

**SECOND QUARTER 2011
DOMESTIC WELL MONITORING REPORT**

YERINGTON MINE SITE

August 15, 2011

PREPARED FOR:
Atlantic Richfield Company
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LIST OF ACRONYMS AND ABBREVIATIONS

APN	Assessor's Parcel Number	RI/FS	Remedial Investigation/Feasibility Study
ARC	Atlantic Richfield Company		
COC	Chain-of-Custody	RO	Reverse Osmosis
DQO	Data Quality Objective	Site	Yerington Mine Site
DWMP	Domestic Well Monitoring Program	SOW	Scope of Work
		TDS	Total Dissolved Solids
DWMP	Domestic Well Monitoring Report	TOC	Total Organic Carbon
EPA	U.S. Environmental Protection Agency	UAO	Unilateral Administrative Order
ESI	Environmental Standards, Inc.		
GMR	Groundwater Monitoring Report	amsl	above mean sea level
GPS	Global Positioning System	bgs	below ground surface
ICP	Inductively Coupled Plasma	L	liter
ICP-MS	Inductively Coupled Plasma-Mass Spectrometry	mg	milligrams
		pCi	picocuries
MCL	Maximum Contaminant Level	s.u.	standard units for pH
MDL	Method Detection Limit	µg	micrograms
MS	Matrix Spike	%	percent
MSD	Matrix Spike Duplicate		
NDWR	Nevada Division of Water Resources		
Order	Administrative Order		
PDF	Portable Document Format		
PQL	Practical Quantitation Limit		
PWS	Pumpback Well System		
QA	Quality Assurance		
QAPP	Quality Assurance Project Plan		
QC	Quality Control		

SECTION 1.0 INTRODUCTION

Atlantic Richfield Company (ARC) has prepared this Second Quarter 2011 Domestic Well Monitoring Report (2Q 2011 DWMR) pursuant to: 1) Paragraph 24 of the March 31, 2005 Unilateral Administrative Order (UAO; EPA, 2005), which states that ARC “*shall provide EPA the quality assurance/quality control (QA/QC) procedures followed by all sampling teams and laboratories performing data collection and analysis*”; 2) Section 6.0 of the Scope of Work (SOW) attached to the Administrative Order (Order) for Remedial Investigation and Feasibility Study (RI/FS) of the Anaconda/Yerington Mine Site (Site), issued to ARC by the U.S. Environmental Protection Agency - Region 9 (EPA) on January 12, 2007 (EPA, 2007); and 3) the Site-Wide Quality Assurance Project Plan (QAPP), Domestic Well Monitoring Plan - Revision 3 (Brown and Caldwell, 2010). This 2Q 2011 DWMR presents analytical results for domestic, commercial and irrigation wells (referred to as domestic wells) located near the Site. The Site is located adjacent to the City of Yerington, in western Nevada (Figure 1-1). Figure 1-1 also depicts the locations of the Yerington Paiute Tribe reservation and the Paiute Indian Colony.

As a result of the EPA-approved temporary shutdown of the pumpback well system (PWS) in March 2009 to evaluate hydrogeologic conditions in the area of the PWS, EPA requested that ARC sample additional domestic wells on a quarterly basis along Luzier Lane and Locust Drive, located immediately north and west of the Site, respectively. In response, ARC sampled these selected additional domestic wells beginning with the second quarter (June) 2009 event and continuing on a quarterly basis through 2009. Subsequently, in a letter dated November 9, 2009, EPA requested that ARC expand the Domestic Well Monitoring Program (DWMP) in the first quarter of 2010 (1Q 2010) as an addendum to the Site-Wide QAPP - Revision 5 (Environmental Standards, Inc. [ESI] and Brown and Caldwell, 2009). This expansion was based on EPA’s review of existing domestic well data and conclusion that the number of wells being monitored, the frequency of monitoring, and the number of analytes were not adequate to evaluate trends and long-term potential impacts on public health.

As requested by EPA (2009), the DWMP includes wells to be sampled at two frequencies:

1. *“Quarterly sampling of domestic wells belonging to residents who are not currently on bottled water, as well as those who have never had their wells sampled.*
2. *Semi-annual sampling of domestic wells belonging to residents who currently receive bottled water.”*

Eligibility for domestic well owners to be included in the Bottled Water Program is based on a uranium concentration of 25 micrograms per liter ($\mu\text{g/L}$). The Site-Wide QAPP, Domestic Well Monitoring Plan - Revision 3 (Brown and Caldwell, 2010) stated: *“The primary Data Quality Objective (DQO) for domestic well sampling is to obtain groundwater samples that are representative of the quality of water used for drinking water or other domestic water supply purposes. Additional domestic well monitoring objectives include:*

- *Monitoring temporal trends in the magnitude and distribution of chemicals in groundwater extracted by domestic wells that is used for drinking water or agricultural purposes;*
- *Assessing what, if any, potential risk is posed to human health and the environment by the use of groundwater extracted by domestic wells for drinking water or agricultural purposes; and*
- *Determining whether residents are qualified to receive bottled water (i.e., uranium concentrations equal or exceed 25 micrograms per liter [$\mu\text{g/L}$]).”*

Since the DWMP was expanded, DWMRs have been submitted as separate documents from the groundwater monitoring reports (GMRs), beginning with the 3Q 2009 sampling event. This 2Q 2011 DWMR provides the following information: 1) a description of the domestic well monitoring activities conducted during 2Q 2011; 2) a summary of water quality analyses for the domestic wells sampled; and 3) a discussion of the QA/QC aspects of the water quality data.

Section 2.0 presents a brief description of the current (2Q 2011) domestic well sampling network, including field sample collection and analytical methods. Sections 3.0 and 4.0, respectively, summarize the water quality and associated QA/QC results for the 2Q 2011 monitoring event. Section 5.0 lists the references cited in this 2Q 2011 DWMR.

Appendix A contains available domestic well construction logs and other well information, and Appendix B consists of field log books. Copies of the 2Q 2011 domestic well field sampling forms are included in Appendix C. Appendix D contains the 2Q 2011 analytical data table, laboratory reports, verification reports, and the updated domestic well database. Individual domestic well data reports for EPA distribution to well owners or residents were submitted to EPA on July 21, 2011, and are not included in this 2Q 2011 DWMR. Appendix E provides time-concentration plots of selected analytes for domestic wells sampled during the 2Q 2011 event.

SECTION 2.0

2Q 2011 DOMESTIC WELL MONITORING PROGRAM

This section briefly describes the domestic well sampling program, and provides specific information on well water sampling and analytical methods.

2.1 Domestic Well Network

In December 2003, ARC initiated the collection of water samples from up to 16 domestic wells for analysis as part of the groundwater monitoring program. Samples were collected from these wells several times in 2004. In June 2005, ARC initiated the sampling of these select wells on an annual basis, and continued sampling these “annual” wells during the second quarter of each subsequent year, up to and including 2009.

In March 2009, EPA requested that some of the “annual” wells and other domestic wells located north and northwest of the Site along Luzier Lane and Locust Drive, be sampled and analyzed on a quarterly basis. This request was linked to the temporary shut down of the PWS, located along the northern margin of the Site. ARC initiated quarterly sampling of these wells beginning with the 2Q 2009 event, limited to wells whose owner(s) had signed an access agreement. Based on this requirement, 25 domestic wells were added to the quarterly sampling program through 4Q 2009. Therefore, a total of 41 domestic wells were sampled in 2009, including the 16 “annual” wells.

As part of the expanded DWMP that was initiated in 1Q 2010, a total of 173 domestic wells were identified by ARC and approved by EPA to be included in the program. Of these wells, residences that were participating in the Bottled Water Program (discussed in more detail in Section 3.0) were to be sampled semi-annually (65 wells), and 107 wells were to be sampled quarterly. EPA requested that well DW-174 be included in the program, but the well does not have power (i.e., it is currently not used for domestic or agricultural purposes).

One new residence was added to the sampling program before the start of each 2010 monitoring event (DW-176 in 2Q; DW-177 in 3Q; DW-178 in 4Q). A signed access agreement was received from DW-152 (status formerly “Outstanding”) before the 4Q 2010 event. These additions were initially to be sampled quarterly. Three new residences (DW-180, DW-181, and DW-182) were added to the program before the start of the 1Q 2011 event. Also, signed access agreements were received from DW-52 and DW-105 (status formerly “Outstanding”), and samples were collected from these two wells during the 1Q 2011 event. One new residence (DW-183) was added to the program before the start of the 2Q 2011 event.

Table 2-1 summarizes the 180 domestic wells that were included in the DWMP as of the end of the 2Q 2011 event, and includes some general information on construction details, if known. The locations of these domestic wells are shown in Figure 1-2 (also provided as a plate). Construction logs are available for 90 of these domestic wells and are provided in Appendix A.

Starting in the first week of February 2010, ARC sent access agreements via certified mail to the respective owner(s) of domestic wells for which signed access agreements were not in place, in preparation for the 1Q 2010 domestic well sampling event. During the last week of February 2010, ARC contacted by phone and personally visited several of the residences that had not returned signed access agreements. ARC has continued to personally visit and/or contact by phone those residences who have not yet returned the access agreement or who have not yet responded to previous contact attempts.

Leading up to, and during, the 2Q 2011 event, ARC had obtained signed access agreements for 157 domestic wells. These 157 wells are indicated in Table 2-1 by a “Yes” indicated under the column “Access Agreement Signed”. Since the end of the 1Q 2011 sampling event, a signed access agreement was received from DW-183 and this well was sampled during the 2Q 2011 event. Irrigation well WDW019 was taken out of service in March 2011 and, therefore, was not sampled. The owner of DW-101 requested to have their well taken out of the sampling program at the start of the 2Q 2011 event. Therefore, the status of this well was changed from “Yes” to “Denied”.

During the 2Q 2011 event, samples were to be collected from 66 domestic wells for which a signed access agreement was in place. However, samples were not collected from the following five wells listed below, for the reasons stated in parentheses:

- DW-49 (house vacant, no water)
- DW-76 (house vacant, no power to house)
- DW-101 (owner requested to be taken out of well sampling program)
- DW-116 (no water)
- DW-132 (house vacant, no power to house)

Therefore, during the period of June 13 to 15, 2011, samples were collected from a total of 61 wells. As indicated in Table 2-1, the status of the remaining 23 domestic wells for which a signed access agreement has not been received is as follows (the status of “pending” and “outstanding” access agreements between June 30, 2011 and the submittal date of this 2Q 2011 DWMR is not included):

- Access “denied” for 17 well locations (DW-59, DW-66, DW-67, DW-93, DW-97, DW-100, DW-101, DW-106, DW-131, DW-141, DW-144, DW-145, DW-155, DW-156, DW-171, DW-172, and DW-174) as the owners were not interested in participation in the program. DW-174 does not have power and is not used for domestic or irrigation purposes. The owners of DW-59, DW-66, DW-67, DW-101, and DW-106 previously had signed access agreements and samples were collected from the respective wells during at least one event since the 1Q 2010 event. However, the owners since have requested that their respective well be taken out of the program.
- Access “pending” for one well location (DW-127) as the owner indicated that a signed access agreement would be returned to ARC, but one had yet to be received by the end of the 2Q 2011 event.
- Access “outstanding” for the remaining five wells (DW-33, DW-68, DW-77, DW-80, and DW-89) as the owners did not return a signed agreement and ARC was unable to contact them during follow-up phone calls and/or personal visits through the end of the 2Q 2011 event.

Table 2-1 summarizes available information about the domestic wells in the DWMP, including those without access agreements. Domestic well locations for which access agreements were received have been surveyed using a Fast Static Global Positioning System (GPS) survey method referenced to a known Project Datum survey point using the Nevada State Plane West Zone coordinate system (NAD27). The GPS method was used to establish horizontal coordinates (X and Y). The GPS unit (a Trimble GeoXT handheld unit) is capable of achieving a horizontal accuracy of ± 3.0 feet (i.e., submeter). Vertical coordinates (Z) for each well were established by plotting the locations on a topographic map and estimating the ground surface elevation of the well location. A vertical accuracy of ± 0.5 feet is typically achieved using this method. Although updated and more accurate location coordinates are included in Table 2-1, the reported elevations for the domestic wells are approximate and the reported construction details have not been verified.

2.2 Domestic Well Sampling Methods

Samples were collected from the domestic wells listed in Table 2-1 by the following methods:

1. Arrived at well location and notified the homeowner or occupant that well purging and sampling activities would occur. Homes were not entered.
2. In discussions with the homeowner or occupant, identified the “preferred sampling location” (if previously unknown), which was an outside spigot closest to the well, and did not draw water through a water softener tank, in-line filter, or other treatment system.
3. Filled out the Date, Well ID, Sampler Name, Analytes, and whether QA/QC sample would be collected on the **Domestic Well Field Sample Form**. Blank spaces were not left on the form.
4. Donned a new pair of nitrile gloves.
5. Went to the “preferred sample location” identified in previous field sampling records or by the homeowner/occupant (if previously unknown). A spigot closest to the well (i.e., upstream of any treatment system) was used for purging and sampling, so that only untreated water was sampled. An alternate location requested by the homeowner may have been sampled if it was upstream of, and did not draw water through, a water softener tank, in-line filter or other treatment system. Water treatment information (presence, type, location, etc.), if any, provided by the homeowner/occupant was recorded on the **Domestic Well Field Sample Form** and/or in the field logbook.

6. Removed the hose (if one attached) from the spigot. If necessary, the hose was left on the spigot for purging, but was removed before sampling.
7. Turned on the spigot.
8. Allowed the well water to run through the spigot for approximately five minutes or until approximately 25 gallons of water had been discharged. Collected discharged water into five-gallon buckets to verify that 25 gallons had been purged. Discarded the purge water onto the ground or onto landscaping in the general area of the well.
9. If left on during purging, removed the hose from the spigot.
10. Collected the samples by filling the required containers directly from the spigot. The valve on the spigot was turned almost to the closed position to provide a low sampling flow rate that was as laminar as possible. The lip of the sample containers did not touch the spigot. Sample bottles were filled in the following order at each well: physical parameters and cations/anions, total organic carbon (TOC), metals, and radiochemicals.
11. Turned off the spigot and re-attached the hose (if one was attached). Checked to ensure that the spigot and hose were left in the same condition as found at before sampling.
12. Completed the field documentation including field log book, the purge time and sample collection time on the **Domestic Well Field Sample Form**, chain-of-custody (COC) form, and sample labels.
13. Placed the sample containers for analysis of physical parameters and cations/anions, TOC, and metals in a cooler of ice until returned to the field office and prepared for shipment.
14. Filled out the information on the “Domestic Well Testing Program” flyer. If the homeowner/occupant was home, hand-delivered the flyer and discussed with the homeowner/occupant the information on the flyer. If the homeowner/occupant was not home, left the flyer securely taped on the front door.
15. Packed up the equipment and went to the next well.

A copy of field log books is provided in Appendix B, and copies of field forms are included in Appendix C. Duplicate samples from seven wells were concurrently collected using the same methods listed above, and were labeled with the suffix “-FD” appended to the well sample designation (i.e., DW-146-FD). Matrix spike/matrix spike duplicate (MS/MSD) samples were concurrently collected following the same sampling methods from four wells. A field blank was collected at four well locations (four samples total) by pouring certified analyte-free water provided by the respective laboratories into the appropriate sample containers.

Upon collection, each sample bottle was labeled and samples for the analysis of physical parameters and cations/anions, TOC and metals were immediately placed into a cooler of ice. At the end of each work day, the samples collected that afternoon for analysis of physical parameters and cations/anions, TOC, and metals were transferred from the iced cooler into a refrigerator located in a secured-access building on the Site. Temperature blanks were stored in the refrigerator, which contained a thermometer to document the refrigerator temperature. Late in the morning of the following work day, samples temporarily stored in the refrigerator from the previous day afternoon were shipped in a cooler of ice, each containing a temperature blank. The refrigerator temperature and the temperature of the blank placed into a cooler were documented on one of the COC forms that were placed into a cooler before shipment.

Samples were submitted under COC via overnight courier to the TestAmerica laboratory in Irvine, California for analysis of physical parameters and cations/anions, TOC and metals, and to the TestAmerica laboratory in Richland, Washington for analysis of radiochemicals. The analytical laboratories provided the certified-clean sample bottles, chemical preservatives, shipping coolers, and custody seals. The TestAmerica laboratories analyzed the domestic well and QA/QC samples for the parameters listed in Table 2-2.

Well Name	Access Agreement Signed ⁽¹⁾	Sampling Frequency ⁽²⁾	Assessor's Parcel Number (APN)	Location Coordinates		NDWR ⁽³⁾ Well Log No.	Well Completion Date	Approx Ground Surface Elevation	Well Casing Diameter	Total Depth of Well	Total Depth of Borehole	Top of Screen		Bottom of Screen Elevation	Screen Length	Top of Gravel Pack		Bottom of Gravel Pack		Gravel Pack Length	Zone ⁽⁴⁾
				feet amsl ⁽⁵⁾	inches			feet bgs ⁽⁵⁾	feet	feet bgs	feet amsl	feet amsl	feet	feet bgs	feet amsl	feet bgs	feet amsl	feet			
DW-1	Yes	Quarterly	004-092-01	321479.89	1561774.725	92781	3/26/04	4368.00	6.62	200	200	160	4208	4168	40	50	4318	200	4168	150	D
DW-2	Yes	Semi-annual	004-082-05	321915.424	1563663.391	20046	6/20/79	4400.25	6.62	147	149	129	4271.25	4253.25	18	50	4350.25	149	4251.25	99	S/I
DW-3	Yes	Quarterly	014-271-13	322924.526	1564712.511	-- ⁽⁶⁾	--	4388.00	--	--	145	--	--	--	--	--	--	--	--	--	U
DW-4	Yes	Semi-annual	004-091-07	321355.455	1562690.078	22350	1/15/81	4390.25	6.62	144	145	124	4266.25	4246.25	20	50	4340.25	144	4246.25	94	I/D
DW-5	Yes	Semi-annual	004-082-01	322265.958	1563284.145	--	--	4384.50	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-6	Yes	Semi-annual	014-271-09	323983.92	1564107.4	38309	6/27/92	4362.50	6.62	150	150	130	4232.5	4212.5	20	60	4302.5	150	4212.5	90	S/I/D
DW-7	Yes	Semi-annual	014-271-04	322672.973	1564099.267	3794	6/1/57	4389.00	6.62	110	110	60	4329	4279	50	--	--	--	--	--	S/I
DW-9	Yes	Semi-annual	014-271-16	322677.68	1564854.884	23009	6/19/81	4394.25	6.62	120.5	121.5	100.5	4293.75	4273.75	20	50	4344.25	120.5	4273.75	70.5	S/I
DW-10	Yes	Semi-annual	014-271-05	322580.817	1564181.406	--	--	4392.50	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-11	Yes	Quarterly	014-271-38	322491.407	1565993.22	20064	6/20/79	4402.75	6.62	115	115	95	4307.75	4287.75	20	--	--	--	--	--	S/I
DW-12	Yes	Quarterly	014-251-15	322331.322	1569369.297	55089	3/1/94	4359.50	6.62	140	140	120	4239.5	4219.5	20	--	--	--	--	--	D
DW-13	Yes	Semi-annual	004-083-01	323731.888	1563339.259	67351	6/20/96	4359.75	6.62	139	139	119	4240.75	4220.75	20	50	4309.75	139	4220.75	89	S/I/D
DW-14	Yes	Semi-annual	004-081-08	321569.709	1562992.706	--	--	4391.75	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-15	Yes	Quarterly	014-411-14	318600.425	1554977.24	--	--	4458.25	--	--	155	135	4323.25	4323.25	0	--	--	--	--	--	U
DW-16	Yes	Semi-annual	004-082-02	321909.975	1563185.175	26691	10/21/85	4390.00	6.62	142.5	143.5	122.5	4267.5	4247.5	20	50	4340	142.5	4247.5	92.5	S/I/D
DW-17	Yes	Quarterly	014-271-32	323552.75	1566303.212	9563	6/8/67	4375.25	6.62	122.5	122.5	100	4275.25	4252.75	22.5	--	--	--	--	--	I
DW-18	Yes	Quarterly	014-271-25	322609.367	1565542.572	--	--	4399.50	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-19	Yes	Semi-annual	014-271-35	323558.916	1566698.957	--	--	4369.50	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-20	Yes	Quarterly	004-071-05	321605.006	1566496.191	--	--	4452.25	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-21	Yes	Quarterly	014-271-64	323367.556	1566720.648	--	--	4373.00	--	--	160	--	--	--	--	--	--	--	--	--	U
DW-22	Yes	Semi-annual	014-271-59	323599.953	1565659.319	47206	1/5/95	4374.25	6.62	140	140	100	4274.25	4234.25	40	50	4324.25	140	4234.25	90	S/I/D
DW-23	Yes	Semi-annual	014-271-31	323898.076	1565913.758	16514	10/5/76	4368.50	6.00	--	118	--	--	--	--	50	4318.5	118	4250.5	68	S/I
DW-24	Yes	Semi-annual	004-083-03	322897.555	1563338.798	46654	6/20/94	4373.00	6.62	159	159	139	4234	4214	20	50	4323	159	4214	109	S/I/D
DW-25	Yes	Semi-annual	004-084-03	323214.501	1562810.011	36183	4/23/91	4362.00	6.62	119.5	120.5	99.5	4262.5	4242.5	20	50	4312	119.5	4242.5	69.5	S/I/D
DW-26	Yes	Semi-annual	014-271-60	322690.098	1563462.097	71630	4/8/98	4379.00	6	140	140	120	4259	4239	20	--	--	--	--	--	I/D
DW-27	Yes	Semi-annual	004-082-04	321555.799	1563731.278	--	--	4410.50	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-28	Yes	Quarterly	014-271-76	322385.567	1565684.082	--	--	4406.50	--	--	120	--	--	--	--	--	--	--	--	--	U
DW-29	Yes	Semi-annual	014-271-41	322310.226	1565229.249	--	--	4406.25	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-30	Yes	Quarterly	014-271-40	322375.444	1565303.099	--	--	4405.50	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-31	Yes	Quarterly	004-071-02	322323.857	1566227.928	64859	1/31/97	4406.00	8.62	--	220	135	4271	4226	45 ⁽⁷⁾	51	4355	155	4251	104	S/I
DW-32	Yes	Quarterly	004-091-02	322452.745	1562430.253	90560	8/19/03	4368.25	6.62	177	177	137	4231.25	4191.25	40	50	4318.25	177	4191.25	127	S/I/D
DW-33	Outstanding	Quarterly	014-271-61	323150	1563500	71631	3/25/98	4372.00	6	155	155	135	4237	4217	20	--	--	--	--	--	D
DW-34	Yes	Semi-annual	014-271-44	321254.655	1565159.99	39522	7/3/92	4436.00	6.62	183	183	163	4273	4253	20	50	4386	183	4253	133	S/I
DW-35	Yes	Quarterly	014-271-54	321617.096	1564383.236	--	--	4420.50	--	--	201	--	--	--	--	--	--	--	--	--	U
DW-36	Yes	Semi-annual	004-081-10	322383.048	1562966.884	--	--	4377.00	--	--	180	--	--	--	--	--	--	--	--	--	U
DW-37	Yes	Quarterly	014-271-02	322637.686	1562709.243	--	--	4368.75	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-38	Yes	Semi-annual	004-151-08	319368.715	1555111.655	27548	7/8/86	4423.75	8.62	150	151	130	4293.75	4273.75	20	50	4373.75	150	4273.75	100	S/I

Table 2-1. 2Q 2011 Domestic Well Monitoring Locations and Construction Details

Well Name	Access Agreement Signed ⁽¹⁾	Sampling Frequency ⁽²⁾	Assessor's Parcel Number (APN)	Location Coordinates		NDWR ⁽³⁾ Well Log No.	Well Completion Date	Approx Ground Surface Elevation	Well Casing Diameter	Total Depth of Well	Total Depth of Borehole	Top of Screen		Bottom of Screen Elevation	Screen Length	Top of Gravel Pack		Bottom of Gravel Pack		Gravel Pack Length	Zone ⁽⁴⁾
				feet amsl ⁽⁵⁾	inches			feet bgs ⁽⁵⁾	feet	feet bgs	feet amsl	feet amsl	feet	feet bgs	feet amsl	feet bgs	feet amsl	feet			
DW-39	Yes	Quarterly	004-151-03	319371.619	1556232.362	34158	8/24/90	4400.75	6.62	155	155	135	4265.75	4245.75	20	--	--	--	--	--	I
DW-40	Yes	Semi-annual	014-271-68	323305.702	1564426.57	59260	9/29/96	4376.25	6.62	140	140	130	4246.25	4236.25	10	50	4326.25	140	4236.25	90	S/I/D
DW-41	Yes	Semi-annual	014-271-46	321780.851	1565073.376	--	--	4420.50	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-42	Yes	Semi-annual	014-271-53	321260.897	1564359.921	28567	4/20/87	4429.75	6.62	--	160	--	--	--	--	50	4379.75	159	4270.75	109	S/I
DW-43	Yes	Semi-annual	014-241-12	327448.405	1562465.613	--	--	4350.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-44	Yes	Semi-annual	014-271-75	324112.187	1565160.528	--	--	4359.50	--	--	180	--	--	--	--	--	--	--	--	--	U
DW-45	Yes	Semi-annual	004-084-04	323522.043	1563009.121	--	--	4359.75	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-46	Yes	Semi-annual	004-081-04	321223.585	1564046.984	--	--	4425.50	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-47	Yes	Semi-annual	004-151-20	319426.098	1556683.724	9010	5/28/66	4395.00	6.62	108	108	85	4310	4287	23	--	--	--	--	--	S/I
DW-48	Yes	Semi-annual	014-271-28	324233.63	1565629.569	13132	2/5/73	4360.50	6.62	90	90	70	4290.5	4270.5	20	50	4310.5	90	4270.5	40	S/I
DW-49	Yes	Quarterly	004-153-08	319028.476	1553945.055	--	12/22/74	4461.50	6.62	151	151	131	4330.5	4310.5	20	50	4411.5	151	4310.5	101	S
DW-50	Yes	Semi-annual	004-071-01	322230.932	1566583.807	25390	3/20/84	4397.50	6.62	134.5	134.5	--	--	--	--	50	4347.5	134.5	4263	84.5	S/I
DW-51	Yes	Quarterly	014-243-01	323345.415	1557457.683	--	--	4350.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-52	Yes	Quarterly	014-271-01	322616.379	1562102.032	26693	10/14/85	4367.00	6.62	139	140	119	4248	4228	20	50	4317	139	4228	89	S/I/D
DW-53	Yes	Semi-annual	004-091-06	321741.427	1562589.817	--	--	4381.50	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-54	Yes	Semi-annual	014-242-07	320725.905	1557627.794	--	--	4352.75	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-55	Yes	Semi-annual	014-181-09	321999.25	1577722.878	--	--	4322.50	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-57	Yes	Semi-annual	014-251-12	321282.51	1570087.713	92770	3/1/04	4369.50	6.62	157	157	100	4269.5	4212.5	57 ⁽⁷⁾	50	4319.5	157	4212.5	107	S/I/D
DW-58	Yes	Semi-annual	014-291-15	330210.858	1565365.188	--	--	4346.25	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-59	Denied	Quarterly	014-431-04	330272.004	1546169.368	--	--	4383.50	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-60	Yes	Quarterly	014-231-40	329331.178	1576921.062	10083	5/28/68	4330.00	6	80	83	60	4270	4250	20	--	--	--	--	--	I
DW-61	Yes	Semi-annual	014-181-09	325211.538	1576117.677	--	--	4329.75	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-62	Yes	Semi-annual	004-081-09	321917.9	1563039.123	29346	10/12/87	4386.50	6.62	147	148	127	4259.5	4239.5	20	50	4336.5	147	4239.5	97	S/I/D
DW-63	Yes	Semi-annual	004-152-02	319017.638	1555396.762	25113	1/12/84	4429.25	8.62	147.5	148.5	127.5	4301.75	4281.75	20	50	4379.25	147.5	4281.75	97.5	S/I
DW-64	Yes	Semi-annual	004-152-04	319020.363	1555743.832	--	--	4419.00	--	--	120	--	--	--	--	--	--	--	--	--	U
DW-65	Yes	Quarterly	014-251-03	321630.482	1569349.952	--	--	4374.25	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-66	Denied	Quarterly	014-271-57	323068.096	1565585.545	39955	11/24/92	4387.25	6.62	136	140	116	4271.25	4251.25	20	60	4327.25	136	4251.25	76	S/I
DW-67	Denied	Quarterly	014-271-58	323312.929	1565600.093	39638	9/20/92	4380.25	6	150	150	130	4250.25	4230.25	20	50	4330.25	150	4230.25	100	S/I/D
DW-68	Outstanding	Quarterly	004-081-02	322100	1564025	--	--	4402.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-69	Yes	Semi-annual	014-181-09	323434.342	1575126.636	--	--	4327.75	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-70	Yes	Semi-annual	014-271-34	323947.81	1566144.695	--	--	4367.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-71	Yes	Quarterly	014-281-08	318838.824	1562045.439	91042	10/9/03	4428.25	6.62	233	233	213	4215.25	4195.25	20	50	4378.25	200	4228.25	150	S/I/D
DW-72	Yes	Semi-annual	014-411-03	317537.05	1557045.572	42790	6/6/93	4480.00	6.62	239	239	219	4261	4241	20	50	4430	239	4241	189	S/I/D
DW-73	Yes	Semi-annual	014-411-22	317392.051	1554082.712	62472	10/12/96	4546.75	6.62	260	260	200	4346.75	4286.75	60	50	4496.75	260	4286.75	210	S/I
DW-74	Yes	Quarterly	004-152-06	319040.5	1556117.505	--	--	4413.75	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-75	Yes	Semi-annual	004-151-04	319346.583	1555958.865	35936	3/28/91	4404.00	6.62	160	160	140	4264	4244	20	--	--	--	--	--	I
DW-76	Yes	Quarterly	004-153-10	319142.3	1554402.05	67353	3/5/96	4452.00	6.62	199	199	159	4293	4253	40	50	4402	199	4253	149	S/I
DW-77	Outstanding	Quarterly	004-153-13	318951.219	1554167.041	--	--	4456.75	--	--	240	--	--	--	--	--	--	--	--	--	U

Table 2-1. 2Q 2011 Domestic Well Monitoring Locations and Construction Details																					
Well Name	Access Agreement Signed ⁽¹⁾	Sampling Frequency ⁽²⁾	Assessor's Parcel Number (APN)	Location Coordinates		NDWR ⁽³⁾ Well Log No.	Well Completion Date	Approx Ground Surface Elevation	Well Casing Diameter	Total Depth of Well	Total Depth of Borehole	Top of Screen		Bottom of Screen Elevation	Screen Length	Top of Gravel Pack		Bottom of Gravel Pack		Gravel Pack Length	Zone ⁽⁴⁾
				feet amsl ⁽⁵⁾	inches			feet bgs ⁽⁵⁾	feet	feet bgs	feet amsl	feet amsl	feet	feet bgs	feet amsl	feet bgs	feet amsl	feet			
DW-78	Yes	Semi-annual	014-242-08	320448.086	1557621.177	--	--	4356.75	--	--	160	--	--	--	--	--	--	--	--	--	U
DW-79	Yes	Semi-annual	014-231-42	329367.803	1577696.497	--	--	4328.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-80	Outstanding	Semi-annual	014-181-09	323886.55	1574078.28	--	--	4330.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-83	Yes	Quarterly	014-261-02	323697.553	1566877.901	--	--	4364.50	--	--	160	--	--	--	--	--	--	--	--	--	U
DW-85	Yes	Semi-annual	004-083-02	323240.501	1563393.606	--	--	4368.75	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-86	Yes	Semi-annual	004-082-06	322243.059	1563638.413	--	--	4391.75	--	--	120	--	--	--	--	--	--	--	--	--	U
DW-87	Yes	Semi-annual	014-271-51	321282.846	1564834.8	--	--	4434.50	--	--	221	--	--	--	--	--	--	--	--	--	U
DW-88	Yes	Semi-annual	004-081-05	321236.692	1563780.376	14706	4/23/75	4419.00	6.62	180	180	140	4279	4239	40	50	4369	180	4239	130	S/I/D
DW-89	Outstanding	Semi-annual	014-271-67	323361.7	1564457.09	43261	10/31/93	4380.00	6.62	150	150	130	4250	4230	20	50	4330	150	4230	100	S/I/D
DW-90	Yes	Semi-annual	004-081-01	322249.375	1564025.453	--	--	4397.25	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-91	Yes	Quarterly	004-151-21	319319.388	1556780.526	42088	3/5/93	4398.75	6.62	159	159	139	4259.75	4239.75	20	50	4348.75	159	4239.75	109	S/I/D
DW-92	Yes	Quarterly	014-281-05	319272.93	1562734.685	81115	5/25/00	4425.50	6.62	258	260	240	4185.5	4167.5	18	--	--	--	--	--	D
DW-93	Denied	Not Assigned	014-271-22	323313.27	1565196.77	--	--	4387.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-94	Yes	Semi-annual	014-271-19	323562.361	1564969.293	39810	9/24/92	4371.50	6	160	160	140	4231.5	4211.5	20	50	4321.5	160	4211.5	110	S/I/D
DW-95	Yes	Quarterly	014-271-17	323182.626	1565006.979	--	--	4380.75	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-96	Yes	Semi-annual	014-271-11	323910.346	1564584.826	--	--	4364.75	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-97	Denied	Not Assigned	014-271-49	322374.09	1564915.47	--	--	4410.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-98	Yes	Quarterly	014-271-65	322944.952	1566523.469	42798	9/30/93	4386.00	6	130	140	100	4286	4256	30	50	4336	140	4246	90	S/I/D
DW-99	Yes	Quarterly	014-261-05	323262.072	1567598.327	9523	5/19/67	4357.75	6.62	104	104	45	4312.75	4253.75	59	--	--	--	--	--	S/I
DW-100	Denied	Not Assigned	004-152-10	319232.25	1557260.2	--	--	4410.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-101	Denied	Quarterly	014-411-08	317084.061	1555185.512	21005	4/10/80	4518.25	8	230	250	210	4308.25	4288.25	20	--	--	--	--	--	S/I
DW-102	Yes	Quarterly	014-411-25	318411.865	1553053.158	--	--	4500.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-103	Yes	Quarterly	014-271-77	322238.297	1565526.482	93614	6/4/09	4410.00	6.62	160	160	140	4270	4250	20	50	4360	160	4250	110	S/I
DW-104	Yes	Semi-annual	014-271-07	323198.824	1564327.126	--	--	4378.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-105	Yes	Semi-annual	014-271-27	323916.095	1565588.233	14629	1/17/75	4365.00	6.62	120	120	100	4265	4245	20	50	4315	120	4245	70	S/I/D
DW-106	Denied	Quarterly	014-271-08	323511.55	1564258.613	--	--	4369.75	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-107	Yes	Semi-annual	014-271-14	322563.956	1564557.479	22858	--	4396.25	6.6	115.5	116.5	75.5	4320.75	4280.75	40	50	4346.25	115.5	4280.75	65.5	S/I
DW-108	Yes	Semi-annual	014-291-03	330211.031	1566383.114	--	--	4344.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-109	Yes	Semi-annual	014-231-30	329789.413	1575127.659	85991	3/1/02	4334.00	8.62	240	240	200	4134	4094	40	100	4234	240	4094	140	D
DW-110	Yes	Quarterly	014-271-18	323448.181	1564989.179	39811	9/29/92	4374.50	6	160	160	140	4234.5	4214.5	20	50	4324.5	160	4214.5	110	S/I/D
DW-112	Yes	Semi-annual	004-081-03	321768.031	1564020.02	14403	10/18/74	4410.25	--	199	200	169	4241.25	4211.25	30	50	4360.25	199	4211.25	149	S/I/D
DW-113	Yes	Quarterly	004-092-02	321669.698	1561854.462	95003	10/20/04	4367.25	6.62	220	220	180	4187.25	4147.25	40	--	--	--	--	--	S/I/D
DW-114	Yes	Quarterly	014-251-13	321412.511	1569539.242	95002	9/25/04	4377.50	6.62	170	170	150	4227.5	4207.5	20	51	4326.5	170	4207.5	119	S/I/D
DW-115	Yes	Quarterly	004-091-04	322407.02	1562001.758	24182	10/13/82	4361.25	6.62	130.5	131.5	110.5	4250.75	4230.75	20	50	4311.25	130.5	4230.75	80.5	I/D
DW-116	Yes	Quarterly	004-151-23	319318.731	1557286.138	--	--	4393.50	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-117	Yes	Semi-annual	014-291-13	329857.416	1565468.924	--	--	4345.25	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-118	Yes	Quarterly	014-291-09	330207.596	1565939.612	18534	6/23/78	4344.50	6.62	96	96	76	4268.5	4248.5	20	50	4294.5	96	4248.5	46	I/D
DW-119	Yes	Semi-annual	014-291-05	330206.311	1566167.429	--	--	4344.00	--	--	--	--	--	--	--	--	--	--	--	--	U

Well Name	Access Agreement Signed ⁽¹⁾	Sampling Frequency ⁽²⁾	Assessor's Parcel Number (APN)	Location Coordinates		NDWR ⁽³⁾ Well Log No.	Well Completion Date	Approx Ground Surface Elevation	Well Casing Diameter	Total Depth of Well	Total Depth of Borehole	Top of Screen		Bottom of Screen Elevation	Screen Length	Top of Gravel Pack		Bottom of Gravel Pack		Gravel Pack Length	Zone ⁽⁴⁾
				feet amsl ⁽⁵⁾	inches			feet bgs ⁽⁵⁾	feet	feet bgs	feet amsl	feet amsl	feet	feet bgs	feet amsl	feet bgs	feet amsl	feet			
DW-120	Yes	Quarterly	014-271-29	324544.66	1565878.275	--	--	4355.25	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-121	Yes	Semi-annual	014-231-05	330285.71	1575771.02	28962	6/28/87	4334.00	8	122	130	102	4232	4212	20	--	--	--	--	--	D
DW-122	Yes	Quarterly	014-271-63	323569.717	1563461.39	58915	8/1/96	4363.00	6.62	150	150	130	4233	4213	20	53	4310	150	4213	97	S/I/D
DW-123	Yes	Semi-annual	014-411-27	319160.17	1553522.862	90771	4/12/02	4467.00	6.62	220	220	180	4287	4247	40	50	4417	220	4247	170	S/I
DW-124	Yes	Quarterly	004-152-07	319197.371	1556358.348	--	--	4405.50	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-125	Yes	Semi-annual	004-153-02	319101.059	1552774.193	101145	6/23/05	4481.50	6.62	260	260	160	4321.5	4221.5	100 ⁽⁷⁾	90	4391.5	260	4221.5	170	S/I/D
DW-126	Yes	Quarterly	014-242-04	322254.514	1557846.412	101211	3/25/06	4348.50	6.62	162	166	158	4190.5	4186.5	4	--	--	--	--	--	D
DW-127	Pending	Semi-annual	014-411-01	317211.65	1557192.38	--	--	4511.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-128	Yes	Semi-annual	004-151-13	319341.956	1553989.624	99667	4/10/06	4450.50	6.62	200	200	180	4270.5	4250.5	20	51	4399.5	200	4250.5	149	S/I
DW-129	Yes	Semi-annual	004-153-07	318924.483	1553809.684	109870	5/29/06	4466.00	6.62	300	300	260	4206	4166	40	50	4416	300	4166	250	S/I/D
DW-130	Yes	Semi-annual	014-251-24	321849.234	1570729.666	--	--	4344.25	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-131	Denied	Not Assigned	014-242-05	321691.82	1557447.01	97805	7/17/05	4357.00	6.62	180	180	160	4197	4177	20	55	4302	180	4177	125	S/I/D
DW-132 ⁽⁸⁾	Yes	Quarterly	004-152-01	319043.758	1555078.754	--	--	4435.25	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-133	Yes	Quarterly	014-261-04	323043.735	1566934.108	29002	9/5/87	4377.75	8	118	126	100	4277.75	4259.75	18	--	--	--	--	--	I
DW-134	Yes	Semi-annual	014-281-23	318604.633	1558831.002	--	--	4408.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-135	Yes	Semi-annual	014-281-21	318784.408	1559432.629	--	--	4389.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-136	Yes	Semi-annual	014-251-07	321532.005	1570111.582	--	--	4363.25	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-138	Yes	Quarterly	004-084-02	322884.886	1562882.639	26692	1/30/86	4367.75	6.62	120	121	98.5	4269.25	4247.75	21.5	50	4317.75	120	4247.75	70	S/I/D
DW-139	Yes	Semi-annual	014-281-06	318914.809	1562194.729	--	--	4430.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-140	Yes	Quarterly	014-261-31	322741.443	1566966.152	--	--	4382.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-141	Denied	Not Assigned	004-153-11	319122.84	1554520.68	--	--	4445.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-142	Yes	Quarterly	004-151-12	319312.843	1554250.414	--	--	4441.50	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-143	Yes	Quarterly	004-151-11	319325.96	1554375.73	101360	6/28/06	4438.50	6.62	180	200	140	4298.5	4258.5	40	60	4378.5	200	4238.5	140	S/I/D
DW-144	Denied	Not Assigned	004-151-10	319451.06	1554626.05	35169	1/21/91	4430.00	6.62	150	150	130	4300	4280	20	50	4380	150	4280	100	S/I
DW-145	Denied	Not Assigned	004-151-06	319319.57	1555428.81	--	--	4415.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-146	Yes	Quarterly	014-261-32	323246.958	1568041.529	--	--	4352.75	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-147	Yes	Quarterly	004-081-06	321305.958	1563407.356	--	--	4406.50	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-148	Yes	Semi-annual	014-411-30	318538.581	1553812.843	--	--	4481.25	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-149	Yes	Quarterly	014-411-06	317549.32	1555872.757	24788	6/20/83	4477.75	8.62	198	198	178	4299.75	4279.75	20	50	4427.75	197	4280.75	147	S/I
DW-150	Yes	Quarterly	014-281-02	320281.314	1560698.849	95007	7/21/04	4359.50	6.62	236	236	230	4129.5	4123.5	6	50	4309.5	236	4123.5	186	S/I/D
DW-151	Yes	Quarterly	004-092-03	322341.625	1561675.697	39956	11/12/92	4356.75	6.62	113	113	93	4263.75	4243.75	20	60	4296.75	113	4243.75	53	I/D
DW-152	Yes	Quarterly	004-091-01	322138.782	1562639.392	--	--	4375.75	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-153	Yes	Semi-annual	004-082-03	321574.625	1563413.158	--	--	4402.25	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-154	Yes	Semi-annual	014-271-62	323317.131	1563464.941	71629	3/10/98	4368.00	6	150	150	130	4238	4218	20	--	--	--	--	--	D
DW-155	Denied	Not Assigned	014-271-55	322100	1564150	26690	7/10/85	4403.00	6.62	147	148	123	4280	4256	24	50	4353	147	4256	97	S/I
DW-156	Denied	Not Assigned	014-271-56	322200	1564150	--	--	4401.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-157	Yes	Semi-annual	014-271-06	322848.957	1564361.071	20729	1/15/80	4385.75	6.62	123.5	122	103.5	4282.25	4262.25	20	50	4335.75	123.5	4262.25	73.5	S/I
DW-158	Yes	Semi-annual	014-271-52	321254.675	1564691.637	--	--	4435.25	--	--	--	--	--	--	--	--	--	--	--	--	U

Table 2-1. 2Q 2011 Domestic Well Monitoring Locations and Construction Details

Well Name	Access Agreement Signed ⁽¹⁾	Sampling Frequency ⁽²⁾	Assessor's Parcel Number (APN)	Location Coordinates		NDWR ⁽³⁾ Well Log No.	Well Completion Date	Approx Ground Surface Elevation	Well Casing Diameter	Total Depth of Well	Total Depth of Borehole	Top of Screen		Bottom of Screen Elevation	Screen Length	Top of Gravel Pack		Bottom of Gravel Pack		Gravel Pack Length	Zone ⁽⁴⁾
				feet amsl ⁽⁵⁾	inches			feet bgs ⁽⁵⁾	feet	feet bgs	feet amsl	feet amsl	feet	feet bgs	feet amsl	feet bgs	feet amsl	feet			
DW-159	Yes	Semi-annual	014-271-50	322197.966	1564442.207	22091	10/20/80	4405.75	6.62	148.5	148.5	128.5	4277.25	4257.25	20	50	4355.75	147.5	4258.25	97.5	I
DW-160	Yes	Semi-annual	014-271-15	322567.713	1564712.06	--	--	4397.25	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-161	Yes	Semi-annual	014-271-66	323839.014	1564540.504	67339	6/27/95	4366.75	6.62	139	140	119	4247.75	4227.75	20	50	4316.75	139	4227.75	89	S/I/D
DW-162	Yes	Semi-annual	014-271-47	321955.255	1564841.644	17992	4/24/78	4413.75	6	146	146	126	4287.75	4267.75	20	50	4363.75	146	4267.75	96	S/I
DW-163	Yes	Semi-annual	014-271-45	321319.124	1565074.115	24544	4/14/83	4432.75	6.62	169	170	149	4283.75	4263.75	20	50	4382.75	169	4263.75	119	S/I
DW-164	Yes	Semi-annual	014-271-43	321667.154	1565205.087	--	--	4424.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-165	Yes	Quarterly	014-271-42	321855.962	1565152.001	21181	5/10/80	4417.50	8	155	160	119	4298.5	4262.5	36	--	--	--	--	--	I
DW-166	Yes	Quarterly	014-271-24	322850	1565375	58927	5/8/96	4393.00	6.62	109	109	103	4290	4284	6	50	4343	109	4284	59	S/I
DW-167	Yes	Quarterly	014-271-23	322919.246	1565124.81	--	--	4388.25	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-168	Yes	Quarterly	014-271-21	323632.511	1565160.726	--	--	4369.25	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-169	Yes	Quarterly	014-261-31	322810.728	1567329.189	--	--	4371.75	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-170	Yes	Quarterly	014-261-06	323049.765	1567780.352	--	--	4361.50	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-171	Denied	Not Assigned	014-261-30	330290.966	1575792.577	--	--	4334.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-172	Denied	Not Assigned	014-261-29	322975	1568300	27757	9/19/86	4352.00	6.62	99	100	79	4273	4253	20	50	4302	99	4253	49	S/I
DW-173	Yes	Quarterly	014-241-42	330224.084	1558835.485	--	--	4357.75	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-174 ⁽⁹⁾	Denied	Not Assigned	014-281-29	320301.689	1559457.082	--	--	4348.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-175	Yes	Semi-annual	014-231-38	329450.804	1576435.147	71280	1/7/98	4332.50	6.62	138	140	128	4204.5	4194.5	10	55	4277.5	140	4192.5	85	I/D
DW-176	Yes	Semi-annual	014-231-16	329320.094	1573567.288	--	--	4336.75	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-177	Yes	Semi-annual	014-231-49	328243.554	1573159.458	--	--	4336.00	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-178	Yes	Quarterly	014-291-02	330077.994	1566652.256	107953	1/6/09	4344.00	6.6	179	180	159	4185	4165	20	50	4294	179	4165	129	I/D
DW-180	Yes	Semi-annual	014-231-01	329939.73	1578418.334	--	--	4363.55	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-181	Yes	Semi-annual	014-251-26	321364.05	1571093.358	--	--	4347.84	--	--	--	--	--	--	--	--	--	--	--	--	U
DW-182	Yes	Semi-annual	014-191-09	330420.891	1578882.62	14568	2/2/75	4357.11	6	94	94	73	4284.11	4263.11	21	50	4307.11	94	4263.11	44	S/I
DW-183	Yes	Quarterly	014-271-10	324120.675	1564076.719	109868	7/12/07	4359.50	6.62	180	180	160	4199.5	4179.5	20	50	4309.5	180	4179.5	130	S/I/D
TW-6	Yes	Quarterly	014-181-10	329059.579	1573402.023	16361	4/7/77	4337.50	8	117	117	92	4245.5	4225.5	20	--	--	--	--	--	D
WDW017	Yes	Quarterly	014-242-09	319891.99	1557705.495	--	--	4371.00	--	--	--	--	--	--	--	--	--	--	--	--	U
WDW018	Yes	Semi-annual	014-242-06	320848.006	1557638.495	--	--	4351.75	--	--	--	--	--	--	--	--	--	--	--	--	U
WDW019 ⁽¹⁰⁾	Yes	Quarterly	014-401-20	327082.834	1557405.626	78925	1/19/00	4354.50	30	365	365	50	4304.5	3989.5	315	2	4352.5	365	3989.5	363	S/I/D
Well 4	Yes	Semi-annual	014-181-09	321746.431	1572812.646	31222	1/11/89	4341.00	8	--	200	105	4236	4151	85 ⁽⁷⁾	--	--	--	--	--	D

- Notes: (1) Status as of end of 2Q 2011 event (June 30, 2011): Yes = signed access agreement received and sample collected during 1Q 2011 event (except for DW-49, DW-76, DW-116, and DW-132); Pending = owner orally agreed to sign and submit access agreement; Outstanding = access agreement sent to owner but the signed agreement has not been returned and not able to contact owner for verbal verification; Denied = owner refused access.
- (2) Sampling frequency based on bottled water program recipients.
- (3) NDWR = Nevada Division of Water Resources.
- (4) Zone designation based on reported gravel-pack interval (or screen interval if no gravel-pack or gravel-pack interval not indicated). S = shallow; I = intermediate; D = deep; U = Unknown (i.e., either due to incomplete or non-existent NDWR Well Driller's Reports). Combinations used where long screen and/or gravel-pack intervals span more than one zone.
- (5) amsl = above mean sea level; bgs = below ground surface
- (6) "--" means information not available on the NDWR Well Driller's Report.
- (7) Multiple screen intervals.
- (8) DW-132 was formerly designated as DW-111.
- (9) EPA requested inclusion of this well in the DWMP but the well does not have power and is not currently being used for domestic or agricultural purposes.
- (10) Irrigation well WDW019 taken out of service in March 2011.

Table 2-2. Analyte List for Domestic Well Sampling					
Parameter or Analyte	Total or Dissolved	Method ⁽²⁾	Reporting Limit ⁽²⁾	MCL ⁽³⁾	Units
Physical Parameters and Major Anions/Cations					
Alkalinity, Bicarbonate (as CaCO ₃)	Total	SM 2320B	2.0	--	mg/L
Alkalinity, Carbonate (as CaCO ₃)	Total	SM 2320B	2.0	--	mg/L
Alkalinity, Hydroxide (as CaCO ₃)	Total	SM 2320B	2.0	--	mg/L
Alkalinity, Total (as CaCO ₃)	Total	SM 2320B	2.0	--	mg/L
Chloride	Total	EPA 300.0	0.5	--	mg/L
Fluoride	Total	EPA 300.0	0.5	4.0	mg/L
Nitrate (as N)	Total	EPA 300.0	0.1	10	mg/L
Nitrate (NO ₃ + NO ₂ as N)	Total	EPA 300.0	0.1	--	mg/L
Nitrite (as N)	Total	EPA 300.0	0.1	1	mg/L
pH (Lab)	Total	SM 4500B	0.1	--	s.u.
Sulfate	Total	EPA 300.0	0.5	--	mg/L
Total Dissolved Solids (TDS) ⁽¹⁾	Total (Lab Filtered) ⁽¹⁾	SM 2540C	10	--	mg/L
Total Organic Carbon (TOC)	Total	SM 5310B	1.0	--	mg/L
Metals					
Aluminum	Total	EPA 200.7	0.05	--	mg/L
Arsenic	Total	EPA 200.8	0.001	0.01	mg/L
Barium	Total	EPA 200.8	0.001	2.0	mg/L
Beryllium	Total	EPA 200.8	0.0005	0.004	mg/L
Boron	Total	EPA 200.7	0.05	--	mg/L
Cadmium	Total	EPA 200.8	0.001	0.005	mg/L
Calcium	Total	EPA 200.7	0.1	--	mg/L
Chromium	Total	EPA 200.8	0.002	0.1	mg/L
Cobalt	Total	EPA 200.8	0.001	--	mg/L
Copper	Total	EPA 200.8	0.001	1.3	mg/L
Iron	Total	EPA 200.7	0.04	--	mg/L
Lead	Total	EPA 200.8	0.001	0.015 ⁽⁴⁾	mg/L
Lithium	Total	EPA 200.7	0.002	--	mg/L
Magnesium	Total	EPA 200.7	0.02	--	mg/L
Manganese	Total	EPA 200.8	0.001	--	mg/L
Molybdenum	Total	EPA 200.8	0.002	--	mg/L
Nickel	Total	EPA 200.8	0.002	--	mg/L
Potassium	Total	EPA 200.7	0.5	--	mg/L
Selenium	Total	EPA 200.8	0.002	0.05	mg/L
Silicon	Total	EPA 200.7	0.05	--	mg/L
Sodium	Total	EPA 200.7	0.5	--	mg/L
Strontium	Total	EPA 200.7	0.02	--	mg/L
Uranium, Total	Total	EPA 200.8	0.001	0.03	mg/L
Vanadium	Total	EPA 200.8	0.002	--	mg/L
Zinc	Total	EPA 200.8	0.01	--	mg/L

Table 2-2. Analyte List for Domestic Well Sampling					
Parameter or Analyte	Total or Dissolved	Method ⁽²⁾	Reporting Limit ⁽²⁾	MCL ⁽³⁾	Units
Radiochemicals					
Gross Alpha	Total	EPA 900.0	1.0	15	pCi/L
Gross Beta	Total	EPA 900.0	1.0	- -	pCi/L
Radium-226	Total	EPA 903.0	1.0	5 ⁽⁵⁾	pCi/L
Radium-228	Total	EPA 904.0	1.0	5 ⁽⁵⁾	pCi/L

- Notes: (1) The sample container for TDS is filtered in the analytical laboratory with a new disposable 0.45 micron filter.
(2) EPA laboratory analytical methods and reporting limits are consistent with those provided in Revision 5 of the QAPP; alternative analytical methods identified in the QAPP may also be used.
(3) EPA National Primary Drinking Water Maximum Contaminant Level (MCL); “- -” means no MCL.
(4) MCL set at zero; action level is 0.015 mg/L.
(5) MCL for combined Radium 226 + 228 is 5 pCi/L.
“s.u.” is “standard units” for pH.
“mg/L” is “milligrams per liter”.
“pCi/L” is “picocuries per liter”.

SECTION 3.0

2Q 2011 DOMESTIC WELL SAMPLING RESULTS

During the 2Q 2011 sampling event (June 13 to 15, 2011), domestic well water samples were collected from 61 domestic wells (Table 2-1 and Figure 1-2). Samples were submitted to: 1) the TestAmerica laboratory in Irvine, California for analysis of physical parameters and cations/anions, TOC and metals; and 2) the TestAmerica laboratory in Richland, Washington for analysis of radiochemicals.

Analytical results of domestic wells sampled during the 2Q 2011 event are provided in Appendix D-1 (Excel format). Laboratory reports in Portable Document Format (PDF) are in Appendix D-2. Verification reports (PDF) are provided as Appendix D-3, and the updated domestic well database including 2Q 2011 data (Access format) is provided as Appendix D-4. Individual domestic well data reports for EPA distribution to well owners or residents were submitted to EPA on July 21, 2011, and are not included in this report. Sulfate and uranium concentrations in sampled domestic wells are shown on Figures 3-1 and 3-2, respectively (these figures are also provided as plates).

Appendix E provides time-concentration plots (pdf) for pH (lab), alkalinity, sulfate, chloride, total arsenic, total iron and total uranium for domestic wells sampled during the 2Q 2011 event. Plots for domestic wells that were not sampled during 2Q 2011 are not included in Appendix E, but will be included in the 2011 Annual Domestic Well Monitoring Report. The time-concentration plots in Appendix E: 1) present available historical data for some constituents from select domestic wells (trend lines connecting the widely-spaced points were included in the plots to reflect potential longer-term trends); and 2) indicate that some wells either do not show consistent trends or consist of a limited number of values. This is because some wells were sampled for the first time in 2010 or in 2Q 2011, or had not previously been sampled for constituents that were included in the 1Q 2010 event. A statistical analysis of the domestic well data will be included in the 2011 Annual Domestic Well Monitoring Report.

The time-concentration plots indicate increasing, decreasing, or fairly constant concentrations depending on the well and/or the constituent, and no consistent trends are observed between wells. As an example, the plots for DW-32 and DW-37 (located along Sunset Hills Drive) indicate: a decreasing trend in alkalinity for both wells; a decreasing trend for sulfate in DW-32 and an increasing trend in DW-37; a slightly decreasing to stable trend for chloride for DW-32 and a slightly increasing trend in DW-37; a fairly constant trend for arsenic in both wells; a fairly constant trend for iron in DW-32 and a decreasing trend in DW-37; and a fairly constant trend for uranium in DW-32 and a slightly decreasing trend in DW-37.

Compared to previous sampling events, the time-concentration plots for DW-150 indicate a decrease in the concentrations of alkalinity, sulfate, arsenic, iron and uranium in 2Q 2011. After receipt of the 2Q 2011 data, the owner indicated that: 1) water pumped from the domestic well is treated through a water softener system, including tap water and water from outside spigots on the property; and 2) no spigot exists on the property that discharges untreated water.

During the 2Q 2011 sampling event, exceedances of the EPA Primary Maximum Contaminant Levels (MCLs) established for drinking water occurred for arsenic (MCL of 0.01 milligrams per liter or mg/L) in 41 wells, gross alpha (MCL of 15 picocuries per liter (pCi/L)) in nine wells, and nitrate (MCL of 10 mg/L) in one well. The uranium MCL of 0.030 mg/L was not exceeded in any of the wells sampled. Where the respective MCL was met or exceeded (Table 3-1): arsenic values ranged from 0.010 to 0.053 mg/L; gross alpha concentrations ranged from 15.2 to 33.4 pCi/L; and the nitrate concentration was 14 mg/L.

Table 3-1 also includes the domestic well status relative to the Bottled Water Program. ARC implemented the program in March 2004. At that time, ARC offered bottled water to any resident north of the Site that requested participation in the program. In April 2004, the eligibility criteria for participation in the program were initiated by ARC. A well owner/user was qualified to receive bottled drinking water from ARC provided that the uranium concentration during at least one historical sampling event of the well was 25 µg/L (0.025 mg/L) or greater, and the well owner agreed to participate in the program.

Owner(s)/user(s) of some domestic wells may currently be receiving bottled water even though the uranium concentration in a specific well has not exceeded 25 µg/L. The owner(s)/user(s) of these wells receive bottled water because when the program was initially implemented in March 2004, a minimum uranium value had not been established and ARC offered bottled water to any resident north of the Site that requested participation in the program. ARC did not remove these residences from the program once the minimum uranium concentration of 25 µg/L was established in April 2004, and these residences were considered to be “grandfathered” into the program.

Of the wells listed in Table 3-1, DW-55, DW-64, and DW-75 currently receive bottled water based on this “grandfathering” consideration. DW-22 was inadvertently added to the program in March 2009 although the residence originally was not “grandfathered” into the program, but the uranium concentration during sampling in September 2010 exceeded 25 µg/L. DW-78 was “grandfathered” into the program in 2004, but the uranium concentration during sampling in June 2009 was 25 µg/L.

The 2Q 2011 sampling data in Appendix D-1 were reviewed to evaluate whether domestic wells ineligible for participation in the Bottled Water Program before the event, may be eligible based on a concentration of uranium greater than or equal to 25 µg/L. As indicated in Table 3-1, three wells sampled during the 2Q 2011 event equaled or exceeded uranium concentrations of 25 µg/L. None of the owners of these three wells eligible for participation in the Bottled Water Program were on the 2Q 2011 bottled water distribution list based on 2010 or 1Q 2011 data. Therefore, the owners/users of DW-71, DW-118, and TW-06 are now eligible to receive bottled water Program based on 2Q 2011 data.

The Bottled Water Program is summarized in Table 3-2. Owners of well DW-71 cancelled on December 15, 2009 after they installed a new water filtration system. The owner of well DW-118 previously was eligible to receive bottled water but declined participation in the program in August 2008. This residence again was eligible based on 1Q 2010 results.

During the 2Q 2010 sampling of the well, the owner of DW-118 orally verified their lack of interest in participating in the Bottled Water Program. Well TW-06 is used for non-drinking water purposes. Therefore, none of the owners of the three wells eligible to participate in the Bottled Water Program based on 2Q 2011 results were notified by ARC.

Although the 2Q 2011 uranium value in DW-102 did not exceed 25 µg/L, the owner was eligible to participate in the Bottled Water Program based on 1Q 2011 data. During a phone conversation on March 17, 2011, the owner of DW-102 indicated that they receive bottled water as a result of a second well (DW-123) on their property that previously qualified, and did not need additional bottled water. The owner of DW-150 originally accepted participation in the Bottled Water Program in September 2010, but before receiving bottled water, the owner installed a new water treatment system, and has since declined participation in the Program.

The owners of DW-120 and DW-165 were eligible for bottled water based on 4Q 2010 and 3Q 2010 data, respectively, but both owners declined participation in the Program. The 2Q 2011 uranium values in both of these wells did not exceed 25 µg/L.

Although EPA Secondary MCLs are non-enforceable water quality standards established only as guidelines for aesthetic considerations in drinking water, the analytical data in Appendix D-1 were compared to secondary MCLs. During the 2Q 2011 sampling event, the secondary MCLs were met or exceeded for pH in one well (8.60 J s.u.), fluoride in one well (2.7 mg/L), iron in six wells (0.30 to 0.72 mg/L), manganese in two wells (0.054 and 0.160 mg/L), sulfate in six wells (250 to 420 mg/L), and TDS in 27 wells (500 to 1100 mg/L). Exceedances of secondary MCLs for these analytes are summarized in Table 3-3.

Table 3-1. Exceedances of EPA Primary Maximum Contaminant Levels							
Well Name ⁽¹⁾	Domestic Well Group ⁽²⁾	Arsenic (MCL=0.010 mg/L) ⁽³⁾	Gross Alpha (MCL=15 pCi/L) ⁽³⁾	Nitrate (MCL=10 mg/L) ⁽³⁾	Uranium (MCL=0.030 mg/L) ⁽³⁾	Uranium (Bottled Water Eligibility =0.025 mg/L) ⁽⁴⁾	On 2Q 2011 Bottled Water Distribution List?
DW-1	Q	0.053	--	--	--	--	No
DW-3	Q	0.012	--	--	--	--	No
DW-11	Q	0.013	--	--	--	--	No
DW-12	Q	0.016	--	--	--	--	No
DW-15	Q	0.017	21.6	--	--	--	No
DW-18	Q	--	--	14 J ⁽⁵⁾	--	--	No
DW-20	Q	0.012	16.4	--	--	--	No
DW-21	Q	0.033	--	--	--	--	No
DW-28	Q	--	20.3	--	--	--	No
DW-30	Q	0.010	--	--	--	--	No
DW-31	Q	0.026	--	--	--	--	No
DW-32	Q	0.014	--	--	--	--	No
DW-35	Q	0.014	--	--	--	--	No
DW-37	Q	0.010	--	--	--	--	No
DW-39	Q	0.035	--	--	--	--	No
DW-51	Q	0.011	--	--	--	--	No
DW-52	Q	0.012	--	--	--	--	No
DW-60	Q	0.011	--	--	--	--	No
DW-65	Q	0.031	--	--	--	--	No
DW-71	Q	--	33.4	--	--	0.026	No ⁽⁶⁾
DW-74	Q	0.031	16.8	--	--	--	No
DW-83	Q	0.030	--	--	--	--	No
DW-91	Q	0.038	--	--	--	--	No
DW-92	Q	--	28.8	--	--	--	No

Table 3-1. Exceedances of EPA Primary Maximum Contaminant Levels							
Well Name ⁽¹⁾	Domestic Well Group ⁽²⁾	Arsenic (MCL=0.010 mg/L) ⁽³⁾	Gross Alpha (MCL=15 pCi/L) ⁽³⁾	Nitrate (MCL=10 mg/L) ⁽³⁾	Uranium (MCL=0.030 mg/L) ⁽³⁾	Uranium (Bottled Water Eligibility =0.025 mg/L) ⁽⁴⁾	On 2Q 2011 Bottled Water Distribution List?
DW-95	Q	0.012	--	--	--	--	No
DW-98	Q	0.022	--	--	--	--	No
DW-99	Q	0.020	--	--	--	--	No
DW-102	Q	0.015	16.9	--	--	--	No ⁽⁷⁾
DW-103	Q	0.016	--	--	--	--	No
DW-110	Q	0.012	--	--	--	--	No
DW-113	Q	0.039	--	--	--	--	No
DW-114	Q	0.033	--	--	--	--	No
DW-115	Q	0.013	--	--	--	--	No
DW-118	Q	--	22.9	--	--	0.025	No ⁽⁸⁾
DW-124	Q	0.038	--	--	--	--	No
DW-133	Q	0.011	--	--	--	--	No
DW-140	Q	0.025	--	--	--	--	No
DW-142	Q	0.032	--	--	--	--	No
DW-143	Q	0.031	--	--	--	--	No
DW-149	Q	0.053	--	--	--	--	No
DW-151	Q	0.015	--	--	--	--	No
DW-165	Q	--	15.2	--	--	--	No ⁽⁸⁾
DW-166	Q	0.010	--	--	--	--	No
DW-167	Q	0.011	--	--	--	--	No
DW-169	Q	0.012	--	--	--	--	No
DW-170	Q	0.017	--	--	--	--	No
TW-06 ⁽⁹⁾	Q	--	--	--	--	0.026	No
WDW017	Q	0.041	--	--	--	--	No

Notes:

- (1) Only wells sampled in 2Q 2011 and where an MCL for at least one analyte and/or the Uranium Bottled Water Concentration were exceeded are listed.
- (2) "Q" indicates "Quarterly Domestic Group" for the 2Q 2011 event.
- (3) Only analytes for which the indicated MCL is exceeded in at least one well are listed. Analyte concentrations are listed only if the respective MCL is met or exceeded. The symbol "-" indicates that the respective MCL was not met or exceeded.
- (4) Uranium concentrations are listed only if the uranium concentration of 0.025 mg/L for eligibility in Bottled Water Program is met or exceeded. The symbol "-" indicates that the Bottled Water Concentration was not met or exceeded.
- (5) "J" indicates that the concentration is estimated.
- (6) Cancelled participation in the Bottled Water Program on December 15, 2009, as a new water filtration system was installed at residence.
- (7) Qualified to receive bottled water but owner declined as already receives bottled water through DW-123.
- (8) Qualified to receive bottled water but owner responded that not interested in participation in the Program.
- (9) Provides non-drinking water.

Table 3-2. Bottled Water Program Summary						
Well Name	Bottled Water Program ID	Date Eligible for Bottled Water Program	Date(s) Offered Bottled Water	Date(s) Accepted Bottled Water	Date Rejected Bottled Water	Bottled Water Program Comments
DW-2	QR	12/11/03	3/9/04	3/9/04		
DW-4	QR	3/18/07	9/6/07	9/6/07		
DW-5	QR	4/5/04	5/19/04	5/19/04		
DW-6	QR	10/20/10	10/20/10	11/2/10		
DW-7	QR	4/5/04	6/23/04	6/23/04		
DW-9	QR	10/20/10	10/20/10	11/2/10		
DW-10	QR	12/10/03	8/20/08	8/20/08		
DW-13	QR	4/5/04	8/16/10	8/16/10		Unoccupied for ~2.5 years, new owner added to program 8/16/10. Previous owner offered/accepted 5/11/04.
DW-14	QR	4/6/04	5/11/04	5/11/04		
DW-16	QR	4/6/04	10/7/08	10/7/08		
DW-19	QR	6/8/04	10/8/04	9/16/09		Added back to program 9/16/09; no water between July 2008 and 9/16/09
DW-22	R		8/14/08	3/3/09		Doesn't qualify, receiving bottled water
DW-23	QR	4/5/04	5/10/10	5/10/10		Rejected in August 2008, accepted on 5/10/10
DW-24	QR	6/8/04	7/30/04	7/30/04		
DW-25	QR	4/5/04	5/6/04	5/6/04		
DW-26	QR	4/5/04	5/11/04	5/11/04		
DW-27	QR	4/5/04	6/23/04	6/23/04		
DW-29	QR	6/8/04	8/28/08	8/28/08		
DW-34	QR	6/8/04	7/30/04	7/30/04		
DW-36	QR	12/11/03	2/1/07	2/1/07		
DW-38	QR	12/10/03	2/13/06	2/13/06		
DW-40	QR	10/26/10	10/28/10	11/1/10		
DW-41	QR	12/11/03	7/30/04	7/30/04		
DW-42	QR	10/26/10	10/28/10	2/24/11	11/17/10	Rejected bottled water on 11/17/10; accepted on 2/24/11
DW-43	QR	12/11/03	3/8/04	3/8/04		

Table 3-2. Bottled Water Program Summary						
Well Name	Bottled Water Program ID	Date Eligible for Bottled Water Program	Date(s) Offered Bottled Water	Date(s) Accepted Bottled Water	Date Rejected Bottled Water	Bottled Water Program Comments
DW-44	QR	9/16/04	12/5/04	12/5/04		
DW-45	QR	12/11/03	3/18/04	3/18/04		
DW-46	QR	12/11/03	3/8/04	3/8/04		
DW-47	QR	10/26/10	10/28/10	11/30/10		
DW-48	QR	12/11/03	3/8/04	3/8/04		
DW-49	Q	9/14/04				Not on bottled water program, status unknown
DW-50	QR	6/2/09	9/6/07	9/6/07		Asked for bottled water and added to the program
DW-53	QR	12/7/04	8/24/05	8/24/05		
DW-54	QR	3/8/04	12/16/04	12/16/04		
DW-55	R		12/22/04	12/22/04		Doesn't qualify, receiving bottled water, grandfathered into program
DW-57	QR	5/4/04	12/15/04	12/15/04		
DW-58	QR	5/4/04	9/12/09	9/12/09		Rental property
DW-61	QR	4/6/04	5/6/04	5/6/04		
DW-62	QR	3/9/04	5/11/04	5/11/04		
DW-63	QR	12/7/04	12/16/04	12/16/04		
DW-64	R		1/26/05	1/26/05		Doesn't qualify, receiving bottled water, grandfathered into program
DW-68	Q	9/13/04	12/14/04	12/14/04		No water received since 2008, current status unknown, unable to contact owner, house vacant
DW-69	QR	4/6/04	5/6/04	5/6/04		
DW-70	QR	4/5/04	5/19/04	5/19/04		
DW-71	Q	9/14/04	8/20/08	8/20/08	12/15/09	Owner installed filtration system in December 2009, stopped bottled water delivery
DW-72	QR	4/7/04	5/11/04	5/11/04		
DW-73	QR	10/18/10	10/18/10	11/2/10		
DW-75	R		1/26/05	1/26/05		Doesn't qualify, receiving bottled water, grandfathered into program
DW-77	Q	5/4/04	8/28/08	8/28/08	4/20/10	Owner passed away - not receiving bottled water - stopped 4/20/10. New owner moved in August 2010, has not returned access agreement.

Table 3-2. Bottled Water Program Summary						
Well Name	Bottled Water Program ID	Date Eligible for Bottled Water Program	Date(s) Offered Bottled Water	Date(s) Accepted Bottled Water	Date Rejected Bottled Water	Bottled Water Program Comments
DW-78	QR	6/16/09	12/10/04	12/10/04		Did not qualify but received water. Qualified 6/16/09.
DW-79	QR	6/7/04	7/26/04	7/26/04		
DW-80	QR	6/7/04	7/6/04	7/6/04		
DW-85	QR	6/8/04	7/30/04	7/30/04		Rental property
DW-86	QR	6/8/04	7/30/04	7/30/04		
DW-87	QR	12/6/04	3/3/05	3/3/05		
DW-88	QR	9/13/04	12/6/04	12/6/04		
DW-89	QR	9/13/04	12/10/04	12/10/04		
DW-90	QR	9/14/04	8/8/08	8/8/08		
DW-94	QR	9/13/04		3/3/09	8/11/08	Rejected 8/11/08, requested participation on 3/3/09
DW-96	QR	9/13/04	12/14/04	12/14/04		
DW-102	Q	3/17/11	3/17/11		3/17/11	Rejected bottled water through DW-102 as already receives bottled water through DW-123
DW-104	QR	10/26/10	10/27/10	11/16/10		
DW-105	QR		5/3/05	5/3/05		Didn't originally qualify, receiving bottled water, was grandfathered into program. Qualified during 1Q 2011 event.
DW-106	Q	3/7/05	7/14/10		8/11/10	March 2005 - not interested. Contacted again on 7/14/10 and 8/11/10, rejected on 8/11/10.
DW-107	QR	10/26/10	10/28/10	6/6/11		Undecided about bottled water (11/17/10); accepted on 6/6/11
DW-108	QR	3/7/05	5/3/06	5/3/06		
DW-109	QR	12/9/10	12/10/10	12/17/10		Qualifying letter sent 12/10/10; accepted participation in BW Program on 12/17/10
DW-112	QR	6/6/05	9/2/08	9/2/08		
DW-117	QR	6/6/05	8/24/05	8/24/05		
DW-118	Q	6/6/05	6/30/05		6/21/10	Confirmed again on 8/12/08 - not interested, asked not to contact again. Confirmed verbally not interested on 6/21/10.
DW-119	QR	6/6/05	4/26/10	2/8/11	6/24/10	Rejected June 2005 and again on 8/11/08, resent letter on 4/26/10. Confirmed verbally not interested on 6/24/10. Accepted on 2/8/11.

Table 3-2. Bottled Water Program Summary						
Well Name	Bottled Water Program ID	Date Eligible for Bottled Water Program	Date(s) Offered Bottled Water	Date(s) Accepted Bottled Water	Date Rejected Bottled Water	Bottled Water Program Comments
DW-120	Q	12/10/10	12/10/10		12/17/10	Declined participation in BW Program on 12/17/10.
DW-121	QR	6/7/05	3/2/06	7/12/10	12/31/08	No bottled water received since 2008; began receiving bottled water on 7/12/10.
DW-123	QR	9/9/05	3/2/06	3/2/06		
DW-125	QR	6/18/09	9/1/09	9/1/09		
DW-127	QR	6/14/06	12/6/06	12/6/06		
DW-128	QR	9/14/09	1/8/10	1/8/10		
DW-129	QR	9/21/06	11/12/06	9/4/09		Restarted in program on 9/4/09
DW-130	QR	12/12/06	5/3/07	5/3/07		
DW-134	QR	7/15/08	8/14/08	8/14/08		
DW-135	QR	7/15/08	8/12/08	8/12/08		
DW-136	QR	8/21/08	9/16/08	9/16/08		
DW-139	QR	4/10/09	5/4/09	9/1/09		
DW-148	QR	3/22/10	4/22/10	7/2/10		
DW-150	Q	3/16/10	4/22/10	9/8/10	3/31/11	No response to qualification letter dated 4/22/10 and 7/22/10. Acceptance by phone on 9/8/10, for his use during his periodic week-long visits. During phone call on 3/31/11, owner rejected bottled water as a reverse osmosis (RO) treatment system was installed. Owner never did receive bottled water.
DW-153	QR	3/23/10	4/22/10	8/18/10		No response to qualification letter dated 4/22/10. Called on 7/14/10, number no longer in service. Visited and accepted water on 8/17/10, added to program 8/18/10.
DW-154	QR	4/16/10	4/22/10	5/4/10		
DW-157	QR	7/12/10	7/12/10	7/13/10		
DW-158	QR	3/15/10	4/26/10	11/5/10		No response to qualification letter dated 4/26/10. Called on 7/14/10 and 8/11/10, left messages to call, no response. Visited 8/17/10 and 9/3/10, no one home. Accepted on 11/5/10
DW-159	QR	4/16/10	4/26/10	5/4/10		
DW-160	QR	7/20/10	7/22/10	8/9/10		

Table 3-2. Bottled Water Program Summary						
Well Name	Bottled Water Program ID	Date Eligible for Bottled Water Program	Date(s) Offered Bottled Water	Date(s) Accepted Bottled Water	Date Rejected Bottled Water	Bottled Water Program Comments
DW-161	QR	3/18/11	3/18/11	5/26/11		Left message on phone on 3/29/11. No response from owner on receiving bottled water. Accepted 5/26/11.
DW-162	QR	4/23/10	4/26/10	5/4/10		
DW-163	QR	3/17/11	3/18/11	3/28/11		
DW-164	QR	7/20/10	7/22/10	7/27/10		
DW-165	Q	10/26/10	10/28/10		11/16/10	Rejected bottled water on 11/16/10
DW-168	QR	10/26/10	10/28/10	8/1/11		Bottled water on-hold on 11/1/10 (house vacant). Accepted 8/1/11. Bottled water for periodic visits, will call ahead for water as needed.
DW-175	QR	3/16/10	4/26/10	5/4/10		
DW-176	QR	7/14/10	7/15/10	7/23/10		
DW-177	QR	10/26/10	10/28/10	11/1/10		
DW-180	QR	3/17/11	3/18/11	3/21/11		
DW-181	QR	3/16/11	3/16/11	3/16/11		Upon receipt of lab data, immediately notified owner of eligibility by phone as requested by owner
DW-182	QR	3/16/11	3/17/11	3/28/11		
EDW-01	R	9/8/04	12/6/04	12/6/04		
WDW018	QR	3/8/04	12/16/04	12/16/04		
Well 4	QR	9/15/04	12/22/04	12/22/04		

Notes: Q-qualifies for bottled water program
R-currently (as of date of this report) receives bottled water

Table 3-3. Exceedances of EPA Secondary Maximum Contaminant Levels, Domestic Wells							
Well Name ⁽¹⁾	Domestic Well Group ⁽²⁾	pH (<6.5 and >8.5 s.u.) ⁽³⁾	Fluoride (2 mg/L) ⁽³⁾	Iron (0.3 mg/L) ⁽³⁾	Manganese (0.050 mg/L) ⁽³⁾	Sulfate (250 mg/L) ⁽³⁾	Total Dissolved Solids (500 mg/L) ⁽³⁾
DW-1	Q	8.6 J ⁽⁴⁾	--	--	--	--	--
DW-3	Q	--	--	--	--	420	1100
DW-11	Q	--	--	--	--	--	540
DW-12	Q	--	--	--	--	--	520
DW-17	Q	--	--	--	--	--	580
DW-18	Q	--	--	0.51	--	260	970
DW-20	Q	--	--	--	--	--	650
DW-28	Q	--	--	--	--	--	740
DW-30	Q	--	--	--	--	250	810
DW-31	Q	--	--	--	--	--	560
DW-35	Q	--	--	--	--	--	700
DW-60	Q	--	--	--	0.160	--	--
DW-71	Q	--	--	--	--	--	600
DW-95	Q	--	--	0.30 J	--	--	680
DW-98	Q	--	--	--	--	--	540
DW-99	Q	--	--	--	--	--	620
DW-110	Q	--	--	--	--	--	520
DW-118	Q	--	--	--	--	--	500
DW-133	Q	--	--	0.72 J	--	--	520
DW-140	Q	--	--	--	--	--	580
DW-142	Q	--	--	0.55	--	--	680
DW-143	Q	--	--	--	--	270	750
DW-146	Q	--	--	0.40	--	--	--
DW-147	Q	--	--	--	--	340	900

Table 3-3. Exceedances of EPA Secondary Maximum Contaminant Levels, Domestic Wells							
Well Name ⁽¹⁾	Domestic Well Group ⁽²⁾	pH (<6.5 and >8.5 s.u.) ⁽³⁾	Fluoride (2 mg/L) ⁽³⁾	Iron (0.3 mg/L) ⁽³⁾	Manganese (0.050 mg/L) ⁽³⁾	Sulfate (250 mg/L) ⁽³⁾	Total Dissolved Solids (500 mg/L) ⁽³⁾
DW-149	Q	--	2.7	--	--	--	--
DW-165	Q	--	--	--	--	--	730
DW-166	Q	--	--	--	--	--	990
DW-167	Q	--	--	--	--	--	710
DW-168	Q	--	--	--	--	260	670
DW-169	Q	--	--	--	--	--	530
DW-170	Q	--	--	--	--	--	560
DW-173	Q	--	--	0.64	0.054	--	--

Notes:

- (1) Only wells where a secondary MCL for at least one analyte is exceeded are listed.
- (2) "Q" indicates "Quarterly Domestic Group" for the 2Q 2011 event.
- (3) Only analytes for which the indicated secondary MCL is exceeded in at least one well are listed. Analyte concentrations are listed only if the respective secondary MCL is met or exceeded. The symbol "--" indicates that the respective secondary MCL was not met or exceeded.
- (4) "J" indicates that the concentration is estimated.

SECTION 4.0 QUALITY ASSURANCE/QUALITY CONTROL SUMMARY

A total of 61 normal and seven field duplicate water matrix samples were collected and analyzed during the 2Q 2011 event. All samples were analyzed for the full list of parameters in Table 2-2. Overall, the data meets the data quality objectives (DQOs). No analytical results have been rejected, and all data are usable for the purposes stated in the DWMP. Completeness goals are met for every method and analyte. The primary issues that resulted in data qualification are:

- Blank contamination and high matrix spike (MS) recoveries for inductively coupled plasma (ICP) metals;
- Blank contamination and field duplicate imprecision for inductively coupled plasma-mass spectrometry (ICP-MS) metals;
- Holding time exceedances for nitrate, nitrite and nitrate/nitrite;
- Blank contamination issues for gross beta;
- Field duplicate imprecision for radium-226; and
- Holding time exceedances for pH.

Results qualified as estimated should be used with caution.

Table 4-1 provides a summary of the number of samples analyzed by each method and the number of results that were qualified for each method.

Table 4-1. Analytical Completeness by Method									
Method	Parameter	Samples Analyzed (N+FD)	Analytes per sample	Number of Results				Completeness	
				Total	Rejected	Estimated due to QC deficiencies	Estimated due to >MDL but <PQL	Percent (%) usable	Percent quantitative*
E200.7	ICP Metals	61+7	10	680	0	26	34	100%	96.2%
E200.8	ICP-MS Metals	61+7	15	1020	0	49	159	100%	95.2%
E300	Anions	61+7	6	408	0	20	32	100%	95.1%
E900.0	Gross Alpha and Beta	61+7	2	136	0	20	4	100%	85.3%
E903.0	Total Alpha Radium (Ra-226)	61+7	1	68	0	2	8	100%	97.1%
E904.0	Radium-228	61+7	1	68	0	0	4	100%	100%
SM2320B	Alkalinity (as CaCO ₃)	61+7	4	272	0	0	0	100%	100%
SM2540C	Total Dissolved Solids	61+7	1	68	0	0	0	100%	100%
SM4500	pH (lab)	61+7	1	68	0	68	0	100%	0.0%
SM5310B	Total Organic Carbon	61+7	1	68	0	0	11	100%	100%

Notes:

*Estimations due solely to results <PQL do not affect the calculated completeness

Calculations do not include any required field or laboratory QC samples, except field duplicates.

N = normal environmental samples

FD = field duplicate samples

MDL = method detection limit

PQL = practical quantitation limit

ICP = inductively coupled plasma

ICP-MS = inductively coupled plasma-mass spectrometry

SECTION 5.0
REFERENCES

- Brown and Caldwell, 2010, *Addendum to the Site-Wide Quality Assurance Project Plan, Domestic Well Monitoring Plan – Revision 3, Yerington Mine Site, Lyon County, Nevada*. Prepared for the Atlantic Richfield Company. July 1.
- Environmental Standards, Inc. (ESI) and Brown and Caldwell, 2009, *Quality Assurance Project Plan, Yerington Mine Site, Revision 5*, prepared for the Atlantic Richfield Company. May 20.
- EPA, 2005, Anaconda/Yerington Mine Site Unilateral Administrative Order for Initial Response Activities, CERCLA Docket No. 9-2005-0011, U.S. Environmental Protection Agency, Region 9.
- EPA, 2007, Administrative Order for the Remedial Investigation and Feasibility Study. In the matter of Anaconda / Yerington Mine Site, Yerington, Lyon County, Nevada. Atlantic Richfield, Respondent. U.S. EPA Region 9, CERCLA Docket No. 9-2007-0005. Proceeding under Section 106(a) of CERCLA, as amended, 42 USC § 9606(a). Including Attachment A: Scope of Work for the Remedial Investigations / Feasibility Studies Continued Response Action. January 12.
- EPA, 2009, Letter to ARC RE: Domestic Well Monitoring Program. Anaconda/Yerington Mine Site, Nevada. November 9.