



February 12, 2013

Mr. Ron Linton  
U.S. Nuclear Regulatory Commission  
Office of Federal and State Materials and  
Environmental Management Programs  
Mail Stop T-8F5  
11545 Rockville Pike  
Rockville, MD 20852-2738

Re: Nichols Ranch Unit Production Area #1 (PA#1) Wellfield Data Package

Dear Mr. Linton,

Uranerz Energy Corporation (Uranerz) is, in accordance with NRC SUA-1597, Technical Report Section 5.7.8, and License Conditions 10.8, 11.3 and 11.4, submitting the upper control limits (UCLs) and restoration target values (RTVs) for Production Area #1 in the Nichols Ranch Unit. The Nichols Ranch Unit is located in Sections 7, 8, 17, and 18 Township 43N, R76W in Campbell and Johnson Counties, WY. Uranerz previously submitted the wellfield package that was accepted by NRC per letter dated June 14, 2012 (TAC JOO670). Review and approval of this package will allow Uranerz to begin production from PA#1 once facility start-up is approved by NRC.

The production areas for the Nichols Ranch Unit, including PA#1, have been classified as Class V (Mineral Commercial) by EPA approval in letter dated 11/08/2012. The production area contains viable concentrations of producible mineral and because of this mineralization the aquifer is exempted as a source of drinking water.

Water quality samples were collected and analyzed from monitor wells installed for PA#1, as required by Permit No. 778 and NRC License SUA-1597, to establish baseline groundwater quality for the underlying aquifer (MUN wells), overlying aquifer (MON wells) and ore zone perimeter (MRN wells). There are four tables, one for each monitor well set, in Section 12. The UCLs and RTVs were calculated and assessed in accordance with Permit No. 778 Mine Plan and NRC License SUA-1597. Three copies of the water quality data sheets and calculations are enclosed as well as an Index of Change for insertion guidance into the wellfield package binder. A CD containing a digital copy of the UCL and RTV calculations has also been included.

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**MKT:**

Based on the assessment, Uranerz proposes the following UCLs for the MON, MUN, and MRN wells:

Monitor Well Type	Aquifer Monitored	Upper Control Limits		
		Alkalinity (mg/L)	Chloride (mg/L)	Conductivity (umhos/cm)
MON	Overlying	145	21	733
MRN	Production	152	21	731
MUN	Underlying	274	20	490

RTVs were calculated for the ore zone aquifer (MPN wells), as described in Section 3.14.7.8.7 of the Mine Plan and Section 1.2 of the Restoration Plan in the WDEQ/LQD Permit to Mine No. 778 and Section 6.1.2 of the NRC License Application. In instances where constituents analyzed were non-detectable, no RTV was assigned as non-detectable data at various levels of detection cannot be precisely analyzed to establish a mean and standard deviation. Per NRC SUA-1597 License Condition 10.6 specific constituents provided for in 10 CFR Part 40, Appendix A, Criterion 5(B)(5) are required to be restored to a numerical ground water standard such that Uranerz will either restore to background or maximum contaminant levels (whichever is greater). Uranerz, therefore assigned the maximum contaminant level as the RTV for those specific constituents analyzed as non-detectable only. Please refer to the Table 12-4 for the restoration values.

It is worth noting that the limits in Criterion 5 apply to groundwater protection standards for surface impoundments used to manage uranium and thorium byproduct material. This material is required to be protected via a liner and typically has higher concentrations of those constituents listed in Criterion 5(C). These impoundments do not exist at ISR facilities. Thus it is more appropriate to consider background, alternate concentration limits (ACLs), or class of use values. Furthermore, License Condition 10.6 requires the licensee must also show that it has first made reasonable effort to restore the specified hazardous constituents; however, Criterion 5(B)(6) provides that ACLs for hazardous constituents as provided in Criterion 5(B)(5) will be established if it finds that the proposed limit is as low as reasonably achievable, after considering practicable corrective actions, and that the constituent will not pose a substantial present or potential hazard to human health or the environment as long as the ACL is not exceeded.

The wellfield package, UCLs and RTVs have also been submitted to the Wyoming Department of Environmental Quality Land Quality Division (WDEQ-LQD) for review and approval in accordance with Permit to Mine No. 778.

If you have any questions regarding the provided information, please contact me at 307-265-8900 or by email at: [mthomas@uranerz.com](mailto:mthomas@uranerz.com).

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#### MKT:

Sincerely,



Michael P. Thomas  
Vice President Environmental, Safety, and Health  
Uranerz Energy Corporation

MT/dk

**Attachments**

3 Copies of:

Index Sheet

Table of Contents for Pump Test Report

Upper Control Limit and Restoration Target Value Calculations Tables

CD with Excel Spreadsheets

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**MKT:**

*Do not make corrections to this form after printing. Forms bearing strikeouts, ink changes, etc will not be accepted.*

**INDEX SHEET FOR MINE PERMIT AMENDMENTS OR REVISIONS**

MINE COMPANY NAME: Uranerz Energy Corporation  
MINE NAME: Nichols Ranch ISR Project

Page 1 of 1  
Date 1/9/13  
TFN  
PERMIT NO.: PA#1 Wellfield Data Package  
(TAC JOO670)

Statement: I, Michael P. Thomas, an authorized representative of Uranerz Energy Corporation declare that only the items listed on this and all consecutively numbered Index Sheets are intended as revisions to the current permit document. In the event that other changes inadvertently occurred due to this revision, those unintentional alterations will not be considered approved. Please initial and date. MPT 2-12-13

**NOTES:**

- 1) Include all revision or change elements and a brief description of or reason for each revision element.
- 2) List all revision or change elements in sequence by volume number; number index sheets sequentially as needed.

Volume Number	Page, Map or other Permit Entry to be REMOVED	Page, Map or other Permit Entry to be ADDED	Description of Change
Nichols Ranch Unit PA#1 Wellfield Package Hydrologic Test	Pages i--viii	Pages i--viii	Remove existing pages and replace with revised pages in the Table of Contents
Nichols Ranch Unit PA#1 Wellfield Package Hydrologic Test		Section 12.0 UCLs & RTVs tab,	Section 12.0 is being added to the wellfield document binder. This new section should be inserted after the final page in Section 11.0. There are 4 tables in this new section containing the water quality data and the UCLs and RTVs. The CD contains the live excel spreadsheets.

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____



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**Table 12-1**  
**Water Quality Data and Upper Control Limits**  
**Overlying Monitor Wells (MON Wells)**  
**Summary Sheet**

Upper Control Limit Parameters	n Sample Events	Minimum Value	Maximum Value	MEAN	Standard Deviation	k Factor $\alpha=0.05/P=0.99$ , n=78	Tolerance Minimum	Tolerance Maximum	Mean without Outliers	Standard Deviation without Outliers	Standard Deviation x 5	UCL
LQD Guideline 4												
Alkalinity, Total as CaCO3 mg/L	78	102	142	121	6.12	2.9924	105	137	121	4.86	24	145
Chloride mg/L	78	5	9	6	0.60	NA					NA	21
Conductivity @ 25 C umhos/cm	78	517	732	579	39.03	2.9924	480	670	575	31.68	158	733



**Table**  
**Water Quality Data and Upper Control Limits**  
**Overlying Monitor Wells (MON Wells)**

Production Area #1 Overlying Monitoring Wells (MON-1 thru MON-13)	Well ID Sampling Dates	MON-01	MON-01	MON-01	MON-01	MON-01	MON-01	MON-02	MON-02	MON-02	MON-02	MON-02	MON-02	MON-03	MON-03	MON-03	MON-03	MON-03	MON-03
Upper Control Limit Parameters	Laboratory RL	4/5/2012	5/17/2012	6/7/2012	7/11/2012	10/3/2012	11/1/2012	4/9/2012	5/1/2012	5/21/2012	7/12/2012	10/3/2012	11/1/2012	4/9/2012	5/17/2012	6/12/2012	7/10/2012	10/17/2012	10/31/2012
Alkalinity, Total as CaCO <sub>3</sub> mg/L	5.0	120	122	121	120	122	118	123	123	123	121	120	120	128	122	122	128	126	117
Chloride mg/L	1.0	6	6	6	7	6	6	6	6	6	7	5	6	6	6	6	7	5	6
Conductivity @ 25 C umhos/cm	5.0	517	535	547	556	555	539	539	518	548	548	549	543	551	534	553	558	566	537
<b>Analytes/Units</b>																			
<b>Major Ions</b>																			
Bicarbonate as HCO <sub>3</sub> mg/L	5.0	143	148			141	139	147	150			137	140	156	149			142	140
Calcium mg/L	1.0	6	7			7	7	6	7			6	7	8	8			7	8
Carbonate as CO <sub>3</sub> mg/L	5.0	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			6	ND
Fluoride mg/L	0.1	0.3	0.2			0.2	0.2	0.3	0.3			0.2	0.2	0.2	0.2			0.2	0.2
Magnesium mg/L	1.0	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nitrogen, Ammonia as N mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nitrogen, Nitrate+Nitrite as N mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Potassium mg/L	1.0	2	2			2	2	2	2			3	2	2	2			2	2
Silica mg/L	0.1	8.4	9.2			7.9	8.2	8.3	8.1			7.9	8.2	8.7	9			7.9	8.4
Sodium mg/L	1.0	113	102			113	115	108	110			114	115	115	118			102	115
Sulfate mg/L	2.0	124	123			114	120	116	123			113	116	127	129			114	128
<b>Physical Properties</b>																			
pH su	0.1	8.85	8.69			8.5	8.5	8.75	8.73			8.6	8.5	8.5	8.54			8.7	8.4
Solids, Total Dissolved TDS @ 180 C mg/L	10	333	331			360	350	340	357			340	360	358	338			350	350
<b>Metals</b>																			
Aluminum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Arsenic mg/L	0.001	0.006	0.004			0.004	ND	0.006	0.006			0.006	0.004	0.003	0.002			0.002	0.002
Barium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Boron mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Cadmium mg/L	0.005	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Chromium mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Copper mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Iron mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Lead mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Manganese mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	0.01	0.01	0.01			0.01	0.01
Mercury mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Molybdenum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nickel mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Selenium mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Uranium mg/L	0.0003	0.0312	0.041			0.0292	0.0307	0.0281	0.0299			0.0295	0.0304	0.034	0.0316			0.0308	0.0310
Vanadium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Zinc mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
<b>Radionuclides - Total</b>																			
Gross Alpha pCi/L	2	35.9	36.4			29.5	28.7	42.2	36.8			24	29.2	43.8	31.8			29.3	29.7
Gross Beta pCi/L	3	6.4	7.9			9.3	5.9	3.9	7.4			8	7.1	2.9	6.4			7.2	7.2
Radium 226 pCi/L	0.2	-0.1	0.25			ND	ND	0.26	0.12			ND	ND	0.07	0.29			ND	ND
Radium 228 pCi/L	1	1.3	-0.2			ND	ND	0.3	2			ND	ND	1.2	0.2			ND	1.7



**Table 3**  
**Water Quality Data and Upper Control Limits**  
**Overlying Monitor Wells (MON Wells)**

Production Area #1 Overlying Monitoring Wells (MON-1 thru MON-13)	Well ID Sampling Dates	MON-04	MON-04	MON-04	MON-04	MON-04	MON-04	MON-05	MON-05	MON-05	MON-05	MON-05	MON-05	MON-06	MON-06	MON-06	MON-06	MON-06	MON-06
Upper Control Limit Parameters	Laboratory RL	4/10/2012	5/15/2012	6/5/2012	6/18/2012	9/20/2012	10/5/2012	4/12/2012	5/8/2012	6/6/2012	9/26/2012	10/8/2012	10/22/2012	4/13/2012	5/10/2012	5/31/2012	6/19/2012	10/9/2012	10/23/2012
Alkalinity, Total as CaCO <sub>3</sub> mg/L	5.0	113	124	124	123	122	121	122	121	123	123	119	126	123	121	129	122	128	121
Chloride mg/L	1.0	6	6	6	6	7	6	6	7	6	7	6	6	6	6	6	6	6	6
Conductivity @ 25 C umhos/cm	5.0	521	550	551	551	556	563	572	580	578	571	556	578	583	577	572	571	557	577
<b>Analytes/Units</b>																			
<b>Major Ions</b>																			
Bicarbonate as HCO <sub>3</sub> mg/L	5.0	119	146			140	137	144	148			146	146	142	144			154	139
Calcium mg/L	1.0	4	7			6	8	9	9			8	8	8	9			8	8
Carbonate as CO <sub>3</sub> mg/L	5.0	9	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Fluoride mg/L	0.1	0.3	0.3			0.2	0.2	0.2	0.2			0.2	0.2	0.2	0.2			0.2	0.2
Magnesium mg/L	1.0	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nitrogen, Ammonia as N mg/L	0.05	ND	ND			ND	ND	ND	ND			0.12	ND	ND	ND			0.13	ND
Nitrogen, Nitrate+Nitrite as N mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	0.1	ND	ND			ND	0.1
Potassium mg/L	1.0	5	3			3	3	3	3			3	3	2	2			2	2
Silica mg/L	0.1	7.7	9.3			8	8.1	9	9.3			8	8.0	7.9	8.2			8	8.2
Sodium mg/L	1.0	103	114			102	106	115	116			107	108	110	108			107	113
Sulfate mg/L	2.0	114	125			130	126	137	140			123	127	136	134			122	137
<b>Physical Properties</b>																			
pH su	0.1	9.3	8.8			8.6	8.6	8.7	8.65			8.3	8.6	8.88	8.59			8.3	8.6
Solids, Total Dissolved TDS @ 180 C mg/L	10	296	339			330	330	346	365			370	360	375	380			360	370
<b>Metals</b>																			
Aluminum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Arsenic mg/L	0.001	0.006	0.005			ND	0.004	0.003	0.003			0.004	0.008	0.003	0.003			0.003	0.003
Barium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Boron mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Cadmium mg/L	0.005	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Chromium mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Copper mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Iron mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Lead mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Manganese mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Mercury mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Molybdenum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nickel mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Selenium mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Uranium mg/L	0.0003	0.0163	0.0254			0.0222	0.0221	0.0338	0.0344			0.0349	0.0347	0.0318	0.0314			0.0301	0.0299
Vanadium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Zinc mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
<b>Radionuclides - Total</b>																			
Gross Alpha pCi/L	2	20.1	27.6			20.9	22.3	40.2	37			24.7	32.7	34.1	32.5			24.6	27.8
Gross Beta pCi/L	3	5.4	5.9			5.9	6.5	9.6	9			8.5	8.9	9.8	8			9.6	8.2
Radium 226 pCi/L	0.2	0.04	0.04			ND	ND	0.04	-0.03			ND	0.2	0.12	-0.02			ND	ND
Radium 228 pCi/L	1	0.7	-0.09			ND	ND	0.4	1.3			ND	ND	2.3	0.9			ND	1.1



**Table 3**  
**Water Quality Data and Upper Control Limits**  
**Overlying Monitor Wells (MON Wells)**

Production Area #1 Overlying Monitoring Wells (MON-1 thru MON-13)	Well ID Sampling Dates	MON-07	MON-07	MON-07	MON-07	MON-07	MON-07	MON-08	MON-08	MON-08	MON-08	MON-08	MON-08	MON-09	MON-09	MON-09	MON-09	MON-09	MON-09
Upper Control Limit Parameters	Laboratory RL	4/16/2012	5/10/2012	6/1/2012	6/26/2012	9/25/2012	10/9/2012	4/25/2012	5/16/2012	6/1/2012	6/19/2012	10/11/2012	10/25/2012	3/2/2012	5/16/2012	6/1/2012	6/19/2012	10/11/2012	10/25/2012
Alkalinity, Total as CaCO <sub>3</sub> mg/L	5.0	116	120	122	135	120	120	122	122	128	125	118	137	142	129	123	122	121	121
Chloride mg/L	1.0	7	7	7	7	6	5	6	6	6	6	5	6	6	6	6	7	5	6
Conductivity @ 25 C umhos/cm	5.0	590	586	585	582	578	565	579	582	581	575	587	597	535	575	572	567	593	578
<b>Analytes/Units</b>																			
<b>Major Ions</b>																			
Bicarbonate as HCO <sub>3</sub> mg/L	5.0	125	144			141	142	143	145			135	119	163	157			143	139
Calcium mg/L	1.0	7	9			9	8	9	9			8	8	9	9			9	9
Carbonate as CO <sub>3</sub> mg/L	5.0	8	ND			ND	ND	ND	ND			ND	24	5	ND			ND	ND
Fluoride mg/L	0.1	0.2	0.2			0.2	0.2	0.2	0.2			0.2	0.2	0.2	0.2			0.2	0.2
Magnesium mg/L	1.0	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nitrogen, Ammonia as N mg/L	0.05	ND	ND			ND	0.12	ND	ND			0.14	ND	ND	ND			0.1	ND
Nitrogen, Nitrate+Nitrite as N mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Potassium mg/L	1.0	5	2			3	3	2	2			3	3	2	2			3	3
Silica mg/L	0.1	7	7.9			8.4	8.2	8.5	10.1			8.1	8.5	9.6	9.9			8.2	8.6
Sodium mg/L	1.0	108	107			112	108	114	103			108	117	114	110			106	115
Sulfate mg/L	2.0	139	141			126	124	140	139			123	138	138	135			122	126
<b>Physical Properties</b>																			
pH su	0.1	9.18	8.63			8.5	8.4	8.92	8.8			8.6	9.4	8.55	8.54			8.5	8.6
Solids, Total Dissolved TDS @ 180 C mg/L	10	350	376			380	360	363	356			350	340	326	348			330	340
<b>Metals</b>																			
Aluminum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Arsenic mg/L	0.001	0.003	0.002			0.003	0.003	0.003	0.003			0.003	0.003	0.003	0.003			0.003	0.002
Barium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Boron mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Cadmium mg/L	0.005	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Chromium mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Copper mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Iron mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Lead mg/L	0.001	ND	ND			ND	ND	0.001	ND			ND	ND	ND	ND			ND	ND
Manganese mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Mercury mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Molybdenum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nickel mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Selenium mg/L	0.001	ND	0.001			ND	ND	0.008	ND			ND	ND	ND	ND			ND	ND
Uranium mg/L	0.0003	0.0326	0.0365			0.0392	0.0385	0.039	0.038			0.0378	0.0358	0.0343	0.0348			0.036	0.0339
Vanadium mg/L	0.1	ND	ND			ND	ND	ND	0.2			ND	ND	ND	0.2			ND	ND
Zinc mg/L	0.01	ND	ND			ND	ND	ND	0.01			ND	ND	ND	0.01			ND	ND
<b>Radionuclides - Total</b>																			
Gross Alpha pCi/L	2	37.8	36.4			28.7	30	53.7	37.3			28.9	32.8	43.9	40.1			23.8	36.1
Gross Beta pCi/L	3	8.2	11.6			9.2	11.8	10.1	8.7			9.6	8.8	8.8	2.6			10.4	8.7
Radium 226 pCi/L	0.2	0.12	0.02			0.2	ND	0.1	0.07			ND	0.2	-0.04	0.03			ND	ND
Radium 228 pCi/L	1	1.1	4.6			ND	ND	0.4	1.1			ND	ND	0.6	0.7			ND	ND

Values in red boxes are outliers



**Table 1**  
**Water Quality Data and Upper Control Limits**  
**Overlying Monitor Wells (MON Wells)**

Production Area #1 Overlying Monitoring Wells (MON-1 thru MON-13)	Well ID Sampling Dates	MON-10	MON-10	MON-10	MON-10	MON-10	MON-10	MON-11	MON-11	MON-11	MON-11	MON-11	MON-11	MON-12	MON-12	MON-12	MON-12	MON-12	MON-12
Upper Control Limit Parameters	Laboratory RL	3/1/2012	5/23/2012	6/21/2012	6/6/2012	10/15/2012	10/29/2012	3/1/2012	5/23/2012	6/6/2012	6/21/2012	10/16/2012	10/30/2012	2/29/2012	3/12/2012	5/18/2012	6/1/2012	9/20/2012	10/30/2012
Alkalinity, Total as CaCO3 mg/L	5.0	120	121	120	121	117	120	106	102	105	103	127	112	123	117	117	119	121	114
Chloride mg/L	1.0	7	6	6	6	6	6	6	6	6	6	9	5	7	6	6	6	6	6
Conductivity @ 25 C umhos/cm	5.0	558	586	566	584	590	588	592	663	681	682	732	711	609	601	618	641	620	629
Analytes/Units																			
Major Ions																			
Bicarbonate as HCO3 mg/L	5.0	138	147			138	140	111	121			130	131	150	142	143			134
Calcium mg/L	1.0	9	10			9	9	7	9			15	15	11	12	13			12
Carbonate as CO3 mg/L	5.0	ND	ND			ND	ND	9	ND			ND	ND	ND	ND	ND			ND
Fluoride mg/L	0.1	0.2	0.2			0.2	0.2	0.2	0.2			0.1	0.1	0.2	0.3	0.2			0.1
Magnesium mg/L	1.0	ND	ND			ND	ND	ND	ND			1	1	ND	ND	ND			ND
Nitrogen, Ammonia as N mg/L	0.05	ND	ND			0.14	ND	ND	ND			0.12	ND	ND	ND	ND			ND
Nitrogen, Nitrate+Nitrite as N mg/L	0.1	ND	ND			0.2	ND	ND	ND			0.2	ND	ND	ND	ND			ND
Potassium mg/L	1.0	2	2			2	3	4	5			4	4	3	3	3			3
Silica mg/L	0.1	9.7	10.1			8.8	8.7	9	9.6			8.4	8.7	9.9	7.6	9.1			8.6
Sodium mg/L	1.0	111	123			117	117	120	134			138	141	113	109	119			123
Sulfate mg/L	2.0	151	141			144	132	175	184			220	198	170	166	162			158
Physical Properties																			
pH su	0.1	8.49	8.52			8.5	8.5	8.93	8.82			8.6	8.5	8.46	8.45	8.4			8.5
Solids, Total Dissolved TDS @ 180 C mg/L	10	333	367			330	390	348	408			480	460	388	370	387			400
Metals																			
Aluminum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND			ND
Arsenic mg/L	0.001	0.003	0.004			0.01	0.006	0.006	0.005			ND	0.002	0.003	0.003	0.004			0.003
Barium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND			ND
Boron mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND			ND
Cadmium mg/L	0.005	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND			ND
Chromium mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND			ND
Copper mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND			ND
Iron mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND			ND
Lead mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND			ND
Manganese mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND			ND
Mercury mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND			ND
Molybdenum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND			ND
Nickel mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND			ND
Selenium mg/L	0.001	ND	ND			ND	0.001	ND	ND			ND	ND	ND	ND	ND			ND
Uranium mg/L	0.0003	0.0403	0.041			0.0408	0.0399	0.0319	0.0379			0.0454	0.0421	0.0452	0.0322	0.0454			0.0435
Vanadium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND			ND
Zinc mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND			ND
Radionuclides - Total																			
Gross Alpha pCi/L	2	53.6	42.3			29.4	32.1	43.4	37.1			38.9	36	74.5	82.5	54.3			34.3
Gross Beta pCi/L	3	8	10.9			10.2	8.4	10.8	15.3			11.5	8.2	11.3	10.3	9.2			7.2
Radium 226 pCi/L	0.2	0.01	0.05			ND	0.4	-0.05	-0.05			0.3	0.7	0.09	0.33	0.15			0.6
Radium 228 pCi/L	1	0.6	0.05			1.1	ND	0.7	0.1			ND	3.2	-0.03	0.3	-0.4			ND

Values in red boxes are outliers



**Table 1**  
**Water Quality Data and Upper Control Limits**  
**Overlying Monitor Wells (MON Wells)**

Production Area #1 Overlying Monitoring Wells (MON-1 thru MON-13)	Well ID Sampling Dates	MON-13	MON-13	MON-13	MON-13	MON-13	MON-13	n Sample Events	Minimum Value	Maximum Value	MEAN	Standard Deviation	k Factor $\alpha=0.05/P=0.99, n=78$	Tolerance Minimum	Tolerance Maximum	Mean without Outliers	Standard Deviation without Outliers	Standard Deviation x 5	UCL
<b>Upper Control Limit Parameters</b>	Laboratory RL	2/27/2012	5/22/2012	6/7/2012	6/21/2012	10/16/2012	10/30/2012	LOD Guideline 4											
Alkalinity, Total as CaCO3 mg/L	5.0	121	121	121	121	119	118	78	102	142	121	6.12	2.9924	107	136	121	4.86	24	145
Chloride mg/L	1.0	6	7	6	6	6	6	78	5	9	6	0.60	NA					NA	21
Conductivity @ 25 C umhos/cm	5.0	567	592	593	586	593	590	78	517	732	579	39.03	2.9924	480	670	575	31.68	158	733
<b>Analytes/Units</b>																			
<b>Major Ions</b>																			
Bicarbonate as HCO3 mg/L	5.0	147	147			138	137												
Calcium mg/L	1.0	11	12			11	11												
Carbonate as CO3 mg/L	5.0	ND	ND			ND	ND												
Fluoride mg/L	0.1	0.2	0.2			0.2	0.2												
Magnesium mg/L	1.0	ND	ND			ND	ND												
Nitrogen, Ammonia as N mg/L	0.05	ND	ND			ND	ND												
Nitrogen, Nitrate+Nitrite as N mg/L	0.1	ND	ND			0.1	ND												
Potassium mg/L	1.0	3	3			3	3												
Silica mg/L	0.1	8.2	10.2			7.5	8.5												
Sodium mg/L	1.0	121	122			113	117												
Sulfate mg/L	2.0	148	147			135	137												
<b>Physical Properties</b>																			
pH su	0.1	8.85	8.44			8.6	8.5												
Solids, Total Dissolved TDS @ 180 C mg/L	10	336	384			410	370												
<b>Metals</b>																			
Aluminum mg/L	0.1	ND	ND			ND	ND												
Arsenic mg/L	0.001	0.002	0.003			0.002	0.002												
Barium mg/L	0.1	ND	ND			ND	ND												
Boron mg/L	0.1	ND	ND			0.2	ND												
Cadmium mg/L	0.005	ND	ND			ND	ND												
Chromium mg/L	0.05	ND	ND			ND	ND												
Copper mg/L	0.01	ND	ND			ND	ND												
Iron mg/L	0.05	0.11	ND			ND	ND												
Lead mg/L	0.001	0.002	ND			ND	ND												
Manganese mg/L	0.01	ND	ND			ND	ND												
Mercury mg/L	0.001	ND	ND			ND	ND												
Molybdenum mg/L	0.1	ND	ND			ND	ND												
Nickel mg/L	0.05	ND	ND			ND	ND												
Selenium mg/L	0.001	ND	ND			ND	ND												
Uranium mg/L	0.0003	0.0452	0.0419			0.0463	0.0408												
Vanadium mg/L	0.1	ND	ND			ND	ND												
Zinc mg/L	0.01	ND	0.01			ND	ND												
<b>Radionuclides - Total</b>																			
Gross Alpha pCi/L	2	53.7	38.4			43.3	33.2												
Gross Beta pCi/L	3	12.5	7.6			10	7.5												
Radium 226 pCi/L	0.2	0.17	0.14			ND	0.5												
Radium 228 pCi/L	1	1	1.4			ND	ND												

**Table 12-2**  
**Water Quality and Upper Control Limits**  
**Monitor Ring Wells (MRN Wells)**  
**Summary Sheet**

Upper Control Limit Parameters	n Sample Events	Minimum Value	Maximum Value	MEAN	Standard Deviation	k Factor $\alpha=0.05/P=0.99$ , n=78	Tolerance Minimum	Tolerance Maximum	Mean without Outliers	Standard Deviation without Outliers	Standard Deviation x 5	UCL
LQD Guideline 4												
Alkalinity, Total as CaCO <sub>3</sub> mg/L	198	106	144	124	6	3	108	139	124	5.53	28	152
Chloride mg/L	198	5	8	6	0.5	NA					NA	21
Conductivity @ 25 C umhos/cm	198	491	750	569	35	3	476	659	568	32.51	163	731



**Table 1**  
**Water Quality Data and Upper Control Limits**  
**Monitor Ring Wells (MRN Wells)**

Production Area #1 Ring Monitoring Wells (MRN-1 thru MRN-34.2)	Well ID Sampling Dates	MRN-01	MRN-01	MRN-01	MRN-01	MRN-01	MRN-01	MRN-02.2	MRN-02.2	MRN-02.2	MRN-02.2	MRN-02.2	MRN-02.2	MRN-03.2	MRN-03.2	MRN-03.2	MRN-03.2	MRN-03.2	MRN-03.2
<b>Upper Control Limit Parameters</b>	Laboratory RL	4/10/2012	5/2/2012	5/29/2012	6/14/2012	10/12/2012	10/26/2012	3/8/2012	5/2/2012	5/29/2012	6/14/2012	10/11/2012	10/25/2012	3/8/2012	5/2/2012	5/29/2012	6/13/2012	10/11/2012	10/26/2012
Alkalinity, Total as CaCO <sub>3</sub> mg/L	5.0	129	125	131	125	121	124	111	124	121	121	140	138	115	119	117	119	118	118
Chloride mg/L	1.0	6	7	7	7	7	6	7	7	7	8	6	6	7	7	7	7	6	6
Conductivity @ 25 C umhos/cm	5.0	568	559	568	566	578	574	639	719	750	737	702	666	491	570	580	575	601	591
<b>Analytes/Units</b>																			
<b>Major Ions</b>																			
Bicarbonate as HCO <sub>3</sub> mg/L	5.0	137	143			139	142	131	151			167	164	129	135			137	136
Calcium mg/L	1.0	7	6			7	6	10	14			14	13	6	6			6	6
Carbonate as CO <sub>3</sub> mg/L	5.0	10	ND			ND	ND	ND	ND			ND	ND	6	ND			ND	ND
Fluoride mg/L	0.1	0.2	0.2			0.2	0.2	0.2	0.2			0.1	0.2	0.2	0.2			0.2	0.2
Magnesium mg/L	1.0	ND	ND			ND	ND	ND	1			1	1	ND	ND			ND	ND
Nitrogen, Ammonia as N mg/L	0.05	ND	0.06			0.1	ND	ND	ND			0.1	ND	0.05	0.06			0.1	ND
Nitrogen, Nitrate+Nitrite as N mg/L	0.1	ND	ND			0.2	ND	ND	ND			ND	ND	ND	ND			ND	ND
Potassium mg/L	1.0	3	3			3	3	2	2			3	3	2	2			2	2
Silica mg/L	0.1	9	9.4			9.1	9.5	7.9	8.9			10.1	10.4	7.9	8			9	9.6
Sodium mg/L	1.0	115	115			106	118	127	135			121	135	121	109			108	121
Sulfate mg/L	2.0	127	131			133	118	183	206			149	145	138	140			125	130
<b>Physical Properties</b>																			
pH su	0.1	9.03	8.94			8.6	8.6	8.88	8.61			8.4	8.4	7.7	8.91			8.5	8.6
Solids, Total Dissolved TDS @ 180 C mg/L	10	334	354			320	350	397	478			440	440	353	362			330	350
<b>Metals</b>																			
Aluminum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Arsenic mg/L	0.001	0.002	0.002			ND	0.002	0.001	ND			0.001	ND	0.001	0.001			0.001	ND
Barium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Boron mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Cadmium mg/L	0.005	ND	ND			ND	ND	ND	ND			0.002	ND	ND	ND			ND	ND
Chromium mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Copper mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Iron mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Lead mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	0.002			ND	ND
Manganese mg/L	0.01	ND	ND			ND	ND	ND	0.01			0.02	0.02	ND	ND			ND	ND
Mercury mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Molybdenum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nickel mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Selenium mg/L	0.001	ND	ND			ND	ND	0.01	0.01			0.008	0.002	ND	ND			0.002	ND
Uranium mg/L	0.0003	ND	ND			ND	ND	ND	0.0004			0.0007	0.0004	ND	0.0004			0.0004	0.0003
Vanadium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Zinc mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
<b>Radionuclides - Total</b>																			
Gross Alpha pCi/L	2	-1	-2			ND	ND	-0.6	-0.9			ND	ND	-1	-3			ND	ND
Gross Beta pCi/L	3	2.2	-1			ND	ND	-2	0.9			ND	ND	-2	0.9			ND	ND
Radium 226 pCi/L	0.2	0.07	0.23			0.6	ND	0.25	0.17			ND	0.3	0.08	0.06			ND	ND
Radium 228 pCi/L	1	3.5	0.2			ND	ND	0.6	1.3			ND	ND	0.6	0.8			ND	ND

Values in red boxes are outliers



**Table 1**  
**Water Quality Data and Upper Control Limits**  
**Monitor Ring Wells (MRN Wells)**

Production Area #1 Ring Monitoring Wells (MRN-1 thru MRN-34.2)	Well ID Sampling Dates	MRN-04	MRN-04	MRN-04	MRN-04	MRN-04	MRN-04	MRN-05	MRN-05	MRN-05	MRN-05	MRN-05	MRN-05	MRN-06	MRN-06	MRN-06	MRN-06	MRN-06	MRN-06
Upper Control Limit Parameters	Laboratory RL	4/12/2012	5/2/2012	5/29/2012	6/13/2012	10/11/2012	10/25/2012	4/17/2012	5/11/2012	5/31/2012	6/14/2012	10/11/2012	10/26/2012	4/18/2012	5/16/2012	5/31/2012	6/14/2012	10/10/2012	10/25/2012
Alkalinity, Total as CaCO3 mg/L	5.0	122	123	122	122	124	122	120	121	121	120	118	119	118	119	118	119	114	116
Chloride mg/L	1.0	7	7	7	7	6	6	7	7	7	7	6	6	7	7	7	7	6	6
Conductivity @ 25 C umhos/cm	5.0	583	586	590	588	601	593	578	584	588	587	603	600	586	560	590	593	589	597
Analytes/Units																			
Major Ions																			
Bicarbonate as HCO3 mg/L	5.0	139	141			131	137	139	133			135	137	136	136			134	133
Calcium mg/L	1.0	7	7			7	7	7	8			7	7	7	8			7	7
Carbonate as CO3 mg/L	5.0	5	ND			10	6	ND	7			ND	ND	ND	ND			ND	ND
Fluoride mg/L	0.1	0.2	0.2			0.2	0.2	0.2	0.2			0.2	0.2	0.2	0.2			0.2	0.2
Magnesium mg/L	1.0	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nitrogen, Ammonia as N mg/L	0.05	ND	0.05			0.1	ND	0.08	ND			0.2	ND	0.11	0.07			0.2	ND
Nitrogen, Nitrate+Nitrite as N mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Potassium mg/L	1.0	3	3			4	3	4	3			3	3	2	2			3	3
Silica mg/L	0.1	9.5	9.4			9	9.6	9.2	10.7			9.5	9.8	8.9	11.2			9	9.6
Sodium mg/L	1.0	117	116			111	123	116	111			109	120	112	119			112	121
Sulfate mg/L	2.0	139	143			125	129	141	145			126	130	146	144			130	134
Physical Properties																			
pH su	0.1	8.93	8.98			8.7	8.7	9.1	9.06			8.6	8.6	8.98	8.9			8.4	8.6
Solids, Total Dissolved TDS @ 180 C mg/L	10	354	370			340	350	370	367			330	360	382	365			370	390
Metals																			
Aluminum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Arsenic mg/L	0.001	0.001	0.001			0.002	0.001	0.002	0.002			0.002	0.002	0.002	0.002			0.001	0.001
Barium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Boron mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Cadmium mg/L	0.005	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Chromium mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Copper mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Iron mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Lead mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Manganese mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Mercury mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Molybdenum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nickel mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Selenium mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Uranium mg/L	0.0003	0.0004	0.0004			0.0004	0.0004	0.0004	0.0004			0.0004	0.0004	ND	ND			ND	ND
Vanadium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	0.2			ND	ND
Zinc mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	0.01			ND	ND
Radionuclides - Total																			
Gross Alpha pCi/L	2	-0.9	-0.7			ND	ND	-0.6	-0.7			ND	ND	-2	4.9			ND	ND
Gross Beta pCi/L	3	1.7	1.5			3.1	ND	4.6	3.5			ND	3.7	1	0.5			3.3	ND
Radium 226 pCi/L	0.2	0.23	0.08			ND	ND	0.23	-0.07			ND	ND	0.13	0.2			ND	ND
Radium 228 pCi/L	1	0.3	1.1			ND	ND	0.3	3.6			ND	ND	0.2	0.8			ND	ND



**Table**  
**Water Quality Data and Upper Control Limits**  
**Monitor Ring Wells (MRN Wells)**

Production Area #1 Ring Monitoring Wells (MRN-1 thru MRN-34.2)	Well ID Sampling Dates	MRN-07	MRN-07	MRN-07	MRN-07	MRN-07	MRN-07	MRN-08	MRN-08	MRN-08	MRN-08	MRN-08	MRN-08	MRN-08	MRN-09	MRN-09	MRN-09	MRN-09	MRN-09	MRN-09		
Upper Control Limit Parameters	Laboratory RL	4/18/2012	5/11/2012	5/31/2012	6/15/2012	10/10/2012	10/25/2012	3/9/2012	4/3/2012	5/29/2012	6/13/2012	10/8/2012	10/22/2012	2/27/2012	4/3/2012	5/24/2012	6/12/2012	10/5/2012	10/19/2012			
Alkalinity, Total as CaCO3 mg/L	5.0	120	120	126	120	117	119	106	108	117	123	114	118	113	115	117	123	116	115			
Chloride mg/L	1.0	7	7	7	7	6	6	6	7	7	7	6	6	7	7	7	7	6	6			
Conductivity @ 25 C umhos/cm	5.0	589	590	593	595	595	601	535	554	594	596	577	601	571	573	594	600	607	595			
Analytes/Units																						
Major Ions																						
Bicarbonate as HCO3 mg/L	5.0	142	137			137	137	119	124			136	139	134	141			133	134			
Calcium mg/L	1.0	7	8			7	8	6	7			7	7	8	8			9	8			
Carbonate as CO3 mg/L	5.0	ND	ND			ND	ND	5	ND			ND	ND	ND	ND			ND	ND			
Fluoride mg/L	0.1	0.2	0.2			0.2	0.2	0.2	0.2			0.2	0.2	0.2	0.2			0.2	0.2			
Magnesium mg/L	1.0	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND			
Nitrogen, Ammonia as N mg/L	0.05	ND	ND			0.2	ND	ND	ND			0.15	ND	ND	ND			ND	ND			
Nitrogen, Nitrate+Nitrite as N mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND			
Potassium mg/L	1.0	2	2			3	3	3	3			3	3	3	2			3	3			
Silica mg/L	0.1	9	11.1			9.2	9.9	8.2	10.4			9.2	9.3	9	10.4			9.4	8.9			
Sodium mg/L	1.0	117	117			111	122	107	119			110	119	122	121			112	109			
Sulfate mg/L	2.0	143	148			133	133	144	146			131	148	158	153			149	138			
Physical Properties																						
pH su	0.1	8.87	8.84			8.5	8.6	8.52	8.97			8.4	8.6	8.66	8.66			8.6	8.6			
Solids, Total Dissolved TDS @ 180 C mg/L	10	394	384			380	390	364	358			380	390	349	389			360	390			
Metals																						
Aluminum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND			
Arsenic mg/L	0.001	ND	0.001			0.001	ND	0.002	0.002			0.001	0.006	0.001	0.001			0.001	0.001			
Barium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND			
Boron mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND			
Cadmium mg/L	0.005	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND			
Chromium mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND			
Copper mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND			
Iron mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND			
Lead mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND			
Manganese mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND			
Mercury mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND			
Molybdenum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND			
Nickel mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND			
Selenium mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND			
Uranium mg/L	0.0003	ND	ND			ND	ND	0.0005	ND			ND	ND	ND	ND			ND	ND			
Vanadium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND			
Zinc mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND			
Radionuclides - Total																						
Gross Alpha pCi/L	2	-2	-0.8			ND	ND	0.9	-1			ND	ND	-0.6	-0.9			ND	ND			
Gross Beta pCi/L	3	1.4	3			ND	ND	0.5	3.4			ND	ND	-0.2	1			3.3	ND			
Radium 226 pCi/L	0.2	-0.05	-0.03			ND	ND	0.18	0.16			ND	1.2	0.17	0.09			ND	0.2			
Radium 228 pCi/L	1	0.03	0.4			ND	1.4	0.1	0.3			ND	ND	0.5	0.4			ND	ND			

Values in red boxes are outliers



**Table 3**  
**Water Quality Data and Upper Control Limits**  
**Monitor Ring Wells (MRN Wells)**

Production Area #1 Ring Monitoring Wells (MRN-1 thru MRN-34.2)	Well ID Sampling Dates	MRN-10	MRN-10	MRN-10	MRN-10	MRN-10	MRN-10	MRN-11	MRN-11	MRN-11	MRN-11	MRN-11	MRN-11	MRN-12	MRN-12	MRN-12	MRN-12	MRN-12	MRN-12
Upper Control Limit Parameters	Laboratory RL	2/27/2012	4/3/2012	5/24/2012	6/6/2012	10/5/2012	10/19/2012	2/27/2012	4/4/2012	5/24/2012	6/14/2012	10/4/2012	10/18/2012	2/27/2012	4/4/2012	5/24/2012	6/12/2012	10/4/2012	10/18/2012
Alkalinity, Total as CaCO3 mg/L	5.0	111	112	115	116	116	116	110	111	116	118	117	118	121	123	126	125	127	124
Chloride mg/L	1.0	7	7	7	7	6	7	7	7	7	7	6	7	6	6	6	6	5	6
Conductivity @ 25 C umhos/cm	5.0	562	564	589	593	602	591	570	567	592	593	604	601	532	566	592	597	603	600
<b>Analytes/Units</b>																			
<b>Major Ions</b>																			
Bicarbonate as HCO3 mg/L	5.0	131	137			133	135	127	132			133	136	146	150			141	142
Calcium mg/L	1.0	7	7			9	7	7	8			9	8	8	8			10	9
Carbonate as CO3 mg/L	5.0	ND	ND			ND	ND	ND	ND			5	ND	ND	ND			7	ND
Fluoride mg/L	0.1	0.2	0.2			0.2	0.2	0.2	0.2			0.2	0.2	0.2	0.2			0.2	0.2
Magnesium mg/L	1.0	ND	ND			ND	ND	ND	ND			ND	ND	ND	1			ND	ND
Nitrogen, Ammonia as N mg/L	0.05	ND	ND			ND	0.06	ND	ND			ND	ND	ND	ND			ND	ND
Nitrogen, Nitrate+Nitrite as N mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Potassium mg/L	1.0	3	3			3	3	3	3			3	3	2	2			3	3
Silica mg/L	0.1	8.9	10			9	8.6	9.2	9.3			9.5	9.1	9.3	10.4			9.5	9.2
Sodium mg/L	1.0	117	120			110	122	110	119			110	112	108	115			112	112
Sulfate mg/L	2.0	152	147			148	147	155	154			136	138	147	144			130	132
<b>Physical Properties</b>																			
pH su	0.1	8.74	8.73			8.6	8.6	8.84	8.82			8.6	8.6	8.54	8.65			8.7	8.6
Solids, Total Dissolved TDS @ 180 C mg/L	10	354	383			360	370	326	367			360	370	339	372			340	370
<b>Metals</b>																			
Aluminum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Arsenic mg/L	0.001	0.002	0.002			0.001	0.001	0.002	0.002			0.001	0.002	0.001	0.001			0.001	0.001
Barium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Boron mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Cadmium mg/L	0.005	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Chromium mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Copper mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Iron mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Lead mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Manganese mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Mercury mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Molybdenum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nickel mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Selenium mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Uranium mg/L	0.0003	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Vanadium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Zinc mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
<b>Radionuclides - Total</b>																			
Gross Alpha pCi/L	2	-2	-1			ND	ND	-0.9	0.5			ND	ND	-1	3.5			ND	ND
Gross Beta pCi/L	3	0.5	1.4			ND	ND	0.9	4.5			ND	3.7	-0.7	4			ND	ND
Radium 226 pCi/L	0.2	0.16	0.05			ND	0.2	0.41	-0.01			0.2	ND	0.24	0.06			ND	0.3
Radium 228 pCi/L	1	0.4	1.3			ND	ND	0.7	1			1.6	ND	0.6	1.5			ND	ND



**Table 3**  
**Water Quality Data and Upper Control Limits**  
**Monitor Ring Wells (MRN Wells)**

Production Area #1 Ring Monitoring Wells (MRN-1 thru MRN-34.2)	Well ID Sampling Dates	MRN-13	MRN-13	MRN-13	MRN-13	MRN-13	MRN-13	MRN-14	MRN-14	MRN-14	MRN-14	MRN-14	MRN-14	MRN-15	MRN-15	MRN-15	MRN-15	MRN-15	MRN-15		
Upper Control Limit Parameters	Laboratory RL	2/28/2012	4/4/2012	5/24/2012	6/7/2012	10/4/2012	10/18/2012	2/28/2012	4/4/2012	5/23/2012	6/7/2012	10/8/2012	10/22/2012	2/28/2012	4/4/2012	5/23/2012	6/7/2012	10/1/2012	10/17/2012		
Alkalinity, Total as CaCO3 mg/L	5.0	131	126	127	126	124	125	135	130	129	129	123	126	117	133	125	126	126	128		
Chloride mg/L	1.0	6	7	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	7		
Conductivity @ 25 C umhos/cm	5.0	582	574	598	600	606	604	593	583	607	610	584	607	553	555	586	588	589	609		
Analytes/Units																					
Major Ions																					
Bicarbonate as HCO3 mg/L	5.0	152	154			142	142	150	150			150	145	134	162			146	146		
Calcium mg/L	1.0	8	8			10	8	10	9			8	9	7	7			8	8		
Carbonate as CO3 mg/L	5.0	ND	ND			ND	ND	7	ND			ND	ND	ND	ND			ND	5		
Fluoride mg/L	0.1	0.2	0.2			0.2	0.2	0.2	0.2			0.1	0.2	0.2	0.2			0.2	0.1		
Magnesium mg/L	1.0	1	1			ND	ND	1	1			ND	ND	ND	ND			ND	ND		
Nitrogen, Ammonia as N mg/L	0.05	ND	ND			ND	ND	0.05	0.05			0.18	ND	ND	ND			ND	ND		
Nitrogen, Nitrate+Nitrite as N mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	0.1	ND	ND			ND	ND		
Potassium mg/L	1.0	3	3			3	3	3	3			3	3	3	3			3	3		
Silica mg/L	0.1	8.9	10.2			9.3	8.9	9.2	10.3			9.1	9.2	9.4	9.8			9.1	8.9		
Sodium mg/L	1.0	113	116			112	112	112	116			110	119	109	111			113	108		
Sulfate mg/L	2.0	148	146			132	133	148	145	143		132	147	142	140	139		125	124		
Physical Properties																					
pH su	0.1	8.6	8.65			8.6	8.6	8.83	8.89			8.3	8.7	8.74	8.75			8.6	8.7		
Solids, Total Dissolved TDS @ 180 C mg/L	10	377	355			370	370	366	375			360	400	356	330			400	400		
Metals																					
Aluminum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND		
Arsenic mg/L	0.001	0.001	ND			ND	0.001	ND	ND			ND	0.006	0.002	0.002			0.001	ND		
Barium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND		
Boron mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND		
Cadmium mg/L	0.005	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND		
Chromium mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND		
Copper mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND		
Iron mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND		
Lead mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND		
Manganese mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND		
Mercury mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND		
Molybdenum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND		
Nickel mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND		
Selenium mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND		
Uranium mg/L	0.0003	ND	ND			ND	ND	ND	ND			ND	ND	0.001	0.0008			0.0008	0.0009		
Vanadium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND		
Zinc mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND		
Radionuclides - Total																					
Gross Alpha pCi/L	2	-0.04	0.9			ND	ND	-0.8	0.6			ND	ND	5.2	1.5			ND	2		
Gross Beta pCi/L	3	0.8	3.3			ND	ND	-0.5	4			3.1	3.8	1.9	2.5			4	ND		
Radium 226 pCi/L	0.2	0.03	0.03			0.2	0.2	0.21	0.09			0.3	0.2	0.15	0.07			0.4	0.4		
Radium 228 pCi/L	1	0.7	0.8			ND	ND	1.1	0.6			ND	ND	1.5	0.9			ND	ND		



Table  
Water Quality Data and Upper Control Limits  
Monitor Ring Wells (MRN Wells)

Production Area #1 Ring Monitoring Wells (MRN-1 thru MRN-34.2)	Well ID Sampling Dates	MRN-16	MRN-16	MRN-16	MRN-16	MRN-16	MRN-16	MRN-17	MRN-17	MRN-17	MRN-17	MRN-17	MRN-17	MRN-18.1	MRN-18.1	MRN-18.1	MRN-18.1	MRN-18.1	MRN-18.1
Upper Control Limit Parameters	Laboratory RL	2/28/2012	4/4/2012	5/23/2012	6/7/2012	10/1/2012	10/17/2012	3/1/2012	4/5/2012	5/23/2012	6/6/2012	10/1/2012	10/17/2012	2/29/2012	4/5/2012	5/23/2012	6/6/2012	10/1/2012	10/17/2012
Alkalinity, Total as CaCO <sub>3</sub> mg/L	5.0	122	126	128	128	127	127	144	128	129	131	129	128	124	127	137	128	128	128
Chloride mg/L	1.0	6	6	6	6	6	5	6	6	6	6	6	5	7	6	6	6	6	5
Conductivity @ 25 C umhos/cm	5.0	547	556	583	584	578	598	542	538	564	562	559	577	542	541	569	566	561	577
<b>Analytes/Units</b>																			
<b>Major Ions</b>																			
Bicarbonate as HCO <sub>3</sub> mg/L	5.0	145	154			148	145	173	156			149	145	150	155			146	145
Calcium mg/L	1.0	8	10			10	9	8	9			9	8	9	10			9	9
Carbonate as CO <sub>3</sub> mg/L	5.0	ND	ND			ND	ND	ND	ND			ND	5	ND	ND			ND	6
Fluoride mg/L	0.1	0.2	0.2			0.2	0.2	0.2	0.2			0.2	0.2	0.2	0.2			0.2	0.2
Magnesium mg/L	1.0	ND	1			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nitrogen, Ammonia as N mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nitrogen, Nitrate+Nitrite as N mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Potassium mg/L	1.0	2	3			3	3	2	2			3	3	2	2			3	3
Silica mg/L	0.1	9	8.8			8.8	8.9	10.1	9			8.6	8.5	9.7	8.8			8	8.0
Sodium mg/L	1.0	109	119			111	106	109	114			109	103	102	112			109	104
Sulfate mg/L	2.0	140	138	138		123	126	125	129	126		116	117	136	130	127		117	116
<b>Physical Properties</b>																			
pH su	0.1	8.52	8.57			8.5	8.6	8.48	8.53			8.5	8.6	8.49	8.51			8.6	8.7
Solids, Total Dissolved TDS @ 180 C mg/L	10	354	354			360	370	299	357			360	340	325	368			370	370
<b>Metals</b>																			
Aluminum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Arsenic mg/L	0.001	0.002	0.002			0.002	0.002	0.003	0.002			0.003	0.002	0.003	0.003			0.002	0.002
Barium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Boron mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Cadmium mg/L	0.005	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Chromium mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Copper mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Iron mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Lead mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Manganese mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			0.02	0.02
Mercury mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Molybdenum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nickel mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Selenium mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Uranium mg/L	0.0003	0.0177	0.0146			0.012	0.0126	0.0265	0.0264			0.0241	0.0226	0.032	0.0339			0.0288	0.0263
Vanadium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Zinc mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
<b>Radionuclides - Total</b>																			
Gross Alpha pCi/L	2	90.2	62.4			35.4	56.9	41.9	37.2			26.4	34.2	48.3	38.1			27.5	31.5
Gross Beta pCi/L	3	53.8	38			80.1	67.9	9.6	5			8.3	9.9	10.7	4.3			10.3	10
Radium 226 pCi/L	0.2	10	10			11.7	12.1	0.7	0.68			0.8	0.8	0.08	0.13			ND	0.2
Radium 228 pCi/L	1	2.3	0.6			1.2	ND	1.6	0.1			ND	ND	0.2	0.7			ND	ND

Values in red boxes are outliers



**Table**  
**Water Quality Data and Upper Control Limits**  
**Monitor Ring Wells (MRN Wells)**

Production Area #1 Ring Monitoring Wells (MRN-1 thru MRN-34.2)	Well ID Sampling Dates	MRN-20.1	MRN-20.1	MRN-20.1	MRN-20.1	MRN-20.1	MRN-20.1	MRN-21	MRN-21	MRN-21	MRN-21	MRN-21	MRN-21	MRN-22	MRN-22	MRN-22	MRN-22	MRN-22	MRN-22
Upper Control Limit Parameters	Laboratory RL	2/29/2012	4/5/2012	5/23/2012	6/20/2012	7/6/2012	10/16/2012	2/28/2012	5/17/2012	6/4/2012	6/19/2012	10/12/2012	10/30/2012	2/28/2012	4/5/2012	5/29/2012	6/15/2012	10/15/2012	10/29/2012
Alkalinity, Total as CaCO3 mg/L	5.0	126	130	127	138	133	128	129	127	129	132	126	126	120	129	123	122	122	120
Chloride mg/L	1.0	6	6	6	6	6	6	6	6	6	6	6	6	7	6	6	7	6	6
Conductivity @ 25 C umhos/cm	5.0	549	542	560	556	559	564	530	545	544	552	565	546	530	529	556	551	560	552
<b>Analytes/Units</b>																			
<b>Major Ions</b>																			
Bicarbonate as HCO3 mg/L	5.0	117	145	139		151	142	157	153			146	146	140	155			141	140
Calcium mg/L	1.0	7	7	6		7	7	7	9			8	8	6	7			7	7
Carbonate as CO3 mg/L	5.0	18	7	7		8	7	ND	ND			ND	ND	ND	ND			ND	ND
Fluoride mg/L	0.1	0.2	0.2	0.2		0.2	0.2	0.2	0.2			0.2	0.2	0.2	0.2			0.2	0.2
Magnesium mg/L	1.0	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nitrogen, Ammonia as N mg/L	0.05	ND	ND	ND		ND	0.12	ND	ND			0.1	ND	ND	ND			0.11	ND
Nitrogen, Nitrate+Nitrite as N mg/L	0.1	ND	ND	ND		ND	0.2	ND	ND			0.2	ND	ND	ND			0.2	ND
Potassium mg/L	1.0	5	4	4		5	4	2	2			2	2	2	3			3	3
Silica mg/L	0.1	9.8	8.3	9.7		8.3	8.1	8.5	9.1			8.1	8.6	8.2	8.3			8.6	8.3
Sodium mg/L	1.0	104	116	117		119	107	103	114			101	111	104	115			115	113
Sulfate mg/L	2.0	128	125	123		110	117	128	122			127	114	131	128			125	115
<b>Physical Properties</b>																			
pH su	0.1	9.5	9.07	9.05		8.9	8.8	8.56	8.52			8.5	8.6	8.66	8.73			8.6	8.5
Solids, Total Dissolved TDS @ 180 C mg/L	10	311	340	345		350	320	331	336			320	330	319	342			340	360
<b>Metals</b>																			
Aluminum mg/L	0.1	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Arsenic mg/L	0.001	0.005	0.003	0.005		ND	0.003	0.004	0.002			0.002	0.002	0.005	0.004			0.018	0.007
Barium mg/L	0.1	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Boron mg/L	0.1	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Cadmium mg/L	0.005	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Chromium mg/L	0.05	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Copper mg/L	0.01	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Iron mg/L	0.05	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Lead mg/L	0.001	ND	0.001	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Manganese mg/L	0.01	ND	ND	ND		ND	ND	0.01	ND			ND	ND	0.01	0.01			0.02	0.02
Mercury mg/L	0.001	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Molybdenum mg/L	0.1	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nickel mg/L	0.05	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Selenium mg/L	0.001	ND	ND	ND		ND	ND	ND	ND			0.002	ND	ND	ND			ND	0.003
Uranium mg/L	0.0003	0.0264	0.032	0.0281		0.0276	0.0344	0.0333	0.0288			0.028	0.0293	0.0253	0.025			0.0240	0.0247
Vanadium mg/L	0.1	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Zinc mg/L	0.01	ND	ND	ND		ND	ND	ND	0.01			0.01	ND	ND	ND			ND	ND
<b>Radionuclides - Total</b>																			
Gross Alpha pCi/L	2	46.9	45.1	35.4		29.5	28.6	59.4	43.7			42.3	33.6	36.8	34.7			20.9	32
Gross Beta pCi/L	3	12	8.8	12.7		8.4	11.8	11	5			8.3	7	5.3	3.3			5.9	6.8
Radium 226 pCi/L	0.2	0.21	0.04	0.24		0.4	0.4	0.12	0.2			ND	0.4	0.09	0.31			ND	0.3
Radium 228 pCi/L	1	0.1	1	0.4		1.8	ND	38.8	0.07			ND	1.3	0.7	0.4			ND	1.4



**Table**  
**Water Quality Data and Upper Control Limits**  
**Monitor Ring Wells (MRN Wells)**

Production Area #1 Ring Monitoring Wells (MRN-1 thru MRN-34.2)	Well ID Sampling Dates	MRN-23	MRN-23	MRN-23	MRN-23	MRN-23	MRN-23	MRN-24	MRN-24	MRN-24	MRN-24	MRN-24	MRN-24	MRN-25	MRN-25	MRN-25	MRN-25	MRN-25	MRN-25
<b>Upper Control Limit Parameters</b>	Laboratory RL	3/9/2012	4/5/2012	5/29/2012	6/15/2012	10/12/2012	10/26/2012	3/1/2012	4/5/2012	5/29/2012	6/15/2012	10/11/2012	10/25/2012	4/17/2012	5/22/2012	6/20/2012	7/5/2012	10/12/2012	10/26/2012
Alkalinity, Total as CaCO <sub>3</sub> mg/L	5.0	125	128	126	126	124	126	119	125	125	126	123	134	121	127	133	126	125	127
Chloride mg/L	1.0	6	6	6	6	6	6	6	6	6	7	5	6	6	7	6	6	6	6
Conductivity @ 25 C umhos/cm	5.0	553	530	561	553	567	565	529	529	556	553	563	560	549	572	562	568	577	574
<b>Analytes/Units</b>																			
<b>Major Ions</b>																			
Bicarbonate as HCO <sub>3</sub> mg/L	5.0	152	156			144	146	137	148			142	155	127	138	145		145	143
Calcium mg/L	1.0	8	8			8	8	6	7			6	7	4	4	4		5	5
Carbonate as CO <sub>3</sub> mg/L	5.0	ND	ND			ND	ND	ND	ND			ND	ND	10	9	8		ND	6
Fluoride mg/L	0.1	0.2	0.2			0.2	0.2	0.2	0.2			0.2	0.2	0.2	0.2	0.2		0.2	0.2
Magnesium mg/L	1.0	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	ND
Nitrogen, Ammonia as N mg/L	0.05	ND	ND			0.1	ND	ND	ND			0.1	ND	ND	ND	ND		0.1	ND
Nitrogen, Nitrate+Nitrite as N mg/L	0.1	ND	ND			0.2	ND	ND	ND			ND	ND	ND	ND	ND		0.3	ND
Potassium mg/L	1.0	2	2			2	2	2	2			3	3	3	3	3		3	3
Silica mg/L	0.1	7.7	8.5			8.3	8.6	9.6	8			8.3	8.7	7.3	9.2	8.5		8.6	8.9
Sodium mg/L	1.0	108	113			105	114	103	113			103	114	114	125	123		111	119
Sulfate mg/L	2.0	128	124			129	113	125	123			109	113	123	131	114		129	114
<b>Physical Properties</b>																			
pH su	0.1	9.11	8.58			8.5	8.6	8.67	8.72			8.6	8.6	9.38	9.14	8.9		8.6	8.7
Solids, Total Dissolved TDS @ 180 C mg/L	10	352	360			330	350	292	345			330	320	350	365	360		330	350
<b>Metals</b>																			
Aluminum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	ND
Arsenic mg/L	0.001	0.003	0.003			0.002	0.002	0.004	0.003			0.004	0.003	0.007	0.005	0.003		0.003	0.003
Barium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	ND
Boron mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	ND
Cadmium mg/L	0.005	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	ND
Chromium mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	ND
Copper mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	ND
Iron mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	ND
Lead mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	ND
Manganese mg/L	0.01	ND	ND			0.01	0.01	ND	ND			ND	ND	ND	ND	ND		ND	ND
Mercury mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	ND
Molybdenum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	ND
Nickel mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	ND
Selenium mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	ND
Uranium mg/L	0.0003	0.014	0.0239			0.0216	0.0226	0.0179	0.0204			0.0193	0.0195	0.0108	0.0146	0.0145		0.0157	0.0187
Vanadium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	ND
Zinc mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	ND
<b>Radionuclides - Total</b>																			
Gross Alpha pCi/L	2	37.4	37.6			36.5	28.1	37	35.5			23.7	29.3	19.6	21.5	19.1		17.2	24.8
Gross Beta pCi/L	3	7.4	6.7			4.6	8.7	2.9	4.6			9.6	6.4	5.1	3.6	5.6		6.9	5.2
Radium 226 pCi/L	0.2	0.75	0.81			0.2	0.8	0.2	0.23			0.3	0.4	0.05	0.09	0.4		1	0.3
Radium 228 pCi/L	1	0.002	0.9			ND	ND	0.9	-0.4			ND	ND	-1	-0.1	ND		ND	2.2



**Table**  
**Water Quality Data and Upper Control Limits**  
**Monitor Ring Wells (MRN Wells)**

Production Area #1 Ring Monitoring Wells (MRN-1 thru MRN-34.2)	Well ID Sampling Dates	MRN-26	MRN-26	MRN-26	MRN-26	MRN-26	MRN-26	MRN-27	MRN-27	MRN-27	MRN-27	MRN-27	MRN-27	MRN-28	MRN-28	MRN-28	MRN-28	MRN-28	MRN-28
Upper Control Limit Parameters	Laboratory RL	4/17/2012	5/16/2012	6/19/2012	7/5/2012	10/12/2012	10/26/2012	4/12/2012	5/16/2012	5/31/2012	6/15/2012	10/18/2012	11/1/2012	4/12/2012	5/16/2012	5/31/2012	6/15/2012	10/16/2012	10/30/2012
Alkalinity, Total as CaCO <sub>3</sub> mg/L	5.0	133	133	137	129	128	130	123	125	125	124	126	122	124	121	124	129	119	124
Chloride mg/L	1.0	6	6	6	6	6	6	6	6	6	7	6	6	6	6	6	7	7	6
Conductivity @ 25 C umhos/cm	5.0	530	547	537	542	559	554	542	518	547	547	550	536	543	547	546	548	542	540
<b>Analytes/Units</b>																			
<b>Major Ions</b>																			
Bicarbonate as HCO <sub>3</sub> mg/L	5.0	152	152	155		148	148	143	147			141	141	144	142			134	142
Calcium mg/L	1.0	7	6	7		7	7	6	6			5	6	5	5			5	5
Carbonate as CO <sub>3</sub> mg/L	5.0	ND	5	6		ND	5	ND	ND			6	ND	ND	ND			5	5
Fluoride mg/L	0.1	0.2	0.2	0.2		0.2	0.2	0.2	0.2			0.2	0.2	0.2	0.2			0.2	0.2
Magnesium mg/L	1.0	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nitrogen, Ammonia as N mg/L	0.05	0.05	ND	ND		0.2	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nitrogen, Nitrate+Nitrite as N mg/L	0.1	ND	ND	ND		0.3	ND	ND	ND			ND	ND	ND	ND			0.2	ND
Potassium mg/L	1.0	3	2	3		2	2	2	2			2	2	2	2			3	3
Silica mg/L	0.1	8.6	10	8.8		8.6	8.8	8.8	10.1			8.1	8.4	8.7	10.1			8.4	8.6
Sodium mg/L	1.0	112	111	117		105	114	111	110			105	117	112	108			109	113
Sulfate mg/L	2.0	111	112	101		118	115	120	123			110	110	123	123			114	111
<b>Physical Properties</b>																			
pH su	0.1	8.97	8.88	8.7		8.5	8.7	8.83	8.76			8.7	8.7	8.85	8.78			8.7	8.7
Solids, Total Dissolved TDS @ 180 C mg/L	10	344	334	320		330	340	327	331			340	340	331	328			320	340
<b>Metals</b>																			
Aluminum mg/L	0.1	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Arsenic mg/L	0.001	0.003	0.003	0.002		0.002	0.002	0.005	0.005			0.004	0.003	0.004	0.004			0.003	0.003
Barium mg/L	0.1	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Boron mg/L	0.1	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Cadmium mg/L	0.005	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Chromium mg/L	0.05	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Copper mg/L	0.01	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Iron mg/L	0.05	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Lead mg/L	0.001	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Manganese mg/L	0.01	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Mercury mg/L	0.001	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Molybdenum mg/L	0.1	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nickel mg/L	0.05	ND	ND	ND		ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Selenium mg/L	0.001	ND	ND	ND		0.001	ND	ND	ND			ND	ND	ND	ND			ND	ND
Uranium mg/L	0.0003	0.0119	0.0117	0.0109		0.0131	0.0116	0.0122	0.0129			0.0116	0.0109	0.01	0.0093			0.0091	0.0100
Vanadium mg/L	0.1	ND	ND	ND		ND	ND	ND	0.2			ND	ND	ND	0.2			ND	ND
Zinc mg/L	0.01	ND	0.01	ND		ND	ND	ND	0.01			ND	ND	ND	0.02			ND	ND
<b>Radionuclides - Total</b>																			
Gross Alpha pCi/L	2	20.2	27.9	18.3		21.2	18.5	21.2	23.5			18.1	20.9	16.7	16.5			13.8	18
Gross Beta pCi/L	3	6.1	4.5	6.5		8.3	6.2	4.2	2.8			5.8	5.4	4.5	2.8			5.1	5.3
Radium 226 pCi/L	0.2	0.27	0.1	0.5		0.4	0.3	0.06	0.03			ND	ND	0.21	0.07			0.2	0.3
Radium 228 pCi/L	1	0.2	0.5	ND		ND	ND	0.6	0.4			ND	ND	1.3	1			ND	1.9



**Table**  
**Water Quality Data and Upper Control Limits**  
**Monitor Ring Wells (MRN Wells)**

Production Area #1 Ring Monitoring Wells (MRN-1 thru MRN-34.2)	Well ID Sampling Dates	MRN-29	MRN-29	MRN-29	MRN-29	MRN-29	MRN-29	MRN-30	MRN-30	MRN-30	MRN-30	MRN-30	MRN-30	MRN-31	MRN-31	MRN-31	MRN-31	MRN-31	MRN-31
Upper Control Limit Parameters	Laboratory RL	11/21/2011	2/17/2012	5/31/2012	6/15/2012	10/16/2012	10/30/2012	4/13/2012	5/14/2012	5/30/2012	6/14/2012	10/15/2012	10/30/2012	4/11/2012	5/4/2012	5/30/2012	6/14/2012	10/15/2012	10/30/2012
Alkalinity, Total as CaCO3 mg/L	5.0	120	124	125	125	125	133	125	125	126	132	122	123	127	129	127	128	127	129
Chloride mg/L	1.0	6	7	6	7	6	6	6	6	6	7	6	6	6	6	6	7	6	6
Conductivity @ 25 C umhos/cm	5.0	547	524	543	542	545	537	540	542	542	542	543	533	528	513	536	534	544	523
<b>Analytes/Units</b>																			
<b>Major Ions</b>																			
Bicarbonate as HCO3 mg/L	5.0	132	146			141	154	147	145			141	140	144	148			144	141
Calcium mg/L	1.0	6	7			6	6	6	5			5	5	6	6			5	6
Carbonate as CO3 mg/L	5.0	7	ND			5	ND	ND	ND			ND	5	5	ND			6	8
Fluoride mg/L	0.1	0.2	0.2			0.2	0.2	0.2	0.2			0.2	0.2	0.2	0.2			0.2	0.2
Magnesium mg/L	1.0	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nitrogen, Ammonia as N mg/L	0.05	ND	ND			0.11	ND	ND	ND			0.2	ND	ND	ND			0.16	ND
Nitrogen, Nitrate+Nitrite as N mg/L	0.1	ND	ND			0.3	ND	ND	ND			0.2	ND	ND	ND			0.2	ND
Potassium mg/L	1.0	2	2			3	2	2	2			2	3	2	2			2	2
Silica mg/L	0.1	9	10.2			8.4	8.7	8.9	9.8			8.9	8.7	9.6	9.9			10.1	9.6
Sodium mg/L	1.0	116	110			107	110	109	102			113	112	108	110			113	110
Sulfate mg/L	2.0	122	126			120	110	118	121			118	118	113	116			111	113
<b>Physical Properties</b>																			
pH su	0.1	8.57	8.61			8.7	8.6	8.76	8.83			8.6	8.7	8.93	8.87			8.7	8.9
Solids, Total Dissolved TDS @ 180 C mg/L	10	315	339			310	360	343	343			340	350	309	338			280	330
<b>Metals</b>																			
Aluminum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Arsenic mg/L	0.001	0.004	0.003			0.001	0.002	0.002	0.002			0.011	0.002	0.001	0.001			0.006	0.002
Barium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Boron mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Cadmium mg/L	0.005	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Chromium mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Copper mg/L	0.01	ND	ND			ND	ND	ND	0.01			ND	ND	ND	ND			ND	ND
Iron mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Lead mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Manganese mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Mercury mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Molybdenum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nickel mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Selenium mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Uranium mg/L	0.0003	0.024	0.0117			0.0150	0.0122	0.0122	0.0133			0.0109	0.0105	0.0058	0.0061			0.0057	0.0058
Vanadium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Zinc mg/L	0.01	ND	0.04			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
<b>Radionuclides - Total</b>																			
Gross Alpha pCi/L	2	47.7	26.9			23.2	21.2	55.3	40.5			31.6	33.8	8.1	12.1			8.2	9.8
Gross Beta pCi/L	3	11.8	14.5			6.4	5.7	55.8	45.7			31.5	18.4	2.8	1.3			ND	4
Radium 226 pCi/L	0.2	0.77	1.3			1.0	1.4	9.8	7.6			8.3	10.8	0.3	0.23			0.4	0.8
Radium 228 pCi/L	1	0.8	0.57			ND	ND	2.3	0.5			ND	ND	0.7	0.6			ND	ND



**Table**  
**Water Quality Data and Upper Control Limits**  
**Monitor Ring Wells (MRN Wells)**

Production Area #1 Ring Monitoring Wells (MRN-1 thru MRN-34.2)	Well ID Sampling Dates	MRN-32	MRN-32	MRN-32	MRN-32	MRN-32	MRN-32	MRN-33	MRN-33	MRN-33	MRN-33	MRN-33	MRN-33	MRN-34.2	MRN-34.2	MRN-34.2	MRN-34.2	MRN-34.2	MRN-34.2
Upper Control Limit Parameters	Laboratory RL	4/11/2012	5/4/2012	5/30/2012	6/27/2012	10/15/2012	10/30/2012	4/10/2012	5/2/2012	5/30/2012	6/13/2012	10/15/2012	10/29/2012	4/10/2012	5/2/2012	5/30/2012	6/13/2012	10/15/2012	10/29/2012
Alkalinity, Total as CaCO3 mg/L	5.0	124	123	123	126	119	125	125	125	124	125	124	122	125	124	124	124	122	121
Chloride mg/L	1.0	6	6	6	6	6	6	6	7	7	7	6	6	6	7	7	7	7	6
Conductivity @ 25 C umhos/cm	5.0	522	506	534	532	533	521	541	536	590	540	546	539	560	559	560	555	563	550
<b>Analytes/Units</b>																			
<b>Major Ions</b>																			
Bicarbonate as HCO3 mg/L	5.0	135	132			136	140	134	142			144	141	143	148			141	142
Calcium mg/L	1.0	4	4			4	5	5	5			5	5	7	7			6	6
Carbonate as CO3 mg/L	5.0	8	9			ND	6	9	5			ND	ND	ND	ND			ND	ND
Fluoride mg/L	0.1	0.2	0.2			0.2	0.2	0.2	0.2			0.2	0.2	0.2	0.2			0.2	0.2
Magnesium mg/L	1.0	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nitrogen, Ammonia as N mg/L	0.05	ND	ND			0.18	ND	ND	0.05			0.14	ND	ND	0.05			0.17	ND
Nitrogen, Nitrate+Nitrite as N mg/L	0.1	ND	3.4			0.2	ND	ND	ND			0.1	ND	ND	ND			0.1	ND
Potassium mg/L	1.0	2	2			2	2	2	2			2	2	2	2			2	2
Silica mg/L	0.1	9.2	9.5			10.2	9.8	8.8	8.9			10.1	9.6	9	9.6			10.3	9.4
Sodium mg/L	1.0	109	106			111	111	112	105			116	111	115	112			117	114
Sulfate mg/L	2.0	113	114			113	113	117	124			117	116	129	133			126	114
<b>Physical Properties</b>																			
pH su	0.1	9.19	9.15			8.7	8.8	9.22	8.99			8.6	8.6	8.8	8.73			8.6	8.5
Solids, Total Dissolved TDS @ 180 C mg/L	10	323	326			290	320	326	350			320	360	342	359			330	370
<b>Metals</b>																			
Aluminum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Arsenic mg/L	0.001	0.002	0.002			0.008	0.002	0.002	0.002			0.012	0.004	0.003	0.002			0.022	0.004
Barium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Boron mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Cadmium mg/L	0.005	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Chromium mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Copper mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Iron mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Lead mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Manganese mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Mercury mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Molybdenum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nickel mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Selenium mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	0.002	ND	ND			ND	0.001
Uranium mg/L	0.0003	0.0006	0.0005			0.0007	0.0008	0.0004	0.0004			0.0005	0.0005	ND	ND			ND	0.0003
Vanadium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Zinc mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
<b>Radionuclides - Total</b>																			
Gross Alpha pCi/L	2	-1	0.8			ND	ND	-0.9	-2			ND	ND	-0.5	-0.4			ND	ND
Gross Beta pCi/L	3	2	2.8			ND	ND	0.9	1.3			ND	ND	0.9	-1			ND	ND
Radium 226 pCi/L	0.2	-0.06	-0.002			ND	0.3	0.004	-0.09			ND	ND	0.11	-0.03			0.3	0.3
Radium 228 pCi/L	1	0.7	-0.09			ND	ND	2.2	2.3			1.1	ND	2.7	1.1			ND	ND



**Table 1**  
**Water Quality Data and Upper Control Limits**  
**Monitor Ring Wells (MRN Wells)**

Production Area #1 Ring Monitoring Wells (MRN-1 thru MRN-34.2)	Well ID Sampling Dates	n Sample Events	Minimum Value	Maximum Value	MEAN	Standard Deviation	k Factor $\alpha=0.05/P=$ 0.99, n=78	Tolerance Minimum	Tolerance Maximum	Mean without Outliers	Standard Deviation without Outliers	Standard Deviation x 5	UCL
<b>Upper Control Limit Parameters</b>		Laboratory RL LOD Guideline 4											
Alkalinity, Total as CaCO <sub>3</sub> mg/L	5.0	198	106	144	124	5.83	2.81772	108	139	124	5.53	28	152
Chloride mg/L	1.0	198	5	8	6	0.53	NA					NA	21
Conductivity @ 25 C umhos/cm	5.0	198	491	750	569	34.91	2.81772	476	659	568	32.51	163	731
<b>Analytes/Units</b>													
<b>Major Ions</b>													
Bicarbonate as HCO <sub>3</sub> mg/L	5.0												
Calcium mg/L	1.0												
Carbonate as CO <sub>3</sub> mg/L	5.0												
Fluoride mg/L	0.1												
Magnesium mg/L	1.0												
Nitrogen, Ammonia as N mg/L	0.05												
Nitrogen, Nitrate+Nitrite as N mg/L	0.1												
Potassium mg/L	1.0												
Silica mg/L	0.1												
Sodium mg/L	1.0												
Sulfate mg/L	2.0												
<b>Physical Properties</b>													
pH su	0.1												
Solids, Total Dissolved TDS @ 180 C mg/L	10												
<b>Metals</b>													
Aluminum mg/L	0.1												
Arsenic mg/L	0.001												
Barium mg/L	0.1												
Boron mg/L	0.1												
Cadmium mg/L	0.005												
Chromium mg/L	0.05												
Copper mg/L	0.01												
Iron mg/L	0.05												
Lead mg/L	0.001												
Manganese mg/L	0.01												
Mercury mg/L	0.001												
Molybdenum mg/L	0.1												
Nickel mg/L	0.05												
Selenium mg/L	0.001												
Uranium mg/L	0.0003												
Vanadium mg/L	0.1												
Zinc mg/L	0.01												
<b>Radionuclides - Total</b>													
Gross Alpha pCi/L	2												
Gross Beta pCi/L	3												
Radium 226 pCi/L	0.2												
Radium 228 pCi/L	1												

**Table 12-3**  
**Water Quality Data and Upper Control Limits**  
**Underlying Monitor Wells (MUN Wells)**  
**Summary Sheet**

Upper Control Limit Parameters	n Sample Events	Minimum Value	Maximum Value	MEAN	Standard Deviation	k Factor $\alpha=0.05/P=0.99$ , n=78	Tolerance Minimum	Tolerance Maximum	Mean without Outliers	Deviation without Outliers	Standard Deviation x 5	UCL
	LQD Guideline 4											
Alkalinity, Total as CaCO3 mg/L	53	185	236	205	13.87	3.1068	162	248	NA	NA	69.37	274
Chloride mg/L	53	3	6	5	0.55	NA					NA	20
Conductivity @ 25 C umhos/cm	53	369	450	400	17.95	3.1068	344	455	NA	NA	89.76	490



**Table**  
**Water Quality Data and Upper Control Limits**  
**Underlying Monitor Wells (MUN Wells)**

Production Area #1 Overlaying Monitoring Wells (MUN-1.1 thru MON-09)	Well ID Sampling Dates	MUN-01.1	MUN-01.1	MUN-01.1	MUN-01.1	MUN-01.1	MUN-01.1	MUN-02	MUN-02	MUN-02	MUN-02	MUN-02	MUN-02	MUN-03	MUN-03	MUN-03	MUN-03	MUN-03	MUN-03
Upper Control Limit Parameters	Laboratory RL	4/5/2012	5/17/2012	6/7/2012	7/11/2012	10/8/2012	11/1/2012	4/9/2012	5/1/2012	5/24/2012	7/12/2012	10/8/2012	11/1/2012	4/20/2012	5/17/2012	6/12/2012	7/10/2012	10/17/2012	11/1/2012
Alkalinity, Total as CaCO3 mg/L	5.0	211	212	221	208	204	203	212	212	214	213	208	210	208	210	210	208	210	205
Chloride mg/L	1.0	5	5	5	5	4	4	5	5	5	5	4	4	5	5	5	5	5	5
Conductivity @ 25 C umhos/cm	5.0	388	406	406	406	391	397	417	391	405	415	395	397	396	404	408	405	407	391
<b>Analytes/Units</b>																			
<b>Major Ions</b>																			
Bicarbonate as HCO3 mg/L	5.0	235	239			239	231	238	246			238	235	234	232			224	225
Calcium mg/L	1.0	4	3			3	4	3	4			4	4	4	4			4	4
Carbonate as CO3 mg/L	5.0	11	10			ND	8	10	7			8	10	10	12			16	12
Fluoride mg/L	0.1	0.5	0.6			0.4	0.4	0.6	0.6			0.4	0.4	0.5	0.5			0.4	0.4
Magnesium mg/L	1.0	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nitrogen, Ammonia as N mg/L	0.05	0.11	0.09			0.19	0.12	0.08	0.09			0.17	0.1	0.07	0.06			ND	0.08
Nitrogen, Nitrate+Nitrite as N mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Potassium mg/L	1.0	3	2			2	2	2	2			2	2	3	3			2	2
Silica mg/L	0.1	8.7	10.3			8.9	9.2	8.6	8.2			8.8	9.2	9.8	10.3			9.2	9.6
Sodium mg/L	1.0	99	91			87	96	97	87			87	98	89	99			84	95
Sulfate mg/L	2.0	2	1			ND	ND	4	ND			ND	ND	ND	ND			ND	ND
<b>Physical Properties</b>																			
pH su	0.1	9.09	9			8.5	8.7	8.85	8.95			8.7	8.8	9.04	9.04			9.0	8.9
Solids, Total Dissolved TDS @ 180 C mg/L	10	241	250			260	240	267	253			240	250	241	241			260	260
<b>Metals</b>																			
Aluminum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Arsenic mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Barium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Boron mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Cadmium mg/L	0.005	ND	0.005			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Chromium mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Copper mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Iron mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Lead mg/L	0.001	ND	0.001			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Manganese mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Mercury mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Molybdenum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nickel mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Selenium mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			0.002	ND
Uranium mg/L	0.0003	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Vanadium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Zinc mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
<b>Radionuclides - Total</b>																			
Gross Alpha pCi/L	2	-0.2	-2			ND	ND	-0.9	3			ND	ND	-2	-1			ND	ND
Gross Beta pCi/L	3	2.7	1.5			ND	ND	2.6	0.6			ND	ND	-1	0.8			ND	ND
Radium 226 pCi/L	0.2	0.08	-0.02			ND	ND	0.17	0.08			ND	ND	0.02	0.08			ND	ND
Radium 228 pCi/L	1	0.6	-0.7			ND	ND	-0.01	4.7			ND	ND	-0.3	0.2			ND	ND



**Table 1**  
**Water Quality Data and Upper Control Limits**  
**Underlying Monitor Wells (MUN Wells)**

Production Area #1 Overlying Monitoring Wells (MUN-1.1 thru MON-09)	Well ID Sampling Dates	MUN-04	MUN-04	MUN-04	MUN-04	MUN-04	MUN-04	MUN-05.1	MUN-05.1	MUN-05.1	MUN-05.1	MUN-05.1	MUN-06	MUN-06	MUN-06	MUN-06	MUN-06	MUN-06
Upper Control Limit Parameters	Laboratory RL	4/10/2012	5/1/2012	5/15/2012	6/5/2012	10/5/2012	10/19/2012	4/12/2012	5/8/2012	6/6/2012	10/8/2012	10/22/2012	4/13/2012	5/10/2012	5/30/2012	6/19/2012	10/9/2012	10/23/2012
Alkalinity, Total as CaCO3 mg/L	5.0	235	236	234	235	230	231	205	204	207	202	206	206	211	207	206	204	207
Chloride mg/L	1.0	4	4	4	4	3	4	5	5	5	4	4	5	5	5	5	4	4
Conductivity @ 25 C umhos/cm	5.0	441	420	440	436	450	434	394	396	398	378	387	406	400	395	395	383	397
<b>Analytes/Units</b>																		
<b>Major Ions</b>																		
Bicarbonate as HCO3 mg/L	5.0	261	272	269		255	259	233	239		234	229	234	239			234	225
Calcium mg/L	1.0	4	4	5		5	3	5	4		3	3	3	4			3	3
Carbonate as CO3 mg/L	5.0	12	8	8		12	11	8	ND		6	11	9	9			7	13
Fluoride mg/L	0.1	0.6	0.6	0.6		0.4	0.4	0.5	0.5		0.4	0.4	0.5	0.5			0.4	0.4
Magnesium mg/L	1.0	ND	ND	ND		ND	ND	ND	ND		ND	ND	ND	ND			ND	ND
Nitrogen, Ammonia as N mg/L	0.05	0.08	0.08	0.07		ND	0.09	0.07	0.08		0.18	ND	0.08	0.05			0.19	ND
Nitrogen, Nitrate+Nitrite as N mg/L	0.1	ND	ND	ND		ND	ND	ND	ND		ND	ND	ND	ND			ND	ND
Potassium mg/L	1.0	3	3	2		2	2	2	2		3	3	2	2			2	2
Silica mg/L	0.1	9.4	9.1	10.9		9.2	8.7	9.6	8.4		8.7	8.8	9.3	8.3			8.9	9.0
Sodium mg/L	1.0	102	95	101		96	106	90	85		84	88	89	85			86	90
Sulfate mg/L	2.0	1	1	ND		ND	ND	1	ND		ND	ND	2	ND			ND	ND
<b>Physical Properties</b>																		
pH su	0.1	8.96	8.88	8.7		8.8	8.8	8.87	8.89		8.6	8.8	8.96	8.84			8.6	8.8
Solids, Total Dissolved TDS @ 180 C mg/L	10	270	281	265		250	270	241	244		250	250	250	262			230	240
<b>Metals</b>																		
Aluminum mg/L	0.1	ND	ND	ND		ND	ND	ND	ND		ND	ND	ND	ND			ND	ND
Arsenic mg/L	0.001	ND	ND	ND		ND	ND	ND	ND		ND	0.004	ND	ND			ND	ND
Barium mg/L	0.1	ND	ND	ND		ND	ND	ND	ND		ND	ND	ND	ND			ND	ND
Boron mg/L	0.1	ND	ND	ND		ND	ND	ND	ND		ND	ND	ND	ND			ND	ND
Cadmium mg/L	0.005	ND	ND	ND		ND	ND	ND	ND		ND	ND	ND	ND			ND	ND
Chromium mg/L	0.05	ND	ND	ND		ND	ND	ND	ND		ND	ND	ND	ND			ND	ND
Copper mg/L	0.01	ND	ND	ND		ND	ND	ND	ND		ND	ND	ND	ND			ND	ND
Iron mg/L	0.05	ND	ND	ND		ND	ND	ND	ND		ND	ND	ND	ND			ND	ND
Lead mg/L	0.001	ND	ND	ND		ND	ND	ND	ND		ND	ND	ND	ND			ND	ND
Manganese mg/L	0.01	ND	ND	ND		ND	ND	ND	ND		ND	ND	ND	ND			ND	ND
Mercury mg/L	0.001	ND	ND	ND		ND	ND	ND	ND		ND	ND	ND	ND			ND	ND
Molybdenum mg/L	0.1	ND	ND	ND		ND	ND	ND	ND		ND	ND	ND	ND			ND	ND
Nickel mg/L	0.05	ND	ND	ND		ND	ND	ND	ND		ND	ND	ND	ND			ND	ND
Selenium mg/L	0.001	ND	ND	ND		ND	ND	ND	ND		ND	ND	ND	ND			ND	ND
Uranium mg/L	0.0003	ND	ND	0.0008		ND	ND	ND	ND		ND	ND	ND	ND			ND	0.0004
Vanadium mg/L	0.1	ND	ND	ND		ND	ND	ND	ND		ND	ND	ND	ND			ND	ND
Zinc mg/L	0.01	ND	ND	ND		ND	ND	ND	ND		ND	ND	ND	ND			ND	ND
<b>Radionuclides - Total</b>																		
Gross Alpha pCi/L	2	-2	5.1	2.6		ND	ND	0.3	-0.7		ND	ND	-1	0.5			ND	ND
Gross Beta pCi/L	3	-0.7	-1	0.09		ND	ND	0.8	0.01		ND	ND	2.3	0.8			ND	ND
Radium 226 pCi/L	0.2	0.07	-0.1	0.07		ND	ND	-0.02	-0.02		0.2	ND	0.02	0.04			ND	ND
Radium 228 pCi/L	1	1.3	2.7	0.7		1.4	ND	1.1	0.7		ND	ND	1.9	0.2			ND	ND



**Table 1**  
**Water Quality Data and Upper Control Limits**  
**Underlying Monitor Wells (MUN Wells)**

Production Area #1 Overlying Monitoring Wells (MUN-1.1 thru MON-09)	Well ID Sampling Dates	MUN-07	MUN-07	MUN-07	MUN-07	MUN-07	MUN-07	MUN-08	MUN-08	MUN-08	MUN-08	MUN-08	MUN-08	MUN-09	MUN-09	MUN-09	MUN-09	MUN-09	MUN-09
Upper Control Limit Parameters	Laboratory RL	4/16/2012	5/10/2012	6/1/2012	6/26/2012	10/9/2012	10/23/2012	4/25/2012	5/16/2012	6/1/2012	7/3/2012	10/11/2012	10/25/2012	4/25/2012	5/16/2012	6/1/2012	6/21/2012	10/11/2012	10/25/2012
Alkalinity, Total as CaCO3 mg/L	5.0	188	186	189	185	185	185	188	189	190	185	186	187	203	196	200	200	193	196
Chloride mg/L	1.0	5	5	5	5	4	5	5	5	5	5	4	4	5	5	6	5	5	5
Conductivity @ 25 C umhos/cm	5.0	405	390	390	386	374	389	373	376	375	371	369	375	406	407	409	398	405	405
Analytes/Units																			
Major Ions																			
Bicarbonate as HCO3 mg/L	5.0	204	210			213	205	215	217			212	208	230	225			220	214
Calcium mg/L	1.0	4	4			3	3	3	4			3	3	4	4			4	4
Carbonate as CO3 mg/L	5.0	12	9			6	10	7	7			7	10	9	7			8	12
Fluoride mg/L	0.1	0.5	0.6			0.4	0.4	0.5	0.5			0.4	0.4	0.6	0.6			0.4	0.5
Magnesium mg/L	1.0	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nitrogen, Ammonia as N mg/L	0.05	0.13	0.08			0.18	ND	ND	ND			0.19	ND	0.05	ND			0.16	ND
Nitrogen, Nitrate+Nitrite as N mg/L	0.1	ND	ND			ND	0.1	ND	ND			ND	ND	ND	ND			ND	ND
Potassium mg/L	1.0	4	2			2	2	2	2			2	2	2	2			2	2
Silica mg/L	0.1	8	8.1			8.9	9.0	8.7	11.2			9.4	9.6	9.6	11			8.9	9.2
Sodium mg/L	1.0	83	80			83	84	85	83			80	85	92	93			85	92
Sulfate mg/L	2.0	11	10			9	9	4	4			3	3	10	10			9	9
Physical Properties																			
pH su	0.1	9.16	8.9			8.6	8.9	8.98	8.9			8.6	8.8	9.02	8.9			8.7	8.9
Solids, Total Dissolved TDS @ 180 C mg/L	10	246	276			240	230	227	220			220	200	237	242			240	220
Metals																			
Aluminum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Arsenic mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Barium mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Boron mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Cadmium mg/L	0.005	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Chromium mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Copper mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Iron mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Lead mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Manganese mg/L	0.01	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Mercury mg/L	0.001	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Molybdenum mg/L	0.1	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Nickel mg/L	0.05	ND	ND			ND	ND	ND	ND			ND	ND	ND	ND			ND	ND
Selenium mg/L	0.001	ND	0.001			ND	ND	0.005	ND			ND	ND	0.016	ND			ND	ND
Uranium mg/L	0.0003	ND	ND			ND	0.0004	ND	ND			ND	ND	ND	ND			ND	ND
Vanadium mg/L	0.1	ND	ND			ND	ND	ND	0.1			ND	ND	ND	ND			ND	ND
Zinc mg/L	0.01	ND	ND			ND	ND	ND	0.01			ND	ND	ND	0.01			ND	ND
Radionuclides - Total																			
Gross Alpha pCi/L	2	-3	0.9			ND	ND	3.7	3.4			ND	ND	3.5	1.9			ND	ND
Gross Beta pCi/L	3	3.1	1.8			ND	ND	-0.3	-2			ND	ND	1.1	-0.4			ND	ND
Radium 226 pCi/L	0.2	0.03	0.14			ND	ND	0.02	-0.1			ND	ND	0.006	-0.06			ND	ND
Radium 228 pCi/L	1	1.7	1.2			ND	ND	0.6	-0.4			ND	1.5	1.1	-0.2			ND	ND



**Table 1**  
**Water Quality Data and Upper Control Limits**  
**Underlying Monitor Wells (MUN Wells)**

Production Area #1 Overlying Monitoring Wells (MUN-1.1 thru MON-09)	Well ID Sampling Dates	n Sample Events	Minimum Value	Maximum Value	MEAN	Standard Deviation	k Factor $\alpha=0.05/P=0.99$ n=78	Tolerance Minimum	Tolerance Maximum	Mean without Outliers	Standard Deviation without Outliers	Standard Deviation x 5	UCL
<b>Upper Control Limit Parameters</b>	Laboratory RL	LQO Guideline 4											
Alkalinity, Total as CaCO3 mg/L	5.0	53	185	236	205	13.87	3.1068	162	248	NA	NA	69.37	274
Chloride mg/L	1.0	53	3	6	5	0.55	NA					NA	20
Conductivity @ 25 C umhos/cm	5.0	53	369	450	400	17.95	3.1068	344	455	NA	NA	89.76	490
<b>Analytes/Units</b>													
<b>Major Ions</b>													
Bicarbonate as HCO3 mg/L	5.0												
Calcium mg/L	1.0												
Carbonate as CO3 mg/L	5.0												
Fluoride mg/L	0.1												
Magnesium mg/L	1.0												
Nitrogen, Ammonia as N mg/L	0.05												
Nitrogen, Nitrate+Nitrite as N mg/L	0.1												
Potassium mg/L	1.0												
Silica mg/L	0.1												
Sodium mg/L	1.0												
Sulfate mg/L	2.0												
<b>Physical Properties</b>													
pH su	0.1												
Solids, Total Dissolved TDS @ 180 C mg/L	10												
<b>Metals</b>													
Aluminum mg/L	0.1												
Arsenic mg/L	0.001												
Barium mg/L	0.1												
Boron mg/L	0.1												
Cadmium mg/L	0.005												
Chromium mg/L	0.05												
Copper mg/L	0.01												
Iron mg/L	0.05												
Lead mg/L	0.001												
Manganese mg/L	0.01												
Mercury mg/L	0.001												
Molybdenum mg/L	0.1												
Nickel mg/L	0.05												
Selenium mg/L	0.001												
Uranium mg/L	0.0003												
Vanadium mg/L	0.1												
Zinc mg/L	0.01												
<b>Radionuclides - Total</b>													
Gross Alpha pCi/L	2												
Gross Beta pCi/L	3												
Radium 226 pCi/L	0.2												
Radium 228 pCi/L	1												



Table  
Restoration Target Values  
Summary Sheet

Analyte	Units	Laboratory RL	Total Number Samples	Excluding Outliers	Minimum Value	Maximum Value	k factor $\alpha=0.05$ , $p=0.99$	Mean	Standard Deviation	Tolerance Minimum	Tolerance Maximum	Mean without Outliers	Standard Deviation without Outliers	Restoration Target Value (Mean + 2 $\sigma$ )
Sample Date														
Alkalinity	mg/L CaCO <sub>3</sub>	5	52	52	115	148	3.1132	128	6.3	109	148	NA	NA	141
Aluminum	mg/L	0.1	52	NA	NA	NA	3.1132							
Arsenic*	mg/L	0.001	52	52	0.002	0.008	3.1132	0.003	0.001	-0.001	0.007	NA	NA	*
Barium*	mg/L	0.1	52	NA	NA	NA	3.1132							*
Bicarbonate	mg/L	5	52	52	122	172	3.1132	145	10.0	113.3	176	NA	NA	165
Boron	mg/L	0.1	52	NA	NA	NA	3.1132							
Cadmium*	mg/L	0.005	52	NA	NA	NA	3.1132							*
Calcium	mg/L	1	52	52	5	11	3.1132	8.0	1.2	4.3	11.7	NA	NA	10
Carbonate	mg/L	5	52	52	5	11	3.1132	7.3	1.7	2.0	12.5	NA	NA	11
Chloride	mg/L	1	52	52	6	8	3.1132	6.3	0.6	4.5	8.1	NA	NA	7
Chromium*	mg/L	0.05	52	NA	NA	NA	3.1132							*
Conductivity	umhos/cm	5	52	52	518	660	3.1132	578	26.9	494.2	662	NA	NA	632
Copper	mg/L	0.01	52	51	NA	NA	3.1132							
Fluoride	mg/L	0.1	52	52	0.1	0.2	3.1132	0.2	0.01	0.2	0.2	NA	NA	0.2
Gross Alpha	pCi/L	2	52	52	9.6	1080	3.1132	239	288	-656.7	1135	NA	NA	815
Gross Beta	pCi/L	3	52	52	1.8	706	3.1132	170	204	-464.3	805	NA	NA	578
Iron	mg/L	0.05	52	NA	NA	NA	3.1132							
Lead*	mg/L	0.001	52	50	NA	NA	3.1132							*
Magnesium	mg/L	1	52	49	NA	NA	3.1132							
Manganese	mg/L	0.01	52	NA	NA	NA	3.1132							
Mercury*	mg/L	0.001	52	NA	NA	NA	3.1132							*
Molybdenum	mg/L	0.1	52	NA	NA	NA	3.1132							
Nickel	mg/L	0.05	52	NA	NA	NA	3.1132							
Ammonia as N	mg/L	0.05	52	48	NA	NA	3.1132							
Nitrate+Nitrite as N	mg/L	0.1	52	51	NA	NA	3.1132							
pH	s.u.	0.1	52	52	8.58	9.23	3.1132	8.85	0.2	8.35	9.36	NA	NA	9
Potassium	mg/L	1	52	52	1	6	3.1132	3.5	1.1	0.0	7.1	NA	NA	6
Radium 226	pCi/L	0.2	52	52	0.3	254	3.1132	56.4	71.0	-165	277	NA	NA	198
Radium 228	pCi/L	1	52	16	0.3	3	3.1132	1.6	0.7	-1	4	NA	NA	3
Selenium*	mg/L	0.001	52	52	0.001	0.005	3.1132	0.003	0.002	-0.002	0.008	NA	NA	*
Silica	mg/L	0.1	52	52	7.9	12.2	3.1132	9.5	0.9	6.6	12.3	NA	NA	11
Sodium	mg/L	1	52	52	105	128	3.1132	117	5.2	101	133	NA	NA	127
TDS @ 180 C	mg/L	10	52	52	320	403	3.1132	362	18.2	306	419	NA	NA	399
Sulfate	mg/L	2	52	52	108	151	3.1132	130	9.4	100.9	160	NA	NA	149
Uranium	mg/L	0.0003	52	52	0.0059	0.136	3.1132	0.0317	0.0277	-0.0545	0.1179	0.0291	0.0237	0.08
Vanadium	mg/L	0.1	52	51	0.2	0.2	3.1132							
Zinc	mg/L	0.01	52	47	NA	NA	3.1132							

\*10 CFR Part 40, Appendix A, Criterion 5(B)(5) lists three standards, one of which each hazardous constituent in groundwater must meet at the point of compliance. The standards are:

- The commission approved background concentration of that constituent in the ground water;
- The respective value given in the table in paragraph 5 C if the constituent is listed in the table and if the background level of the constituent is below the value listed; or
- An alternate concentration limit established by the Commission



**T-12-4**  
**Restoration Target Values**  
**Production Monitor Well (MPN Wells)**

Analyte	Units	Laboratory RL	MPN-01.1	MPN-01.1	MPN-01.1	MPN-01.1	MPN-02.1	MPN-02.1	MPN-02.1	MPN-02.1	MPN-03	MPN-03	MPN-03	MPN-03
<b>Sample Date</b>			4/27/2012	5/17/2012	6/7/2012	7/11/2012	4/9/2012	5/8/2012	5/24/2012	7/12/2012	6/14/2012	7/10/2012	7/26/2012	8/9/2012
Alkalinity	mg/L CaCO3	5	125	138	133	131	123	133	127	123	116	121	123	118
Aluminum	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic*	mg/L	0.001	0.003	0.003	0.003	0.003	0.008	0.007	0.006	0.006	0.002	0.002	0.002	0.002
Barium*	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bicarbonate	mg/L	5	142	161	156	149	127	151	141	136	122	134	131	131
Boron	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium*	mg/L	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	mg/L	1	6	6	6	6	7	7	7	5	7	7	7	7
Carbonate	mg/L	5	5	ND	ND	5	11	5	7	7	9	7	9	6
Chloride	mg/L	1	6	6	6	6	7	8	7	6	6	7	7	8
Chromium*	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Conductivity	umhos/cm	5	518	537	527	561	579	569	561	596	539	566	535	549
Copper	mg/L	0.01	ND	ND	ND	ND	ND	ND	ND	0.02	ND	ND	ND	ND
Fluoride	mg/L	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Gross Alpha	pCi/L	2	463	347	202	191	387	504	509	210	10.7	9.6	10.2	9.9
Gross Beta	pCi/L	3	355	419	123	96.1	190	646	664	383	6.4	6.9	9	1.8
Iron	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead*	mg/L	0.001	ND	ND	ND	ND	ND	ND	ND	0.002	ND	ND	ND	ND
Magnesium	mg/L	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	mg/L	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury*	mg/L	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Molybdenum	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia as N	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1	ND
Nitrate+Nitrite as N	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
pH	s.u.	0.1	8.93	8.87	8.6	8.7	9.12	9.07	8.96	8.9	8.9	8.9	9	8.93
Potassium	mg/L	1	3	3	2	3	4	2	3	3	3	3	3	3
Radium 226	pCi/L	0.2	65	93	70.3	66.7	96	92	103	80.5	0.8	1.1	0.9	0.3
Radium 228	pCi/L	1	2.8	1.7	ND	ND	0.3	1.1	0.8	ND	ND	ND	ND	ND
Selenium*	mg/L	0.001	ND	ND	0.004	0.004	0.005	0.001	ND	ND	ND	ND	ND	ND
Silica	mg/L	0.1	7.9	9.9	9.2	8.9	9.3	8.1	10.3	8.8	10	10	10.2	12.2
Sodium	mg/L	1	114	113	111	110	111	108	119	113	113	109	110	112
TDS @ 180 C	mg/L	10	330	328	340	330	357	356	360	340	340	330	320	347
Sulfate	mg/L	2	120	120	108	119	135	133	127	133	114	125	123	130
Uranium	mg/L	0.0003	0.047	0.0337	0.0377	0.0303	0.0239	0.0477	0.0439	0.0218	0.0078	0.007	0.0059	0.0072
Vanadium	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	mg/L	0.01	ND	ND	ND	ND	ND	ND	ND	0.01	ND	ND	ND	ND

Values in red boxes are outliers



T-2-4  
Restoration Target Values  
Production Monitor Well (MPN Wells)

Analyte	Units	Laboratory RL	MPN-04	MPN-04	MPN-04	MPN-04	MPN-05	MPN-05	MPN-05	MPN-05	MPN-06	MPN-06	MPN-06	MPN-06
Sample Date			6/5/2012	6/18/2012	6/27/2012	7/3/2012	4/12/2012	5/8/2012	5/23/2012	6/6/2012	4/25/2012	5/10/2012	5/31/2012	6/19/2012
Alkalinity	mg/L CaCO3	5	132	135	130	137	123	122	123	115	134	131	133	136
Aluminum	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic*	mg/L	0.001	0.003	0.004	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.002
Barium*	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bicarbonate	mg/L	5	143	145	143	148	138	148	146	126	151	147	154	153
Boron	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium*	mg/L	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	mg/L	1	8	8	8	8	8	8	9	8	7	7	9	8
Carbonate	mg/L	5	9	10	8	9	6	ND	ND	7	6	6	ND	7
Chloride	mg/L	1	6	6	7	6	7	8	6	6	6	6	6	6
Chromium*	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Conductivity	umhos/cm	5	640	585	575	576	559	586	578	565	577	577	568	562
Copper	mg/L	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoride	mg/L	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2
Gross Alpha	pCi/L	2	278	304	427	232	181	157	183	75.4	68	65.9	52.7	32.9
Gross Beta	pCi/L	3	155	177	221	224	196	167	204	45.4	50.9	45.9	40.5	23.6
Iron	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead*	mg/L	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium	mg/L	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	mg/L	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury*	mg/L	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Molybdenum	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia as N	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate+Nitrite as N	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
pH	s.u.	0.1	8.7	9	9.1	8.9	8.95	8.78	8.71	8.8	9.07	8.9	8.94	8.8
Potassium	mg/L	1	3	4	3	3	2	2	2	2	3	3	3	3
Radium 226	pCi/L	0.2	91.5	84.9	91	90.6	28	33	33	30	4.7	5.9	5	5.6
Radium 228	pCi/L	1	ND	ND	ND	ND	ND	1.7	ND	ND	ND	1.1	ND	ND
Selenium*	mg/L	0.001	ND	ND	ND	ND	ND	ND	ND	ND	0.005	0.001	ND	ND
Silica	mg/L	0.1	9	9.1	10.2	9	9.4	8.9	10.7	8.9	8.9	8.6	8.8	8.9
Sodium	mg/L	1	120	122	128	116	116	114	121	117	111	111	117	119
TDS @ 180 C	mg/L	10	380	370	363	360	356	362	356	380	365	371	356	380
Sulfate	mg/L	2	120	130	138	120	137	139	135	125	132	126	125	113
Uranium	mg/L	0.0003	0.0524	0.082	0.129	0.0781	0.0118	0.0129	0.0108	0.0102	0.0221	0.0182	0.0178	0.0164
Vanadium	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	mg/L	0.01	ND	ND	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND

Values in red boxes are outliers



**Table 2-4**  
**Restoration Target Values**  
**Production Monitor Well (MPN Wells)**

Analyte	Units	Laboratory RL	MPN-07	MPN-07	MPN-07	MPN-07	MPN-08	MPN-08	MPN-08	MPN-08	MPN-09	MPN-09	MPN-09	MPN-09
Sample Date			6/12/2012	7/3/2012	7/24/2012	8/9/2012	4/4/2012	5/16/2012	6/1/2012	6/19/2012	6/6/2012	6/20/2012	7/5/2012	7/27/2012
Alkalinity	mg/L CaCO3	5	119	131	128	125	127	126	129	131	120	131	134	132
Aluminum	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic*	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.003	0.003	0.002	0.003
Barium*	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bicarbonate	mg/L	5	127	140	144	140	150	154	150	152	133	151	153	150
Boron	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium*	mg/L	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	mg/L	1	8	7	8	8	8	9	8	9	8	8	8	8
Carbonate	mg/L	5	9	10	6	6	ND	ND	ND	ND	7	ND	ND	5
Chloride	mg/L	1	7	7	6	7	6	6	6	6	6	6	6	6
Chromium*	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Conductivity	umhos/cm	5	583	586	576	590	557	573	579	571	564	569	575	565
Copper	mg/L	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoride	mg/L	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Gross Alpha	pCi/L	2	61.6	47.4	56.5	50.7	1050	825	1080	509	40.9	38.5	36.4	30.2
Gross Beta	pCi/L	3	21.9	27.7	52.8	18.5	439	670	706	370	7.9	8.3	11.8	8.5
Iron	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead*	mg/L	0.001	ND	ND	ND	ND	ND	ND	ND	ND	0.001	ND	ND	ND
Magnesium	mg/L	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	mg/L	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury*	mg/L	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Molybdenum	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia as N	mg/L	0.05	ND	ND	0.14	ND	ND	ND	ND	ND	ND	ND	ND	0.05
Nitrate+Nitrite as N	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
pH	s.u.	0.1	9	9	8.8	8.96	8.81	8.61	8.58	8.6	8.8	8.6	8.7	8.7
Potassium	mg/L	1	5	5	5	3	3	2	1	3	4	4	3	4
Radium 226	pCi/L	0.2	1.8	2.1	1.5	1.4	163	210	195	201	0.3	0.3	0.7	0.3
Radium 228	pCi/L	1	ND	ND	ND	ND	1.7	3	1.4	ND	ND	1.8	ND	ND
Selenium*	mg/L	0.001	0.002	0.002	ND	ND	ND	ND	ND	ND	ND	ND	0.003	ND
Silica	mg/L	0.1	8.2	8.6	8.8	10	8.5	10.6	10	8.8	8.5	8.8	9.1	8.9
Sodium	mg/L	1	121	117	119	115	121	114	112	123	118	123	116	116
TDS @ 180 C	mg/L	10	380	360	360	374	355	354	364	380	370	370	360	360
Sulfate	mg/L	2	129	127	139	143	137	136	136	122	124	123	122	133
Uranium	mg/L	0.0003	0.0619	0.0425	0.0394	0.0446	0.136	0.0647	0.0539	0.0504	0.0293	0.0383	0.0342	0.0322
Vanadium	mg/L	0.1	ND	ND	ND	ND	ND	0.2	ND	ND	ND	ND	ND	ND
Zinc	mg/L	0.01	ND	ND	ND	ND	ND	0.02	0.02	ND	ND	ND	ND	ND

Values in red boxes are outliers



**Table 2-4**  
**Restoration Target Values**  
**Production Monitor Well (MPN Wells)**

Analyte	Units	Laboratory RL	MPN-10	MPN-10	MPN-10	MPN-10	MPN-11	MPN-11	MPN-11	MPN-11	MPN-12	MPN-12	MPN-12	MPN-12
Sample Date			5/22/2012	6/5/2012	6/21/2012	7/6/2012	5/22/2012	6/5/2012	6/21/2012	7/6/2012	3/12/2012	5/18/2012	6/1/2012	7/6/2012
Alkalinity	mg/L CaCO <sub>3</sub>	5	122	124	122	128	128	127	128	148	122	125	131	133
Aluminum	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic*	mg/L	0.001	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Barium*	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bicarbonate	mg/L	5	132	135	142	142	144	144	149	172	128	141	152	151
Boron	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium*	mg/L	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	mg/L	1	9	8	9	9	8	8	9	8	8	9	8	9
Carbonate	mg/L	5	8	8	ND	7	6	ND	ND	ND	10	6	ND	6
Chloride	mg/L	1	6	6	7	6	6	6	6	6	6	6	6	6
Chromium*	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Conductivity	umhos/cm	5	600	660	596	591	583	635	573	576	568	582	595	593
Copper	mg/L	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoride	mg/L	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Gross Alpha	pCi/L	2	118	67.4	108	65.7	37.3	39	43.3	34.2	90.4	60.9	64.1	38.2
Gross Beta	pCi/L	3	46	26.8	42.8	44.3	34.7	20.3	29.4	34.4	29.1	38.6	34.1	25.5
Iron	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead*	mg/L	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium	mg/L	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	mg/L	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury*	mg/L	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Molybdenum	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia as N	mg/L	0.05	ND	ND	ND	ND	ND	ND	0.06	ND	ND	ND	ND	ND
Nitrate+Nitrite as N	mg/L	0.1	ND	ND	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
pH	s.u.	0.1	9.11	8.8	8.88	8.8	8.96	8.6	8.87	8.6	9.23	9.01	9.1	8.7
Potassium	mg/L	1	6	6	4	5	4	5	4	4	5	4	6	4
Radium 226	pCi/L	0.2	18	19.8	28	19.4	1.4	2.1	1.4	1.3	15	17	12	15.8
Radium 228	pCi/L	1	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND	ND	1.3
Selenium*	mg/L	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silica	mg/L	0.1	10.8	9.2	10.7	9.4	10.6	9.1	10.7	9.3	8	9.8	10.3	9.4
Sodium	mg/L	1	123	121	124	116	113	118	121	114	105	117	121	117
TDS @ 180 C	mg/L	10	384	400	368	370	376	380	363	350	356	359	368	370
Sulfate	mg/L	2	142	128	138	130	134	118	128	121	141	136	141	129
Uranium	mg/L	0.0003	0.0241	0.0219	0.0202	0.0177	0.0202	0.0206	0.0202	0.0199	0.0075	0.0109	0.0115	0.0071
Vanadium	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	mg/L	0.01	ND	ND	ND	ND	0.01	ND	ND	ND	ND	ND	0.01	ND

Values in red boxes are outliers



T-12-4  
Restoration Target Values  
Production Monitor Well (MPN Wells)

Analyte	Units	Laboratory RL	MPN-13	MPN-13	MPN-13	MPN-13	Total Number Samples	Excluding Outliers	Minimum Value	Maximum Value	k factor $\alpha=0.05, p=0.99$	Mean	Standard Deviation	Tolerance Minimum
Sample Date			2/27/2012	5/22/2012	6/7/2012	6/21/2012								
Alkalinity	mg/L CaCO <sub>3</sub>	5	134	127	137	128	52	52	115	148	3.1132	128	6.3	109
Aluminum	mg/L	0.1	ND	ND	ND	ND	52	NA	NA	NA	3.1132			
Arsenic*	mg/L	0.001	0.002	0.002	0.002	0.002	52	52	0.002	0.008	3.1132	0.003	0.001	-0.001
Barium*	mg/L	0.1	ND	ND	ND	ND	52	NA	NA	NA	3.1132			
Bicarbonate	mg/L	5	155	150	159	153	52	52	122	172	3.1132	145	10.0	113.3
Boron	mg/L	0.1	ND	ND	ND	ND	52	NA	NA	NA	3.1132			
Cadmium*	mg/L	0.005	ND	ND	ND	ND	52	NA	NA	NA	3.1132			
Calcium	mg/L	1	8	11	11	11	52	52	5	11	3.1132	8.0	1.2	4.3
Carbonate	mg/L	5	ND	ND	ND	ND	52	52	5	11	3.1132	7.3	1.7	2.0
Chloride	mg/L	1	6	6	6	6	52	52	6	8	3.1132	6.3	0.6	4.5
Chromium*	mg/L	0.05	ND	ND	ND	ND	52	NA	NA	NA	3.1132			
Conductivity	umhos/cm	5	567	618	630	618	52	52	518	660	3.1132	578	26.9	494.2
Copper	mg/L	0.01	ND	ND	ND	ND	52	51	NA	NA	3.1132			
Fluoride	mg/L	0.1	0.2	0.2	0.2	0.2	52	52	0.1	0.2	3.1132	0.2	0.01	0.2
Gross Alpha	pCi/L	2	782	865	441	855	52	52	9.6	1080	3.1132	239	288	-656.7
Gross Beta	pCi/L	3	474	383	394	410	52	52	1.8	706	3.1132	170	204	-464.3
Iron	mg/L	0.05	ND	ND	ND	ND	52	NA	NA	NA	3.1132			
Lead*	mg/L	0.001	ND	ND	ND	ND	52	50	NA	NA	3.1132			
Magnesium	mg/L	1	ND	1	1	1	52	49	NA	NA	3.1132			
Manganese	mg/L	0.01	ND	ND	ND	ND	52	NA	NA	NA	3.1132			
Mercury*	mg/L	0.001	ND	ND	ND	ND	52	NA	NA	NA	3.1132			
Molybdenum	mg/L	0.1	ND	ND	ND	ND	52	NA	NA	NA	3.1132			
Nickel	mg/L	0.05	ND	ND	ND	ND	52	NA	NA	NA	3.1132			
Ammonia as N	mg/L	0.05	ND	ND	ND	ND	52	48	NA	NA	3.1132			
Nitrate+Nitrite as N	mg/L	0.1	ND	ND	ND	ND	52	51	NA	NA	3.1132			
pH	s.u.	0.1	8.85	8.75	8.7	8.71	52	52	8.58	9.23	3.1132	8.85	0.2	8.35
Potassium	mg/L	1	5	4	5	3	52	52	1	6	3.1132	3.5	1.1	0.0
Radium 226	pCi/L	0.2	166	198	215	254	52	52	0.3	254	3.1132	56.4	71.0	-165
Radium 228	pCi/L	1	1.6	1.8	ND	2.3	52	16	0.3	3	3.1132	1.6	0.7	-1
Selenium*	mg/L	0.001	ND	ND	ND	ND	52	52	0.001	0.005	3.1132	0.003	0.002	-0.002
Silica	mg/L	0.1	9	11	9.7	11.3	52	52	7.9	12.2	3.1132	9.5	0.9	6.6
Sodium	mg/L	1	120	128	128	116	52	52	105	128	3.1132	117	5.2	101
TDS @ 180 C	mg/L	10	348	403	400	389	52	52	320	403	3.1132	362	18.2	306
Sulfate	mg/L	2	144	151	145	149	52	52	108	151	3.1132	130	9.4	100.9
Uranium	mg/L	0.0003	0.011	0.0111	0.0105	0.0111	52	52	0.0059	0.136	3.1132	0.0317	0.0277	-0.0545
Vanadium	mg/L	0.1	ND	ND	ND	ND	52	51	0.2	0.2	3.1132			
Zinc	mg/L	0.01	ND	0.02	ND	0.02	52	47	NA	NA	3.1132			

Values in red boxes are outliers

Grey boxes represent non



**T-12-4**  
**Restoration Target Values**  
**Production Monitor Well (MPN Wells)**

Analyte	Units	Laboratory RL	Tolerance Maximum	Mean without Outliers	Standard Deviation without Outliers	Restoration Target Value (Mean + 2σ)
<b>Sample Date</b>						
Alkalinity	mg/L CaCO <sub>3</sub>	5	148	NA	NA	141
Aluminum	mg/L	0.1				
Arsenic*	mg/L	0.001	0.007	NA	NA	*
Barium*	mg/L	0.1				*
Bicarbonate	mg/L	5	176	NA	NA	165
Boron	mg/L	0.1				
Cadmium*	mg/L	0.005				*
Calcium	mg/L	1	11.7	NA	NA	10
Carbonate	mg/L	5	12.5	NA	NA	11
Chloride	mg/L	1	8.1	NA	NA	7
Chromium*	mg/L	0.05				*
Conductivity	umhos/cm	5	662	NA	NA	632
Copper	mg/L	0.01				
Fluoride	mg/L	0.1	0.2	NA	NA	0.2
Gross Alpha	pCi/L	2	1135	NA	NA	815
Gross Beta	pCi/L	3	805	NA	NA	578
Iron	mg/L	0.05				
Lead*	mg/L	0.001				*
Magnesium	mg/L	1				
Manganese	mg/L	0.01				
Mercury*	mg/L	0.001				*
Molybdenum	mg/L	0.1				
Nickel	mg/L	0.05				
Ammonia as N	mg/L	0.05				
Nitrate+Nitrite as N	mg/L	0.1				
pH	s.u.	0.1	9.36	NA	NA	9
Potassium	mg/L	1	7.1	NA	NA	6
Radium 226	pCi/L	0.2	277	NA	NA	198
Radium 228	pCi/L	1	4	NA	NA	3
Selenium*	mg/L	0.001	0.008	NA	NA	*
Silica	mg/L	0.1	12.3	NA	NA	11
Sodium	mg/L	1	133	NA	NA	127
TDS @ 180 C	mg/L	10	419	NA	NA	399
Sulfate	mg/L	2	160	NA	NA	149
Uranium	mg/L	0.0003	0.1179	0.0291	0.0237	0.08
Vanadium	mg/L	0.1				
Zinc	mg/L	0.01				

*detectable constituents*

\*10 CFR Part 40, Appendix A, Criterion 5(B)(5) lists three standards, one of which each hazardous constituent in groundwater must meet at the point of compliance. The standards are:

- a) The commission approved background concentration of that constituent in the ground water;
- b) The respective value given in the table in paragraph 5 C if the constituent is listed in the table and if the background level of the constituent is below the value listed; or
- c) An alternate concentration limit established by the Commission