5.3	<0.03	1.5	<0.01	1.1	5.1	24
MW-4	10/30/2002	4.30	7050.49	7.0					44.0	<0.050	NR[1]		294	<0.10[T]		**370[T]**		**14.8[T]**		42[T]		
MW-4	7/29/2003			7.2	231	6.0			NR[3]	<0.1	<0.5		170	NR[3]		NR[3]		NR[3]		NR[3]		
MW-4	11/13/2003	3.96	7050.83	7.2					5.5	0.05*	NR[1]			<0.10[T]		**49[T]**		**2.06[T]**		10.5[T]		
MW-4	6/22/2004	2.88	7051.91	6.8	254	4.7			NR[3]	0.05	<1.0		172	NR[3]		0.110		**0.080**		NR[3]		
MW-4	9/1/2004	12.95	7041.84	6.4	278	7.3			NR[3]	<0.050	<1.0		167	NR[3]		0.170		**0.190**		NR[3]		
MW-4	10/13/2004	4.38	7050.41	6.8	230	8.8			6.9	<0.1	<1	<1	150	0.03		<0.02		**0.580**		9.0		
MW-4	8/11/2005	3.22	7051.57	6.7	210	7.0	34	1.3	220	6.1	<0.1	<1	<1	170	<0.03	25.0	0.110	8.6	0.050	3.0	9.0	96
MW-4	9/15/2005	3.10	7051.69	6.7	230	7.0	112	1.1	240	7.5	0.1	<1	<1	180	<0.03	26.0	<0.02	8.8	**0.390**	5.0	10.0	100
MW-4	10/13/2005	3.20	7051.59	7.3	25	7.5	8	9.6	260	8.4	0.2	1	<1	160	<0.03	28.0	**0.760**	9.2	**1.300**	4.0	10.0	110
MW-4	6/29/2006	2.65	7052.14	7.2	193	5.0	165	1.5	200	4.8	0.1	<1	<1	130	<0.03	22.0	0.020	7.4	0.030	2.0	8.0	90
MW-4	8/2/2006	3.08	7051.71	8.3	186	8.2	94	0.7	200	5.9	<0.1	<1	<1	150	<0.03	22.0	<0.02	7.4	0.030	5.0	9.0	85
MW-4	10/10/2006	3.00	7051.79	6.9	205	6.9	101	1.5	210	6.1	<0.1	1	<1	160	<0.03	24.0	<0.02	7.9	0.050	<1	10.0	85
MW-4	7/12/2007	3.70	7051.09	7.2	180	10.0	213	1.6	200	6.3	<0.1	0.1	<1	180	<0.03	24.0	0.031	7.5	**0.059**	4.0	10.0	87
MW-4	8/29/2007	3.30	7051.49	7.0	187	10.1	127	6.6	200	6.7	<0.1	<1	<1	140	<0.03	22.0	0.160	7.3	**0.073**	4.1	8.0	91
MW-4	9/26/2007	3.60	7051.19	6.8	191	9.5	-106	9.4	210	6.4	<0.1	<1	<1	140	<0.03	21.0	0.067	7.0	**0.067**	4.0	9.0	86
MW-4	7/8/2008	3.00	7051.79	6.9	203	8.2	216	1.1	220	6.6	<0.1	<1	<1	180	<0.03	24.0	0.060	8.0	0.030	4.0	8.0	86

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Well	Date	Depth To GW (ft)	GW Elev. (ft, NAVD88)	Field pH	Field EC (µS/cm)	Temp. (C)	ORP (mV)	Dissolved Oxygen (mg/L)	Lab SC (µS/cm)	Cl (mg/L)	NO3-N (mg/L)	TKN (mg/L)	Ammonia as N	TDS (mg/L)	B (mg/L)	Ca (mg/L)	Fe (mg/L)	Mg (mg/L)	Mn (mg/L)	K (mg/L)	Na (mg/L)	HCO3 as CaCO3 (mg/L)
MW-4	9/18/2008	3.49	7051.30	7.0	196	9.5	476	2.4	210	6.3	<0.1	<1	<1	160	<0.03	20.0	<0.02	6.5	<0.01	4.0	9.0	85
MW-4	10/16/2008	3.75	7051.04	7.7	191	9.5	133	6.2	210	6.3	<0.1	<0.1	<1	170	<0.03	22.0	0.020	7.2	<0.01	4.0	9.0	90
MW-4	7/7/2009	3.35	7051.44	7.0	207	7.3	476	5.6	220	6.6	0.4	2	<1	210	<0.03	25.0	0.040	8.2	0.040	4.0	9.0	95
MW-4	9/30/2009	3.30	7051.49	4.5	199	8.1	243	3.9	200	7.2	<0.1	<1	<1	160	<0.03	23.0	0.080	7.0	<0.01	4.0	9.0	80
MW-4	10/26/2009	3.35	7051.44	6.2	188	8.6	300	4.7	240	8.2	0.3	<1	<1	220	<0.03	25.0	0.030	7.5	0.260	3.0	9.0	90
MW-4	7/13/2010	2.50	7052.29	6.6	227	5.5	105	0.6	230	6.9	<0.1	<1	<1	150	<0.03	25.0	0.030	8.3	<0.01	4.0	9.0	100
MW-4	8/24/2010	3.03	7051.76	6.4	228	6.9	83	0.2	230	7.1	<0.1	<1	<1	180	<0.03	23.0	<0.02	7.6	0.040	3.0	9.0	82
MW-4	11/4/2010	2.15	7052.64	6.5	194	7.8	172	0.1	190	6.9	<0.1	<1	<1	140	<0.03	21.0	<0.02	6.5	0.040	3.0	8.0	75
MW-4	7/21/2011	1.60	7053.19	6.9	208	5.3	104	0.4	210	4.8	<0.1	<1	<1	160	<0.03	21.0	<0.02	7.1	<0.01	3.7	7.4	92
MW-4	9/8/2011	2.85	7051.94	6.9	215	6.6	84	0.2	220	6.2	<0.1	1	<1	150	<0.03	18.4	<0.02	7.2	0.019	3.1	7.8	87
MW-4	10/20/2011	2.30	7052.49	7.0	191	7.3	88	0.2	190	6.1	<0.1	<1	<1	140	<0.03	17.4	<0.02	5.8	**0.079**	3.2	7.4	70
MW-4	6/26/2012	2.55	7052.24	8.0	125	6.4	94	0.4	130	20.0	<0.1	<1	<1	130	<0.03	22.2	<0.02	7.5	0.022	3.4	9.5	89
MW-4	7/31/2012	3.00	7051.79	6.6	204	6.9	86	0.1	200	6.4	<0.2	2	<1	150	<0.03	22.4	<0.02	7.0	0.012	3.4	8.6	84
MW-4	10/9/2012	4.30	7050.49	5.8	191	8.1	357	1.0	190	6.4	<0.2	<1	<1	140	<0.03	18.2	0.020	5.9	0.046	3.2	8.3	75
MW-4	5/30/2013	2.30	7052.49	6.4	210	6.1	109	--	210	6.9	<0.2	<1	<1	150	<0.03	20.8	<0.02	7.2	0.027	3.5	7.7	86
MW-4	8/21/2013	3.30	7051.49	6.5	200	8.2	448	0.4	200	6.8	<0.2	<1	<1	140	<0.03	18.8	<0.02	6.3	0.030	3.4	7.5	89
MW-4	10/15/2013	4.31	7050.48	6.6	200	8.9	553	0.5	200	6.8	<0.2	<1	<1	150	<0.03	21.8	<0.02	6.5	0.014	4.0	8.2	91
MW-4	6/12/2014	2.66	7052.13	5.6	227	6.1	129	0.3	230	7.3	<0.2	<1	<1	160	<0.03	23.1	<0.02	8.2	<0.01	4.1	8.5	89
MW-4	8/12/2014	3.57	7051.22	6.9	208	7.9	213	0.1	210	6.8	<0.2	<1	<1	160	<0.03	21.8	0.026	6.9	**0.068**	4.0	8.5	92
MW-4	10/14/2014	4.69	7050.10	6.7	201	9.0	574	0.1	200	6.8	<0.2	<1	<1	130	<0.03	18.9	<0.02	6.8	0.009	3.2	7.7	78
MW-4	6/17/2015	2.41	7052.38	7.1	217	7.1	-7	0.1	220	6.9	<0.2	<1	<1	140	<0.03	20.7	<0.02	7.0	<0.01	3.4	7.7	86
MW-4	9/9/2015	3.72	7051.07	6.7	203	9.1	109	0.2	200	6.8	<0.2	<1	<1	160	0.034	20.1	<0.03	6.6	0.024	3.9	8.2	110
MW-4	11/13/2015	3.16	7051.63	6.8	189	8.9	253	--	190	7.7	<0.2	<1	<1	130	<0.03	18.4	<0.03	5.7	<0.01	11.4	8.2	78
MW-5	9/1/2004	12.95	7190.83	6.6	307	6.4				NR[3]	0.064	<1.0		276	NR[3]		**1.280**		**0.200**		NR[3]	
MW-5	10/13/2004	13.74	7190.04	6.2	230	8.9				28.0	<0.1	2	<1	340	0.08		<0.02		**0.230**		18.0	
MW-5	8/11/2005	11.74	7192.04	6.3	110	15.7	51	4.2	120	5.5	<0.1	2	<1	180	<0.03	1.0	**0.620**	4.4	0.060	1.0	6.0	45
MW-5	9/15/2005	12.50	7191.28	7.0	170	11.2	41	NS	120	5.8	0.1	<1	<1	170	<0.03	12.0	**0.750**	4.6	**0.130**	3.0	7.0	51
MW-5	10/13/2005	9.27	7194.51	6.5	103	8.8	133	8.5	110	8.5	0.2	<1	<1	120	<0.03	8.9	0.210	3.9	0.040	3.0	6.0	35
MW-5	6/29/2006	12.50	7191.28	7.6	71	14.7	159	6.5	81	4.1	<0.1	<1	<1	120	<0.03	5.8	0.280	2.5	0.050	2.0	4.0	25
MW-5	8/2/2006	11.49	7192.29	8.4	34	19.8	98	5.0	98	8.0	<0.1	<1	<1	120	<0.03	6.4	0.090	2.5	0.040	3.0	8.0	35
MW-5	10/11/2006	11.89	7191.89	5.8	93	8.4	186	5.7	110	3.6	<0.1	1	<1	170	<0.03	12.0	**0.540**	4.6	**0.060**	<1	6.0	45
MW-5	7/12/2007	13.10	7190.68	6.1	142	13.9	226	NS														
MW-5	8/29/2007	13.50	7190.28	Well pumped dry before sampling																		
MW-5	9/26/2007	13.70	7190.08	6.7	88	11.6	-87	8.9														
MW-5	7/8/2008	13.00	7190.78	7.3	104	15.1	136	NS														
MW-5	9/18/2008	13.80	7189.98	Well pumped dry before sampling																		
MW-5	10/16/2008	13.95	7189.83	Well pumped dry before sampling																		
MW-5	7/7/2009	12.80	7190.98	6.7	214	11.0	818	8.1	130	4.8	0.3	<1	<1	230	<0.03	11.0	**0.430**	3.8	**0.100**	2.0	10.0	45
MW-5	9/30/2009	13.30	7190.48	6.3	109	8.6	141	4.6	130	5.3	0.4	NS	NS	NS	0.23	9.9	<0.02	3.4	0.050	2.0	22.0	NS
MW-5	10/26/2009	13.25	7190.53	Well pumped dry before sampling																		
MW-5	7/13/2010	11.50	7192.28	6.0	94	8.0	158	2.5	94	5.1	<0.1	<1	<1	200	<0.03	8.0	0.270	2.7	**0.060**	3.0	5.0	35
MW-5	8/24/2010	12.52	7191.26	6.7	95	11.0	129	7.1	95	4.8	<0.1	<1	<1	170	<0.03	7.9	<0.02	3.3	0.020	1.0	5.0	37
MW-5	11/4/2010	12.15	7191.63	6.1	98	7.4	209	6.5	98	5.5	<0.1	<1	<1	84	0.06	7.5	<0.02	3.0	0.020	2.0	6.0	41
MW-5	7/21/2011	9.15	7194.63	4.9	74	5.7	115	4.4	74	3.6	<0.1	<1	<1	100	<0.03	5.9	0.121	2.3	**0.072**	1.9	4.1	27
MW-5	9/8/2011	12.50	7191.28	6.5	101	8.0	102	5.7	100	4.0	<0.1	1	<1	150	<0.03	8.2	**2.400**	4.0	**0.056**	2.2	5.1	43
MW-5	10/20/2011	11.58	7192.20	6.0	95	7.0	157	4.5	95	4.5	<0.1	<1	<1	150	<0.03	8.1	0.216	3.0	0.012	2.2	4.1	38

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Historic Groundwater Quality

Well	Date	Depth To GW (ft)	GW Elev. (ft, NAVD88)	Field pH	Field EC (µS/cm)	Temp. (C)	ORP (mV)	Dissolved Oxygen (mg/L)	Lab SC (µS/cm)	Cl (mg/L)	NO3-N (mg/L)	TKN (mg/L)	Ammonia as N	TDS (mg/L)	B (mg/L)	Ca (mg/L)	Fe (mg/L)	Mg (mg/L)	Mn (mg/L)	K (mg/L)	Na (mg/L)	HCO3 as CaCO3 (mg/L)
MW-5	6/26/2012	12.70	7191.08	6.9	26	7.1	58	15.3	120	8.2	0.1	<1	<1	130	0.074	9.5	0.039	3.9	**0.054**	4.6	6.9	39
MW-5	7/31/2012	11.87	7191.91	6.3	106	9.7	231	5.3	110	4.7	<0.2	<1	<1	120	<0.03	10.2	<0.02	3.7	0.037	2.4	4.8	39
MW-5	10/9/2012	14.64	7189.14	Well pumped dry before sampling																		
MW-5	5/30/2013	13.20	7190.58	6.0	85	9.9	390	--	85	4.7	<0.2	<1	<1	140	<0.03	6.6	0.151	2.7	0.049	1.5	4.8	38
MW-5	8/21/2013	12.99	7190.79	6.0	40	21.8	702	6.2	40	5.1	<0.2	<1	<1	110	<0.03	6.2	0.074	2.3	0.016	1.7	3.9	26
MW-5	10/15/2013	14.06	7189.72	8.1	91	10.2	694	11.6	91	11.0	<0.2	<1	<1	160	<0.03	6.8	<0.02	2.6	<0.01	2.4	10.1	33
MW-5	6/12/2014	13.11	7190.67	5.8	80	11.3	692	7.8	80	5.1	<0.2	<1	<1	240	<0.03	6.9	0.046	3.0	<0.01	2.4	4.3	36
MW-5	8/12/2014	13.01	7190.77	5.6	111	3.3	279	3.3	110	6.0	<0.2	<1	<1	120	<0.03	10.1	0.284	3.9	**0.063**	3.2	5.4	46
MW-5	10/14/2014	14.23	7189.55	Well pumped dry before sampling																		
MW-5	6/17/2015	13.19	7190.59	4.5	106	11.7	418.2	6.9	110	6.4	<0.2	<1	<1	150	0.041	8.7	<0.02	3.5	**0.137**	2.6	4.8	42
MW-5	9/9/2015	12.44	7191.34	7.0	108	11.8	675.4	5.4	110	6.8	<0.2	<1	<1	220	<0.03	9.6	<0.03	3.9	**0.078**	3.3	5.5	46
MW-5	11/12/2015	13.23	7190.55	6.6	108	7.7	200.1	--	110	6.7	<0.2	<1	<1	220	<0.03	9.5	<0.03	3.7	**0.071**	1.4	4.2	42
MW-6	10/30/2002	6.45	7053.04	6.6						59.0	<0.050	NR[1]		376	<0.10[T]		**335[T]**		**6.89[T]**		36[T]	
MW-6	7/29/2003			7.1	457	7.5				NR[3]	<0.1	<0.5		260	NR[3]		NR[3]		NR[3]		NR[3]	
MW-6	11/13/2003	6.17	7053.32	7.0						6.9	<0.050*	NR[1]			<0.10[T]		**132[T]**		**4.78[T]**		18.5[T]	
MW-6	6/22/2004	2.14	7057.35	7.1	508	4.5				NR[3]	<0.05	<1.0		280	NR[3]		0.210		**1.760**		NR[3]	
MW-6	9/1/2004	5.43	7054.06	6.8	479	6.5				NR[3]	<0.050	<1.0		297	NR[3]		**0.390**		**2.190**		NR[3]	
MW-6	10/13/2004	6.39	7053.10	7.1	470	7.5				6.6	<0.1	<1	<1	320	0.03		<0.02		**2.100**		16.0	
MW-6	8/11/2005	3.21	7056.28	6.9	470	6.9	14	1.5	500	7.0	<0.1	<1	<1	300	<0.03	71.0	**0.650**	16.0	**2.400**	5.0	17.0	250
MW-6	9/15/2005	4.71	7054.78	6.7	440	7.0	41	<0.2	460	7.1	0.2	1	<1	290	<0.03	66.0	**0.340**	15.0	**2.200**	4.0	17.0	240
MW-6	10/13/2005	5.15	7054.34	7.1	450	7.3	10	8.8	470	7.0	0.2	<1	<1	290	<0.03	62.0	**0.530**	14.0	**2.200**	4.0	16.0	240
MW-6	6/29/2006	1.11	7058.38	7.5	431	7.6	25	0.6	450	7.4	<0.1	<1	<1	270	<0.03	62.0	0.290	14.0	**2.100**	<1	15.0	230
MW-6	8/2/2006	3.63	7055.86	7.6	417	8.6	-38	0.5	460	6.7	<0.1	<1	<1	280	<0.03	62.0	0.300	14.0	**2.100**	3.0	16.0	230
MW-6	10/10/2006	5.60	7053.89	7.3	476	7.1	-12	2.5	500	6.7	<0.1	<1	<1	300	<0.03	70.0	**0.310**	15.0	**2.400**	<1	17.0	250
MW-6	7/12/2007	4.40	7055.09	7.1	434	8.0	52	2.3	460	6.3	<0.1	<1	<1	370	<0.03	68.0	**0.300**	15.0	**2.400**	6.0	17.0	233
MW-6	8/29/2007	5.90	7053.59	7.1	461	8.8	45	4.5	490	7.4	<0.1	<1	<1	280	<0.03	69.0	**0.430**	15.0	**2.600**	4.3	17.0	260
MW-6	9/26/2007	6.70	7052.79	6.9	473	8.4	-123	9.9	500	7.2	<0.1	<1	<1	280	<0.03	65.0	**0.520**	15.0	**2.500**	5.0	16.0	260
MW-6	7/8/2008	3.00	7056.49	7.0	473	8.1	21	3.1	500	6.9	<0.1	<1	<1	330	<0.03	67.0	**0.450**	16.0	**2.300**	4.0	15.0	236
MW-6	9/18/2008	6.13	7053.36	7.1	490	8.1	78	2.7	510	6.7	<0.1	<1	<1	390	<0.03	69.0	0.220	16.0	**2.400**	4.0	17.0	270
MW-6	10/16/2008	6.85	7052.64	7.3	481	7.1	18	8.3	510	7.0	<0.1	<0.1	<1	320	<0.03	70.0	**0.580**	16.0	**2.700**	4.0	16.0	270
MW-6	7/7/2009	2.70	7056.79	7.2	490	7.3	232	2.0	500	7.1	<0.1	<1	<1	370	<0.03	71.0	**0.900**	16.0	**2.800**	4.0	16.0	260
MW-6	9/30/2009	6.50	7052.99	6.8	464	7.3	-32	1.8	510	7.3	<0.1	<1	<1	320	<0.03	71.0	**0.630**	15.0	**2.900**	5.0	16.0	260
MW-6	10/26/2009	5.40	7054.09	6.7	389	7.1	24	0.3	520	7.2	<0.1	<1	<1	320	<0.03	68.0	**1.000**	15.0	**2.700**	4.0	16.0	250
MW-6	7/13/2010	1.70	7057.79	6.8	485	5.5	-98	0.5	490	7.0	<0.1	<1	<1	310	<0.03	66.0	**0.620**	15.0	**2.600**	4.0	16.0	250
MW-6	8/24/2010	4.66	7054.83	6.7	497	6.3	-25	0.3	500	6.4	<0.1	<1	<1	430	<0.03	64.0	<0.02	15.0	**2.700**	3.0	19.0	230
MW-6	11/4/2010	1.05	7058.44	6.5	479	6.9	-22	0.4	480	6.3	<0.1	<1	<1	330	<0.03	63.0	**0.710**	14.0	**3.100**	2.0	15.0	230
MW-6	7/21/2011	0.70	7058.79	7.0	492	5.5	43	0.3	490	6.6	<0.1	<1	<1	320	<0.03	55.1	**0.582**	14.0	**2.160**	4.3	15.7	270
MW-6	9/8/2011	4.33	7055.16	7.0	507	6.3	-38	0.4	510	6.1	<0.1	<1	<1	280	<0.03	57.3	**0.616**	15.8	**2.530**	3.5	13.6	270
MW-6	10/20/2011	1.86	7057.63	6.6	416	6.5	17	0.7	420	4.0	<0.1	<1	<1	250	<0.03	43.8	**0.793**	11.9	**2.380**	3.7	13.5	190
MW-6	6/26/2012	2.60	7056.89	6.8	310	5.2	62	1.1	310	6.2	<0.1	<1	<1	300	<0.03	66.8	**0.724**	16.8	**4.090**	3.7	15.6	230
MW-6	7/31/2012	4.65	7054.84	6.8	516	6.4	29	0.1	520	6.1	<0.2	<1	<1	310	<0.03	65.1	**0.493**	15.2	**2.920**	3.8	15.1	260
MW-6	10/9/2012	7.80	7051.69	6.7	525	6.7	28	1.3	530	6.4	<0.2	<1	<1	340	<0.03	60.9	**0.812**	15.3	**2.280**	4.1	15.0	290
MW-6	5/30/2013	6.48	7053.01	6.5	375	6.2	-3	--	380	4.7	<0.2	<1	<1	250	<0.03	44.0	0.107	10.6	**2.070**	3.3	12.3	190
MW-6	8/21/2013	5.10	7054.39	6.5	469	8.5	18	0.5	470	6.1	<0.2	<1	<1	270	<0.03	54.2	**0.644**	13.4	**2.700**	3.9	13.9	250
MW-6	10/15/2013	6.71	7052.78	6.3	523	7.5	52	0.8	520	6.4	<0.2	<1	<1	310	<0.03	76.4	**0.698**	16.2	**2.700**	4.4	16.2	270

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Well	Date	Depth To GW (ft)	GW Elev. (ft, NAVD88)	Field pH	Field EC (µS/cm)	Temp. (C)	ORP (mV)	Dissolved Oxygen (mg/L)	Lab SC (µS/cm)	Cl (mg/L)	NO3-N (mg/L)	TKN (mg/L)	Ammonia as N	TDS (mg/L)	B (mg/L)	Ca (mg/L)	Fe (mg/L)	Mg (mg/L)	Mn (mg/L)	K (mg/L)	Na (mg/L)	HCO3 as CaCO3 (mg/L)
MW-6	6/12/2014	2.60	7056.89	5.9	455	5.9	7	0.4	490	6.2	<0.2	<1	<1	310	<0.03	62.1	**0.521**	15.4	**2.780**	4.6	14.7	260
MW-6	8/12/2014	4.90	7054.59	5.7	529	7.4	42	0.1	530	6.6	<0.2	2	<1	370	<0.03	72.7	**0.747**	16.0	**2.870**	4.9	15.7	310
MW-6	10/14/2014	6.96	7052.53	6.5	549	7.5	48	0.5	550	6.8	<0.2	<1	<1	370	<0.03	67.6	**0.736**	17.5	**2.910**	4.3	14.9	280
MW-6	6/17/2015	2.12	7057.37	7.4	342	6.6	49	0.1	340	4.0	0.3	<1	<1	240	0.03	39.3	<0.02	9.5	**1.850**	2.4	10.5	190
MW-6	9/9/2015	4.50	7054.99	6.5	457	8.4	96	0.8	460	5.2	<0.2	<1	<1	280	0.045	57.2	**0.656**	13.7	**2.710**	3.3	14.2	250
MW-6	11/12/2015	0.00	7059.49	6.2	209	8.1	93	--	210	9.7	<0.2	<1	<1	120	<0.03	23.8	**0.176**	6.0	**0.815**	1.4	7.5	90
Discharge Pump	8/11/2005								190	13.0	<0.1	12	8.5	120	<0.03	6.8	**0.630**	1.3	**0.200**	3.0	14.0	40
Discharge Pump	9/15/2005							0.3	250	17.0	1.1	8	6.4	140	0.06	7.5	**1.000**	1.8	0.050	5.0	23.0	61
Discharge Pump	10/13/2005								290	20.0	1.7	13	11.0	150	0.06	6.8	**0.840**	1.7	0.040	6.0	24.0	76
Discharge Pump	6/29/2006								180	13.0	<0.1	8	7.0	100	0.04	6.8	**2.600**	1.4	**0.500**	7.0	13.0	55
Discharge Pump	8/2/2006								230	17.0	0.1	12	9.0	120	0.05	7.1	**0.940**	4.5	**0.060**	6.0	18.0	70
Discharge Pump	10/11/2006								150	16.0	0.7	12	10.0	100	0.06	8.1	**0.400**	2.0	0.050	<1	23.0	70
Discharge Pump	7/12/2007								170	12.0	<0.1	7	4.3	210	<0.03	7.2	**2.700**	1.5	**0.400**	6.0	17.0	52.8
Discharge Pump	7/8/2008			7.3	225	20.0	98	3.1	240	15.0	<0.1	<1	<1	140	0.05	13.0	**1.800**	3.0	**0.460**	6.0	18.0	75
Discharge Pump	9/18/2008			8.3	143	18.6	219	8.8	230	22.0	<0.1	<1	<1	230	0.07	3.2	**3.000**	0.6	**0.150**	5.0	25.0	28
Discharge Pump	10/16/2008								320	21.0	0.5	4.97	<1	250	0.08	16.0	**1.300**	3.4	**0.120**	7.0	34.0	15
Discharge Pump	7/7/2009								300	19.0	<0.1	14.00	<1	180	0.05	12.0	**1.500**	2.1	**0.290**	6.0	23.0	95
Treatment Pond	8/11/2005								76	3.1	<0.1	14	9.6	120	0.04	7.3	0.170	1.7	0.020	5.0	20.0	30
Treatment Pond	9/15/2005							2.8	260	17.0	2.1	10	8.1	130	0.07	8.5	0.120	1.8	0.030	6.0	24.0	66
Treatment Pond	10/13/2005								290	20.0	1.7	15	11.0	150	0.05	9.8	0.210	2.4	**0.090**	6.0	22.0	76
Treatment Pond	6/29/2006								180	10.0	0.1	9	8.0	91	0.03	6.1	0.290	1.3	0.040	5.0	22.0	55
Treatment Pond	8/2/2006								230	13.0	0.1	13	9.0	130	<0.03	<0.03	**0.580**	4.6	0.040	5.0	18.0	75
Treatment Pond	10/11/2006								340	17.0	1.1	19	16.0	150	0.09	10.0	**0.620**	2.2	0.030	<1	30.0	110
Treatment Pond	7/12/2007								270	16.0	0.2	18	11.6	240	0.042	9.7	**0.550**	1.9	0.070	8.0	25.0	90.8
Treatment Pond	7/8/2008			7.8	281	26.2	102	3.0	300	16.0	0.4	14	<1	180	0.06	9.0	**0.470**	2.0	0.040	7.0	25.0	50
Treatment Pond	9/18/2008			7.3	401	16.0	213	7.8	420	20.0	0.7	22	16.0	240	0.08	11.0	**0.520**	2.0	0.060	10.0	35.0	190
Treatment Pond	10/16/2008								400	21.0	1.4	23	<1	200	0.08	12.0	**0.340**	2.3	0.020	10.0	36.0	130
Treatment Pond	7/7/2009								250	14.0	1	12	<1	200	0.04	9.9	**0.310**	1.8	0.050	6.0	20.0	75
Bloods Creek Upstream	8/11/2005								67	2.0	<0.1	2	<1	86	<0.03	6.5	0.360	1.6	0.020	<1	5.0	30
Bloods Creek Upstream	6/20/2006								34	1.2	<0.1	<1	<1	46	<0.03	3.1	<0.02	0.7	<0.01	<1	1.0	10
Bloods Creek Upstream	7/12/2007								57	1.1	<0.1	<1	<1	69	<0.03	6.5	0.210	1.3	0.060	2.0	5.0	25.6
Bloods Creek Upstream	7/8/2008			7.2	66	24.6	204	5.8	51	1.8	<0.1	<1	<1	64	<0.03	5.0	0.170	1.0	0.020	2.0	5.0	24
Bloods Creek Upstream	7/7/2009								56	2.2	<0.1	<1	<1	100	<0.03	5.9	0.280	1.3	0.040	1.0	4.0	15
Bloods Creek Downstream	8/11/2005								76	3.2	<0.1	2	<1	100	0.05	7.3	0.160	1.7	0.020	6.0	20.0	81
Bloods Creek Downstream	6/20/2006								40	1.4	<0.1	<1	<1	84	<0.03	3.7	0.050	0.9	<0.01	<1	1.0	15
Bloods Creek Downstream	7/12/2007								71	2.6	<0.1	<1	<1	110	<0.03	7.7	**0.340**	2.1	0.020	6.0	5.0	30
Bloods Creek Downstream	7/8/2008			7.3	61	25.0	178	6.7	65	2.8	<0.1	<1	<1	98	<0.03	6.0	0.220	2.0	<0.01	1.0	3.0	25
Bloods Creek Downstream	7/7/2009								64	2.9	<0.1	<1	<1	110	<0.03	6.8	0.290	1.6	<0.01	1.0	4.0	30

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Well	Date	HCO3 as HCO3 (mg/L)	CO3 as CaCO3 (mg/L)	OH as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Sulfate (mg/L)	Total Coliform (MPN/100ml)	Fecal Coliform (MPN/100ml)	Hardness as CaCO3 (mg/l)	NO2-N (mg/L)	***Total Nitrogen (mg/L)	Lab pH (std units)	Ammonia as NH3 (mg/L)
MW-1	9/1/2004						28	2		NR[2]	NR[2]	6.9	<0.50
MW-1	10/13/2004						<2	<2		NR[2]	1.0	7.3	
MW-1	8/11/2005	87	<1	<1	71	3.7	<2	<2		<0.1	2.0	7.2	
MW-1	9/15/2005	93	<1	<1	76	3.9	<2	<2		<0.1	<1	6.7	
MW-1	10/13/2005	74	<1	<1	61	3.0	2	<2		<0.1	<1	6.8	
MW-1	6/29/2006	67	<1	<1	55	0.6	<2	<2		<0.1	<1	5.9	
MW-1	8/2/2006	91	<1	<1	75	3.7	**21**	8		<0.1	<1	6.8	
MW-1	10/10/2006	85	<1	<1	70	3.6	<2	<2		<0.1	<1	6.6	
MW-1	7/12/2007	107	<1	<1	88	3.7	2	<2		<0.1	<1	7.2	
MW-1	8/29/2007	117	<1	<1	96	4.5	14	2		<0.1	<1	7.4	
MW-1	9/26/2007	122	<1	<1	100	4.3	<2	<2		<0.1	<1	7.3	
MW-1	7/8/2008	79	<1	<1	65	4.0	**4**	<2		<0.1	<1	7.0	
MW-1	9/18/2008	116	<1	<1	95	4.3	**230**	30		<0.1	<1	7.3	
MW-1	1/16/2008	109	<1	<1	90	4.5	**11**	4		<0.1	<1	7.2	
MW-1	7/7/2009	91	<1	<1	75	5.6	2	<2		<0.2	<1	7.3	
MW-1	9/30/2009	134	<1	<1	110	4.5	**8**	4		<0.1	<1	7.0	
MW-1	10/26/2009	122	<1	<1	100	5.1	**80**	11		<0.1	1.3	7.5	
MW-1	7/13/2010	79	<1	<1	65	4.4	<2	<2		<0.1	<1	6.4	
MW-1	8/24/2010	95	<1	<1	78	4.7	2	<2		<0.1	<1	7.0	
MW-1	11/4/2010	93	<1	<1	76	3.3	**17**	2		<0.1	6.0	5.9	
MW-1	7/21/2011	93	<1	<1	76	3.6	<2	<2		<0.1	<1	5.6	
MW-1	9/8/2011	93	<1	<1	76	4.7	<2	<2		<0.1	2.0	7.0	
MW-1	10/20/2011	106	<1	<1	87	4.6	**4.5**	<2		<0.1	2.0	6.6	
MW-1	6/26/2012	66	<1	<1	54	3.1	<1.8	<1.8	56.4	<0.1	0.2	6.7	
MW-1	7/31/2012	121	<1	<1	99	3.9	2	<1.8		<0.1	1.0	7.0	
MW-1	10/9/2012	104	<1	<1	85	4.4	<1.8	<1.8		<0.2	2.0	6.5	
MW-1	5/30/2013	98	<1	<1	80	4.3	<1.8	<1.8	60.2	<0.2	<1	6.4	
MW-1	8/21/2013	104	<1	<1	85	4.4	<1.8	<1.8	65.4	<0.2	<1	6.6	
MW-1	10/15/2013	122	<1	<1	100	4.3	<1.8	<1.8	88.6	<0.2	<1	6.4	
MW-1	6/12/2014	71	<1	<1	58	4.6	<1.8	<1.8	52.7			6.2	
MW-1	8/12/2014	105	<1	<1	86	4.4	<1.8	<1.8	66.0			7.4	
MW-1	10/14/2014	105	<1	<1	86	4.0	<1.8	<1.8	77.6			7.2	
MW-1	6/17/2015	51	<1	<1	42	3.6	<1.8	<1.8					
MW-1	9/9/2015	98	<1	<1	80	4.2	<1.8	<1.8	69.2			6.6	
MW-1	11/12/2015	83	<1	<1	68	4.2	**17**	<1.8	62.0			6.5	
MW-2	10/30/2002						**>2400**	NR[2]		<0.020	NR[2]		<0.50
MW-2	7/29/2003						**6**	4		NR[2]	NR[2]	6.7	<0.2
MW-2	11/13/2003						2	NR[2]		<0.050*	NR[2]	6.7	<0.50
MW-2	6/22/2004						2	<2		NR[2]	NR[2]	6.5	<0.50
MW-2	9/1/2004						<2	<2		NR[2]	NR[2]	6.5	<0.50
MW-2	10/13/2004						**4**	<2		NR[2]	10.0	7.1	
MW-2	8/11/2005	30	<1	<1	25	<0.5	<2	<2		<0.1	2.0	6.9	
MW-2	9/15/2005	37	<1	<1	30	0.6	<2	<2		<0.1	2.1	6.5	
MW-2	10/13/2005	30	<1	<1	25	<0.5	**30**	<2		<0.1	<1	6.5	

Bear Valley Water District
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Well	Date	HCO3 as HCO3 (mg/L)	CO3 as CaCO3 (mg/L)	OH as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Sulfate (mg/L)	Total Coliform (MPN/100ml)	Fecal Coliform (MPN/100ml)	Hardness as CaCO3 (mg/l)	NO2-N (mg/L)	***Total Nitrogen (mg/L)	Lab pH (std units)	Ammonia as NH3 (mg/L)
MW-2	6/29/2006	24	<1	<1	20	<0.5	<2	<2		<0.1	<1	5.6	
MW-2	8/2/2006	24	<1	<1	20	<0.5	<2	<2		<0.1	<1	6.1	
MW-2	10/10/2006	30	<1	<1	25	<0.5	<2	<2		<0.1	<1	6.0	
MW-2	7/12/2007	30	<1	<1	25	<0.5	2	2		<0.1	0.7	6.8	
MW-2	8/29/2007	43	<1	<1	35	1.6	<2	<2		<0.1	<1	7.0	
MW-2	9/26/2007	37	<1	<1	30	1.4	2	<2		<0.1	<1	6.7	
MW-2	7/8/2008	30	<1	<1	25	<0.5	**220**	<2		<0.1	<1	6.5	
MW-2	9/18/2008	30	<1	<1	25	0.6	<2	<2		<0.1	3.2	6.9	
MW-2	10/16/2008	30	<1	<1	25	0.6	2	<2		<0.1	<1	7.0	
MW-2	7/7/2009	30	<1	<1	25	0.5	2	<2		<0.2	<1	7.0	
MW-2	9/30/2009	37	<1	<1	30	<0.5	**8**	<2		<0.1	<1	6.8	
MW-2	10/26/2009	30	<1	<1	25	<0.5	**2200**	800		<0.1	0.5	6.7	
MW-2	7/13/2010	24	<1	<1	20	<0.5	**11**	<2		<0.1	<1	6.1	
MW-2	8/24/2010	27	<1	<1	22	<0.5	**23**	<2		<0.1	<1	6.3	
MW-2	11/4/2010	30	<1	<1	25	<0.5	**500**	4		<0.1	3.0	5.8	
MW-2	7/21/2011	27	<1	<1	22	<0.5	**13**	<2		<0.1	<1	6.2	
MW-2	9/8/2011	33	<1	<1	27	<0.5	2	<2		<0.1	2.0	6.4	
MW-2	10/20/2011	40	<1	<1	33	<0.5	**79**	<2		<0.1	1.0	6.1	
MW-2	6/26/2012	37	<1	<1	30	<0.5	<1.8	<1.8	22.7	<0.1	2.0	6.2	
MW-2	7/31/2012	43	<1	<1	35	<0.5	**23**	11		<0.2	<1	6.3	
MW-2	10/9/2012	37	<1	<1	30	0.8	<1.8	<1.8		<0.2	<1	5.9	
MW-2	5/30/2013	22	<1	<1	18	0.5	**4.5**	<1.8	16.5	<0.2	<1	6.1	
MW-2	8/21/2013	34	<1	<1	28	0.6	**4.5**	<1.8	21.8	<0.2	<1	5.2	
MW-2	10/15/2013	27	<1	<1	22	0.6	**4**	<1.8	17.8	<0.2	<1	5.6	
MW-2	6/12/2014	22	<1	<1	18	0.5	**4.5**	<1.8	16.3			5.9	
MW-2	8/12/2014	34	<1	<1	28	0.6	**21**	<1.8	20.9			6.7	
MW-2	10/14/2014	29	<1	<1	24	0.6	**<1.8**	<1.8	26.5			5.9	
MW-2	6/17/2015	36	<1	<1	30	<0.5	<1.8	<1.8					
MW-2	9/9/2015	49	<1	<1	40	0.8	<1.8	<1.8	19.5			6.9	
MW-2	11/13/2015	32	<1	<1	26	<0.5	**6.8**	2	22.5			6.1	
MW-3	10/30/2002						**>2400**	NR[2]		<0.020	NR[2]		<0.50
MW-3	7/29/2003						**1600**	80		NR[2]	NR[2]	6.6	<0.2
MW-3	11/13/2003						**9**	NR[2]		0.06*	NR[2]	6.0	**
MW-3	6/22/2004						**9**	<2		NR[2]	NR[2]	6.0	<0.50
MW-3	9/1/2004						<2	<2		NR[2]	NR[2]	6.2	<0.50
MW-3	10/13/2004						<2	<2		NR[2]	0.3	6.7	
MW-3	8/11/2005	24	<1	<1	20	1.9	2	<2		<0.1	<1	6.2	
MW-3	9/15/2005	30	<1	<1	25	1.4	**30**	8		<0.1	<1	5.9	
MW-3	10/13/2005	24	<1	<1	20	1.8	**9**	<2		<0.1	2.4	6.1	
MW-3	6/29/2006	24	<1	<1	20	1.3	2	<2		<0.1	<1	5.5	

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Well	Date	HCO3 as HCO3 (mg/L)	CO3 as CaCO3 (mg/L)	OH as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Sulfate (mg/L)	Total Coliform (MPN/100ml)	Fecal Coliform (MPN/100ml)	Hardness as CaCO3 (mg/l)	NO2-N (mg/L)	***Total Nitrogen (mg/L)	Lab pH (std units)	Ammonia as NH3 (mg/L)
MW-3	8/2/2006	24	<1	<1	20	1.3	<2	<2		<0.1	0.2	5.7	
MW-3	10/10/2006	24	<1	<1	20	1.5	**13**	<2		<0.1	2.0	5.4	
MW-3	7/12/2007	34	<1	<1	28	1.1	<2	<2		<0.1	0.2	6.5	
MW-3	8/29/2007	30	<1	<1	25	1.6	**800**	4		<0.1	<1	6.3	
MW-3	9/26/2007	37	<1	<1	30	0.5	**80**	2		<0.1	<1	6.3	
MW-3	7/8/2008	43	<1	<1	35	1.2	2	<2		<0.1	<1	6.3	
MW-3	9/18/2008	24	<1	<1	20	2.0	<2	<2		<0.1	<1	6.2	
MW-3	10/16/2008	37	<1	<1	30	2.1	2	<2		<0.1	0.15	6.2	
MW-3	7/7/2009	24	<1	<1	20	3.5	**4**	<2		<0.2	<1	6.5	
MW-3	9/30/2009	49	<1	<1	40	3.2	**4**	<2		<0.1	<1	6.0	
MW-3	10/26/2009	18	<1	<1	15	3.3	**22**	4		<0.1	0.90	6.4	
MW-3	7/13/2010	24	<1	<1	20	<0.5	**8**	<2		<0.1	<1	6.1	
MW-3	8/24/2010	33	<1	<1	27	<0.5	2	<2		<0.1	<1	5.8	
MW-3	11/4/2010	30	<1	<1	25	<0.5	**800**	26		<0.1	3.00	5.6	
MW-3	7/21/2011	20	<1	<1	16	<0.5	**34**	<2		<0.1	<1	6.2	
MW-3	9/8/2011	27	<1	<1	22	<0.5	2	<2		<0.1	2.00	6.1	
MW-3	10/20/2011	33	<1	<1	27	<0.5	**130**	11		<0.1	1.00	6.1	
MW-3	6/26/2012	37	<1	<1	30	1.3	<1.8	<1.8	22.1	<0.1	<1	6.0	
MW-3	7/31/2012	43	<1	<1	35	1.2	<1.8	<1.8		<0.2	<1	6.0	
MW-3	10/9/2012	43	<1	<1	35	1.5	<1.8	<1.8		<0.2	<1	5.7	
MW-3	5/30/2013	24	<1	<1	20	2.3	**6.8**	<1.8	15.7	<0.2	<1	5.9	
MW-3	8/21/2013	22	<1	<1	18	1.3	<1.8	<1.8	18.7	<0.2	<1	4.2	
MW-3	10/15/2013	39	<1	<1	32	1.4	<1.8	<1.8	21.8	<0.2	<1	5.4	
MW-3	6/12/2014	24	<1	<1	20	1.3	**6.8**	<1.8	15.3			5.7	
MW-3	8/12/2014	24	<1	<1	20	1.2	**9.3**	<1.8	19.4			5.6	
MW-3	10/14/2014	27	<1	<1	22	1.3	<1.8	<1.8	20.5			5.5	
MW-3	6/17/2015	34	<1	<1	28	1.3	<1.8	<1.8					
MW-3	9/9/2015	51	<1	<1	42	1.4	**7.8**	7.8	18.7			7.4	
MW-3	11/13/2015	29	<1	<1	24	1.3	<1.8	<1.8	19.1				
MW-4	10/30/2002						**900**	NR[2]		<0.020	NR[2]		<0.50
MW-4	7/29/2003						**240**	<2		NR[2]	NR[2]	6.5	<0.2
MW-4	11/13/2003						<2	NR[2]		0.05*	NR[2]	6.9	**
MW-4	6/22/2004						<2	<2		NR[2]	NR[2]	6.8	<0.50
MW-4	9/1/2004						<2	<2		NR[2]	NR[2]	6.9	<0.50
MW-4	10/13/2004						<2	<2		NR[2]	<1.1	7.1	
MW-4	8/11/2005	117	<1	<1	96	5.7	<2	<2		<0.1	<1	6.9	
MW-4	9/15/2005	122	<1	<1	100	5.8	<2	<2		<0.1	0.1	6.6	
MW-4	10/13/2005	134	<1	<1	110	5.1	<2	<2		<0.1	1.2	6.8	
MW-4	6/29/2006	110	<1	<1	90	4.1	<2	<2		<0.1	0.1	6.2	
MW-4	8/2/2006	102	<1	<1	85	6.2	<2	<2		<0.1	<1	6.7	
MW-4	10/10/2006	104	<1	<1	85	6.0	2	<2		<0.1	1.0	6.8	
MW-4	7/12/2007	106	<1	<1	87	6.7	<2	<2		<0.1	0.1	6.8	
MW-4	8/29/2007	111	<1	<1	91	6.9	<2	<2		<0.1	<1	7.2	
MW-4	9/26/2007	105	<1	<1	86	10.0	<2	<2		<0.1	<1	7.0	
MW-4	7/8/2008	105	<1	<1	86	5.8	<2	<2		<0.1	<1	7.0	

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Well	Date	HCO3 as HCO3 (mg/L)	CO3 as CaCO3 (mg/L)	OH as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Sulfate (mg/L)	Total Coliform (MPN/100ml)	Fecal Coliform (MPN/100ml)	Hardness as CaCO3 (mg/l)	NO2-N (mg/L)	***Total Nitrogen (mg/L)	Lab pH (std units)	Ammonia as NH3 (mg/L)
MW-4	9/18/2008	104	<1	<1	85	6.2	<2	<2		<0.1	<1	6.9	
MW-4	10/16/2008	109	<1	<1	90	5.9	2	<2		<0.1	<0.1	6.9	
MW-4	7/7/2009	116	<1	<1	95	7.0	<2	<2		<0.2	2.4	7.1	
MW-4	9/30/2009	98	<1	<	80	6.3	<2	<2		<0.1	<1	6.8	
MW-4	10/26/2009	110	<1	<1	90	5.4	**1300**	13		<0.1	0.3	7.1	
MW-4	7/13/2010	122	<1	<1	100	5.2	2	<2		<0.1	<1	6.6	
MW-4	8/24/2010	100	<1	<1	82	5.6	<2	<2		<0.1	<1	6.4	
MW-4	11/4/2010	91	<1	<1	75	6.8	**50**	13		<0.1	<1	6.5	
MW-4	7/21/2011	112	<1	<1	92	4.1	<2	<2		<0.1	<1	6.9	
MW-4	9/8/2011	106	<1	<1	87	5.0	<2	<2		<0.1	1.0	6.9	
MW-4	10/20/2011	85	<1	<1	70	7.3	2	<2		<0.1	<1	7.0	
MW-4	6/26/2012	108	<1	<1	89	7.0	<1.8	<1.8	86.4	<0.1	<1	8.0	
MW-4	7/31/2012	102	<1	<1	84	6.6	**6.8**	<1.8		<0.2	2.0	6.6	
MW-4	10/9/2012	91	<1	<1	75	6.8	<1.8	<1.8		<0.2	<1	5.8	
MW-4	5/30/2013	105	<1	<1	86	6.1	<1.8	<1.8	81.7	<0.2	<1	6.4	
MW-4	8/21/2013	109	<1	<1	89	6.7	<1.8	<1.8	72.9	<0.2	<1	6.5	
MW-4	10/15/2013	111	<1	<1	91	6.7	<1.8	<1.8	81.2	<0.2	<1	6.6	
MW-4	6/12/2014	109	<1	<1	89	5.9	<1.8	<1.8	91.2			5.6	
MW-4	8/12/2014	112	<1	<1	92	6.0	<1.8	<1.8	82.8			6.9	
MW-4	10/14/2014	95	<1	<1	78	6.5	<1.8	<1.8	75.2			6.7	
MW-4	6/17/2015	105	<1	<1	86	6.0	<1.8	<1.8					
MW-4	9/9/2015	134	<1	<1	110	6.3	2	<1.8	77.4			6.7	
MW-4	11/13/2015	95	<1	<1	78	5.3	<1.8	<1.8	69.5			6.8	
MW-5	9/1/2004						**80**	17		NR[2]	NR[2]	6.6	<0.50
MW-5	10/13/2004						**500**	2		NR[2]	2.0	6.8	
MW-5	8/11/2005	55	<1	<1	45	1.8	2	<2		<0.1	2.0	6.2	
MW-5	9/15/2005	62	<1	<1	51	2.0	<2	<2		<0.1	0.1	7.6	
MW-5	10/13/2005	43	<1	<1	35	1.3	**11**	<2		<0.1	0.2	6.1	
MW-5	6/29/2006	30	<1	<1	25	0.7	<2	<2		<0.1	<1	5.4	
MW-5	8/2/2006	42	<1	<1	35	1.0	<2	<2		<0.1	<1	6.1	
MW-5	10/11/2006	55	<1	<1	45	1.7	2	<2		<0.1	1.0	6.0	
MW-5	7/12/2007											Well pumped dry	
MW-5	8/29/2007												
MW-5	9/26/2007											Well pumped dry	
MW-5	7/8/2008											Well pumped dry	
MW-5	9/18/2008												
MW-5	10/16/2008												
MW-5	7/7/2009	55	<1	<1	45	2.7	<2	<2		<0.2	<1	6.5	
MW-5	9/30/2009	NS	NS	NS	NS	2.5	NS	NS		0.2	NS	7.5	well pur
MW-5	10/26/2009												
MW-5	7/13/2010	43	<1	<1	35	<0.5	2	<2		<0.1	<1	6.0	
MW-5	8/24/2010	45	<1	<1	37	<0.5	2	<2		<0.1	<1	6.7	
MW-5	11/4/2010	50	<1	<1	41	<0.5	**23**	<2		<0.1	<1	6.1	
MW-5	7/21/2011	33	<1	<1	27	<0.5	**4**	<2		<0.1	<1	4.9	
MW-5	9/8/2011	52	<1	<1	43	<0.5	<2	<2		<0.1	1.0	6.5	
MW-5	10/20/2011	46	<1	<1	38	1.7	**4.5**	<2		<0.1	<1	6.0	

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Well	Date	HCO3 as HCO3 (mg/L)	CO3 as CaCO3 (mg/L)	OH as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Sulfate (mg/L)	Total Coliform (MPN/100ml)	Fecal Coliform (MPN/100ml)	Hardness as CaCO3 (mg/l)	NO2-N (mg/L)	***Total Nitrogen (mg/L)	Lab pH (std units)	Ammonia as NH3 (mg/L)
MW-5	6/26/2012	48	<1	<1	39	1.0	IVS	IVS	39.8	<0.1	0.1	6.9	
MW-5	7/31/2012	48	<1	<1	39	2.1	<1.8	<1.8		<0.2	<1	6.3	
MW-5	10/9/2012												
MW-5	5/30/2013	46	<1	<1	38	0.9	IVS	IVS	27.6	<0.2	<1	6.0	well pur
MW-5	8/21/2013	32	<1	<1	26	0.8	<1.8	<1.8	25.2	<0.2	<1	6.0	
MW-5	10/15/2013	40	<1	<1	33	2.7	<1.8	<1.8	27.3	<0.2	<1	8.1	
MW-5	6/12/2014	44	<1	<1	36	1.0	<1.8	<1.8	29.8			5.8	
MW-5	8/12/2014	56	<1	<1	46	1.2	14	<1.8	41.1			5.6	
MW-5	10/14/2014												
MW-5	6/17/2015	51	<1	<1	42	1.1	<1.8	<1.8					
MW-5	9/9/2015	56	<1	<1	46	1.2	IVS	IVS	39.9			7.0	
MW-5	11/12/2015	51	<1	<1	42	1.0	IVS	IVS	39.1				
MW-6	10/30/2002						**240**	NR[2]		<0.020	NR[2]		<0.50
MW-6	7/29/2003						<2	<2		NR[2]	NR[2]	6.5	<0.2
MW-6	11/13/2003						<2	NR[2]		<0.050*	NR[2]	6.7	**
MW-6	6/22/2004						<2	<2		NR[2]	NR[2]	7.0	<0.50
MW-6	9/1/2004						<2	<2		NR[2]	NR[2]	7.0	<0.50
MW-6	10/13/2004						<2	<2		NR[2]	<1.1	7.6	
MW-6	8/11/2005	305	<1	<1	250	1.8	<2	<2		<0.1	<1	7.3	
MW-6	9/15/2005	293	<1	<1	240	1.9	<2	<2		<0.1	1.2	7.0	
MW-6	10/13/2005	292	<1	<1	240	1.8	2	<2		<0.1	0.2	7.3	
MW-6	6/29/2006	280	<1	<1	230	1.8	<2	<2		<0.1	<1	6.8	
MW-6	8/2/2006	280	<1	<1	230	1.6	<2	<2		<0.1	<1	6.8	<1
MW-6	10/10/2006	304	<1	<1	250	1.9	<2	<2		<0.1	<1	7.0	
MW-6	7/12/2007	284	<1	<1	233	1.9	<2	<2		<0.1	<1	7.1	
MW-6	8/29/2007	317	<1	<1	260	2.1	**50**	7		<0.1	<1	7.3	
MW-6	9/26/2007	317	<1	<1	260	1.7	**4**	<2		<0.1	<1	7.3	
MW-6	7/8/2008	288	<1	<1	236	1.9	<2	<2		<0.1	<1	7.2	
MW-6	9/18/2008	329	<1	<1	270	2.1	<2	<2		<0.1	<1	7.1	
MW-6	10/16/2008	329	<1	<1	270	1.9	<2	<2		<0.1	<0.1	7.7	
MW-6	7/7/2009	317	<1	<1	260	3.2	<2	<2		<0.2	<1	7.2	
MW-6	9/30/2009	317	<1	<1	260	2.6	<2	<2		<0.1	<1	7.0	
MW-6	10/26/2009	305	<1	<1	250	3.2	<2	<2		<0.1	<1	7.6	
MW-6	7/13/2010	305	<1	<1	250	<0.5	2	<2		<0.1	<1	6.8	
MW-6	8/24/2010	280	<1	<1	230	<0.5	<2	<2		<0.1	<1	6.7	
MW-6	11/4/2010	281	<1	<1	230	2.9	<2	<2		<0.1	<1	6.5	
MW-6	7/21/2011	329	<1	<1	270	2.3	<2	<2		<0.1	<1	7.0	
MW-6	9/8/2011	329	<1	<1	270	<0.5	<2	<2		<0.1	<1	7.0	
MW-6	10/20/2011	232	<1	<1	190	<0.5	**6.8**	<2		<0.1	<1	6.6	
MW-6	6/26/2012	280	<1	<1	230	1.9	<1.8	<1.8	236	<0.1	<1	6.8	
MW-6	7/31/2012	317	<1	<1	260	3.0	**4.5**	<1.8		<0.2	<1	6.8	
MW-6	10/9/2012	354	<1	<1	290	2.0	<1.8	<1.8		<0.2	<1	6.7	
MW-6	5/30/2013	232	<1	<1	190	2.8	<1.8	<1.8	154	<0.2	<1	6.5	
MW-6	8/21/2013	305	<1	<1	250	2.0	<1.8	<1.8	191	<0.2	<1	6.5	
MW-6	10/15/2013	329	<1	<1	270	3.1	2	<1.8	257	<0.2	<1	6.3	

Bear Valley Water District
Historic Groundwater Quality

Well	Date	HCO3 as HCO3 (mg/L)	CO3 as CaCO3 (mg/L)	OH as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Sulfate (mg/L)	Total Coliform (MPN/100ml)	Fecal Coliform (MPN/100ml)	Hardness as CaCO3 (mg/l)	NO2-N (mg/L)	***Total Nitrogen (mg/L)	Lab pH (std units)	Ammonia as NH3 (mg/L)
MW-6	6/12/2014	317	<1	<1	260	3.0	<1.8	<1.8	218			5.9	
MW-6	8/12/2014	378	<1	<1	310	3.1	<1.8	<1.8	248			5.7	
MW-6	10/14/2014	341	<1	<1	280	2.0	<1.8	<1.8	241			6.5	
MW-6	6/17/2015	231	<1	<1	190	1.6	<1.8	<1.8					
MW-6	9/9/2015	305	<1	<1	250	1.8	<1.8	<1.8	199			6.5	
MW-6	11/12/2015	110	<1	<1	90	0.8	<1.8	<1.8	84			6.2	
Discharge Pump	8/11/2005	49	<1	<1	40	3.6	**23**	<2		<0.1	12.0	6.7	
Discharge Pump	9/15/2005	74	<1	<1	61	6.1	**>16000**	1700		0.8	9.9	6.9	
Discharge Pump	10/13/2005	93	<1	<1	76	7.2	**800**	22		0.3	15.0	7.2	
Discharge Pump	6/29/2006	67	<1	<1	55	3.4	**8**	<2		<0.1	8.0	6.4	
Discharge Pump	8/2/2006	85	<1	<1	70	4.2	<2	<2		<0.1	12.1	6.9	
Discharge Pump	10/11/2006	85	<1	<1	70	5.6	**23**	4		0.1	12.8	7.1	
Discharge Pump	7/12/2007	64	<1	<1	52.8	3.6	**500**	2		<0.1	6.5	7.2	
Discharge Pump	7/8/2008	91	<1	<1	75	4.9	**22**	6		<0.1	<1	7.3	
Discharge Pump	9/18/2008	34	<1	<1	28	6.7	**230**	30		<0.1	<1	8.9	
Discharge Pump	10/16/2008	18	<1	<1	15	85.0	**1300**	13		<0.1	5.5	7.9	
Discharge Pump	7/7/2009	116	<1	<1	95	7.3	**50**	11		<0.2	14.0	7.2	
Treatment Pond	8/11/2005	37	<1	<1	30	1.0	**>3000**	1300		<0.1	14.0	8.5	
Treatment Pond	9/15/2005	81	<1	<1	66	6.1	**>16000**	>3000		0.8	12.9	7.1	
Treatment Pond	10/13/2005	93	<1	<1	76	7.2	**2400**	1300		0.3	17.0	7.3	
Treatment Pond	6/29/2006	67	<1	<1	55	3.7	**170**	17		<0.1	9.1	6.9	
Treatment Pond	8/2/2006	91	<1	<1	75	4.2	**>16000**	700		0.1	13.2	7.2	
Treatment Pond	10/11/2006	134	<1	<1	110	6.7	**16000**	2800		0.2	20.3	7.3	
Treatment Pond	7/12/2007	111	<1	<1	90.8	4.4	**16000**	1100		0.1	18.4	7.6	
Treatment Pond	7/8/2008	61	<1	<1	50	5.4	**5000**	30		0.2	14.6	7.8	
Treatment Pond	9/18/2008	231	<1	<1	190	6.8	**16000**	16000		0.4	23.1	8.0	
Treatment Pond	10/16/2008	159	<1	<1	130	7.7	**9000**	2400		0.1	24.5	7.6	
Treatment Pond	7/7/2009	91	<1	<1	75	6.8	**9000**	700		0.7	13.7	7.9	
Bloods Creek Upstream	8/11/2005	37	<1	<1	30	0.5	170	80		<0.1	2.0	7.0	
Bloods Creek Upstream	6/20/2006	12	<1	<1	10	<0.5	<2	<2		<0.1	<1	6.3	
Bloods Creek Upstream	7/12/2007	31	<1	<1	25.6	0.5	14	8		<0.1	<1	7.0	
Bloods Creek Upstream	7/8/2008	29	<1	<1	24	<0.5	130	13		<0.1	<1	7.1	
Bloods Creek Upstream	7/7/2009	18	<1	<1	15	2.1	500	50		<0.2	<1	6.8	
Bloods Creek Downstream	8/11/2005	99	<1	<1	81	1.0	>16000	130		<0.1	2.0	6.8	
Bloods Creek Downstream	6/20/2006	18	<1	<1	15	<0.5	17	2		<0.1	<1	6.3	
Bloods Creek Downstream	7/12/2007	37	<1	<1	30	0.7	>16000	50		<0.1	<1	6.9	
Bloods Creek Downstream	7/8/2008	30	<1	<1	25	0.6	500	130		<0.1	<1	7.1	
Bloods Creek Downstream	7/7/2009	37	<1	<1	30	2.2	170	13		<0.2	<1	7.2	