Data Validation Package

February 2009
Groundwater and Surface Water Sampling at the Tuba City, Arizona Disposal Site

May 2009

U.S. DEPARTMENT OF ENERGY | Legacy Management

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Contents

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Sampling Event Summary

Site: Tuba City, Arizona, Disposal Site

Sampling Period: February 24-26, 2009

The groundwater compliance strategy for the Tuba City Disposal Site is defined in *Phase I Ground Water Compliance Action Plan for the Tuba City, Arizona, UMTRA Site.* Samples are collected and analyzed on a semiannual basis to evaluate the performance of the Phase I remediation system.

Sampling and analysis was conducted as specified in *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites.*

U.S. Environmental Protection Agency (EPA) groundwater standards were exceeded in samples collected from monitor wells as listed in Table 1.

The data from this sampling event are generally consistent with previously obtained values and are acceptable for general use as qualified. Data anomalies are not significant with respect to the known nature and extent of contamination and progress of remedial action at the site. The data from this sampling event will be incorporated into the annual performance evaluation report that will present a comprehensive hydrologic summary and evaluation of groundwater remedial action performance at the Tuba City site through March 2009.

Table 1. Tuba City Wells with Analyte Concentrations that Exceed EPA Standards

Analyte	Standard[a]	Location	Concentration
Molybdenum	0.1	0262	1.4
Molybdenum	0.1	0938	0.14
Nitrate + Nitrite as Nitrogen	10	0262	150
Nitrate + Nitrite as Nitrogen	10	0263	160
Nitrate + Nitrite as Nitrogen	10	0265	160
Nitrate + Nitrite as Nitrogen	10	0267	300
Nitrate + Nitrite as Nitrogen	10	0268	17
Nitrate + Nitrite as Nitrogen	10	0273	33
Nitrate + Nitrite as Nitrogen	10	0275	260
Nitrate + Nitrite as Nitrogen	10	0281	38
Nitrate + Nitrite as Nitrogen	10	0282	34
Nitrate + Nitrite as Nitrogen	10	0287	250
Nitrate + Nitrite as Nitrogen	10	0288	71
Nitrate + Nitrite as Nitrogen	10	0289	51
Nitrate + Nitrite as Nitrogen	10	0691	14
Nitrate + Nitrite as Nitrogen	10	0908	210
Nitrate + Nitrite as Nitrogen	10	0909	170
Nitrate + Nitrite as Nitrogen	10	0934	400

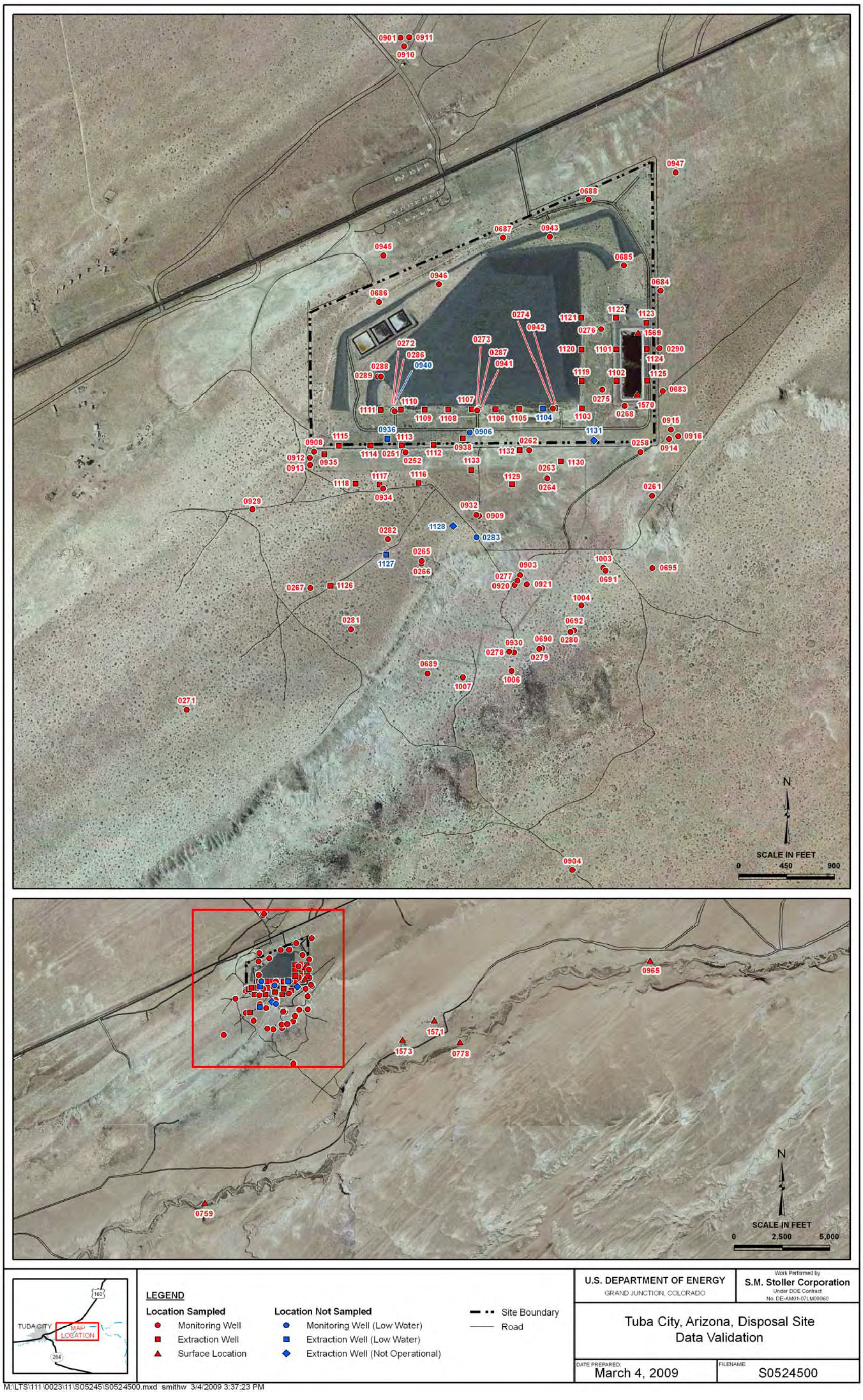
Table 1 (continued). Tuba City Wells with Analyte Concentrations that Exceed EPA Standards

Analyte	Standard[a]	Location	Concentration
Nitrate + Nitrite as Nitrogen	10	0935	190
Nitrate + Nitrite as Nitrogen	10	0938	140
Nitrate + Nitrite as Nitrogen	10	0941	200
Nitrate + Nitrite as Nitrogen	10	0942	210
Selenium	0.01	0262	0.088
Selenium	0.01	0263	0.027
Selenium	0.01	0267	0.042
Selenium	0.01	0273	0.013
Selenium	0.01	0275	0.020
Selenium	0.01	0287	0.093
Selenium	0.01	0908	0.022
Selenium	0.01	0909	0.054
Selenium	0.01	0934	0.010
Selenium	0.01	0935	0.019
Selenium	0.01	0938	0.041
Selenium	0.01	0941	0.078
Selenium	0.01	0942	0.044
Uranium	0.044	0262	1.2
Uranium	0.044	0263	0.120
Uranium	0.044	0265	0.072
Uranium	0.044	0267	0.070
Uranium	0.044	0275	0.52
Uranium	0.044	0287	0.20
Uranium	0.044	0908	0.093
Uranium	0.044	0909	0.059
Uranium	0.044	0934	0.19
Uranium	0.044	0935	0.11
Uranium	0.044	0938	0.66
Uranium	0.044	0941	0.17
Uranium	0.044	0942	0.50

[a] Standards are listed in 40 CFR 192.02 Table 1 to Subpart A; units are in milligrams per liter.

Tim Bartlett
Site Hydrologist, S.M. Stoller

5/28/09
Date



Tuba City, Arizona, Disposal Site, Sample Location Map

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Data Assessment Summary

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Water Sampling Field Activities Verification Checklist

Project	Tuba City, Arizona	**Date(s) of Water Sampling**	February 24-26, 2009
Date(s) of Verification	April 15, 2009	**Name of Verifier**	Steve Donivan

	Response (Yes, No, NA)	Comments
1. Is the SAP the primary document directing field procedures?	Yes	
List other documents, SOPs, instructions.		Work Order Letter dated January 21, 2009.
2. Were the sampling locations specified in the planning documents sampled?	No	Wells 0283, 0906, 0936, and 0940 did not have enough water to collect a sample.
3. Was a pre-trip calibration conducted as specified in the above-named documents?	Yes	Pre-trip calibration was performed on February 20, 2009.
4. Was an operational check of the field equipment conducted daily?	Yes	
Did the operational checks meet criteria?	Yes	
5. Were the number and types (alkalinity, temperature, specific conductance, pH, turbidity, DO, ORP) of field measurements taken as specified?	Yes	
6. Was the category of the well documented?	Yes	
7. Were the following conditions met when purging a Category I well:		
Was one pump/tubing volume purged prior to sampling?	Yes	
Did the water level stabilize prior to sampling?	Yes	
Did pH, specific conductance, and turbidity measurements stabilize prior to sampling?	Yes	
Was the flow rate less than 500 mL/min?	Yes	
If a portable pump was used, was there a 4-hour delay between pump installation and sampling?	NA	

Water Sampling Field Activities Verification Checklist (continued)

	Response (Yes, No, NA)	Comments
8. Were the following conditions met when purging a Category II well:		
Was the flow rate less than 500 mL/min?	Yes	
Was one pump/tubing volume removed prior to sampling?	Yes	
9. Were duplicates taken at a frequency of one per 20 samples?	Yes	Duplicates were collected from locations 0934 and 1570.
10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with nondedicated equipment?	NA	All samples were collected using dedicated equipment.
11. Were trip blanks prepared and included with each shipment of VOC samples?	NA	
12. Were QC samples assigned a fictitious site identification number?	Yes	Location IDs 2723 and 2724 were used for duplicates.
Was the true identity of the samples recorded on the Quality Assurance Sample Log or in the Field Data Collection System (FDCS) report?	Yes	
13. Were samples collected in the containers specified?	Yes	
14. Were samples filtered and preserved as specified?	Yes	
15. Were the number and types of samples collected as specified?	Yes	
16. Were chain of custody records completed and was sample custody maintained?	Yes	
17. Are field data sheets signed and dated by both team members (hardcopies) or are dates present for the “Date Signed” fields (FDCS)?	Yes	
18. Was all other pertinent information documented on the field data sheets?	Yes	
19. Was the presence or absence of ice in the cooler documented at every sample location?	Yes	
20. Were water levels measured at the locations specified in the planning documents?	Yes	

Laboratory Performance Assessment

General Information

Requisition No.:	09022097
Sample Event:	February 24-26, 2009
Site(s):	Tuba City, Arizona
Laboratory:	ALS Paragon, Fort Collins, Colorado
Work Order No.:	0902239
Analysis:	Metals and Inorganics
Validator:	Steve Donivan
Review Date:	April 14, 2009

This validation was performed according to the *Environmental Procedures Catalog*, "Standard Practice for Validation of Laboratory Data," GT-9(P) (2006). The procedure was applied at Level 3, Data Validation. See attached Data Validation Worksheets for supporting documentation on the data review and validation. All analyses were successfully completed. The samples were prepared and analyzed using accepted procedures based on methods specified by line item code, which are listed in Table 2.

Table 2. Analytes and Methods

Analyte	Line Item Code	Prep Method	Analytical Method
Ammonia as N	WCH-A-005	MCAWW 350.1	MCAWW 350.1
Arsenic, Molybdenum, Selenium, Uranium	LMM-02	SW-846 3005A	SW-846 6020A
Calcium, Iron, Magnesium, Manganese, Potassium, Silica, Sodium	LMM-01	SW-846 3005A	SW-846 6010B
Chloride	MIS-A-039	SW-846 9056	SW-846 9056
Nitrite + Nitrate as N	WCH-A-022	MCAWW 353.2	MCAWW 353.2
Sulfate	MIS-A-044	SW-846 9056	SW-846 9056
Total Dissolved Solids	WCH-A-033	MCAWW 160.1	MCAWW 160.1

Data Qualifier Summary

Analytical results were qualified as listed in Table 3. Refer to the attached validation worksheets and the sections below for an explanation of the data qualifiers applied.

Table 3. Data Qualifiers

Sample Number	Location	Analyte	Flag	Reason
0902239-1	0251	Molybdenum	U	Less than 5 times the method blank
0902239-2	0252	Molybdenum	U	Less than 5 times the method blank
0902239-3	0258	Iron	U	Less than 5 times the method blank
0902239-3	0258	Manganese	U	Less than 5 times the method blank
0902239-4	0262	Iron	U	Less than 5 times the method blank
0902239-5	0263	Iron	U	Less than 5 times the method blank
0902239-5	0263	Manganese	U	Less than 5 times the method blank
0902239-6	0264	Iron	U	Less than 5 times the method blank
0902239-6	0264	Manganese	U	Less than 5 times the method blank
0902239-6	0264	Molybdenum	U	Less than 5 times the method blank
0902239-7	0265	Iron	U	Less than 5 times the method blank
0902239-7	0265	Manganese	U	Less than 5 times the method blank
0902239-7	0265	Molybdenum	U	Less than 5 times the method blank
0902239-9	0267	Iron	U	Less than 5 times the method blank
0902239-9	0267	Molybdenum	U	Less than 5 times the method blank
0902239-10	0268	Iron	U	Less than 5 times the method blank
0902239-10	0268	Manganese	U	Less than 5 times the method blank
0902239-10	0268	Molybdenum	U	Less than 5 times the method blank
0902239-11	0272	Iron	U	Less than 5 times the method blank
0902239-11	0272	Manganese	U	Less than 5 times the method blank
0902239-11	0272	Molybdenum	U	Less than 5 times the method blank
0902239-12	0273	Manganese	U	Less than 5 times the method blank
0902239-13	0274	Manganese	U	Less than 5 times the method blank
0902239-14	0275	Molybdenum	U	Less than 5 times the method blank
0902239-15	0276	Iron	U	Less than 5 times the method blank
0902239-15	0276	Manganese	U	Less than 5 times the method blank
0902239-16	0281	Arsenic	U	Less than 5 times the method blank
0902239-17	0282	Arsenic	U	Less than 5 times the method blank
0902239-18	0286	Iron	U	Less than 5 times the method blank
0902239-18	0286	Molybdenum	U	Less than 5 times the method blank
0902239-20	0288	Molybdenum	U	Less than 5 times the method blank
0902239-21	0289	Iron	U	Less than 5 times the method blank
0902239-22	0290	Manganese	J	Serial dilution failure
0902239-23	0691	Iron	U	Less than 5 times the method blank
0902239-24	0908	Iron	U	Less than 5 times the method blank
0902239-25	0909	Iron	U	Less than 5 times the method blank
0902239-25	0909	Manganese	U	Less than 5 times the method blank
0902239-25	0909	Molybdenum	U	Less than 5 times the method blank
0902239-27	0930	Iron	U	Less than 5 times the method blank
0902239-27	0930	Manganese	U	Less than 5 times the method blank
0902239-27	0930	Molybdenum	U	Less than 5 times the method blank
0902239-28	0932	Iron	U	Less than 5 times the method blank
0902239-28	0932	Manganese	U	Less than 5 times the method blank
0902239-29	0934	Iron	U	Less than 5 times the method blank
0902239-29	0934	Manganese	U	Less than 5 times the method blank
0902239-29	0934	Molybdenum	U	Less than 5 times the method blank

Table 3 (continued). Data Qualifiers

Sample Number	Location	Analyte	Flag	Reason
0902239-30	0935	Iron	U	Less than 5 times the method blank
0902239-30	0935	Molybdenum	U	Less than 5 times the method blank
0902239-31	0938	Iron	U	Less than 5 times the method blank
0902239-32	0941	Iron	U	Less than 5 times the method blank
0902239-33	0942	Iron	U	Less than 5 times the method blank
0902239-34	1569	Iron	U	Less than 5 times the method blank
0902239-35	1570	Iron	U	Less than 5 times the method blank
0902239-36	1570 Duplicate	Iron	U	Less than 5 times the method blank
0902239-37	0934 Duplicate	Iron	U	Less than 5 times the method blank
0902239-37	0934 Duplicate	Molybdenum	U	Less than 5 times the method blank

Sample Shipping/Receiving

ALS Paragon in Fort Collins, Colorado, received 37 water samples on February 28, 2009, accompanied by Chain of Custody (COC) forms. The COC forms were checked to confirm that all of the samples were listed with sample collection dates and times, and that signatures and dates were present indicating sample relinquishment and receipt. The COC forms had no errors or omissions. A copy of the air waybill was included with the receiving documentation.

Preservation and Holding Times

The sample shipments were received intact with temperatures inside the iced coolers at 0.6 °C and 1.0 °C which compiles with requirements. All samples were received in the correct container types and had been preserved correctly for the requested analyses with the following exception. The metals bottle from location 0262 was received with a pH of 7. The laboratory acidified this bottle to a pH less than two upon receipt. All samples were analyzed within the applicable holding times.

Laboratory Instrument Calibration

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data for all analytes. Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run and of producing a linear curve. Compliance requirements for continuing calibration checks are established to ensure that the instrument continues to be capable of producing acceptable qualitative and quantitative data. All laboratory instrument calibrations were performed correctly in accordance with the cited methods.

Method MCAWW 160.1

There is no initial or continuing calibration requirement associated with the determination of total dissolved solids.

Method MCAWW 350.1

The initial calibrations for ammonia as N were performed using six calibration standards as follows on March 5, 2009. Initial and continuing calibration verification checks were made at the required frequency resulting in six verification checks. All calibration verification checks met the acceptance criteria. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the method detection limit (MDL). Calibration and laboratory spike standards were prepared from independent sources.

Method MCAWW 353.2

The initial calibrations for nitrate + nitrite as N were performed using seven calibration standards on March 4, 2009. Initial and continuing calibration verification checks were made at the required frequency resulting in five verification checks. All calibration verification checks met the acceptance criteria. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Calibration and laboratory spike standards were prepared from independent sources.

Method SW-846 6010B

Calibrations for calcium, iron, magnesium, manganese, potassium, silica, and sodium were performed using a single point calibration on March 6 and March 12, 2009. Initial and continuing calibration verification checks were made at the required frequency resulting in 20 verification checks. All calibration verification checks met the acceptance criteria. Calibration and laboratory spike standards were prepared from independent sources. Reporting limit verification checks were made at the beginning of each analytical sequence to verify the linearity of the calibration curve near the practical quantitation limit (PQL) and all results were within the acceptance range.

Method SW-846 6020A

Calibrations for arsenic, selenium, molybdenum, and uranium were performed using seven standards on March 6 and March 12, 2009. Initial and continuing calibration verification checks were made at the required frequency resulting in 18 verification checks. All calibration verification checks met the acceptance criteria. The calibration curve correlation coefficient values were greater than 0.995. The absolute values of the calibration curve intercepts were slightly greater than 3 times the MDL for some calibrations, but are acceptable for this project. Calibration and laboratory spike standards were prepared from independent sources. Reporting limit verification checks were made at the beginning of each analytical sequence to verify the linearity of the calibration curve near the PQL and all results were within the acceptance range. Mass calibration and resolution verifications were performed at the beginning of each analytical run in accordance with the analytical procedure. Internal standard recoveries associated with requested analytes were stable and within acceptable ranges.

Method SW-846 9056

Calibrations for chloride and sulfate were performed on March 2, 2009, using five calibration standards as follows. Initial and continuing calibration verification checks were made at the required frequency resulting in ten verification checks. All calibration checks met the acceptance criteria. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL.

Method and Calibration Blanks

Method blanks are analyzed to assess any contamination that may have occurred during sample preparation. Calibration blanks are analyzed to assess instrument contamination prior to and during sample analysis. All method blank and initial and continuing calibration blank results associated with the samples were below the PQLs for all analytes with the following exceptions. One nitrate calibration blank result and one chloride calibration blank result were above the PQL. Associated samples had results greater than 10 times the blank concentration or were re-analyzed with acceptable blanks. Associated iron results below the PQL are qualified with a "U" flag (not detected). In cases where a blank concentration exceeds the MDL, the associated sample results are qualified with a "U" flag (not detected) when the sample result is greater than the MDL but less than 5 times the blank concentration.

Inductively Coupled Plasma (ICP) Interference Check Sample (ICS) Analysis

ICP interference check samples ICSA and ICSAB were analyzed at the required frequency to verify the instrumental interelement and background correction factors. All check sample results met the acceptance criteria.

Matrix Spike Analysis

Matrix spike and matrix spike duplicate (MS/MSD) samples are used to measure method performance in the sample matrix. The MS/MSD data are not evaluated when the concentration of the unspiked sample is greater than 4 times the spike concentration. The spike recoveries met the recovery and precision criteria for all analytes evaluated.

Laboratory Replicate Analysis

Laboratory replicate sample results demonstrate acceptable laboratory precision. The relative percent difference values for the sample replicates and matrix spike replicates were less than 20 percent for results that are greater than 5 times the PQL.

Laboratory Control Sample

Laboratory control samples were analyzed at the correct frequency to provide information on the accuracy of the analytical method and the overall laboratory performance, including sample preparation. The results were acceptable for all analytes.

Metals Serial Dilution

Serial dilutions were prepared and analyzed for the metals analyses to monitor chemical or physical interferences in the sample matrix. Serial dilution data are evaluated when the concentration of the undiluted sample is greater than 100 times the PQL for ICP-MS or greater than 50 times the PQL for ICP. The manganese serial dilution percent difference for sample 0290 was above the acceptance criteria. The sample result associated with the failed serial dilution is qualified with a "J" flag as an estimated value.

Detection Limits/Dilutions

Samples were diluted in a consistent and acceptable manner when required. The samples were diluted prior to analysis of molybdenum and uranium to reduce interferences. The required detection limits were achieved for all analytes.

Completeness

Results were reported in the correct units for all analytes requested using contract-required laboratory qualifiers.

Chromatography Peak Integration

The integration of analyte peaks was reviewed for all ion chromatography data. There were no manual integrations performed and all peak integrations were satisfactory.

Electronic Data Deliverable File (EDD)

The EDD was received on March 17, 2009. The Sample Management System EDD validation module was used to verify that the EDD file was complete and in compliance with requirements. The module compares the contents of the file to the requested analyses to ensure all and only the requested data are delivered. The contents of the EDD were manually examined to verify that the sample results accurately reflect the data contained in the sample data package.

Anion/Cation Balance

The anion/cation balance is used to determine if major ion concentrations have been quantified correctly. The total anions should balance with (be equal to) the total cations when expressed in milliequivalents per liter (meq/L). Table 4 shows the total anion and cation results from this event and the charge balance, which is a relative percent difference calculation. Typically, a charge balance difference of 10 percent is considered acceptable.

Table 4. Comparison of Major Anions and Cations

Location	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
0251	2.13	2.71	12.11
0252	1.70	1.83	3.63
0258	2.68	2.72	0.74
0262	54.47	50.46	3.82
0263	65.34	62.35	2.34
0264	4.37	4.97	6.44
0265	49.99	47.08	3.00
0266	2.20	2.52	6.63
0267	109.52	110.03	0.23
0268	6.95	10.75	21.46
0272	2.44	2.67	4.44
0273	9.59	9.52	0.35
0274	2.63	2.66	0.43
0275	83.20	80.15	1.87
0276	2.56	4.71	29.57
0281	8.70	8.40	1.73
0282	7.09	7.16	0.51
0286	3.94	3.83	1.41
0287	64.95	59.33	4.52
0288	20.84	19.52	3.28
0289	14.50	14.73	0.80
0290	3.03	3.01	0.30
0691	5.91	7.83	13.98
0908	79.74	81.05	0.82
0909	39.13	37.41	2.25
0929	3.37	3.55	2.59
0930	3.71	4.57	10.35
0932	3.24	3.48	3.60
0934	111.03	107.11	1.80
0935	78.09	75.95	1.39
0938	50.44	42.06	9.05
0941	56.62	52.58	3.70
0942	96.33	100.08	1.91
1569	2337.05	2156.67	4.01
1570	2447.27	2192.02	5.50

The charge balance value for most locations was less than 10 percent.

At five locations, the charge balances were above 10 percent. The alkalinity measurements made at locations 0268 and 0276 are anomalously high and impact the charge balance. There were no laboratory analytical errors identified during the review of the data.

SAMPLE MANAGEMENT SYSTEM

General Data Validation Report

RIN: 09022097 **Lab Code:** PAR **Validator:** Steve Donivan **Validation Date:** 4/14/2009

Project: Tuba City **Analysis Type:** ☑ Metals ☑ General Chem ☐ Rad ☐ Organics

# of Samples: 37 **Matrix:** WATER **Requested Analysis Completed:** Yes

Chain of Custody

Present: OK **Signed:** OK **Dated:** OK

Sample

Integrity: OK **Preservation:** OK **Temperature:** OK

Select Quality Parameters

☑ Holding Times	All analyses were completed within the applicable holding times.
☑ Detection Limits	The reported detection limits are equal to or below contract requirements.
☐ Field/Trip Blanks	
☑ Field Duplicates	There were 2 duplicates evaluated.

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 09022097 **Lab Code:** PAR **Date Due:** 3/28/2009

Matrix: Water **Site Code:** TUB **Date Completed:** 3/17/2009

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
		Int.	R^2	ICV	CCV	ICB	CCB								
ARSENIC	03/06/2009	0.0000	1.0000	OK	OK	OK	OK	OK	94.0	94.0	94.0	0.0	106.0		90.0
ARSENIC	03/09/2009	0.0000	1.0000						104.0	95.0	93.0	2.0	104.0		95.0
CALCIUM	03/06/2009			OK	OK	OK	OK	OK	99.0	99.0	103.0	2.0	106.0	0.0	103.0
CALCIUM	03/06/2009								90.0				107.0	5.0	97.0
CALCIUM	03/12/2009			OK	OK	OK	OK	OK		107.0	110.0	1.0	111.0		113.0
IRON	03/06/2009			OK	OK	OK	OK	OK	92.0	87.0	88.0	2.0	107.0		95.0
IRON	03/06/2009								97.0				107.0	3.0	90.0
IRON	03/12/2009			OK	OK	OK	OK	OK		97.0	97.0	0.0	112.0		106.0
MAGNESIUM	03/06/2009			OK	OK	OK	OK	OK	99.0	96.0	98.0	1.0	105.0	1.0	98.0
MAGNESIUM	03/06/2009								93.0				106.0	3.0	93.0
MAGNESIUM	03/12/2009			OK	OK	OK	OK	OK		100.0	101.0	1.0	108.0		104.0
MANGANESE	03/06/2009								97.0	94.0	95.0	1.0	93.0		103.0
MANGANESE	03/06/2009								93.0				92.0		97.0
MANGANESE	03/12/2009			OK	OK	OK	OK	OK		97.0	97.0	1.0	95.0		101.0
MOLYBDENUM	03/06/2009	0.0000	1.0000	OK	OK	OK	OK	OK	103.0	107.0	104.0	3.0	113.0		110.0
MOLYBDENUM	03/09/2009	0.0000	1.0000	OK	OK	OK	OK	OK	101.0	101.0	104.0	3.0	109.0		115.0
POTASSIUM	03/06/2009			OK	OK	OK	OK	OK	97.0	100.0	99.0	1.0			83.0
POTASSIUM	03/06/2009								93.0						80.0

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 09022097 **Lab Code:** PAR **Date Due:** 3/28/2009

Matrix: Water **Site Code:** TUB **Date Completed:** 3/17/2009

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
		Int.	R^2	ICV	CCV	ICB	CCB								
POTASSIUM	03/12/2009			OK	OK	OK	OK	OK		99.0	99.0	0.0			86.0
SELENIUM	03/06/2009	0.0000	1.0000	OK	OK	OK	OK	OK	96.0	97.0	95.0	1.0	106.0		94.0
SELENIUM	03/09/2009	0.0000	1.0000	OK	OK	OK	OK	OK	101.0	88.0	91.0	2.0	102.0		91.0
SILICON	03/06/2009			OK	OK	OK	OK	OK	99.0	94.0	95.0	0.0	95.0	1.0	101.0
SILICON	03/06/2009								96.0				93.0	2.0	90.0
SILICON	03/12/2009			OK	OK	OK	OK	OK		104.0	105.0	0.0	94.0		98.0
SODIUM	03/06/2009			OK	OK	OK	OK	OK	96.0	100.0	99.0	1.0		3.0	81.0
SODIUM	03/06/2009								93.0					5.0	79.0
SODIUM	03/12/2009			OK	OK	OK	OK	OK		106.0	105.0	0.0			90.0
URANIUM	03/06/2009	0.0000	1.0000	OK	OK	OK	OK	OK	104.0	109.0	107.0	2.0	105.0	9.0	85.0
URANIUM	03/09/2009	0.0000	1.0000	OK	OK	OK	OK	OK	98.0	103.0	106.0	2.0	106.0	4.0	94.0

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 09022097 **Lab Code:** PAR **Date Due:** 3/28/2009

Matrix: Water **Site Code:** TUB **Date Completed:** 3/17/2009

Analyte	Date Analyzed	CALIBRATION						Method	LCS	MS	MSD	DUP	Serial Dil.
		Int.	R^2	ICV	CCV	ICB	CCB	Blank	%R	%R	%R	RPD	%R
AMMONIA AS N	03/05/2009	0.000	1.0000	OK	OK	OK	OK	OK	97.00	91.0	91.0	0	
AMMONIA AS N	03/05/2009							OK	97.00				
CHLORIDE	03/02/2009	0.000	1.0000	OK	OK	OK	OK	OK	93.00	100.0	99.0	1.00	
CHLORIDE	03/02/2009								97.00				
CHLORIDE	03/03/2009				OK		OK	OK		98.0	97.0	0	
CHLORIDE	03/03/2009									98.0			
CHLORIDE	03/03/2009									94.0			
NITRATE/NITRITE AS N	03/04/2009	0.000	0.9998	OK	OK	OK	OK	OK	96.00	80.0	75.0	1.00	
NITRATE/NITRITE AS N	03/04/2009							OK	98.00	87.0	83.0	1.00	
SULFATE	03/02/2009	0.000	1.0000	OK	OK	OK	OK	OK	95.00	103.0	104.0	0	
SULFATE	03/02/2009								95.00				
SULFATE	03/03/2009			OK		OK		OK		97.0	96.0	0	
SULFATE	03/03/2009									107.0			
SULFATE	03/03/2009									104.0			
TOTAL DISSOLVED SOLIDS	03/03/2009							OK	100.00			0	
TOTAL DISSOLVED SOLIDS	03/03/2009							OK	99.00			3.00	

Sampling Quality Control Assessment

The following information summarizes and assesses quality control for this sampling event.

Sampling Protocol

Sample results for monitor wells that met the Category I, II, or III low-flow sampling criteria were qualified with an "F" flag in the database, indicating the wells were purged and sampled using the low-flow sampling method. All wells are equipped with either dedicated downhole and pumphead tubing or a bladder pump. Extraction wells are spigot samples.

The following wells met the Category I criteria and were sampled with dedicated tubing using the low-flow purge procedure 0252, 0265, 0275, 0276, 0691, 0909, 0930, 0932, and 0934.

The following wells were classified as Category II:

0251	0258	0262	0263	0264	0273
0274	0281	0282	0286	0287	0288
0289	0290	0908	0929	0941	

The sample results for these wells were qualified with a "Q" flag, indicating the data are qualitative because of the sampling technique.

Equipment Blank Assessment

No equipment blanks were taken. All groundwater and surface water samples were collected using dedicated equipment that did not require equipment blanks.

Field Duplicate Analysis

Field duplicate samples are collected and analyzed as an indication of overall precision of the measurement process. The precision observed includes both field and laboratory precision and has more variability than laboratory duplicates, which measure only laboratory performance. Duplicate samples were collected from locations 0934 and 1570. EPA recommended laboratory duplicate criterion is less than 20 percent relative percent difference (RPD) for results that are greater than 5 times the PQL. The duplicate results were acceptable with the exception of sodium at location 1570 with an RPD of 28 percent. There were no analytical errors identified during the review of the data.

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

RIN: 09022097 **Lab Code:** PAR **Project:** Tuba City **Validation Date:** 4/14/2009

Duplicate: 2723 **Sample:** 1570

Analyte	Sample Result	Sample Flag	Sample Error	Duplicate Result	Duplicate Flag	Duplicate Error	RPD	RER	Units
AMMONIA AS N				300					MG/L
ARSENIC	180			190			5.41		UG/L
CALCIUM	1100			1000			9.52		MG/L
CHLORIDE	59000			62000			4.96		MG/L
IRON	54	B		22	B				UG/L
MAGNESIUM	5100			5100			0		MG/L
MANGANESE	96000			110000			13.59		UG/L
MOLYBDENUM	270			280			3.64		UG/L
NITRATE/NITRITE AS N	3600			3700			2.74		MG/L
POTASSIUM	610			570			6.78		MG/L
SELENIUM	570			550			3.57		UG/L
Silica				99000					UG/L
SILICON				46000					UG/L
SODIUM	45000			34000			27.85		MG/L
SULFATE	13000			13000			0		MG/L
TOTAL DISSOLVED SOLIDS	140000			140000			0		MG/L
URANIUM	1600			1600			0		UG/L

Duplicate: 2724 **Sample:** 0934

Analyte	Sample Result	Sample Flag	Sample Error	Duplicate Result	Duplicate Flag	Duplicate Error	RPD	RER	Units
AMMONIA AS N	0.1	U		0.1	U				MG/L
ARSENIC	0.65			0.7			7.41		UG/L
CALCIUM	730			720			1.38		MG/L
CHLORIDE	250			250			0		MG/L
IRON	20	B		24	B				UG/L
MAGNESIUM	830			820			1.21		MG/L
MANGANESE	12	B		54			127.27		UG/L
MOLYBDENUM	0.21	B		0.23	B				UG/L
NITRATE/NITRITE AS N	400			400			0		MG/L
POTASSIUM	9.8			9.9			1.02		MG/L
SELENIUM	10			11			9.52		UG/L
Silica	18000			18000			0		UG/L
SILICON	8300			8500			2.38		UG/L
SODIUM	140			140			0		MG/L
SULFATE	2700			2800			3.64		MG/L
TOTAL DISSOLVED SOLIDS	7300			7400			1.36		MG/L

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

RIN: 09022097 **Lab Code:** PAR **Project:** Tuba City **Validation Date:** 4/14/2009

Duplicate: 2724 **Sample:** 0934

Analyte	Sample Result	Sample Flag	Sample Error	Duplicate Result	Duplicate Flag	Duplicate Error	RPD	RER	Units
URANIUM	190			190			0		UG/L

Certification

All laboratory analytical quality control criteria were met except as qualified in this report. The data qualifiers listed on the SEEPro database reports are defined on the last page of each report. All data in this package are considered validated and available for use.

Laboratory Coordinator: Steve Donivan — Date: 5-28-2009

Data Validation Lead: Steve Donivan — Date: 5-28-2009

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Attachment 1
Assessment of Anomalous Data

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Potential Outliers Report

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Potential Outliers Report

Potential outliers are measurements that are extremely large or small relative to the rest of the data and, therefore, are suspected of misrepresenting the population from which they were collected. Potential outliers may result from transcription errors, data-coding errors, or measurement system problems. However, outliers may also represent true extreme values of a distribution and indicate more variability in the population than was expected.

Statistical outlier tests give probabilistic evidence that an extreme value does not "fit" with the distribution of the remainder of the data and is therefore a statistical outlier. These tests should only be used to identify data points that require further investigation. The tests alone cannot determine whether a statistical outlier should be discarded or corrected within a data set.

There are three steps involved in identifying extreme values or outliers:

1. Identify extreme values that may be potential outliers by generating the Outliers Report using the Sample Management System from data in the SEEPro database. The application compares the new data set with historical data and lists the new data that fall outside the historical data range. A determination is also made if the data are normally distributed using the Shapiro-Wilk Test.
2. Apply the appropriate statistical test. Dixon's Extreme Value test is used to test for statistical outliers when the sample size is less than or equal to 25. This test considers both extreme values that are much smaller than the rest of the data (case 1) and extreme values that are much larger than the rest of the data (case 2). This test is valid only if the data without the suspected outlier are normally distributed. Rosner's Test is a parametric test that is used to detect outliers for sample sizes of 25 or more. This test also assumes that the data without the suspected outliers are normally distributed.
3. Scientifically review statistical outliers and decide on their disposition.

Fifteen results were identified as potentially anomalous. All other sample results met these criteria and are acceptable for use as qualified. At this time, all data from this sampling event may be treated as validated results.

Of the 15 identified results, four are field measurements, seven are from Category II wells, and one from a surface water location where higher variability is expected. The other data points are below the PQLs of the analytical method used.

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Data Validation Outliers Report - Field Parameters Only
Laboratory: Field Measurements
RIN: 09022097
Comparison: All Historical Data
Report Date: 5/5/2009

Site Code	Location Code	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Normally Distributed	Statistical Outlier
				Result	Qualifiers Lab	Qualifiers Data	Result	Qualifiers Lab	Qualifiers Data	Result	Qualifiers Lab	Qualifiers Data	N	N Below Detect		
TUB01	0251	02/25/2009	Specific Conductance	205		FQ	2146		FQ	212		F	19	0	No	No
TUB01	0252	02/25/2009	Specific Conductance	170		F	359			176		F	17	0	No	No
TUB01	0258	02/26/2009	pH	8.13		FQ	8.07		F	7.28		F	9	0	No	No
TUB01	0262	02/26/2009	Alkalinity, Total (As CaCO3)	392		FQ	369		FQ	144			13	0	Yes	No
TUB01	0262	02/26/2009	Oxidation Reduction Potential	318.2		FQ	242		F	28.5		F	11	0	Yes	No
TUB01	0263	02/26/2009	pH	7.02		FQ	6.94		FQ	6.55			11	0	No	No
TUB01	0263	02/26/2009	Specific Conductance	3972		FQ	5150			4142		F	11	0	Yes	No
TUB01	0264	02/26/2009	Alkalinity, Total (As CaCO3)	134		FQ	121			90		FQ	12	0	Yes	No
TUB01	0264	02/26/2009	Oxidation Reduction Potential	208.4		FQ	204.6		FQ	69.2		FQ	11	0	Yes	No
TUB01	0264	02/26/2009	pH	8.22		FQ	7.91		FQ	7.25		QF	11	0	No	Yes
TUB01	0265	02/25/2009	Oxidation Reduction Potential	354.6		F	231		F	-86		F	11	0	No	Yes
TUB01	0266	02/25/2009	Oxidation Reduction Potential	362.5		F	194		F	-143		QF	11	0	No	Yes
TUB01	0266	02/25/2009	pH	8.17		F	8.14		FQ	7.56			11	0	Yes	No
TUB01	0266	02/25/2009	Specific Conductance	215		F	273		F	226		FQ	11	0	Yes	No
TUB01	0267	02/25/2009	Oxidation Reduction Potential	383.1		F	277		F	26			16	0	Yes	No
TUB01	0268	02/24/2009	Alkalinity, Total (As CaCO3)	319		F	178		F	80			21	0	Yes	Yes
TUB01	0275	02/24/2009	pH	6.57		F	6.55		F	6.29		F	8	0	Yes	No
TUB01	0276	02/24/2009	Alkalinity, Total (As CaCO3)	192		F	125		F	91		F	8	0	Yes	Yes
TUB01	0281	02/25/2009	Alkalinity, Total (As CaCO3)	102		FQ	182		FQ	109		FQ	8	0	No	No
TUB01	0281	02/25/2009	Oxidation Reduction Potential	374.9		FQ	212		QF	-25		F	8	0	Yes	No
TUB01	0281	02/25/2009	Turbidity	25.4		FQ	17.9		FQ	2.89		FQ	8	0	Yes (log)	Yes
TUB01	0282	02/25/2009	Alkalinity, Total (As CaCO3)	104		FQ	367		FQ	113		FQ	8	0	No	No
TUB01	0282	02/25/2009	Oxidation Reduction Potential	382.7		FQ	212.1		FQ	109		FQ	8	0	Yes (log)	No
TUB01	0282	02/25/2009	pH	7.74		FQ	7.62		FQ	7.24		FQ	8	0	No	No

Data Validation Outliers Report - Field Parameters Only

Laboratory: Field Measurements
RIN: 09022097
Comparison: All Historical Data
Report Date: 5/5/2009

				Current			Historical Maximum			Historical Minimum			Number of Data Points		Normally Distributed	Statistical Outlier
					Qualifiers			Qualifiers			Qualifiers					
Site Code	Location Code	Sample Date	Analyte	Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect		
TUB01	0282	02/25/2009	Specific Conductance	679		FQ	2698		F	839		FQ	8	0	No	No
TUB01	0691	02/26/2009	Oxidation Reduction Potential	477.2		F	257		F	-121		F	20	0	No	Yes
TUB01	0929	02/25/2009	pH	8.16		FQ	7.92		L	7.04		L	20	0	Yes	No
TUB01	0929	02/25/2009	Specific Conductance	326		FQ	265000		F	345		L	20	0	No	No
TUB01	0930	02/26/2009	Alkalinity, Total (As CaCO3)	130		F	120		F	81			24	0	No	Yes
TUB01	0930	02/26/2009	Oxidation Reduction Potential	487.5		F	339			48			20	0	Yes	Yes
TUB01	0932	02/26/2009	pH	8.3		F	8.02		F	7.04			24	0	No	No
TUB01	0935	02/25/2009	Oxidation Reduction Potential	373.4		F	282			-234		F	25	0	No	Yes
TUB01	0935	02/25/2009	pH	6.92		F	6.81			5.91			25	0	No	Yes
TUB01	0938	02/25/2009	pH	7.11		F	7.1			6.43			13	0	Yes	No
TUB01	0941	02/24/2009	Specific Conductance	3783		FQ	3750		FQ	1130			24	0	No	No

Data Validation Outliers Report - Laboratory Parameters
Laboratory: PARAGON (Fort Collins, CO)
RIN: 09022097
Comparison: All Historical Data
Report Date: 5/6/2009

				Current			Historical Maximum			Historical Minimum			Number of Data Points		Normally Distributed	Statistical Outlier
					Qualifiers			Qualifiers			Qualifiers					
Site Code	Location Code	Sample Date	Analyte	Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect		
TUB01	0251	02/25/2009	Molybdenum	0.00027	B	UFQ	0.003	U		0.00029	B	F	21	15	No	No
TUB01	0251	02/25/2009	Sodium	5.5		FQ	17.1			5.6		F	17	0	No	No
TUB01	0252	02/25/2009	Arsenic	0.0024	E	F	0.0022		F	0.0012		F	14	0	Yes	No
TUB01	0252	02/25/2009	Chloride	4.5		F	5.68			4.58		F	17	0	Yes	No
TUB01	0252	02/25/2009	Magnesium	3.7		F	7.66			3.8		FQ	17	0	No	No
TUB01	0252	02/25/2009	Potassium	2.1		F	3.7		F	2.17	E	JF	17	0	No	No
TUB01	0252	02/25/2009	Sodium	8.9		F	15.2			9.1		FQ	17	0	Yes	No
TUB01	0258	02/26/2009	Magnesium	6.7		FQ	7.5		F	6.8		F	9	0	Yes	No
TUB01	0258	02/26/2009	Molybdenum	0.00037	B	FQ	0.00077	B	UF	0.0005	B	UFQ	9	6	Yes	Yes
TUB01	0258	02/26/2009	Sodium	10		FQ	12.5			11		F	9	0	No	Yes
TUB01	0262	02/26/2009	Calcium	730		FQ	670		FQ	433			11	0	Yes	Yes
TUB01	0262	02/26/2009	Manganese	0.012		FQ	0.011		FQ	0.000054	U	FQ	11	6	Yes (log)	Yes
TUB01	0264	02/26/2009	Sodium	13		FQ	18.3			14		FQ	11	0	No	No
TUB01	0266	02/25/2009	Iron	0.071		F	0.014	U	F	0.0029	U	FQ	11	11	Yes	Yes
TUB01	0266	02/25/2009	Magnesium	6.7		F	7.6	N	FJ	6.9		FQ	11	0	Yes	No
TUB01	0266	02/25/2009	Manganese	0.0038	B	F	0.00064	B	UFQ	0.000054	U	FQ	11	9	Yes	Yes
TUB01	0266	02/25/2009	Sodium	5.5		F	7	N	FJ	5.6		F	11	0	Yes	No
TUB01	0267	02/25/2009	Magnesium	770		F	932		F	817		F	14	0	Yes	No
TUB01	0267	02/25/2009	Manganese	0.032		F	0.153			0.035		F	17	0	No	No
TUB01	0272	02/24/2009	Chloride	7.8		F	13		F	8		FJ	10	0	No	No
TUB01	0272	02/24/2009	Sodium	5.6		F	6.8		F	5.8		F	10	0	Yes	No
TUB01	0274	02/24/2009	Arsenic	0.0025		FQ	0.0022		FQ	0.0014		FQ	8	0	No	Yes
TUB01	0274	02/24/2009	Chloride	10		FQ	12		FQ	11		FQ	8	0	No	Yes
TUB01	0274	02/24/2009	Iron	0.036	B	FQ	0.015	B	UFQ	0.0029	U	FQ	8	8	Yes	Yes
TUB01	0274	02/24/2009	Magnesium	6.4		FQ	7.6		FQ	6.5		FQ	8	0	Yes	No
TUB01	0274	02/24/2009	Sodium	9.6		FQ	11		FQ	10		FQ	8	0	No	No

Data Validation Outliers Report - Laboratory Parameters

Laboratory: PARAGON (Fort Collins, CO)
RIN: 09022097
Comparison: All Historical Data
Report Date: 5/6/2009

Site Code	Location Code	Sample Date	Analyte	Current	Current Qualifiers		Historical Maximum	Historical Maximum Qualifiers		Historical Minimum	Historical Minimum Qualifiers		Number of Data Points		Normally Distributed	Statistical Outlier
				Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect		
TUB01	0275	02/24/2009	Ammonia Total as N	34		F	25		FJ	16		F	8	0	No	Yes
TUB01	0275	02/24/2009	Iron	0.049	B	F	0.028	U	F	0.0014	U	FJ	8	8	Yes	No
TUB01	0275	02/24/2009	Manganese	9.8		F	9.4		F	2.2		F	8	0	No	No
TUB01	0275	02/24/2009	Uranium	0.52		F	0.49		F	0.16		F	8	0	No	No
TUB01	0276	02/24/2009	Calcium	31		F	36		F	32		F	8	0	Yes	No
TUB01	0276	02/24/2009	Magnesium	6		F	7.1		F	6.6		F	8	0	Yes	Yes
TUB01	0276	02/24/2009	Molybdenum	0.00044	B	F	0.00073	B	UF	0.00049	B	F	8	7	Yes	No
TUB01	0276	02/24/2009	Sodium	11		F	13		F	12		F	8	0	No	No
TUB01	0281	02/25/2009	Iron	0.26		FQ	0.22		FQ	0.017	B	UFQ	9	6	Yes (log)	No
TUB01	0281	02/25/2009	Sodium	21		FQ	30		FQ	22		FQ	9	0	Yes	No
TUB01	0282	02/25/2009	Calcium	98		FQ	390		F	110		FQ	8	0	Yes (log)	No
TUB01	0282	02/25/2009	Chloride	38		FQ	94		F	39		FQ	8	0	No	No
TUB01	0282	02/25/2009	Iron	0.1		FQ	0.075		FQ	0.0029	U	FQ	8	7	Yes (log)	No
TUB01	0282	02/25/2009	Magnesium	19		FQ	120		F	22		FQ	8	0	Yes (log)	No
TUB01	0282	02/25/2009	Molybdenum	0.00058	B	FQ	0.0048		F	0.00067	B	FQ	8	4	Yes (log)	No
TUB01	0282	02/25/2009	Silicon	6.6		FQ	7.7		FQ	6.7		FQ	8	0	Yes	No
TUB01	0282	02/25/2009	Sodium	13		FQ	67		F	16		FQ	8	0	Yes (log)	No
TUB01	0282	02/25/2009	Sulfate	76		FQ	790		F	94		FQJ	8	0	Yes (log)	No
TUB01	0282	02/25/2009	Total Dissolved Solids	510		FQ	1600		FQ	520		FQ	7	0	Yes (log)	No
TUB01	0282	02/25/2009	Uranium	0.0046		FQ	0.054		F	0.0057		FQ	8	0	Yes (log)	No
TUB01	0691	02/26/2009	Arsenic	0.0019	E	F	0.0017		F	0.00071		F	14	0	No	No
TUB01	0691	02/26/2009	Calcium	81		F	353		F	83		F	18	0	No	No
TUB01	0691	02/26/2009	Potassium	1.9		F	6.3		F	2		FQ	18	0	Yes (log)	No
TUB01	0908	02/25/2009	Ammonia Total as N	27		FQ	78		F	39		FQJ	9	0	Yes	No
TUB01	0929	02/25/2009	Iron	0.063		FQ	0.03	U	F	0.0024	B	F	21	17	Yes (log)	Yes
TUB01	0929	02/25/2009	Manganese	0.0038	B	FQ	0.0034	B	L	0.000054	U	F	19	14	Yes (log)	Yes
TUB01	0929	02/25/2009	Molybdenum	0.00028	B	FQ	0.01	U	F	0.00029	B	UFQ	20	19	No	No

Data Validation Outliers Report - Laboratory Parameters
Laboratory: PARAGON (Fort Collins, CO)
RIN: 09022097
Comparison: All Historical Data
Report Date: 5/6/2009

				Current			Historical Maximum			Historical Minimum			Number of Data Points		Normally Distributed	Statistical Outlier
					Qualifiers			Qualifiers			Qualifiers					
Site Code	Location Code	Sample Date	Analyte	Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect		
TUB01	0929	02/25/2009	Sodium	9.1		FQ	15.1		FQ	9.9		FQ	17	0	No	No
TUB01	0930	02/26/2009	Arsenic	0.0016		F	0.0015	B	F	0.00097		F	14	0	No	No
TUB01	0930	02/26/2009	Calcium	49		F	73		F	50.3			18	0	Yes	No
TUB01	0930	02/26/2009	Chloride	16		F	63		F	16.2			18	0	No	No
TUB01	0930	02/26/2009	Magnesium	10		F	15		F	10.6			18	0	No	No
TUB01	0930	02/26/2009	Potassium	2		F	3		F	2.05			18	0	No	No
TUB01	0930	02/26/2009	Selenium	0.0014		F	0.005	UW	J	0.0015		F	22	1	No	No
TUB01	0930	02/26/2009	Sodium	8.9		F	16		F	10.8			18	0	Yes	Yes
TUB01	0930	02/26/2009	Total Dissolved Solids	230		F	365		F	242			18	0	Yes	No
TUB01	0932	02/26/2009	Molybdenum	0.00035	B	F	0.01	U		0.00037	B	UF	26	23	No	No
TUB01	0932	02/26/2009	Potassium	1.8		F	3.9		F	1.9		F	23	0	No	No
TUB01	0934	02/25/2009	Nitrate + Nitrite as Nitrogen	400		F	520		FQJ	420		FQ	11	0	Yes	No
TUB01	0935	02/25/2009	Ammonia Total as N	78		F	98			79		J	7	0	Yes	No
TUB01	0935	02/25/2009	Magnesium	340		F	593			350		F	22	0	Yes	No
TUB01	0935	02/25/2009	Sulfate	2400		F	3360			2500		F	26	0	Yes	No
TUB01	0938	02/25/2009	Magnesium	150		F	472			160			14	0	Yes	No
TUB01	0938	02/25/2009	Manganese	0.0092	B	F	0.12		FQ	0.012			13	0	No	No
TUB01	0938	02/25/2009	Molybdenum	0.14		F	0.063			0.001	U		14	7	No	Yes
TUB01	0938	02/25/2009	Sulfate	950		F	2300		FQ	960		J	14	0	No	No
TUB01	0938	02/25/2009	Total Dissolved Solids	2700		F	6650			2800			14	0	Yes	No
TUB01	0938	02/25/2009	Uranium	0.66		F	0.62		FQ	0.133			14	0	Yes	No
TUB01	0941	02/24/2009	Calcium	820		FQ	690		FQ	122		F	24	0	No	No
TUB01	0942	02/24/2009	Calcium	580		F	847		F	609		F	26	0	Yes	No
TUB01	0942	02/24/2009	Nitrate + Nitrite as Nitrogen	210		F	380		F	260			10	0	No	No
TUB01	1569	02/24/2009	Arsenic	0.16			2.7			0.24			13	0	Yes (log)	Yes
TUB01	1569	02/24/2009	Molybdenum	0.29			3.64			0.292			17	0	Yes (log)	No
TUB01	1570	02/24/2009	Arsenic	0.19			2.7			0.29			16	0	No	No

Data Validation Outliers Report - Laboratory Parameters

Laboratory: PARAGON (Fort Collins, CO)
RIN: 09022097
Comparison: All Historical Data
Report Date: 5/6/2009

Site Code	Location Code	Sample Date	Analyte	Current Result	Current Qualifiers Lab	Current Qualifiers Data	Historical Maximum Result	Historical Maximum Qualifiers Lab	Historical Maximum Qualifiers Data	Historical Minimum Result	Historical Minimum Qualifiers Lab	Historical Minimum Qualifiers Data	Number of Data Points N	Number of Data Points N Below Detect	Normally Distributed	Statistical Outlier
TUB01	1570	02/24/2009	Arsenic	0.18			2.7			0.29			16	0	No	No
TUB01	1570	02/24/2009	Molybdenum	0.28			3.75			0.296			20	0	Yes	No
TUB01	1570	02/24/2009	Molybdenum	0.27			3.75			0.296			20	0	Yes	No

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
>	Result above upper detection limit.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
C	Pesticide result confirmed by GC-MS.
D	Analyte determined in diluted sample.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
J	Estimated
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P	> 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X,Y,Z	Laboratory defined qualifier, see case narrative.

DATA QUALIFIERS:

F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.	J	Estimated value.
L	Less than 3 bore volumes purged prior to sampling.	Q	Qualitative result due to sampling technique.	R	Unusable result.
U	Parameter analyzed for but was not detected.	X	Location is undefined.		

STATISTICAL TESTS:
The distribution of the data is tested for normality or lognormality using the Shapiro-Wilk Test
Outliers are identified using Dixon's Test when there are 25 or fewer data points.
Outliers are identified using Rosner's Test when there are 26 or more data points.
See Data Quality Assessment: Statistical Methods for Practitioners, EPA QC/G-9S, February 2006.

Attachment 2
Data Presentation

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Groundwater Quality Data

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Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/6/2009
Location: 0251 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/25/2009	N001	200 - 300	99		FQ	#		
Ammonia Total as N	mg/L	02/25/2009	N001	200 - 300	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/25/2009	N001	200 - 300	0.0021		FQ	#	0.0000061	
Calcium	mg/L	02/25/2009	N001	200 - 300	27		FQ	#	0.004	
Chloride	mg/L	02/25/2009	N001	200 - 300	6.2		FQ	#	0.4	
Iron	mg/L	02/25/2009	N001	200 - 300	0.031	B	FQ	#	0.0013	
Magnesium	mg/L	02/25/2009	N001	200 - 300	5.8		FQ	#	0.0054	
Manganese	mg/L	02/25/2009	N001	200 - 300	0.0032	B	FQ	#	0.000097	
Molybdenum	mg/L	02/25/2009	N001	200 - 300	0.00027	B	UFQ	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/25/2009	N001	200 - 300	4		FQ	#	0.05	
Oxidation Reduction Potential	mV	02/25/2009	N001	200 - 300	125.7		FQ	#		
pH	s.u.	02/25/2009	N001	200 - 300	8.03		FQ	#		
Potassium	mg/L	02/25/2009	N001	200 - 300	2.2		FQ	#	0.085	
Selenium	mg/L	02/25/2009	N001	200 - 300	0.0011		FQ	#	0.000017	
Silica	mg/L	02/25/2009	N001	200 - 300	10		FQ	#	0.013	
Silicon	mg/L	02/25/2009	N001	200 - 300	4.7		FQ	#	0.0061	
Sodium	mg/L	02/25/2009	N001	200 - 300	5.5		FQ	#	0.004	
Specific Conductance	umhos /cm	02/25/2009	N001	200 - 300	205		FQ	#		
Sulfate	mg/L	02/25/2009	N001	200 - 300	13		FQ	#	1	
Temperature	C	02/25/2009	N001	200 - 300	16.46		FQ	#		
Total Dissolved Solids	mg/L	02/25/2009	N001	200 - 300	140		FQ	#	20	
Turbidity	NTU	02/25/2009	N001	200 - 300	0.93		FQ	#		
Uranium	mg/L	02/25/2009	N001	200 - 300	0.0018		FQ	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0252 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/25/2009	N001	400	-	500	70		F	#		
Ammonia Total as N	mg/L	02/25/2009	N001	400	-	500	0.1	U	F	#	0.1	
Arsenic	mg/L	02/25/2009	N001	400	-	500	0.0024	E	F	#	0.0000061	
Calcium	mg/L	02/25/2009	N001	400	-	500	19		F	#	0.004	
Chloride	mg/L	02/25/2009	N001	400	-	500	4.5		F	#	0.4	
Iron	mg/L	02/25/2009	N001	400	-	500	0.029	B	F	#	0.0013	
Magnesium	mg/L	02/25/2009	N001	400	-	500	3.7		F	#	0.0054	
Manganese	mg/L	02/25/2009	N001	400	-	500	0.0056		F	#	0.000097	
Molybdenum	mg/L	02/25/2009	N001	400	-	500	0.00022	B	UF	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/25/2009	N001	400	-	500	2.3		F	#	0.02	
Oxidation Reduction Potential	mV	02/25/2009	N001	400	-	500	83.2		F	#		
pH	s.u.	02/25/2009	N001	400	-	500	7.8		F	#		
Potassium	mg/L	02/25/2009	N001	400	-	500	2.1		F	#	0.085	
Selenium	mg/L	02/25/2009	N001	400	-	500	0.00051		F	#	0.000017	
Silica	mg/L	02/25/2009	N001	400	-	500	9.5		F	#	0.013	
Silicon	mg/L	02/25/2009	N001	400	-	500	4.4		F	#	0.0061	
Sodium	mg/L	02/25/2009	N001	400	-	500	8.9		F	#	0.004	
Specific Conductance	umhos /cm	02/25/2009	N001	400	-	500	170		F	#		
Sulfate	mg/L	02/25/2009	N001	400	-	500	6.6		F	#	1	
Temperature	C	02/25/2009	N001	400	-	500	16.23		F	#		
Total Dissolved Solids	mg/L	02/25/2009	N001	400	-	500	110		F	#	20	
Turbidity	NTU	02/25/2009	N001	400	-	500	1.42		F	#		
Uranium	mg/L	02/25/2009	N001	400	-	500	0.0019		F	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0258 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/26/2009	N001	159	-	199	89		FQ	#		
Ammonia Total as N	mg/L	02/26/2009	N001	159	-	199	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/26/2009	N001	159	-	199	0.0025		FQ	#	0.0000061	
Calcium	mg/L	02/26/2009	N001	159	-	199	33		FQ	#	0.004	
Chloride	mg/L	02/26/2009	N001	159	-	199	12		FQ	#	0.4	
Iron	mg/L	02/26/2009	N001	159	-	199	0.013	B	UFQ	#	0.0013	
Magnesium	mg/L	02/26/2009	N001	159	-	199	6.7		FQ	#	0.0054	
Manganese	mg/L	02/26/2009	N001	159	-	199	0.00076	B	UFQ	#	0.000097	
Molybdenum	mg/L	02/26/2009	N001	159	-	199	0.00037	B	FQ	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/26/2009	N001	159	-	199	3.5		FQ	#	0.05	
Oxidation Reduction Potential	mV	02/26/2009	N001	159	-	199	179.8		FQ	#		
pH	s.u.	02/26/2009	N001	159	-	199	8.13		FQ	#		
Potassium	mg/L	02/26/2009	N001	159	-	199	1.7		FQ	#	0.085	
Selenium	mg/L	02/26/2009	N001	159	-	199	0.0017		FQ	#	0.000017	
Silica	mg/L	02/26/2009	N001	159	-	199	12		FQ	#	0.013	
Silicon	mg/L	02/26/2009	N001	159	-	199	5.5		FQ	#	0.0061	
Sodium	mg/L	02/26/2009	N001	159	-	199	10		FQ	#	0.004	
Specific Conductance	umhos /cm	02/26/2009	N001	159	-	199	271		FQ	#		
Sulfate	mg/L	02/26/2009	N001	159	-	199	17		FQ	#	1	
Temperature	C	02/26/2009	N001	159	-	199	16.4		FQ	#		
Total Dissolved Solids	mg/L	02/26/2009	N001	159	-	199	170		FQ	#	20	
Turbidity	NTU	02/26/2009	N001	159	-	199	1.79		FQ	#		
Uranium	mg/L	02/26/2009	N001	159	-	199	0.0014		FQ	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0262 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/26/2009	N001	60	-	100	392		FQ	#		
Ammonia Total as N	mg/L	02/26/2009	N001	60	-	100	1.6		FQ	#	0.1	
Arsenic	mg/L	02/26/2009	N001	60	-	100	0.0015		FQ	#	0.0000061	
Calcium	mg/L	02/26/2009	N001	60	-	100	730		FQ	#	0.0081	
Chloride	mg/L	02/26/2009	N001	60	-	100	98		FQ	#	10	
Iron	mg/L	02/26/2009	N001	60	-	100	0.012	B	UFQ	#	0.0026	
Magnesium	mg/L	02/26/2009	N001	60	-	100	120		FQ	#	0.011	
Manganese	mg/L	02/26/2009	N001	60	-	100	0.012		FQ	#	0.00019	
Molybdenum	mg/L	02/26/2009	N001	60	-	100	1.4		FQ	#	0.0026	
Nitrate + Nitrite as Nitrogen	mg/L	02/26/2009	N001	60	-	100	150		FQ	#	1	
Oxidation Reduction Potential	mV	02/26/2009	N001	60	-	100	318.2		FQ	#		
pH	s.u.	02/26/2009	N001	60	-	100	6.97		FQ	#		
Potassium	mg/L	02/26/2009	N001	60	-	100	9		FQ	#	0.17	
Selenium	mg/L	02/26/2009	N001	60	-	100	0.088		FQ	#	0.00017	
Silica	mg/L	02/26/2009	N001	60	-	100	18		FQ	#	0.026	
Silicon	mg/L	02/26/2009	N001	60	-	100	8.4		FQ	#	0.012	
Sodium	mg/L	02/26/2009	N001	60	-	100	180		FQ	#	0.008	
Specific Conductance	umhos /cm	02/26/2009	N001	60	-	100	3514		FQ	#		
Sulfate	mg/L	02/26/2009	N001	60	-	100	1400		FQ	#	25	
Temperature	C	02/26/2009	N001	60	-	100	17.05		FQ	#		
Total Dissolved Solids	mg/L	02/26/2009	N001	60	-	100	3600		FQ	#	80	
Turbidity	NTU	02/26/2009	N001	60	-	100	2.27		FQ	#		
Uranium	mg/L	02/26/2009	N001	60	-	100	1.2		FQ	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0263 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/26/2009	N001	60	-	100	309		FQ	#		
Ammonia Total as N	mg/L	02/26/2009	N001	60	-	100	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/26/2009	N001	60	-	100	0.0011		FQ	#	0.0000061	
Calcium	mg/L	02/26/2009	N001	60	-	100	770		FQ	#	0.0081	
Chloride	mg/L	02/26/2009	N001	60	-	100	110		FQ	#	10	
Iron	mg/L	02/26/2009	N001	60	-	100	0.02	B	UFQ	#	0.0026	
Magnesium	mg/L	02/26/2009	N001	60	-	100	240		FQ	#	0.011	
Manganese	mg/L	02/26/2009	N001	60	-	100	0.0014	B	UFQ	#	0.00019	
Molybdenum	mg/L	02/26/2009	N001	60	-	100	0.013		FQ	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/26/2009	N001	60	-	100	160		FQ	#	1	
Oxidation Reduction Potential	mV	02/26/2009	N001	60	-	100	218.4		FQ	#		
pH	s.u.	02/26/2009	N001	60	-	100	7.02		FQ	#		
Potassium	mg/L	02/26/2009	N001	60	-	100	8.2		FQ	#	0.17	
Selenium	mg/L	02/26/2009	N001	60	-	100	0.027		FQ	#	0.000033	
Silica	mg/L	02/26/2009	N001	60	-	100	15		FQ	#	0.026	
Silicon	mg/L	02/26/2009	N001	60	-	100	7.1		FQ	#	0.012	
Sodium	mg/L	02/26/2009	N001	60	-	100	160		FQ	#	0.008	
Specific Conductance	umhos /cm	02/26/2009	N001	60	-	100	3972		FQ	#		
Sulfate	mg/L	02/26/2009	N001	60	-	100	2000		FQ	#	25	
Temperature	C	02/26/2009	N001	60	-	100	16.54		FQ	#		
Total Dissolved Solids	mg/L	02/26/2009	N001	60	-	100	4300		FQ	#	80	
Turbidity	NTU	02/26/2009	N001	60	-	100	2.31		FQ	#		
Uranium	mg/L	02/26/2009	N001	60	-	100	0.12		FQ	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0264 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/26/2009	N001	160	-	200	134		FQ	#		
Ammonia Total as N	mg/L	02/26/2009	N001	160	-	200	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/26/2009	N001	160	-	200	0.0022		FQ	#	0.0000061	
Calcium	mg/L	02/26/2009	N001	160	-	200	57		FQ	#	0.004	
Chloride	mg/L	02/26/2009	N001	160	-	200	13		FQ	#	1	
Iron	mg/L	02/26/2009	N001	160	-	200	0.018	B	UFQ	#	0.0013	
Magnesium	mg/L	02/26/2009	N001	160	-	200	11		FQ	#	0.0054	
Manganese	mg/L	02/26/2009	N001	160	-	200	0.00078	B	UFQ	#	0.000097	
Molybdenum	mg/L	02/26/2009	N001	160	-	200	0.00029	B	UFQ	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/26/2009	N001	160	-	200	9.5		FQ	#	0.1	
Oxidation Reduction Potential	mV	02/26/2009	N001	160	-	200	208.4		FQ	#		
pH	s.u.	02/26/2009	N001	160	-	200	8.22		FQ	#		
Potassium	mg/L	02/26/2009	N001	160	-	200	2		FQ	#	0.085	
Selenium	mg/L	02/26/2009	N001	160	-	200	0.0017		FQ	#	0.000017	
Silica	mg/L	02/26/2009	N001	160	-	200	12		FQ	#	0.013	
Silicon	mg/L	02/26/2009	N001	160	-	200	5.7		FQ	#	0.0061	
Sodium	mg/L	02/26/2009	N001	160	-	200	13		FQ	#	0.004	
Specific Conductance	umhos /cm	02/26/2009	N001	160	-	200	468		FQ	#		
Sulfate	mg/L	02/26/2009	N001	160	-	200	60		FQ	#	2.5	
Temperature	C	02/26/2009	N001	160	-	200	17.03		FQ	#		
Total Dissolved Solids	mg/L	02/26/2009	N001	160	-	200	290		FQ	#	20	
Turbidity	NTU	02/26/2009	N001	160	-	200	1.2		FQ	#		
Uranium	mg/L	02/26/2009	N001	160	-	200	0.0032		FQ	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0265 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/25/2009	N001	60	-	100	350		F	#		
Ammonia Total as N	mg/L	02/25/2009	N001	60	-	100	0.1	U	F	#	0.1	
Arsenic	mg/L	02/25/2009	N001	60	-	100	0.00096		F	#	0.0000061	
Calcium	mg/L	02/25/2009	N001	60	-	100	630		F	#	0.0081	
Chloride	mg/L	02/25/2009	N001	60	-	100	130		F	#	10	
Iron	mg/L	02/25/2009	N001	60	-	100	0.033	B	UF	#	0.0026	
Magnesium	mg/L	02/25/2009	N001	60	-	100	160		F	#	0.011	
Manganese	mg/L	02/25/2009	N001	60	-	100	0.0032	B	UF	#	0.00019	
Molybdenum	mg/L	02/25/2009	N001	60	-	100	0.00018	B	UF	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/25/2009	N001	60	-	100	160		F	#	1	
Oxidation Reduction Potential	mV	02/25/2009	N001	60	-	100	354.6		F	#		
pH	s.u.	02/25/2009	N001	60	-	100	6.88		F	#		
Potassium	mg/L	02/25/2009	N001	60	-	100	6.4		F	#	0.17	
Selenium	mg/L	02/25/2009	N001	60	-	100	0.0061		F	#	0.000017	
Silica	mg/L	02/25/2009	N001	60	-	100	16		F	#	0.026	
Silicon	mg/L	02/25/2009	N001	60	-	100	7.4		F	#	0.012	
Sodium	mg/L	02/25/2009	N001	60	-	100	120		F	#	0.008	
Specific Conductance	umhos /cm	02/25/2009	N001	60	-	100	3341		F	#		
Sulfate	mg/L	02/25/2009	N001	60	-	100	1200		F	#	25	
Temperature	C	02/25/2009	N001	60	-	100	16.94		F	#		
Total Dissolved Solids	mg/L	02/25/2009	N001	60	-	100	3400		F	#	80	
Turbidity	NTU	02/25/2009	N001	60	-	100	3.87		F	#		
Uranium	mg/L	02/25/2009	N001	60	-	100	0.072		F	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0266 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/25/2009	N001	160	-	200	93		F	#		
Ammonia Total as N	mg/L	02/25/2009	N001	160	-	200	0.1	U	F	#	0.1	
Arsenic	mg/L	02/25/2009	N001	160	-	200	0.0016		F	#	0.0000061	
Calcium	mg/L	02/25/2009	N001	160	-	200	27		F	#	0.004	
Chloride	mg/L	02/25/2009	N001	160	-	200	7.3		F	#	0.4	
Iron	mg/L	02/25/2009	N001	160	-	200	0.071		F	#	0.0013	
Magnesium	mg/L	02/25/2009	N001	160	-	200	6.7		F	#	0.0054	
Manganese	mg/L	02/25/2009	N001	160	-	200	0.0038	B	F	#	0.000097	
Molybdenum	mg/L	02/25/2009	N001	160	-	200	0.00066	B	F	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/25/2009	N001	160	-	200	3.1		F	#	0.05	
Oxidation Reduction Potential	mV	02/25/2009	N001	160	-	200	362.5		F	#		
pH	s.u.	02/25/2009	N001	160	-	200	8.17		F	#		
Potassium	mg/L	02/25/2009	N001	160	-	200	2.3		F	#	0.085	
Selenium	mg/L	02/25/2009	N001	160	-	200	0.0012		F	#	0.000017	
Silica	mg/L	02/25/2009	N001	160	-	200	12		F	#	0.013	
Silicon	mg/L	02/25/2009	N001	160	-	200	5.6		F	#	0.0061	
Sodium	mg/L	02/25/2009	N001	160	-	200	5.5		F	#	0.004	
Specific Conductance	umhos /cm	02/25/2009	N001	160	-	200	215		F	#		
Sulfate	mg/L	02/25/2009	N001	160	-	200	11		F	#	1	
Temperature	C	02/25/2009	N001	160	-	200	17.26		F	#		
Total Dissolved Solids	mg/L	02/25/2009	N001	160	-	200	150		F	#	20	
Turbidity	NTU	02/25/2009	N001	160	-	200	0.87		F	#		
Uranium	mg/L	02/25/2009	N001	160	-	200	0.0019		F	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0267 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/25/2009	N001	60	-	100	840		F	#		
Ammonia Total as N	mg/L	02/25/2009	N001	60	-	100	0.1	U	F	#	0.1	
Arsenic	mg/L	02/25/2009	N001	60	-	100	0.003		F	#	0.0000061	
Calcium	mg/L	02/25/2009	N001	60	-	100	580		F	#	0.02	
Chloride	mg/L	02/25/2009	N001	60	-	100	110		F	#	20	
Iron	mg/L	02/25/2009	N001	60	-	100	0.027	B	UF	#	0.0064	
Magnesium	mg/L	02/25/2009	N001	60	-	100	770		F	#	0.027	
Manganese	mg/L	02/25/2009	N001	60	-	100	0.032		F	#	0.00048	
Molybdenum	mg/L	02/25/2009	N001	60	-	100	0.00018	B	UF	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/25/2009	N001	60	-	100	300		F	#	2	
Oxidation Reduction Potential	mV	02/25/2009	N001	60	-	100	383.1		F	#		
pH	s.u.	02/25/2009	N001	60	-	100	6.61		F	#		
Potassium	mg/L	02/25/2009	N001	60	-	100	11		F	#	0.43	
Selenium	mg/L	02/25/2009	N001	60	-	100	0.042		F	#	0.000084	
Silica	mg/L	02/25/2009	N001	60	-	100	23		F	#	0.066	
Silicon	mg/L	02/25/2009	N001	60	-	100	11		F	#	0.03	
Sodium	mg/L	02/25/2009	N001	60	-	100	390		F	#	0.02	
Specific Conductance	umhos /cm	02/25/2009	N001	60	-	100	6571		F	#		
Sulfate	mg/L	02/25/2009	N001	60	-	100	3300		F	#	50	
Temperature	C	02/25/2009	N001	60	-	100	16.02		F	#		
Total Dissolved Solids	mg/L	02/25/2009	N001	60	-	100	7500		F	#	80	
Turbidity	NTU	02/25/2009	N001	60	-	100	1.17		F	#		
Uranium	mg/L	02/25/2009	N001	60	-	100	0.07		F	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0268 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/24/2009	N001	200	-	300	319		F	#		
Ammonia Total as N	mg/L	02/24/2009	N001	200	-	300	0.1	U	F	#	0.1	
Arsenic	mg/L	02/24/2009	N001	200	-	300	0.00047		F	#	0.0000061	
Calcium	mg/L	02/24/2009	N001	200	-	300	95		F	#	0.004	
Chloride	mg/L	02/24/2009	N001	200	-	300	16		F	#	1	
Iron	mg/L	02/24/2009	N001	200	-	300	0.0078	B	UF	#	0.0013	
Magnesium	mg/L	02/24/2009	N001	200	-	300	17		F	#	0.0054	
Manganese	mg/L	02/24/2009	N001	200	-	300	0.00081	B	UF	#	0.000097	
Molybdenum	mg/L	02/24/2009	N001	200	-	300	0.0002	B	UF	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/24/2009	N001	200	-	300	17		F	#	0.1	
Oxidation Reduction Potential	mV	02/24/2009	N001	200	-	300	187.2		F	#		
pH	s.u.	02/24/2009	N001	200	-	300	7.71		F	#		
Potassium	mg/L	02/24/2009	N001	200	-	300	4.3		F	#	0.085	
Selenium	mg/L	02/24/2009	N001	200	-	300	0.0019		F	#	0.000017	
Silica	mg/L	02/24/2009	N001	200	-	300	10		F	#	0.013	
Silicon	mg/L	02/24/2009	N001	200	-	300	4.7		F	#	0.0061	
Sodium	mg/L	02/24/2009	N001	200	-	300	16		F	#	0.004	
Specific Conductance	umhos /cm	02/24/2009	N001	200	-	300	719		F	#		
Sulfate	mg/L	02/24/2009	N001	200	-	300	130		F	#	2.5	
Temperature	C	02/24/2009	N001	200	-	300	15.35		F	#		
Total Dissolved Solids	mg/L	02/24/2009	N001	200	-	300	460		F	#	20	
Turbidity	NTU	02/24/2009	N001	200	-	300	1.15		F	#		
Uranium	mg/L	02/24/2009	N001	200	-	300	0.02		F	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0272 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/24/2009	N001	159.1	-	179.1	97		F	#		
Ammonia Total as N	mg/L	02/24/2009	N001	159.1	-	179.1	0.1	U	F	#	0.1	
Arsenic	mg/L	02/24/2009	N001	159.1	-	179.1	0.0018		F	#	0.0000061	
Calcium	mg/L	02/24/2009	N001	159.1	-	179.1	32		F	#	0.004	
Chloride	mg/L	02/24/2009	N001	159.1	-	179.1	7.8		F	#	0.4	
Iron	mg/L	02/24/2009	N001	159.1	-	179.1	0.009	B	UF	#	0.0013	
Magnesium	mg/L	02/24/2009	N001	159.1	-	179.1	6.7		F	#	0.0054	
Manganese	mg/L	02/24/2009	N001	159.1	-	179.1	0.00083	B	UF	#	0.000097	
Molybdenum	mg/L	02/24/2009	N001	159.1	-	179.1	0.00019	B	UF	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/24/2009	N001	159.1	-	179.1	3.6		F	#	0.05	
Oxidation Reduction Potential	mV	02/24/2009	N001	159.1	-	179.1	136.4		F	#		
pH	s.u.	02/24/2009	N001	159.1	-	179.1	7.96		F	#		
Potassium	mg/L	02/24/2009	N001	159.1	-	179.1	1.6		F	#	0.085	
Selenium	mg/L	02/24/2009	N001	159.1	-	179.1	0.0012		F	#	0.000017	
Silica	mg/L	02/24/2009	N001	159.1	-	179.1	11		F	#	0.013	
Silicon	mg/L	02/24/2009	N001	159.1	-	179.1	5.1		F	#	0.0061	
Sodium	mg/L	02/24/2009	N001	159.1	-	179.1	5.6		F	#	0.004	
Specific Conductance	umhos /cm	02/24/2009	N001	159.1	-	179.1	294		F	#		
Sulfate	mg/L	02/24/2009	N001	159.1	-	179.1	12		F	#	1	
Temperature	C	02/24/2009	N001	159.1	-	179.1	17.2		F	#		
Total Dissolved Solids	mg/L	02/24/2009	N001	159.1	-	179.1	150		F	#	20	
Turbidity	NTU	02/24/2009	N001	159.1	-	179.1	1.69		F	#		
Uranium	mg/L	02/24/2009	N001	159.1	-	179.1	0.0015		F	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0273 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/24/2009	N001	153	-	173	145		FQ	#		
Ammonia Total as N	mg/L	02/24/2009	N001	153	-	173	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/24/2009	N001	153	-	173	0.0011		FQ	#	0.0000061	
Calcium	mg/L	02/24/2009	N001	153	-	173	130		FQ	#	0.004	
Chloride	mg/L	02/24/2009	N001	153	-	173	33		FQ	#	1	
Iron	mg/L	02/24/2009	N001	153	-	173	0.039	B	FQ	#	0.0013	
Magnesium	mg/L	02/24/2009	N001	153	-	173	23		FQ	#	0.0054	
Manganese	mg/L	02/24/2009	N001	153	-	173	0.0019	B	UFQ	#	0.000097	
Molybdenum	mg/L	02/24/2009	N001	153	-	173	0.019		FQ	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/24/2009	N001	153	-	173	33		FQ	#	0.5	
Oxidation Reduction Potential	mV	02/24/2009	N001	153	-	173	177.2		FQ	#		
pH	s.u.	02/24/2009	N001	153	-	173	7.36		FQ	#		
Potassium	mg/L	02/24/2009	N001	153	-	173	2.7		FQ	#	0.085	
Selenium	mg/L	02/24/2009	N001	153	-	173	0.013		FQ	#	0.000017	
Silica	mg/L	02/24/2009	N001	153	-	173	12		FQ	#	0.013	
Silicon	mg/L	02/24/2009	N001	153	-	173	5.7		FQ	#	0.0061	
Sodium	mg/L	02/24/2009	N001	153	-	173	26		FQ	#	0.004	
Specific Conductance	umhos /cm	02/24/2009	N001	153	-	173	896		FQ	#		
Sulfate	mg/L	02/24/2009	N001	153	-	173	160		FQ	#	2.5	
Temperature	C	02/24/2009	N001	153	-	173	16.63		FQ	#		
Total Dissolved Solids	mg/L	02/24/2009	N001	153	-	173	650		FQ	#	20	
Turbidity	NTU	02/24/2009	N001	153	-	173	1.89		FQ	#		
Uranium	mg/L	02/24/2009	N001	153	-	173	0.043		FQ	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0274 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/24/2009	N001	149	-	169	91		FQ	#		
Ammonia Total as N	mg/L	02/24/2009	N001	149	-	169	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/24/2009	N001	149	-	169	0.0025		FQ	#	0.0000061	
Calcium	mg/L	02/24/2009	N001	149	-	169	33		FQ	#	0.004	
Chloride	mg/L	02/24/2009	N001	149	-	169	10		FQ	#	0.4	
Iron	mg/L	02/24/2009	N001	149	-	169	0.036	B	FQ	#	0.0013	
Magnesium	mg/L	02/24/2009	N001	149	-	169	6.4		FQ	#	0.0054	
Manganese	mg/L	02/24/2009	N001	149	-	169	0.00099	B	UFQ	#	0.000097	
Molybdenum	mg/L	02/24/2009	N001	149	-	169	0.00049	B	FQ	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/24/2009	N001	149	-	169	3.4		FQ	#	0.05	
Oxidation Reduction Potential	mV	02/24/2009	N001	149	-	169	185.1		FQ	#		
pH	s.u.	02/24/2009	N001	149	-	169	7.97		FQ	#		
Potassium	mg/L	02/24/2009	N001	149	-	169	1.4		FQ	#	0.085	
Selenium	mg/L	02/24/2009	N001	149	-	169	0.0015		FQ	#	0.000017	
Silica	mg/L	02/24/2009	N001	149	-	169	11		FQ	#	0.013	
Silicon	mg/L	02/24/2009	N001	149	-	169	5.1		FQ	#	0.0061	
Sodium	mg/L	02/24/2009	N001	149	-	169	9.6		FQ	#	0.004	
Specific Conductance	umhos /cm	02/24/2009	N001	149	-	169	297		FQ	#		
Sulfate	mg/L	02/24/2009	N001	149	-	169	15		FQ	#	1	
Temperature	C	02/24/2009	N001	149	-	169	15.99		FQ	#		
Total Dissolved Solids	mg/L	02/24/2009	N001	149	-	169	170		FQ	#	20	
Turbidity	NTU	02/24/2009	N001	149	-	169	1.73		FQ	#		
Uranium	mg/L	02/24/2009	N001	149	-	169	0.0015		FQ	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0275 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/24/2009	N001	158.2	-	178.2	620		F	#		
Ammonia Total as N	mg/L	02/24/2009	N001	158.2	-	178.2	34		F	#	5	
Arsenic	mg/L	02/24/2009	N001	158.2	-	178.2	0.0011		F	#	0.0000061	
Calcium	mg/L	02/24/2009	N001	158.2	-	178.2	770		F	#	0.0081	
Chloride	mg/L	02/24/2009	N001	158.2	-	178.2	120		F	#	10	
Iron	mg/L	02/24/2009	N001	158.2	-	178.2	0.049	B	F	#	0.0026	
Magnesium	mg/L	02/24/2009	N001	158.2	-	178.2	360		F	#	0.011	
Manganese	mg/L	02/24/2009	N001	158.2	-	178.2	9.8		F	#	0.00019	
Molybdenum	mg/L	02/24/2009	N001	158.2	-	178.2	0.00026	B	UF	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/24/2009	N001	158.2	-	178.2	260		F	#	2	
Oxidation Reduction Potential	mV	02/24/2009	N001	158.2	-	178.2	193.1		F	#		
pH	s.u.	02/24/2009	N001	158.2	-	178.2	6.57		F	#		
Potassium	mg/L	02/24/2009	N001	158.2	-	178.2	22		F	#	0.17	
Selenium	mg/L	02/24/2009	N001	158.2	-	178.2	0.02		F	#	0.000033	
Silica	mg/L	02/24/2009	N001	158.2	-	178.2	17		F	#	0.026	
Silicon	mg/L	02/24/2009	N001	158.2	-	178.2	7.7		F	#	0.012	
Sodium	mg/L	02/24/2009	N001	158.2	-	178.2	280		F	#	0.008	
Specific Conductance	umhos /cm	02/24/2009	N001	158.2	-	178.2	5466		F	#		
Sulfate	mg/L	02/24/2009	N001	158.2	-	178.2	2200		F	#	25	
Temperature	C	02/24/2009	N001	158.2	-	178.2	16.49		F	#		
Total Dissolved Solids	mg/L	02/24/2009	N001	158.2	-	178.2	5400		F	#	80	
Turbidity	NTU	02/24/2009	N001	158.2	-	178.2	2.96		F	#		
Uranium	mg/L	02/24/2009	N001	158.2	-	178.2	0.52		F	#	0.000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0276 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/24/2009	N001	154.5	-	174.5	192		F	#		
Ammonia Total as N	mg/L	02/24/2009	N001	154.5	-	174.5	0.1	U	F	#	0.1	
Arsenic	mg/L	02/24/2009	N001	154.5	-	174.5	0.0027		F	#	0.0000061	
Calcium	mg/L	02/24/2009	N001	154.5	-	174.5	31		F	#	0.004	
Chloride	mg/L	02/24/2009	N001	154.5	-	174.5	11		F	#	0.4	
Iron	mg/L	02/24/2009	N001	154.5	-	174.5	0.0099	B	UF	#	0.0013	
Magnesium	mg/L	02/24/2009	N001	154.5	-	174.5	6		F	#	0.0054	
Manganese	mg/L	02/24/2009	N001	154.5	-	174.5	0.00097	B	UF	#	0.000097	
Molybdenum	mg/L	02/24/2009	N001	154.5	-	174.5	0.00044	B	F	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/24/2009	N001	154.5	-	174.5	3.2		F	#	0.05	
Oxidation Reduction Potential	mV	02/24/2009	N001	154.5	-	174.5	153.9		F	#		
pH	s.u.	02/24/2009	N001	154.5	-	174.5	7.88		F	#		
Potassium	mg/L	02/24/2009	N001	154.5	-	174.5	1.4		F	#	0.085	
Selenium	mg/L	02/24/2009	N001	154.5	-	174.5	0.0016		F	#	0.000017	
Silica	mg/L	02/24/2009	N001	154.5	-	174.5	11		F	#	0.013	
Silicon	mg/L	02/24/2009	N001	154.5	-	174.5	5.1		F	#	0.0061	
Sodium	mg/L	02/24/2009	N001	154.5	-	174.5	11		F	#	0.004	
Specific Conductance	umhos /cm	02/24/2009	N001	154.5	-	174.5	318		F	#		
Sulfate	mg/L	02/24/2009	N001	154.5	-	174.5	16		F	#	1	
Temperature	C	02/24/2009	N001	154.5	-	174.5	15.73		F	#		
Total Dissolved Solids	mg/L	02/24/2009	N001	154.5	-	174.5	160		F	#	20	
Turbidity	NTU	02/24/2009	N001	154.5	-	174.5	1.58		F	#		
Uranium	mg/L	02/24/2009	N001	154.5	-	174.5	0.0014		F	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0281 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/25/2009	0001	70.5	-	80.5	102		FQ	#		
Ammonia Total as N	mg/L	02/25/2009	0001	70.5	-	80.5	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/25/2009	0001	70.5	-	80.5	0.000091	B	UFQ	#	0.0000061	
Calcium	mg/L	02/25/2009	0001	70.5	-	80.5	120		FQ	#	0.004	
Chloride	mg/L	02/25/2009	0001	70.5	-	80.5	26		FQ	#	2	
Iron	mg/L	02/25/2009	0001	70.5	-	80.5	0.26		FQ	#	0.0013	
Magnesium	mg/L	02/25/2009	0001	70.5	-	80.5	21		FQ	#	0.0054	
Manganese	mg/L	02/25/2009	0001	70.5	-	80.5	0.031		FQ	#	0.000097	
Molybdenum	mg/L	02/25/2009	0001	70.5	-	80.5	0.001		FQ	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/25/2009	0001	70.5	-	80.5	38		FQ	#	0.5	
Oxidation Reduction Potential	mV	02/25/2009	N001	70.5	-	80.5	374.9		FQ	#		
pH	s.u.	02/25/2009	N001	70.5	-	80.5	7.56		FQ	#		
Potassium	mg/L	02/25/2009	0001	70.5	-	80.5	2.4		FQ	#	0.085	
Selenium	mg/L	02/25/2009	0001	70.5	-	80.5	0.002		FQ	#	0.000017	
Silica	mg/L	02/25/2009	0001	70.5	-	80.5	14		FQ	#	0.013	
Silicon	mg/L	02/25/2009	0001	70.5	-	80.5	6.6		FQ	#	0.0061	
Sodium	mg/L	02/25/2009	0001	70.5	-	80.5	21		FQ	#	0.004	
Specific Conductance	umhos /cm	02/25/2009	N001	70.5	-	80.5	779		FQ	#		
Sulfate	mg/L	02/25/2009	0001	70.5	-	80.5	140		FQ	#	5	
Temperature	C	02/25/2009	N001	70.5	-	80.5	16.69		FQ	#		
Total Dissolved Solids	mg/L	02/25/2009	0001	70.5	-	80.5	630		FQ	#	20	
Turbidity	NTU	02/25/2009	N001	70.5	-	80.5	25.4		FQ	#		
Uranium	mg/L	02/25/2009	0001	70.5	-	80.5	0.0077		FQ	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0282 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/25/2009	N001	74.1	-	84.1	104		FQ	#		
Ammonia Total as N	mg/L	02/25/2009	N001	74.1	-	84.1	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/25/2009	N001	74.1	-	84.1	0.0001		UFQ	#	0.0000061	
Calcium	mg/L	02/25/2009	N001	74.1	-	84.1	98		FQ	#	0.004	
Chloride	mg/L	02/25/2009	N001	74.1	-	84.1	38		FQ	#	1	
Iron	mg/L	02/25/2009	N001	74.1	-	84.1	0.1		FQ	#	0.0013	
Magnesium	mg/L	02/25/2009	N001	74.1	-	84.1	19		FQ	#	0.0054	
Manganese	mg/L	02/25/2009	N001	74.1	-	84.1	0.0059		FQ	#	0.000097	
Molybdenum	mg/L	02/25/2009	N001	74.1	-	84.1	0.00058	B	FQ	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/25/2009	N001	74.1	-	84.1	34		FQ	#	0.5	
Oxidation Reduction Potential	mV	02/25/2009	N001	74.1	-	84.1	382.7		FQ	#		
pH	s.u.	02/25/2009	N001	74.1	-	84.1	7.74		FQ	#		
Potassium	mg/L	02/25/2009	N001	74.1	-	84.1	2.5		FQ	#	0.085	
Selenium	mg/L	02/25/2009	N001	74.1	-	84.1	0.0015		FQ	#	0.000017	
Silica	mg/L	02/25/2009	N001	74.1	-	84.1	14		FQ	#	0.013	
Silicon	mg/L	02/25/2009	N001	74.1	-	84.1	6.6		FQ	#	0.0061	
Sodium	mg/L	02/25/2009	N001	74.1	-	84.1	13		FQ	#	0.004	
Specific Conductance	umhos /cm	02/25/2009	N001	74.1	-	84.1	679		FQ	#		
Sulfate	mg/L	02/25/2009	N001	74.1	-	84.1	76		FQ	#	2.5	
Temperature	C	02/25/2009	N001	74.1	-	84.1	16.91		FQ	#		
Total Dissolved Solids	mg/L	02/25/2009	N001	74.1	-	84.1	510		FQ	#	20	
Turbidity	NTU	02/25/2009	N001	74.1	-	84.1	2.55		FQ	#		
Uranium	mg/L	02/25/2009	N001	74.1	-	84.1	0.0046		FQ	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0286 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/24/2009	N001	93.2	-	103.2	105		FQ	#		
Ammonia Total as N	mg/L	02/24/2009	N001	93.2	-	103.2	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/24/2009	N001	93.2	-	103.2	0.00062		FQ	#	0.0000061	
Calcium	mg/L	02/24/2009	N001	93.2	-	103.2	53		FQ	#	0.004	
Chloride	mg/L	02/24/2009	N001	93.2	-	103.2	13		FQ	#	0.4	
Iron	mg/L	02/24/2009	N001	93.2	-	103.2	0.0065	B	UFQ	#	0.0013	
Magnesium	mg/L	02/24/2009	N001	93.2	-	103.2	10		FQ	#	0.0054	
Manganese	mg/L	02/24/2009	N001	93.2	-	103.2	0.0036	B	FQ	#	0.000097	
Molybdenum	mg/L	02/24/2009	N001	93.2	-	103.2	0.00025	B	UFQ	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/24/2009	N001	93.2	-	103.2	9.2		FQ	#	0.1	
Oxidation Reduction Potential	mV	02/24/2009	N001	93.2	-	103.2	155		FQ	#		
pH	s.u.	02/24/2009	N001	93.2	-	103.2	7.14		FQ	#		
Potassium	mg/L	02/24/2009	N001	93.2	-	103.2	1.8		FQ	#	0.085	
Selenium	mg/L	02/24/2009	N001	93.2	-	103.2	0.0018		FQ	#	0.000017	
Silica	mg/L	02/24/2009	N001	93.2	-	103.2	12		FQ	#	0.013	
Silicon	mg/L	02/24/2009	N001	93.2	-	103.2	5.7		FQ	#	0.0061	
Sodium	mg/L	02/24/2009	N001	93.2	-	103.2	9.7		FQ	#	0.004	
Specific Conductance	umhos /cm	02/24/2009	N001	93.2	-	103.2	511		FQ	#		
Sulfate	mg/L	02/24/2009	N001	93.2	-	103.2	34		FQ	#	1	
Temperature	C	02/24/2009	N001	93.2	-	103.2	17.22		FQ	#		
Total Dissolved Solids	mg/L	02/24/2009	N001	93.2	-	103.2	250		FQ	#	20	
Turbidity	NTU	02/24/2009	N001	93.2	-	103.2	2.08		FQ	#		
Uranium	mg/L	02/24/2009	N001	93.2	-	103.2	0.0042		FQ	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0287 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/24/2009	N001	100.7	-	110.7	481		FQ	#		
Ammonia Total as N	mg/L	02/24/2009	N001	100.7	-	110.7	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/24/2009	N001	100.7	-	110.7	0.0011		FQ	#	0.0000061	
Calcium	mg/L	02/24/2009	N001	100.7	-	110.7	900		FQ	#	0.0081	
Chloride	mg/L	02/24/2009	N001	100.7	-	110.7	170		FQ	#	10	
Iron	mg/L	02/24/2009	N001	100.7	-	110.7	0.0026	U	FQ	#	0.0026	
Magnesium	mg/L	02/24/2009	N001	100.7	-	110.7	130		FQ	#	0.011	
Manganese	mg/L	02/24/2009	N001	100.7	-	110.7	0.0074	B	FQ	#	0.00019	
Molybdenum	mg/L	02/24/2009	N001	100.7	-	110.7	0.045		FQ	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/24/2009	N001	100.7	-	110.7	250		FQ	#	2	
Oxidation Reduction Potential	mV	02/24/2009	N001	100.7	-	110.7	204.8		FQ	#		
pH	s.u.	02/24/2009	N001	100.7	-	110.7	6.64		FQ	#		
Potassium	mg/L	02/24/2009	N001	100.7	-	110.7	8.1		FQ	#	0.17	
Selenium	mg/L	02/24/2009	N001	100.7	-	110.7	0.093		FQ	#	0.00017	
Silica	mg/L	02/24/2009	N001	100.7	-	110.7	16		FQ	#	0.026	
Silicon	mg/L	02/24/2009	N001	100.7	-	110.7	7.4		FQ	#	0.012	
Sodium	mg/L	02/24/2009	N001	100.7	-	110.7	210		FQ	#	0.008	
Specific Conductance	umhos /cm	02/24/2009	N001	100.7	-	110.7	4555		FQ	#		
Sulfate	mg/L	02/24/2009	N001	100.7	-	110.7	1300		FQ	#	25	
Temperature	C	02/24/2009	N001	100.7	-	110.7	16.71		FQ	#		
Total Dissolved Solids	mg/L	02/24/2009	N001	100.7	-	110.7	4400		FQ	#	80	
Turbidity	NTU	02/24/2009	N001	100.7	-	110.7	1.76		FQ	#		
Uranium	mg/L	02/24/2009	N001	100.7	-	110.7	0.2		FQ	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0288 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/24/2009	N001	104	-	114	274		FQ	#		
Ammonia Total as N	mg/L	02/24/2009	N001	104	-	114	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/24/2009	N001	104	-	114	0.00055		FQ	#	0.0000061	
Calcium	mg/L	02/24/2009	N001	104	-	114	280		FQ	#	0.004	
Chloride	mg/L	02/24/2009	N001	104	-	114	30		FQ	#	4	
Iron	mg/L	02/24/2009	N001	104	-	114	0.057		FQ	#	0.0013	
Magnesium	mg/L	02/24/2009	N001	104	-	114	47		FQ	#	0.0054	
Manganese	mg/L	02/24/2009	N001	104	-	114	0.0074		FQ	#	0.000097	
Molybdenum	mg/L	02/24/2009	N001	104	-	114	0.00016	B	UFQ	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/24/2009	N001	104	-	114	71		FQ	#	0.5	
Oxidation Reduction Potential	mV	02/24/2009	N001	104	-	114	185.9		FQ	#		
pH	s.u.	02/24/2009	N001	104	-	114	6.94		FQ	#		
Potassium	mg/L	02/24/2009	N001	104	-	114	4.8		FQ	#	0.085	
Selenium	mg/L	02/24/2009	N001	104	-	114	0.0029		FQ	#	0.000017	
Silica	mg/L	02/24/2009	N001	104	-	114	16		FQ	#	0.013	
Silicon	mg/L	02/24/2009	N001	104	-	114	7.6		FQ	#	0.0061	
Sodium	mg/L	02/24/2009	N001	104	-	114	66		FQ	#	0.004	
Specific Conductance	umhos /cm	02/24/2009	N001	104	-	114	1793		FQ	#		
Sulfate	mg/L	02/24/2009	N001	104	-	114	390		FQ	#	10	
Temperature	C	02/24/2009	N001	104	-	114	16.08		FQ	#		
Total Dissolved Solids	mg/L	02/24/2009	N001	104	-	114	1400		FQ	#	40	
Turbidity	NTU	02/24/2009	N001	104	-	114	5.08		FQ	#		
Uranium	mg/L	02/24/2009	N001	104	-	114	0.016		FQ	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0289 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/24/2009	N001	148.3	-	158.3	225		FQ	#		
Ammonia Total as N	mg/L	02/24/2009	N001	148.3	-	158.3	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/24/2009	N001	148.3	-	158.3	0.0012		FQ	#	0.0000061	
Calcium	mg/L	02/24/2009	N001	148.3	-	158.3	200		FQ	#	0.004	
Chloride	mg/L	02/24/2009	N001	148.3	-	158.3	27		FQ	#	4	
Iron	mg/L	02/24/2009	N001	148.3	-	158.3	0.02	B	UFQ	#	0.0013	
Magnesium	mg/L	02/24/2009	N001	148.3	-	158.3	33		FQ	#	0.0054	
Manganese	mg/L	02/24/2009	N001	148.3	-	158.3	0.02		FQ	#	0.000097	
Molybdenum	mg/L	02/24/2009	N001	148.3	-	158.3	0.00049	B	FQ	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/24/2009	N001	148.3	-	158.3	51		FQ	#	0.5	
Oxidation Reduction Potential	mV	02/24/2009	N001	148.3	-	158.3	181.2		FQ	#		
pH	s.u.	02/24/2009	N001	148.3	-	158.3	7.17		FQ	#		
Potassium	mg/L	02/24/2009	N001	148.3	-	158.3	4		FQ	#	0.085	
Selenium	mg/L	02/24/2009	N001	148.3	-	158.3	0.0034		FQ	#	0.000017	
Silica	mg/L	02/24/2009	N001	148.3	-	158.3	14		FQ	#	0.013	
Silicon	mg/L	02/24/2009	N001	148.3	-	158.3	6.8		FQ	#	0.0061	
Sodium	mg/L	02/24/2009	N001	148.3	-	158.3	39		FQ	#	0.004	
Specific Conductance	umhos /cm	02/24/2009	N001	148.3	-	158.3	1401		FQ	#		
Sulfate	mg/L	02/24/2009	N001	148.3	-	158.3	280		FQ	#	10	
Temperature	C	02/24/2009	N001	148.3	-	158.3	15.96		FQ	#		
Total Dissolved Solids	mg/L	02/24/2009	N001	148.3	-	158.3	1100		FQ	#	20	
Turbidity	NTU	02/24/2009	N001	148.3	-	158.3	4.24		FQ	#		
Uranium	mg/L	02/24/2009	N001	148.3	-	158.3	0.022		FQ	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0290 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/26/2009	N001	102.7	-	112.7	95		FQ	#		
Ammonia Total as N	mg/L	02/26/2009	N001	102.7	-	112.7	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/26/2009	N001	102.7	-	112.7	0.0019		FQ	#	0.0000061	
Calcium	mg/L	02/26/2009	N001	102.7	-	112.7	38		FQ	#	0.004	
Chloride	mg/L	02/26/2009	N001	102.7	-	112.7	13		FQ	#	0.4	
Iron	mg/L	02/26/2009	N001	102.7	-	112.7	0.18		FQ	#	0.0013	
Magnesium	mg/L	02/26/2009	N001	102.7	-	112.7	6.3		FQ	#	0.0054	
Manganese	mg/L	02/26/2009	N001	102.7	-	112.7	0.0066	E	FQJ	#	0.000097	
Molybdenum	mg/L	02/26/2009	N001	102.7	-	112.7	0.00078	B	FQ	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/26/2009	N001	102.7	-	112.7	4.3		FQ	#	0.05	
Oxidation Reduction Potential	mV	02/26/2009	N001	102.7	-	112.7	186.8		FQ	#		
pH	s.u.	02/26/2009	N001	102.7	-	112.7	8.08		FQ	#		
Potassium	mg/L	02/26/2009	N001	102.7	-	112.7	1.7		FQ	#	0.085	
Selenium	mg/L	02/26/2009	N001	102.7	-	112.7	0.0017		FQ	#	0.000017	
Silica	mg/L	02/26/2009	N001	102.7	-	112.7	13		FQ	#	0.013	
Silicon	mg/L	02/26/2009	N001	102.7	-	112.7	6.2		FQ	#	0.0061	
Sodium	mg/L	02/26/2009	N001	102.7	-	112.7	13		FQ	#	0.004	
Specific Conductance	umhos /cm	02/26/2009	N001	102.7	-	112.7	273		FQ	#		
Sulfate	mg/L	02/26/2009	N001	102.7	-	112.7	21		FQ	#	1	
Temperature	C	02/26/2009	N001	102.7	-	112.7	16.38		FQ	#		
Total Dissolved Solids	mg/L	02/26/2009	N001	102.7	-	112.7	190		FQ	#	20	
Turbidity	NTU	02/26/2009	N001	102.7	-	112.7	3.43		FQ	#		
Uranium	mg/L	02/26/2009	N001	102.7	-	112.7	0.0014		FQ	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0691 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/26/2009	N001	55	-	95	200		F	#		
Ammonia Total as N	mg/L	02/26/2009	N001	55	-	95	0.1	U	F	#	0.1	
Arsenic	mg/L	02/26/2009	N001	55	-	95	0.0019	E	F	#	0.0000061	
Calcium	mg/L	02/26/2009	N001	55	-	95	81		F	#	0.004	
Chloride	mg/L	02/26/2009	N001	55	-	95	19		F	#	1	
Iron	mg/L	02/26/2009	N001	55	-	95	0.035	B	UF	#	0.0013	
Magnesium	mg/L	02/26/2009	N001	55	-	95	13		F	#	0.0054	
Manganese	mg/L	02/26/2009	N001	55	-	95	0.21		F	#	0.000097	
Molybdenum	mg/L	02/26/2009	N001	55	-	95	0.00041	B	F	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/26/2009	N001	55	-	95	14		F	#	0.1	
Oxidation Reduction Potential	mV	02/26/2009	N001	55	-	95	477.2		F	#		
pH	s.u.	02/26/2009	N001	55	-	95	7.79		F	#		
Potassium	mg/L	02/26/2009	N001	55	-	95	1.9		F	#	0.085	
Selenium	mg/L	02/26/2009	N001	55	-	95	0.0019	E	F	#	0.000017	
Silica	mg/L	02/26/2009	N001	55	-	95	12		F	#	0.013	
Silicon	mg/L	02/26/2009	N001	55	-	95	5.8		F	#	0.0061	
Sodium	mg/L	02/26/2009	N001	55	-	95	17		F	#	0.004	
Specific Conductance	umhos /cm	02/26/2009	N001	55	-	95	549		F	#		
Sulfate	mg/L	02/26/2009	N001	55	-	95	110		F	#	2.5	
Temperature	C	02/26/2009	N001	55	-	95	16.14		F	#		
Total Dissolved Solids	mg/L	02/26/2009	N001	55	-	95	410		F	#	20	
Turbidity	NTU	02/26/2009	N001	55	-	95	6.52		F	#		
Uranium	mg/L	02/26/2009	N001	55	-	95	0.013		F	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0908 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/25/2009	N001	52	-	67	375		FQ	#		
Ammonia Total as N	mg/L	02/25/2009	N001	52	-	67	27		FQ	#	5	
Arsenic	mg/L	02/25/2009	N001	52	-	67	0.00082		FQ	#	0.0000061	
Calcium	mg/L	02/25/2009	N001	52	-	67	570		FQ	#	0.02	
Chloride	mg/L	02/25/2009	N001	52	-	67	83		FQ	#	4	
Iron	mg/L	02/25/2009	N001	52	-	67	0.042	B	UFQ	#	0.0064	
Magnesium	mg/L	02/25/2009	N001	52	-	67	440		FQ	#	0.027	
Manganese	mg/L	02/25/2009	N001	52	-	67	0.15		FQ	#	0.00048	
Molybdenum	mg/L	02/25/2009	N001	52	-	67	0.0022		FQ	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/25/2009	N001	52	-	67	210		FQ	#	2	
Oxidation Reduction Potential	mV	02/25/2009	N001	52	-	67	166.5		FQ	#		
pH	s.u.	02/25/2009	N001	52	-	67	6.71		FQ	#		
Potassium	mg/L	02/25/2009	N001	52	-	67	22		FQ	#	0.43	
Selenium	mg/L	02/25/2009	N001	52	-	67	0.022		FQ	#	0.000084	
Silica	mg/L	02/25/2009	N001	52	-	67	19		FQ	#	0.066	
Silicon	mg/L	02/25/2009	N001	52	-	67	9		FQ	#	0.03	
Sodium	mg/L	02/25/2009	N001	52	-	67	290		FQ	#	0.02	
Specific Conductance	umhos /cm	02/25/2009	N001	52	-	67	5205		FQ	#		
Sulfate	mg/L	02/25/2009	N001	52	-	67	2700		FQ	#	50	
Temperature	C	02/25/2009	N001	52	-	67	16.71		FQ	#		
Total Dissolved Solids	mg/L	02/25/2009	N001	52	-	67	5700		FQ	#	80	
Turbidity	NTU	02/25/2009	N001	52	-	67	2.64		FQ	#		
Uranium	mg/L	02/25/2009	N001	52	-	67	0.093		FQ	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0909 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/26/2009	N001	65	-	80	161		F	#		
Ammonia Total as N	mg/L	02/26/2009	N001	65	-	80	0.1	U	F	#	0.1	
Arsenic	mg/L	02/26/2009	N001	65	-	80	0.001		F	#	0.0000061	
Calcium	mg/L	02/26/2009	N001	65	-	80	550		F	#	0.0081	
Chloride	mg/L	02/26/2009	N001	65	-	80	110		F	#	4	
Iron	mg/L	02/26/2009	N001	65	-	80	0.041	B	UF	#	0.0026	
Magnesium	mg/L	02/26/2009	N001	65	-	80	89		F	#	0.011	
Manganese	mg/L	02/26/2009	N001	65	-	80	0.0023	B	UF	#	0.00019	
Molybdenum	mg/L	02/26/2009	N001	65	-	80	0.00024	B	UF	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/26/2009	N001	65	-	80	170		F	#	1	
Oxidation Reduction Potential	mV	02/26/2009	N001	65	-	80	368.3		F	#		
pH	s.u.	02/26/2009	N001	65	-	80	7.3		F	#		
Potassium	mg/L	02/26/2009	N001	65	-	80	5.4		F	#	0.17	
Selenium	mg/L	02/26/2009	N001	65	-	80	0.054		F	#	0.000084	
Silica	mg/L	02/26/2009	N001	65	-	80	14		F	#	0.026	
Silicon	mg/L	02/26/2009	N001	65	-	80	6.8		F	#	0.012	
Sodium	mg/L	02/26/2009	N001	65	-	80	97		F	#	0.008	
Specific Conductance	umhos /cm	02/26/2009	N001	65	-	80	2833		F	#		
Sulfate	mg/L	02/26/2009	N001	65	-	80	910		F	#	25	
Temperature	C	02/26/2009	N001	65	-	80	16.55		F	#		
Total Dissolved Solids	mg/L	02/26/2009	N001	65	-	80	2700		F	#	80	
Turbidity	NTU	02/26/2009	N001	65	-	80	7.47		F	#		
Uranium	mg/L	02/26/2009	N001	65	-	80	0.059		F	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site

REPORT DATE: 5/6/2009

Location: 0929 WELL No Log Information.

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/25/2009	N001	48.2	-	88.2	98		FQ	#		
Ammonia Total as N	mg/L	02/25/2009	N001	48.2	-	88.2	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/25/2009	N001	48.2	-	88.2	0.0014		FQ	#	0.0000061	
Calcium	mg/L	02/25/2009	N001	48.2	-	88.2	46		FQ	#	0.004	
Chloride	mg/L	02/25/2009	N001	48.2	-	88.2	15		FQ	#	0.4	
Iron	mg/L	02/25/2009	N001	48.2	-	88.2	0.063		FQ	#	0.0013	
Magnesium	mg/L	02/25/2009	N001	48.2	-	88.2	7.6		FQ	#	0.0054	
Manganese	mg/L	02/25/2009	N001	48.2	-	88.2	0.0038	B	FQ	#	0.000097	
Molybdenum	mg/L	02/25/2009	N001	48.2	-	88.2	0.00028	B	FQ	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/25/2009	N001	48.2	-	88.2	9.9		FQ	#	0.1	
Oxidation Reduction Potential	mV	02/25/2009	N001	48.2	-	88.2	281.3		FQ	#		
pH	s.u.	02/25/2009	N001	48.2	-	88.2	8.16		FQ	#		
Potassium	mg/L	02/25/2009	N001	48.2	-	88.2	1.8		FQ	#	0.085	
Selenium	mg/L	02/25/2009	N001	48.2	-	88.2	0.0019		FQ	#	0.000017	
Silica	mg/L	02/25/2009	N001	48.2	-	88.2	12		FQ	#	0.013	
Silicon	mg/L	02/25/2009	N001	48.2	-	88.2	5.6		FQ	#	0.0061	
Sodium	mg/L	02/25/2009	N001	48.2	-	88.2	9.1		FQ	#	0.004	
Specific Conductance	umhos /cm	02/25/2009	N001	48.2	-	88.2	326		FQ	#		
Sulfate	mg/L	02/25/2009	N001	48.2	-	88.2	22		FQ	#	1	
Temperature	C	02/25/2009	N001	48.2	-	88.2	16.94		FQ	#		
Total Dissolved Solids	mg/L	02/25/2009	N001	48.2	-	88.2	210		FQ	#	20	
Turbidity	NTU	02/25/2009	N001	48.2	-	88.2	1.39		FQ	#		
Uranium	mg/L	02/25/2009	N001	48.2	-	88.2	0.0016		FQ	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0930 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/26/2009	N001	20	-	50	130		F	#		
Ammonia Total as N	mg/L	02/26/2009	N001	20	-	50	0.1	U	F	#	0.1	
Arsenic	mg/L	02/26/2009	N001	20	-	50	0.0016		F	#	0.0000061	
Calcium	mg/L	02/26/2009	N001	20	-	50	49		F	#	0.004	
Chloride	mg/L	02/26/2009	N001	20	-	50	16		F	#	0.4	
Iron	mg/L	02/26/2009	N001	20	-	50	0.037	B	UF	#	0.0013	
Magnesium	mg/L	02/26/2009	N001	20	-	50	10		F	#	0.0054	
Manganese	mg/L	02/26/2009	N001	20	-	50	0.0013	B	UF	#	0.000097	
Molybdenum	mg/L	02/26/2009	N001	20	-	50	0.00026	B	UF	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/26/2009	N001	20	-	50	9.3		F	#	0.1	
Oxidation Reduction Potential	mV	02/26/2009	N001	20	-	50	487.5		F	#		
pH	s.u.	02/26/2009	N001	20	-	50	8.06		F	#		
Potassium	mg/L	02/26/2009	N001	20	-	50	2		F	#	0.085	
Selenium	mg/L	02/26/2009	N001	20	-	50	0.0014		F	#	0.000017	
Silica	mg/L	02/26/2009	N001	20	-	50	12		F	#	0.013	
Silicon	mg/L	02/26/2009	N001	20	-	50	5.7		F	#	0.0061	
Sodium	mg/L	02/26/2009	N001	20	-	50	8.9		F	#	0.004	
Specific Conductance	umhos /cm	02/26/2009	N001	20	-	50	353		F	#		
Sulfate	mg/L	02/26/2009	N001	20	-	50	41		F	#	1	
Temperature	C	02/26/2009	N001	20	-	50	16.25		F	#		
Total Dissolved Solids	mg/L	02/26/2009	N001	20	-	50	230		F	#	20	
Turbidity	NTU	02/26/2009	N001	20	-	50	1.14		F	#		
Uranium	mg/L	02/26/2009	N001	20	-	50	0.0023		F	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0932 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/26/2009	N001	112.5	-	132.5	98		F	#		
Ammonia Total as N	mg/L	02/26/2009	N001	112.5	-	132.5	0.1	U	F	#	0.1	
Arsenic	mg/L	02/26/2009	N001	112.5	-	132.5	0.0015		F	#	0.0000061	
Calcium	mg/L	02/26/2009	N001	112.5	-	132.5	40		F	#	0.004	
Chloride	mg/L	02/26/2009	N001	112.5	-	132.5	13		F	#	0.4	
Iron	mg/L	02/26/2009	N001	112.5	-	132.5	0.028	B	UF	#	0.0013	
Magnesium	mg/L	02/26/2009	N001	112.5	-	132.5	8.1		F	#	0.0054	
Manganese	mg/L	02/26/2009	N001	112.5	-	132.5	0.0012	B	UF	#	0.000097	
Molybdenum	mg/L	02/26/2009	N001	112.5	-	132.5	0.00035	B	F	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/26/2009	N001	112.5	-	132.5	7.1		F	#	0.1	
Oxidation Reduction Potential	mV	02/26/2009	N001	112.5	-	132.5	321.5		F	#		
pH	s.u.	02/26/2009	N001	112.5	-	132.5	8.3		F	#		
Potassium	mg/L	02/26/2009	N001	112.5	-	132.5	1.8		F	#	0.085	
Selenium	mg/L	02/26/2009	N001	112.5	-	132.5	0.0015		F	#	0.000017	
Silica	mg/L	02/26/2009	N001	112.5	-	132.5	11		F	#	0.013	
Silicon	mg/L	02/26/2009	N001	112.5	-	132.5	5.1		F	#	0.0061	
Sodium	mg/L	02/26/2009	N001	112.5	-	132.5	12		F	#	0.004	
Specific Conductance	umhos /cm	02/26/2009	N001	112.5	-	132.5	308		F	#		
Sulfate	mg/L	02/26/2009	N001	112.5	-	132.5	31		F	#	1	
Temperature	C	02/26/2009	N001	112.5	-	132.5	16.31		F	#		
Total Dissolved Solids	mg/L	02/26/2009	N001	112.5	-	132.5	210		F	#	20	
Turbidity	NTU	02/26/2009	N001	112.5	-	132.5	0.99		F	#		
Uranium	mg/L	02/26/2009	N001	112.5	-	132.5	0.0017		F	#	0.0000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0934 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/25/2009	N001	45	-	90	764		F	#		
Ammonia Total as N	mg/L	02/25/2009	N001	45	-	90	0.1	U	F	#	0.1	
Ammonia Total as N	mg/L	02/25/2009	N002	45	-	90	0.1	U	F	#	0.1	
Arsenic	mg/L	02/25/2009	N001	45	-	90	0.00065		F	#	0.0000061	
Arsenic	mg/L	02/25/2009	N002	45	-	90	0.0007		F	#	0.0000061	
Calcium	mg/L	02/25/2009	N001	45	-	90	730		F	#	0.02	
Calcium	mg/L	02/25/2009	N002	45	-	90	720		F	#	0.02	
Chloride	mg/L	02/25/2009	N001	45	-	90	250		F	#	4	
Chloride	mg/L	02/25/2009	N002	45	-	90	250		F	#	4	
Iron	mg/L	02/25/2009	N001	45	-	90	0.02	B	UF	#	0.0064	
Iron	mg/L	02/25/2009	N002	45	-	90	0.024	B	UF	#	0.0064	
Magnesium	mg/L	02/25/2009	N001	45	-	90	830		F	#	0.027	
Magnesium	mg/L	02/25/2009	N002	45	-	90	820		F	#	0.027	
Manganese	mg/L	02/25/2009	N001	45	-	90	0.012	B	UF	#	0.00048	
Manganese	mg/L	02/25/2009	N002	45	-	90	0.054		F	#	0.00048	
Molybdenum	mg/L	02/25/2009	N001	45	-	90	0.00021	B	UF	#	0.000052	
Molybdenum	mg/L	02/25/2009	N002	45	-	90	0.00023	B	UF	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/25/2009	N001	45	-	90	400		F	#	5	
Nitrate + Nitrite as Nitrogen	mg/L	02/25/2009	N002	45	-	90	400		F	#	5	
Oxidation Reduction Potential	mV	02/25/2009	N001	45	-	90	342.4		F	#		
pH	s.u.	02/25/2009	N001	45	-	90	6.77		F	#		
Potassium	mg/L	02/25/2009	N001	45	-	90	9.8		F	#	0.43	
Potassium	mg/L	02/25/2009	N002	45	-	90	9.9		F	#	0.43	
Selenium	mg/L	02/25/2009	N001	45	-	90	0.01		F	#	0.000017	
Selenium	mg/L	02/25/2009	N002	45	-	90	0.011		F	#	0.000017	
Silica	mg/L	02/25/2009	N001	45	-	90	18		F	#	0.066	
Silica	mg/L	02/25/2009	N002	45	-	90	18		F	#	0.066	
Silicon	mg/L	02/25/2009	N001	45	-	90	8.3		F	#	0.03	
Silicon	mg/L	02/25/2009	N002	45	-	90	8.5		F	#	0.03	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0934 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Sodium	mg/L	02/25/2009	N001	45	-	90	140		F	#	0.02	
Sodium	mg/L	02/25/2009	N002	45	-	90	140		F	#	0.02	
Specific Conductance	umhos /cm	02/25/2009	N001	45	-	90	6613		F	#		
Sulfate	mg/L	02/25/2009	N001	45	-	90	2700		F	#	50	
Sulfate	mg/L	02/25/2009	N002	45	-	90	2800		F	#	50	
Temperature	C	02/25/2009	N001	45	-	90	17.06		F	#		
Total Dissolved Solids	mg/L	02/25/2009	N001	45	-	90	7300		F	#	80	
Total Dissolved Solids	mg/L	02/25/2009	N002	45	-	90	7400		F	#	200	
Turbidity	NTU	02/25/2009	N001	45	-	90	1.44		F	#		
Uranium	mg/L	02/25/2009	N001	45	-	90	0.19		F	#	0.0000062	
Uranium	mg/L	02/25/2009	N002	45	-	90	0.19		F	#	0.0000062	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0935 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/25/2009	N001	50	-	90	522		F	#		
Ammonia Total as N	mg/L	02/25/2009	N001	50	-	90	78		F	#	10	
Arsenic	mg/L	02/25/2009	N001	50	-	90	0.00084		F	#	0.0000061	
Calcium	mg/L	02/25/2009	N001	50	-	90	620		F	#	0.02	
Chloride	mg/L	02/25/2009	N001	50	-	90	70		F	#	4	
Iron	mg/L	02/25/2009	N001	50	-	90	0.044	B	UF	#	0.0064	
Magnesium	mg/L	02/25/2009	N001	50	-	90	340		F	#	0.027	
Manganese	mg/L	02/25/2009	N001	50	-	90	0.41		F	#	0.00048	
Molybdenum	mg/L	02/25/2009	N001	50	-	90	0.0002	B	UF	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/25/2009	N001	50	-	90	190		F	#	2	
Oxidation Reduction Potential	mV	02/25/2009	N001	50	-	90	373.4		F	#		
pH	s.u.	02/25/2009	N001	50	-	90	6.92		F	#		
Potassium	mg/L	02/25/2009	N001	50	-	90	22		F	#	0.43	
Selenium	mg/L	02/25/2009	N001	50	-	90	0.019		F	#	0.000017	
Silica	mg/L	02/25/2009	N001	50	-	90	20		F	#	0.066	
Silicon	mg/L	02/25/2009	N001	50	-	90	9.1		F	#	0.03	
Sodium	mg/L	02/25/2009	N001	50	-	90	300		F	#	0.02	
Specific Conductance	umhos /cm	02/25/2009	N001	50	-	90	5119		F	#		
Sulfate	mg/L	02/25/2009	N001	50	-	90	2400		F	#	50	
Temperature	C	02/25/2009	N001	50	-	90	17.08		F	#		
Total Dissolved Solids	mg/L	02/25/2009	N001	50	-	90	5100		F	#	80	
Turbidity	NTU	02/25/2009	N001	50	-	90	1.63		F	#		
Uranium	mg/L	02/25/2009	N001	50	-	90	0.11		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0938 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/25/2009	N001	40	-	95	510		F	#		
Ammonia Total as N	mg/L	02/25/2009	N001	40	-	95	0.1	U	F	#	0.1	
Arsenic	mg/L	02/25/2009	N001	40	-	95	0.0013		F	#	0.0000061	
Calcium	mg/L	02/25/2009	N001	40	-	95	620		F	#	0.0081	
Chloride	mg/L	02/25/2009	N001	40	-	95	74		F	#	2	
Iron	mg/L	02/25/2009	N001	40	-	95	0.012	B	UF	#	0.0026	
Magnesium	mg/L	02/25/2009	N001	40	-	95	150		F	#	0.011	
Manganese	mg/L	02/25/2009	N001	40	-	95	0.0092	B	F	#	0.00019	
Molybdenum	mg/L	02/25/2009	N001	40	-	95	0.14		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	02/25/2009	N001	40	-	95	140		F	#	1	
Oxidation Reduction Potential	mV	02/25/2009	N001	40	-	95	208.3		F	#		
pH	s.u.	02/25/2009	N001	40	-	95	7.11		F	#		
Potassium	mg/L	02/25/2009	N001	40	-	95	7.6		F	#	0.17	
Selenium	mg/L	02/25/2009	N001	40	-	95	0.041		F	#	0.000084	
Silica	mg/L	02/25/2009	N001	40	-	95	16		F	#	0.026	
Silicon	mg/L	02/25/2009	N001	40	-	95	7.3		F	#	0.012	
Sodium	mg/L	02/25/2009	N001	40	-	95	160		F	#	0.008	
Specific Conductance	umhos /cm	02/25/2009	N001	40	-	95	3490		F	#		
Sulfate	mg/L	02/25/2009	N001	40	-	95	950		F	#	25	
Temperature	C	02/25/2009	N001	40	-	95	17.12		F	#		
Total Dissolved Solids	mg/L	02/25/2009	N001	40	-	95	2700		F	#	80	
Turbidity	NTU	02/25/2009	N001	40	-	95	1.74		F	#		
Uranium	mg/L	02/25/2009	N001	40	-	95	0.66		F	#	0.000031	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0941 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/24/2009	N001	45	-	65	440		FQ	#		
Ammonia Total as N	mg/L	02/24/2009	N001	45	-	65	0.1	U	FQ	#	0.1	
Arsenic	mg/L	02/24/2009	N001	45	-	65	0.0014		FQ	#	0.0000061	
Calcium	mg/L	02/24/2009	N001	45	-	65	820		FQ	#	0.0081	
Chloride	mg/L	02/24/2009	N001	45	-	65	160		FQ	#	10	
Iron	mg/L	02/24/2009	N001	45	-	65	0.035	B	UFQ	#	0.0026	
Magnesium	mg/L	02/24/2009	N001	45	-	65	120		FQ	#	0.011	
Manganese	mg/L	02/24/2009	N001	45	-	65	0.013		FQ	#	0.00019	
Molybdenum	mg/L	02/24/2009	N001	45	-	65	0.0022		FQ	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/24/2009	N001	45	-	65	200		FQ	#	2	
Oxidation Reduction Potential	mV	02/24/2009	N001	45	-	65	210.2		FQ	#		
pH	s.u.	02/24/2009	N001	45	-	65	6.96		FQ	#		
Potassium	mg/L	02/24/2009	N001	45	-	65	6.7		FQ	#	0.17	
Selenium	mg/L	02/24/2009	N001	45	-	65	0.078		FQ	#	0.000084	
Silica	mg/L	02/24/2009	N001	45	-	65	16		FQ	#	0.026	
Silicon	mg/L	02/24/2009	N001	45	-	65	7.6		FQ	#	0.012	
Sodium	mg/L	02/24/2009	N001	45	-	65	130		FQ	#	0.008	
Specific Conductance	umhos /cm	02/24/2009	N001	45	-	65	3783		FQ	#		
Sulfate	mg/L	02/24/2009	N001	45	-	65	1200		FQ	#	25	
Temperature	C	02/24/2009	N001	45	-	65	17.47		FQ	#		
Total Dissolved Solids	mg/L	02/24/2009	N001	45	-	65	3700		FQ	#	80	
Turbidity	NTU	02/24/2009	N001	45	-	65	3.86		FQ	#		
Uranium	mg/L	02/24/2009	N001	45	-	65	0.17		FQ	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 0942 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/24/2009	N001	54	-	74	669		F	#		
Ammonia Total as N	mg/L	02/24/2009	N001	54	-	74	110		F	#	20	
Arsenic	mg/L	02/24/2009	N001	54	-	74	0.0027		F	#	0.0000061	
Calcium	mg/L	02/24/2009	N001	54	-	74	580		F	#	0.02	
Chloride	mg/L	02/24/2009	N001	54	-	74	180		F	#	4	
Iron	mg/L	02/24/2009	N001	54	-	74	0.029	B	UF	#	0.0064	
Magnesium	mg/L	02/24/2009	N001	54	-	74	450		F	#	0.027	
Manganese	mg/L	02/24/2009	N001	54	-	74	3.5		F	#	0.00048	
Molybdenum	mg/L	02/24/2009	N001	54	-	74	0.0084		F	#	0.000052	
Nitrate + Nitrite as Nitrogen	mg/L	02/24/2009	N001	54	-	74	210		F	#	2	
Oxidation Reduction Potential	mV	02/24/2009	N001	54	-	74	251.3		F	#		
pH	s.u.	02/24/2009	N001	54	-	74	6.67		F	#		
Potassium	mg/L	02/24/2009	N001	54	-	74	30		F	#	0.43	
Selenium	mg/L	02/24/2009	N001	54	-	74	0.044		F	#	0.000084	
Silica	mg/L	02/24/2009	N001	54	-	74	17		F	#	0.066	
Silicon	mg/L	02/24/2009	N001	54	-	74	7.8		F	#	0.03	
Sodium	mg/L	02/24/2009	N001	54	-	74	500		F	#	0.02	
Specific Conductance	umhos /cm	02/24/2009	N001	54	-	74	6930		F	#		
Sulfate	mg/L	02/24/2009	N001	54	-	74	3200		F	#	50	
Temperature	C	02/24/2009	N001	54	-	74	15.9		F	#		
Total Dissolved Solids	mg/L	02/24/2009	N001	54	-	74	6500		F	#	200	
Turbidity	NTU	02/24/2009	N001	54	-	74	2.56		F	#		
Uranium	mg/L	02/24/2009	N001	54	-	74	0.5		F	#	0.000015	

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
>	Result above upper detection limit.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
C	Pesticide result confirmed by GC-MS.
D	Analyte determined in diluted sample.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
J	Estimated
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P	> 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X,Y,Z	Laboratory defined qualifier, see case narrative.

DATA QUALIFIERS:

F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.	J	Estimated value.
L	Less than 3 bore volumes purged prior to sampling.	Q	Qualitative result due to sampling technique.	R	Unusable result.
U	Parameter analyzed for but was not detected.	X	Location is undefined.		

QA QUALIFIER:

#	Validated according to quality assurance guidelines.

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Surface Water Quality Data

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Surface Water Quality Data by Location (USEE102) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 1569 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/24/2009	N001	0			#		
Arsenic	mg/L	02/24/2009	N001	0.16			#	0.00031	
Calcium	mg/L	02/24/2009	N001	1000			#	0.02	
Chloride	mg/L	02/24/2009	N001	58000			#	1000	
Iron	mg/L	02/24/2009	N001	0.013	B	U	#	0.0064	
Magnesium	mg/L	02/24/2009	N001	4900			#	0.27	
Manganese	mg/L	02/24/2009	N001	110			#	0.0048	
Molybdenum	mg/L	02/24/2009	N001	0.29			#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	02/24/2009	N001	3500			#	20	
Oxidation Reduction Potential	mV	02/24/2009	N001	303.6			#		
pH	s.u.	02/24/2009	N001	6.14			#		
Potassium	mg/L	02/24/2009	N001	540			#	0.43	
Selenium	mg/L	02/24/2009	N001	0.54			#	0.00084	
Sodium	mg/L	02/24/2009	N001	43000			#	2	
Specific Conductance	umhos/cm	02/24/2009	N001	123230			#		
Sulfate	mg/L	02/24/2009	N001	13000			#	2500	
Temperature	C	02/24/2009	N001	13.81			#		
Total Dissolved Solids	mg/L	02/24/2009	N001	130000			#	2000	
Turbidity	NTU	02/24/2009	N001	7.45			#		
Uranium	mg/L	02/24/2009	N001	1.7			#	0.000062	

Surface Water Quality Data by Location (USEE102) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 1570 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	02/24/2009	N001	0			#		
Ammonia Total as N	mg/L	02/24/2009	N002	300			#	20	
Arsenic	mg/L	02/24/2009	N001	0.18			#	0.00031	
Arsenic	mg/L	02/24/2009	N002	0.19			#	0.00031	
Calcium	mg/L	02/24/2009	N001	1100			#	0.04	
Calcium	mg/L	02/24/2009	N002	1000			#	0.02	
Chloride	mg/L	02/24/2009	N001	59000			#	1000	
Chloride	mg/L	02/24/2009	N002	62000			#	1000	
Iron	mg/L	02/24/2009	N001	0.054	B	U	#	0.013	
Iron	mg/L	02/24/2009	N002	0.022	B	U	#	0.0064	
Magnesium	mg/L	02/24/2009	N001	5100			#	0.27	
Magnesium	mg/L	02/24/2009	N002	5100			#	0.27	
Manganese	mg/L	02/24/2009	N001	96			#	0.00097	
Manganese	mg/L	02/24/2009	N002	110			#	0.0048	
Molybdenum	mg/L	02/24/2009	N001	0.27			#	0.001	
Molybdenum	mg/L	02/24/2009	N002	0.28			#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	02/24/2009	N001	3600			#	20	
Nitrate + Nitrite as Nitrogen	mg/L	02/24/2009	N002	3700			#	20	
Oxidation Reduction Potential	mV	02/24/2009	N001	296.8			#		
pH	s.u.	02/24/2009	N001	5.71			#		
Potassium	mg/L	02/24/2009	N001	610			#	0.85	
Potassium	mg/L	02/24/2009	N002	570			#	0.43	
Selenium	mg/L	02/24/2009	N001	0.57			#	0.00084	
Selenium	mg/L	02/24/2009	N002	0.55			#	0.00084	
Silica	mg/L	02/24/2009	N002	99			#	0.066	
Silicon	mg/L	02/24/2009	N002	46			#	0.03	
Sodium	mg/L	02/24/2009	N001	45000			#	2	
Sodium	mg/L	02/24/2009	N002	34000			#	2	
Specific Conductance	umhos/cm	02/24/2009	N001	136582			#		

Surface Water Quality Data by Location (USEE102) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009
Location: 1570 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Sulfate	mg/L	02/24/2009	N001	13000			#	2500	
Sulfate	mg/L	02/24/2009	N002	13000			#	2500	
Temperature	C	02/24/2009	N001	15.46			#		
Total Dissolved Solids	mg/L	02/24/2009	N001	140000			#	2000	
Total Dissolved Solids	mg/L	02/24/2009	N002	140000			#	2000	
Turbidity	NTU	02/24/2009	N001	5.61			#		
Uranium	mg/L	02/24/2009	N001	1.6			#	0.000062	
Uranium	mg/L	02/24/2009	N002	1.6			#	0.000062	

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
>	Result above upper detection limit.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
C	Pesticide result confirmed by GC-MS.
D	Analyte determined in diluted sample.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
J	Estimated
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P	> 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X,Y,Z	Laboratory defined qualifier, see case narrative.

DATA QUALIFIERS:

F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.	J	Estimated value.
L	Less than 3 bore volumes purged prior to sampling.	Q	Qualitative result due to sampling technique.	R	Unusable result.
U	Parameter analyzed for but was not detected.	X	Location is undefined.		

QA QUALIFIER:

#	Validated according to quality assurance guidelines.

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Static Water Level Data

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STATIC WATER LEVELS (USEE700) FOR SITE TUB01, Tuba City Disposal Site
REPORT DATE: 5/6/2009

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0251		5061.25	02/25/2009	10:40:06	104.65	4956.6	
0252		5061.3	02/25/2009	10:10:29	80.94	4980.36	
0258		5055.56	02/26/2009	11:45:49	107.15	4948.41	
0262		5061.99	02/26/2009	14:45:55	67.14	4994.85	
0263		5063.1	02/26/2009	12:35:36	74.62	4988.48	
0264		5062.19	02/26/2009	13:00:53	119.14	4943.05	
0265		5053.88	02/25/2009	15:35:37	78.79	4975.09	
0266		5053.32	02/25/2009	16:10:43	113.13	4940.19	
0267		5053.4	02/25/2009	18:00:55	61.07	4992.33	
0268		5067.24	02/24/2009	10:50:05	152.91	4914.33	
0272		5064.24	02/24/2009	14:50:35	107.3	4956.94	
0273		5064.74	02/24/2009	12:20:36	122.95	4941.79	
0274		5064.42	02/24/2009	11:40:53	123.02	4941.4	
0275		5062.64	02/24/2009	10:00:49	126.16	4936.48	
0276		5067.55	02/24/2009	09:20:07	133.12	4934.43	
0281		5051	02/25/2009	17:10:43	70	4981	
0282		5060.04	02/25/2009	16:40:47	83.5	4976.54	
0286		5063.99	02/24/2009	15:10:45	86.63	4977.36	
0287		5065.65	02/24/2009	13:00:07	72.05	4993.6	
0288		5072.54	02/24/2009	15:45:22	61.1	5011.44	
0289		5070.82	02/24/2009	16:15:37	63.09	5007.73	
0290		5068.91	02/26/2009	12:05:19	108.81	4960.1	
0691		4979.41	02/26/2009	09:55:14	46.4	4933.01	
0908	D	5058.14	02/25/2009	11:15:24	64.12	4994.02	
0909	D	5057.17	02/26/2009	16:00:20	71.02	4986.15	
0929	D	5060.82	02/25/2009	14:00:18	63.75	4997.07	
0930	D	4954.96	02/26/2009	10:45:55	21.66	4933.3	
0932	D	5057.32	02/26/2009	15:20:07	111.94	4945.38	
0934	D	5059.73	02/25/2009	14:50:40	76.45	4983.28	
0941	D	5065.97	02/24/2009	12:40:56	68.03	4997.94	

FLOW CODES: B BACKGROUND C CROSS GRADIENT D DOWN GRADIENT F OFF SITE
N UNKNOWN O ON SITE U UPGRADIENT

WATER LEVEL FLAGS: D Dry F FLOWING

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Time-Concentration Graphs Monitor Wells

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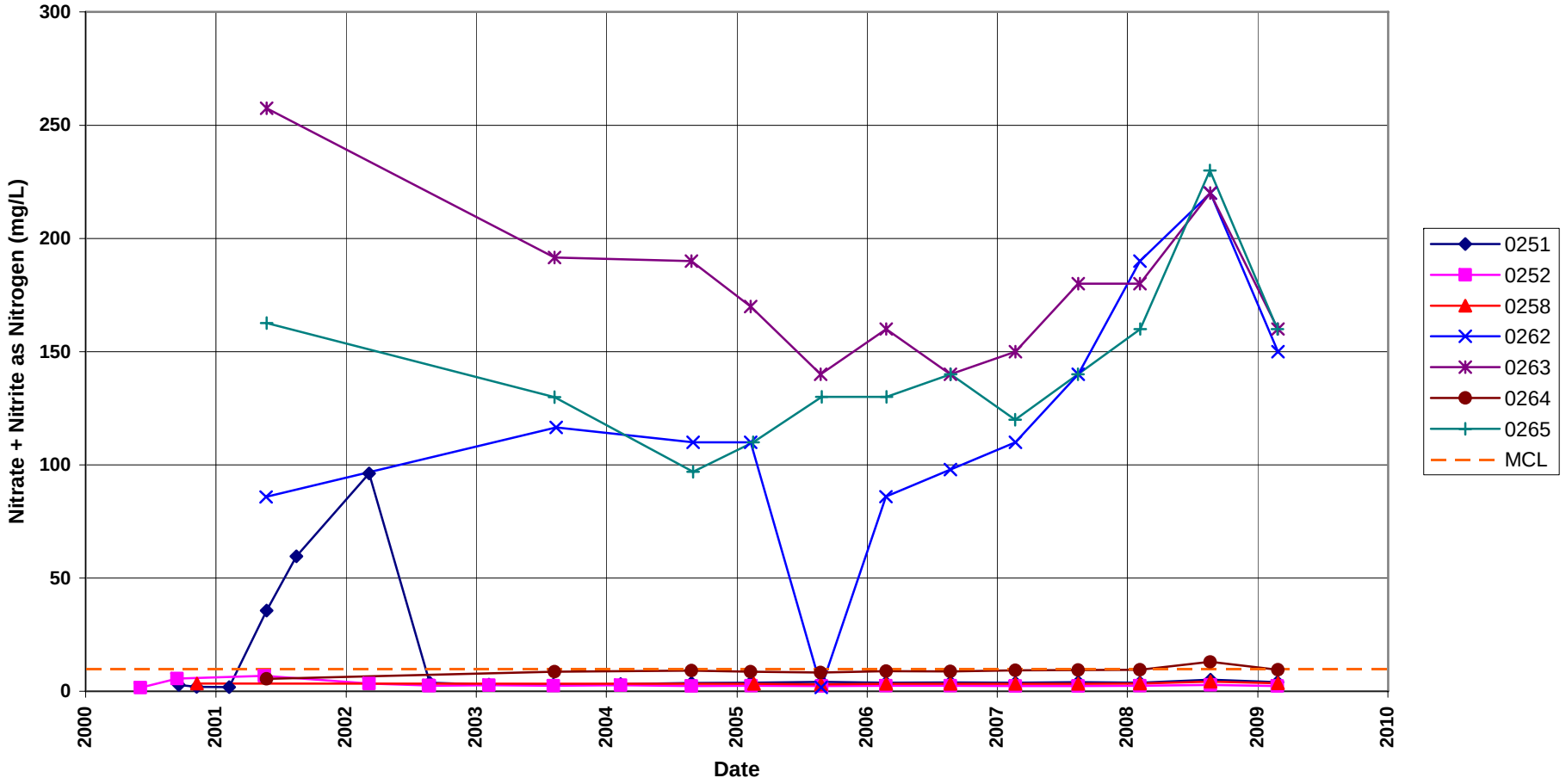
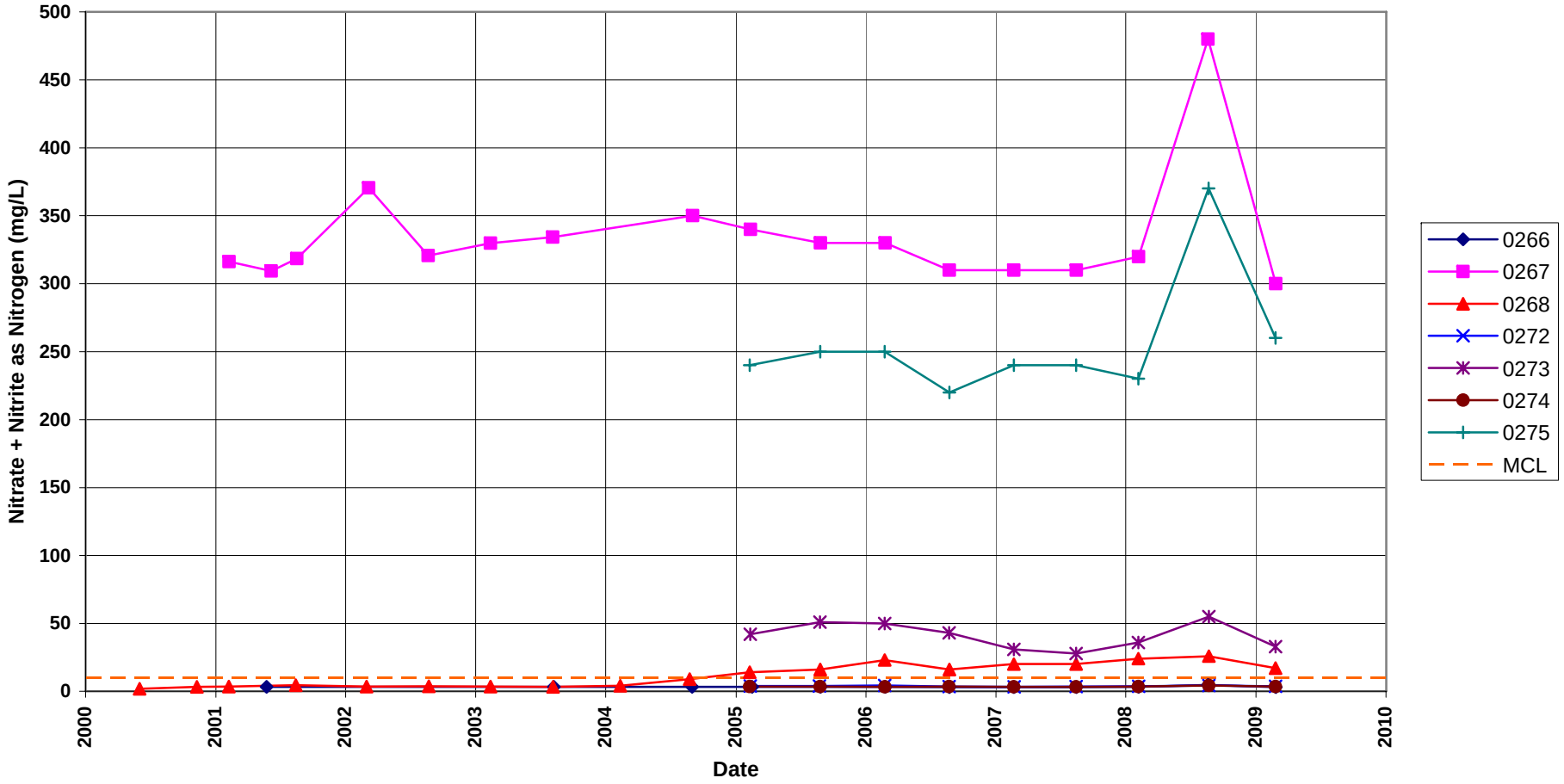
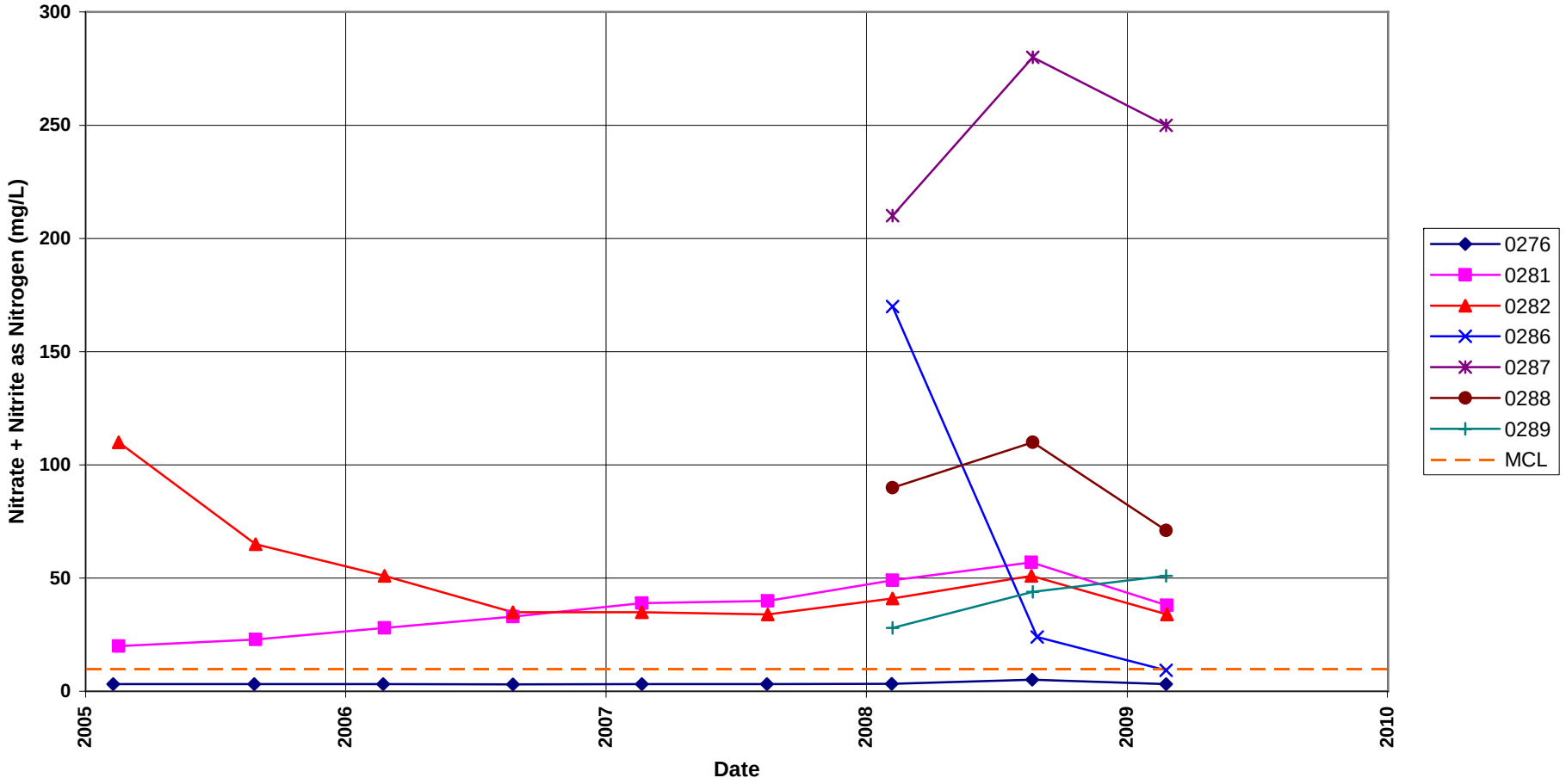
Tuba City Disposal Site
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level = 10.0 mg/L



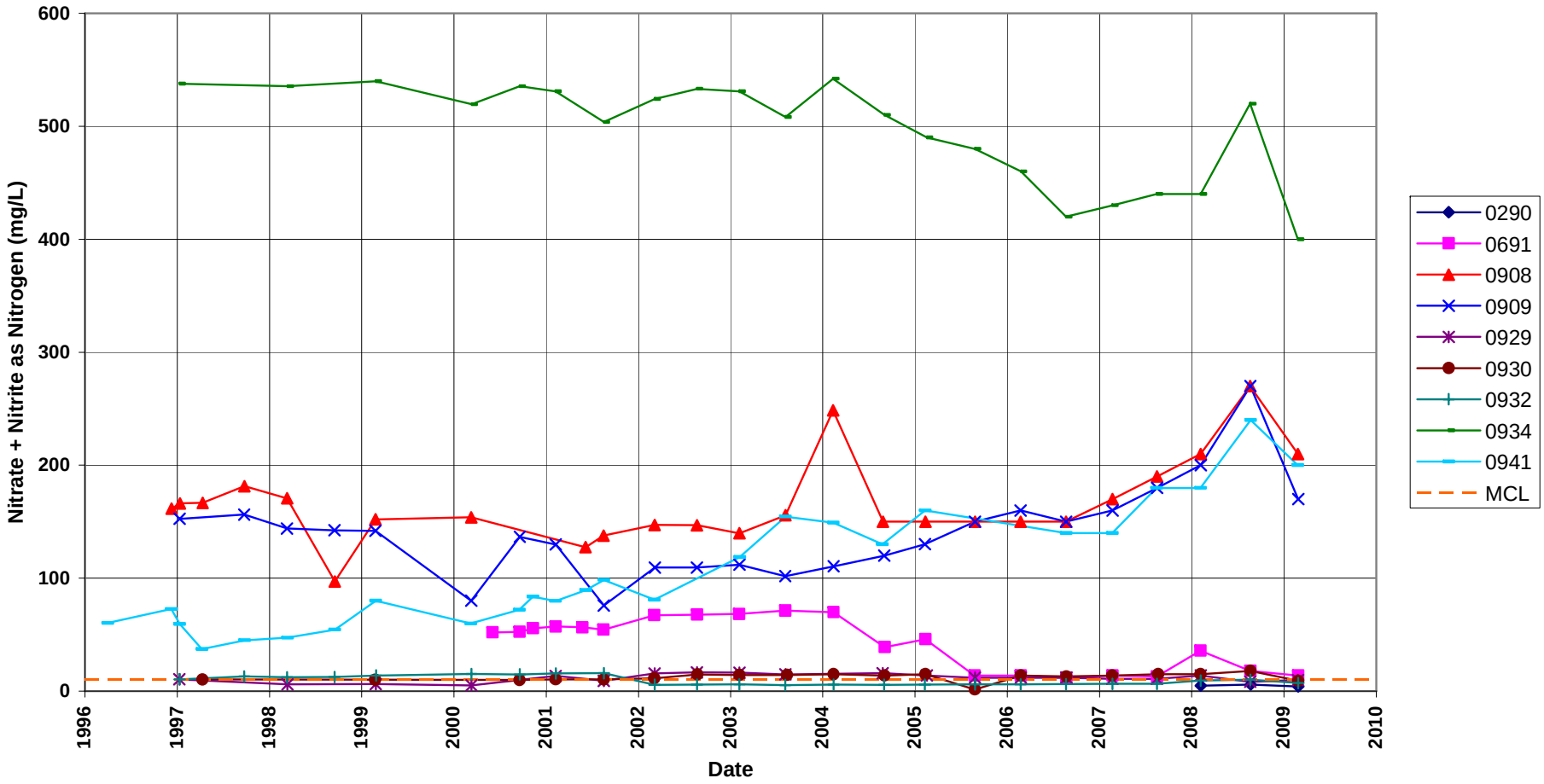
Tuba City Disposal Site
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level = 10.0 mg/L



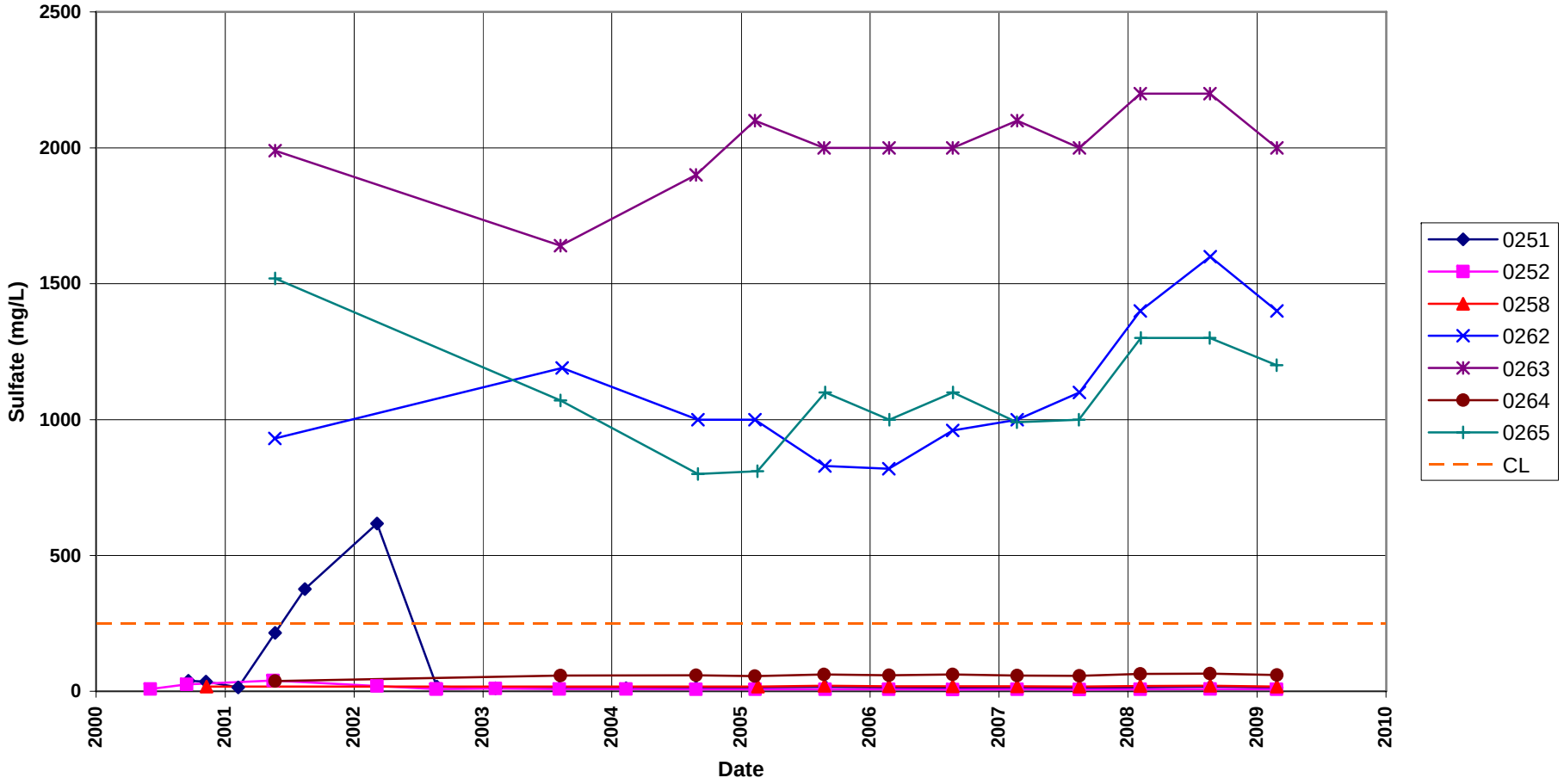
Tuba City Disposal Site
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level = 10.0 mg/L



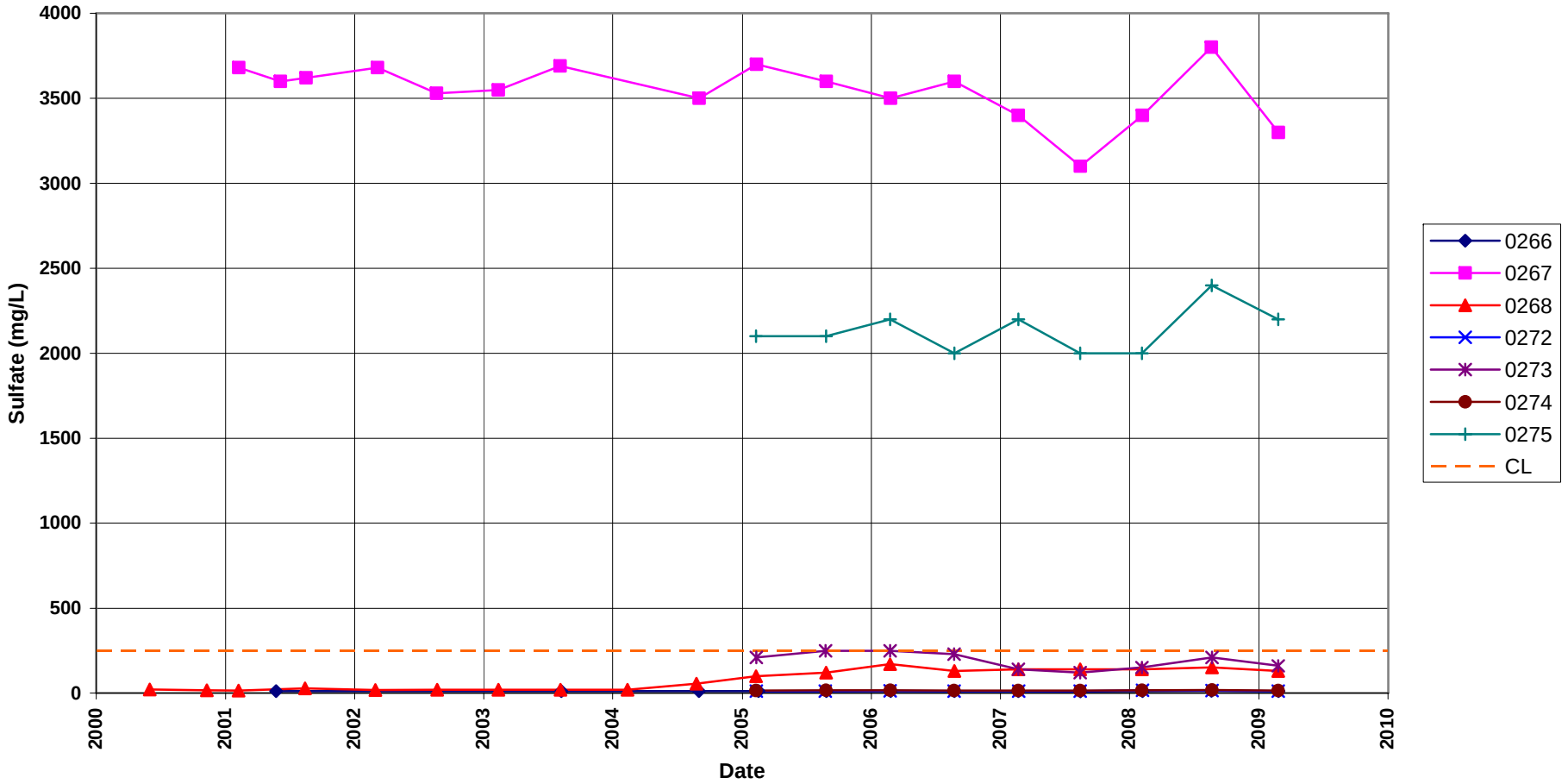
Tuba City Disposal Site
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level = 10.0 mg/L



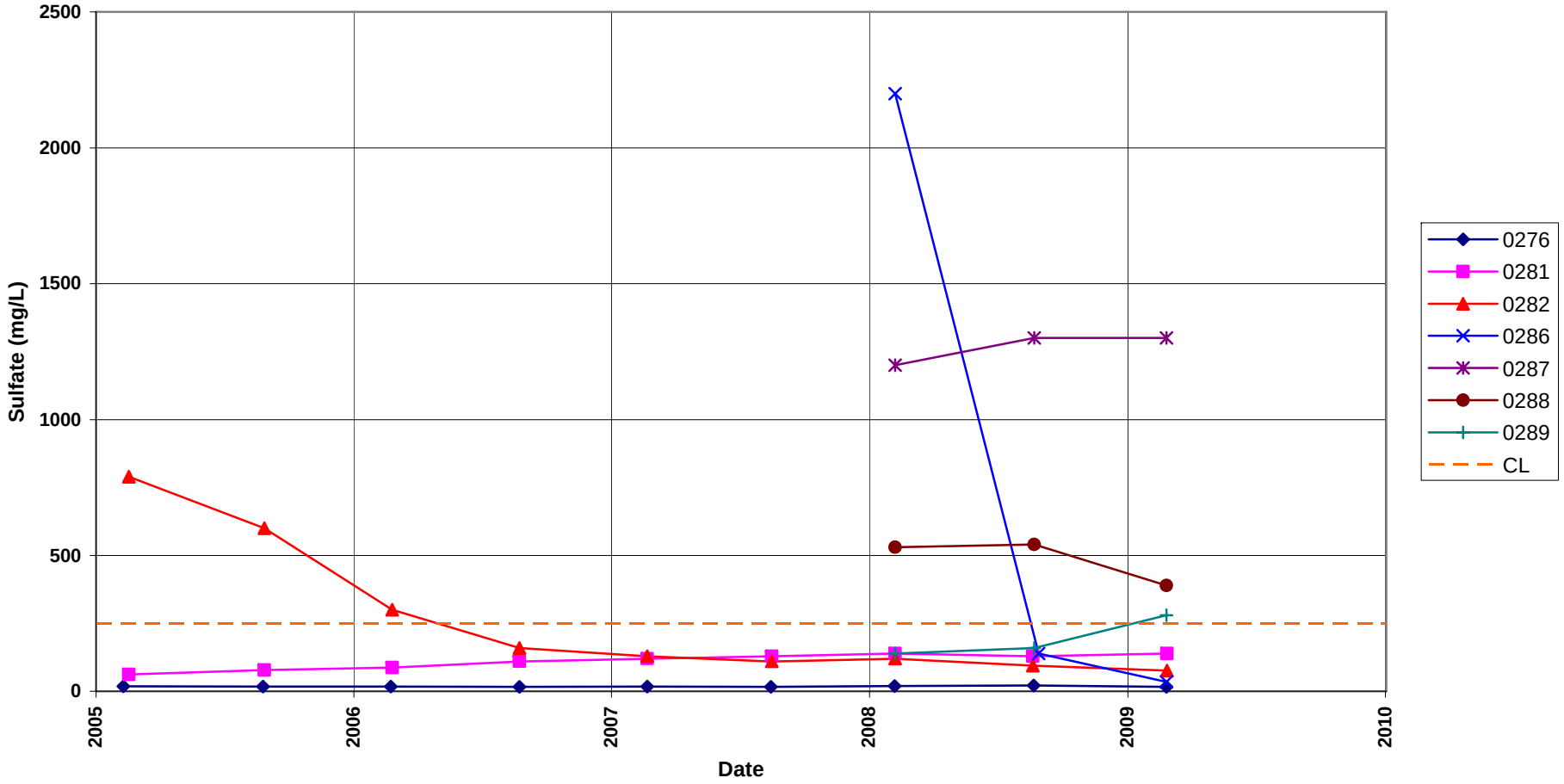
Tuba City Disposal Site
Sulfate Concentration
Cleanup Level = 250 mg/L



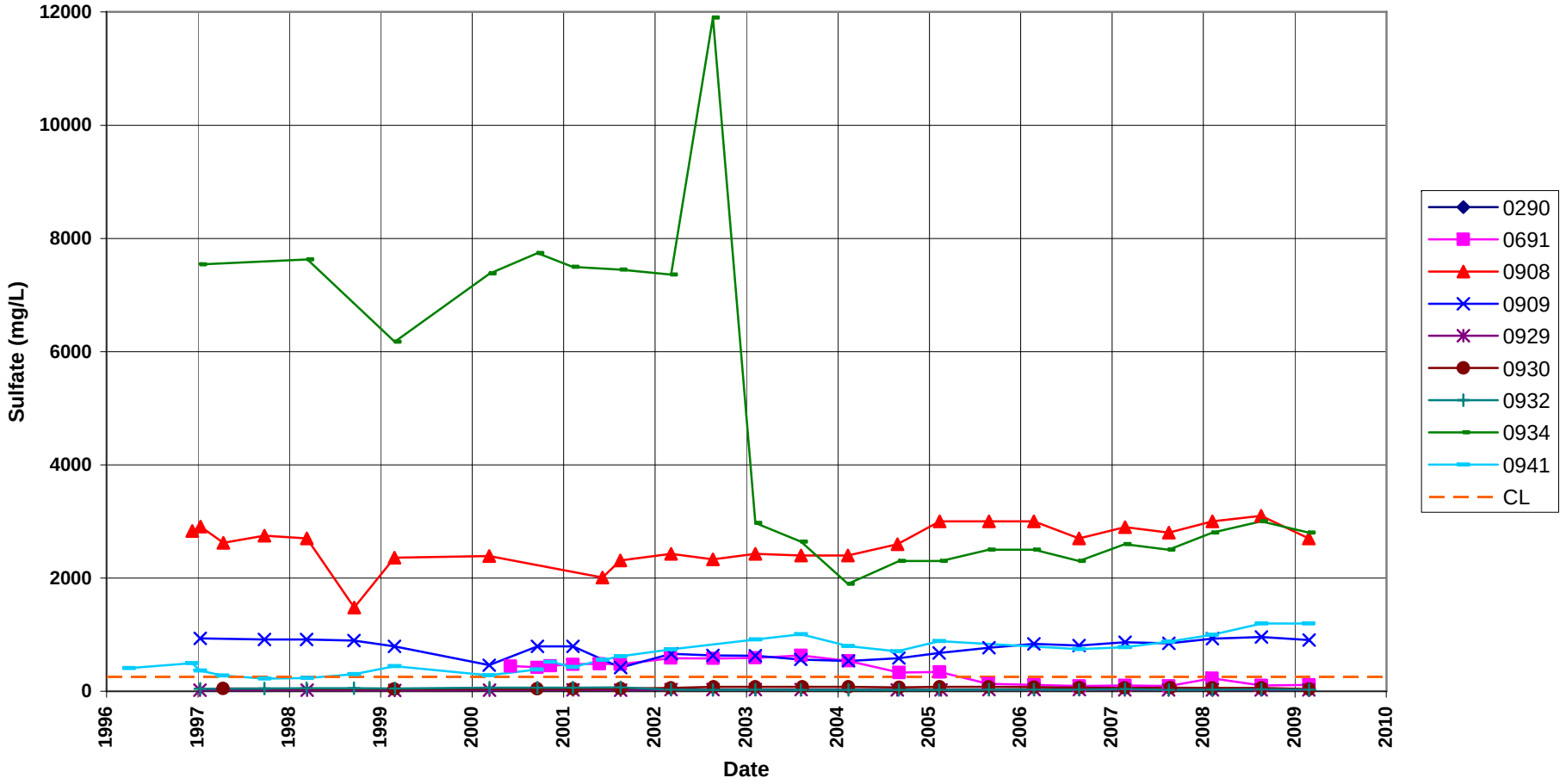
Tuba City Disposal Site
Sulfate Concentration
Cleanup Level = 250 mg/L



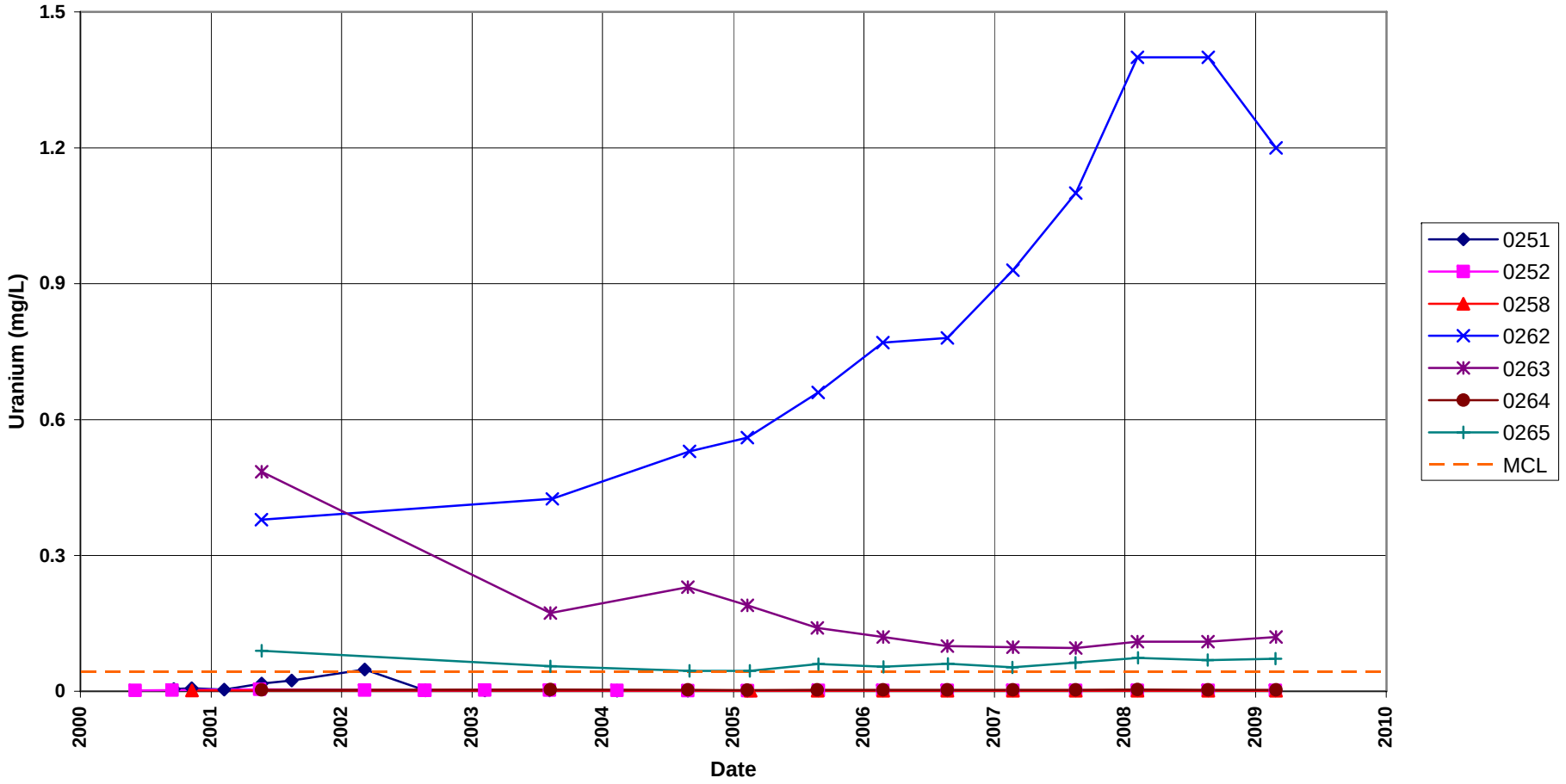
Tuba City Disposal Site
Sulfate Concentration
Cleanup Level = 250 mg/L



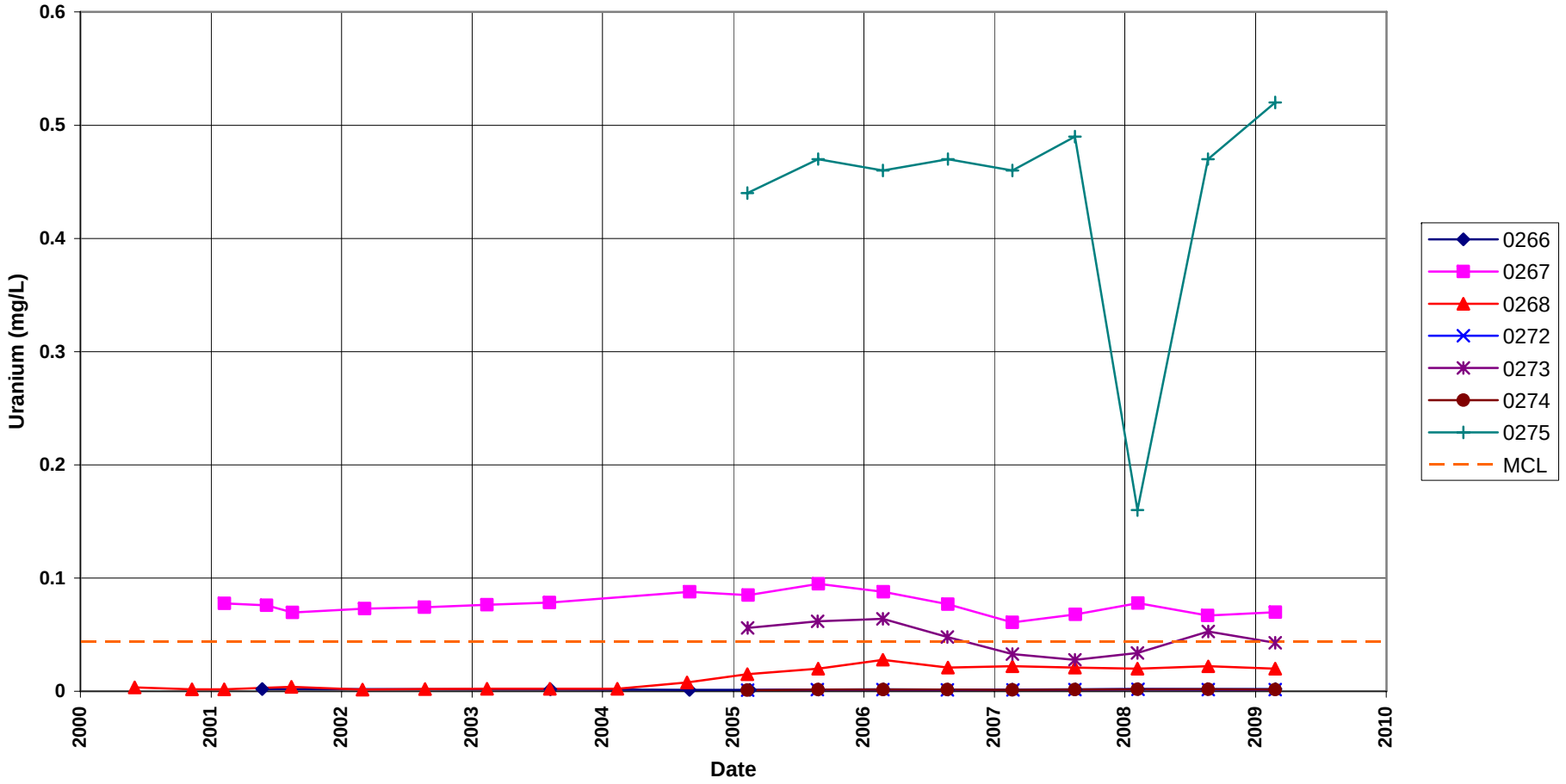
Tuba City Disposal Site
Sulfate Concentration
Cleanup Level = 250 mg/L



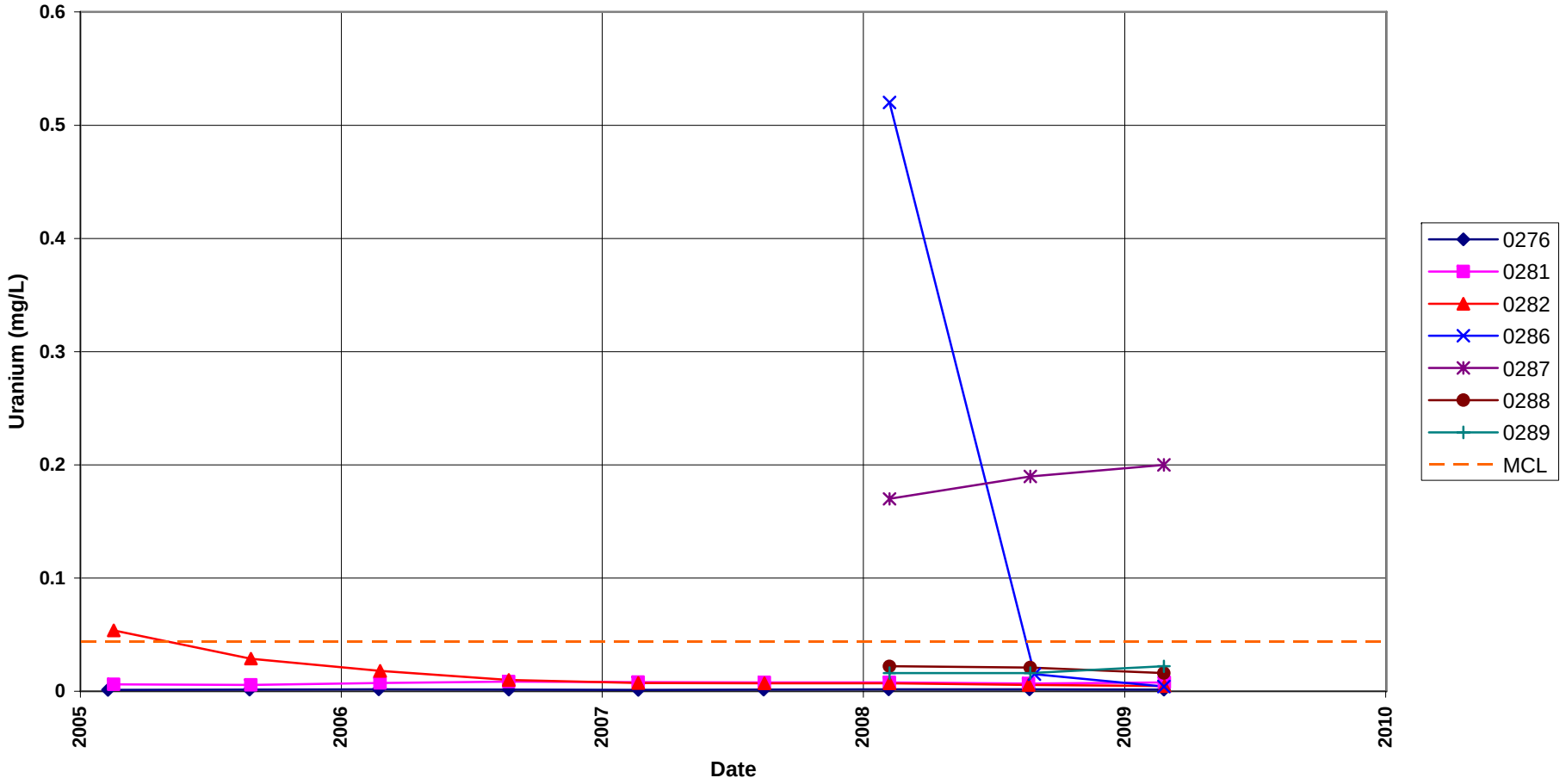
Tuba City Disposal Site
Uranium Concentration
Maximum Contaminant Level = 0.044 mg/L



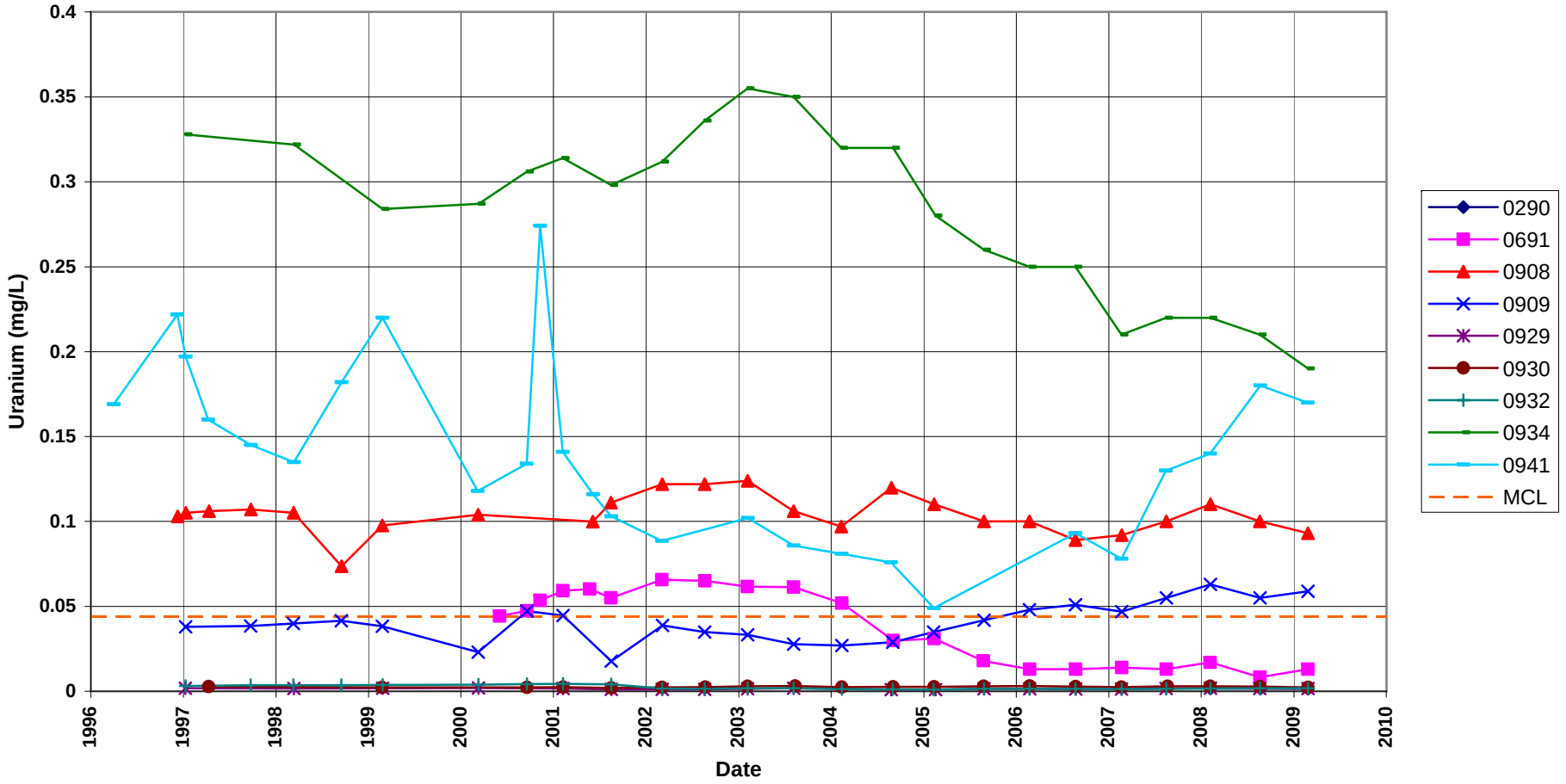
Tuba City Disposal Site
Uranium Concentration
Maximum Contaminant Level = 0.044 mg/L



Tuba City Disposal Site
Uranium Concentration
Maximum Contaminant level = 0.044 mg/L



Tuba City Disposal Site
Uranium Concentration
Maximum Contaminant Level = 0.044 mg/L



Attachment 3
Sampling and Analysis Work Order

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Stoller established 1959

Task Order LM00-501
Control Number 09-0421

January 21, 2009

U.S. Department of Energy
Office of Legacy Management
ATTN: Richard P. Bush
Site Manager
2597 B ¾ Road
Grand Junction, CO 81503

SUBJECT: Contract No. DE-AM01-07LM00060, Stoller
February 2009 Environmental Sampling at Tuba City, Arizona

REFERENCE: Task Order LM00-501-02-122-402, Tuba City, AZ

Dear Mr. Bush:

The purpose of this letter is to inform you of the upcoming sampling event at Tuba City, Arizona. Enclosed are the map and tables specifying sample locations and analytes for routine monitoring. Water quality data will be collected at this site as part of the routine environmental sampling currently scheduled to begin the week of February 23, 2009.

The following lists show the monitor wells (with zone of completion) and surface locations scheduled to be sampled during this event.

Monitor Wells*

251 Na	265 Na	274 Na	283 Na	290 Na	929 Na	936 Na
252 Na	266 Na	275 Na	286 Na	691 Na	930 Na	938 Na
258 Na	267 Na	276 Na	287 Na	906 Na	932 Na	940 Na
262 Na	268 Na	281 Na	288 Na	908 Na	934 Na	941 Na
263 Na	272 Na	282 Na	289 Na	909 Na	935 Na	942 Na
264 Na	273 Na					

*NOTE: Na = Navajo sandstone

Surface locations

1569 1570

All samples will be collected as directed in the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites*.

If you have any questions, please call me at extension (970)248-6568.

The S.M. Stoller Corporation 2597 B ¾ Road Grand Junction, CO 81503 (970) 248-6000 Fax: (970) 248-6040

Sincerely,

GEA for

Carl Jacobson
Site Lead

CJ/lcg/lb

Enclosures (3)

cc: (electronic)
Steve Donivan, Stoller
Lauren Goodknight, Stoller
Carl Jacobson, Stoller
EDD Delivery
rc-grand.junction

The S.M. Stoller Corporation 2597 B ¾ Road Grand Junction, CO 81503 (970) 248-6000 Fax: (970) 248-6040

Site	Tuba City				
Analyte	Groundwater	Surface Water	Required Detection Limit (mg/L)	Analytical Method	Line Item Code
Approx. No. Samples/yr	143	9			
Field Measurements					
Alkalinity	X	X			
Dissolved Oxygen					
Redox Potential	X	X			
pH	X	X			
Specific Conductance	X	X			
Turbidity	X				
Temperature	X	X			
Laboratory Measurements					
Aluminum					
Ammonia as N (NH3-N)	X		0.1	EPA 350.1	WCH-A-005
Arsenic	X	X	0.0001	SW-846 6020	LMM-02
Calcium	X	X	5	SW-846 6010	LMM-01
Chloride	X	X	0.5	SW-846 9056	WCH-A-039
Chromium					
Gross Alpha					
Gross Beta					
Iron	X	X	0.05	SW-846 6020	LMM-02
Lead					
Magnesium	X	X	5	SW-846 6010	LMM-01
Manganese	X	X	0.005	SW-846 6010	LMM-01
Molybdenum	X	X	0.003	SW-846 6020	LMM-02
Nickel					
Nickel-63					
Nitrate + Nitrite as N (NO3+NO2)-N	X	X	0.05	EPA 353.1	WCH-A-022
Potassium	X	X	1	SW-846 6010	LMM-01
Radium-226					
Radium-228					
Selenium	X	X	0.0001	SW-846 6020	LMM-02
Silica	X		0.2	SW-846 6010	LMM-01
Sodium	X	X	1	SW-846 6010	LMM-01
Strontium					
Sulfate	X	X	0.5	SW-846 9056	MIS-A-044
Sulfide					
Total Dissolved Solids	X	X	10	SM2540 C	WCH-A-033
Total Organic Carbon					
Uranium	X	X	0.0001	SW-846 6020	LMM-02
Vanadium					
Zinc					
Total No. of Analytes	16	14			

Note: All analyte samples are considered unfiltered unless stated otherwise. All private well samples are to be unfiltered. The total number of analytes does not include field parameters.

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Attachment 4
Trip Report

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Stoller established 1959
Grand Junction Office

Memorandum

Control Number N/A

DATE: March 26, 2009

TO: Carl Jacobson

FROM: Dan Sellers

SUBJECT: Trip Report

Site: Tuba City, AZ

Date of Sampling Event: February 23 through 27, 2009.

Team Members: Dan Sellers and Kent Moe.

Number of Locations Sampled: 33 monitor wells, 2 surface waters, and 2 duplicates were collected for a total of 37 samples.

Locations Not Sampled/Reason: Wells 0283**,** 0906, 0936, and 0940 did not have enough water to collect a sample.

Location Specific Information: All monitor and extraction wells, and surface samples were sampled for As, Ca, Fe, Mg, Mn, Mo, K, Se, Na, U, SiO2, Cl, SO4, (NO3+NO2)-N, (NH3-N), and TDS.

Well specific information is given in the table below including the depth of each well bladder pump and water intake.

Sample Location	Notes	Pump Depth (ft)(TOC)	Intake Depth (ft)(TOC)	Pump Vol (L)
0251	Cat II	230	230	.395
0252	Cat I	115	335	.625
0258	Cat II	192	192	.13
0262	Cat II	98	98	.13
0263	Cat II	98	98	.13
0264	Cat II	175	175	.13
0265	Cat I	88	88	.13
0266	Cat I	180	180	.13
0267	Cat I	80	80	.13
0268	Cat I	230	230	.395
0272	Cat I	173	173	.395
0273	Cat II	160	160	.395

Sample Location	Notes	Pump Depth (ft)(TOC)	Intake Depth (ft)(TOC)	Pump Vol (L)
0274	Cat II	159	159	.395
0275	Cat I	170	170	.395
0276	Cat I	166	166	.395
0281	Cat II	78	78	.13
0282	Cat II	86	86	.13
0286	Cat II	100	100	.13
0287	Cat II	109	109	.13
0288	Cat II	112	112	.13
0289	Cat II	155	155	.13
0290	Cat III, pump below screen	113	113	.13
0691	Cat I	93	93	.395
0906	Cat III, parameters taken only. Total well depth is 65.9. Pump below screen	65	65	.395
0908	Cat II, very little water. It does recover slowly	65	65	.395
0909	Cat I	75	75	.395
0929	Cat II	85	85	.395
0930	Cat I	48	48	.13
0932	Cat I	130	130	.395
0934	Cat I	90	90	.395
0935	Extraction well			
0938	Extraction Well			
0940	Dry; not enough water to collect sample or parameters.			
0941	Cat III, No Samples or parameters collected. Pump below screen			.395
0942	Extraction Well			
1569	Surface Water			
1570	Surface Water			

All samples were shipped to Paragon Analytics via Fed-Ex. Samples were shipped from Tuba City on February 27, 2009.

Field Variance: No parameters taken for wells 0283, 0941, 0936 due to insufficient water.

Quality Control Sample Cross Reference: Following are the false identifications assigned to the quality control samples:

False ID	True ID	Sample Type	Ticket Number	Notes
2723	1570	Duplicate	HDR 464	Surface duplicate
2724	0934	Duplicate	HDR 465	Well duplicate

Requisition Numbers Assigned: All samples were assigned to report identification number (RIN) 09022097.

Water Level Measurements: Water levels were measured at all sampled wells. Additional water levels were recorded from wells not sampled except for the following extraction wells:

1101	1110	1119	1127
1102	1111	1120	1128
1103	1112	1121	1129
1104	1113	1122	1130
1105	1114	1123	1131
1106	1115	1124	1132
1107	1116	1125	1133
1108	1117	1126	
1109	1118	1126A	

Well Inspection Summary: All wells were in good condition.

Equipment: All monitor wells are equipped with bladder pumps. Extraction wells are spigot samples. Surface water samples were collected using dedicated tubing.

Regulatory: N/A

Institutional Controls

Fences, Gates, Locks: All were OK.
Signs: All appeared OK.
Trespassing/Site Disturbances: None observed.

Site Issues: None observed.

Disposal Cell/Drainage Structure Integrity: N/A
Vegetation/Noxious Weed Concerns: N/A
Maintenance Requirements: N/A

Access Issues: None

Corrective Action Required/Taken: None

(dls/lcg)

cc: (electronic)
Richard Bush, DOE
Timothy Bartlett, Stoller
Steve Donivan, Stoller
EDD Delivery

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