

WM-00058

Data Validation Package

September 2011
Groundwater and Surface Water
Sampling at the
Shiprock, New Mexico, Disposal Site

January 2012



U.S. DEPARTMENT OF
ENERGY

Legacy
Management

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Sampling Event Summary

Site: Shiprock, New Mexico, Disposal Site

Sampling Period: September 12-15, 2011

Groundwater and surface water sampling and analysis are performed semiannually at the Shiprock, New Mexico, Disposal Site as specified in the July 2005 *Refinement of Conceptual Model and Recommendations for Improving Remediation Efficiency at the Shiprock, New Mexico, Site*. Sampling and analysis were conducted as specified in *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites* (LMS/PLN/S04351, continually updated) and the *Environmental Procedures Catalog* (LMS/PRO/S04325, continually updated). Monitoring of terrace locations is performed to determine the effectiveness of active remediation. Monitoring of floodplain locations is performed to determine the progress of the natural flushing process and the effectiveness of groundwater removal to prevent contaminants from reaching the San Juan River.

The contaminants of concern for the Shiprock Disposal Site are ammonia (as nitrogen), manganese, nitrate + nitrite (as nitrogen), selenium, strontium, sulfate, and uranium. Wells with contaminant concentrations that exceeded 40 CFR 192.02 groundwater standards are listed in Table 1. Time-concentration graphs for the contaminants of concern are included in this report.

Measurements for alkalinity, conductivity, oxidation-reduction potential, pH, and temperature were collected in the field. These field parameters are geochemical indicators of general water quality.

Table 1. Shiprock Locations that Exceed Standards

Analyte	Standard ^a	Site Code ^b	Location	Concentration
Nitrate + Nitrite as Nitrogen	10	SHP01	0608	69
			0610	360
			0614	210
			0618	88
			0630	43
			0735	990
			0773	61
			0779	41
			0793	31
			0854	26
			1008	21
			1104	15
			1105	220
			1111	32
			1112	290
			1113	290
			1114	210
			1115	580
			1128	630
			1138	16
			1140	110
			1141	12

Table 1 (continued). Shiprock Locations that Exceed Standards

Analyte	Standard ^a	Site Code ^b	Location	Concentration
Selenium	0.01	SHP01	0610	0.14
			0614	0.63
			0615	0.049
			0618	0.32
			0622	0.051
			0630	0.26
			0735	0.23
			0773	0.048
			0779	0.03
			0793	0.18
			0855	0.044
			1008	0.011
			1105	0.21
			1111	0.3
			1112	1
			1113	0.03
			1114	0.043
			1115	0.14
			1128	0.024
			1140	0.13
			1141	0.097
Uranium	0.044	SHP01	0608	0.67
			0610	1.1
			0612	0.066
			0614	1.5
			0615	0.5
			0618	1.9
			0619	0.3
			0622	0.1
			0623	0.073
			0625	0.054
			0630	0.21
			0734	0.23
			0735	0.51
			0736	0.064
			0766	0.21
			0768	0.34
			0773	0.35
			0775	0.22
			0779	2.2
			0792	0.14
			0793	0.54
			0798	0.47
			0853	0.081
			0854	1.5
			0855	0.07
			0856	0.074
			0857	0.47
			1008	1.3
			1009	0.24
			1089	0.29
			1104	0.87
			1105	2.1
			1111	0.95
			1112	1.5

Table 1 (continued). Shiprock Locations that Exceed Standards

Analyte	Standard ^a	Site Code ^b	Location	Concentration
Uranium	0.044	SHP01	1113	0.69
			1114	0.89
			1115	1.4
			1128	1.4
			1135	0.12
			1137	0.22
			1138	0.34
			1139	0.29
			1140	1.8
			1141	1
			1143	0.053
Nitrate + Nitrite as Nitrogen	10	SHP02	0600	91
			0602	26
			0603	1700
			0604	1000
			0726	12
			0727	98
			0728	180
			0730	180
			0731	65
			0812	1300
			0813	1600
			0814	710
			0815	660
			0816	18
			0817	500
			0818	770
			0819	51
			0824	260
			0825	30
			0826	100
			0827	28
			0828	36
			0830	110
			0833	150
			0835	71
			0836	28
			0838	590
			0844	700
			1007	720
			1049	550
			1059	330
			1068	300
			1070	700
			1071	680
			1073	1300
			1074	1100
			1078	580
			1079	140
			1091	1300
			1092	860
			1093R	2200
			1095	1500
			1096	620

Table 1 (continued). Shiprock Locations that Exceed Standards

Analyte	Standard ^a	Site Code ^b	Location	Concentration
Selenium	0.01	SHP02	0603	0.084
			0604	1
			0726	0.012
			0730	0.011
			0731	0.017
			0812	6.1
			0813	0.057
			0814	2.2
			0815	0.025
			0816	0.017
			0818	2.2
			0819	0.015
			0826	0.044
			0827	0.016
			0828	0.024
			0830	0.029
			0833	0.32
			0835	0.36
			0836	0.21
			0837	0.2
			0838	0.98
			0843	0.18
			0844	1.6
			0848	0.045
			1007	0.23
			1049	1.3
			1059	0.015
			1068	0.024
			1070	2.8
			1071	3
			1073	2.5
			1074	0.33
			1078	2.9
			1079	0.48
			1091	0.78
			1092	1.8
			1093R	0.6
			1095	0.19
			1096	3

Table 1 (continued). Shiprock Locations that Exceed Standards

Analyte	Standard ^a	Site Code ^b	Location	Concentration
Uranium	0.044	SHP02	0600	0.71
			0602	0.5
			0604	0.089
			0725	0.1
			0727	0.2
			0728	0.27
			0812	0.13
			0813	0.11
			0814	0.09
			0815	0.36
			0817	7.2
			0818	0.11
			0819	1.4
			0820	0.059
			0824	0.4
			0826	3.2
			0827	0.93
			0828	0.89
			0833	0.18
			0835	0.07
			0837	0.045
			0838	0.13
			0844	0.17
			1007	2.9
			1049	0.2
			1059	0.069
			1068	0.74
			1070	0.086
			1071	0.15
			1073	0.063
			1074	2.1
			1078	0.12
			1091	0.11
			1092	0.092
			1093R	0.12
			1095	0.054
			1096	0.093

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

^b SHP01 is the site code for the floodplain; SHP02 is the site code for the terrace.

Both filtered and unfiltered samples from the river locations were submitted. River location analyte concentrations of filtered and unfiltered samples were compared to statistical benchmark values. Benchmark values were derived using data from location 0898, which is located upstream of the site on the San Juan River.

- It was noted that the river was low and muddy. At all river locations, multiple 0.45- μ m filters were required to collect the filtered aliquots because solids clogged the filters. Typically, one is needed to filter water collected from a river. During this event, two to nine filters were used at each location. The measured turbidity at all river locations exceeded the instrument range of 1,000 nephelometric turbidity units (NTU).
- The benchmark location, 0898, had some of the highest results among the unfiltered river samples (see Table 2). Unfiltered samples of calcium, magnesium, manganese,

nitrate + nitrite as N, potassium, selenium, sodium, specific conductance, strontium, sulfate, and uranium exceeded historical ranges. The benchmark value is equal to the maximum concentration when fewer than 10 data points are available.

- Results for location 1205 (unfiltered) were slightly higher than, but comparable to, the results at the benchmark location, 0898. This location required nine 0.45-µm filters. The specific conductance was the second highest among the samples, and correlates with high concentrations of solids.
- Filtered samples exceeded benchmark values (Table 3) at locations 0501, 1203, and 1205. The specific conductances at these locations were three of the four highest among the river samples. This indicates results are associated with high solids in the unfiltered samples.

The benchmark exceedances for this sampling event correlate with high concentrations of solids in the river, which was flowing at a low volume during the sampling event. High results at the benchmark location indicate high results downstream could be caused by high sediment levels in the river.

Table 2. Benchmark Comparison for Floodplain River Locations (Unfiltered Samples)

Location	Ammonia as N	Manganese	Nitrate+Nitrite as N	Selenium	Strontium	Sulfate	Uranium	Sp. Cond. ^b
Benchmark ^c	0.1	6.2	1.4	0.013	3.9	240	0.028	867
0501	ND ^a	2.2	0.61	0.0037	1.7	140	0.0084	717
0897	ND	0.57	0.46	0.0021	0.94	120	0.0037	559
0898	ND	6.2	1.4	0.013	3.9	240	0.028	867
0899	ND	0.7	0.57	0.0026	1	120	0.0043	690
0940	ND	2.3	0.71	0.0063	2.1	150	0.0097	557
0956	ND	1.7	0.43	0.0037	1.5	130	0.0081	501
0965	ND	1.8	0.54	0.0038	1.5	130	0.0087	570
1203	ND	1.8	0.6	0.0037	1.5	130	0.0081	742
1205	ND	6.6	1.5	0.015	4.8	190	0.029	840

Units are in milligrams per liter.

Values in **bold** exceed the benchmark value.

^a ND = Not Detected.

^b Sp. Cond. = Specific Conductance. This field measurement was included to illustrate samples collected at locations 0501, 0898 (the benchmark location), 1203, and 1205 were high in solids.

^c Benchmark values are calculated using guidance derived from *Data Quality Assessment: Statistical Methods for Practitioners* (EPA 2006).

Table 3. Benchmark Comparison for Floodplain River Locations (Filtered Samples)

Location	Ammonia as N	Manganese	Nitrate+Nitrite as N	Selenium	Strontium	Sulfate	Uranium
Benchmark ^b	0.1	0.0247	1.1725	0.0019	1.2009	256	0.0032
0501	ND ^a	0.073	0.62	0.00094	0.68	130	0.0022
0897	ND	0.0012	0.54	0.00091	0.69	120	0.0016
0898	ND	0.017	0.94	0.0015	0.62	240	0.0031
0899	ND	0.0019	0.61	0.0011	0.69	120	0.0016
0940	ND	0.0048	0.74	0.00089	0.65	150	0.0018
0956	ND	0.016	0.53	0.00064	0.71	130	0.002
0965	ND	0.012	0.55	0.00071	0.69	130	0.0019
1203	ND	0.059	0.58	0.00078	0.7	130	0.0021
1205	ND	0.15	1.5	0.0016	0.5	180	0.0036

Units are in milligrams per liter.

Values in **bold** exceed the benchmark value.

^a ND = Not Detected.

^b Benchmark values are calculated using guidance derived from *Data Quality Assessment: Statistical Methods for Practitioners* (EPA 2006).

A comparison of filtered and unfiltered results from the river samples is shown in Table 4, excluding ammonia as N, which was not detected in the river location samples.

Table 4. Floodplain River Locations, Filtered and Unfiltered Samples

Location	Analyte	Result, Filtered	Result, Unfiltered	RPD ^a
0501	Calcium	48	120	86%
	Chloride	10	10	0%
	Magnesium	6.8	30	126%
	Manganese	0.073	2.2	187%
	Nitrate+Nitrite as N	0.62	0.61	2%
	Potassium	4.5	17	116%
	Selenium	0.00094	0.0037	119%
	Sodium	49	56	13%
	Strontium	0.68	1.7	86%
	Sulfate	130	140	7%
	Uranium	0.0022	0.0084	117%
0897	Calcium	50	72	36%
	Chloride	11	11	0%
	Magnesium	8.6	18	71%
	Manganese	0.0012	0.57	199%
	Nitrate+Nitrite as N	0.54	0.46	16%
	Potassium	2.8	7.6	92%
	Selenium	0.00091	0.0021	79%
	Sodium	34	37	8%
	Strontium	0.69	0.94	31%
	Sulfate	120	120	0%
	Uranium	0.0016	0.0037	79%

Table 4 (continued). Floodplain River Locations, Filtered and Unfiltered Samples

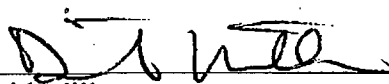
Location	Analyte	Result, Filtered	Result, Unfiltered	RPD ^a
0898	Calcium	40	320	156%
	Chloride	18	18	0%
	Magnesium	5.6	120	182%
	Manganese	0.017	6.2	199%
	Nitrate+Nitrite as N	0.94	1.4	39%
	Potassium	7.5	55	152%
	Selenium	0.0015	0.013	159%
	Sodium	110	130	17%
	Strontium	0.62	3.9	145%
	Sulfate	240	240	0%
	Uranium	0.0031	0.028	160%
0899	Calcium	50	80	46%
	Chloride	11	11	0%
	Magnesium	8.4	20	82%
	Manganese	0.0019	0.7	199%
	Nitrate+Nitrite as N	0.61	0.57	7%
	Potassium	3	8.8	98%
	Selenium	0.0011	0.0026	81%
	Sodium	35	39	11%
	Strontium	0.69	1	37%
	Sulfate	120	120	0%
	Uranium	0.0016	0.0043	92%
0940	Calcium	42	160	117%
	Chloride	11	11	0%
	Magnesium	6.3	56	160%
	Manganese	0.0048	2.3	199%
	Nitrate+Nitrite as N	0.74	0.71	4%
	Potassium	3.8	28	152%
	Selenium	0.00089	0.0063	150%
	Sodium	58	71	20%
	Strontium	0.65	2.1	105%
	Sulfate	150	150	0%
	Uranium	0.0018	0.0097	137%
0956	Calcium	49	100	68%
	Chloride	9.9	9.9	0%
	Magnesium	6.6	29	126%
	Manganese	0.016	1.7	196%
	Nitrate+Nitrite as N	0.53	0.43	21%
	Potassium	3.5	15	124%
	Selenium	0.00064	0.0037	141%
	Sodium	44	51	15%
	Strontium	0.71	1.5	71%
	Sulfate	130	130	0%
	Uranium	0.002	0.0081	121%

Table 4 (continued). Floodplain River Locations, Filtered and Unfiltered Samples

Location	Analyte	Result, Filtered	Result, Unfiltered	RPD ^a
0965	Calcium	47	100	72%
	Chloride	10	10	0%
	Magnesium	6.2	30	131%
	Manganese	0.012	1.8	197%
	Nitrate+Nitrite as N	0.55	0.54	2%
	Potassium	3.5	16	128%
	Selenium	0.00071	0.0038	137%
	Sodium	45	53	16%
	Strontium	0.69	1.5	74%
	Sulfate	130	130	0%
	Uranium	0.0019	0.0087	128%
1203	Calcium	48	100	70%
	Chloride	10	10	0%
	Magnesium	6.8	28	122%
	Manganese	0.059	1.8	187%
	Nitrate+Nitrite as N	0.58	0.6	3%
	Potassium	3.9	14	113%
	Selenium	0.00078	0.0037	130%
	Sodium	45	52	14%
	Strontium	0.7	1.5	73%
	Sulfate	130	130	0%
	Uranium	0.0021	0.0081	118%
1205	Calcium	28	290	165%
	Chloride	12	12	0%
	Magnesium	4.3	89	182%
	Manganese	0.15	6.6	191%
	Nitrate+Nitrite as N	1.5	1.5	0%
	Potassium	5.6	57	164%
	Selenium	0.0016	0.015	161%
	Sodium	110	140	24%
	Strontium	0.5	4.8	162%
	Sulfate	180	190	5%
	Uranium	0.0036	0.029	156%

^aRPD = Relative Percent Difference.

Units are in milligrams per liter.


 David Miller
 Site Lead, S.M. Stoller Corporation

1/16/12
 Date

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Data Assessment Summary

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Water Sampling Field Activities Verification Checklist

Project	Shiprock, New Mexico	Date(s) of Water Sampling	September 12-15, 2011
Date(s) of Verification	December 10, 2011	Name of Verifier	Gretchen Baer

	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 August 16, 2011.
2. Were the sampling locations specified in the planning documents sampled?	No	A total of 34 locations were not sampled, see Trip Report for explanation.
3. Was a pre-trip calibration conducted as specified in the above-named documents?	Yes	Pre-trip calibrations were performed on September 8, 2011.
4. Was an operational check of the field equipment conducted daily?	Yes	
Did the operational checks meet criteria?	No	pH pre-trip calibration: 2 spans were slightly out of range, which is acceptable. A post-trip check for ORP was slightly below range, which is acceptable. A post-trip check for turbidity was slightly above range, which is acceptable.
5. Were the number and types (alkalinity, temperature, specific conductance, pH, turbidity, DO, ORP) of field measurements taken as specified?	Yes	With the exception of some locations where alkalinity could not be measured due to limited sample volumes.
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	Duplicate samples were collected from seven locations.
10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with nondedicated equipment?	Yes	One equipment blank was collected.
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	
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

Report Number (RIN): 11094067
Sample Event: September 12-15, 2011
Site(s): Shiprock Disposal Site (Floodplain), New Mexico
Laboratory: ALS Laboratory Group, Fort Collins, Colorado
Work Order No.: 1109239
Analysis: Metals and Wet Chemistry
Validator: Gretchen Baer
Review Date: December 10, 2011

This validation was performed according to the *Environmental Procedures Catalog* (LMS/PRO/S04325, continually updated), "Standard Practice for Validation of Laboratory Data." 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 5.

Table 5. Analytes and Methods

Analyte	Line Item Code	Prep Method	Analytical Method
Ammonia as N	WCH-A-005	EPA 350.1	EPA 350.1
Calcium, Magnesium, Manganese, Potassium, Sodium, Strontium	LMM-01	SW-846 3005	SW-846 6010B
Chloride, Sulfate	MIS-A-045	SW-846 9056	SW-846 9056
Nitrate + Nitrite as N	WCH-A-022	EPA 353.2	EPA 353.2
Selenium, Uranium	LMM-02	SW-846 3005	SW-846 6020

Data Qualifier Summary

Analytical results were qualified as listed in Table 6. Refer to the attached validation worksheets and the sections below for an explanation of the data qualifiers applied.

Table 6. Data Qualifier Summary

Sample Number	Location	Analyte	Flag	Reason
1109239-28	0793	Manganese	U	Less than 5 times the calibration blank
1109239-38	0897	Manganese	U	Less than 5 times the calibration blank
1109239-39	0898	Selenium	J	Serial dilution failure
1109239-49	1008	Nitrate + Nitrite as N	J	Matrix spike failure
1109239-58	1113	Manganese	J	Serial dilution failure
1109239-62	1118	Manganese	U	Less than 5 times the calibration blank
1109239-79	1113 Dup, 2210	Manganese	J	Serial dilution failure
1109239-81	1008 Dup, 2212	Nitrate + Nitrite as N	J	Matrix spike failure
1109239-82	Equip Blank, 2215	Calcium	U	Less than 5 times the calibration blank
1109239-82	Equip Blank, 2215	Sodium	U	Less than 5 times the calibration blank

Sample Shipping/Receiving

ALS Laboratory Group in Fort Collins, Colorado, received 82 water samples on September 20, 2011, accompanied by Chain of Custody forms. Copies of the air bills were included in the receiving documentation. The Chain of Custody forms were checked to confirm that all of the samples were listed and that signatures and dates were present indicating sample relinquishment and receipt. The sample submittal documents including the Chain of Custody forms had no errors or omissions with the following exception. The bottle set for location 0734 on the Chain of Custody was crossed off mistakenly. The laboratory noted the error and correctly proceeded with analysis of the bottle received. No data qualification is necessary.

Preservation and Holding Times

The sample shipments were received intact with the temperatures inside the iced coolers at 0.8 °C and 2.4 °C, which complies 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 laboratory noticed that two bottles for location 0768 had pH values that contradicted the bottles' labels, which indicated that the labels had been switched. The laboratory corrected the error and proceeded with sample analysis. No data qualification is necessary. 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. All calibration and laboratory spike standards were prepared from independent sources.

Method EPA 350.1

Calibrations were performed for ammonia as N on October 5 and 7, 2011, using six calibration standards. 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). Initial and continuing calibration verification checks were made at the required frequency resulting in 26 verification checks. All calibration checks met the acceptance criteria.

Method EPA 353.2

Calibrations were performed for nitrate + nitrite as N on October 10 and 12, 2011, using seven calibration standards. 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. Initial and continuing calibration verification checks were made at the required frequency resulting in 15 verification checks. All calibration checks met the acceptance criteria.

Method SW-846 6010B

Calibrations for calcium, magnesium, manganese, potassium, sodium, and strontium were performed October 6, 7, 11, and 12, 2011, using three calibration standards. The correlation coefficient values were greater than 0.995. The absolute values of the intercepts were less than or only slightly above 3 times the MDL, with the exception of the intercepts for calcium, potassium, sodium, and strontium. These intercepts were less than 3 times the reporting limits and all results were above the reporting limits. Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification checks were made at the required frequency resulting in 20 verification checks (39 for sodium). All calibration checks associated with reported results met the acceptance criteria. Reporting limit verification checks were made at the required frequency 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 selenium and uranium were performed October 6 and 10, 2011, using four calibration standards. 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. Initial and continuing calibration verification checks were made at the required frequency resulting in 18 verification checks. All calibration checks associated with reported results met the acceptance criteria. Reporting limit verification checks were made at the required frequency 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 were performed for chloride and sulfate on September 21, 2011, using five calibration standards. 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. Initial and continuing calibration verification checks were made at the required frequency resulting in 20 verification checks. All calibration checks met the acceptance criteria.

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. 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. All method blank and calibration blank results associated with the samples were below the PQLs for all analytes. Some selenium results were only slightly less than 5 times an associated blank. Since these detections are consistent with historical data, the results were not qualified.

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

Interference check samples 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 spikes met the recovery and precision criteria for all analytes evaluated with the following exception. A nitrate + nitrite as N spike recovery was above the acceptance range. Associated results above the detection limit are qualified with a "J" flag (estimated).

Laboratory Replicate Analysis

Laboratory replicate analyses are used to determine laboratory precision for each sample matrix. The relative percent difference (RPD) for replicate results that are greater than 5 times the PQL should be less than 20 percent. For results that are less than 5 times the PQL, the range should be no greater than the PQL. The replicate results met these criteria, demonstrating acceptable laboratory precision.

Laboratory Control Samples

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 control sample 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 50 times the PQL for method 6010 or greater than 100 times the PQL for method 6020. All evaluated serial dilution data were acceptable with the following exceptions. A serial dilution for manganese and selenium did not meet the acceptance criteria. Associated results are qualified with a "J" flag as estimated values.

Detection Limits/Dilutions

Samples were diluted in a consistent and acceptable manner when required. The required detection limits were met 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 chloride and sulfate data. All peak integrations were satisfactory.

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 7 shows the total anion and cation results in groundwater samples from this event and the charge balance, which is an RPD calculation. Typically, a charge balance difference of 10 percent is considered acceptable.

Table 7. Comparison of Major Anions and Cations in Groundwater Samples

Site Code	Location	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
SHP01	0608	118	128	4
SHP01	0610	169	173	1
SHP01	0611	112	139	11
SHP01	0612	19	22	7
SHP01	0614	191	214	6
SHP01	0615	92	96	2
SHP01	0618	277	288	2
SHP01	0619	162	158	1
SHP01	0622	65	79	10
SHP01	0623	63	76	10
SHP01	0625	63	76	9
SHP01	0626	48	59	10
SHP01	0628	55	67	10
SHP01	0630	100	112	6
SHP01	0734	126	-----	NA
SHP01	0735	477	458	2
SHP01	0736	76	83	5
SHP01	0766	143	165	7
SHP01	0768	162	180	5
SHP01	0773	74	78	3

Table 7 (continued). Comparison of Major Anions and Cations in Groundwater Samples

Site Code	Location	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
SHP01	0775	113	122	4
SHP01	0779	251	264	3
SHP01	0782R	17	18	4
SHP01	0783R	13	14	2
SHP01	0792	336	374	5
SHP01	0793	74	77	1
SHP01	0797	86	93	4
SHP01	0798	157	170	4
SHP01	0850	32	33	1
SHP01	0853	26	26	1
SHP01	0854	271	280	2
SHP01	0855	66	69	2
SHP01	0856	67	72	4
SHP01	0857	77	90	7
SHP01	1008	223	232	2
SHP01	1009	50	51	1
SHP01	1089	113	128	6
SHP01	1104	190	215	6
SHP01	1105	220	228	2
SHP01	1109	21	24	7
SHP01	1110	185	199	4
SHP01	1111	203	214	3
SHP01	1112	216	235	4
SHP01	1113	141	149	3
SHP01	1114	122	126	2
SHP01	1115	219	246	6
SHP01	1117	6	7	7
SHP01	1118	195	206	3
SHP01	1128	253	256	1
SHP01	1132	6	6	4
SHP01	1134	6	6	0
SHP01	1135	84	92	4
SHP01	1136	13	16	8
SHP01	1137	60	66	5
SHP01	1138	67	72	4
SHP01	1139	59	64	3
SHP01	1140	190	202	3
SHP01	1141	105	108	2
SHP01	1142	5	6	13
SHP01	1143	55	64	8

The charge balance value was greater than ten percent for two locations. Further review of the data for these locations did not indicate any errors in the data. At location SHP01 0734 the anion results were not determined; the charge balance is not applicable.

Electronic Data Deliverable (EDD) File

The EDD file arrived on October 24, 2011. The Sample Management System EDD validation module was used to verify that the EDD files were complete and in compliance with requirements. The module compares the contents of the files 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.

SAMPLE MANAGEMENT SYSTEM

General Data Validation Report

RIN: 11094067 Lab Code: PAR Validator: Gretchen Baer Validation Date: 12/2/2011
Project: Shiprock Monitoring Analysis Type: ☒ Metals ☒ General Chem ☐ Rad ☐ Organics
of Samples: 82 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
- ☒ Detection Limits
- ☒ Field/Trip Blanks
- ☒ Field Duplicates

All analyses were completed within the applicable holding times.

The reported detection limits are equal to or below contract requirements.

There was 1 trip/equipment blank evaluated.

There were 3 duplicates evaluated.

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 11094067

Lab Code: PAR

Date Due: 10/18/2011

Matrix: Water

Site Code: SHP

Date Completed: 10/26/2011

Analyte	Method Type	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								
Calcium	ICP/ES	10/07/2011			OK	OK	OK	OK	OK	100.0				110.0		106.0
Calcium	ICP/ES	10/11/2011			OK	OK	OK	OK	OK	97.0			3.0	104.0	2.0	105.0
Calcium	ICP/ES	10/06/2011			OK	OK	OK	OK	OK	99.0	89.0	84.0	0.0	104.0	0.0	110.0
Calcium	ICP/ES	10/11/2011			OK	OK	OK	OK	OK	96.0	95.0	86.0	1.0	108.0	5.0	108.0
Calcium	ICP/ES	10/11/2011			OK	OK	OK	OK	OK	97.0	117.0	83.0	4.0	106.0	3.0	107.0
Magnesium	ICP/ES	10/06/2011			OK	OK	OK	OK	OK	100.0	89.0	80.0	0.0	108.0	1.0	108.0
Magnesium	ICP/ES	10/11/2011			OK	OK	OK	OK	OK	98.0			0.0	105.0	0.0	104.0
Magnesium	ICP/ES	10/07/2011			OK	OK	OK	OK	OK	101.0				111.0		107.0
Magnesium	ICP/ES	10/11/2011			OK	OK	OK	OK	OK	99.0	111.0	99.0	3.0	105.0	5.0	104.0
Magnesium	ICP/ES	10/11/2011			OK	OK	OK	OK	OK	99.0	99.0	104.0	2.0	106.0	1.0	107.0
Manganese	ICP/ES	10/11/2011			OK	OK	OK	OK	OK	94.0	85.0	81.0	0.0	92.0	3.0	107.0
Manganese	ICP/ES	10/06/2011			OK	OK	OK	OK	OK	100.0	90.0	89.0	0.0	94.0	12.0	108.0
Manganese	ICP/ES	10/07/2011			OK	OK	OK	OK	OK	97.0				97.0		114.0
Manganese	ICP/ES	10/11/2011			OK	OK	OK	OK	OK	95.0	98.0	105.0	2.0	96.0	7.0	113.0
Manganese	ICP/ES	10/11/2011			OK	OK	OK	OK	OK	96.0			3.0	98.0	4.0	111.0
Potassium	ICP/ES	10/07/2011			OK	OK	OK	OK	OK	95.0						81.0
Potassium	ICP/ES	10/11/2011			OK	OK	OK	OK	OK	95.0	116.0	117.0	1.0			81.0

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 11094067

Lab Code: PAR

Date Due: 10/18/2011

Matrix: Water

Site Code: SHP

Date Completed: 10/26/2011

Analyte	Method Type	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	ICP/ES	10/11/2011			OK	OK	OK	OK	OK	94.0	106.0	100.0	2.0			82.0
Potassium	ICP/ES	10/11/2011			OK	OK	OK	OK	OK	93.0	104.0	106.0	1.0			84.0
Potassium	ICP/ES	10/06/2011			OK	OK	OK	OK	OK	97.0	115.0	115.0	0.0		8.0	84.0
Sodium	ICP/ES	10/11/2011			OK	OK	OK	OK	OK	90.0			0.0		6.0	88.0
Sodium	ICP/ES	10/11/2011			OK	OK	OK	OK	OK	93.0			1.0		9.0	84.0
Sodium	ICP/ES	10/07/2011			OK	OK	OK	OK	OK	90.0						80.0
Sodium	ICP/ES	10/11/2011			OK	OK	OK	OK	OK	92.0	100.0	90.0	2.0		6.0	88.0
Sodium	ICP/ES	10/06/2011			OK	OK	OK	OK	OK	93.0			0.0		6.0	88.0
Strontium	ICP/ES	10/11/2011			OK	OK	OK	OK	OK	97.0			0.0	101.0	0.0	103.0
Strontium	ICP/ES	10/06/2011			OK	OK	OK	OK	OK	100.0	108.0	107.0	0.0	95.0	10.0	97.0
Strontium	ICP/ES	10/11/2011			OK	OK	OK	OK	OK	100.0			2.0	96.0	4.0	96.0
Strontium	ICP/ES	10/07/2011			OK	OK	OK	OK	OK	98.0				99.0		103.0
Strontium	ICP/ES	10/11/2011			OK	OK	OK	OK	OK	99.0	110.0	88.0	2.0	98.0	0.0	102.0
Selenium	ICP/MS	10/06/2011			OK	OK	OK	OK	OK	103.0	104.0	102.0	2.0	106.0		92.0
Selenium	ICP/MS	10/06/2011			OK	OK	OK	OK	OK	103.0				109.0	14.0	92.0
Selenium	ICP/MS	10/06/2011			OK	OK	OK	OK	OK	100.0						109.0
Selenium	ICP/MS	10/10/2011			OK	OK	OK	OK	OK	96.0	94.0	102.0	5.0			

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 11094067

Lab Code: PAR

Date Due: 10/18/2011

Matrix: Water

Site Code: SHP

Date Completed: 10/26/2011

Analyte	Method Type	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								
Selenium	ICP/MS	10/10/2011									102.0	94.0	6.0			
Selenium	ICP/MS	10/06/2011			OK	OK	OK	OK	OK	103.0	77.0	82.0	5.0			
Uranium	ICP/MS	10/06/2011			OK	OK	OK	OK	OK	102.0				110.0	2.0	130.0
Uranium	ICP/MS	10/06/2011			OK	OK	OK	OK	OK	99.0				109.0	1.0	110.0
Uranium	ICP/MS	10/10/2011			OK	OK	OK	OK	OK	96.0			2.0		6.0	90.0
Uranium	ICP/MS	10/06/2011			OK	OK	OK	OK	OK	102.0	98.0	90.0	1.0		3.0	
Uranium	ICP/MS	10/10/2011											0.0			
Uranium	ICP/MS	10/06/2011			OK	OK	OK	OK	OK	102.0	106.0	121.0	4.0			

SAMPLE MANAGEMENT SYSTEM **Wet Chemistry Data Validation Worksheet**

RIN: 11094067 Lab Code: PAR Date Due: 10/18/2011
 Matrix: Water Site Code: SHP Date Completed: 10/26/2011

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	10/05/2011	0.040	0.9998	OK	OK	OK	OK	OK	101.00				
AMMONIA AS N	10/07/2011							OK	97.00	107.0	107.0	0	
AMMONIA AS N	10/07/2011	0.000	0.9999	OK	OK	OK	OK	OK	102.00	111.0	111.0	0	
AMMONIA AS N	10/07/2011							OK	97.00	114.0	111.0	2.00	
AMMONIA AS N	10/07/2011							OK	96.00				
CHLORIDE	09/21/2011	-0.037	1.0000	OK		OK							
CHLORIDE	10/04/2011									103.0			
CHLORIDE	10/04/2011				OK		OK	OK	97.00	102.0	99.0	1.00	
CHLORIDE	10/04/2011							OK	101.00	108.0	104.0	2.00	
CHLORIDE	10/04/2011									101.0			
CHLORIDE	10/05/2011							OK	96.00	104.0	105.0	1.00	
CHLORIDE	10/05/2011				OK		OK	OK	93.00	104.0	108.0	1.00	
CHLORIDE	10/05/2011									101.0			
CHLORIDE	10/05/2011							OK	97.00	111.0	100.0	1.00	
CHLORIDE	10/05/2011									101.0			

SAMPLE MANAGEMENT SYSTEM **Wet Chemistry Data Validation Worksheet**

RIN: 11094067 Lab Code: PAR Date Due: 10/18/2011
Matrix: Water Site Code: SHP Date Completed: 10/26/2011

Analyte	Date Analyzed	CALIBRATION						Method	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	ICV	CCV	ICB	CCB						
Nitrate+Nitrite as N	10/10/2011	0.000	0.9997	OK	OK	OK	OK	OK	102.00	126.0	124.0	0	
Nitrate+Nitrite as N	10/10/2011							OK	100.00	104.0	105.0	1.00	
Nitrate+Nitrite as N	10/10/2011							OK	103.00	108.0	109.0	1.00	
Nitrate+Nitrite as N	10/10/2011							OK	100.00	104.0	107.0	3.00	
Nitrate+Nitrite as N	10/10/2011							OK	101.00	100.0	103.0	1.00	
Nitrate+Nitrite as N	10/12/2011	0.000	0.9999	OK	OK	OK	OK						
Sulfate	09/21/2011	0.280	1.0000	OK		OK							
SULFATE	10/04/2011				OK		OK			103.0			
SULFATE	10/04/2011									109.0			
SULFATE	10/04/2011							OK	97.00	91.0	108.0	1.00	
SULFATE	10/04/2011							OK	101.00	101.0	95.0	1.00	
SULFATE	10/05/2011							OK	93.00	106.0	98.0	1.00	
SULFATE	10/05/2011									102.0			
SULFATE	10/05/2011							OK	96.00	96.0	98.0	0	
SULFATE	10/05/2011				OK		OK			103.0			

SAMPLE MANAGEMENT SYSTEM **Wet Chemistry Data Validation Worksheet**

RIN: 11094067

Lab Code: PAR

Date Due: 10/18/2011

Matrix: Water

Site Code: SHP

Date Completed: 10/26/2011

Analyte	Date Analyzed	CALIBRATION						Method	LCS	MS	MSD	DUP	Serial Dil.
		Int.	R^2	ICV	CCV	ICB	CCB	Blank	%R	%R	%R	RPD	%R
SULFATE	10/05/2011							OK	98.00	103.0	100.0	1.00	

General Information

Report Number (RIN): 11094068
Sample Event: September 12-15, 2011
Site(s): Shiprock Disposal Site (Terrace), New Mexico
Laboratory: ALS Laboratory Group, Fort Collins, Colorado
Work Order No.: 1109238
Analysis: Metals and Wet Chemistry
Validator: Gretchen Baer
Review Date: December 10, 2011

This validation was performed according to the *Environmental Procedures Catalog* (LMS/PRO/S04325, continually updated), "Standard Practice for Validation of Laboratory Data." 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 8.

Table 8. Analytes and Methods

Analyte	Line Item Code	Prep Method	Analytical Method
Ammonia as N	WCH-A-005	EPA 350.1	EPA 350.1
Calcium, Magnesium, Manganese, Potassium, Sodium, Strontium	LMM-01	SW-846 3005	SW-846 6010B
Chloride, Sulfate	MIS-A-045	SW-846 9056	SW-846 9056
Nitrate + Nitrite as N	WCH-A-022	EPA 353.2	EPA 353.2
Selenium, Uranium	LMM-02	SW-846 3005	SW-846 6020

Data Qualifier Summary

Analytical results were qualified as listed in Table 9. Refer to the attached validation worksheets and the sections below for an explanation of the data qualifiers applied.

Table 9. Data Qualifier Summary

Sample Number	Location	Analyte	Flag	Reason
1109238-1	0600	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-1	0600	Selenium	J	Reporting limit verification failure
1109238-2	0602	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-4	0604	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-5	0662	Selenium	J	Reporting limit verification failure
1109238-8	0727	Selenium	J	Reporting limit verification failure
1109238-12	0812	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-13	0813	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-14	0814	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-15	0815	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-16	0816	Manganese	U	Less than 5 times the calibration blank

Table 9 (continued). Data Qualifier Summary

Sample Number	Location	Analyte	Flag	Reason
1109238-17	0817	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-17	0817	Selenium	J	Reporting limit verification failure
1109238-18	0818	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-19	0819	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-20	0820	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-20	0820	Selenium	J	Reporting limit verification failure
1109238-21	0824	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-21	0824	Selenium	J	Reporting limit verification failure
1109238-22	0825	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-23	0826	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-24	0827	Selenium	J	Reporting limit verification failure
1109238-25	0828	Selenium	J	Reporting limit verification failure
1109238-28	0835	Manganese	U	Less than 5 times the calibration blank
1109238-34	0848	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-35	0889	Nitrate + Nitrite as N	J	Matrix spike failure
1109238-36	1007	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-37	1049	Manganese	U	Less than 5 times the calibration blank
1109238-37	1049	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-38	1058	Selenium	J	Reporting limit verification failure
1109238-41	1070	Nitrate + Nitrite as N	J	Matrix spike failure
1109238-41	1070	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-42	1071	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-43	1073	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-44	1074	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-45	1078	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-48	1088	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-49	1091	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-50	1092	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-51	1093R	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-53	1096	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-54	1215	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-55	1219	Manganese	U	Less than 5 times the calibration blank
1109238-57	1221	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-60	0817 Dup, 2812	Selenium	J	Reporting limit verification failure
1109238-61	0889 Dup, 2813	Nitrate + Nitrite as N	J	Matrix spike failure
1109238-62	MW1	Potassium	J	Matrix spike failure; Serial dilution failure
1109238-62	MW1	Selenium	J	Reporting limit verification failure

Sample Shipping/Receiving

ALS Laboratory Group in Fort Collins, Colorado, received 62 water samples on September 20, 2011, accompanied by Chain of Custody forms. Copies of the air bills were included in the receiving documentation. The Chain of Custody forms were checked to confirm that all of the samples were listed and that signatures and dates were present indicating sample relinquishment and receipt. The sample submittal documents including the Chain of Custody forms had no errors or omissions.

Preservation and Holding Times

The sample shipments were received intact with the temperatures inside the iced coolers at 0.2 °C and 2.4 °C, which complies with requirements. All samples were received in the correct container types and had been preserved correctly for the requested analyses. 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. All calibration and laboratory spike standards were prepared from independent sources.

Method EPA 350.1

Calibration was performed for ammonia as N on October 5, 2011, using six calibration standards. 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. Initial and continuing calibration verification checks were made at the required frequency resulting in 13 verification checks. All calibration checks met the acceptance criteria.

Method EPA 353.2

Calibrations were performed for nitrate + nitrite as N on September 30 and October 4, 2011, using seven calibration standards. 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. Initial and continuing calibration verification checks were made at the required frequency resulting in 9 verification checks. All calibration checks met the acceptance criteria.

Method SW-846 6010B

Calibrations for calcium, magnesium, manganese, potassium, sodium, and strontium were performed October 4 and 7, 2011, using three calibration standards. The correlation coefficient values were greater than 0.995. The absolute values of the intercepts were less than or only slightly above 3 times the MDL, with the exception of the intercepts for calcium, potassium, sodium, and strontium. These intercepts were less than 3 times the reporting limits and all results were above the reporting limits. Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification checks were made at the required frequency resulting in 25 verification checks. All calibration checks associated with reported results met the acceptance criteria. Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curve near the PQL and all results were within the acceptance range.

Method SW-846 6020A

Calibrations for selenium and uranium were performed October 4, 5, 6, and 10, 2011, using four calibration standards. 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. Initial and continuing calibration verification checks were made at the required frequency resulting in 32 verification checks. All calibration checks associated with reported results met the acceptance criteria. Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curve near the PQL and all results were within the acceptance range, with the following exception. A selenium check result was above the acceptance range. Dilution-factor-corrected results less than 5 times the PQL and above the detection limit are qualified with a "J" flag (estimated). 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 were performed for chloride and sulfate on September 21, 2011, using five calibration standards. 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. Initial and continuing calibration verification checks were made at the required frequency resulting in 13 verification checks. All calibration checks met the acceptance criteria.

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. 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. All method blank and calibration blank results associated with the samples were below the PQLs for all analytes. Some blank results for manganese were slightly greater than the MDL. The associated samples that were diluted and that had results greater than 5 times the blank were not further qualified.

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

Interference check samples 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

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 spikes met the recovery and precision criteria for all analytes evaluated with the following exceptions. Spike recoveries for potassium were outside the acceptance range for three samples. These samples were associated with locations with especially high specific conductivities (a field measurement). These three potassium results and all other potassium results associated with locations with similarly high specific conductivities are qualified with a "J" flag (estimated) for potential matrix interference. Two nitrate + nitrite as N spike recoveries were outside the acceptance range. Associated results are qualified with a "J" flag.

Laboratory Replicate Analysis

Laboratory replicate analyses are used to determine laboratory precision for each sample matrix. The RPD for replicate results that are greater than 5 times the PQL should be less than 20 percent. For results that are less than 5 times the PQL, the range should be no greater than the PQL. The replicate results met these criteria, demonstrating acceptable laboratory precision.

Laboratory Control Samples

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 control sample 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 50 times the PQL for method 6010 or greater than 100 times the PQL for method 6020. All evaluated serial dilution data were acceptable with the following exceptions. Serial dilutions for potassium were outside the acceptance range for three samples. These samples were associated with locations with especially high specific conductivities (a field measurement). These three potassium results and all other potassium results associated with locations with similarly high specific conductivities are qualified with a "J" flag (estimated) for potential matrix interference.

Detection Limits/Dilutions

Samples were diluted in a consistent and acceptable manner when required. The required detection limits were met 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 chloride and sulfate data. All peak integrations were satisfactory.

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. Table 10 shows the total anion and cation results in groundwater samples from this event and the charge balance, which is an RPD calculation. Typically, a charge balance difference of 10 percent is considered acceptable.

Table 10. Comparison of Major Anions and Cations in Groundwater Samples

Site Code	Location	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
SHP02	0600	220	277	11
SHP02	0602	377	424	6
SHP02	0603	197	193	1
SHP02	0604	366	400	4
SHP02	0725	59	80	15
SHP02	0726	108	123	7
SHP02	0727	256	276	4
SHP02	0728	129	132	1
SHP02	0730	55	54	1
SHP02	0731	95	102	4
SHP02	0812	467	532	7
SHP02	0813	351	326	4
SHP02	0814	357	-----	NA
SHP02	0815	387	402	2
SHP02	0816	35	42	8
SHP02	0817	334	356	3
SHP02	0818	334	366	5
SHP02	0819	308	312	1
SHP02	0820	301	358	9
SHP02	0824	199	232	8
SHP02	0825	267	318	9
SHP02	0826	304	325	3
SHP02	0827	153	168	5
SHP02	0828	62	71	7
SHP02	0830	44	45	1
SHP02	0833	139	160	7
SHP02	0835	81	94	8
SHP02	0836	60	62	1
SHP02	0837	61	63	1
SHP02	0838	219	236	4
SHP02	0843	40	40	1
SHP02	0844	279	280	0
SHP02	0848	330	401	10
SHP02	1007	359	368	1
SHP02	1049	408	433	3
SHP02	1058	141	167	8
SHP02	1059	201	244	10
SHP02	1068	154	-----	NA
SHP02	1070	366	436	9
SHP02	1071	323	384	9
SHP02	1073	304	319	2
SHP02	1074	333	302	5
SHP02	1078	354	380	4
SHP02	1079	71	73	2

Table 10 (continued). Comparison of Major Anions and Cations in Groundwater Samples

Site Code	Location	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
SHP02	1087	207	217	2
SHP02	1088	423	498	8
SHP02	1091	416	410	1
SHP02	1092	342	349	1
SHP02	1093R	307	294	2
SHP02	1095	231	238	1
SHP02	1096	328	377	7
SHP02	MW1	172	183	3

The charge balance value was greater than ten percent for two locations. Further review of the data for these locations did not indicate any errors in the data. At locations 0814 and 1068 the anion results were not determined; the charge balance is not applicable.

Electronic Data Deliverable File

A revised EDD file arrived on December 15, 2011, that included corrections to some ion chromatography data. The Sample Management System EDD validation module was used to verify that the EDD files were complete and in compliance with requirements. The module compares the contents of the files 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.

SAMPLE MANAGEMENT SYSTEM

General Data Validation Report

RIN: 11094068 Lab Code: PAR Validator: Gretchen Baer Validation Date: 12/9/2011
Project: Shiprock Monitoring Analysis Type: ☒ Metals ☒ General Chem ☐ Rad ☐ Organics
of Samples: 62 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 4 duplicates evaluated.

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 11094068

Lab Code: PAR

Date Due: 10/18/2011

Matrix: Water

Site Code: SHP

Date Completed: 10/24/2011

Analyte	Method Type	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								
Calcium	ICP/ES	10/07/2011			OK	OK	OK	OK	OK	99.0			3.0	104.0	6.0	105.0
Calcium	ICP/ES	10/04/2011			OK	OK	OK	OK	OK	101.0	91.0	94.0	1.0	109.0	6.0	110.0
Calcium	ICP/ES	10/04/2011			OK	OK	OK	OK	OK	100.0			4.0	107.0	6.0	108.0
Calcium	ICP/ES	10/07/2011			OK	OK	OK	OK	OK	100.0	81.0	105.0	2.0	109.0	1.0	108.0
Magnesium	ICP/ES	10/07/2011			OK	OK	OK	OK	OK	101.0	85.0	98.0	2.0	106.0	4.0	105.0
Magnesium	ICP/ES	10/04/2011			OK	OK	OK	OK	OK	100.0	91.0	94.0	1.0	105.0	0.0	104.0
Magnesium	ICP/ES	10/04/2011			OK	OK	OK	OK	OK	100.0	94.0	120.0	3.0	109.0	8.0	108.0
Magnesium	ICP/ES	10/07/2011			OK	OK	OK	OK	OK	100.0			3.0	110.0	8.0	107.0
Manganese	ICP/ES	10/04/2011			OK	OK	OK	OK	OK	97.0	91.0	96.0	3.0	94.0		108.0
Manganese	ICP/ES	10/04/2011			OK	OK	OK	OK	OK	98.0	92.0	93.0	1.0	93.0	6.0	106.0
Manganese	ICP/ES	10/07/2011			OK	OK	OK	OK	OK	97.0	97.0	92.0	3.0	99.0	4.0	110.0
Manganese	ICP/ES	10/07/2011			OK	OK	OK	OK	OK	97.0	94.0	96.0	2.0	99.0	2.0	113.0
Potassium	ICP/ES	10/07/2011			OK	OK	OK	OK	OK	95.0	115.0	118.0	2.0			79.0
Potassium	ICP/ES	10/04/2011			OK	OK	OK	OK	OK	95.0	151.0	155.0	1.0		25.0	79.0
Potassium	ICP/ES	10/07/2011			OK	OK	OK	OK	OK	94.0	174.0	161.0	3.0		33.0	80.0
Potassium	ICP/ES	10/04/2011			OK	OK	OK	OK	OK	95.0	169.0	182.0	4.0		22.0	82.0
Sodium	ICP/ES	10/07/2011			OK	OK	OK	OK	OK	90.0			1.0		4.0	80.0

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 11094068

Lab Code: PAR

Date Due: 10/18/2011

Matrix: Water

Site Code: SHP

Date Completed: 10/24/2011

Analyte	Method Type	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								
Sodium	ICP/ES	10/04/2011			OK	OK	OK	OK	OK	88.0			0.0		6.0	82.0
Sodium	ICP/ES	10/07/2011			OK	OK	OK	OK	OK	89.0			2.0		5.0	81.0
Sodium	ICP/ES	10/04/2011			OK	OK	OK	OK	OK	88.0			1.0		3.0	82.0
Strontium	ICP/ES	10/07/2011			OK	OK	OK	OK	OK	98.0			2.0	96.0	3.0	96.0
Strontium	ICP/ES	10/04/2011			OK	OK	OK	OK	OK	100.0	91.0	115.0	1.0	99.0	4.0	99.0
Strontium	ICP/ES	10/04/2011			OK	OK	OK	OK	OK	99.0			3.0	101.0	5.0	100.0
Strontium	ICP/ES	10/07/2011			OK	OK	OK	OK	OK	98.0			3.0	101.0	5.0	102.0
Selenium	ICP/MS	10/04/2011			OK	OK	OK	OK	OK	101.0	105.0	109.0	4.0	107.0	2.0	106.0
Selenium	ICP/MS	10/05/2011			OK	OK	OK	OK	OK	96.0	105.0	100.0	5.0	99.0	3.0	104.0
Selenium	ICP/MS	10/06/2011			OK	OK	OK	OK	OK	103.0	115.0	103.0	3.0	106.0		140.0
Selenium	ICP/MS	10/06/2011			OK	OK	OK	OK	OK	101.0			4.0	109.0		118.0
Uranium	ICP/MS	10/06/2011			OK	OK	OK	OK	OK	102.0	123.0	103.0	5.0	108.0	9.0	90.0
Uranium	ICP/MS	10/06/2011			OK	OK	OK	OK	OK	100.0			6.0	99.0	6.0	100.0
Uranium	ICP/MS	10/05/2011			OK	OK	OK	OK	OK	106.0			1.0	110.0	1.0	110.0
Uranium	ICP/MS	10/04/2011			OK	OK	OK	OK	OK	106.0			3.0		4.0	90.0

SAMPLE MANAGEMENT SYSTEM **Wet Chemistry Data Validation Worksheet**

RIN: 11094068 Lab Code: PAR Date Due: 10/18/2011
Matrix: Water Site Code: SHP Date Completed: 10/24/2011

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	10/05/2011	0.040	0.9998	OK	OK	OK	OK	OK	94.00	101.0	100.0	0	
AMMONIA AS N	10/05/2011							OK	98.00				
AMMONIA AS N	10/05/2011							OK	101.00				
AMMONIA AS N	10/05/2011							OK	95.00	98.0	100.0	2.00	
CHLORIDE	09/21/2011	-0.037	1.0000	OK		OK							
CHLORIDE	09/29/2011				OK		OK	OK	96.00	105.0	104.0	0	
CHLORIDE	09/29/2011							OK	96.00				
CHLORIDE	09/30/2011									101.0			
CHLORIDE	09/30/2011									102.0			
CHLORIDE	09/30/2011				OK		OK	OK	99.00	102.0	105.0	1.00	
Nitrate+Nitrite as N	09/30/2011	0.000	0.9994	OK	OK	OK	OK	OK	99.00	88.0	89.0	0	
Nitrate+Nitrite as N	09/30/2011							OK	97.00	92.0	92.0	0	
Nitrate+Nitrite as N	10/04/2011	0.000	0.9998	OK	OK	OK	OK	OK	100.00	93.0	59.0	10.00	
Nitrate+Nitrite as N	10/04/2011							OK	101.00	61.0	81.0	5.00	
Sulfate	09/21/2011	0.280	1.0000	OK		OK							

SAMPLE MANAGEMENT SYSTEM **Wet Chemistry Data Validation Worksheet**

RIN: 11094068 Lab Code: PAR Date Due: 10/18/2011
 Matrix: Water Site Code: SHP Date Completed: 10/24/2011

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	ICV	CCV	ICB	CCB						
SULFATE	09/29/2011									111.0			
SULFATE	09/29/2011				OK		OK	OK	97.00	105.0	104.0	0	
SULFATE	09/29/2011							OK	97.00	102.0	110.0	1.00	
SULFATE	09/30/2011				OK		OK	OK	99.00	82.0	87.0	1.00	
SULFATE	09/30/2011									82.0			
SULFATE	09/30/2011									94.0			

Sampling Quality Control Assessment

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

Sampling Protocol

Sample results for monitoring 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 met the Category I criteria and were sampled with dedicated tubing using the low-flow purge procedure with the following exceptions: floodplain wells 0734 and 0797, and terrace wells 0600, 0602, 0604, 0727, 0730, 0812, 0814, 0816, 0817, 0819, 0820, 0824, 0825, 0826, 0827, 1007, 1049, 1058, 1059, 1068, 1073, 1074, and MW1 were classified as Category II or III. The sample results for these wells were qualified with a "Q" flag, indicating the data are qualitative because of the sampling technique.

Both filtered and unfiltered samples were collected from floodplain river locations 0501, 0897, 0898, 0899, 0940, 0956, 0965, 1203, and 1205.

As per site lead request, any non river surface water location with turbidity slightly above 10 NTU was not filtered. A Program Directive will be created for this requirement.

Equipment Blank Assessment

Equipment blanks are prepared and analyzed to document contamination attributable the sample collection process. Equipment blanks are prepared and analyzed to document contamination attributable the sample collection process. An equipment blank (field ID 2215) was collected after decontamination of the tubing reel used to collect some surface water samples. Uranium was detected in this blank. The associated sample concentrations for uranium were greater than 5 times the blank concentration, so no further qualification is necessary. Calcium and sodium were detected in the blank by the laboratory, but these analytes have been qualified during data validation with a "U" flag as not detected. The equipment blank results indicate adequate decontamination of the sampling equipment.

Field Duplicate Assessment

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. The RPD for duplicate results that are greater than 5 times the PQL should be less than 20 percent. For results that are less than 5 times the PQL, the range should be no greater than the PQL. Duplicate samples were collected from floodplain locations 0779, 1008, and 1113, and terrace wells 0817, 0889, 1095, and 1215. The duplicate results met the criteria with the exception of the selenium RPD at location 1008, which was above the criteria at 26 percent. There were no analytical errors identified during the review of the data and the field notes did not describe any unusual conditions during sampling at this location. The duplicate results demonstrate acceptable overall precision.

SAMPLE MANAGEMENT SYSTEM

Validation Report: Equipment/Trip Blanks

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RIN: 11094067 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 12/2/2011

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	1109239-82	SW6020	Uranium	0.004	B	0.0029	UG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
1109239-1	JKV 243	0501	8.4	1		
1109239-2	JKV 254	0501	2.2	1		
1109239-37	JKV 232	0897	3.7	1		
1109239-38	JKV 267	0897	1.6	1		
1109239-39	JKV 233	0898	28	1		
1109239-40	JKV 268	0898	3.1	1		
1109239-41	JKV 269	0899	4.3	1		
1109239-42	JKV 288	0899	1.6	1		
1109239-45	JKV 235	0956	8.1	1		
1109239-46	JKV 273	0956	2	1		
1109239-51	JKV 230	1089	290	10		
1109239-52	JKV 246	1104	870	50		
1109239-54	JKV 244	1109	100	10		
1109239-55	JKV 245	1110	1200	200		
1109239-62	JKV 236	1118	760	50		
1109239-75	JKV 238	1203	8.1	1		
1109239-76	JKV 275	1203	2.1	1		
1109239-77	JKV 231	1205	29	1		
1109239-78	JKV 239	1205	3.6	1		

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

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RIN: 11094067 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 12/2/2011

Duplicate: 2210

Sample: 1113

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	25			10	23			10	8.33		MG/L
Calcium	490000			10	480000			10	2.06		UG/L
CHLORIDE	190			100	190			100	0		MG/L
Magnesium	830000			10	800000			10	3.68		UG/L
Manganese	1800			10	1500	E		1	18.18		UG/L
Nitrate+Nitrite as N	290			200	280			200	3.51		MG/L
Potassium	130000			10	150000			1	14.29		UG/L
Selenium	30			50	29			50	3.39		UG/L
Sodium	1000000			10	1000000			10	0		UG/L
Strontium	7700			10	6600			1	15.38		UG/L
SULFATE	5500			100	5400			100	1.83		MG/L
Uranium	760			50	690			50	9.66		UG/L

Duplicate: 2211

Sample: 0779

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	8.7			5	6.4			10	4.58		MG/L
Calcium	550000			20	540000			10	1.83		UG/L
CHLORIDE	440			200	430			200	2.30		MG/L
Magnesium	1400000			20	1300000			10	7.41		UG/L
Manganese	6400			20	6300			10	1.57		UG/L
Nitrate+Nitrite as N	41			50	40			50	2.47		MG/L
Potassium	110000			20	120000			10	8.70		UG/L
Selenium	30			100	35			100	15.38		UG/L
Sodium	2400000			20	2300000			50	4.26		UG/L
Strontium	13000			20	12000			10	8.00		UG/L
SULFATE	11000			200	11000			200	0		MG/L
Uranium	2300			100	2200			100	4.44		UG/L

Duplicate: 2212

Sample: 1008

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	10			10	10			5	0		MG/L
Calcium	420000			20	410000			10	2.41		UG/L
CHLORIDE	290			200	290			200	0		MG/L
Magnesium	1100000			20	1100000			10	0		UG/L
Manganese	4800			20	4800			10	0		UG/L

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

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RIN: 11094067 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 12/2/2011

Duplicate: 2212

Sample: 1008

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
Nitrate+Nitrite as N	21			20	22	N		20	4.65		MG/L
Potassium	87000			20	99000			10	12.90		UG/L
Selenium	11			50	8.5			50	25.64		UG/L
Sodium	2500000			20	2400000			50	4.08		UG/L
Strontium	8800			20	8300			10	5.85		UG/L
SULFATE	10000			200	10000			200	0		MG/L
Uranium	1300			50	1400			50	7.41		UG/L

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

Page 1 of 2

RIN: 11094068 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 12/9/2011

Duplicate: 2810		Sample: 1095		Sample		Duplicate						
Analyte	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution	RPD	RER	Units	
AMMONIA AS N	520			200	500			200	3.92		MG/L	
Calcium	840000			10	830000			10	1.20		UG/L	
CHLORIDE	260			200	260			200	0		MG/L	
Magnesium	1300000			10	1200000			10	8.00		UG/L	
Manganese	37000			10	36000			10	2.74		UG/L	
Nitrate+Nitrite as N	1800			1000	1500			1000	18.18		MG/L	
Potassium	150000			10	150000			10	0		UG/L	
Selenium	170			10	190			10	11.11		UG/L	
Sodium	950000			10	960000			10	1.05		UG/L	
Strontium	8000			10	7900			10	1.26		UG/L	
SULFATE	4500			200	4600			200	2.20		MG/L	
Uranium	54			10	60			10	10.53		UG/L	

Duplicate: 2811		Sample: 1215		Sample		Duplicate						
Analyte	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution	RPD	RER	Units	
AMMONIA AS N	24			5	24			5	0		MG/L	
Calcium	540000			100	540000			50	0		UG/L	
CHLORIDE	3500			5000	3600			1000			MG/L	
Magnesium	9100000			100	9400000			50	3.24		UG/L	
Manganese	600			100	590			50	1.68		UG/L	
Nitrate+Nitrite as N	2600			2000	2200			2000	16.67		MG/L	
Potassium	750000			100	870000			50	14.81		UG/L	
Selenium	3700			200	3800			200	2.67		UG/L	
Sodium	1.6E+07			500	1.5E+07			250	6.45		UG/L	
Strontium	16000			100	17000			50	6.06		UG/L	
SULFATE	66000			5000	70000			1000	5.88		MG/L	
Uranium	5400			200	5700			200	5.41		UG/L	

Duplicate: 2812		Sample: 0817		Sample		Duplicate						
Analyte	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution	RPD	RER	Units	
AMMONIA AS N	920			200	900			200	2.20		MG/L	
Calcium	450000			5	460000			10	2.20		UG/L	
CHLORIDE	530			200	510			200	3.85		MG/L	
Magnesium	2100000			5	2100000			10	0		UG/L	
Manganese	2300			5	2300			10	0		UG/L	

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

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RIN: 11094068 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 12/9/2011

Duplicate: 2812

Sample: 0817

Analyte	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution	RPD	RER	Units
Nitrate+Nitrite as N	500			500	450			500	10.53		MG/L
Potassium	310000			5	280000			10	10.17		UG/L
Selenium	4			10	4			10	0		UG/L
Sodium	1500000			50	1500000			10	0		UG/L
Strontium	12000			5	12000			10	0		UG/L
SULFATE	13000			200	13000			200	0		MG/L
Uranium	7200			100	6300			500	13.33		UG/L

Duplicate: 2813

Sample: 0889

Analyte	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution	RPD	RER	Units
AMMONIA AS N	0.25			1	0.3			1			MG/L
Calcium	380000			5	370000			10	2.67		UG/L
CHLORIDE	280			50	280			50	0		MG/L
Magnesium	210000			5	210000			10	0		UG/L
Manganese	16	B		5	18	B		10	11.76		UG/L
Nitrate+Nitrite as N	110			100	110	N		100	0		MG/L
Potassium	34000			5	29000			10	15.87		UG/L
Selenium	270			10	280			10	3.64		UG/L
Sodium	1200000			50	1300000			10	8.00		UG/L
Strontium	2800			5	2700			10	3.64		UG/L
SULFATE	4200			50	4100			50	2.41		MG/L
Uranium	28			10	27			10	3.64		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 Donovan
Steve Donovan

1-5-2012
Date

Data Validation Lead:

Gretchen Baer
Gretchen Baer

1/5/12
Date

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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.

Data identified as potentially anomalous generally are from locations where analyte concentrations are trending upward or downward. One result is listed on the Anomalous Data Review Checksheet for further review. There were no data errors indicated from the review of these potential outliers and the data from this event are acceptable as qualified.

Table 11 summarizes the anomalies identified in a previous report (April 2011). The right-hand column describes the result for this sampling event (September 2011).

Table 11. Comparison of April 2011 Anomalies with September 2011 Results

Loc. No.	Analyte	Type of Anomaly in April 2011	September 2011 Measurement
SHP01-0857	Nitrate + Nitrite as Nitrogen	High	Measurement is lower & near historical range.
SHP02-0600	Selenium	High	Measurement is lower & near historical range.
SHP02-0817	Uranium	High	Measurement is lower & near historical range. The value of 30 ppm on 4/22/11 will be REJECTED (flagged with an "R" in the database) because: <ol style="list-style-type: none"> 1. This result is inconsistent with historical results. 2. The laboratory measured U \approx 7 ppm in the sample by another method. This result was not reported because the instrument was not calibrated for U by this method. However, the discrepancies in the U results obtained by the different methods are evidence that the laboratory made a dilution error when calculating the 30 ppm result.
SHP02-0820	Selenium	High	Measurement is lower & near historical range.
SHP02-0838	Selenium	High	Measurement is lower but still elevated; possible upward trend.

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 11094067

Report Date: 12/21/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of		Statistical Outlier
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N	N Below Detect	
						Lab	Data		Lab	Data		Lab	Data			
SHP01	0501	N001	09/13/2011	Calcium	120			90			40.9			19	0	Yes
SHP01	0501	N001	09/13/2011	Magnesium	30			21			7.4			19	0	Yes
SHP01	0501	0002	09/13/2011	Magnesium	6.8			21			7.4			19	0	No
SHP01	0501	N001	09/13/2011	Manganese	2.2			0.73			0.0022	B		19	3	No
SHP01	0501	N001	09/13/2011	Potassium	17			9	E	J	1.95			19	0	Yes
SHP01	0501	N001	09/13/2011	Strontium	1.7			1.1			0.44			19	0	Yes
SHP01	0501	N001	09/13/2011	Uranium	0.0084			0.0046			0.00087			19	0	Yes
SHP01	0608	N001	09/13/2011	Uranium	0.67		F	3.73			0.676	E	F	53	0	No
SHP01	0611	N001	09/13/2011	Magnesium	87		F	722			89		F	6	0	No
SHP01	0614	N001	09/13/2011	Nitrate + Nitrite as Nitrogen	210		F	1100		F	250			19	0	No
SHP01	0615	N001	09/14/2011	Nitrate + Nitrite as Nitrogen	3		F	1200		F	14		F	17	0	No
SHP01	0615	N001	09/14/2011	Selenium	0.049		F	1.81			0.07		F	39	0	No
SHP01	0615	N001	09/14/2011	Uranium	0.5		F	4.8		F	0.76		F	49	0	No
SHP01	0622	N001	09/15/2011	Nitrate + Nitrite as Nitrogen	0.01	U	F	3.4		F	0.014		F	6	0	No
SHP01	0625	N001	09/15/2011	Selenium	0.0013		F	0.764			0.0015	U	F	7	1	No
SHP01	0626	N001	09/15/2011	Magnesium	35		F	938			36		F	37	0	No
SHP01	0626	N001	09/15/2011	Sodium	820		F	2574			930		F	37	0	No
SHP01	0630	N001	09/15/2011	Nitrate + Nitrite as Nitrogen	43		F	12.4		F	0.019		F	9	0	Yes
SHP01	0630	N001	09/15/2011	Selenium	0.26		F	0.196	S*		0.0046		F	26	0	Yes
SHP01	0630	N001	09/15/2011	Strontium	25		F	24.5		F	5			24	0	No
SHP01	0735	N001	09/15/2011	Calcium	710		F	612.5			46		F	42	0	No
SHP01	0735	N001	09/15/2011	Magnesium	2400		F	2000		F	71.7		F	38	0	No
SHP01	0735	N001	09/15/2011	Potassium	100		F	99		F	11.5		F	38	0	No
SHP01	0735	N001	09/15/2011	Strontium	20		F	15		F	0.908		F	36	0	Yes

Data Validation Outliers Report - No Field Parameters
Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 11094067

Report Date: 12/21/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of		Statistical
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		Data Points		Outlier
						Lab	Data		Lab	Data		Lab	Data	N	N Below Detect	
SHP01	0766	N001	09/15/2011	Selenium	0.00044		F	0.0526			0.00065		FQ	6	0	No
SHP01	0766	N001	09/15/2011	Uranium	0.21		F	4.44			0.27		F	7	0	No
SHP01	0773	N001	09/13/2011	Ammonia Total as N	38		F	4			0.016	U	F	10	2	Yes
SHP01	0773	N001	09/13/2011	Uranium	0.35		F	0.9184			0.381	E	J	14	0	No
SHP01	0775	N001	09/15/2011	Selenium	0.001		F	0.124		L	0.0015	UN		8	2	No
SHP01	0779	N002	09/14/2011	Calcium	540		F	532.5			244			12	0	No
SHP01	0779	N001	09/14/2011	Calcium	550		F	532.5			244			12	0	No
SHP01	0779	N001	09/14/2011	Nitrate + Nitrite as Nitrogen	41		F	34		F	0.01	U	F	6	3	No
SHP01	0779	N002	09/14/2011	Nitrate + Nitrite as Nitrogen	40		F	34		F	0.01	U	F	6	3	No
SHP01	0779	N001	09/14/2011	Potassium	110		F	100			43.4			12	0	No
SHP01	0779	N002	09/14/2011	Potassium	120		F	100			43.4			12	0	No
SHP01	0779	N002	09/14/2011	Selenium	0.035		F	0.024		F	0.001	B		9	3	No
SHP01	0779	N001	09/14/2011	Selenium	0.03		F	0.024		F	0.001	B		9	3	No
SHP01	0779	N002	09/14/2011	Strontium	12		F	8.44		F	6		F	6	0	Yes
SHP01	0779	N001	09/14/2011	Strontium	13		F	8.44		F	6		F	6	0	Yes
SHP01	0782R	N001	09/13/2011	Calcium	110		F	98		F	53		F	6	0	No
SHP01	0782R	N001	09/13/2011	Magnesium	42		F	39		F	15		F	6	0	No
SHP01	0782R	N001	09/13/2011	Manganese	3.2		F	2.2		F	1.2		F	6	0	No
SHP01	0782R	N001	09/13/2011	Potassium	5.9		F	5.1		FJ	2.7		F	6	0	No
SHP01	0782R	N001	09/13/2011	Strontium	1.5		F	1.3		F	0.67		F	6	0	No
SHP01	0782R	N001	09/13/2011	Sulfate	660		F	630		F	240		F	6	0	No
SHP01	0782R	N001	09/13/2011	Uranium	0.011		F	0.0097		F	0.0027		F	6	0	No
SHP01	0783R	N001	09/13/2011	Manganese	2.3		F	2		F	0.39		F	6	0	No
SHP01	0792	N001	09/14/2011	Calcium	490		F	484.8			360		F	14	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 11094067

Report Date: 12/21/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Result	Current Qualifiers		Historical Maximum Qualifiers			Historical Minimum Qualifiers			Number of Data Points		Statistical Outlier
						Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
SHP01	0793	N001	09/14/2011	Manganese	0.012	B	UF	1.6		F	0.042		F	7	0	No
SHP01	0793	N001	09/14/2011	Uranium	0.54		F	1.7		F	0.648	E	F	8	0	No
SHP01	0798	N001	09/15/2011	Calcium	520		F	470		F	387		F	8	0	No
SHP01	0798	N001	09/15/2011	Nitrate + Nitrite as Nitrogen	0.01	U	F	5.4		F	0.014		F	6	0	No
SHP01	0798	N001	09/15/2011	Selenium	0.0039		F	0.873			0.02		F	7	0	No
SHP01	0854	N001	09/15/2011	Ammonia Total as N	8.9		F	8.5		F	3			5	0	No
SHP01	0897	0002	09/14/2011	Manganese	0.0012	B	U	1.6			0.0017	B		33	4	No
SHP01	0898	N001	09/15/2011	Calcium	320			160			29.2			32	0	No
SHP01	0898	N001	09/15/2011	Magnesium	120			25			5.03			32	0	No
SHP01	0898	N001	09/15/2011	Manganese	6.2			2.5			0.0015	B		32	2	No
SHP01	0898	N001	09/15/2011	Nitrate + Nitrite as Nitrogen	1.4			1		J	0.01			19	0	Yes
SHP01	0898	N001	09/15/2011	Potassium	55	E		9.4		J	1.42			32	0	No
SHP01	0898	N001	09/15/2011	Selenium	0.013	E	J	0.0019	B		0.0001	U		32	6	No
SHP01	0898	N001	09/15/2011	Sodium	130			75			11			32	0	No
SHP01	0898	0001	09/15/2011	Sodium	110			75			11			32	0	No
SHP01	0898	N001	09/15/2011	Strontium	3.9			2.2			0.27			32	0	No
SHP01	0898	0001	09/15/2011	Sulfate	240			220		J	40.7			32	0	No
SHP01	0898	N001	09/15/2011	Sulfate	240			220		J	40.7			32	0	No
SHP01	0898	N001	09/15/2011	Uranium	0.028			0.0087			0.00032	B		32	1	No
SHP01	0899	0001	09/14/2011	Calcium	50			69			54			11	0	No
SHP01	0899	N001	09/14/2011	Calcium	80			69			54			11	0	Yes
SHP01	0899	N001	09/14/2011	Magnesium	20			13			8			11	0	Yes
SHP01	0899	0001	09/14/2011	Manganese	0.0019	B		10	U		0.0021	B	U	11	4	No
SHP01	0899	0001	09/14/2011	Nitrate + Nitrite as Nitrogen	0.61			0.54			0.34			8	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 11094067

Report Date: 12/21/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of		Statistical
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		Data Points	N Below Detect	
						Lab	Data		Lab	Data		Lab	Data	N		
SHP01	0899	N001	09/14/2011	Nitrate + Nitrite as Nitrogen	0.57			0.54			0.34			8	0	No
SHP01	0899	0001	09/14/2011	Potassium	3			2.9			2.1			11	0	No
SHP01	0899	N001	09/14/2011	Potassium	8.8			2.9			2.1			11	0	Yes
SHP01	0899	N001	09/14/2011	Selenium	0.0026			0.0016			0.00054			8	2	No
SHP01	0899	N001	09/14/2011	Strontium	1			0.85			0.69			8	0	Yes
SHP01	0899	N001	09/14/2011	Uranium	0.0043			0.0028			0.001			11	0	Yes
SHP01	0940	N001	09/15/2011	Calcium	160			97			29.4			33	0	Yes
SHP01	0940	N001	09/15/2011	Magnesium	56			52.3			5.16			33	0	No
SHP01	0940	N001	09/15/2011	Manganese	2.3			0.64			0.0012	B		32	1	Yes
SHP01	0940	N001	09/15/2011	Potassium	28			4		J	1.48			33	0	Yes
SHP01	0940	N001	09/15/2011	Selenium	0.0063			0.0015		U	0.0001	U		32	5	Yes
SHP01	0940	N001	09/15/2011	Strontium	2.1			1.3			0.283			32	0	Yes
SHP01	0956	N001	09/13/2011	Calcium	100			99			41			31	0	Yes
SHP01	0956	N001	09/13/2011	Magnesium	29			23.2			7.5			31	0	Yes
SHP01	0956	0002	09/13/2011	Magnesium	6.6			23.2			7.5			31	0	No
SHP01	0956	N001	09/13/2011	Manganese	1.7			0.5			0.0026	B		31	1	No
SHP01	0956	N001	09/13/2011	Potassium	15			5.5		J	2	B		31	0	Yes
SHP01	0956	N001	09/13/2011	Selenium	0.0037			0.0018		B	0.0001	U		31	3	Yes
SHP01	0956	N001	09/13/2011	Strontium	1.5			1.2			0.46			31	0	Yes
SHP01	0956	N001	09/13/2011	Uranium	0.0081			0.0037			0.00094			31	0	Yes
SHP01	0965	N001	09/13/2011	Calcium	100			87			42			23	0	No
SHP01	0965	0002	09/13/2011	Magnesium	6.2			25.6			7.7			23	0	No
SHP01	0965	N001	09/13/2011	Magnesium	30			25.6			7.7			23	0	Yes
SHP01	0965	N001	09/13/2011	Manganese	1.8			0.46			0.0032	B		23	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 11094067

Report Date: 12/21/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of		Statistical
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N	N Below Detect	
						Lab	Data		Lab	Data		Lab	Data			Outlier
SHP01	0965	N001	09/13/2011	Potassium	16			3.9		J	2.12	B		23	0	Yes
SHP01	0965	N001	09/13/2011	Selenium	0.0038			0.0018	B		0.00024			23	2	Yes
SHP01	0965	N001	09/13/2011	Strontium	1.5			1.23			0.47			23	0	No
SHP01	0965	N001	09/13/2011	Uranium	0.0087			0.0034			0.00096			23	0	Yes
SHP01	1008	N002	09/15/2011	Selenium	0.0085		F	0.24		F	0.0089	N	JL	14	0	No
SHP01	1008	N002	09/15/2011	Strontium	8.3		F	13.7			8.39		F	13	0	No
SHP01	1009	N001	09/14/2011	Selenium	0.0084		F	0.34		F	0.0346	N	FJ	12	0	No
SHP01	1009	N001	09/14/2011	Sodium	240		F	754			261		F	15	0	No
SHP01	1089	N001	09/14/2011	Magnesium	290			1700			305			13	0	No
SHP01	1089	N001	09/14/2011	Nitrate + Nitrite as Nitrogen	0.88			83			3.75			16	0	No
SHP01	1089	N001	09/14/2011	Selenium	0.0054			0.094		F	0.015			12	0	No
SHP01	1104	N001	09/14/2011	Nitrate + Nitrite as Nitrogen	15			180		F	16.3			11	0	No
SHP01	1104	N001	09/14/2011	Selenium	0.0097			0.047			0.014			9	0	No
SHP01	1111	N001	09/14/2011	Manganese	0.95		F	0.82		F	0.34		F	8	0	No
SHP01	1111	N001	09/14/2011	Selenium	0.3		F	0.74		F	0.4		F	8	0	No
SHP01	1112	N001	09/13/2011	Manganese	2.2		F	80		U	2.4		F	13	2	No
SHP01	1113	N002	09/13/2011	Calcium	480		F	473			390		F	9	0	No
SHP01	1113	N001	09/13/2011	Calcium	490		F	473			390		F	9	0	No
SHP01	1113	N002	09/13/2011	Uranium	0.69		F	1.7962			0.762		F	9	0	No
SHP01	1113	N001	09/13/2011	Uranium	0.76		F	1.7962			0.762		F	9	0	No
SHP01	1114	N001	09/13/2011	Calcium	410		F	370			85		F	14	0	No
SHP01	1114	N001	09/13/2011	Manganese	4		F	3.24		F	1		F	9	0	No
SHP01	1114	N001	09/13/2011	Nitrate + Nitrite as Nitrogen	210		F	150		F	27		F	9	0	No
SHP01	1114	N001	09/13/2011	Selenium	0.043		F	0.0164		N	0.0042		F	9	0	Yes

Data Validation Outliers Report - No Field Parameters
Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 11094067

Report Date: 12/21/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of		Statistical
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		Data Points		Outlier
						Lab	Data		Lab	Data		Lab	Data	N	N Below Detect	
SHP01	1114	N001	09/13/2011	Strontium	6.6		F	4.71		F	1.7		F	9	0	No
SHP01	1115	N001	09/13/2011	Nitrate + Nitrite as Nitrogen	580		F	409			47		F	13	0	No
SHP01	1115	N001	09/13/2011	Potassium	180		F	162			30		F	22	0	No
SHP01	1115	N001	09/13/2011	Selenium	0.14		F	0.12		F	0.0088		F	13	0	Yes
SHP01	1117	N001	09/13/2011	Manganese	0.16		F	1	U		0.2			14	1	No
SHP01	1118	0001	09/14/2011	Chloride	410			380			168			11	0	No
SHP01	1118	0001	09/14/2011	Magnesium	1200			1100			350			11	0	No
SHP01	1118	0001	09/14/2011	Potassium	72			65			21			11	0	No
SHP01	1118	0001	09/14/2011	Sulfate	8100			7900			4100			12	0	No
SHP01	1118	0001	09/14/2011	Uranium	0.76			0.717			0.28			12	0	No
SHP01	1134	N001	09/13/2011	Chloride	11		F	21		F	12		F	5	0	No
SHP01	1134	N001	09/13/2011	Uranium	0.009		F	0.02		F	0.0095		F	5	0	No
SHP01	1135	N001	09/15/2011	Selenium	0.0003		F	0.0075	UN	FJ	0.00046	B	F	6	3	No
SHP01	1135	N001	09/15/2011	Sodium	1100		F	1700		F	1220			9	0	No
SHP01	1135	N001	09/15/2011	Uranium	0.12		F	0.24		F	0.126	E	J	9	0	No
SHP01	1136	N001	09/14/2011	Nitrate + Nitrite as Nitrogen	1.2		F	0.252		F	0.01	U	F	5	4	No
SHP01	1139	N001	09/15/2011	Selenium	0.0025		F	0.0252	N	F	0.00424	N		5	1	No
SHP01	1142	N001	09/14/2011	Calcium	53		F	80.5			60.5		F	8	0	No
SHP01	1142	N001	09/14/2011	Chloride	9.6		F	30.8		F	12		F	5	0	No
SHP01	1142	N001	09/14/2011	Magnesium	11		F	14		F	12		F	8	0	No
SHP01	1142	N001	09/14/2011	Selenium	0.00036		F	0.0075	UN	FJ	0.00055		F	5	3	No
SHP01	1142	N001	09/14/2011	Sodium	31		F	66			32		F	8	0	No
SHP01	1143	N001	09/15/2011	Chloride	72		F	96.1			76		F	5	0	No
SHP01	1143	N001	09/15/2011	Selenium	0.00013		F	0.0075	UN	FJ	0.00025		F	5	3	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 11094067

Report Date: 12/21/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current		Historical Maximum			Historical Minimum			Number of		Statistical
					Result	Qualifiers	Result	Lab	Data	Result	Lab	Data	Data Points	N Below Detect	
													N		
SHP01	1143	N001	09/15/2011	Uranium	0.053	F	0.078			0.054			8	0	No
SHP01	1203	N001	09/13/2011	Calcium	100		81			42			22	0	Yes
SHP01	1203	0002	09/13/2011	Magnesium	6.8		19			7.8			22	0	No
SHP01	1203	N001	09/13/2011	Magnesium	28		19			7.8			22	0	Yes
SHP01	1203	N001	09/13/2011	Manganese	1.8		0.47			0.0021	B		24	0	No
SHP01	1203	N001	09/13/2011	Potassium	14		12		J	2.27	B		22	0	No
SHP01	1203	N001	09/13/2011	Selenium	0.0037		0.0017			0.0001	U		24	3	Yes
SHP01	1203	N001	09/13/2011	Strontium	1.5		1			0.45			22	0	Yes
SHP01	1203	N001	09/13/2011	Uranium	0.0081		0.0035			0.00088			24	0	Yes
SHP01	1205	N001	09/15/2011	Calcium	290		180			42			30	0	No
SHP01	1205	0001	09/15/2011	Calcium	28		180			42			30	0	No
SHP01	1205	N001	09/15/2011	Magnesium	89		45			5.3			30	0	No
SHP01	1205	0001	09/15/2011	Magnesium	4.3		45			5.3			30	0	No
SHP01	1205	N001	09/15/2011	Manganese	6.6		3.3			0.00099	B		32	0	No
SHP01	1205	N001	09/15/2011	Potassium	57		23		J	2.16	B		30	0	No
SHP01	1205	N001	09/15/2011	Selenium	0.015		0.0023			0.00011	U		32	4	Yes
SHP01	1205	0001	09/15/2011	Sodium	110		69		J	19			30	0	Yes
SHP01	1205	N001	09/15/2011	Sodium	140		69		J	19			30	0	Yes
SHP01	1205	N001	09/15/2011	Strontium	4.8		2.4			0.45			30	0	No
SHP01	1205	N001	09/15/2011	Uranium	0.029		0.016			0.00088			32	0	No

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.

Data Validation Outliers Report - Field Parameters Only

Comparison: All Historical Data

Laboratory: Field Measurements

RIN: 11094067

Report Date: 12/21/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of		Statistical
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		Data Points		Outlier
						Lab	Data		Lab	Data		Lab	Data	N	N Below Detect	
SHP01	0611	N001	09/13/2011	Temperature	24.12		F	23.64		F	9.9		F	6	0	No
SHP01	0625	N001	09/15/2011	Oxidation Reduction Potential	29.5		F	450			31.8		F	7	0	No
SHP01	0626	N001	09/15/2011	Oxidation Reduction Potential	-128.2		F	495.4			-85.9		F	23	0	No
SHP01	0630	N001	09/15/2011	pH	6.95		F	8.21			7			28	0	No
SHP01	0735	N001	09/15/2011	Alkalinity, Total (as CaCO ₃)	1340		F	1104			315		F	40	0	Yes
SHP01	0735	N001	09/15/2011	Specific Conductance	26440		F	24050		F	2035		F	36	0	No
SHP01	0766	N001	09/15/2011	Oxidation Reduction Potential	-286.3		F	206			-110		F	6	0	No
SHP01	0773	N001	09/13/2011	Alkalinity, Total (as CaCO ₃)	340		F	339			242			13	0	No
SHP01	0775	N001	09/15/2011	Oxidation Reduction Potential	-203.1		F	228			-165			12	0	No
SHP01	0775	N001	09/15/2011	Temperature	22.81		F	22.34			8.87		F	12	0	No
SHP01	0782R	N001	09/13/2011	Specific Conductance	1958		F	1650		F	643		F	6	0	No
SHP01	0782R	N001	09/13/2011	Temperature	18.68		F	18.66		F	9.96		F	6	0	No
SHP01	0793	N001	09/14/2011	Oxidation Reduction Potential	51.8		F	222.1		F	57.4		F	7	0	No
SHP01	0797	N001	09/15/2011	pH	7.05		FQ	8.19		F	7.06		F	21	0	No
SHP01	0798	N001	09/15/2011	Oxidation Reduction Potential	15.4		F	158.1			32.4		F	7	0	No
SHP01	0854	N001	09/15/2011	Oxidation Reduction Potential	377		F	276		F	8.76			12	0	Yes
SHP01	0857	N001	09/14/2011	Alkalinity, Total (as CaCO ₃)	989		F	451		F	286		FQ	16	0	Yes
SHP01	0857	N001	09/14/2011	Oxidation Reduction Potential	211.5		F	167.1		F	-55			12	0	No
SHP01	0857	N001	09/14/2011	Turbidity	0.78		F	246			0.8		F	13	0	No
SHP01	0898	N001	09/15/2011	Alkalinity, Total (as CaCO ₃)	340			167			39			32	0	Yes
SHP01	0898	N001	09/15/2011	Specific Conductance	867			803			267			27	0	No

Data Validation Outliers Report - Field Parameters Only
Comparison: All Historical Data

Laboratory: Field Measurements

RIN: 11094067

Report Date: 12/21/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of		Statistical
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N	N Below Detect	Outlier
						Lab	Data		Lab	Data		Lab	Data			
SHP01	0899	N001	09/14/2011	Alkalinity, Total (as CaCO ₃)	340			130			96			5	0	Yes
SHP01	0899	N001	09/14/2011	Specific Conductance	690			617			481			7	0	No
SHP01	0940	N001	09/15/2011	Oxidation Reduction Potential	307			210			-2.5			26	0	No
SHP01	0956	N001	09/13/2011	Oxidation Reduction Potential	-100			196			-59.5			24	0	No
SHP01	0965	N001	09/13/2011	Oxidation Reduction Potential	-121			233			-40.4			17	0	Yes
SHP01	1089	N001	09/14/2011	Specific Conductance	8489			19700		F	9231			16	0	No
SHP01	1104	N001	09/14/2011	Oxidation Reduction Potential	244.7			217.5		F	-38			11	0	No
SHP01	1110	N001	09/14/2011	Turbidity	7.95			6.48			2.01			9	0	No
SHP01	1113	N001	09/13/2011	Temperature	23.12		F	22.93		F	4.7			8	0	No
SHP01	1114	N001	09/13/2011	Turbidity	0.14		F	9.93		F	1.3		F	9	0	No
SHP01	1117	N001	09/13/2011	Alkalinity, Total (as CaCO ₃)	180		F	169			82		F	14	0	No
SHP01	1118	0001	09/14/2011	Alkalinity, Total (as CaCO ₃)	1080			942			103			8	0	No
SHP01	1118	N001	09/14/2011	Specific Conductance	13008			12371			7352			11	0	No
SHP01	1118	N001	09/14/2011	Turbidity	20.9			8.9			1.45			9	0	Yes
SHP01	1134	N001	09/13/2011	Oxidation Reduction Potential	111.1		F	106.6		F	-111		F	5	0	No
SHP01	1135	N001	09/15/2011	Alkalinity, Total (as CaCO ₃)	295		F	410		F	297			7	0	No
SHP01	1135	N001	09/15/2011	pH	7.08		F	7.2			7.11		F	8	0	No
SHP01	1136	N001	09/14/2011	Oxidation Reduction Potential	157.8		F	120.2		F	-72.4			7	0	No
SHP01	1139	N001	09/15/2011	Oxidation Reduction Potential	322		F	166.6			3.9			7	0	No
SHP01	1139	N001	09/15/2011	Temperature	20.95		F	20.58			7.86			8	0	No
SHP01	1139	N001	09/15/2011	Turbidity	3.39		F	8.24		F	3.44			8	0	No
SHP01	1142	N001	09/14/2011	Specific Conductance	503		F	664			545			8	0	No

Data Validation Outliers Report - Field Parameters Only

Comparison: All Historical Data

Laboratory: Field Measurements

RIN: 11094067

Report Date: 12/21/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of		Statistical
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		Data Points		Outlier
						Lab	Data		Lab	Data		Lab	Data	N	N Below Detect	
SHP01	1143	N001	09/15/2011	Alkalinity, Total (as CaCO ₃)	312		F	288		F	212			7	0	No
SHP01	1143	N001	09/15/2011	Specific Conductance	5055		F	5939		F	5096			8	0	No
SHP01	1205	N001	09/15/2011	Alkalinity, Total (as CaCO ₃)	286			152			73			26	0	Yes
SHP01	1205	N001	09/15/2011	Oxidation Reduction Potential	-96			552			-0.9			23	0	No

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.

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 11094068

Report Date: 12/21/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of		Statistical
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		Data Points		Outlier
						Lab	Data		Lab	Data		Lab	Data	N	N Below Detect	
SHP02	0600	N001	09/14/2011	Calcium	250		FQ	477			260		F	25	0	No
SHP02	0600	N001	09/14/2011	Magnesium	260		FQ	858			270		FQ	25	0	No
SHP02	0602	N001	09/14/2011	Ammonia Total as N	120		FQ	460			150		FQ	7	0	No
SHP02	0602	N001	09/14/2011	Chloride	1700		FQ	1500		FQ	610	N		25	0	No
SHP02	0602	N001	09/14/2011	Sodium	4300		FQ	4060		FQ	2120			24	0	Yes
SHP02	0603	N001	09/14/2011	Calcium	1100		F	1040		F	367			19	0	No
SHP02	0604	0001	09/15/2011	Magnesium	1900		FQ	1890		FQ	972		L	10	0	No
SHP02	0604	0001	09/15/2011	Potassium	89		JFQ	73		FQJ	27.9		L	10	0	No
SHP02	0604	0001	09/15/2011	Selenium	1		FQ	0.937	E	FQ	0.0001	U	L	11	1	No
SHP02	0604	0001	09/15/2011	Sulfate	12000		FQ	11000		FQ	1.59		L	16	0	No
SHP02	0725	N001	09/14/2011	Ammonia Total as N	0.63		F	0.1	U	F	0.059	J	JF	9	7	No
SHP02	0725	N001	09/14/2011	Calcium	240		F	396			250		F	23	0	No
SHP02	0725	N001	09/14/2011	Sodium	820		F	1210			900			23	0	Yes
SHP02	0727	N001	09/14/2011	Manganese	0.99		FQ	1.61			1		FQ	21	0	No
SHP02	0727	N001	09/14/2011	Uranium	0.2		FQ	0.546			0.23		FQ	23	0	No
SHP02	0730	0001	09/13/2011	Calcium	700		FQ	659		F	477		L	16	0	No
SHP02	0730	0001	09/13/2011	Manganese	26		FQ	24.9		F	18		F	17	0	Yes
SHP02	0730	0001	09/13/2011	Potassium	16		FQ	28.9	E	JL	16.8		F	16	0	No
SHP02	0812	N001	09/13/2011	Magnesium	2400		FQ	2300		FQ	2050		L	14	0	No
SHP02	0812	N001	09/13/2011	Nitrate + Nitrite as Nitrogen	1300		FQ	1500		FQ	1400		FQ	7	0	No
SHP02	0812	N001	09/13/2011	Potassium	110		JFQ	100		FQ	58.3		FQ	14	0	No
SHP02	0813	N001	09/13/2011	Chloride	590		F	880		F	593		F	18	0	No
SHP02	0813	N001	09/13/2011	Nitrate + Nitrite as Nitrogen	1600		F	2800		F	2300		F	10	0	Yes

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 11094068

Report Date: 12/21/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Result	Current	Historical Maximum			Historical Minimum			Number of		Statistical	
						Qualifiers		Qualifiers			Qualifiers			Data Points		Outlier
						Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
SHP02	0813	N001	09/13/2011	Sodium	2100		F	3000		F	2360		F	18	0	No
SHP02	0814	0001	09/14/2011	Calcium	390		FQ	476			420		FQ	11	0	Yes
SHP02	0814	0001	09/14/2011	Manganese	1.1		FQ	1.52			1.2		FQ	12	0	No
SHP02	0814	0001	09/14/2011	Nitrate + Nitrite as Nitrogen	710		FQ	980		FQ	885		JFQ	6	0	Yes
SHP02	0814	0001	09/14/2011	Potassium	160		JFQ	150		J	84.6		L	11	0	No
SHP02	0815	N001	09/13/2011	Ammonia Total as N	0.77		F	0.575		F	0.1	U	F	9	7	No
SHP02	0815	N001	09/13/2011	Potassium	130		JF	110		F	67.5			14	0	No
SHP02	0816	N001	09/13/2011	Potassium	10		FQ	18		F	10.8		JFQ	14	0	No
SHP02	0817	0001	09/14/2011	Potassium	310		JFQ	290		F	184		F	21	0	No
SHP02	0818	N001	09/12/2011	Ammonia Total as N	54			240			55.5			17	0	No
SHP02	0818	N001	09/12/2011	Nitrate + Nitrite as Nitrogen	770			1900			850			16	0	No
SHP02	0819	N001	09/14/2011	Potassium	260		JFQ	240		F	119		L	13	0	No
SHP02	0820	N001	09/14/2011	Nitrate + Nitrite as Nitrogen	9		FQ	1.9		FQ	0.024		FQ	5	0	No
SHP02	0824	N001	09/14/2011	Ammonia Total as N	0.76		FQ	13		FQ	1.28		FQ	5	0	No
SHP02	0824	N001	09/14/2011	Manganese	0.1		FQ	0.939		L	0.106		L	10	0	No
SHP02	0824	N001	09/14/2011	Uranium	0.4		FQ	0.3881			0.0263		L	14	0	No
SHP02	0825	N001	09/14/2011	Ammonia Total as N	2.2		FQ	9			2.45		FQ	5	0	No
SHP02	0825	N001	09/14/2011	Potassium	180		JFQ	120		FQJ	44		FQ	5	0	No
SHP02	0825	N001	09/14/2011	Sodium	5600		FQ	7300			5800		FQ	5	0	No
SHP02	0825	N001	09/14/2011	Sulfate	5300		FQ	7358			5390		FQ	5	0	No
SHP02	0826	N001	09/14/2011	Calcium	390		FQ	466		FQ	400		F	16	0	No
SHP02	0826	N001	09/14/2011	Manganese	1.6		FQ	2.9		F	1.88		FQ	16	0	Yes
SHP02	0828	N001	09/13/2011	Nitrate + Nitrite as Nitrogen	36		F	177		F	48		F	5	0	No
SHP02	0828	N001	09/13/2011	Uranium	0.89		F	0.79	*EN	F	0.21		F	14	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 11094068

Report Date: 12/21/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of		Statistical
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		Data Points		Outlier
						Lab	Data		Lab	Data		Lab	Data	N	N Below Detect	
SHP02	0833	N001	09/14/2011	Calcium	400		F	735			420		F	12	0	No
SHP02	0833	N001	09/14/2011	Manganese	0.052		F	0.043		F	0.0006		U	13	3	No
SHP02	0833	N001	09/14/2011	Nitrate + Nitrite as Nitrogen	150		F	1260		F	360		F	7	0	No
SHP02	0838	N001	09/12/2011	Chloride	650		F	610		F	12.8			26	0	Yes
SHP02	0838	N001	09/12/2011	Magnesium	1300		F	1230		F	87.6			26	0	No
SHP02	0838	N001	09/12/2011	Nitrate + Nitrite as Nitrogen	590		F	587		F	32		F	16	0	No
SHP02	0838	N001	09/12/2011	Potassium	35		F	25		FJ	4			26	0	Yes
SHP02	0838	N001	09/12/2011	Sulfate	8000		F	7080		F	1180			29	0	No
SHP02	0843	N001	09/13/2011	Nitrate + Nitrite as Nitrogen	5.7		F	27		F	7.95		F	7	0	No
SHP02	0844	N001	09/12/2011	Magnesium	1900		F	1800		F	355			14	0	No
SHP02	0844	N001	09/12/2011	Potassium	69		F	67		FJ	9.7			14	0	No
SHP02	0848	N001	09/14/2011	Calcium	350		F	548			360		F	13	0	No
SHP02	0889	0002	09/15/2011	Chloride	280			2890			920			28	0	Yes
SHP02	0889	0001	09/15/2011	Chloride	280			2890			920			28	0	Yes
SHP02	0889	0002	09/15/2011	Magnesium	210			2610			690			28	0	No
SHP02	0889	0001	09/15/2011	Magnesium	210			2610			690			28	0	No
SHP02	0889	0001	09/15/2011	Nitrate + Nitrite as Nitrogen	110		J	1340			370			15	0	Yes
SHP02	0889	0002	09/15/2011	Nitrate + Nitrite as Nitrogen	110	N	J	1340			370			15	0	Yes
SHP02	0889	0002	09/15/2011	Potassium	29			117			34.2			28	0	No
SHP02	0889	0001	09/15/2011	Potassium	34			117			34.2			28	0	No
SHP02	0889	0002	09/15/2011	Selenium	0.28			3.98			0.473			28	0	No
SHP02	0889	0001	09/15/2011	Selenium	0.27			3.98			0.473			28	0	No
SHP02	0889	0002	09/15/2011	Sodium	1300			16900			4000			28	0	No
SHP02	0889	0001	09/15/2011	Sodium	1200			16900			4000			28	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 11094068

Report Date: 12/21/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of		Statistical
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		Data Points		Outlier
						Lab	Data		Lab	Data		Lab	Data	N	N Below Detect	
SHP02	0889	0002	09/15/2011	Strontium	2.7			14			5.6			28	0	No
SHP02	0889	0001	09/15/2011	Strontium	2.8			14			5.6			28	0	No
SHP02	0889	0001	09/15/2011	Sulfate	4200			42400			11000			30	0	Yes
SHP02	0889	0002	09/15/2011	Sulfate	4100			42400			11000			30	0	Yes
SHP02	0889	0002	09/15/2011	Uranium	0.027			0.28			0.11			30	0	No
SHP02	0889	0001	09/15/2011	Uranium	0.028			0.28			0.11			30	0	No
SHP02	1007	N001	09/14/2011	Calcium	510		FQ	499		FQ	427			10	0	No
SHP02	1007	N001	09/14/2011	Potassium	200		JFQ	140		FQ	77.3		L	10	0	Yes
SHP02	1049	0001	09/15/2011	Calcium	420		FQ	416		F	379			7	0	No
SHP02	1049	0001	09/15/2011	Potassium	63		JFQ	53		FJ	26.6		F	7	0	No
SHP02	1049	0001	09/15/2011	Uranium	0.2		FQ	0.18		F	0.114			8	0	No
SHP02	1058	N001	09/13/2011	Ammonia Total as N	4.5		FQ	4.25		FQ	1.2		FQ	7	0	No
SHP02	1059	N001	09/13/2011	Potassium	38		FQ	36		FQ	19.7		FQ	11	0	No
SHP02	1070	0001	09/12/2011	Uranium	0.086			0.14			0.087			19	0	No
SHP02	1071	N001	09/13/2011	Sulfate	14000			13000	N		2600			23	0	No
SHP02	1073	N001	09/13/2011	Ammonia Total as N	48		FQ	200		FQ	68		FQ	8	0	No
SHP02	1073	N001	09/13/2011	Magnesium	1900		FQ	1800		FQ	1600		FQ	7	0	No
SHP02	1073	N001	09/13/2011	Manganese	0.82		FQ	1.3		FQ	1.1		FQ	7	0	Yes
SHP02	1074	N001	09/15/2011	Selenium	0.33		FQ	0.32		FQ	0.25		FQ	7	0	No
SHP02	1074	N001	09/15/2011	Sodium	2600		FQ	2480		FQ	2000		FQ	7	0	No
SHP02	1074	N001	09/15/2011	Uranium	2.1		FQ	2		FQ	1.7		FQ	7	0	No
SHP02	1079	N001	09/13/2011	Calcium	820		F	800		F	450		F	21	0	No
SHP02	1079	N001	09/13/2011	Chloride	190		F	140		F	35.7		F	21	0	Yes
SHP02	1079	N001	09/13/2011	Magnesium	170		F	160		F	99		F	21	0	No

Data Validation Outliers Report - No Field Parameters
Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 11094068

Report Date: 12/21/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current		Historical Maximum		Historical Minimum		Number of		Statistical
					Result	Qualifiers	Result	Qualifiers	Result	Qualifiers	Data Points	N Below Detect	
						Lab Data		Lab Data		Lab Data	N		Outlier
SHP02	1079	N001	09/13/2011	Nitrate + Nitrite as Nitrogen	140	F	96	F	35	F	17	0	Yes
SHP02	1091	0001	09/13/2011	Chloride	910		1400		927		18	0	No
SHP02	1091	0001	09/13/2011	Magnesium	2900		2500		1520		11	0	No
SHP02	1092	0001	09/13/2011	Nitrate + Nitrite as Nitrogen	860		2900		869		15	0	No
SHP02	1095	N002	09/12/2011	Chloride	260		440		285		8	0	No
SHP02	1095	N001	09/12/2011	Chloride	260		440		285		8	0	No
SHP02	1095	N001	09/12/2011	Manganese	37		34.9	J	23		8	0	No
SHP02	1095	N002	09/12/2011	Manganese	36		34.9	J	23		8	0	No
SHP02	1095	N001	09/12/2011	Selenium	0.17		0.3		0.19	E	8	0	No
SHP02	1095	N001	09/12/2011	Sodium	950		1300		980		8	0	No
SHP02	1095	N002	09/12/2011	Sodium	960		1300		980		8	0	No
SHP02	1095	N001	09/12/2011	Sulfate	4500		7500		4880		10	0	No
SHP02	1095	N002	09/12/2011	Sulfate	4600		7500		4880		10	0	No
SHP02	1096	N001	09/12/2011	Chloride	950		1200		971		10	0	No
SHP02	1096	N001	09/12/2011	Magnesium	1000		1300		1100		10	0	No
SHP02	1096	N001	09/12/2011	Uranium	0.093		0.12		0.094		11	0	No
SHP02	1215	N002	09/12/2011	Chloride	3600		2580		1100		8	0	No
SHP02	1215	N001	09/12/2011	Chloride	3500		2580		1100		8	0	No
SHP02	1215	N002	09/12/2011	Magnesium	9400		6700		2400		8	0	No
SHP02	1215	N001	09/12/2011	Magnesium	9100		6700		2400		8	0	No
SHP02	1215	N001	09/12/2011	Potassium	750	J	660	J	270		8	0	No
SHP02	1215	N002	09/12/2011	Potassium	870		660	J	270		8	0	No
SHP02	1215	N002	09/12/2011	Selenium	3.8		2.5	E	0.86		8	0	No
SHP02	1215	N001	09/12/2011	Selenium	3.7		2.5	E	0.86		8	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 11094068

Report Date: 12/21/2011

					Current			Historical Maximum			Historical Minimum			Number of		Statistical
					Qualifiers			Qualifiers			Qualifiers			Data Points		Outlier
Site Code	Location Code	Sample ID	Sample Date	Analyte	Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
SHP02	1215	N001	09/12/2011	Sodium	16000			13000			4600			8	0	No
SHP02	1215	N002	09/12/2011	Sodium	15000			13000			4600			8	0	No
SHP02	1215	N002	09/12/2011	Strontium	17			14.9			6.7			8	0	No
SHP02	1215	N001	09/12/2011	Strontium	16			14.9			6.7			8	0	No
SHP02	1215	N001	09/12/2011	Sulfate	66000			45000			19000			9	0	No
SHP02	1215	N002	09/12/2011	Sulfate	70000			45000			19000			9	0	Yes
SHP02	1215	N001	09/12/2011	Uranium	5.4			3.9			1.7			9	0	No
SHP02	1215	N002	09/12/2011	Uranium	5.7			3.9			1.7			9	0	No

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.

Data Validation Outliers Report - Field Parameters Only

Comparison: All Historical Data

Laboratory: Field Measurements

RIN: 11094068

Report Date: 12/21/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of		Statistical
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		Data Points		Outlier
						Lab	Data		Lab	Data		Lab	Data	N	N Below Detect	
SHP02	0603	N001	09/14/2011	Alkalinity, Total (as CaCO ₃)	610		F	320			132		F	25	0	No
SHP02	0725	N001	09/14/2011	Alkalinity, Total (as CaCO ₃)	920		F	434		F	154			26	0	Yes
SHP02	0812	N001	09/13/2011	Oxidation Reduction Potential	16		FQ	260			97		FQ	17	0	Yes
SHP02	0813	N001	09/13/2011	Alkalinity, Total (as CaCO ₃)	476		F	1170			604		F	21	0	Yes
SHP02	0814	N001	09/14/2011	Turbidity	14.7		FQ	1000	>	L	17.1			10	0	No
SHP02	0820	N001	09/14/2011	Temperature	19.94		FQ	19.22		FQ	12.46		FQ	11	0	No
SHP02	0825	N001	09/14/2011	pH	6.78		FQ	7.39		FQ	6.84		FQ	5	0	No
SHP02	0825	N001	09/14/2011	Specific Conductance	25200		FQ	30125			27650		FQ	5	0	No
SHP02	0826	N001	09/14/2011	Alkalinity, Total (as CaCO ₃)	1600		FQ	1816		F	1612		L	19	0	No
SHP02	0828	N001	09/13/2011	Alkalinity, Total (as CaCO ₃)	826		F	694		F	180			14	0	No
SHP02	0833	N001	09/14/2011	Oxidation Reduction Potential	4		F	232		F	87		F	14	0	Yes
SHP02	0838	N001	09/12/2011	Oxidation Reduction Potential	-11		F	258		F	-4		F	27	0	No
SHP02	0843	N001	09/13/2011	Alkalinity, Total (as CaCO ₃)	263		F	462			278		F	19	0	Yes
SHP02	0843	N001	09/13/2011	Oxidation Reduction Potential	-13		F	236			6.2		F	14	0	No
SHP02	0843	N001	09/13/2011	Temperature	17.96		F	17.38		FQ	13			14	0	No
SHP02	0844	N001	09/12/2011	Oxidation Reduction Potential	-29		F	211			97		F	14	0	Yes
SHP02	0848	N001	09/14/2011	Alkalinity, Total (as CaCO ₃)	1860		F	1790		FQ	65			17	0	No
SHP02	0889	N001	09/15/2011	Specific Conductance	7183			47810			20094			30	0	Yes
SHP02	1007	N001	09/14/2011	Turbidity	4.31		FQ	1000	>	L	4.39		FQ	11	0	No
SHP02	1049	N001	09/15/2011	Oxidation Reduction Potential	162.3		FQ	260			174.8		FQ	8	0	No
SHP02	1049	N001	09/15/2011	Turbidity	1000	>	FQ	574		FQ	6.03		F	7	0	No
SHP02	1058	N001	09/13/2011	Alkalinity, Total (as CaCO ₃)	806		FQ	602		FQ	248			6	0	No

Data Validation Outliers Report - Field Parameters Only

Comparison: All Historical Data

Laboratory: Field Measurements

RIN: 11094068

Report Date: 12/21/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of		Statistical
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		Data Points		Outlier
						Lab	Data		Lab	Data		Lab	Data	N	N Below Detect	
SHP02	1058	N001	09/13/2011	Oxidation Reduction Potential	-108		FQ	235		FQ	-90		FQ	9	0	No
SHP02	1070	N001	09/12/2011	Turbidity	443			49			1.92			13	0	Yes
SHP02	1073	N001	09/13/2011	Turbidity	3.65		FQ	723		FQ	6.42		FQ	7	0	No
SHP02	1078	N001	09/12/2011	Alkalinity, Total (as CaCO ₃)	800			643			437			14	0	Yes
SHP02	1079	N001	09/13/2011	Turbidity	9.28		F	8.65		F	0.78		F	18	0	No
SHP02	1088	0001	09/13/2011	Alkalinity, Total (as CaCO ₃)	840			770			549			13	0	Yes
SHP02	1088	N001	09/13/2011	pH	7.19			8.17			7.25			16	0	No
SHP02	1091	N001	09/13/2011	Turbidity	559			25.8			1.2			13	0	Yes
SHP02	1092	N001	09/13/2011	Turbidity	120			37.7			3.35			12	0	No
SHP02	1093R	N001	09/13/2011	Turbidity	2.1			12			2.9			6	0	No
SHP02	1215	N001	09/12/2011	Specific Conductance	71233			58420			28846			7	0	No
SHP02	MW1	N001	09/14/2011	Temperature	18.4		FQ	17.8		FQ	13.4			8	0	No

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.

Anomalous Data Review Checksheet

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Anomalous Data Review Checksheet

Site: Shiprock, NM, Disposal Site

Sampling Data: Water

Reviewer: Gretchen Baer
Name (print)  Signature
Date 1/5/12

Site Hydrologist: David Miller 1/16/12
Name (print) Signature Date

Date of Review: December 10, 2011

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Attachment 2

Data Presentation

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**Groundwater Quality Data
Floodplain Locations**

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Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0608 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	10	-	15	377		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	10	-	15	82		F	#	5	
Calcium	mg/L	09/13/2011	N001	10	-	15	320		F	#	0.12	
Chloride	mg/L	09/13/2011	N001	10	-	15	190		F	#	2	
Magnesium	mg/L	09/13/2011	N001	10	-	15	510		F	#	0.13	
Manganese	mg/L	09/13/2011	N001	10	-	15	2.6		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	10	-	15	69		F	#	0.5	
Oxidation Reduction Potential	mV	09/13/2011	N001	10	-	15	203.7		F	#		
pH	s.u.	09/13/2011	N001	10	-	15	7.03		F	#		
Potassium	mg/L	09/13/2011	N001	10	-	15	67		F	#	1.1	
Selenium	mg/L	09/13/2011	N001	10	-	15	0.0046		F	#	0.00032	
Sodium	mg/L	09/13/2011	N001	10	-	15	1200		F	#	0.066	
Specific Conductance	umhos /cm	09/13/2011	N001	10	-	15	9274		F	#		
Strontium	mg/L	09/13/2011	N001	10	-	15	6.6		F	#	0.00078	
Sulfate	mg/L	09/13/2011	N001	10	-	15	5300		F	#	50	
Temperature	C	09/13/2011	N001	10	-	15	20.53		F	#		
Turbidity	NTU	09/13/2011	N001	10	-	15	6.69		F	#		
Uranium	mg/L	09/13/2011	N001	10	-	15	0.67		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0610 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	4	-	9	374		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	4	-	9	2.3		F	#	0.1	
Calcium	mg/L	09/13/2011	N001	4	-	9	520		F	#	0.12	
Chloride	mg/L	09/13/2011	N001	4	-	9	220		F	#	20	
Magnesium	mg/L	09/13/2011	N001	4	-	9	1000		F	#	0.13	
Manganese	mg/L	09/13/2011	N001	4	-	9	0.06		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	4	-	9	360		F	#	2	
Oxidation Reduction Potential	mV	09/13/2011	N001	4	-	9	191.1		F	#		
pH	s.u.	09/13/2011	N001	4	-	9	7.04		F	#		
Potassium	mg/L	09/13/2011	N001	4	-	9	150		F	#	1.1	
Selenium	mg/L	09/13/2011	N001	4	-	9	0.14		F	#	0.00032	
Sodium	mg/L	09/13/2011	N001	4	-	9	1300		F	#	0.066	
Specific Conductance	umhos/cm	09/13/2011	N001	4	-	9	11109		F	#		
Strontium	mg/L	09/13/2011	N001	4	-	9	7.8		F	#	0.00078	
Sulfate	mg/L	09/13/2011	N001	4	-	9	6400		F	#	50	
Temperature	C	09/13/2011	N001	4	-	9	25.29		F	#		
Turbidity	NTU	09/13/2011	N001	4	-	9	1.76		F	#		
Uranium	mg/L	09/13/2011	N001	4	-	9	1.1		F	#	0.00029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0611 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	9.5	-	14.5	579		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	9.5	-	14.5	2.8		F	#	0.1	
Calcium	mg/L	09/13/2011	N001	9.5	-	14.5	170		F	#	0.12	
Chloride	mg/L	09/13/2011	N001	9.5	-	14.5	520		F	#	20	
Magnesium	mg/L	09/13/2011	N001	9.5	-	14.5	87		F	#	0.13	
Manganese	mg/L	09/13/2011	N001	9.5	-	14.5	0.069		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	9.5	-	14.5	0.042		F	#	0.01	
Oxidation Reduction Potential	mV	09/13/2011	N001	9.5	-	14.5	184.6		F	#		
pH	s.u.	09/13/2011	N001	9.5	-	14.5	7.14		F	#		
Potassium	mg/L	09/13/2011	N001	9.5	-	14.5	18		F	#	1.1	
Selenium	mg/L	09/13/2011	N001	9.5	-	14.5	0.00061		F	#	0.000032	
Sodium	mg/L	09/13/2011	N001	9.5	-	14.5	2200		F	#	0.33	
Specific Conductance	umhos /cm	09/13/2011	N001	9.5	-	14.5	10812		F	#		
Strontium	mg/L	09/13/2011	N001	9.5	-	14.5	7		F	#	0.00078	
Sulfate	mg/L	09/13/2011	N001	9.5	-	14.5	5400		F	#	50	
Temperature	C	09/13/2011	N001	9.5	-	14.5	24.12		F	#		
Turbidity	NTU	09/13/2011	N001	9.5	-	14.5	2.38		F	#		
Uranium	mg/L	09/13/2011	N001	9.5	-	14.5	0.0081		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0612 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	5	-	10	395		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	5	-	10	0.32		F	#	0.1	
Calcium	mg/L	09/14/2011	N001	5	-	10	110		F	#	0.012	
Chloride	mg/L	09/14/2011	N001	5	-	10	35		F	#	4	
Magnesium	mg/L	09/14/2011	N001	5	-	10	60		F	#	0.013	
Manganese	mg/L	09/14/2011	N001	5	-	10	0.47		F	#	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	5	-	10	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/14/2011	N001	5	-	10	-44		F	#		
pH	s.u.	09/14/2011	N001	5	-	10	7.31		F	#		
Potassium	mg/L	09/14/2011	N001	5	-	10	8		F	#	0.11	
Selenium	mg/L	09/14/2011	N001	5	-	10	0.00054		F	#	0.000032	
Sodium	mg/L	09/14/2011	N001	5	-	10	190		F	#	0.033	
Specific Conductance	umhos/cm	09/14/2011	N001	5	-	10	1748		F	#		
Strontium	mg/L	09/14/2011	N001	5	-	10	1.3		F	#	0.000078	
Sulfate	mg/L	09/14/2011	N001	5	-	10	610		F	#	10	
Temperature	C	09/14/2011	N001	5	-	10	20.14		F	#		
Turbidity	NTU	09/14/2011	N001	5	-	10	2.06		F	#		
Uranium	mg/L	09/14/2011	N001	5	-	10	0.066		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0614 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	10	-	15	583		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	10	-	15	31		F	#	1	
Calcium	mg/L	09/13/2011	N001	10	-	15	420		F	#	0.12	
Chloride	mg/L	09/13/2011	N001	10	-	15	290		F	#	20	
Magnesium	mg/L	09/13/2011	N001	10	-	15	1200		F	#	0.13	
Manganese	mg/L	09/13/2011	N001	10	-	15	2.4		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	10	-	15	210		F	#	2	
Oxidation Reduction Potential	mV	09/13/2011	N001	10	-	15	192.1		F	#		
pH	s.u.	09/13/2011	N001	10	-	15	7.07		F	#		
Potassium	mg/L	09/13/2011	N001	10	-	15	150		F	#	1.1	
Selenium	mg/L	09/13/2011	N001	10	-	15	0.63		F	#	0.0032	
Sodium	mg/L	09/13/2011	N001	10	-	15	1500		F	#	0.066	
Specific Conductance	umhos /cm	09/13/2011	N001	10	-	15	12787		F	#		
Strontium	mg/L	09/13/2011	N001	10	-	15	8.1		F	#	0.00078	
Sulfate	mg/L	09/13/2011	N001	10	-	15	8600		F	#	50	
Temperature	C	09/13/2011	N001	10	-	15	20.53		F	#		
Turbidity	NTU	09/13/2011	N001	10	-	15	1.9		F	#		
Uranium	mg/L	09/13/2011	N001	10	-	15	1.5		F	#	0.00029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0615 WELL S of floodplain fence, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	4.5	-	9.5	479		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	4.5	-	9.5	3.1		F	#	0.1	
Calcium	mg/L	09/14/2011	N001	4.5	-	9.5	450		F	#	0.06	
Chloride	mg/L	09/14/2011	N001	4.5	-	9.5	87		F	#	10	
Magnesium	mg/L	09/14/2011	N001	4.5	-	9.5	480		F	#	0.065	
Manganese	mg/L	09/14/2011	N001	4.5	-	9.5	1.2		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	4.5	-	9.5	3		F	#	0.05	
Oxidation Reduction Potential	mV	09/14/2011	N001	4.5	-	9.5	53.9		F	#		
pH	s.u.	09/14/2011	N001	4.5	-	9.5	7		F	#		
Potassium	mg/L	09/14/2011	N001	4.5	-	9.5	70		F	#	0.54	
Selenium	mg/L	09/14/2011	N001	4.5	-	9.5	0.049		F	#	0.0016	
Sodium	mg/L	09/14/2011	N001	4.5	-	9.5	640		F	#	0.033	
Specific Conductance	umhos/cm	09/14/2011	N001	4.5	-	9.5	6052		F	#		
Strontium	mg/L	09/14/2011	N001	4.5	-	9.5	4.9		F	#	0.00039	
Sulfate	mg/L	09/14/2011	N001	4.5	-	9.5	4000		F	#	25	
Temperature	C	09/14/2011	N001	4.5	-	9.5	23.38		F	#		
Turbidity	NTU	09/14/2011	N001	4.5	-	9.5	4.56		F	#		
Uranium	mg/L	09/14/2011	N001	4.5	-	9.5	0.5		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0618 WELL Center of floodplain, well nest, just N of floodplain fence

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	11	- 16	881		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	11	- 16	46		F	#	1	
Calcium	mg/L	09/14/2011	N001	11	- 16	440		F	#	0.24	
Chloride	mg/L	09/14/2011	N001	11	- 16	510		F	#	40	
Magnesium	mg/L	09/14/2011	N001	11	- 16	1600		F	#	0.26	
Manganese	mg/L	09/14/2011	N001	11	- 16	9.2		F	#	0.0023	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	11	- 16	88		F	#	0.5	
Oxidation Reduction Potential	mV	09/14/2011	N001	11	- 16	215.1		F	#		
pH	s.u.	09/14/2011	N001	11	- 16	6.88		F	#		
Potassium	mg/L	09/14/2011	N001	11	- 16	100		F	#	2.2	
Selenium	mg/L	09/14/2011	N001	11	- 16	0.32		F	#	0.0065	
Sodium	mg/L	09/14/2011	N001	11	- 16	2700		F	#	0.13	
Specific Conductance	umhos /cm	09/14/2011	N001	11	- 16	17326		F	#		
Strontium	mg/L	09/14/2011	N001	11	- 16	9.2		F	#	0.0016	
Sulfate	mg/L	09/14/2011	N001	11	- 16	12000		F	#	100	
Temperature	C	09/14/2011	N001	11	- 16	18.78		F	#		
Turbidity	NTU	09/14/2011	N001	11	- 16	5.06		F	#		
Uranium	mg/L	09/14/2011	N001	11	- 16	1.9		F	#	0.00058	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0619 WELL Center of floodplain

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	8	-	13	555		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	8	-	13	0.71		F	#	0.1	
Calcium	mg/L	09/15/2011	N001	8	-	13	410		F	#	0.12	
Chloride	mg/L	09/15/2011	N001	8	-	13	190		F	#	20	
Magnesium	mg/L	09/15/2011	N001	8	-	13	330		F	#	0.13	
Manganese	mg/L	09/15/2011	N001	8	-	13	2.7		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	8	-	13	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/15/2011	N001	8	-	13	-42.7		F	#		
pH	s.u.	09/15/2011	N001	8	-	13	7.06		F	#		
Potassium	mg/L	09/15/2011	N001	8	-	13	57		F	#	1.1	
Selenium	mg/L	09/15/2011	N001	8	-	13	0.0018		F	#	0.00032	
Sodium	mg/L	09/15/2011	N001	8	-	13	2600		F	#	0.33	
Specific Conductance	umhos/cm	09/15/2011	N001	8	-	13	10919		F	#		
Strontium	mg/L	09/15/2011	N001	8	-	13	9.7		F	#	0.00078	
Sulfate	mg/L	09/15/2011	N001	8	-	13	6800		F	#	50	
Temperature	C	09/15/2011	N001	8	-	13	18.79		F	#		
Turbidity	NTU	09/15/2011	N001	8	-	13	3.93		F	#		
Uranium	mg/L	09/15/2011	N001	8	-	13	0.3		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0622 WELL Center of floodplain, well nest, N of floodplain fence

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	5	-	10	388		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	5	-	10	0.1	U	F	#	0.1	
Calcium	mg/L	09/15/2011	N001	5	-	10	190		F	#	0.12	
Chloride	mg/L	09/15/2011	N001	5	-	10	100		F	#	10	
Magnesium	mg/L	09/15/2011	N001	5	-	10	140		F	#	0.13	
Manganese	mg/L	09/15/2011	N001	5	-	10	1.6		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	5	-	10	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/15/2011	N001	5	-	10	181.1		F	#		
pH	s.u.	09/15/2011	N001	5	-	10	7.28		F	#		
Potassium	mg/L	09/15/2011	N001	5	-	10	24		F	#	1.1	
Selenium	mg/L	09/15/2011	N001	5	-	10	0.051		F	#	0.00032	
Sodium	mg/L	09/15/2011	N001	5	-	10	1000		F	#	0.066	
Specific Conductance	umhos/cm	09/15/2011	N001	5	-	10	5859		F	#		
Strontium	mg/L	09/15/2011	N001	5	-	10	5.4		F	#	0.00078	
Sulfate	mg/L	09/15/2011	N001	5	-	10	3300		F	#	25	
Temperature	C	09/15/2011	N001	5	-	10	18.59		F	#		
Turbidity	NTU	09/15/2011	N001	5	-	10	1.67		F	#		
Uranium	mg/L	09/15/2011	N001	5	-	10	0.1		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0623 WELL Center of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	10	-	15	445		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	10	-	15	0.22		F	#	0.1	
Calcium	mg/L	09/15/2011	N001	10	-	15	270		F	#	0.12	
Chloride	mg/L	09/15/2011	N001	10	-	15	83		F	#	10	
Magnesium	mg/L	09/15/2011	N001	10	-	15	65		F	#	0.13	
Manganese	mg/L	09/15/2011	N001	10	-	15	1.6		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	10	-	15	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/15/2011	N001	10	-	15	27.6		F	#		
pH	s.u.	09/15/2011	N001	10	-	15	7.1		F	#		
Potassium	mg/L	09/15/2011	N001	10	-	15	18		F	#	1.1	
Selenium	mg/L	09/15/2011	N001	10	-	15	0.0021		F	#	0.00032	
Sodium	mg/L	09/15/2011	N001	10	-	15	990		F	#	0.066	
Specific Conductance	umhos/cm	09/15/2011	N001	10	-	15	5656		F	#		
Strontium	mg/L	09/15/2011	N001	10	-	15	9.3		F	#	0.00078	
Sulfate	mg/L	09/15/2011	N001	10	-	15	3100		F	#	25	
Temperature	C	09/15/2011	N001	10	-	15	18.7		F	#		
Turbidity	NTU	09/15/2011	N001	10	-	15	3.04		F	#		
Uranium	mg/L	09/15/2011	N001	10	-	15	0.073		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0625 WELL Center of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	4.5	- 9.5	433		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	4.5	- 9.5	0.1	U	F	#	0.1	
Calcium	mg/L	09/15/2011	N001	4.5	- 9.5	280		F	#	0.12	
Chloride	mg/L	09/15/2011	N001	4.5	- 9.5	89		F	#	10	
Magnesium	mg/L	09/15/2011	N001	4.5	- 9.5	59		F	#	0.13	
Manganese	mg/L	09/15/2011	N001	4.5	- 9.5	4.4		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	4.5	- 9.5	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/15/2011	N001	4.5	- 9.5	29.5		F	#		
pH	s.u.	09/15/2011	N001	4.5	- 9.5	7.05		F	#		
Potassium	mg/L	09/15/2011	N001	4.5	- 9.5	16		F	#	1.1	
Selenium	mg/L	09/15/2011	N001	4.5	- 9.5	0.0013		F	#	0.00032	
Sodium	mg/L	09/15/2011	N001	4.5	- 9.5	1000		F	#	0.066	
Specific Conductance	umhos /cm	09/15/2011	N001	4.5	- 9.5	5757		F	#		
Strontium	mg/L	09/15/2011	N001	4.5	- 9.5	11		F	#	0.00078	
Sulfate	mg/L	09/15/2011	N001	4.5	- 9.5	3100		F	#	25	
Temperature	C	09/15/2011	N001	4.5	- 9.5	20.52		F	#		
Turbidity	NTU	09/15/2011	N001	4.5	- 9.5	5.39		F	#		
Uranium	mg/L	09/15/2011	N001	4.5	- 9.5	0.054		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0626 WELL Center of floodplain, just NE of wetland

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	9.5 - 14.5	360		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	9.5 - 14.5	0.17		F	#	0.1	
Calcium	mg/L	09/15/2011	N001	9.5 - 14.5	180		F	#	0.06	
Chloride	mg/L	09/15/2011	N001	9.5 - 14.5	68		F	#	10	
Magnesium	mg/L	09/15/2011	N001	9.5 - 14.5	35		F	#	0.065	
Manganese	mg/L	09/15/2011	N001	9.5 - 14.5	2.5		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	9.5 - 14.5	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/15/2011	N001	9.5 - 14.5	-128.2		F	#		
pH	s.u.	09/15/2011	N001	9.5 - 14.5	7.26		F	#		
Potassium	mg/L	09/15/2011	N001	9.5 - 14.5	13		F	#	0.54	
Selenium	mg/L	09/15/2011	N001	9.5 - 14.5	0.0011		F	#	0.000032	
Sodium	mg/L	09/15/2011	N001	9.5 - 14.5	820		F	#	0.33	
Specific Conductance	umhos/cm	09/15/2011	N001	9.5 - 14.5	4884		F	#		
Strontium	mg/L	09/15/2011	N001	9.5 - 14.5	8.1		F	#	0.00039	
Sulfate	mg/L	09/15/2011	N001	9.5 - 14.5	2400		F	#	25	
Temperature	C	09/15/2011	N001	9.5 - 14.5	19.19		F	#		
Turbidity	NTU	09/15/2011	N001	9.5 - 14.5	1.34		F	#		
Uranium	mg/L	09/15/2011	N001	9.5 - 14.5	0.034		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0628 WELL Center of floodplain, well nest, just N of wetland

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	6 - 10	336		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	6 - 10	0.1	U	F	#	0.1	
Calcium	mg/L	09/15/2011	N001	6 - 10	170		F	#	0.12	
Chloride	mg/L	09/15/2011	N001	6 - 10	69		F	#	10	
Magnesium	mg/L	09/15/2011	N001	6 - 10	41		F	#	0.13	
Manganese	mg/L	09/15/2011	N001	6 - 10	2.8		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	6 - 10	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/15/2011	N001	6 - 10	-130.1		F	#		
pH	s.u.	09/15/2011	N001	6 - 10	7.39		F	#		
Potassium	mg/L	09/15/2011	N001	6 - 10	13		F	#	1.1	
Selenium	mg/L	09/15/2011	N001	6 - 10	0.001		F	#	0.000032	
Sodium	mg/L	09/15/2011	N001	6 - 10	980		F	#	0.066	
Specific Conductance	umhos/cm	09/15/2011	N001	6 - 10	5260		F	#		
Strontium	mg/L	09/15/2011	N001	6 - 10	10		F	#	0.00078	
Sulfate	mg/L	09/15/2011	N001	6 - 10	2800		F	#	25	
Temperature	C	09/15/2011	N001	6 - 10	17.22		F	#		
Turbidity	NTU	09/15/2011	N001	6 - 10	2.19		F	#		
Uranium	mg/L	09/15/2011	N001	6 - 10	0.018		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0630 WELL Just N of mouth of Bob Lee Wash, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	5	-	10	610		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	5	-	10	0.1	U	F	#	0.1	
Calcium	mg/L	09/15/2011	N001	5	-	10	510		F	#	0.12	
Chloride	mg/L	09/15/2011	N001	5	-	10	190		F	#	20	
Magnesium	mg/L	09/15/2011	N001	5	-	10	200		F	#	0.13	
Manganese	mg/L	09/15/2011	N001	5	-	10	1.7		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	5	-	10	43		F	#	0.5	
Oxidation Reduction Potential	mV	09/15/2011	N001	5	-	10	94		F	#		
pH	s.u.	09/15/2011	N001	5	-	10	6.95		F	#		
Potassium	mg/L	09/15/2011	N001	5	-	10	20		F	#	1.1	
Selenium	mg/L	09/15/2011	N001	5	-	10	0.26		F	#	0.0016	
Sodium	mg/L	09/15/2011	N001	5	-	10	1300		F	#	0.066	
Specific Conductance	umhos/cm	09/15/2011	N001	5	-	10	8107		F	#		
Strontium	mg/L	09/15/2011	N001	5	-	10	25		F	#	0.00078	
Sulfate	mg/L	09/15/2011	N001	5	-	10	4400		F	#	50	
Temperature	C	09/15/2011	N001	5	-	10	19.46		F	#		
Turbidity	NTU	09/15/2011	N001	5	-	10	2.59		F	#		
Uranium	mg/L	09/15/2011	N001	5	-	10	0.21		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0734 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Calcium	mg/L	09/15/2011	N001	2	-	4	420		FQ	#	0.12	
Magnesium	mg/L	09/15/2011	N001	2	-	4	310		FQ	#	0.13	
Manganese	mg/L	09/15/2011	N001	2	-	4	0.15		FQ	#	0.0011	
Oxidation Reduction Potential	mV	09/15/2011	N001	2	-	4	106.6		FQ	#		
pH	s.u.	09/15/2011	N001	2	-	4	7.2		FQ	#		
Potassium	mg/L	09/15/2011	N001	2	-	4	25		FQ	#	1.1	
Selenium	mg/L	09/15/2011	N001	2	-	4	0.0081		FQ	#	0.00032	
Sodium	mg/L	09/15/2011	N001	2	-	4	1800		FQ	#	0.33	
Specific Conductance	umhos /cm	09/15/2011	N001	2	-	4	10497		FQ	#		
Strontium	mg/L	09/15/2011	N001	2	-	4	11		FQ	#	0.00078	
Temperature	C	09/15/2011	N001	2	-	4	20.21		FQ	#		
Turbidity	NTU	09/15/2011	N001	2	-	4	16		FQ	#		
Uranium	mg/L	09/15/2011	N001	2	-	4	0.23		FQ	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0735 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	3	-	8	1340		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	3	-	8	23		F	#	1	
Calcium	mg/L	09/15/2011	N001	3	-	8	710		F	#	0.6	
Chloride	mg/L	09/15/2011	N001	3	-	8	980		F	#	40	
Magnesium	mg/L	09/15/2011	N001	3	-	8	2400		F	#	0.65	
Manganese	mg/L	09/15/2011	N001	3	-	8	5.7		F	#	0.0057	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	3	-	8	990		F	#	5	
Oxidation Reduction Potential	mV	09/15/2011	N001	3	-	8	206.3		F	#		
pH	s.u.	09/15/2011	N001	3	-	8	6.8		F	#		
Potassium	mg/L	09/15/2011	N001	3	-	8	100		F	#	5.4	
Selenium	mg/L	09/15/2011	N001	3	-	8	0.23		F	#	0.0032	
Sodium	mg/L	09/15/2011	N001	3	-	8	5500		F	#	0.33	
Specific Conductance	umhos/cm	09/15/2011	N001	3	-	8	26440		F	#		
Strontium	mg/L	09/15/2011	N001	3	-	8	20		F	#	0.0039	
Sulfate	mg/L	09/15/2011	N001	3	-	8	16000		F	#	100	
Temperature	C	09/15/2011	N001	3	-	8	16.92		F	#		
Turbidity	NTU	09/15/2011	N001	3	-	8	2.59		F	#		
Uranium	mg/L	09/15/2011	N001	3	-	8	0.51		F	#	0.00029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0736 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	3	-	5	265		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	3	-	5	0.1	U	F	#	0.1	
Calcium	mg/L	09/15/2011	N001	3	-	5	410		F	#	0.12	
Chloride	mg/L	09/15/2011	N001	3	-	5	85		F	#	20	
Magnesium	mg/L	09/15/2011	N001	3	-	5	78		F	#	0.13	
Manganese	mg/L	09/15/2011	N001	3	-	5	1		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	3	-	5	0.027		F	#	0.01	
Oxidation Reduction Potential	mV	09/15/2011	N001	3	-	5	-73		F	#		
pH	s.u.	09/15/2011	N001	3	-	5	7.12		F	#		
Potassium	mg/L	09/15/2011	N001	3	-	5	25		F	#	1.1	
Selenium	mg/L	09/15/2011	N001	3	-	5	0.00031		F	#	0.000032	
Sodium	mg/L	09/15/2011	N001	3	-	5	1100		F	#	0.066	
Specific Conductance	umhos/cm	09/15/2011	N001	3	-	5	6284		F	#		
Strontium	mg/L	09/15/2011	N001	3	-	5	5.7		F	#	0.00078	
Sulfate	mg/L	09/15/2011	N001	3	-	5	3600		F	#	50	
Temperature	C	09/15/2011	N001	3	-	5	19.65		F	#		
Turbidity	NTU	09/15/2011	N001	3	-	5	2.83		F	#		
Uranium	mg/L	09/15/2011	N001	3	-	5	0.064		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0766 WELL Well Point

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	6.25 - 8.75	511		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	6.25 - 8.75	0.15		F	#	0.1	
Calcium	mg/L	09/15/2011	N001	6.25 - 8.75	420		F	#	0.12	
Chloride	mg/L	09/15/2011	N001	6.25 - 8.75	170		F	#	20	
Magnesium	mg/L	09/15/2011	N001	6.25 - 8.75	400		F	#	0.13	
Manganese	mg/L	09/15/2011	N001	6.25 - 8.75	0.63		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	6.25 - 8.75	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/15/2011	N001	6.25 - 8.75	-286.3		F	#		
pH	s.u.	09/15/2011	N001	6.25 - 8.75	7.3		F	#		
Potassium	mg/L	09/15/2011	N001	6.25 - 8.75	72		F	#	1.1	
Selenium	mg/L	09/15/2011	N001	6.25 - 8.75	0.00044		F	#	0.000065	
Sodium	mg/L	09/15/2011	N001	6.25 - 8.75	2000		F	#	0.33	
Specific Conductance	umhos/cm	09/15/2011	N001	6.25 - 8.75	11339		F	#		
Strontium	mg/L	09/15/2011	N001	6.25 - 8.75	6.3		F	#	0.00078	
Sulfate	mg/L	09/15/2011	N001	6.25 - 8.75	7200		F	#	50	
Temperature	C	09/15/2011	N001	6.25 - 8.75	22.84		F	#		
Turbidity	NTU	09/15/2011	N001	6.25 - 8.75	1.43		F	#		
Uranium	mg/L	09/15/2011	N001	6.25 - 8.75	0.21		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0768 WELL Well Point

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	4.58 - 7.08	698		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	4.58 - 7.08	0.1	U	F	#	0.1	
Calcium	mg/L	09/15/2011	N001	4.58 - 7.08	280		F	#	0.24	
Chloride	mg/L	09/15/2011	N001	4.58 - 7.08	260		F	#	40	
Magnesium	mg/L	09/15/2011	N001	4.58 - 7.08	400		F	#	0.26	
Manganese	mg/L	09/15/2011	N001	4.58 - 7.08	1.8		F	#	0.0023	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	4.58 - 7.08	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/15/2011	N001	4.58 - 7.08	-71.3		F	#		
pH	s.u.	09/15/2011	N001	4.58 - 7.08	7.28		F	#		
Potassium	mg/L	09/15/2011	N001	4.58 - 7.08	66		F	#	2.2	
Selenium	mg/L	09/15/2011	N001	4.58 - 7.08	0.0024		F	#	0.00032	
Sodium	mg/L	09/15/2011	N001	4.58 - 7.08	2600		F	#	0.13	
Specific Conductance	umhos/cm	09/15/2011	N001	4.58 - 7.08	12896		F	#		
Strontium	mg/L	09/15/2011	N001	4.58 - 7.08	9.4		F	#	0.0016	
Sulfate	mg/L	09/15/2011	N001	4.58 - 7.08	7600		F	#	100	
Temperature	C	09/15/2011	N001	4.58 - 7.08	19.37		F	#		
Turbidity	NTU	09/15/2011	N001	4.58 - 7.08	2.54		F	#		
Uranium	mg/L	09/15/2011	N001	4.58 - 7.08	0.34		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0773 WELL Well Point

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	4	-	6.5	340		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	4	-	6.5	38		F	#	1	
Calcium	mg/L	09/13/2011	N001	4	-	6.5	330		F	#	0.06	
Chloride	mg/L	09/13/2011	N001	4	-	6.5	99		F	#	20	
Magnesium	mg/L	09/13/2011	N001	4	-	6.5	400		F	#	0.065	
Manganese	mg/L	09/13/2011	N001	4	-	6.5	0.1		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	4	-	6.5	61		F	#	0.5	
Oxidation Reduction Potential	mV	09/13/2011	N001	4	-	6.5	169.7		F	#		
pH	s.u.	09/13/2011	N001	4	-	6.5	7.05		F	#		
Potassium	mg/L	09/13/2011	N001	4	-	6.5	61		F	#	0.54	
Selenium	mg/L	09/13/2011	N001	4	-	6.5	0.048		F	#	0.00032	
Sodium	mg/L	09/13/2011	N001	4	-	6.5	470		F	#	0.033	
Specific Conductance	umhos/cm	09/13/2011	N001	4	-	6.5	5845		F	#		
Strontium	mg/L	09/13/2011	N001	4	-	6.5	4.3		F	#	0.00039	
Sulfate	mg/L	09/13/2011	N001	4	-	6.5	3100		F	#	50	
Temperature	C	09/13/2011	N001	4	-	6.5	25.6		F	#		
Turbidity	NTU	09/13/2011	N001	4	-	6.5	2.36		F	#		
Uranium	mg/L	09/13/2011	N001	4	-	6.5	0.35		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0775 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	4.25 - 6.75	614		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	4.25 - 6.75	0.3		F	#	0.1	
Calcium	mg/L	09/15/2011	N001	4.25 - 6.75	460		F	#	0.12	
Chloride	mg/L	09/15/2011	N001	4.25 - 6.75	110		F	#	20	
Magnesium	mg/L	09/15/2011	N001	4.25 - 6.75	280		F	#	0.13	
Manganese	mg/L	09/15/2011	N001	4.25 - 6.75	3.7		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	4.25 - 6.75	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/15/2011	N001	4.25 - 6.75	-203.1		F	#		
pH	s.u.	09/15/2011	N001	4.25 - 6.75	7.17		F	#		
Potassium	mg/L	09/15/2011	N001	4.25 - 6.75	55		F	#	1.1	
Selenium	mg/L	09/15/2011	N001	4.25 - 6.75	0.001		F	#	0.00032	
Sodium	mg/L	09/15/2011	N001	4.25 - 6.75	1500		F	#	0.066	
Specific Conductance	umhos/cm	09/15/2011	N001	4.25 - 6.75	8561		F	#		
Strontium	mg/L	09/15/2011	N001	4.25 - 6.75	6.7		F	#	0.00078	
Sulfate	mg/L	09/15/2011	N001	4.25 - 6.75	5100		F	#	50	
Temperature	C	09/15/2011	N001	4.25 - 6.75	22.81		F	#		
Turbidity	NTU	09/15/2011	N001	4.25 - 6.75	1.53		F	#		
Uranium	mg/L	09/15/2011	N001	4.25 - 6.75	0.22		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0779 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	7	-	9.5	993		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	7	-	9.5	6.7		F	#	0.5	
Ammonia Total as N	mg/L	09/14/2011	N002	7	-	9.5	6.4		F	#	1	
Calcium	mg/L	09/14/2011	N001	7	-	9.5	550		F	#	0.24	
Calcium	mg/L	09/14/2011	N002	7	-	9.5	540		F	#	0.12	
Chloride	mg/L	09/14/2011	N001	7	-	9.5	440		F	#	40	
Chloride	mg/L	09/14/2011	N002	7	-	9.5	430		F	#	40	
Magnesium	mg/L	09/14/2011	N001	7	-	9.5	1400		F	#	0.26	
Magnesium	mg/L	09/14/2011	N002	7	-	9.5	1300		F	#	0.13	
Manganese	mg/L	09/14/2011	N001	7	-	9.5	6.4		F	#	0.0023	
Manganese	mg/L	09/14/2011	N002	7	-	9.5	6.3		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	7	-	9.5	41		F	#	0.5	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N002	7	-	9.5	40		F	#	0.5	
Oxidation Reduction Potential	mV	09/14/2011	N001	7	-	9.5	213.5		F	#		
pH	s.u.	09/14/2011	N001	7	-	9.5	7.09		F	#		
Potassium	mg/L	09/14/2011	N001	7	-	9.5	110		F	#	2.2	
Potassium	mg/L	09/14/2011	N002	7	-	9.5	120		F	#	1.1	
Selenium	mg/L	09/14/2011	N001	7	-	9.5	0.03		F	#	0.0032	
Selenium	mg/L	09/14/2011	N002	7	-	9.5	0.035		F	#	0.0032	
Sodium	mg/L	09/14/2011	N001	7	-	9.5	2400		F	#	0.13	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0779 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Sodium	mg/L	09/14/2011	N002	7	-	9.5	2300		F	#	0.33	
Specific Conductance	umhos /cm	09/14/2011	N001	7	-	9.5	15105		F	#		
Strontium	mg/L	09/14/2011	N001	7	-	9.5	13		F	#	0.0016	
Strontium	mg/L	09/14/2011	N002	7	-	9.5	12		F	#	0.00078	
Sulfate	mg/L	09/14/2011	N001	7	-	9.5	11000		F	#	100	
Sulfate	mg/L	09/14/2011	N002	7	-	9.5	11000		F	#	100	
Temperature	C	09/14/2011	N001	7	-	9.5	18.81		F	#		
Turbidity	NTU	09/14/2011	N001	7	-	9.5	3.99		F	#		
Uranium	mg/L	09/14/2011	N001	7	-	9.5	2.3		F	#	0.00029	
Uranium	mg/L	09/14/2011	N002	7	-	9.5	2.2		F	#	0.00029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0782R WELL Island area NW of US Hwy 666 bridge.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	4.71	-	9.46	176		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	4.71	-	9.46	0.1	U	F	#	0.1	
Calcium	mg/L	09/13/2011	N001	4.71	-	9.46	110		F	#	0.012	
Chloride	mg/L	09/13/2011	N001	4.71	-	9.46	22		F	#	4	
Magnesium	mg/L	09/13/2011	N001	4.71	-	9.46	42		F	#	0.013	
Manganese	mg/L	09/13/2011	N001	4.71	-	9.46	3.2		F	#	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	4.71	-	9.46	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/13/2011	N001	4.71	-	9.46	-35		F	#		
pH	s.u.	09/13/2011	N001	4.71	-	9.46	7.36		F	#		
Potassium	mg/L	09/13/2011	N001	4.71	-	9.46	5.9		F	#	0.11	
Selenium	mg/L	09/13/2011	N001	4.71	-	9.46	0.00018		F	#	0.000032	
Sodium	mg/L	09/13/2011	N001	4.71	-	9.46	170		F	#	0.033	
Specific Conductance	umhos /cm	09/13/2011	N001	4.71	-	9.46	1958		F	#		
Strontium	mg/L	09/13/2011	N001	4.71	-	9.46	1.5		F	#	0.000078	
Sulfate	mg/L	09/13/2011	N001	4.71	-	9.46	660		F	#	10	
Temperature	C	09/13/2011	N001	4.71	-	9.46	18.68		F	#		
Turbidity	NTU	09/13/2011	N001	4.71	-	9.46	4.61		F	#		
Uranium	mg/L	09/13/2011	N001	4.71	-	9.46	0.011		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0783R WELL Island area NW of US Hwy 666 bridge.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	4.375 - 9.375	175		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	4.375 - 9.375	0.1	U	F	#	0.1	
Calcium	mg/L	09/13/2011	N001	4.375 - 9.375	96		F	#	0.012	
Chloride	mg/L	09/13/2011	N001	4.375 - 9.375	22		F	#	4	
Magnesium	mg/L	09/13/2011	N001	4.375 - 9.375	35		F	#	0.013	
Manganese	mg/L	09/13/2011	N001	4.375 - 9.375	2.3		F	#	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	4.375 - 9.375	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/13/2011	N001	4.375 - 9.375	-37		F	#		
pH	s.u.	09/13/2011	N001	4.375 - 9.375	7.39		F	#		
Potassium	mg/L	09/13/2011	N001	4.375 - 9.375	5.3		F	#	0.11	
Selenium	mg/L	09/13/2011	N001	4.375 - 9.375	0.00056		F	#	0.000065	
Sodium	mg/L	09/13/2011	N001	4.375 - 9.375	130		F	#	0.0066	
Specific Conductance	umhos/cm	09/13/2011	N001	4.375 - 9.375	1310		F	#		
Strontium	mg/L	09/13/2011	N001	4.375 - 9.375	1.2		F	#	0.000078	
Sulfate	mg/L	09/13/2011	N001	4.375 - 9.375	480		F	#	10	
Temperature	C	09/13/2011	N001	4.375 - 9.375	24.98		F	#		
Turbidity	NTU	09/13/2011	N001	4.375 - 9.375	7.97		F	#		
Uranium	mg/L	09/13/2011	N001	4.375 - 9.375	0.0076		F	#	0.0000058	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0792 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	6	-	8	1199		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	6	-	8	0.1	U	F	#	0.1	
Calcium	mg/L	09/14/2011	N001	6	-	8	490		F	#	0.24	
Chloride	mg/L	09/14/2011	N001	6	-	8	600		F	#	40	
Magnesium	mg/L	09/14/2011	N001	6	-	8	1100		F	#	0.26	
Manganese	mg/L	09/14/2011	N001	6	-	8	13		F	#	0.0023	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	6	-	8	0.015		F	#	0.01	
Oxidation Reduction Potential	mV	09/14/2011	N001	6	-	8	-53.9		F	#		
pH	s.u.	09/14/2011	N001	6	-	8	7.19		F	#		
Potassium	mg/L	09/14/2011	N001	6	-	8	130		F	#	2.2	
Selenium	mg/L	09/14/2011	N001	6	-	8	0.0048		F	#	0.00032	
Sodium	mg/L	09/14/2011	N001	6	-	8	5000		F	#	0.66	
Specific Conductance	umhos/cm	09/14/2011	N001	6	-	8	22312		F	#		
Strontium	mg/L	09/14/2011	N001	6	-	8	19		F	#	0.0016	
Sulfate	mg/L	09/14/2011	N001	6	-	8	16000		F	#	100	
Temperature	C	09/14/2011	N001	6	-	8	19.87		F	#		
Turbidity	NTU	09/14/2011	N001	6	-	8	2.72		F	#		
Uranium	mg/L	09/14/2011	N001	6	-	8	0.14		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0793 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	5.2 - 7.2	450		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	5.2 - 7.2	6.3		F	#	0.5	
Calcium	mg/L	09/14/2011	N001	5.2 - 7.2	300		F	#	0.06	
Chloride	mg/L	09/14/2011	N001	5.2 - 7.2	100		F	#	20	
Magnesium	mg/L	09/14/2011	N001	5.2 - 7.2	420		F	#	0.065	
Manganese	mg/L	09/14/2011	N001	5.2 - 7.2	0.012	B	UF	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	5.2 - 7.2	31		F	#	0.2	
Oxidation Reduction Potential	mV	09/14/2011	N001	5.2 - 7.2	51.8		F	#		
pH	s.u.	09/14/2011	N001	5.2 - 7.2	7.11		F	#		
Potassium	mg/L	09/14/2011	N001	5.2 - 7.2	45		F	#	0.54	
Selenium	mg/L	09/14/2011	N001	5.2 - 7.2	0.18		F	#	0.0016	
Sodium	mg/L	09/14/2011	N001	5.2 - 7.2	530		F	#	0.033	
Specific Conductance	umhos/cm	09/14/2011	N001	5.2 - 7.2	5297		F	#		
Strontium	mg/L	09/14/2011	N001	5.2 - 7.2	4.2		F	#	0.00039	
Sulfate	mg/L	09/14/2011	N001	5.2 - 7.2	3000		F	#	50	
Temperature	C	09/14/2011	N001	5.2 - 7.2	21.67		F	#		
Turbidity	NTU	09/14/2011	N001	5.2 - 7.2	2.85		F	#		
Uranium	mg/L	09/14/2011	N001	5.2 - 7.2	0.54		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0797 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	7.3 - 9.3	406		FQ	#		
Ammonia Total as N	mg/L	09/15/2011	N001	7.3 - 9.3	0.1	U	FQ	#	0.1	
Calcium	mg/L	09/15/2011	N001	7.3 - 9.3	410		FQ	#	0.12	
Chloride	mg/L	09/15/2011	N001	7.3 - 9.3	220		FQ	#	20	
Magnesium	mg/L	09/15/2011	N001	7.3 - 9.3	100		FQ	#	0.13	
Manganese	mg/L	09/15/2011	N001	7.3 - 9.3	5.1		FQ	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	7.3 - 9.3	0.01	U	FQ	#	0.01	
Oxidation Reduction Potential	mV	09/15/2011	N001	7.3 - 9.3	208.6		FQ	#		
pH	s.u.	09/15/2011	N001	7.3 - 9.3	7.05		FQ	#		
Potassium	mg/L	09/15/2011	N001	7.3 - 9.3	8.2	B	FQ	#	1.1	
Selenium	mg/L	09/15/2011	N001	7.3 - 9.3	0.00034		FQ	#	0.000032	
Sodium	mg/L	09/15/2011	N001	7.3 - 9.3	1300		FQ	#	0.066	
Specific Conductance	umhos/cm	09/15/2011	N001	7.3 - 9.3	7375		FQ	#		
Strontium	mg/L	09/15/2011	N001	7.3 - 9.3	7.2		FQ	#	0.00078	
Sulfate	mg/L	09/15/2011	N001	7.3 - 9.3	3800		FQ	#	50	
Temperature	C	09/15/2011	N001	7.3 - 9.3	19.03		FQ	#		
Turbidity	NTU	09/15/2011	N001	7.3 - 9.3	9.95		FQ	#		
Uranium	mg/L	09/15/2011	N001	7.3 - 9.3	0.029		FQ	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0798 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	7.1 - 9.1	683		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	7.1 - 9.1	2.4		F	#	0.1	
Calcium	mg/L	09/15/2011	N001	7.1 - 9.1	520		F	#	0.12	
Chloride	mg/L	09/15/2011	N001	7.1 - 9.1	240		F	#	40	
Magnesium	mg/L	09/15/2011	N001	7.1 - 9.1	460		F	#	0.13	
Manganese	mg/L	09/15/2011	N001	7.1 - 9.1	2.3		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	7.1 - 9.1	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/15/2011	N001	7.1 - 9.1	15.4		F	#		
pH	s.u.	09/15/2011	N001	7.1 - 9.1	7.09		F	#		
Potassium	mg/L	09/15/2011	N001	7.1 - 9.1	67		F	#	1.1	
Selenium	mg/L	09/15/2011	N001	7.1 - 9.1	0.0039		F	#	0.00032	
Sodium	mg/L	09/15/2011	N001	7.1 - 9.1	2100		F	#	0.33	
Specific Conductance	umhos /cm	09/15/2011	N001	7.1 - 9.1	11833		F	#		
Strontium	mg/L	09/15/2011	N001	7.1 - 9.1	8		F	#	0.00078	
Sulfate	mg/L	09/15/2011	N001	7.1 - 9.1	7200		F	#	100	
Temperature	C	09/15/2011	N001	7.1 - 9.1	19.59		F	#		
Turbidity	NTU	09/15/2011	N001	7.1 - 9.1	2.21		F	#		
Uranium	mg/L	09/15/2011	N001	7.1 - 9.1	0.47		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0850 WELL Background area 1 mi E of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	5.6 - 15.4	420		F	#		
Ammonia Total as N	mg/L	09/15/2011	0001	5.6 - 15.4	0.1	U	F	#	0.1	
Calcium	mg/L	09/15/2011	0001	5.6 - 15.4	96		F	#	0.06	
Chloride	mg/L	09/15/2011	0001	5.6 - 15.4	46		F	#	10	
Magnesium	mg/L	09/15/2011	0001	5.6 - 15.4	25		F	#	0.065	
Manganese	mg/L	09/15/2011	0001	5.6 - 15.4	1.1		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	0001	5.6 - 15.4	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/15/2011	N001	5.6 - 15.4	-83.2		F	#		
pH	s.u.	09/15/2011	N001	5.6 - 15.4	7.31		F	#		
Potassium	mg/L	09/15/2011	0001	5.6 - 15.4	3.4	B	F	#	0.54	
Selenium	mg/L	09/15/2011	0001	5.6 - 15.4	0.00025		F	#	0.000032	
Sodium	mg/L	09/15/2011	0001	5.6 - 15.4	570		F	#	0.033	
Specific Conductance	umhos/cm	09/15/2011	N001	5.6 - 15.4	3387		F	#		
Strontium	mg/L	09/15/2011	0001	5.6 - 15.4	1.6		F	#	0.00039	
Sulfate	mg/L	09/15/2011	0001	5.6 - 15.4	1100		F	#	25	
Temperature	C	09/15/2011	N001	5.6 - 15.4	18.36		F	#		
Turbidity	NTU	09/15/2011	N001	5.6 - 15.4	84		F	#		
Uranium	mg/L	09/15/2011	0001	5.6 - 15.4	0.029		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0853 WELL S of floodplain fence

Parameter	Units	Sample Date	ID	Depth Range (Ft.BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	10	-	15	255		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	10	-	15	18		F	#	1	
Calcium	mg/L	09/14/2011	N001	10	-	15	250		F	#	0.012	
Chloride	mg/L	09/14/2011	N001	10	-	15	20		F	#	4	
Magnesium	mg/L	09/14/2011	N001	10	-	15	73		F	#	0.013	
Manganese	mg/L	09/14/2011	N001	10	-	15	1		F	#	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	10	-	15	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/14/2011	N001	10	-	15	-43.4		F	#		
pH	s.u.	09/14/2011	N001	10	-	15	7.16		F	#		
Potassium	mg/L	09/14/2011	N001	10	-	15	19		F	#	0.11	
Selenium	mg/L	09/14/2011	N001	10	-	15	0.0001		F	#	0.000032	
Sodium	mg/L	09/14/2011	N001	10	-	15	130		F	#	0.0066	
Specific Conductance	umhos /cm	09/14/2011	N001	10	-	15	2036		F	#		
Strontium	mg/L	09/14/2011	N001	10	-	15	2.6		F	#	0.000078	
Sulfate	mg/L	09/14/2011	N001	10	-	15	1000		F	#	10	
Temperature	C	09/14/2011	N001	10	-	15	22.63		F	#		
Turbidity	NTU	09/14/2011	N001	10	-	15	8.44		F	#		
Uranium	mg/L	09/14/2011	N001	10	-	15	0.081		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0854 WELL NE part of floodplain

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	9.05 - 11.55	844		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	9.05 - 11.55	8.9		F	#	0.5	
Calcium	mg/L	09/15/2011	N001	9.05 - 11.55	420		F	#	0.12	
Chloride	mg/L	09/15/2011	N001	9.05 - 11.55	410		F	#	40	
Magnesium	mg/L	09/15/2011	N001	9.05 - 11.55	1200		F	#	0.13	
Manganese	mg/L	09/15/2011	N001	9.05 - 11.55	3.8		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	9.05 - 11.55	26		F	#	0.2	
Oxidation Reduction Potential	mV	09/15/2011	N001	9.05 - 11.55	377		F	#		
pH	s.u.	09/15/2011	N001	9.05 - 11.55	7.03		F	#		
Potassium	mg/L	09/15/2011	N001	9.05 - 11.55	120		F	#	1.1	
Selenium	mg/L	09/15/2011	N001	9.05 - 11.55	0.0091		F	#	0.00032	
Sodium	mg/L	09/15/2011	N001	9.05 - 11.55	3400		F	#	0.66	
Specific Conductance	umhos/cm	09/15/2011	N001	9.05 - 11.55	16560		F	#		
Strontium	mg/L	09/15/2011	N001	9.05 - 11.55	9.4		F	#	0.00078	
Sulfate	mg/L	09/15/2011	N001	9.05 - 11.55	12000		F	#	100	
Temperature	C	09/15/2011	N001	9.05 - 11.55	21.74		F	#		
Turbidity	NTU	09/15/2011	N001	9.05 - 11.55	6.85		F	#		
Uranium	mg/L	09/15/2011	N001	9.05 - 11.55	1.5		F	#	0.00029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0855 WELL NW part of floodplain

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	4.9	-	14.9	400		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	4.9	-	14.9	0.1	U	F	#	0.1	
Calcium	mg/L	09/15/2011	N001	4.9	-	14.9	230		F	#	0.06	
Chloride	mg/L	09/15/2011	N001	4.9	-	14.9	83		F	#	20	
Magnesium	mg/L	09/15/2011	N001	4.9	-	14.9	72		F	#	0.065	
Manganese	mg/L	09/15/2011	N001	4.9	-	14.9	1.9		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	4.9	-	14.9	0.88		F	#	0.01	
Oxidation Reduction Potential	mV	09/15/2011	N001	4.9	-	14.9	180.2		F	#		
pH	s.u.	09/15/2011	N001	4.9	-	14.9	7.3		F	#		
Potassium	mg/L	09/15/2011	N001	4.9	-	14.9	16		F	#	0.54	
Selenium	mg/L	09/15/2011	N001	4.9	-	14.9	0.044		F	#	0.00032	
Sodium	mg/L	09/15/2011	N001	4.9	-	14.9	1100		F	#	0.16	
Specific Conductance	umhos/cm	09/15/2011	N001	4.9	-	14.9	5760		F	#		
Strontium	mg/L	09/15/2011	N001	4.9	-	14.9	8.6		F	#	0.00039	
Sulfate	mg/L	09/15/2011	N001	4.9	-	14.9	2800		F	#	50	
Temperature	C	09/15/2011	N001	4.9	-	14.9	16.65		F	#		
Turbidity	NTU	09/15/2011	N001	4.9	-	14.9	9.58		F	#		
Uranium	mg/L	09/15/2011	N001	4.9	-	14.9	0.07		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0856 WELL NW part of floodplain

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	18.8	-	23.8	340		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	18.8	-	23.8	0.1	U	F	#	0.1	
Calcium	mg/L	09/15/2011	N001	18.8	-	23.8	250		F	#	0.06	
Chloride	mg/L	09/15/2011	N001	18.8	-	23.8	89		F	#	20	
Magnesium	mg/L	09/15/2011	N001	18.8	-	23.8	71		F	#	0.065	
Manganese	mg/L	09/15/2011	N001	18.8	-	23.8	1.6		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	18.8	-	23.8	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/15/2011	N001	18.8	-	23.8	140.1		F	#		
pH	s.u.	09/15/2011	N001	18.8	-	23.8	7.33		F	#		
Potassium	mg/L	09/15/2011	N001	18.8	-	23.8	19		F	#	0.54	
Selenium	mg/L	09/15/2011	N001	18.8	-	23.8	0.001		F	#	0.000065	
Sodium	mg/L	09/15/2011	N001	18.8	-	23.8	1100		F	#	0.16	
Specific Conductance	umhos/cm	09/15/2011	N001	18.8	-	23.8	5748		F	#		
Strontium	mg/L	09/15/2011	N001	18.8	-	23.8	7.2		F	#	0.00039	
Sulfate	mg/L	09/15/2011	N001	18.8	-	23.8	3000		F	#	50	
Temperature	C	09/15/2011	N001	18.8	-	23.8	15.03		F	#		
Turbidity	NTU	09/15/2011	N001	18.8	-	23.8	3.34		F	#		
Uranium	mg/L	09/15/2011	N001	18.8	-	23.8	0.074		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 0857 WELL Near E end of floodplain fence

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	13.2 - 18.2	989		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	13.2 - 18.2	13		F	#	1	
Calcium	mg/L	09/14/2011	N001	13.2 - 18.2	450		F	#	0.06	
Chloride	mg/L	09/14/2011	N001	13.2 - 18.2	100		F	#	20	
Magnesium	mg/L	09/14/2011	N001	13.2 - 18.2	330		F	#	0.065	
Manganese	mg/L	09/14/2011	N001	13.2 - 18.2	4.3		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	13.2 - 18.2	5.3		F	#	0.1	
Oxidation Reduction Potential	mV	09/14/2011	N001	13.2 - 18.2	211.5		F	#		
pH	s.u.	09/14/2011	N001	13.2 - 18.2	7.09		F	#		
Potassium	mg/L	09/14/2011	N001	13.2 - 18.2	29		F	#	0.54	
Selenium	mg/L	09/14/2011	N001	13.2 - 18.2	0.001		F	#	0.00032	
Sodium	mg/L	09/14/2011	N001	13.2 - 18.2	600		F	#	0.033	
Specific Conductance	umhos /cm	09/14/2011	N001	13.2 - 18.2	5507		F	#		
Strontium	mg/L	09/14/2011	N001	13.2 - 18.2	5.3		F	#	0.00039	
Sulfate	mg/L	09/14/2011	N001	13.2 - 18.2	3200		F	#	50	
Temperature	C	09/14/2011	N001	13.2 - 18.2	17.56		F	#		
Turbidity	NTU	09/14/2011	N001	13.2 - 18.2	0.78		F	#		
Uranium	mg/L	09/14/2011	N001	13.2 - 18.2	0.47		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1008 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	6.9 - 16.9	710		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	6.9 - 16.9	10		F	#	1	
Ammonia Total as N	mg/L	09/15/2011	N002	6.9 - 16.9	10		F	#	0.5	
Calcium	mg/L	09/15/2011	N001	6.9 - 16.9	420		F	#	0.24	
Calcium	mg/L	09/15/2011	N002	6.9 - 16.9	410		F	#	0.12	
Chloride	mg/L	09/15/2011	N001	6.9 - 16.9	290		F	#	40	
Chloride	mg/L	09/15/2011	N002	6.9 - 16.9	290		F	#	40	
Magnesium	mg/L	09/15/2011	N001	6.9 - 16.9	1100		F	#	0.26	
Magnesium	mg/L	09/15/2011	N002	6.9 - 16.9	1100		F	#	0.13	
Manganese	mg/L	09/15/2011	N001	6.9 - 16.9	4.8		F	#	0.0023	
Manganese	mg/L	09/15/2011	N002	6.9 - 16.9	4.8		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	6.9 - 16.9	21		JF	#	0.2	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N002	6.9 - 16.9	22	N	JF	#	0.2	
Oxidation Reduction Potential	mV	09/15/2011	N001	6.9 - 16.9	68.8		F	#		
pH	s.u.	09/15/2011	N001	6.9 - 16.9	7.01		F	#		
Potassium	mg/L	09/15/2011	N001	6.9 - 16.9	87		F	#	2.2	
Potassium	mg/L	09/15/2011	N002	6.9 - 16.9	99		F	#	1.1	
Selenium	mg/L	09/15/2011	N001	6.9 - 16.9	0.011		F	#	0.0016	
Selenium	mg/L	09/15/2011	N002	6.9 - 16.9	0.0085		F	#	0.0016	
Sodium	mg/L	09/15/2011	N001	6.9 - 16.9	2500		F	#	0.13	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1008 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft-BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Sodium	mg/L	09/15/2011	N002	6.9	- 16.9	2400		F	#	0.33	
Specific Conductance	umhos /cm	09/15/2011	N001	6.9	- 16.9	14827		F	#		
Strontium	mg/L	09/15/2011	N001	6.9	- 16.9	8.8		F	#	0.0016	
Strontium	mg/L	09/15/2011	N002	6.9	- 16.9	8.3		F	#	0.00078	
Sulfate	mg/L	09/15/2011	N001	6.9	- 16.9	10000		F	#	100	
Sulfate	mg/L	09/15/2011	N002	6.9	- 16.9	10000		F	#	100	
Temperature	C	09/15/2011	N001	6.9	- 16.9	18.71		F	#		
Turbidity	NTU	09/15/2011	N001	6.9	- 16.9	1.58		F	#		
Uranium	mg/L	09/15/2011	N001	6.9	- 16.9	1.3		F	#	0.00015	
Uranium	mg/L	09/15/2011	N002	6.9	- 16.9	1.4		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1009 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	7.4	- 17.4	313		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	7.4	- 17.4	14		F	#	1	
Calcium	mg/L	09/14/2011	N001	7.4	- 17.4	440		F	#	0.012	
Chloride	mg/L	09/14/2011	N001	7.4	- 17.4	31		F	#	1	
Magnesium	mg/L	09/14/2011	N001	7.4	- 17.4	190		F	#	0.013	
Manganese	mg/L	09/14/2011	N001	7.4	- 17.4	0.87		F	#	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	7.4	- 17.4	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/14/2011	N001	7.4	- 17.4	14.9		F	#		
pH	s.u.	09/14/2011	N001	7.4	- 17.4	7		F	#		
Potassium	mg/L	09/14/2011	N001	7.4	- 17.4	32		F	#	0.11	
Selenium	mg/L	09/14/2011	N001	7.4	- 17.4	0.0084		F	#	0.00032	
Sodium	mg/L	09/14/2011	N001	7.4	- 17.4	240		F	#	0.033	
Specific Conductance	umhos /cm	09/14/2011	N001	7.4	- 17.4	3631		F	#		
Strontium	mg/L	09/14/2011	N001	7.4	- 17.4	3.8		F	#	0.000078	
Sulfate	mg/L	09/14/2011	N001	7.4	- 17.4	2100		F	#	25	
Temperature	C	09/14/2011	N001	7.4	- 17.4	20.85		F	#		
Turbidity	NTU	09/14/2011	N001	7.4	- 17.4	2.34		F	#		
Uranium	mg/L	09/14/2011	N001	7.4	- 17.4	0.24		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1089 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	4.8	-	14.8	460			#		
Ammonia Total as N	mg/L	09/14/2011	N001	4.8	-	14.8	0.53			#	0.1	
Calcium	mg/L	09/14/2011	N001	4.8	-	14.8	370			#	0.12	
Chloride	mg/L	09/14/2011	N001	4.8	-	14.8	140			#	20	
Magnesium	mg/L	09/14/2011	N001	4.8	-	14.8	290			#	0.13	
Manganese	mg/L	09/14/2011	N001	4.8	-	14.8	0.79			#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	4.8	-	14.8	0.88			#	0.01	
Oxidation Reduction Potential	mV	09/14/2011	N001	4.8	-	14.8	229			#		
pH	s.u.	09/14/2011	N001	4.8	-	14.8	7.16			#		
Potassium	mg/L	09/14/2011	N001	4.8	-	14.8	55			#	1.1	
Selenium	mg/L	09/14/2011	N001	4.8	-	14.8	0.0054			#	0.00032	
Sodium	mg/L	09/14/2011	N001	4.8	-	14.8	1600			#	0.066	
Specific Conductance	umhos/cm	09/14/2011	N001	4.8	-	14.8	8489			#		
Strontium	mg/L	09/14/2011	N001	4.8	-	14.8	5.8			#	0.00078	
Sulfate	mg/L	09/14/2011	N001	4.8	-	14.8	5500			#	50	
Temperature	C	09/14/2011	N001	4.8	-	14.8	21.11			#		
Turbidity	NTU	09/14/2011	N001	4.8	-	14.8	3.85			#		
Uranium	mg/L	09/14/2011	N001	4.8	-	14.8	0.29			#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1104 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	-	812			#		
Ammonia Total as N	mg/L	09/14/2011	N001	-	1.7			#	0.1	
Calcium	mg/L	09/14/2011	N001	-	390			#	0.12	
Chloride	mg/L	09/14/2011	N001	-	290			#	40	
Magnesium	mg/L	09/14/2011	N001	-	820			#	0.13	
Manganese	mg/L	09/14/2011	N001	-	0.98			#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	-	15			#	0.2	
Oxidation Reduction Potential	mV	09/14/2011	N001	-	244.7			#		
pH	s.u.	09/14/2011	N001	-	7.2			#		
Potassium	mg/L	09/14/2011	N001	-	93			#	1.1	
Selenium	mg/L	09/14/2011	N001	-	0.0097			#	0.0016	
Sodium	mg/L	09/14/2011	N001	-	2300			#	0.33	
Specific Conductance	umhos/cm	09/14/2011	N001	-	13414			#		
Strontium	mg/L	09/14/2011	N001	-	7.7			#	0.00078	
Sulfate	mg/L	09/14/2011	N001	-	9100			#	100	
Temperature	C	09/14/2011	N001	-	21.96			#		
Turbidity	NTU	09/14/2011	N001	-	4.03			#		
Uranium	mg/L	09/14/2011	N001	-	0.87			#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1105 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	4.5	- 14.5	647		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	4.5	- 14.5	31		F	#	1	
Calcium	mg/L	09/14/2011	N001	4.5	- 14.5	450		F	#	0.12	
Chloride	mg/L	09/14/2011	N001	4.5	- 14.5	350		F	#	40	
Magnesium	mg/L	09/14/2011	N001	4.5	- 14.5	1500		F	#	0.13	
Manganese	mg/L	09/14/2011	N001	4.5	- 14.5	4.5		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	4.5	- 14.5	220		F	#	2	
Oxidation Reduction Potential	mV	09/14/2011	N001	4.5	- 14.5	87.2		F	#		
pH	s.u.	09/14/2011	N001	4.5	- 14.5	6.93		F	#		
Potassium	mg/L	09/14/2011	N001	4.5	- 14.5	100		F	#	1.1	
Selenium	mg/L	09/14/2011	N001	4.5	- 14.5	0.21		F	#	0.0065	
Sodium	mg/L	09/14/2011	N001	4.5	- 14.5	1600		F	#	0.33	
Specific Conductance	umhos /cm	09/14/2011	N001	4.5	- 14.5	13818		F	#		
Strontium	mg/L	09/14/2011	N001	4.5	- 14.5	9.4		F	#	0.00078	
Sulfate	mg/L	09/14/2011	N001	4.5	- 14.5	9100		F	#	100	
Temperature	C	09/14/2011	N001	4.5	- 14.5	20.53		F	#		
Turbidity	NTU	09/14/2011	N001	4.5	- 14.5	4.67		F	#		
Uranium	mg/L	09/14/2011	N001	4.5	- 14.5	2.1		F	#	0.00058	

General Water Quality Data by Location (USEE105) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1109 TREATMENT SYSTEM Sump to the Trench 2 Treatment System

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	0	-	0	280			#		
Ammonia Total as N	mg/L	09/14/2011	N001	0	-	0	20			#	1	
Calcium	mg/L	09/14/2011	N001	0	-	0	98			#	0.012	
Chloride	mg/L	09/14/2011	N001	0	-	0	35			#	4	
Magnesium	mg/L	09/14/2011	N001	0	-	0	100			#	0.013	
Manganese	mg/L	09/14/2011	N001	0	-	0	0.28			#	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	0	-	0	36			#	0.2	
Oxidation Reduction Potential	mV	09/14/2011	N001	0	-	0	205.2			#		
pH	s.u.	09/14/2011	N001	0	-	0	7.14			#		
Potassium	mg/L	09/14/2011	N001	0	-	0	13			#	0.11	
Selenium	mg/L	09/14/2011	N001	0	-	0	0.0098			#	0.00032	
Sodium	mg/L	09/14/2011	N001	0	-	0	140			#	0.0066	
Specific Conductance	umhos/cm	09/14/2011	N001	0	-	0	2198			#		
Strontium	mg/L	09/14/2011	N001	0	-	0	1.3			#	0.000078	
Sulfate	mg/L	09/14/2011	N001	0	-	0	710			#	10	
Temperature	C	09/14/2011	N001	0	-	0	20.36			#		
Turbidity	NTU	09/14/2011	N001	0	-	0	1.17			#		
Uranium	mg/L	09/14/2011	N001	0	-	0	0.1			#	0.000029	

General Water Quality Data by Location (USEE105) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1110 TREATMENT SYSTEM Sump to the Trench 1 Treatment System

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	0	-	0	808			#		
Ammonia Total as N	mg/L	09/14/2011	N001	0	-	0	8.2			#	1	
Calcium	mg/L	09/14/2011	N001	0	-	0	430			#	0.12	
Chloride	mg/L	09/14/2011	N001	0	-	0	290			#	40	
Magnesium	mg/L	09/14/2011	N001	0	-	0	1000			#	0.13	
Manganese	mg/L	09/14/2011	N001	0	-	0	1.5			#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	0	-	0	120			#	1	
Oxidation Reduction Potential	mV	09/14/2011	N001	0	-	0	209.1			#		
pH	s.u.	09/14/2011	N001	0	-	0	6.99			#		
Potassium	mg/L	09/14/2011	N001	0	-	0	94			#	1.1	
Selenium	mg/L	09/14/2011	N001	0	-	0	0.39			#	0.0065	
Sodium	mg/L	09/14/2011	N001	0	-	0	1800			#	0.33	
Specific Conductance	umhos/cm	09/14/2011	N001	0	-	0	12516			#		
Strontium	mg/L	09/14/2011	N001	0	-	0	9.2			#	0.00078	
Sulfate	mg/L	09/14/2011	N001	0	-	0	8000			#	100	
Temperature	C	09/14/2011	N001	0	-	0	21.2			#		
Turbidity	NTU	09/14/2011	N001	0	-	0	7.95			#		
Uranium	mg/L	09/14/2011	N001	0	-	0	1.2			#	0.00058	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1111 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	7	-	12	1178		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	7	-	12	0.45		F	#	0.1	
Calcium	mg/L	09/14/2011	N001	7	-	12	390		F	#	0.12	
Chloride	mg/L	09/14/2011	N001	7	-	12	400		F	#	40	
Magnesium	mg/L	09/14/2011	N001	7	-	12	1100		F	#	0.13	
Manganese	mg/L	09/14/2011	N001	7	-	12	0.95		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	7	-	12	32		F	#	0.2	
Oxidation Reduction Potential	mV	09/14/2011	N001	7	-	12	115.7		F	#		
pH	s.u.	09/14/2011	N001	7	-	12	6.83		F	#		
Potassium	mg/L	09/14/2011	N001	7	-	12	73		F	#	1.1	
Selenium	mg/L	09/14/2011	N001	7	-	12	0.3		F	#	0.0065	
Sodium	mg/L	09/14/2011	N001	7	-	12	2100		F	#	0.33	
Specific Conductance	umhos /cm	09/14/2011	N001	7	-	12	13307		F	#		
Strontium	mg/L	09/14/2011	N001	7	-	12	12		F	#	0.00078	
Sulfate	mg/L	09/14/2011	N001	7	-	12	8500		F	#	100	
Temperature	C	09/14/2011	N001	7	-	12	20.73		F	#		
Turbidity	NTU	09/14/2011	N001	7	-	12	2.51		F	#		
Uranium	mg/L	09/14/2011	N001	7	-	12	0.95		F	#	0.00058	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1112 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	7	-	12	689		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	7	-	12	25		F	#	1	
Calcium	mg/L	09/13/2011	N001	7	-	12	430		F	#	0.12	
Chloride	mg/L	09/13/2011	N001	7	-	12	330		F	#	40	
Magnesium	mg/L	09/13/2011	N001	7	-	12	1300		F	#	0.13	
Manganese	mg/L	09/13/2011	N001	7	-	12	2.2		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	7	-	12	290		F	#	2	
Oxidation Reduction Potential	mV	09/13/2011	N001	7	-	12	196.8		F	#		
pH	s.u.	09/13/2011	N001	7	-	12	6.97		F	#		
Potassium	mg/L	09/13/2011	N001	7	-	12	130		F	#	1.1	
Selenium	mg/L	09/13/2011	N001	7	-	12	1		F	#	0.0065	
Sodium	mg/L	09/13/2011	N001	7	-	12	1900		F	#	0.33	
Specific Conductance	umhos /cm	09/13/2011	N001	7	-	12	14147		F	#		
Strontium	mg/L	09/13/2011	N001	7	-	12	9		F	#	0.00078	
Sulfate	mg/L	09/13/2011	N001	7	-	12	9200		F	#	100	
Temperature	C	09/13/2011	N001	7	-	12	20.9		F	#		
Turbidity	NTU	09/13/2011	N001	7	-	12	1.37		F	#		
Uranium	mg/L	09/13/2011	N001	7	-	12	1.5		F	#	0.00058	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1113 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	7	-	12	445		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	7	-	12	25		F	#	1	
Ammonia Total as N	mg/L	09/13/2011	N002	7	-	12	23		F	#	1	
Calcium	mg/L	09/13/2011	N001	7	-	12	490		F	#	0.12	
Calcium	mg/L	09/13/2011	N002	7	-	12	480		F	#	0.12	
Chloride	mg/L	09/13/2011	N001	7	-	12	190		F	#	20	
Chloride	mg/L	09/13/2011	N002	7	-	12	190		F	#	20	
Magnesium	mg/L	09/13/2011	N001	7	-	12	830		F	#	0.13	
Magnesium	mg/L	09/13/2011	N002	7	-	12	800		F	#	0.13	
Manganese	mg/L	09/13/2011	N001	7	-	12	1.8		JF	#	0.0011	
Manganese	mg/L	09/13/2011	N002	7	-	12	1.5	E	JF	#	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	7	-	12	290		F	#	2	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N002	7	-	12	280		F	#	2	
Oxidation Reduction Potential	mV	09/13/2011	N001	7	-	12	190.6		F	#		
pH	s.u.	09/13/2011	N001	7	-	12	6.97		F	#		
Potassium	mg/L	09/13/2011	N001	7	-	12	130		F	#	1.1	
Potassium	mg/L	09/13/2011	N002	7	-	12	150		F	#	0.11	
Selenium	mg/L	09/13/2011	N001	7	-	12	0.03		F	#	0.0016	
Selenium	mg/L	09/13/2011	N002	7	-	12	0.029		F	#	0.0016	
Sodium	mg/L	09/13/2011	N001	7	-	12	1000		F	#	0.066	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1113 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Sodium	mg/L	09/13/2011	N002	7	-	12	1000		F	#	0.066	
Specific Conductance	umhos /cm	09/13/2011	N001	7	-	12	9669		F	#		
Strontium	mg/L	09/13/2011	N001	7	-	12	7.7		F	#	0.00078	
Strontium	mg/L	09/13/2011	N002	7	-	12	6.6		F	#	0.000078	
Sulfate	mg/L	09/13/2011	N001	7	-	12	5500		F	#	50	
Sulfate	mg/L	09/13/2011	N002	7	-	12	5400		F	#	50	
Temperature	C	09/13/2011	N001	7	-	12	23.12		F	#		
Turbidity	NTU	09/13/2011	N001	7	-	12	8.79		F	#		
Uranium	mg/L	09/13/2011	N001	7	-	12	0.76		F	#	0.00015	
Uranium	mg/L	09/13/2011	N002	7	-	12	0.69		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1114 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft/BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	7	-	12	622		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	7	-	12	120		F	#	5	
Calcium	mg/L	09/13/2011	N001	7	-	12	410		F	#	0.12	
Chloride	mg/L	09/13/2011	N001	7	-	12	170		F	#	40	
Magnesium	mg/L	09/13/2011	N001	7	-	12	700		F	#	0.13	
Manganese	mg/L	09/13/2011	N001	7	-	12	4		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	7	-	12	210		F	#	2	
Oxidation Reduction Potential	mV	09/13/2011	N001	7	-	12	166.2		F	#		
pH	s.u.	09/13/2011	N001	7	-	12	6.85		F	#		
Potassium	mg/L	09/13/2011	N001	7	-	12	67	E	F	#	1.1	
Selenium	mg/L	09/13/2011	N001	7	-	12	0.043		F	#	0.0016	
Sodium	mg/L	09/13/2011	N001	7	-	12	770		F	#	0.066	
Specific Conductance	umhos/cm	09/13/2011	N001	7	-	12	8713		F	#		
Strontium	mg/L	09/13/2011	N001	7	-	12	6.6		F	#	0.00078	
Sulfate	mg/L	09/13/2011	N001	7	-	12	4500		F	#	100	
Temperature	C	09/13/2011	N001	7	-	12	21.26		F	#		
Turbidity	NTU	09/13/2011	N001	7	-	12	0.14		F	#		
Uranium	mg/L	09/13/2011	N001	7	-	12	0.89		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1115 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	7	-	12	934		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	7	-	12	320		F	#	10	
Calcium	mg/L	09/13/2011	N001	7	-	12	380		F	#	0.012	
Chloride	mg/L	09/13/2011	N001	7	-	12	310		F	#	40	
Magnesium	mg/L	09/13/2011	N001	7	-	12	1300		F	#	0.13	
Manganese	mg/L	09/13/2011	N001	7	-	12	3.2		F	#	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	7	-	12	580		F	#	5	
Oxidation Reduction Potential	mV	09/13/2011	N001	7	-	12	176.1		F	#		
pH	s.u.	09/13/2011	N001	7	-	12	6.68		F	#		
Potassium	mg/L	09/13/2011	N001	7	-	12	180		F	#	0.11	
Selenium	mg/L	09/13/2011	N001	7	-	12	0.14		F	#	0.0016	
Sodium	mg/L	09/13/2011	N001	7	-	12	1500		F	#	0.33	
Specific Conductance	umhos/cm	09/13/2011	N001	7	-	12	15565		F	#		
Strontium	mg/L	09/13/2011	N001	7	-	12	7.4		F	#	0.000078	
Sulfate	mg/L	09/13/2011	N001	7	-	12	8500		F	#	100	
Temperature	C	09/13/2011	N001	7	-	12	20.54		F	#		
Turbidity	NTU	09/13/2011	N001	7	-	12	1.6		F	#		
Uranium	mg/L	09/13/2011	N001	7	-	12	1.4		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1117 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	7	-	12	180		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	7	-	12	0.1	U	F	#	0.1	
Calcium	mg/L	09/13/2011	N001	7	-	12	63		F	#	0.012	
Chloride	mg/L	09/13/2011	N001	7	-	12	11		F	#	0.4	
Magnesium	mg/L	09/13/2011	N001	7	-	12	11		F	#	0.013	
Manganese	mg/L	09/13/2011	N001	7	-	12	0.16		F	#	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	7	-	12	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/13/2011	N001	7	-	12	103		F	#		
pH	s.u.	09/13/2011	N001	7	-	12	7.3		F	#		
Potassium	mg/L	09/13/2011	N001	7	-	12	2.4		F	#	0.11	
Selenium	mg/L	09/13/2011	N001	7	-	12	0.00023		F	#	0.000032	
Sodium	mg/L	09/13/2011	N001	7	-	12	36		F	#	0.0066	
Specific Conductance	umhos/cm	09/13/2011	N001	7	-	12	550		F	#		
Strontium	mg/L	09/13/2011	N001	7	-	12	0.71		F	#	0.000078	
Sulfate	mg/L	09/13/2011	N001	7	-	12	130		F	#	1	
Temperature	C	09/13/2011	N001	7	-	12	19.57		F	#		
Turbidity	NTU	09/13/2011	N001	7	-	12	1.83		F	#		
Uranium	mg/L	09/13/2011	N001	7	-	12	0.005		F	#	0.0000029	

General Water Quality Data by Location (USEE105) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1118 TREATMENT SYSTEM Sump - seep vault

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	0001	0	-	0	1080			#		
Ammonia Total as N	mg/L	09/14/2011	0001	0	-	0	0.1	U		#	0.1	
Calcium	mg/L	09/14/2011	0001	0	-	0	400			#	0.12	
Chloride	mg/L	09/14/2011	0001	0	-	0	410			#	40	
Magnesium	mg/L	09/14/2011	0001	0	-	0	1200			#	0.13	
Manganese	mg/L	09/14/2011	0001	0	-	0	0.015	B	U	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	0001	0	-	0	59			#	0.5	
Oxidation Reduction Potential	mV	09/14/2011	N001	0	-	0	207.3			#		
pH	s.u.	09/14/2011	N001	0	-	0	7.69			#		
Potassium	mg/L	09/14/2011	0001	0	-	0	72			#	1.1	
Selenium	mg/L	09/14/2011	0001	0	-	0	0.12			#	0.0016	
Sodium	mg/L	09/14/2011	0001	0	-	0	1700			#	0.33	
Specific Conductance	umhos /cm	09/14/2011	N001	0	-	0	13008			#		
Strontium	mg/L	09/14/2011	0001	0	-	0	9.8			#	0.00078	
Sulfate	mg/L	09/14/2011	0001	0	-	0	8100			#	100	
Temperature	C	09/14/2011	N001	0	-	0	19.39			#		
Turbidity	NTU	09/14/2011	N001	0	-	0	20.9			#		
Uranium	mg/L	09/14/2011	0001	0	-	0	0.76			#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1128 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	6.81	-	11.81	935		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	6.81	-	11.81	440		F	#	10	
Calcium	mg/L	09/13/2011	N001	6.81	-	11.81	480		F	#	0.12	
Chloride	mg/L	09/13/2011	N001	6.81	-	11.81	320		F	#	40	
Magnesium	mg/L	09/13/2011	N001	6.81	-	11.81	1600		F	#	0.13	
Manganese	mg/L	09/13/2011	N001	6.81	-	11.81	4.3		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	6.81	-	11.81	630		F	#	5	
Oxidation Reduction Potential	mV	09/13/2011	N001	6.81	-	11.81	166.9		F	#		
pH	s.u.	09/13/2011	N001	6.81	-	11.81	6.6		F	#		
Potassium	mg/L	09/13/2011	N001	6.81	-	11.81	190		F	#	1.1	
Selenium	mg/L	09/13/2011	N001	6.81	-	11.81	0.024		F	#	0.0016	
Sodium	mg/L	09/13/2011	N001	6.81	-	11.81	1400		F	#	0.066	
Specific Conductance	umhos/cm	09/13/2011	N001	6.81	-	11.81	16134		F	#		
Strontium	mg/L	09/13/2011	N001	6.81	-	11.81	9.7		F	#	0.00078	
Sulfate	mg/L	09/13/2011	N001	6.81	-	11.81	8800		F	#	100	
Temperature	C	09/13/2011	N001	6.81	-	11.81	19.66		F	#		
Turbidity	NTU	09/13/2011	N001	6.81	-	11.81	1.4		F	#		
Uranium	mg/L	09/13/2011	N001	6.81	-	11.81	1.4		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1132 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	6.07 - 11.07	144		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	6.07 - 11.07	1.2		F	#	0.1	
Calcium	mg/L	09/13/2011	N001	6.07 - 11.07	52		F	#	0.012	
Chloride	mg/L	09/13/2011	N001	6.07 - 11.07	11		F	#	1	
Magnesium	mg/L	09/13/2011	N001	6.07 - 11.07	16		F	#	0.013	
Manganese	mg/L	09/13/2011	N001	6.07 - 11.07	0.32		F	#	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	6.07 - 11.07	0.04		F	#	0.01	
Oxidation Reduction Potential	mV	09/13/2011	N001	6.07 - 11.07	95.6		F	#		
pH	s.u.	09/13/2011	N001	6.07 - 11.07	7.58		F	#		
Potassium	mg/L	09/13/2011	N001	6.07 - 11.07	2.8		F	#	0.11	
Selenium	mg/L	09/13/2011	N001	6.07 - 11.07	0.00043		F	#	0.000032	
Sodium	mg/L	09/13/2011	N001	6.07 - 11.07	40		F	#	0.0066	
Specific Conductance	umhos /cm	09/13/2011	N001	6.07 - 11.07	592		F	#		
Strontium	mg/L	09/13/2011	N001	6.07 - 11.07	0.65		F	#	0.000078	
Sulfate	mg/L	09/13/2011	N001	6.07 - 11.07	150		F	#	2.5	
Temperature	C	09/13/2011	N001	6.07 - 11.07	19.73		F	#		
Turbidity	NTU	09/13/2011	N001	6.07 - 11.07	1.32		F	#		
Uranium	mg/L	09/13/2011	N001	6.07 - 11.07	0.014		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1134 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	8.16 - 13.16	132		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	8.16 - 13.16	0.72		F	#	0.1	
Calcium	mg/L	09/13/2011	N001	8.16 - 13.16	62		F	#	0.012	
Chloride	mg/L	09/13/2011	N001	8.16 - 13.16	11		F	#	1	
Magnesium	mg/L	09/13/2011	N001	8.16 - 13.16	12		F	#	0.013	
Manganese	mg/L	09/13/2011	N001	8.16 - 13.16	0.25		F	#	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	8.16 - 13.16	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/13/2011	N001	8.16 - 13.16	111.1		F	#		
pH	s.u.	09/13/2011	N001	8.16 - 13.16	7.53		F	#		
Potassium	mg/L	09/13/2011	N001	8.16 - 13.16	2.5		F	#	0.11	
Selenium	mg/L	09/13/2011	N001	8.16 - 13.16	0.00015		F	#	0.000032	
Sodium	mg/L	09/13/2011	N001	8.16 - 13.16	38		F	#	0.0066	
Specific Conductance	umhos/cm	09/13/2011	N001	8.16 - 13.16	557		F	#		
Strontium	mg/L	09/13/2011	N001	8.16 - 13.16	0.68		F	#	0.000078	
Sulfate	mg/L	09/13/2011	N001	8.16 - 13.16	140		F	#	2.5	
Temperature	C	09/13/2011	N001	8.16 - 13.16	15.91		F	#		
Turbidity	NTU	09/13/2011	N001	8.16 - 13.16	1.54		F	#		
Uranium	mg/L	09/13/2011	N001	8.16 - 13.16	0.009		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1135 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	6.39 - 11.39	295		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	6.39 - 11.39	0.11		F	#	0.1	
Calcium	mg/L	09/15/2011	N001	6.39 - 11.39	380		F	#	0.12	
Chloride	mg/L	09/15/2011	N001	6.39 - 11.39	95		F	#	20	
Magnesium	mg/L	09/15/2011	N001	6.39 - 11.39	200		F	#	0.13	
Manganese	mg/L	09/15/2011	N001	6.39 - 11.39	2.3		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	6.39 - 11.39	0.01		F	#	0.01	
Oxidation Reduction Potential	mV	09/15/2011	N001	6.39 - 11.39	33		F	#		
pH	s.u.	09/15/2011	N001	6.39 - 11.39	7.08		F	#		
Potassium	mg/L	09/15/2011	N001	6.39 - 11.39	28		F	#	1.1	
Selenium	mg/L	09/15/2011	N001	6.39 - 11.39	0.0003		F	#	0.000065	
Sodium	mg/L	09/15/2011	N001	6.39 - 11.39	1100		F	#	0.066	
Specific Conductance	umhos/cm	09/15/2011	N001	6.39 - 11.39	6774		F	#		
Strontium	mg/L	09/15/2011	N001	6.39 - 11.39	4.7		F	#	0.00078	
Sulfate	mg/L	09/15/2011	N001	6.39 - 11.39	4000		F	#	50	
Temperature	C	09/15/2011	N001	6.39 - 11.39	18.49		F	#		
Turbidity	NTU	09/15/2011	N001	6.39 - 11.39	5.71		F	#		
Uranium	mg/L	09/15/2011	N001	6.39 - 11.39	0.12		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1136 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	6.29 - 11.29	231		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	6.29 - 11.29	0.1	U	F	#	0.1	
Calcium	mg/L	09/14/2011	N001	6.29 - 11.29	110		F	#	0.012	
Chloride	mg/L	09/14/2011	N001	6.29 - 11.29	25		F	#	4	
Magnesium	mg/L	09/14/2011	N001	6.29 - 11.29	41		F	#	0.013	
Manganese	mg/L	09/14/2011	N001	6.29 - 11.29	1.4		F	#	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	6.29 - 11.29	1.2		F	#	0.01	
Oxidation Reduction Potential	mV	09/14/2011	N001	6.29 - 11.29	157.8		F	#		
pH	s.u.	09/14/2011	N001	6.29 - 11.29	7.35		F	#		
Potassium	mg/L	09/14/2011	N001	6.29 - 11.29	4.1		F	#	0.11	
Selenium	mg/L	09/14/2011	N001	6.29 - 11.29	0.00031		F	#	0.000032	
Sodium	mg/L	09/14/2011	N001	6.29 - 11.29	99		F	#	0.0066	
Specific Conductance	umhos/cm	09/14/2011	N001	6.29 - 11.29	1309		F	#		
Strontium	mg/L	09/14/2011	N001	6.29 - 11.29	1.3		F	#	0.000078	
Sulfate	mg/L	09/14/2011	N001	6.29 - 11.29	490		F	#	10	
Temperature	C	09/14/2011	N001	6.29 - 11.29	16.26		F	#		
Turbidity	NTU	09/14/2011	N001	6.29 - 11.29	1.97		F	#		
Uranium	mg/L	09/14/2011	N001	6.29 - 11.29	0.019		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1137 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	9.4	- 14.4	285		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	9.4	- 14.4	1.1		F	#	0.1	
Calcium	mg/L	09/15/2011	N001	9.4	- 14.4	200		F	#	0.06	
Chloride	mg/L	09/15/2011	N001	9.4	- 14.4	64		F	#	10	
Magnesium	mg/L	09/15/2011	N001	9.4	- 14.4	270		F	#	0.065	
Manganese	mg/L	09/15/2011	N001	9.4	- 14.4	1.4		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	9.4	- 14.4	4.7		F	#	0.05	
Oxidation Reduction Potential	mV	09/15/2011	N001	9.4	- 14.4	334		F	#		
pH	s.u.	09/15/2011	N001	9.4	- 14.4	7.32		F	#		
Potassium	mg/L	09/15/2011	N001	9.4	- 14.4	21		F	#	0.54	
Selenium	mg/L	09/15/2011	N001	9.4	- 14.4	0.0022		F	#	0.00032	
Sodium	mg/L	09/15/2011	N001	9.4	- 14.4	630		F	#	0.033	
Specific Conductance	umhos /cm	09/15/2011	N001	9.4	- 14.4	4970		F	#		
Strontium	mg/L	09/15/2011	N001	9.4	- 14.4	2.5		F	#	0.00039	
Sulfate	mg/L	09/15/2011	N001	9.4	- 14.4	2800		F	#	25	
Temperature	C	09/15/2011	N001	9.4	- 14.4	16.51		F	#		
Turbidity	NTU	09/15/2011	N001	9.4	- 14.4	4.48		F	#		
Uranium	mg/L	09/15/2011	N001	9.4	- 14.4	0.22		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1138 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	8.09 - 13.09	288		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	8.09 - 13.09	0.4		F	#	0.1	
Calcium	mg/L	09/15/2011	N001	8.09 - 13.09	270		F	#	0.06	
Chloride	mg/L	09/15/2011	N001	8.09 - 13.09	110		F	#	10	
Magnesium	mg/L	09/15/2011	N001	8.09 - 13.09	330		F	#	0.065	
Manganese	mg/L	09/15/2011	N001	8.09 - 13.09	1.5		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	8.09 - 13.09	16		F	#	0.1	
Oxidation Reduction Potential	mV	09/15/2011	N001	8.09 - 13.09	330		F	#		
pH	s.u.	09/15/2011	N001	8.09 - 13.09	7.3		F	#		
Potassium	mg/L	09/15/2011	N001	8.09 - 13.09	24		F	#	0.54	
Selenium	mg/L	09/15/2011	N001	8.09 - 13.09	0.0045		F	#	0.00032	
Sodium	mg/L	09/15/2011	N001	8.09 - 13.09	580		F	#	0.033	
Specific Conductance	umhos /cm	09/15/2011	N001	8.09 - 13.09	5223		F	#		
Strontium	mg/L	09/15/2011	N001	8.09 - 13.09	3.4		F	#	0.00039	
Sulfate	mg/L	09/15/2011	N001	8.09 - 13.09	3000		F	#	25	
Temperature	C	09/15/2011	N001	8.09 - 13.09	17		F	#		
Turbidity	NTU	09/15/2011	N001	8.09 - 13.09	4.22		F	#		
Uranium	mg/L	09/15/2011	N001	8.09 - 13.09	0.34		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1139 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	6.19 - 11.19	442		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	6.19 - 11.19	0.1	U	F	#	0.1	
Calcium	mg/L	09/15/2011	N001	6.19 - 11.19	210		F	#	0.06	
Chloride	mg/L	09/15/2011	N001	6.19 - 11.19	90		F	#	10	
Magnesium	mg/L	09/15/2011	N001	6.19 - 11.19	270		F	#	0.065	
Manganese	mg/L	09/15/2011	N001	6.19 - 11.19	0.51		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	6.19 - 11.19	4		F	#	0.05	
Oxidation Reduction Potential	mV	09/15/2011	N001	6.19 - 11.19	322		F	#		
pH	s.u.	09/15/2011	N001	6.19 - 11.19	7.25		F	#		
Potassium	mg/L	09/15/2011	N001	6.19 - 11.19	23		F	#	0.54	
Selenium	mg/L	09/15/2011	N001	6.19 - 11.19	0.0025		F	#	0.00032	
Sodium	mg/L	09/15/2011	N001	6.19 - 11.19	600		F	#	0.033	
Specific Conductance	umhos/cm	09/15/2011	N001	6.19 - 11.19	4769		F	#		
Strontium	mg/L	09/15/2011	N001	6.19 - 11.19	3.1		F	#	0.00039	
Sulfate	mg/L	09/15/2011	N001	6.19 - 11.19	2500		F	#	25	
Temperature	C	09/15/2011	N001	6.19 - 11.19	20.95		F	#		
Turbidity	NTU	09/15/2011	N001	6.19 - 11.19	3.39		F	#		
Uranium	mg/L	09/15/2011	N001	6.19 - 11.19	0.29		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1140 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers: Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	7.6 - 12.6	770		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	7.6 - 12.6	25		F	#	1	
Calcium	mg/L	09/14/2011	N001	7.6 - 12.6	430		F	#	0.12	
Chloride	mg/L	09/14/2011	N001	7.6 - 12.6	300		F	#	40	
Magnesium	mg/L	09/14/2011	N001	7.6 - 12.6	1200		F	#	0.13	
Manganese	mg/L	09/14/2011	N001	7.6 - 12.6	3.3		F	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	7.6 - 12.6	110		F	#	1	
Oxidation Reduction Potential	mV	09/14/2011	N001	7.6 - 12.6	106.8		F	#		
pH	s.u.	09/14/2011	N001	7.6 - 12.6	6.9		F	#		
Potassium	mg/L	09/14/2011	N001	7.6 - 12.6	110		F	#	1.1	
Selenium	mg/L	09/14/2011	N001	7.6 - 12.6	0.13		F	#	0.0032	
Sodium	mg/L	09/14/2011	N001	7.6 - 12.6	1500		F	#	0.33	
Specific Conductance	umhos/cm	09/14/2011	N001	7.6 - 12.6	12421		F	#		
Strontium	mg/L	09/14/2011	N001	7.6 - 12.6	7.8		F	#	0.00078	
Sulfate	mg/L	09/14/2011	N001	7.6 - 12.6	8200		F	#	100	
Temperature	C	09/14/2011	N001	7.6 - 12.6	21.38		F	#		
Turbidity	NTU	09/14/2011	N001	7.6 - 12.6	1.54		F	#		
Uranium	mg/L	09/14/2011	N001	7.6 - 12.6	1.8		F	#	0.00029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1141 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	5.6	-	10.6	521		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	5.6	-	10.6	13		F	#	1	
Calcium	mg/L	09/14/2011	N001	5.6	-	10.6	490		F	#	0.06	
Chloride	mg/L	09/14/2011	N001	5.6	-	10.6	120		F	#	20	
Magnesium	mg/L	09/14/2011	N001	5.6	-	10.6	570		F	#	0.065	
Manganese	mg/L	09/14/2011	N001	5.6	-	10.6	1.7		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	5.6	-	10.6	12		F	#	0.1	
Oxidation Reduction Potential	mV	09/14/2011	N001	5.6	-	10.6	87.5		F	#		
pH	s.u.	09/14/2011	N001	5.6	-	10.6	6.97		F	#		
Potassium	mg/L	09/14/2011	N001	5.6	-	10.6	66		F	#	0.54	
Selenium	mg/L	09/14/2011	N001	5.6	-	10.6	0.097		F	#	0.0016	
Sodium	mg/L	09/14/2011	N001	5.6	-	10.6	710		F	#	0.033	
Specific Conductance	umhos /cm	09/14/2011	N001	5.6	-	10.6	7090		F	#		
Strontium	mg/L	09/14/2011	N001	5.6	-	10.6	5.7		F	#	0.00039	
Sulfate	mg/L	09/14/2011	N001	5.6	-	10.6	4500		F	#	50	
Temperature	C	09/14/2011	N001	5.6	-	10.6	20.74		F	#		
Turbidity	NTU	09/14/2011	N001	5.6	-	10.6	2.24		F	#		
Uranium	mg/L	09/14/2011	N001	5.6	-	10.6	1		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1142 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	9	-	14	184		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	9	-	14	0.1	U	F	#	0.1	
Calcium	mg/L	09/14/2011	N001	9	-	14	53		F	#	0.012	
Chloride	mg/L	09/14/2011	N001	9	-	14	9.6		F	#	0.4	
Magnesium	mg/L	09/14/2011	N001	9	-	14	11		F	#	0.013	
Manganese	mg/L	09/14/2011	N001	9	-	14	0.27		F	#	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	9	-	14	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/14/2011	N001	9	-	14	-22.8		F	#		
pH	s.u.	09/14/2011	N001	9	-	14	7.65		F	#		
Potassium	mg/L	09/14/2011	N001	9	-	14	2		F	#	0.11	
Selenium	mg/L	09/14/2011	N001	9	-	14	0.00036		F	#	0.000032	
Sodium	mg/L	09/14/2011	N001	9	-	14	31		F	#	0.0066	
Specific Conductance	umhos /cm	09/14/2011	N001	9	-	14	503		F	#		
Strontium	mg/L	09/14/2011	N001	9	-	14	0.61		F	#	0.000078	
Sulfate	mg/L	09/14/2011	N001	9	-	14	120		F	#	1	
Temperature	C	09/14/2011	N001	9	-	14	15.11		F	#		
Turbidity	NTU	09/14/2011	N001	9	-	14	2.57		F	#		
Uranium	mg/L	09/14/2011	N001	9	-	14	0.0046		F	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 12/21/2011

Location: 1143 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	8.3	- 13.3	312		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	8.3	- 13.3	0.1	U	F	#	0.1	
Calcium	mg/L	09/15/2011	N001	8.3	- 13.3	210		F	#	0.06	
Chloride	mg/L	09/15/2011	N001	8.3	- 13.3	72		F	#	10	
Magnesium	mg/L	09/15/2011	N001	8.3	- 13.3	75		F	#	0.065	
Manganese	mg/L	09/15/2011	N001	8.3	- 13.3	0.98		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	8.3	- 13.3	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/15/2011	N001	8.3	- 13.3	22		F	#		
pH	s.u.	09/15/2011	N001	8.3	- 13.3	7.35		F	#		
Potassium	mg/L	09/15/2011	N001	8.3	- 13.3	16		F	#	0.54	
Selenium	mg/L	09/15/2011	N001	8.3	- 13.3	0.00013		F	#	0.000032	
Sodium	mg/L	09/15/2011	N001	8.3	- 13.3	870		F	#	0.16	
Specific Conductance	umhos /cm	09/15/2011	N001	8.3	- 13.3	5055		F	#		
Strontium	mg/L	09/15/2011	N001	8.3	- 13.3	2.6		F	#	0.00039	
Sulfate	mg/L	09/15/2011	N001	8.3	- 13.3	2700		F	#	25	
Temperature	C	09/15/2011	N001	8.3	- 13.3	16.1		F	#		
Turbidity	NTU	09/15/2011	N001	8.3	- 13.3	8.75		F	#		
Uranium	mg/L	09/15/2011	N001	8.3	- 13.3	0.053		F	#	0.0000029	

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.

**Groundwater Quality Data
Terrace Locations**

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Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011.

Location: 0600 WELL Just N of Disposal Cell

Parameter	Units	Date	Sample ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	29	-	48.8	1272		FQ	#		
Ammonia Total as N	mg/L	09/14/2011	N001	29	-	48.8	25		FQ	#	1	
Calcium	mg/L	09/14/2011	N001	29	-	48.8	250		FQ	#	0.06	
Chloride	mg/L	09/14/2011	N001	29	-	48.8	1300		FQ	#	40	
Magnesium	mg/L	09/14/2011	N001	29	-	48.8	260		FQ	#	0.065	
Manganese	mg/L	09/14/2011	N001	29	-	48.8	0.24		FQ	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	29	-	48.8	91		FQ	#	0.5	
Oxidation Reduction Potential	mV	09/14/2011	N001	29	-	48.8	52		FQ	#		
pH	s.u.	09/14/2011	N001	29	-	48.8	6.81		FQ	#		
Potassium	mg/L	09/14/2011	N001	29	-	48.8	56	EN	JFQ	#	0.54	
Selenium	mg/L	09/14/2011	N001	29	-	48.8	0.0021		JFQ	#	0.00032	
Sodium	mg/L	09/14/2011	N001	29	-	48.8	4200		FQ	#	0.33	
Specific Conductance	umhos/cm	09/14/2011	N001	29	-	48.8	19970		FQ	#		
Strontium	mg/L	09/14/2011	N001	29	-	48.8	7.9		FQ	#	0.00039	
Sulfate	mg/L	09/14/2011	N001	29	-	48.8	10000		FQ	#	100	
Temperature	C	09/14/2011	N001	29	-	48.8	16.44		FQ	#		
Turbidity	NTU	09/14/2011	N001	29	-	48.8	4.43		FQ	#		
Uranium	mg/L	09/14/2011	N001	29	-	48.8	0.71		FQ	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0602 WELL Just W of Disposal Cell; NECA yard

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	27	-	47	2040		FQ	#		
Ammonia Total as N	mg/L	09/14/2011	N001	27	-	47	120		FQ	#	10	
Calcium	mg/L	09/14/2011	N001	27	-	47	410		FQ	#	0.06	
Chloride	mg/L	09/14/2011	N001	27	-	47	1700		FQ	#	40	
Magnesium	mg/L	09/14/2011	N001	27	-	47	1900		FQ	#	0.065	
Manganese	mg/L	09/14/2011	N001	27	-	47	1.3		FQ	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	27	-	47	26		FQ	#	0.2	
Oxidation Reduction Potential	mV	09/14/2011	N001	27	-	47	227.5		FQ	#		
pH	s.u.	09/14/2011	N001	27	-	47	6.47		FQ	#		
Potassium	mg/L	09/14/2011	N001	27	-	47	180		JFQ	#	0.54	
Selenium	mg/L	09/14/2011	N001	27	-	47	0.0077		FQ	#	0.00032	
Sodium	mg/L	09/14/2011	N001	27	-	47	4300		FQ	#	0.33	
Specific Conductance	umhos/cm	09/14/2011	N001	27	-	47	23515		FQ	#		
Strontium	mg/L	09/14/2011	N001	27	-	47	11		FQ	#	0.00039	
Sulfate	mg/L	09/14/2011	N001	27	-	47	16000		FQ	#	100	
Temperature	C	09/14/2011	N001	27	-	47	17.76		FQ	#		
Turbidity	NTU	09/14/2011	N001	27	-	47	8.67		FQ	#		
Uranium	mg/L	09/14/2011	N001	27	-	47	0.5		FQ	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0603 WELL Just SE of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	25.9	-	35.9	610		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	25.9	-	35.9	780		F	#	20	
Calcium	mg/L	09/14/2011	N001	25.9	-	35.9	1100		F	#	0.06	
Chloride	mg/L	09/14/2011	N001	25.9	-	35.9	170		F	#	40	
Magnesium	mg/L	09/14/2011	N001	25.9	-	35.9	690		F	#	0.065	
Manganese	mg/L	09/14/2011	N001	25.9	-	35.9	49		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	25.9	-	35.9	1700		F	#	20	
Oxidation Reduction Potential	mV	09/14/2011	N001	25.9	-	35.9	276.1		F	#		
pH	s.u.	09/14/2011	N001	25.9	-	35.9	6.21		F	#		
Potassium	mg/L	09/14/2011	N001	25.9	-	35.9	150		F	#	0.54	
Selenium	mg/L	09/14/2011	N001	25.9	-	35.9	0.084		F	#	0.00032	
Sodium	mg/L	09/14/2011	N001	25.9	-	35.9	590		F	#	0.033	
Specific Conductance	umhos/cm	09/14/2011	N001	25.9	-	35.9	16731		F	#		
Strontium	mg/L	09/14/2011	N001	25.9	-	35.9	4.8		F	#	0.00039	
Sulfate	mg/L	09/14/2011	N001	25.9	-	35.9	2600		F	#	100	
Temperature	C	09/14/2011	N001	25.9	-	35.9	18.33		F	#		
Turbidity	NTU	09/14/2011	N001	25.9	-	35.9	3.35		F	#		
Uranium	mg/L	09/14/2011	N001	25.9	-	35.9	0.0082		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0604 WELL Just W of radon cover borrow pit

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	0001	62.7 - 72.7	1000		FQ	#		
Ammonia Total as N	mg/L	09/15/2011	0001	62.7 - 72.7	4.7		FQ	#	0.1	
Calcium	mg/L	09/15/2011	0001	62.7 - 72.7	490		FQ	#	0.06	
Chloride	mg/L	09/15/2011	0001	62.7 - 72.7	2100		FQ	#	40	
Magnesium	mg/L	09/15/2011	0001	62.7 - 72.7	1900		FQ	#	0.065	
Manganese	mg/L	09/15/2011	0001	62.7 - 72.7	0.77		FQ	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	0001	62.7 - 72.7	1000		FQ	#	10	
Oxidation Reduction Potential	mV	09/15/2011	N001	62.7 - 72.7	146		FQ	#		
pH	s.u.	09/15/2011	N001	62.7 - 72.7	6.7		FQ	#		
Potassium	mg/L	09/15/2011	0001	62.7 - 72.7	89		JFQ	#	0.54	
Selenium	mg/L	09/15/2011	0001	62.7 - 72.7	1		FQ	#	0.00032	
Sodium	mg/L	09/15/2011	0001	62.7 - 72.7	4200		FQ	#	0.33	
Specific Conductance	umhos/cm	09/15/2011	N001	62.7 - 72.7	24800		FQ	#		
Strontium	mg/L	09/15/2011	0001	62.7 - 72.7	17		FQ	#	0.00039	
Sulfate	mg/L	09/15/2011	0001	62.7 - 72.7	12000		FQ	#	100	
Temperature	C	09/15/2011	N001	62.7 - 72.7	15.77		FQ	#		
Turbidity	NTU	09/15/2011	N001	62.7 - 72.7	17.6		FQ	#		
Uranium	mg/L	09/15/2011	0001	62.7 - 72.7	0.089		FQ	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0725 WELL West side, lower Bob Lee Wash

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	7.5 - 17.5	920		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	7.5 - 17.5	0.63		F	#	0.1	
Calcium	mg/L	09/14/2011	N001	7.5 - 17.5	240		F	#	0.06	
Chloride	mg/L	09/14/2011	N001	7.5 - 17.5	82		F	#	10	
Magnesium	mg/L	09/14/2011	N001	7.5 - 17.5	130		F	#	0.065	
Manganese	mg/L	09/14/2011	N001	7.5 - 17.5	0.2		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	7.5 - 17.5	7		F	#	0.05	
Oxidation Reduction Potential	mV	09/14/2011	N001	7.5 - 17.5	189		F	#		
pH	s.u.	09/14/2011	N001	7.5 - 17.5	6.78		F	#		
Potassium	mg/L	09/14/2011	N001	7.5 - 17.5	16		F	#	0.54	
Selenium	mg/L	09/14/2011	N001	7.5 - 17.5	0.0056		F	#	0.00016	
Sodium	mg/L	09/14/2011	N001	7.5 - 17.5	820		F	#	0.33	
Specific Conductance	umhos /cm	09/14/2011	N001	7.5 - 17.5	5500		F	#		
Strontium	mg/L	09/14/2011	N001	7.5 - 17.5	8.6		F	#	0.00039	
Sulfate	mg/L	09/14/2011	N001	7.5 - 17.5	2800		F	#	25	
Temperature	C	09/14/2011	N001	7.5 - 17.5	19.57		F	#		
Turbidity	NTU	09/14/2011	N001	7.5 - 17.5	2.21		F	#		
Uranium	mg/L	09/14/2011	N001	7.5 - 17.5	0.1		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0726 WELL West side, upper Bob Lee Wash

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	27.2 - 37.2	560		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	27.2 - 37.2	1.7		F	#	0.1	
Calcium	mg/L	09/13/2011	N001	27.2 - 37.2	190		F	#	0.06	
Chloride	mg/L	09/13/2011	N001	27.2 - 37.2	260		F	#	20	
Magnesium	mg/L	09/13/2011	N001	27.2 - 37.2	180		F	#	0.065	
Manganese	mg/L	09/13/2011	N001	27.2 - 37.2	0.38		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	27.2 - 37.2	12		F	#	0.1	
Oxidation Reduction Potential	mV	09/13/2011	N001	27.2 - 37.2	155.5		F	#		
pH	s.u.	09/13/2011	N001	27.2 - 37.2	7.25		F	#		
Potassium	mg/L	09/13/2011	N001	27.2 - 37.2	27		F	#	0.54	
Selenium	mg/L	09/13/2011	N001	27.2 - 37.2	0.012		F	#	0.00016	
Sodium	mg/L	09/13/2011	N001	27.2 - 37.2	1900		F	#	0.33	
Specific Conductance	umhos/cm	09/13/2011	N001	27.2 - 37.2	10904		F	#		
Strontium	mg/L	09/13/2011	N001	27.2 - 37.2	5.5		F	#	0.00039	
Sulfate	mg/L	09/13/2011	N001	27.2 - 37.2	5000		F	#	50	
Temperature	C	09/13/2011	N001	27.2 - 37.2	17.44		F	#		
Turbidity	NTU	09/13/2011	N001	27.2 - 37.2	8.06		F	#		
Uranium	mg/L	09/13/2011	N001	27.2 - 37.2	0.023		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0727 WELL West side, upper Bob Lee Wash

Parameter	Units	Sample Date	ID	Depth Range (Ft.BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	6.7 - 16.7	1430		FQ	#		
Ammonia Total as N	mg/L	09/14/2011	N001	6.7 - 16.7	7		FQ	#	0.2	
Calcium	mg/L	09/14/2011	N001	6.7 - 16.7	420		FQ	#	0.06	
Chloride	mg/L	09/14/2011	N001	6.7 - 16.7	400		FQ	#	40	
Magnesium	mg/L	09/14/2011	N001	6.7 - 16.7	1600		FQ	#	0.065	
Manganese	mg/L	09/14/2011	N001	6.7 - 16.7	0.99		FQ	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	6.7 - 16.7	98		FQ	#	1	
Oxidation Reduction Potential	mV	09/14/2011	N001	6.7 - 16.7	235.1		FQ	#		
pH	s.u.	09/14/2011	N001	6.7 - 16.7	6.51		FQ	#		
Potassium	mg/L	09/14/2011	N001	6.7 - 16.7	91		FQ	#	0.54	
Selenium	mg/L	09/14/2011	N001	6.7 - 16.7	0.0044		JFQ	#	0.00032	
Sodium	mg/L	09/14/2011	N001	6.7 - 16.7	2300		FQ	#	0.33	
Specific Conductance	umhos /cm	09/14/2011	N001	6.7 - 16.7	16343		FQ	#		
Strontium	mg/L	09/14/2011	N001	6.7 - 16.7	12		FQ	#	0.00039	
Sulfate	mg/L	09/14/2011	N001	6.7 - 16.7	11000		FQ	#	100	
Temperature	C	09/14/2011	N001	6.7 - 16.7	19.44		FQ	#		
Turbidity	NTU	09/14/2011	N001	6.7 - 16.7	6.3		FQ	#		
Uranium	mg/L	09/14/2011	N001	6.7 - 16.7	0.2		FQ	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0728 WELL W of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	17	-	27	432		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	17	-	27	99		F	#	5	
Calcium	mg/L	09/13/2011	N001	17	-	27	490		F	#	0.06	
Chloride	mg/L	09/13/2011	N001	17	-	27	69		F	#	20	
Magnesium	mg/L	09/13/2011	N001	17	-	27	800		F	#	0.065	
Manganese	mg/L	09/13/2011	N001	17	-	27	1.3		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	17	-	27	180		F	#	1	
Oxidation Reduction Potential	mV	09/13/2011	N001	17	-	27	177.8		F	#		
pH	s.u.	09/13/2011	N001	17	-	27	6.69		F	#		
Potassium	mg/L	09/13/2011	N001	17	-	27	93		F	#	0.54	
Selenium	mg/L	09/13/2011	N001	17	-	27	0.0025		F	#	0.00016	
Sodium	mg/L	09/13/2011	N001	17	-	27	670		F	#	0.033	
Specific Conductance	umhos /cm	09/13/2011	N001	17	-	27	8376		F	#		
Strontium	mg/L	09/13/2011	N001	17	-	27	6.9		F	#	0.00039	
Sulfate	mg/L	09/13/2011	N001	17	-	27	5200		F	#	50	
Temperature	C	09/13/2011	N001	17	-	27	16.55		F	#		
Turbidity	NTU	09/13/2011	N001	17	-	27	1.38		F	#		
Uranium	mg/L	09/13/2011	N001	17	-	27	0.27		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0730 WELL Just SW of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	0001	26.93 - 36.93	40		FQ	#		
Ammonia Total as N	mg/L	09/13/2011	0001	26.93 - 36.93	54		FQ	#	5	
Calcium	mg/L	09/13/2011	0001	26.93 - 36.93	700		FQ	#	0.06	
Chloride	mg/L	09/13/2011	0001	26.93 - 36.93	13		FQ	#	1	
Magnesium	mg/L	09/13/2011	0001	26.93 - 36.93	150		FQ	#	0.065	
Manganese	mg/L	09/13/2011	0001	26.93 - 36.93	26		FQ	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	0001	26.93 - 36.93	180		FQ	#	1	
Oxidation Reduction Potential	mV	09/13/2011	N001	26.93 - 36.93	238.4		FQ	#		
pH	s.u.	09/13/2011	N001	26.93 - 36.93	4.73		FQ	#		
Potassium	mg/L	09/13/2011	0001	26.93 - 36.93	16		FQ	#	0.54	
Selenium	mg/L	09/13/2011	0001	26.93 - 36.93	0.011		FQ	#	0.00016	
Sodium	mg/L	09/13/2011	0001	26.93 - 36.93	71		FQ	#	0.033	
Specific Conductance	umhos /cm	09/13/2011	N001	26.93 - 36.93	4002		FQ	#		
Strontium	mg/L	09/13/2011	0001	26.93 - 36.93	3.2		FQ	#	0.00039	
Sulfate	mg/L	09/13/2011	0001	26.93 - 36.93	1900		FQ	#	25	
Temperature	C	09/13/2011	N001	26.93 - 36.93	18.73		FQ	#		
Turbidity	NTU	09/13/2011	N001	26.93 - 36.93	941		FQ	#		
Uranium	mg/L	09/13/2011	0001	26.93 - 36.93	0.0037		FQ	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0731 WELL SE of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	17	-	27	280		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	17	-	27	18		F	#	0.5	
Calcium	mg/L	09/14/2011	N001	17	-	27	440		F	#	0.06	
Chloride	mg/L	09/14/2011	N001	17	-	27	89		F	#	20	
Magnesium	mg/L	09/14/2011	N001	17	-	27	420		F	#	0.065	
Manganese	mg/L	09/14/2011	N001	17	-	27	0.096		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	17	-	27	65		F	#	0.5	
Oxidation Reduction Potential	mV	09/14/2011	N001	17	-	27	230.1		F	#		
pH	s.u.	09/14/2011	N001	17	-	27	7.03		F	#		
Potassium	mg/L	09/14/2011	N001	17	-	27	45		F	#	0.54	
Selenium	mg/L	09/14/2011	N001	17	-	27	0.017		F	#	0.00016	
Sodium	mg/L	09/14/2011	N001	17	-	27	820		F	#	0.33	
Specific Conductance	umhos/cm	09/14/2011	N001	17	-	27	7265		F	#		
Strontium	mg/L	09/14/2011	N001	17	-	27	7.1		F	#	0.00039	
Sulfate	mg/L	09/14/2011	N001	17	-	27	4300		F	#	50	
Temperature	C	09/14/2011	N001	17	-	27	17.08		F	#		
Turbidity	NTU	09/14/2011	N001	17	-	27	5.41		F	#		
Uranium	mg/L	09/14/2011	N001	17	-	27	0.023		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0812 WELL W of radon cover borrow pit

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	51.3	- 61.3	720		FQ	#		
Ammonia Total as N	mg/L	09/13/2011	N001	51.3	- 61.3	0.1	U	FQ	#	0.1	
Calcium	mg/L	09/13/2011	N001	51.3	- 61.3	450		FQ	#	0.06	
Chloride	mg/L	09/13/2011	N001	51.3	- 61.3	2500		FQ	#	100	
Magnesium	mg/L	09/13/2011	N001	51.3	- 61.3	2400		FQ	#	0.065	
Manganese	mg/L	09/13/2011	N001	51.3	- 61.3	0.022	B	FQ	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	51.3	- 61.3	1300		FQ	#	10	
Oxidation Reduction Potential	mV	09/13/2011	N001	51.3	- 61.3	16		FQ	#		
pH	s.u.	09/13/2011	N001	51.3	- 61.3	6.92		FQ	#		
Potassium	mg/L	09/13/2011	N001	51.3	- 61.3	110		JFQ	#	0.54	
Selenium	mg/L	09/13/2011	N001	51.3	- 61.3	6.1		FQ	#	0.00032	
Sodium	mg/L	09/13/2011	N001	51.3	- 61.3	5600		FQ	#	0.33	
Specific Conductance	umhos /cm	09/13/2011	N001	51.3	- 61.3	32250		FQ	#		
Strontium	mg/L	09/13/2011	N001	51.3	- 61.3	14		FQ	#	0.00039	
Sulfate	mg/L	09/13/2011	N001	51.3	- 61.3	17000		FQ	#	250	
Temperature	C	09/13/2011	N001	51.3	- 61.3	17.34		FQ	#		
Turbidity	NTU	09/13/2011	N001	51.3	- 61.3	8.6		FQ	#		
Uranium	mg/L	09/13/2011	N001	51.3	- 61.3	0.13		FQ	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0813 WELL W of radon cover borrow pit

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	40.8	-	50.8	476		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	40.8	-	50.8	41		F	#	5	
Calcium	mg/L	09/13/2011	N001	40.8	-	50.8	610		F	#	0.06	
Chloride	mg/L	09/13/2011	N001	40.8	-	50.8	590		F	#	40	
Magnesium	mg/L	09/13/2011	N001	40.8	-	50.8	2700		F	#	0.65	
Manganese	mg/L	09/13/2011	N001	40.8	-	50.8	0.47		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	40.8	-	50.8	1600		F	#	20	
Oxidation Reduction Potential	mV	09/13/2011	N001	40.8	-	50.8	97.6		F	#		
pH	s.u.	09/13/2011	N001	40.8	-	50.8	6.54		F	#		
Potassium	mg/L	09/13/2011	N001	40.8	-	50.8	160		JF	#	0.54	
Selenium	mg/L	09/13/2011	N001	40.8	-	50.8	0.057		F	#	0.00032	
Sodium	mg/L	09/13/2011	N001	40.8	-	50.8	2100		F	#	0.33	
Specific Conductance	umhos/cm	09/13/2011	N001	40.8	-	50.8	22458		F	#		
Strontium	mg/L	09/13/2011	N001	40.8	-	50.8	17		F	#	0.00039	
Sulfate	mg/L	09/13/2011	N001	40.8	-	50.8	8900		F	#	100	
Temperature	C	09/13/2011	N001	40.8	-	50.8	17.14		F	#		
Turbidity	NTU	09/13/2011	N001	40.8	-	50.8	1.59		F	#		
Uranium	mg/L	09/13/2011	N001	40.8	-	50.8	0.11		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0814 WELL South edge of fairgrounds, flush mount.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	0001	23.8	-	33.8	808		FQ	#		
Ammonia Total as N	mg/L	09/14/2011	0001	23.8	-	33.8	54		FQ	#	5	
Calcium	mg/L	09/14/2011	0001	23.8	-	33.8	390		FQ	#	0.012	
Magnesium	mg/L	09/14/2011	0001	23.8	-	33.8	2200		FQ	#	0.13	
Manganese	mg/L	09/14/2011	0001	23.8	-	33.8	1.1		FQ	#	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	0001	23.8	-	33.8	710		FQ	#	5	
Oxidation Reduction Potential	mV	09/14/2011	N001	23.8	-	33.8	148.2		FQ	#		
pH	s.u.	09/14/2011	N001	23.8	-	33.8	6.88		FQ	#		
Potassium	mg/L	09/14/2011	0001	23.8	-	33.8	160		JFQ	#	0.11	
Selenium	mg/L	09/14/2011	0001	23.8	-	33.8	2.2		FQ	#	0.00016	
Sodium	mg/L	09/14/2011	0001	23.8	-	33.8	3400		FQ	#	0.33	
Specific Conductance	umhos /cm	09/14/2011	N001	23.8	-	33.8	23137		FQ	#		
Strontium	mg/L	09/14/2011	0001	23.8	-	33.8	13		FQ	#	0.00078	
Temperature	C	09/14/2011	N001	23.8	-	33.8	17.95		FQ	#		
Turbidity	NTU	09/14/2011	N001	23.8	-	33.8	14.7		FQ	#		
Uranium	mg/L	09/14/2011	0001	23.8	-	33.8	0.09		FQ	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0815 WELL Fairgrounds, just N of Uranium Blvd., flush mount.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	22.3	-	32.3	1400		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	22.3	-	32.3	0.77		F	#	0.1	
Calcium	mg/L	09/13/2011	N001	22.3	-	32.3	450		F	#	0.06	
Chloride	mg/L	09/13/2011	N001	22.3	-	32.3	530		F	#	40	
Magnesium	mg/L	09/13/2011	N001	22.3	-	32.3	2700		F	#	0.65	
Manganese	mg/L	09/13/2011	N001	22.3	-	32.3	1.4		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	22.3	-	32.3	660		F	#	5	
Oxidation Reduction Potential	mV	09/13/2011	N001	22.3	-	32.3	170.5		F	#		
pH	s.u.	09/13/2011	N001	22.3	-	32.3	6.51		F	#		
Potassium	mg/L	09/13/2011	N001	22.3	-	32.3	130		JF	#	0.54	
Selenium	mg/L	09/13/2011	N001	22.3	-	32.3	0.025		F	#	0.00016	
Sodium	mg/L	09/13/2011	N001	22.3	-	32.3	3200		F	#	0.33	
Specific Conductance	umhos/cm	09/13/2011	N001	22.3	-	32.3	22087		F	#		
Strontium	mg/L	09/13/2011	N001	22.3	-	32.3	13		F	#	0.00039	
Sulfate	mg/L	09/13/2011	N001	22.3	-	32.3	15000		F	#	100	
Temperature	C	09/13/2011	N001	22.3	-	32.3	17.09		F	#		
Turbidity	NTU	09/13/2011	N001	22.3	-	32.3	2.56		F	#		
Uranium	mg/L	09/13/2011	N001	22.3	-	32.3	0.36		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0816 WELL N of artesian well 648

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	20.1 - 25.1	380		FQ	#		
Ammonia Total as N	mg/L	09/13/2011	N001	20.1 - 25.1	0.1	U	FQ	#	0.1	
Calcium	mg/L	09/13/2011	N001	20.1 - 25.1	120		FQ	#	0.06	
Chloride	mg/L	09/13/2011	N001	20.1 - 25.1	55		FQ	#	10	
Magnesium	mg/L	09/13/2011	N001	20.1 - 25.1	150		FQ	#	0.065	
Manganese	mg/L	09/13/2011	N001	20.1 - 25.1	0.0019	B	UFQ	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	20.1 - 25.1	18		FQ	#	0.2	
Oxidation Reduction Potential	mV	09/13/2011	N001	20.1 - 25.1	153.1		FQ	#		
pH	s.u.	09/13/2011	N001	20.1 - 25.1	7.81		FQ	#		
Potassium	mg/L	09/13/2011	N001	20.1 - 25.1	10		FQ	#	0.54	
Selenium	mg/L	09/13/2011	N001	20.1 - 25.1	0.017		FQ	#	0.00016	
Sodium	mg/L	09/13/2011	N001	20.1 - 25.1	380		FQ	#	0.033	
Specific Conductance	umhos /cm	09/13/2011	N001	20.1 - 25.1	3488		FQ	#		
Strontium	mg/L	09/13/2011	N001	20.1 - 25.1	2.3		FQ	#	0.00039	
Sulfate	mg/L	09/13/2011	N001	20.1 - 25.1	1500		FQ	#	25	
Temperature	C	09/13/2011	N001	20.1 - 25.1	19.48		FQ	#		
Turbidity	NTU	09/13/2011	N001	20.1 - 25.1	9.67		FQ	#		
Uranium	mg/L	09/13/2011	N001	20.1 - 25.1	0.018		FQ	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0817 WELL Just W of Disposal Cell, NECA yard

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	0001	21.6 - 31.62	1710		FQ	#		
Ammonia Total as N	mg/L	09/14/2011	0001	21.6 - 31.62	920		FQ	#	20	
Ammonia Total as N	mg/L	09/14/2011	0002	21.6 - 31.62	900		FQ	#	20	
Calcium	mg/L	09/14/2011	0001	21.6 - 31.62	450		FQ	#	0.06	
Calcium	mg/L	09/14/2011	0002	21.6 - 31.62	460		FQ	#	0.12	
Chloride	mg/L	09/14/2011	0001	21.6 - 31.62	530		FQ	#	40	
Chloride	mg/L	09/14/2011	0002	21.6 - 31.62	510		FQ	#	40	
Magnesium	mg/L	09/14/2011	0001	21.6 - 31.62	2100		FQ	#	0.065	
Magnesium	mg/L	09/14/2011	0002	21.6 - 31.62	2100		FQ	#	0.13	
Manganese	mg/L	09/14/2011	0001	21.6 - 31.62	2.3		FQ	#	0.00057	
Manganese	mg/L	09/14/2011	0002	21.6 - 31.62	2.3		FQ	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	0001	21.6 - 31.62	500		FQ	#	5	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	0002	21.6 - 31.62	450		FQ	#	5	
Oxidation Reduction Potential	mV	09/14/2011	N001	21.6 - 31.62	237.6		FQ	#		
pH	s.u.	09/14/2011	N001	21.6 - 31.62	6.44		FQ	#		
Potassium	mg/L	09/14/2011	0001	21.6 - 31.62	310		JFQ	#	0.54	
Potassium	mg/L	09/14/2011	0002	21.6 - 31.62	280		FQ	#	1.1	
Selenium	mg/L	09/14/2011	0001	21.6 - 31.62	0.004		JFQ	#	0.00032	
Selenium	mg/L	09/14/2011	0002	21.6 - 31.62	0.004		JFQ	#	0.00032	
Sodium	mg/L	09/14/2011	0001	21.6 - 31.62	1500		FQ	#	0.33	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0817 WELL Just W of Disposal Cell, NECA yard

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Sodium	mg/L	09/14/2011	0002	21.6 - 31.62	1500		FQ	#	0.066	
Specific Conductance	umhos /cm	09/14/2011	N001	21.6 - 31.62	20968		FQ	#		
Strontium	mg/L	09/14/2011	0001	21.6 - 31.62	12		FQ	#	0.00039	
Strontium	mg/L	09/14/2011	0002	21.6 - 31.62	12		FQ	#	0.00078	
Sulfate	mg/L	09/14/2011	0001	21.6 - 31.62	13000		FQ	#	100	
Sulfate	mg/L	09/14/2011	0002	21.6 - 31.62	13000		FQ	#	100	
Temperature	C	09/14/2011	N001	21.6 - 31.62	16.98		FQ	#		
Turbidity	NTU	09/14/2011	N001	21.6 - 31.62	19.4		FQ	#		
Uranium	mg/L	09/14/2011	0001	21.6 - 31.62	7.2		FQ	#	0.00029	
Uranium	mg/L	09/14/2011	0002	21.6 - 31.62	6.3		FQ	#	0.0015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0818 WELL Just W of radon cover borrow pit

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/12/2011	N001	52 - 61.5	720			#		
Ammonia Total as N	mg/L	09/12/2011	N001	52 - 61.5	54			#	5	
Calcium	mg/L	09/12/2011	N001	52 - 61.5	450			#	0.06	
Chloride	mg/L	09/12/2011	N001	52 - 61.5	920			#	40	
Magnesium	mg/L	09/12/2011	N001	52 - 61.5	1900			#	0.065	
Manganese	mg/L	09/12/2011	N001	52 - 61.5	0.52			#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/12/2011	N001	52 - 61.5	770			#	5	
Oxidation Reduction Potential	mV	09/12/2011	N001	52 - 61.5	210.8			#		
pH	s.u.	09/12/2011	N001	52 - 61.5	6.78			#		
Potassium	mg/L	09/12/2011	N001	52 - 61.5	110		J	#	0.54	
Selenium	mg/L	09/12/2011	N001	52 - 61.5	2.2			#	0.00032	
Sodium	mg/L	09/12/2011	N001	52 - 61.5	3400			#	0.33	
Specific Conductance	umhos/cm	09/12/2011	N001	52 - 61.5	21659			#		
Strontium	mg/L	09/12/2011	N001	52 - 61.5	12			#	0.00039	
Sulfate	mg/L	09/12/2011	N001	52 - 61.5	13000			#	100	
Temperature	C	09/12/2011	N001	52 - 61.5	16.44			#		
Turbidity	NTU	09/12/2011	N001	52 - 61.5	3.02			#		
Uranium	mg/L	09/12/2011	N001	52 - 61.5	0.11			#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0819 WELL Just W of Disposal Cell, NECA yard, flush mount.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	15.67 - 25.67	2000		FQ	#		
Ammonia Total as N	mg/L	09/14/2011	N001	15.67 - 25.67	490		FQ	#	20	
Calcium	mg/L	09/14/2011	N001	15.67 - 25.67	430		FQ	#	0.06	
Chloride	mg/L	09/14/2011	N001	15.67 - 25.67	670		FQ	#	40	
Magnesium	mg/L	09/14/2011	N001	15.67 - 25.67	1600		FQ	#	0.065	
Manganese	mg/L	09/14/2011	N001	15.67 - 25.67	1.5		FQ	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	15.67 - 25.67	51		FQ	#	0.5	
Oxidation Reduction Potential	mV	09/14/2011	N001	15.67 - 25.67	252.9		FQ	#		
pH	s.u.	09/14/2011	N001	15.67 - 25.67	6.43		FQ	#		
Potassium	mg/L	09/14/2011	N001	15.67 - 25.67	260		JFQ	#	0.54	
Selenium	mg/L	09/14/2011	N001	15.67 - 25.67	0.015		FQ	#	0.00032	
Sodium	mg/L	09/14/2011	N001	15.67 - 25.67	2600		FQ	#	0.33	
Specific Conductance	umhos /cm	09/14/2011	N001	15.67 - 25.67	19567		FQ	#		
Strontium	mg/L	09/14/2011	N001	15.67 - 25.67	9.3		FQ	#	0.00039	
Sulfate	mg/L	09/14/2011	N001	15.67 - 25.67	12000		FQ	#	100	
Temperature	C	09/14/2011	N001	15.67 - 25.67	18.25		FQ	#		
Turbidity	NTU	09/14/2011	N001	15.67 - 25.67	6.92		FQ	#		
Uranium	mg/L	09/14/2011	N001	15.67 - 25.67	1.4		FQ	#	0.00029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0820 WELL Just N of Disposal Cell, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	149 - 151.5	536		FQ	#		
Ammonia Total as N	mg/L	09/14/2011	N001	149 - 151.5	4		FQ	#	0.1	
Calcium	mg/L	09/14/2011	N001	149 - 151.5	210		FQ	#	0.12	
Chloride	mg/L	09/14/2011	N001	149 - 151.5	8900		FQ	#	100	
Magnesium	mg/L	09/14/2011	N001	149 - 151.5	80		FQ	#	0.13	
Manganese	mg/L	09/14/2011	N001	149 - 151.5	0.66		FQ	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	149 - 151.5	9		FQ	#	0.1	
Oxidation Reduction Potential	mV	09/14/2011	N001	149 - 151.5	-13		FQ	#		
pH	s.u.	09/14/2011	N001	149 - 151.5	7.04		FQ	#		
Potassium	mg/L	09/14/2011	N001	149 - 151.5	35		JFQ	#	1.1	
Selenium	mg/L	09/14/2011	N001	149 - 151.5	0.001		JFQ	#	0.00016	
Sodium	mg/L	09/14/2011	N001	149 - 151.5	6500		FQ	#	0.66	
Specific Conductance	umhos/cm	09/14/2011	N001	149 - 151.5	27000		FQ	#		
Strontium	mg/L	09/14/2011	N001	149 - 151.5	22		FQ	#	0.00078	
Sulfate	mg/L	09/14/2011	N001	149 - 151.5	4600		FQ	#	250	
Temperature	C	09/14/2011	N001	149 - 151.5	19.94		FQ	#		
Turbidity	NTU	09/14/2011	N001	149 - 151.5	8.26		FQ	#		
Uranium	mg/L	09/14/2011	N001	149 - 151.5	0.059		FQ	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0824 WELL Just NE of Disposal Cell, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	198.5 - 201	74		FQ	#		
Ammonia Total as N	mg/L	09/14/2011	N001	198.5 - 201	0.76		FQ	#	0.1	
Calcium	mg/L	09/14/2011	N001	198.5 - 201	150		FQ	#	0.06	
Chloride	mg/L	09/14/2011	N001	198.5 - 201	3900		FQ	#	40	
Magnesium	mg/L	09/14/2011	N001	198.5 - 201	92		FQ	#	0.065	
Manganese	mg/L	09/14/2011	N001	198.5 - 201	0.1		FQ	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	198.5 - 201	260		FQ	#	2	
Oxidation Reduction Potential	mV	09/14/2011	N001	198.5 - 201	29		FQ	#		
pH	s.u.	09/14/2011	N001	198.5 - 201	6.9		FQ	#		
Potassium	mg/L	09/14/2011	N001	198.5 - 201	210	E	JFQ	#	0.54	
Selenium	mg/L	09/14/2011	N001	198.5 - 201	0.0023		JFQ	#	0.00032	
Sodium	mg/L	09/14/2011	N001	198.5 - 201	4100		FQ	#	0.33	
Specific Conductance	umhos /cm	09/14/2011	N001	198.5 - 201	22500		FQ	#		
Strontium	mg/L	09/14/2011	N001	198.5 - 201	13		FQ	#	0.00039	
Sulfate	mg/L	09/14/2011	N001	198.5 - 201	4900		FQ	#	100	
Temperature	C	09/14/2011	N001	198.5 - 201	16.98		FQ	#		
Turbidity	NTU	09/14/2011	N001	198.5 - 201	4.44		FQ	#		
Uranium	mg/L	09/14/2011	N001	198.5 - 201	0.4		FQ	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0825 WELL Just NE of Disposal Cell, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	147.79 - 150.23	138		FQ	#		
Ammonia Total as N	mg/L	09/14/2011	N001	147.79 - 150.23	2.2		FQ	#	0.1	
Calcium	mg/L	09/14/2011	N001	147.79 - 150.23	230		FQ	#	0.06	
Chloride	mg/L	09/14/2011	N001	147.79 - 150.23	7200		FQ	#	100	
Magnesium	mg/L	09/14/2011	N001	147.79 - 150.23	87		FQ	#	0.065	
Manganese	mg/L	09/14/2011	N001	147.79 - 150.23	0.34		FQ	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	147.79 - 150.23	30		FQ	#	0.2	
Oxidation Reduction Potential	mV	09/14/2011	N001	147.79 - 150.23	48		FQ	#		
pH	s.u.	09/14/2011	N001	147.79 - 150.23	6.78		FQ	#		
Potassium	mg/L	09/14/2011	N001	147.79 - 150.23	180		JFQ	#	0.54	
Selenium	mg/L	09/14/2011	N001	147.79 - 150.23	0.00082		FQ	#	0.000032	
Sodium	mg/L	09/14/2011	N001	147.79 - 150.23	5600		FQ	#	0.33	
Specific Conductance	umhos/cm	09/14/2011	N001	147.79 - 150.23	25200		FQ	#		
Strontium	mg/L	09/14/2011	N001	147.79 - 150.23	18		FQ	#	0.00039	
Sulfate	mg/L	09/14/2011	N001	147.79 - 150.23	5300		FQ	#	100	
Temperature	C	09/14/2011	N001	147.79 - 150.23	16.94		FQ	#		
Turbidity	NTU	09/14/2011	N001	147.79 - 150.23	1.87		FQ	#		
Uranium	mg/L	09/14/2011	N001	147.79 - 150.23	0.032		FQ	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0826 WELL Just West of Disposal Cell, NECA yard, flush mount.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	10 - 20	1600		FQ	#		
Ammonia Total as N	mg/L	09/14/2011	N001	10 - 20	58		FQ	#	5	
Calcium	mg/L	09/14/2011	N001	10 - 20	390		FQ	#	0.06	
Chloride	mg/L	09/14/2011	N001	10 - 20	550		FQ	#	20	
Magnesium	mg/L	09/14/2011	N001	10 - 20	2300		FQ	#	0.065	
Manganese	mg/L	09/14/2011	N001	10 - 20	1.6		FQ	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	10 - 20	100		FQ	#	1	
Oxidation Reduction Potential	mV	09/14/2011	N001	10 - 20	250.7		FQ	#		
pH	s.u.	09/14/2011	N001	10 - 20	6.48		FQ	#		
Potassium	mg/L	09/14/2011	N001	10 - 20	140		JFQ	#	0.54	
Selenium	mg/L	09/14/2011	N001	10 - 20	0.044		FQ	#	0.0016	
Sodium	mg/L	09/14/2011	N001	10 - 20	2000		FQ	#	0.33	
Specific Conductance	umhos /cm	09/14/2011	N001	10 - 20	18137		FQ	#		
Strontium	mg/L	09/14/2011	N001	10 - 20	11		FQ	#	0.00039	
Sulfate	mg/L	09/14/2011	N001	10 - 20	13000		FQ	#	100	
Temperature	C	09/14/2011	N001	10 - 20	18.36		FQ	#		
Turbidity	NTU	09/14/2011	N001	10 - 20	6.57		FQ	#		
Uranium	mg/L	09/14/2011	N001	10 - 20	3.2		FQ	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0827 WELL Just NW of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	19.9	-	29.9	1380		FQ	#		
Ammonia Total as N	mg/L	09/14/2011	N001	19.9	-	29.9	3.1		FQ	#	0.1	
Calcium	mg/L	09/14/2011	N001	19.9	-	29.9	440		FQ	#	0.06	
Chloride	mg/L	09/14/2011	N001	19.9	-	29.9	320		FQ	#	20	
Magnesium	mg/L	09/14/2011	N001	19.9	-	29.9	780		FQ	#	0.065	
Manganese	mg/L	09/14/2011	N001	19.9	-	29.9	0.18		FQ	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	19.9	-	29.9	28		FQ	#	0.2	
Oxidation Reduction Potential	mV	09/14/2011	N001	19.9	-	29.9	63		FQ	#		
pH	s.u.	09/14/2011	N001	19.9	-	29.9	6.5		FQ	#		
Potassium	mg/L	09/14/2011	N001	19.9	-	29.9	41		FQ	#	0.54	
Selenium	mg/L	09/14/2011	N001	19.9	-	29.9	0.016		JFQ	#	0.0016	
Sodium	mg/L	09/14/2011	N001	19.9	-	29.9	1500		FQ	#	0.33	
Specific Conductance	umhos/cm	09/14/2011	N001	19.9	-	29.9	14300		FQ	#		
Strontium	mg/L	09/14/2011	N001	19.9	-	29.9	8.7		FQ	#	0.00039	
Sulfate	mg/L	09/14/2011	N001	19.9	-	29.9	6200		FQ	#	50	
Temperature	C	09/14/2011	N001	19.9	-	29.9	16.94		FQ	#		
Turbidity	NTU	09/14/2011	N001	19.9	-	29.9	9.36		FQ	#		
Uranium	mg/L	09/14/2011	N001	19.9	-	29.9	0.93		FQ	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0828 WELL Just E of upper Bob Lee Wash, NECA yard

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	5.3 - 15.3	826		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	5.3 - 15.3	0.79		F	#	0.1	
Calcium	mg/L	09/13/2011	N001	5.3 - 15.3	380		F	#	0.06	
Chloride	mg/L	09/13/2011	N001	5.3 - 15.3	210		F	#	10	
Magnesium	mg/L	09/13/2011	N001	5.3 - 15.3	250		F	#	0.065	
Manganese	mg/L	09/13/2011	N001	5.3 - 15.3	0.59		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	5.3 - 15.3	36		F	#	0.2	
Oxidation Reduction Potential	mV	09/13/2011	N001	5.3 - 15.3	179.7		F	#		
pH	s.u.	09/13/2011	N001	5.3 - 15.3	6.89		F	#		
Potassium	mg/L	09/13/2011	N001	5.3 - 15.3	16		F	#	0.54	
Selenium	mg/L	09/13/2011	N001	5.3 - 15.3	0.024		JF	#	0.0016	
Sodium	mg/L	09/13/2011	N001	5.3 - 15.3	500		F	#	0.033	
Specific Conductance	umhos/cm	09/13/2011	N001	5.3 - 15.3	5116		F	#		
Strontium	mg/L	09/13/2011	N001	5.3 - 15.3	4.7		F	#	0.00039	
Sulfate	mg/L	09/13/2011	N001	5.3 - 15.3	2200		F	#	25	
Temperature	C	09/13/2011	N001	5.3 - 15.3	18.66		F	#		
Turbidity	NTU	09/13/2011	N001	5.3 - 15.3	2.65		F	#		
Uranium	mg/L	09/13/2011	N001	5.3 - 15.3	0.89		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0830 WELL Just SE of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	7.7 - 17.7	0		F	#		
Ammonia Total as N	mg/L	09/15/2011	N001	7.7 - 17.7	0.45		F	#	0.1	
Calcium	mg/L	09/15/2011	N001	7.7 - 17.7	630		F	#	0.12	
Chloride	mg/L	09/15/2011	N001	7.7 - 17.7	55		F	#	10	
Magnesium	mg/L	09/15/2011	N001	7.7 - 17.7	61		F	#	0.013	
Manganese	mg/L	09/15/2011	N001	7.7 - 17.7	4.1		F	#	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	7.7 - 17.7	110		F	#	1	
Oxidation Reduction Potential	mV	09/15/2011	N001	7.7 - 17.7	331		F	#		
pH	s.u.	09/15/2011	N001	7.7 - 17.7	3.48		F	#		
Potassium	mg/L	09/15/2011	N001	7.7 - 17.7	7.5		F	#	0.11	
Selenium	mg/L	09/15/2011	N001	7.7 - 17.7	0.029		F	#	0.00032	
Sodium	mg/L	09/15/2011	N001	7.7 - 17.7	170		F	#	0.066	
Specific Conductance	umhos/cm	09/15/2011	N001	7.7 - 17.7	3551		F	#		
Strontium	mg/L	09/15/2011	N001	7.7 - 17.7	0.33		F	#	0.000078	
Sulfate	mg/L	09/15/2011	N001	7.7 - 17.7	1700		F	#	25	
Temperature	C	09/15/2011	N001	7.7 - 17.7	21.18		F	#		
Turbidity	NTU	09/15/2011	N001	7.7 - 17.7	2.41		F	#		
Uranium	mg/L	09/15/2011	N001	7.7 - 17.7	0.0092		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0833 WELL Just NE of Dine College tract

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	24.9	- 34.9	520		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	24.9	- 34.9	0.1	U	F	#	0.1	
Calcium	mg/L	09/14/2011	N001	24.9	- 34.9	400		F	#	0.06	
Chloride	mg/L	09/14/2011	N001	24.9	- 34.9	410		F	#	20	
Magnesium	mg/L	09/14/2011	N001	24.9	- 34.9	800		F	#	0.065	
Manganese	mg/L	09/14/2011	N001	24.9	- 34.9	0.052		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	24.9	- 34.9	150		F	#	2	
Oxidation Reduction Potential	mV	09/14/2011	N001	24.9	- 34.9	4		F	#		
pH	s.u.	09/14/2011	N001	24.9	- 34.9	6.93		F	#		
Potassium	mg/L	09/14/2011	N001	24.9	- 34.9	27		F	#	0.54	
Selenium	mg/L	09/14/2011	N001	24.9	- 34.9	0.32		F	#	0.00032	
Sodium	mg/L	09/14/2011	N001	24.9	- 34.9	1200		F	#	0.33	
Specific Conductance	umhos /cm	09/14/2011	N001	24.9	- 34.9	10515		F	#		
Strontium	mg/L	09/14/2011	N001	24.9	- 34.9	6.8		F	#	0.00039	
Sulfate	mg/L	09/14/2011	N001	24.9	- 34.9	6100		F	#	50	
Temperature	C	09/14/2011	N001	24.9	- 34.9	15.2		F	#		
Turbidity	NTU	09/14/2011	N001	24.9	- 34.9	8.42		F	#		
Uranium	mg/L	09/14/2011	N001	24.9	- 34.9	0.18		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0835 WELL Housing area between 2nd Wash and 3rd Wash

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	21.9 - 31.9	378		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	21.9 - 31.9	0.1	U	F	#	0.1	
Calcium	mg/L	09/14/2011	N001	21.9 - 31.9	420		F	#	0.06	
Chloride	mg/L	09/14/2011	N001	21.9 - 31.9	160		F	#	10	
Magnesium	mg/L	09/14/2011	N001	21.9 - 31.9	360		F	#	0.065	
Manganese	mg/L	09/14/2011	N001	21.9 - 31.9	0.0017	B	UF	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	21.9 - 31.9	71		F	#	0.5	
Oxidation Reduction Potential	mV	09/14/2011	N001	21.9 - 31.9	108		F	#		
pH	s.u.	09/14/2011	N001	21.9 - 31.9	6.92		F	#		
Potassium	mg/L	09/14/2011	N001	21.9 - 31.9	13		F	#	0.54	
Selenium	mg/L	09/14/2011	N001	21.9 - 31.9	0.36		F	#	0.00032	
Sodium	mg/L	09/14/2011	N001	21.9 - 31.9	680		F	#	0.033	
Specific Conductance	umhos/cm	09/14/2011	N001	21.9 - 31.9	6570		F	#		
Strontium	mg/L	09/14/2011	N001	21.9 - 31.9	5.2		F	#	0.00039	
Sulfate	mg/L	09/14/2011	N001	21.9 - 31.9	3700		F	#	25	
Temperature	C	09/14/2011	N001	21.9 - 31.9	17.36		F	#		
Turbidity	NTU	09/14/2011	N001	21.9 - 31.9	6.57		F	#		
Uranium	mg/L	09/14/2011	N001	21.9 - 31.9	0.07		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0836 WELL SW part of Blueeyes Ranch, N of US Hwy 64

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	26.8	- 36.8	312		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	26.8	- 36.8	0.1	U	F	#	0.1	
Calcium	mg/L	09/13/2011	N001	26.8	- 36.8	510		F	#	0.12	
Chloride	mg/L	09/13/2011	N001	26.8	- 36.8	44		F	#	10	
Magnesium	mg/L	09/13/2011	N001	26.8	- 36.8	240		F	#	0.013	
Manganese	mg/L	09/13/2011	N001	26.8	- 36.8	0.69		F	#	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	26.8	- 36.8	28		F	#	0.2	
Oxidation Reduction Potential	mV	09/13/2011	N001	26.8	- 36.8	-7		F	#		
pH	s.u.	09/13/2011	N001	26.8	- 36.8	6.87		F	#		
Potassium	mg/L	09/13/2011	N001	26.8	- 36.8	7.8		F	#	0.11	
Selenium	mg/L	09/13/2011	N001	26.8	- 36.8	0.21		F	#	0.00032	
Sodium	mg/L	09/13/2011	N001	26.8	- 36.8	330		F	#	0.066	
Specific Conductance	umhos/cm	09/13/2011	N001	26.8	- 36.8	4262		F	#		
Strontium	mg/L	09/13/2011	N001	26.8	- 36.8	5.9		F	#	0.000078	
Sulfate	mg/L	09/13/2011	N001	26.8	- 36.8	2500		F	#	25	
Temperature	C	09/13/2011	N001	26.8	- 36.8	15.37		F	#		
Turbidity	NTU	09/13/2011	N001	26.8	- 36.8	9.59		F	#		
Uranium	mg/L	09/13/2011	N001	26.8	- 36.8	0.043		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0837 WELL Center of Blueeyes Ranch, N of US Hwy 64

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	17 - 27.1	534		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	17 - 27.1	0.1	U	F	#	0.1	
Calcium	mg/L	09/13/2011	N001	17 - 27.1	570		F	#	0.12	
Chloride	mg/L	09/13/2011	N001	17 - 27.1	65		F	#	10	
Magnesium	mg/L	09/13/2011	N001	17 - 27.1	220		F	#	0.013	
Manganese	mg/L	09/13/2011	N001	17 - 27.1	4.7		F	#	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	17 - 27.1	8.8		F	#	0.1	
Oxidation Reduction Potential	mV	09/13/2011	N001	17 - 27.1	-2		F	#		
pH	s.u.	09/13/2011	N001	17 - 27.1	6.75		F	#		
Potassium	mg/L	09/13/2011	N001	17 - 27.1	14		F	#	0.11	
Selenium	mg/L	09/13/2011	N001	17 - 27.1	0.2		F	#	0.00032	
Sodium	mg/L	09/13/2011	N001	17 - 27.1	330		F	#	0.066	
Specific Conductance	umhos/cm	09/13/2011	N001	17 - 27.1	4298		F	#		
Strontium	mg/L	09/13/2011	N001	17 - 27.1	5.7		F	#	0.000078	
Sulfate	mg/L	09/13/2011	N001	17 - 27.1	2400		F	#	25	
Temperature	C	09/13/2011	N001	17 - 27.1	15.74		F	#		
Turbidity	NTU	09/13/2011	N001	17 - 27.1	9.26		F	#		
Uranium	mg/L	09/13/2011	N001	17 - 27.1	0.045		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0838 WELL W part of Dine College tract

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/12/2011	N001	21.9	-	31.9	434		F	#		
Ammonia Total as N	mg/L	09/12/2011	N001	21.9	-	31.9	0.1	U	F	#	0.1	
Calcium	mg/L	09/12/2011	N001	21.9	-	31.9	560		F	#	0.06	
Chloride	mg/L	09/12/2011	N001	21.9	-	31.9	650		F	#	20	
Magnesium	mg/L	09/12/2011	N001	21.9	-	31.9	1300		F	#	0.065	
Manganese	mg/L	09/12/2011	N001	21.9	-	31.9	0.053		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/12/2011	N001	21.9	-	31.9	590		F	#	5	
Oxidation Reduction Potential	mV	09/12/2011	N001	21.9	-	31.9	-11		F	#		
pH	s.u.	09/12/2011	N001	21.9	-	31.9	6.94		F	#		
Potassium	mg/L	09/12/2011	N001	21.9	-	31.9	35		F	#	0.54	
Selenium	mg/L	09/12/2011	N001	21.9	-	31.9	0.98		F	#	0.0016	
Sodium	mg/L	09/12/2011	N001	21.9	-	31.9	1900		F	#	0.66	
Specific Conductance	umhos/cm	09/12/2011	N001	21.9	-	31.9	15040		F	#		
Strontium	mg/L	09/12/2011	N001	21.9	-	31.9	13		F	#	0.00039	
Sulfate	mg/L	09/12/2011	N001	21.9	-	31.9	8000		F	#	50	
Temperature	C	09/12/2011	N001	21.9	-	31.9	15.84		F	#		
Turbidity	NTU	09/12/2011	N001	21.9	-	31.9	8.44		F	#		
Uranium	mg/L	09/12/2011	N001	21.9	-	31.9	0.13		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0843 WELL E part of Blueeyes Ranch, N of US Hwy 64

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	11.9 - 21.9	263		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	11.9 - 21.9	0.1	U	F	#	0.1	
Calcium	mg/L	09/13/2011	N001	11.9 - 21.9	390		F	#	0.012	
Chloride	mg/L	09/13/2011	N001	11.9 - 21.9	51		F	#	10	
Magnesium	mg/L	09/13/2011	N001	11.9 - 21.9	140		F	#	0.013	
Manganese	mg/L	09/13/2011	N001	11.9 - 21.9	1.6		F	#	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	11.9 - 21.9	5.7		F	#	0.05	
Oxidation Reduction Potential	mV	09/13/2011	N001	11.9 - 21.9	-13		F	#		
pH	s.u.	09/13/2011	N001	11.9 - 21.9	6.98		F	#		
Potassium	mg/L	09/13/2011	N001	11.9 - 21.9	12		F	#	0.11	
Selenium	mg/L	09/13/2011	N001	11.9 - 21.9	0.18		F	#	0.00032	
Sodium	mg/L	09/13/2011	N001	11.9 - 21.9	190		F	#	0.33	
Specific Conductance	umhos/cm	09/13/2011	N001	11.9 - 21.9	2947		F	#		
Strontium	mg/L	09/13/2011	N001	11.9 - 21.9	4.1		F	#	0.000078	
Sulfate	mg/L	09/13/2011	N001	11.9 - 21.9	1600		F	#	25	
Temperature	C	09/13/2011	N001	11.9 - 21.9	17.96		F	#		
Turbidity	NTU	09/13/2011	N001	11.9 - 21.9	2.07		F	#		
Uranium	mg/L	09/13/2011	N001	11.9 - 21.9	0.027		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0844 WELL W part of Multipurpose Center tract, W of US Hwy 666, flush mount.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/12/2011	N001	28.91	-	38.91	688		F	#		
Ammonia Total as N	mg/L	09/12/2011	N001	28.91	-	38.91	0.1	U	F	#	0.1	
Calcium	mg/L	09/12/2011	N001	28.91	-	38.91	510		F	#	0.06	
Chloride	mg/L	09/12/2011	N001	28.91	-	38.91	810		F	#	20	
Magnesium	mg/L	09/12/2011	N001	28.91	-	38.91	1900		F	#	0.065	
Manganese	mg/L	09/12/2011	N001	28.91	-	38.91	0.011	B	F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/12/2011	N001	28.91	-	38.91	700		F	#	5	
Oxidation Reduction Potential	mV	09/12/2011	N001	28.91	-	38.91	-29		F	#		
pH	s.u.	09/12/2011	N001	28.91	-	38.91	7.27		F	#		
Potassium	mg/L	09/12/2011	N001	28.91	-	38.91	69		F	#	0.54	
Selenium	mg/L	09/12/2011	N001	28.91	-	38.91	1.6		F	#	0.0016	
Sodium	mg/L	09/12/2011	N001	28.91	-	38.91	2200		F	#	0.33	
Specific Conductance	umhos/cm	09/12/2011	N001	28.91	-	38.91	17850		F	#		
Strontium	mg/L	09/12/2011	N001	28.91	-	38.91	13		F	#	0.00039	
Sulfate	mg/L	09/12/2011	N001	28.91	-	38.91	9300		F	#	50	
Temperature	C	09/12/2011	N001	28.91	-	38.91	15.69		F	#		
Turbidity	NTU	09/12/2011	N001	28.91	-	38.91	3.02		F	#		
Uranium	mg/L	09/12/2011	N001	28.91	-	38.91	0.17		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 0848 WELL Just W of Shiprock High School track, S of US Hwy 64

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	45	- 142.58	1860		F	#		
Ammonia Total as N	mg/L	09/14/2011	N001	45	- 142.58	9.9		F	#	0.5	
Calcium	mg/L	09/14/2011	N001	45	- 142.58	350		F	#	0.06	
Chloride	mg/L	09/14/2011	N001	45	- 142.58	1100		F	#	40	
Magnesium	mg/L	09/14/2011	N001	45	- 142.58	490		F	#	0.065	
Manganese	mg/L	09/14/2011	N001	45	- 142.58	2.8		F	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	45	- 142.58	0.02		F	#	0.01	
Oxidation Reduction Potential	mV	09/14/2011	N001	45	- 142.58	-24		F	#		
pH	s.u.	09/14/2011	N001	45	- 142.58	6.67		F	#		
Potassium	mg/L	09/14/2011	N001	45	- 142.58	51		JF	#	0.54	
Selenium	mg/L	09/14/2011	N001	45	- 142.58	0.045		F	#	0.00032	
Sodium	mg/L	09/14/2011	N001	45	- 142.58	6200		F	#	0.33	
Specific Conductance	umhos/cm	09/14/2011	N001	45	- 142.58	24300		F	#		
Strontium	mg/L	09/14/2011	N001	45	- 142.58	19		F	#	0.00039	
Sulfate	mg/L	09/14/2011	N001	45	- 142.58	16000		F	#	100	
Temperature	C	09/14/2011	N001	45	- 142.58	16.02		F	#		
Turbidity	NTU	09/14/2011	N001	45	- 142.58	8.52		F	#		
Uranium	mg/L	09/14/2011	N001	45	- 142.58	0.021		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 1007 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	36.8 - 46.3	1407		FQ	#		
Ammonia Total as N	mg/L	09/14/2011	N001	36.8 - 46.3	18		FQ	#	0.5	
Calcium	mg/L	09/14/2011	N001	36.8 - 46.3	510		FQ	#	0.06	
Chloride	mg/L	09/14/2011	N001	36.8 - 46.3	640		FQ	#	40	
Magnesium	mg/L	09/14/2011	N001	36.8 - 46.3	2600		FQ	#	0.65	
Manganese	mg/L	09/14/2011	N001	36.8 - 46.3	1.3		FQ	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	36.8 - 46.3	720		FQ	#	5	
Oxidation Reduction Potential	mV	09/14/2011	N001	36.8 - 46.3	46		FQ	#		
pH	s.u.	09/14/2011	N001	36.8 - 46.3	6.58		FQ	#		
Potassium	mg/L	09/14/2011	N001	36.8 - 46.3	200		JFQ	#	0.54	
Selenium	mg/L	09/14/2011	N001	36.8 - 46.3	0.23		FQ	#	0.0016	
Sodium	mg/L	09/14/2011	N001	36.8 - 46.3	2600		FQ	#	0.33	
Specific Conductance	umhos /cm	09/14/2011	N001	36.8 - 46.3	20500		FQ	#		
Strontium	mg/L	09/14/2011	N001	36.8 - 46.3	13		FQ	#	0.00039	
Sulfate	mg/L	09/14/2011	N001	36.8 - 46.3	13000		FQ	#	100	
Temperature	C	09/14/2011	N001	36.8 - 46.3	16.6		FQ	#		
Turbidity	NTU	09/14/2011	N001	36.8 - 46.3	4.31		FQ	#		
Uranium	mg/L	09/14/2011	N001	36.8 - 46.3	2.9		FQ	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 1049 WELL Many Devils Wash, just E of knickpoint, flush mount.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/15/2011	0001	4.3	-	9.3	0.1	U	FQ	#	0.1	
Calcium	mg/L	09/15/2011	0001	4.3	-	9.3	420		FQ	#	0.06	
Chloride	mg/L	09/15/2011	0001	4.3	-	9.3	1400		FQ	#	40	
Magnesium	mg/L	09/15/2011	0001	4.3	-	9.3	1400		FQ	#	0.065	
Manganese	mg/L	09/15/2011	0001	4.3	-	9.3	0.0035	B	UFQ	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	0001	4.3	-	9.3	550		FQ	#	5	
Oxidation Reduction Potential	mV	09/15/2011	N001	4.3	-	9.3	162.3		FQ	#		
pH	s.u.	09/15/2011	N001	4.3	-	9.3	7.37		FQ	#		
Potassium	mg/L	09/15/2011	0001	4.3	-	9.3	63		JFQ	#	0.54	
Selenium	mg/L	09/15/2011	0001	4.3	-	9.3	1.3		FQ	#	0.0016	
Sodium	mg/L	09/15/2011	0001	4.3	-	9.3	6200		FQ	#	0.33	
Specific Conductance	umhos /cm	09/15/2011	N001	4.3	-	9.3	27417		FQ	#		
Strontium	mg/L	09/15/2011	0001	4.3	-	9.3	9.9		FQ	#	0.00039	
Sulfate	mg/L	09/15/2011	0001	4.3	-	9.3	17000		FQ	#	100	
Temperature	C	09/15/2011	N001	4.3	-	9.3	16.92		FQ	#		
Turbidity	NTU	09/15/2011	N001	4.3	-	9.3	1000	>	FQ	#		
Uranium	mg/L	09/15/2011	0001	4.3	-	9.3	0.2		FQ	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 1058 WELL

Parameter	Units	Sample Date	ID	Depth-Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	41.7	- 51.2	806		FQ	#		
Ammonia Total as N	mg/L	09/13/2011	N001	41.7	- 51.2	4.5		FQ	#	0.1	
Calcium	mg/L	09/13/2011	N001	41.7	- 51.2	240		FQ	#	0.06	
Chloride	mg/L	09/13/2011	N001	41.7	- 51.2	1200		FQ	#	20	
Magnesium	mg/L	09/13/2011	N001	41.7	- 51.2	130		FQ	#	0.065	
Manganese	mg/L	09/13/2011	N001	41.7	- 51.2	0.2		FQ	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	41.7	- 51.2	0.01	U	FQ	#	0.01	
Oxidation Reduction Potential	mV	09/13/2011	N001	41.7	- 51.2	-108		FQ	#		
pH	s.u.	09/13/2011	N001	41.7	- 51.2	7.13		FQ	#		
Potassium	mg/L	09/13/2011	N001	41.7	- 51.2	22		FQ	#	0.54	
Selenium	mg/L	09/13/2011	N001	41.7	- 51.2	0.00037		JFQ	#	0.000032	
Sodium	mg/L	09/13/2011	N001	41.7	- 51.2	2700		FQ	#	0.33	
Specific Conductance	umhos/cm	09/13/2011	N001	41.7	- 51.2	13069		FQ	#		
Strontium	mg/L	09/13/2011	N001	41.7	- 51.2	11		FQ	#	0.00039	
Sulfate	mg/L	09/13/2011	N001	41.7	- 51.2	5600		FQ	#	50	
Temperature	C	09/13/2011	N001	41.7	- 51.2	17.13		FQ	#		
Turbidity	NTU	09/13/2011	N001	41.7	- 51.2	5.65		FQ	#		
Uranium	mg/L	09/13/2011	N001	41.7	- 51.2	0.0049		FQ	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 1059 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft.BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	39.5 - 49	820		FQ	#		
Ammonia Total as N	mg/L	09/13/2011	N001	39.5 - 49	3.7		FQ	#	0.1	
Calcium	mg/L	09/13/2011	N001	39.5 - 49	340		FQ	#	0.06	
Chloride	mg/L	09/13/2011	N001	39.5 - 49	670		FQ	#	20	
Magnesium	mg/L	09/13/2011	N001	39.5 - 49	420		FQ	#	0.065	
Manganese	mg/L	09/13/2011	N001	39.5 - 49	0.077		FQ	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	39.5 - 49	330		FQ	#	2	
Oxidation Reduction Potential	mV	09/13/2011	N001	39.5 - 49	172.5		FQ	#		
pH	s.u.	09/13/2011	N001	39.5 - 49	6.92		FQ	#		
Potassium	mg/L	09/13/2011	N001	39.5 - 49	38		FQ	#	0.54	
Selenium	mg/L	09/13/2011	N001	39.5 - 49	0.015		FQ	#	0.000032	
Sodium	mg/L	09/13/2011	N001	39.5 - 49	3400		FQ	#	0.33	
Specific Conductance	umhos /cm	09/13/2011	N001	39.5 - 49	17846		FQ	#		
Strontium	mg/L	09/13/2011	N001	39.5 - 49	17		FQ	#	0.00039	
Sulfate	mg/L	09/13/2011	N001	39.5 - 49	8900		FQ	#	50	
Temperature	C	09/13/2011	N001	39.5 - 49	16.16		FQ	#		
Turbidity	NTU	09/13/2011	N001	39.5 - 49	6.75		FQ	#		
Uranium	mg/L	09/13/2011	N001	39.5 - 49	0.069		FQ	#	0.0000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 1068 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	0001	6.95 - 8.95	840		FQ	#		
Ammonia Total as N	mg/L	09/14/2011	0001	6.95 - 8.95	34		FQ	#	2	
Calcium	mg/L	09/14/2011	0001	6.95 - 8.95	470		FQ	#	0.06	
Magnesium	mg/L	09/14/2011	0001	6.95 - 8.95	1000		FQ	#	0.065	
Manganese	mg/L	09/14/2011	0001	6.95 - 8.95	1.4		FQ	#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	0001	6.95 - 8.95	300		FQ	#	2	
Oxidation Reduction Potential	mV	09/14/2011	N001	6.95 - 8.95	219.2		FQ	#		
pH	s.u.	09/14/2011	N001	6.95 - 8.95	6.84		FQ	#		
Potassium	mg/L	09/14/2011	0001	6.95 - 8.95	76		FQ	#	0.54	
Selenium	mg/L	09/14/2011	0001	6.95 - 8.95	0.024		FQ	#	0.00032	
Sodium	mg/L	09/14/2011	0001	6.95 - 8.95	1000		FQ	#	0.33	
Specific Conductance	umhos/cm	09/14/2011	N001	6.95 - 8.95	11319		FQ	#		
Strontium	mg/L	09/14/2011	0001	6.95 - 8.95	9.3		FQ	#	0.00039	
Temperature	C	09/14/2011	N001	6.95 - 8.95	18.23		FQ	#		
Turbidity	NTU	09/14/2011	N001	6.95 - 8.95	1000	>	FQ	#		
Uranium	mg/L	09/14/2011	0001	6.95 - 8.95	0.74		FQ	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 1070 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/12/2011	0001	52.5 - 62	808			#		
Ammonia Total as N	mg/L	09/12/2011	0001	52.5 - 62	4.7			#	0.1	
Calcium	mg/L	09/12/2011	0001	52.5 - 62	410			#	0.12	
Chloride	mg/L	09/12/2011	0001	52.5 - 62	1300			#	40	
Magnesium	mg/L	09/12/2011	0001	52.5 - 62	1200			#	0.13	
Manganese	mg/L	09/12/2011	0001	52.5 - 62	0.25			#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/12/2011	0001	52.5 - 62	700	N	J	#	5	
Oxidation Reduction Potential	mV	09/12/2011	N001	52.5 - 62	259			#		
pH	s.u.	09/12/2011	N001	52.5 - 62	6.96			#		
Potassium	mg/L	09/12/2011	0001	52.5 - 62	90	EN	J	#	1.1	
Selenium	mg/L	09/12/2011	0001	52.5 - 62	2.8			#	0.00032	
Sodium	mg/L	09/12/2011	0001	52.5 - 62	5600			#	0.33	
Specific Conductance	umhos/cm	09/12/2011	N001	52.5 - 62	27068			#		
Strontium	mg/L	09/12/2011	0001	52.5 - 62	10			#	0.00078	
Sulfate	mg/L	09/12/2011	0001	52.5 - 62	16000			#	100	
Temperature	C	09/12/2011	N001	52.5 - 62	18.8			#		
Turbidity	NTU	09/12/2011	N001	52.5 - 62	443			#		
Uranium	mg/L	09/12/2011	0001	52.5 - 62	0.086			#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 1071 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	36.5 - 46	622		#		
Ammonia Total as N	mg/L	09/13/2011	N001	36.5 - 46	26		#	1	
Calcium	mg/L	09/13/2011	N001	36.5 - 46	480		#	0.12	
Chloride	mg/L	09/13/2011	N001	36.5 - 46	1100		#	40	
Magnesium	mg/L	09/13/2011	N001	36.5 - 46	1300		#	0.13	
Manganese	mg/L	09/13/2011	N001	36.5 - 46	2.7		#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	36.5 - 46	680		#	5	
Oxidation Reduction Potential	mV	09/13/2011	N001	36.5 - 46	127.7		#		
pH	s.u.	09/13/2011	N001	36.5 - 46	7.13		#		
Potassium	mg/L	09/13/2011	N001	36.5 - 46	130	J	#	1.1	
Selenium	mg/L	09/13/2011	N001	36.5 - 46	3		#	0.00032	
Sodium	mg/L	09/13/2011	N001	36.5 - 46	4300		#	0.33	
Specific Conductance	umhos /cm	09/13/2011	N001	36.5 - 46	23400		#		
Strontium	mg/L	09/13/2011	N001	36.5 - 46	9.2		#	0.00078	
Sulfate	mg/L	09/13/2011	N001	36.5 - 46	14000		#	100	
Temperature	C	09/13/2011	N001	36.5 - 46	22.41		#		
Turbidity	NTU	09/13/2011	N001	36.5 - 46	8.14		#		
Uranium	mg/L	09/13/2011	N001	36.5 - 46	0.15		#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 1073 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	40.5 - 50	462		FQ	#		
Ammonia Total as N	mg/L	09/13/2011	N001	40.5 - 50	48		FQ	#	2	
Calcium	mg/L	09/13/2011	N001	40.5 - 50	550		FQ	#	0.12	
Chloride	mg/L	09/13/2011	N001	40.5 - 50	980		FQ	#	40	
Magnesium	mg/L	09/13/2011	N001	40.5 - 50	1900		FQ	#	0.13	
Manganese	mg/L	09/13/2011	N001	40.5 - 50	0.82		FQ	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	40.5 - 50	1300		FQ	#	10	
Oxidation Reduction Potential	mV	09/13/2011	N001	40.5 - 50	145.8		FQ	#		
pH	s.u.	09/13/2011	N001	40.5 - 50	7.13		FQ	#		
Potassium	mg/L	09/13/2011	N001	40.5 - 50	140		JFQ	#	1.1	
Selenium	mg/L	09/13/2011	N001	40.5 - 50	2.5		FQ	#	0.00032	
Sodium	mg/L	09/13/2011	N001	40.5 - 50	2600		FQ	#	0.33	
Specific Conductance	umhos/cm	09/13/2011	N001	40.5 - 50	20900		FQ	#		
Strontium	mg/L	09/13/2011	N001	40.5 - 50	10		FQ	#	0.00078	
Sulfate	mg/L	09/13/2011	N001	40.5 - 50	9100		FQ	#	100	
Temperature	C	09/13/2011	N001	40.5 - 50	16.81		FQ	#		
Turbidity	NTU	09/13/2011	N001	40.5 - 50	3.65		FQ	#		
Uranium	mg/L	09/13/2011	N001	40.5 - 50	0.063		FQ	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 1074 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/15/2011	N001	27 - 36.5	1216		FQ	#		
Ammonia Total as N	mg/L	09/15/2011	N001	27 - 36.5	8.6		FQ	#	0.2	
Calcium	mg/L	09/15/2011	N001	27 - 36.5	570		FQ	#	0.12	
Chloride	mg/L	09/15/2011	N001	27 - 36.5	1000		FQ	#	40	
Magnesium	mg/L	09/15/2011	N001	27 - 36.5	2300		FQ	#	0.13	
Manganese	mg/L	09/15/2011	N001	27 - 36.5	1.9		FQ	#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2011	N001	27 - 36.5	1100		FQ	#	10	
Oxidation Reduction Potential	mV	09/15/2011	N001	27 - 36.5	130		FQ	#		
pH	s.u.	09/15/2011	N001	27 - 36.5	6.61		FQ	#		
Potassium	mg/L	09/15/2011	N001	27 - 36.5	61		JFQ	#	1.1	
Selenium	mg/L	09/15/2011	N001	27 - 36.5	0.33		FQ	#	0.0016	
Sodium	mg/L	09/15/2011	N001	27 - 36.5	2600		FQ	#	0.33	
Specific Conductance	umhos /cm	09/15/2011	N001	27 - 36.5	20350		FQ	#		
Strontium	mg/L	09/15/2011	N001	27 - 36.5	11		FQ	#	0.00078	
Sulfate	mg/L	09/15/2011	N001	27 - 36.5	8200		FQ	#	100	
Temperature	C	09/15/2011	N001	27 - 36.5	16.96		FQ	#		
Turbidity	NTU	09/15/2011	N001	27 - 36.5	9.87		FQ	#		
Uranium	mg/L	09/15/2011	N001	27 - 36.5	2.1		FQ	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 1078 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/12/2011	N001	35.5 - 45	800			#		
Ammonia Total as N	mg/L	09/12/2011	N001	35.5 - 45	2.5			#	0.1	
Calcium	mg/L	09/12/2011	N001	35.5 - 45	440			#	0.12	
Chloride	mg/L	09/12/2011	N001	35.5 - 45	1100			#	40	
Magnesium	mg/L	09/12/2011	N001	35.5 - 45	1200			#	0.13	
Manganese	mg/L	09/12/2011	N001	35.5 - 45	0.083			#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/12/2011	N001	35.5 - 45	580			#	5	
Oxidation Reduction Potential	mV	09/12/2011	N001	35.5 - 45	203.8			#		
pH	s.u.	09/12/2011	N001	35.5 - 45	7.02			#		
Potassium	mg/L	09/12/2011	N001	35.5 - 45	81		J	#	1.1	
Selenium	mg/L	09/12/2011	N001	35.5 - 45	2.9			#	0.00032	
Sodium	mg/L	09/12/2011	N001	35.5 - 45	5300			#	0.33	
Specific Conductance	umhos/cm	09/12/2011	N001	35.5 - 45	23877			#		
Strontium	mg/L	09/12/2011	N001	35.5 - 45	11			#	0.00078	
Sulfate	mg/L	09/12/2011	N001	35.5 - 45	14000			#	100	
Temperature	C	09/12/2011	N001	35.5 - 45	17.62			#		
Turbidity	NTU	09/12/2011	N001	35.5 - 45	5.85			#		
Uranium	mg/L	09/12/2011	N001	35.5 - 45	0.12			#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 1079 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	10.5 - 20	300		F	#		
Ammonia Total as N	mg/L	09/13/2011	N001	10.5 - 20	0.1	U	F	#	0.1	
Calcium	mg/L	09/13/2011	N001	10.5 - 20	820		F	#	0.06	
Chloride	mg/L	09/13/2011	N001	10.5 - 20	190		F	#	10	
Magnesium	mg/L	09/13/2011	N001	10.5 - 20	170		F	#	0.013	
Manganese	mg/L	09/13/2011	N001	10.5 - 20	0.019		F	#	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	10.5 - 20	140		F	#	1	
Oxidation Reduction Potential	mV	09/13/2011	N001	10.5 - 20	156		F	#		
pH	s.u.	09/13/2011	N001	10.5 - 20	6.73		F	#		
Potassium	mg/L	09/13/2011	N001	10.5 - 20	13		F	#	0.11	
Selenium	mg/L	09/13/2011	N001	10.5 - 20	0.48		F	#	0.00032	
Sodium	mg/L	09/13/2011	N001	10.5 - 20	350		F	#	0.033	
Specific Conductance	umhos /cm	09/13/2011	N001	10.5 - 20	5100		F	#		
Strontium	mg/L	09/13/2011	N001	10.5 - 20	7.1		F	#	0.000078	
Sulfate	mg/L	09/13/2011	N001	10.5 - 20	2500		F	#	25	
Temperature	C	09/13/2011	N001	10.5 - 20	18.09		F	#		
Turbidity	NTU	09/13/2011	N001	10.5 - 20	9.28		F	#		
Uranium	mg/L	09/13/2011	N001	10.5 - 20	0.036		F	#	0.000029	

General Water Quality Data by Location (USEE105) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 1087 TREATMENT SYSTEM Sump from interceptor trenches in Bob Lee Wash

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	0	-	0	760			#		
Ammonia Total as N	mg/L	09/14/2011	N001	0	-	0	160			#	10	
Calcium	mg/L	09/14/2011	N001	0	-	0	480			#	0.06	
Chloride	mg/L	09/14/2011	N001	0	-	0	300			#	20	
Magnesium	mg/L	09/14/2011	N001	0	-	0	1400			#	0.065	
Manganese	mg/L	09/14/2011	N001	0	-	0	1.2			#	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	0	-	0	340			#	2	
Oxidation Reduction Potential	mV	09/14/2011	N001	0	-	0	216.7			#		
pH	s.u.	09/14/2011	N001	0	-	0	6.73			#		
Potassium	mg/L	09/14/2011	N001	0	-	0	160			#	0.54	
Selenium	mg/L	09/14/2011	N001	0	-	0	0.034			#	0.0016	
Sodium	mg/L	09/14/2011	N001	0	-	0	1200			#	0.16	
Specific Conductance	umhos/cm	09/14/2011	N001	0	-	0	14900			#		
Strontium	mg/L	09/14/2011	N001	0	-	0	9.7			#	0.00039	
Sulfate	mg/L	09/14/2011	N001	0	-	0	8100			#	50	
Temperature	C	09/14/2011	N001	0	-	0	18.64			#		
Turbidity	NTU	09/14/2011	N001	0	-	0	7.36			#		
Uranium	mg/L	09/14/2011	N001	0	-	0	0.58			#	0.00015	

General Water Quality Data by Location (USEE105) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 1088 TREATMENT SYSTEM Sump from interceptor trenches in Many Devils Wash

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	0001	0	-	0	840			#		
Ammonia Total as N	mg/L	09/13/2011	0001	0	-	0	0.16			#	0.1	
Calcium	mg/L	09/13/2011	0001	0	-	0	460			#	0.24	
Chloride	mg/L	09/13/2011	0001	0	-	0	1400			#	100	
Magnesium	mg/L	09/13/2011	0001	0	-	0	1300			#	0.26	
Manganese	mg/L	09/13/2011	0001	0	-	0	0.077	B		#	0.0023	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	0001	0	-	0	640			#	5	
Oxidation Reduction Potential	mV	09/13/2011	N001	0	-	0	173.2			#		
pH	s.u.	09/13/2011	N001	0	-	0	7.19			#		
Potassium	mg/L	09/13/2011	0001	0	-	0	69		J	#	2.2	
Selenium	mg/L	09/13/2011	0001	0	-	0	1.7			#	0.00032	
Sodium	mg/L	09/13/2011	0001	0	-	0	6700			#	0.66	
Specific Conductance	umhos /cm	09/13/2011	N001	0	-	0	31347			#		
Strontium	mg/L	09/13/2011	0001	0	-	0	10			#	0.0016	
Sulfate	mg/L	09/13/2011	0001	0	-	0	19000			#	250	
Temperature	C	09/13/2011	N001	0	-	0	20.84			#		
Turbidity	NTU	09/13/2011	N001	0	-	0	40			#		
Uranium	mg/L	09/13/2011	0001	0	-	0	0.16			#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 1091 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	33	-	43	1066			#		
Ammonia Total as N	mg/L	09/13/2011	0001	33	-	43	3			#	0.1	
Calcium	mg/L	09/13/2011	0001	33	-	43	540			#	0.12	
Chloride	mg/L	09/13/2011	0001	33	-	43	910			#	40	
Magnesium	mg/L	09/13/2011	0001	33	-	43	2900			#	0.13	
Manganese	mg/L	09/13/2011	0001	33	-	43	2			#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	0001	33	-	43	1300			#	10	
Oxidation Reduction Potential	mV	09/13/2011	N001	33	-	43	62.3			#		
pH	s.u.	09/13/2011	N001	33	-	43	6.83			#		
Potassium	mg/L	09/13/2011	0001	33	-	43	98		J	#	1.1	
Selenium	mg/L	09/13/2011	0001	33	-	43	0.78			#	0.00032	
Sodium	mg/L	09/13/2011	0001	33	-	43	3400			#	0.33	
Specific Conductance	umhos/cm	09/13/2011	N001	33	-	43	25020			#		
Strontium	mg/L	09/13/2011	0001	33	-	43	15			#	0.00078	
Sulfate	mg/L	09/13/2011	0001	33	-	43	13000			#	100	
Temperature	C	09/13/2011	N001	33	-	43	19.52			#		
Turbidity	NTU	09/13/2011	N001	33	-	43	559			#		
Uranium	mg/L	09/13/2011	0001	33	-	43	0.11			#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 1092 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	0001	33 - 43	600			#		
Ammonia Total as N	mg/L	09/13/2011	0001	33 - 43	100			#	10	
Calcium	mg/L	09/13/2011	0001	33 - 43	520			#	0.12	
Chloride	mg/L	09/13/2011	0001	33 - 43	910			#	40	
Magnesium	mg/L	09/13/2011	0001	33 - 43	1500			#	0.13	
Manganese	mg/L	09/13/2011	0001	33 - 43	5.5			#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	0001	33 - 43	860			#	10	
Oxidation Reduction Potential	mV	09/13/2011	N001	33 - 43	168.8			#		
pH	s.u.	09/13/2011	N001	33 - 43	6.86			#		
Potassium	mg/L	09/13/2011	0001	33 - 43	120		J	#	1.1	
Selenium	mg/L	09/13/2011	0001	33 - 43	1.8			#	0.00032	
Sodium	mg/L	09/13/2011	0001	33 - 43	4200			#	0.33	
Specific Conductance	umhos/cm	09/13/2011	N001	33 - 43	22630			#		
Strontium	mg/L	09/13/2011	0001	33 - 43	10			#	0.00078	
Sulfate	mg/L	09/13/2011	0001	33 - 43	12000			#	100	
Temperature	C	09/13/2011	N001	33 - 43	17.34			#		
Turbidity	NTU	09/13/2011	N001	33 - 43	120			#		
Uranium	mg/L	09/13/2011	0001	33 - 43	0.092			#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 1093R WELL a replacement extraction well for 1093

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/13/2011	N001	34	-	38	644			#		
Ammonia Total as N	mg/L	09/13/2011	N001	34	-	38	410			#	20	
Calcium	mg/L	09/13/2011	N001	34	-	38	1100			#	0.12	
Chloride	mg/L	09/13/2011	N001	34	-	38	570			#	40	
Magnesium	mg/L	09/13/2011	N001	34	-	38	1800			#	0.13	
Manganese	mg/L	09/13/2011	N001	34	-	38	30			#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/13/2011	N001	34	-	38	2200			#	20	
Oxidation Reduction Potential	mV	09/13/2011	N001	34	-	38	282.6			#		
pH	s.u.	09/13/2011	N001	34	-	38	6.34			#		
Potassium	mg/L	09/13/2011	N001	34	-	38	200		J	#	1.1	
Selenium	mg/L	09/13/2011	N001	34	-	38	0.6			#	0.00032	
Sodium	mg/L	09/13/2011	N001	34	-	38	1600			#	0.066	
Specific Conductance	umhos/cm	09/13/2011	N001	34	-	38	22052			#		
Strontium	mg/L	09/13/2011	N001	34	-	38	11			#	0.00078	
Sulfate	mg/L	09/13/2011	N001	34	-	38	5200			#	100	
Temperature	C	09/13/2011	N001	34	-	38	21.91			#		
Turbidity	NTU	09/13/2011	N001	34	-	38	2.1			#		
Uranium	mg/L	09/13/2011	N001	34	-	38	0.12			#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 1095 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/12/2011	N001	39 - 49	414			#		
Ammonia Total as N	mg/L	09/12/2011	N001	39 - 49	520			#	20	
Ammonia Total as N	mg/L	09/12/2011	N002	39 - 49	500			#	20	
Calcium	mg/L	09/12/2011	N001	39 - 49	840			#	0.12	
Calcium	mg/L	09/12/2011	N002	39 - 49	830			#	0.12	
Chloride	mg/L	09/12/2011	N001	39 - 49	260			#	40	
Chloride	mg/L	09/12/2011	N002	39 - 49	260			#	40	
Magnesium	mg/L	09/12/2011	N001	39 - 49	1300			#	0.13	
Magnesium	mg/L	09/12/2011	N002	39 - 49	1200			#	0.13	
Manganese	mg/L	09/12/2011	N001	39 - 49	37			#	0.0011	
Manganese	mg/L	09/12/2011	N002	39 - 49	36			#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/12/2011	N001	39 - 49	1800			#	10	
Nitrate + Nitrite as Nitrogen	mg/L	09/12/2011	N002	39 - 49	1500			#	10	
Oxidation Reduction Potential	mV	09/12/2011	N001	39 - 49	241.3			#		
pH	s.u.	09/12/2011	N001	39 - 49	6.72			#		
Potassium	mg/L	09/12/2011	N001	39 - 49	150			#	1.1	
Potassium	mg/L	09/12/2011	N002	39 - 49	150			#	1.1	
Selenium	mg/L	09/12/2011	N001	39 - 49	0.17			#	0.00032	
Selenium	mg/L	09/12/2011	N002	39 - 49	0.19			#	0.00032	
Sodium	mg/L	09/12/2011	N001	39 - 49	950			#	0.066	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 1095 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Sodium	mg/L	09/12/2011	N002	39	-	49	960			#	0.066	
Specific Conductance	umhos /cm	09/12/2011	N001	39	-	49	17157			#		
Strontium	mg/L	09/12/2011	N001	39	-	49	8			#	0.00078	
Strontium	mg/L	09/12/2011	N002	39	-	49	7.9			#	0.00078	
Sulfate	mg/L	09/12/2011	N001	39	-	49	4500			#	100	
Sulfate	mg/L	09/12/2011	N002	39	-	49	4600			#	100	
Temperature	C	09/12/2011	N001	39	-	49	16.32			#		
Turbidity	NTU	09/12/2011	N001	39	-	49	5.24			#		
Uranium	mg/L	09/12/2011	N001	39	-	49	0.054			#	0.000029	
Uranium	mg/L	09/12/2011	N002	39	-	49	0.06			#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: 1096 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/12/2011	N001	57.5 - 66.5	721			#		
Ammonia Total as N	mg/L	09/12/2011	N001	57.5 - 66.5	4.4			#	0.1	
Calcium	mg/L	09/12/2011	N001	57.5 - 66.5	420			#	0.12	
Chloride	mg/L	09/12/2011	N001	57.5 - 66.5	950			#	40	
Magnesium	mg/L	09/12/2011	N001	57.5 - 66.5	1000			#	0.13	
Manganese	mg/L	09/12/2011	N001	57.5 - 66.5	0.15			#	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	09/12/2011	N001	57.5 - 66.5	620			#	5	
Oxidation Reduction Potential	mV	09/12/2011	N001	57.5 - 66.5	248.7			#		
pH	s.u.	09/12/2011	N001	57.5 - 66.5	7.09			#		
Potassium	mg/L	09/12/2011	N001	57.5 - 66.5	84		J	#	1.1	
Selenium	mg/L	09/12/2011	N001	57.5 - 66.5	3			#	0.00032	
Sodium	mg/L	09/12/2011	N001	57.5 - 66.5	5100			#	0.33	
Specific Conductance	umhos /cm	09/12/2011	N001	57.5 - 66.5	24251			#		
Strontium	mg/L	09/12/2011	N001	57.5 - 66.5	9.4			#	0.00078	
Sulfate	mg/L	09/12/2011	N001	57.5 - 66.5	14000			#	100	
Temperature	C	09/12/2011	N001	57.5 - 66.5	16.05			#		
Turbidity	NTU	09/12/2011	N001	57.5 - 66.5	2.88			#		
Uranium	mg/L	09/12/2011	N001	57.5 - 66.5	0.093			#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 12/21/2011

Location: MW1 WELL Just N of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	09/14/2011	N001	-	1760		FQ	#		
Ammonia Total as N	mg/L	09/14/2011	N001	-	3.4		FQ	#	0.1	
Calcium	mg/L	09/14/2011	N001	-	68		FQ	#	0.24	
Chloride	mg/L	09/14/2011	N001	-	4500		FQ	#	100	
Magnesium	mg/L	09/14/2011	N001	-	34		FQ	#	0.26	
Manganese	mg/L	09/14/2011	N001	-	0.077	B	FQ	#	0.0023	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2011	N001	-	0.18		FQ	#	0.01	
Oxidation Reduction Potential	mV	09/14/2011	N001	-	59		FQ	#		
pH	s.u.	09/14/2011	N001	-	7.01		FQ	#		
Potassium	mg/L	09/14/2011	N001	-	22		JFQ	#	2.2	
Selenium	mg/L	09/14/2011	N001	-	0.00031		JFQ	#	0.000032	
Sodium	mg/L	09/14/2011	N001	-	3800		FQ	#	0.66	
Specific Conductance	umhos /cm	09/14/2011	N001	-	18100		FQ	#		
Strontium	mg/L	09/14/2011	N001	-	7.9		FQ	#	0.0016	
Sulfate	mg/L	09/14/2011	N001	-	2000		FQ	#	50	
Temperature	C	09/14/2011	N001	-	18.4		FQ	#		
Turbidity	NTU	09/14/2011	N001	-	6.47		FQ	#		
Uranium	mg/L	09/14/2011	N001	-	0.0004		FQ	#	0.0000029	

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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