

Data Validation Package

March 2013
Groundwater and Surface Water
Sampling at the Shiprock, New Mexico,
Disposal Site

June 2013

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Contents

Sampling Event Summary	1
Shiprock, New Mexico, Disposal Site Planned Sample Locations	11
Data Assessment Summary.....	13
Water Sampling Field Activities Verification Checklist	15
Laboratory Performance Assessment	17
Sampling Quality Control Assessment.....	41
Certification	48

Attachment 1—Assessment of Anomalous Data

Potential Outliers Report

Attachment 2—Data Presentation

Groundwater Quality Data Floodplain Locations
Groundwater Quality Data Terrace Locations
Surface Water Quality Data Floodplain Locations
Surface Water Quality Data Terrace Locations
Equipment Blank Data
Static Water Level Data Floodplain Locations
Static Water Level Data Terrace Locations
Time-Concentration Graphs Floodplain Groundwater Locations
Time-Concentration Graphs Terrace Groundwater Locations

Attachment 3—Sampling and Analysis Work Order

Attachment 4—Trip Report

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Sampling Event Summary

Site: Shiprock, New Mexico, Disposal Site

Sampling Period: March 18–21, 2013

Groundwater and surface water sampling and analyses 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 analyses were conducted as specified in the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites* (LMS/PRO/S04351, continually updated) and the *Environmental Procedures Catalog* (LMS/POL/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.

Alkalinity, conductivity, oxidation-reduction potential, pH, and temperature were measured in the field as 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	57
			0610	290
			0614	120
			0630	32
			0735	560
			0773	19
			0779	60
			0793	21
			0857	15
			1105	140
			1109	52
			1110	36
			1111	25
			1112	130
			1113	310
			1114	100
			1115	220
			1128	580
1136	65			
1137	41			
1138	48			
1139	18			
1140	34			

Table 1 (continued). Shiprock Locations that Exceed Standards

Analyte	Standard ^a	Site Code ^b	Location	Concentration
Selenium	0.01	SHP01	0610	0.069
			0614	0.55
			0615	0.028
			0618	0.052
			0622	0.014
			0630	0.19
			0734	0.016
			0735	0.019
			0773	0.18
			0779	0.075
			0793	0.36
			0855	0.035
			1009	0.012
			1104	0.011
			1105	0.20
			1111	0.18
			1112	0.60
			1113	0.42
			1114	0.027
			1115	0.11
1128	0.023			
1139	0.013			
1140	0.19			
1141	0.096			
Uranium	0.044	SHP01	0608	0.69
			0610	0.89
			0612	0.069
			0614	0.96
			0615	0.51
			0618	0.73
			0619	0.12
			0622	0.055
			0623	0.059
			0630	0.24
			0734	0.070
			0735	0.30
			0766	0.17
			0768	0.13
			0773	0.25
			0775	0.15
			0779	2.2
			0792	0.16
			0793	1.1
			0798	0.25
			0853	0.077
			0854	0.16
			0855	0.081
0856	0.046			
0857	0.84			
1008	0.40			

Table 1 (continued). Shiprock Locations that Exceed Standards

Analyte	Standard ^a	Site Code ^b	Location	Concentration
Uranium	0.044	SHP01	1009	0.20
			1089	0.22
			1104	0.38
			1105	1.7
			1109	0.15
			1110	0.53
			1111	0.62
			1112	0.91
			1113	0.58
			1114	0.56
			1115	0.67
			1128	1.1
			1135	0.090
			1136	0.59
			1137	1.8
			1138	2.0
			1139	1.2
			1140	1.1
1141	0.44			
1143	0.053			
Nitrate + Nitrite as Nitrogen	10	SHP02	0600	88
			0602	30
			0603	1700
			0604	630
			0725	14
			0726	17
			0727	88
			0728	34
			0731	78
			0812	1300
			0813	2700
			0814	940
			0815	730
			0816	17
			0817	640
			0818	790
			0819	20
			0826	20
			0828	23
			0830	52
			0833	110
			0835	56
			0836	47
0837	12			
0838	510			
0841	590			
0844	820			
1007	640			
1048	550			

Table 1 (continued). Shiprock Locations that Exceed Standards

Analyte	Standard ^a	Site Code ^b	Location	Concentration
Nitrate + Nitrite as Nitrogen	10	SHP02	1049	550
			1057	1500
			1059	370
			1070	720
			1071	860
			1073	820
			1074	1500
			1078	600
			1079	400
			1087	230
			1088	710
			1091	1200
			1092	670
			1093R	2200
			1095	1800
			1096	590
Selenium	0.01	SHP02	0603	0.076
			0604	0.75
			0725	0.015
			0726	0.026
			0730	0.016
			0731	0.016
			0812	5.5
			0813	0.086
			0814	1.9
			0815	0.025
			0818	2.3
			0819	0.013
			0826	0.013
			0827	0.018
			0828	0.014
			0830	0.022
			0833	0.27
			0835	0.31
			0836	0.35
			0837	0.13
			0838	0.69
			0841	2.6
			0843	0.41
			0844	1.6
			0848	0.047
			1007	0.063
			1048	1.2
			1049	1.2
			1057	0.065
			1068	0.032
1070	2.6			
1071	2.4			
1073	2.2			
1074	0.40			

Table 1 (continued). Shiprock Locations that Exceed Standards

Analyte	Standard ^a	Site Code ^b	Location	Concentration
Selenium	0.01	SHP02	1078	2.8
			1079	0.66
			1087	0.030
			1088	1.7
			1091	0.71
			1092	1.2
			1093R	0.51
			1095	0.14
			1096	2.9
Uranium	0.044	SHP02	0600	0.65
			0602	0.51
			0604	0.093
			0725	0.088
			0727	0.22
			0728	0.20
			0812	0.13
			0813	0.10
			0814	0.086
			0815	0.34
			0817	6.5
			0818	0.12
			0819	1.4
			0820	0.11
			0822	0.066
			0824	0.055
			0826	2.5
			0827	0.91
			0828	0.69
			0833	0.12
			0835	0.062
			0836	0.046
			0838	0.16
			0841	0.091
			0844	0.17
			1007	2.3
			1048	0.14
			1049	0.15
			1059	0.062
			1068	0.64
			1070	0.081
			1071	0.12
			1073	0.090
1074	2.1			
1078	0.13			
1079	0.048			
1087	0.48			
1088	0.19			

Table 1 (continued). Shiprock Locations that Exceed Standards

Analyte	Standard ^a	Site Code ^b	Location	Concentration
Uranium	0.044	SHP02	1091	0.11
			1092	0.12
			1093R	0.10
			1095	0.046
			1096	0.087

^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 (Tables 2 and 3). Benchmark data are a standard data set from location 0898, which is located upstream of the site on the San Juan River, against which other river location data are compared. There were no significant exceedances of the benchmark values; manganese in well 0897 slightly exceeded the benchmark.

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

Location	Ammonia as N	Manganese	Nitrate+Nitrite as N	Selenium	Strontium	Sulfate	Uranium
Benchmark^a	0.1	6.2	1.4	0.013	3.9	240	0.028
0501	ND ^b	0.054	0.52	0.00085	1.1	210	0.0022
0897	ND	0.099	0.56	0.0011	1.0	180	0.0020
0898	ND	0.082	0.46	0.0011	1.0	190	0.0020
0899	ND	0.058	0.48	0.00095	1.0	180	0.0019
0940	ND	0.057	0.52	0.00087	1.0	190	0.0032
0956	ND	0.072	0.46	0.00074	1.0	180	0.0019
0965	ND	0.056	0.49	0.00057	0.99	180	0.0019
1203	ND	0.075	0.47	0.00089	1.0	190	0.0019
1205	ND	0.090	0.48	0.00092	1.0	180	0.0019

Units are in milligrams per liter (mg/L).

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

^b ND = Not Detected.

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

Location	Ammonia as N	Manganese	Nitrate+Nitrite as N	Selenium	Strontium	Sulfate	Uranium
Benchmark^a	0.1	0.022	1.1	0.002	1.2	250	0.0032
0501	ND ^b	0.011	0.53	0.00083	1.1	210	0.0021
0897	ND	0.023	0.60	0.0015	1.0	180	0.0027
0898	ND	0.014	0.49	0.00082	1.0	190	0.0021
0899	ND	0.011	0.49	0.00071	1.0	180	0.0019
0940	ND	0.017	0.53	0.00071	0.99	190	0.0031
0956	ND	0.019	0.48	0.00068	1.0	180	0.0019
0965	ND	0.011	0.49	0.00081	1.0	180	0.0019
1203	ND	0.015	0.49	0.00073	1.0	180	0.0019
1205	ND	0.0097	0.50	0.00075	1.0	180	0.0018

Units are in milligrams per liter (mg/L).

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

^b ND = Not Detected.

A comparison of filtered and unfiltered results from the river samples is shown in Table 4, excluding ammonia as nitrogen, 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	81	82	1.2
	Chloride	22	21	4.7
	Magnesium	14	14	0.0
	Manganese	0.011	0.054	132.3
	Nitrate+Nitrite as N	0.53	0.52	1.9
	Potassium	3.0	3.2	6.5
	Selenium	0.00083	0.00085	2.4
	Sodium	50	50	0.0
	Strontium	1.1	1.1	0.0
	Sulfate	210	210	0.0
	Uranium	0.0021	0.0022	4.7
0897	Calcium	76	76	0.0
	Chloride	18	18	0.0
	Magnesium	13	13	0.0
	Manganese	0.023	0.099	124.6
	Nitrate+Nitrite as N	0.6	0.56	6.9
	Potassium	2.7	3.0	10.5
	Selenium	0.0015	0.0011	30.8
	Sodium	46	46	0.0
	Strontium	1.0	1.0	0.0
	Sulfate	180	180	0.0
	Uranium	0.0027	0.002	29.8
0898	Calcium	75	76	1.3
	Chloride	19	20	5.1
	Magnesium	14	14	0.0
	Manganese	0.014	0.082	141.7
	Nitrate+Nitrite as N	0.49	0.46	6.3
	Potassium	3.0	3.2	6.5
	Selenium	0.00082	0.0011	29.2
	Sodium	46	46	0.0
	Strontium	1.0	1.0	0.0
	Sulfate	190	190	0.0
	Uranium	0.0021	.002	4.9
0899	Calcium	74	76	2.7
	Chloride	18	19	5.4
	Magnesium	13	13	0.0
	Manganese	0.011	0.058	136.2
	Nitrate+Nitrite as N	0.49	0.48	2.1
	Potassium	2.7	2.9	7.1

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

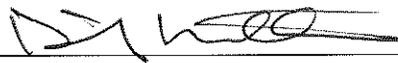
Location	Analyte	Result, Filtered	Result, Unfiltered	RPD ^a (%)
0899	Selenium	0.00071	0.00095	28.9
	Sodium	43	44	2.3
	Strontium	1.0	1.0	0.0
	Sulfate	180	180	0.0
	Uranium	0.0019	0.0019	0.0
0940	Calcium	72	73	1.4
	Chloride	19	19	0.0
	Magnesium	14	14	0.0
	Manganese	0.017	0.057	108.1
	Nitrate+Nitrite as N	0.53	0.52	1.9
	Potassium	2.7	2.9	7.1
	Selenium	0.00071	0.00087	20.3
	Sodium	45	45	0.0
	Strontium	0.99	1.0	1.0
	Sulfate	190	190	0.0
	Uranium	0.0031	0.0032	3.2
0956	Calcium	75	76	1.3
	Chloride	18	19	5.4
	Magnesium	13	13	0.0
	Manganese	0.019	0.072	116.5
	Nitrate+Nitrite as N	0.48	0.46	4.3
	Potassium	2.8	3.0	6.9
	Selenium	0.00068	0.00074	8.5
	Sodium	43	44	2.3
	Strontium	1.0	1.0	0.0
	Sulfate	180	180	0.0
	Uranium	0.0019	0.0019	0.0
0965	Calcium	74	74	0.0
	Chloride	18	18	0.0
	Magnesium	13	13	0.0
	Manganese	0.011	0.056	134.3
	Nitrate+Nitrite as N	0.49	0.49	0.0
	Potassium	2.8	2.8	0.0
	Selenium	0.00081	0.00057	34.8
	Sodium	43	42	2.4
	Strontium	1.0	0.99	1.0
	Sulfate	180	180	0.0
	Uranium	0.0019	0.0019	0.0

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

Location	Analyte	Result, Filtered	Result, Unfiltered	RPD ^a (%)
1203	Calcium	74	76	2.7
	Chloride	18	19	5.4
	Magnesium	13	13	0.0
	Manganese	0.015	0.075	133.3
	Nitrate+Nitrite as N	0.49	0.47	4.2
	Potassium	2.7	3.0	10.5
	Selenium	0.00073	0.00089	19.8
	Sodium	44	45	2.2
	Strontium	1.0	1.0	0.0
	Sulfate	180	190	5.4
	Uranium	0.0019	0.0019	0.0
1205	Calcium	73	77	5.3
	Chloride	19	19	0.0
	Magnesium	12	13	8.0
	Manganese	0.0097	0.090	161.1
	Nitrate+Nitrite as N	0.5	0.48	4.1
	Potassium	2.6	3.0	14.3
	Selenium	0.00075	0.00092	20.4
	Sodium	43	44	2.3
	Strontium	1.0	1.0	0.0
	Sulfate	180	180	0.0
	Uranium	0.0018	0.0019	5.4

Results units are in milligrams per liter (mg/L).

^aRPD= relative percent difference



David Miller
Site Lead, S. M. Stoller Corporation



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	March 18–21, 2013
Date(s) of Verification	May 16, 2013	Name of Verifier	Stephen Donovan

	Response (Yes, No, NA)	Comments
1. Is the SAP the primary document directing field procedures? List any Program Directives or other documents, SOPs, instructions.	Yes	Work Order letter dated March 12, 2013.
2. Were the sampling locations specified in the planning documents sampled?	No	Sixteen locations were not sampled due to insufficient water.
3. Were calibrations conducted as specified in the above-named documents?	Yes	Calibrations were performed March 12, 2013.
4. Was an operational check of the field equipment conducted daily? Did the operational checks meet criteria?	Yes Yes	
5. Were the number and types (alkalinity, temperature, specific conductance, pH, turbidity, DO, ORP) of field measurements taken as specified?	No	Alkalinity was not measured at location 1069, and no field data were collected at location 1220 due to insufficient water.
6. Were wells categorized correctly?	Yes	
7. Were the following conditions met when purging a Category I well: Was one pump/tubing volume purged prior to sampling? Did the water level stabilize prior to sampling? Did pH, specific conductance, and turbidity measurements meet criteria prior to sampling? Was the flow rate less than 500 mL/min?	Yes Yes No Yes	Turbidity criteria could not be met at following wells: SHP01- 0854, 1113, 1137, 1139, and SHP02-1048. Samples from these wells were filtered.

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 locations 0610, 0818, 1070, 1087, 1093R, 1095, 1096, 1112, 1203, and 1215.
10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with non-dedicated equipment?	Yes	One equipment blank was collected.
11. Were trip blanks prepared and included with each shipment of VOC samples?	NA	
12. Were the true identities of the QC samples documented?	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?	No	Only metals analyses aliquots were collected at locations 0730, 1068, and 1220 because of insufficient water.
16. Were chain of custody records completed and was sample custody maintained?	Yes	
17. Was all pertinent information documented on the field data sheets?	Yes	
18. Was the presence or absence of ice in the cooler documented at every sample location?	Yes	
19. Were water levels measured at the locations specified in the planning documents?	Yes	

Laboratory Performance Assessment

General Information

Report Number (RIN): 13035181
Sample Event: March 18-21, 2013
Site(s): Shiprock Disposal Site (Floodplain), New Mexico
Laboratory: ALS Laboratory Group, Fort Collins, Colorado
Work Order No.: 1303373
Analysis: Metals and Wet Chemistry
Validator: Stephen Donovan
Review Date: May 15, 2013

This validation was performed according to the *Environmental Procedures Catalog* (LMS/POL/S04325, continually updated), "*Standard Practice for Validation of Environmental 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 Qualifiers

Sample Number	Location	Analyte	Flag	Reason
1303373-1	0501	Manganese	J	Serial dilution, positive bias
1303373-1	0501	Sodium	J	Serial dilution, positive bias
1303373-21	0766	Ammonia as N	J	Matrix spike recovery
1303373-39	0897	Sodium	J	Serial dilution, positive bias
1303373-58	1112	Potassium	J	Field duplicate precision
1303373-59	1113	Potassium	J	Serial dilution, positive bias
1303373-63	1118	Manganese	U	Less than 5 times the calibration blank
1303373-76	1203	Manganese	J	Field duplicate precision
1303373-79	1205	Sodium	J	Serial dilution, positive bias
1303373-80	1203 Duplicate	Manganese	J	Field duplicate precision
1303373-81	Equipment blank	Calcium	U	Less than 5 times the calibration blank
1303373-81	Equipment blank	Selenium	U	Less than 5 times the calibration blank
1303373-81	Equipment blank	Uranium	U	Less than 5 times the calibration blank
1303373-83	1112 Duplicate	Potassium	J	Field duplicate precision

Sample Shipping/Receiving

ALS Laboratory Group in Fort Collins, Colorado, received 83 water samples on March 26, 2013, 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 between 1.1 and 4.4 °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.

Detection and Quantitation Limits

The method detection limit (MDL) was reported for all analytes as required. The MDL, as defined in 40 CFR 136, is the minimum concentration of an analyte that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. The practical quantitation limit (PQL) for these analytes is the lowest concentration that can be reliably measured, and is defined as 5 times the MDL. The reported MDLs for all analytes demonstrate compliance with contractual requirements.

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 March 27, 2013, 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 with all calibration checks meeting the acceptance criteria.

Method EPA 353.2

Calibrations were performed for nitrate + nitrite as N on March 28, 2013, 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 with all calibration checks meeting the acceptance criteria.

Method SW-846 6010B

Calibrations for calcium, magnesium, manganese, potassium, sodium, and strontium were performed March 27, 2013, using three calibration standards. The correlation coefficient values were greater than 0.995. 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 with all calibration checks associated with reported results meeting 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 of 70 to 130 percent.

Method SW-846 6020A

Calibrations for selenium and uranium were performed March 27, 2013, 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. Initial and continuing calibration verification checks were made at the required frequency with all calibration checks associated with reported results meeting 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 of 70 to 130 percent. 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 March 22, 26, and 29, 2013, 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 with all calibration checks meeting 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.

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. The ammonia as N spike recovery from sample 0766 was slightly below the acceptance range with a negative bias of about 25 percent. The associated sample result is qualified with a “J” flag as an estimated value.

Laboratory Replicate Analysis

Laboratory replicate analyses are used to determine laboratory precision for each sample matrix. The relative percent difference 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 MDL. All evaluated serial dilution data were acceptable with the following exceptions. The serial dilutions for manganese

potassium, and/or sodium prepared from samples 0501, 0899, 1113, and 1205 did not meet the acceptance criteria, all with positive bias. Because of the possible reduced accuracy due to matrix interference, the associated sample results are qualified with a “J” flag as estimated values.

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 the samples from this event and the charge balance, which is a relative percent difference calculation. Typically, a charge balance difference of 10 percent is considered acceptable.

Table 7. Comparison of Major Anions and Cations

Site Code	Location	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
SHP01	0501	7.48	7.71	1.54
SHP01	0608	124.17	131.39	2.82
SHP01	0610	139.75	138.21	0.55
SHP01	0611	116.61	132.33	6.32
SHP01	0612	26.81	27.90	1.99
SHP01	0614	145.02	153.18	2.74
SHP01	0615	82.21	84.96	1.64
SHP01	0618	148.05	153.63	1.85
SHP01	0619	76.22	78.46	1.45
SHP01	0622	53.47	57.16	3.33
SHP01	0623	66.66	69.91	2.39
SHP01	0625	66.32	69.69	2.47
SHP01	0626	48.99	53.01	3.94
SHP01	0628	67.97	74.93	4.87
SHP01	0630	105.36	114.42	4.12
SHP01	0655	74.00	78.40	2.89
SHP01	0734	120.03	126.67	2.69
SHP01	0735	273.05	281.91	1.60
SHP01	0736	60.22	64.41	3.36
SHP01	0766	94.44	104.88	5.24
SHP01	0768	111.77	122.55	4.60
SHP01	0773	32.25	33.02	1.18

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

Site Code	Location	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
SHP01	0775	90.27	100.55	5.39
SHP01	0779	311.84	327.12	2.39
SHP01	0782R	12.45	12.39	0.22
SHP01	0783R	14.89	15.27	1.29
SHP01	0792	98.16	105.28	3.50
SHP01	0793	136.29	144.59	2.96
SHP01	0797	90.45	101.69	5.85
SHP01	0798	113.31	117.65	1.88
SHP01	0850	17.01	18.65	4.60
SHP01	0853	22.11	21.53	1.33
SHP01	0854	131.18	145.55	5.19
SHP01	0855	67.71	74.63	4.86
SHP01	0856	54.60	60.71	5.30
SHP01	0857	141.34	143.88	0.89
SHP01	0897	6.96	7.50	3.72
SHP01	0898	7.00	7.63	4.27
SHP01	0899	6.73	6.61	0.90
SHP01	0940	6.80	7.09	2.09
SHP01	0956	6.78	6.69	0.70
SHP01	0965	6.73	6.89	1.15
SHP01	1008	101.76	110.76	4.24
SHP01	1009	47.12	47.55	0.45
SHP01	1089	90.99	102.84	6.11
SHP01	1104	116.12	119.39	1.39
SHP01	1105	194.97	202.00	1.77
SHP01	1109	29.72	29.66	0.10
SHP01	1110	122.66	126.88	1.69
SHP01	1111	163.12	172.59	2.82
SHP01	1112	167.26	175.40	2.38
SHP01	1113	108.74	117.42	3.83
SHP01	1114	76.07	79.30	2.08
SHP01	1115	109.41	115.67	2.78
SHP01	1117	7.17	6.92	1.78
SHP01	1118	126.37	137.71	4.29
SHP01	1128	209.21	220.87	2.71
SHP01	1132	6.69	6.42	2.04
SHP01	1134	5.69	5.59	0.96
SHP01	1135	70.54	78.13	5.11
SHP01	1136	113.93	117.13	1.38
SHP01	1137	235.67	242.88	1.51
SHP01	1138	245.83	264.91	3.74
SHP01	1139	225.33	234.91	2.08
SHP01	1140	164.59	171.47	2.05
SHP01	1141	65.42	64.70	0.55
SHP01	1142	6.29	6.20	0.73

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

Site Code	Location	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
SHP01	1143	54.16	60.53	5.56
SHP01	1203	6.78	6.67	0.77
SHP01	1205	6.60	6.60	0.03

The charge balance differences for all wells were below 10 percent indicating that there are no significant errors associated with the measurement of major ion concentrations.

Electronic Data Deliverable (EDD) File

The EDD file arrived on April 1, 2013. 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: 13035181 Lab Code: PAR Validator: Stephen Donovan Validation Date: 05/14/2013
Project: Shiprock Monitoring Analysis Type: Metals General Chem Rad Organics
of Samples: 83 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: 13035181 Lab Code: PAR Date Due: 04/23/2013
 Matrix: Water Site Code: SHP01 Date Completed: 04/02/2013

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	CCV	CCB								
Calcium	ICP/ES	03/27/2013	0.0000	1.0000	OK	OK	OK	99.0	97.0	95.0	1.0	105.0	1.0	107.0
Calcium	ICP/ES	03/27/2013					OK	99.0			1.0	104.0	1.0	107.0
Calcium	ICP/ES	03/27/2013					OK	101.0	99.0	97.0	1.0		1.0	105.0
Calcium	ICP/ES	03/27/2013					OK	97.0	113.0	108.0	0.0		1.0	104.0
Calcium	ICP/ES	03/27/2013					OK	100.0	93.0	93.0	0.0			
Magnesium	ICP/ES	03/27/2013	0.0000	1.0000	OK	OK	OK	99.0	97.0	96.0	0.0	107.0	3.0	107.0
Magnesium	ICP/ES	03/27/2013					OK	99.0			1.0	104.0	0.0	105.0
Magnesium	ICP/ES	03/27/2013					OK	100.0	98.0	98.0	1.0		2.0	107.0
Magnesium	ICP/ES	03/27/2013					OK	97.0	114.0	107.0	0.0		1.0	104.0
Magnesium	ICP/ES	03/27/2013					OK	99.0	96.0	96.0	0.0			
Manganese	ICP/ES	03/27/2013	0.0000	1.0000	OK	OK	OK	99.0	98.0	97.0	1.0	98.0	18.0	108.0
Manganese	ICP/ES	03/27/2013					OK	99.0	83.0	87.0	1.0	97.0	2.0	107.0
Manganese	ICP/ES	03/27/2013					OK	100.0	98.0	97.0	1.0		1.0	97.0
Manganese	ICP/ES	03/27/2013					OK	97.0	98.0	97.0	1.0		28.0	
Manganese	ICP/ES	03/27/2013					OK	100.0	95.0	95.0	0.0			
Potassium	ICP/ES	03/27/2013	0.0000	1.0000	OK	OK	OK	95.0	104.0	104.0	0.0			80.0
Potassium	ICP/ES	03/27/2013					OK	95.0	101.0	103.0	1.0			77.0
Potassium	ICP/ES	03/27/2013					OK	97.0	104.0	103.0	0.0			

SAMPLE MANAGEMENT SYSTEM
Metals Data Validation Worksheet

RIN: 13035181 Lab Code: PAR Date Due: 04/23/2013
 Matrix: Water Site Code: SHP01 Date Completed: 04/02/2013

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	CCV	CCB								
Potassium	ICP/ES	03/27/2013					OK	94.0	109.0	106.0	1.0			
Potassium	ICP/ES	03/27/2013					OK	96.0	104.0	104.0	0.0			
Selenium	ICP/MS	03/27/2013	0.0000	1.0000	OK	OK	OK	99.0	104.0	106.0	1.0	102.0	3.0	87.0
Selenium	ICP/MS	03/27/2013					OK	99.0	109.0	116.0	5.0	103.0		130.0
Selenium	ICP/MS	03/27/2013					OK	100.0	102.0	102.0	0.0			
Selenium	ICP/MS	03/27/2013					OK	103.0			8.0			
Selenium	ICP/MS	03/27/2013					OK	93.0	102.0	102.0	0.0			
Sodium	ICP/ES	03/27/2013	0.0000	1.0000	OK	OK	OK	95.0	100.0	100.0	0.0		11.0	81.0
Sodium	ICP/ES	03/27/2013					OK	94.0			1.0		9.0	83.0
Sodium	ICP/ES	03/27/2013					OK	96.0	99.0	98.0	0.0		12.0	
Sodium	ICP/ES	03/27/2013					OK	93.0			1.0		10.0	
Sodium	ICP/ES	03/27/2013					OK	95.0	99.0	99.0	0.0			
Strontium	ICP/ES	03/27/2013	0.0000	1.0000	OK	OK	OK	101.0	98.0	95.0	1.0	96.0	1.0	94.0
Strontium	ICP/ES	03/27/2013					OK	101.0			1.0	101.0	6.0	101.0
Strontium	ICP/ES	03/27/2013					OK	102.0	98.0	95.0	1.0		0.0	96.0
Strontium	ICP/ES	03/27/2013					OK	99.0	120.0	109.0	1.0		1.0	101.0
Strontium	ICP/ES	03/27/2013					OK	102.0	91.0	90.0	0.0			
Uranium	ICP/MS	03/27/2013	0.0000	1.0000	OK	OK	OK	100.0	103.0	106.0	3.0	104.0	3.0	110.0

SAMPLE MANAGEMENT SYSTEM
Metals Data Validation Worksheet

RIN: 13035181 Lab Code: PAR Date Due: 04/23/2013
 Matrix: Water Site Code: SHP01 Date Completed: 04/02/2013

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	CCV	CCB								
Uranium	ICP/MS	03/27/2013					OK	95.0			4.0	102.0	5.0	105.0
Uranium	ICP/MS	03/27/2013					OK	95.0	105.0	100.0	3.0		4.0	
Uranium	ICP/MS	03/27/2013					OK	99.0			6.0		10.0	
Uranium	ICP/MS	03/27/2013					OK	94.0	99.0	100.0	1.0		2.0	

SAMPLE MANAGEMENT SYSTEM
Wet Chemistry Data Validation Worksheet

RIN: 13035181 Lab Code: PAR Date Due: 04/23/2013
 Matrix: Water Site Code: SHP01 Date Completed: 04/02/2013

Analyte	Date Analyzed	CALIBRATION				Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	CCV	CCB						
AMMONIA AS N	03/27/2013	0.000	0.9999	OK	OK	OK	95.00	105.0	105.0	0	
AMMONIA AS N	03/27/2013					OK	97.00	74.0	71.0	4.00	
AMMONIA AS N	03/27/2013					OK	99.00	95.0	99.0	4.00	
AMMONIA AS N	03/27/2013					OK	96.00	96.0	99.0	2.00	
AMMONIA AS N	03/27/2013					OK	96.00				
CHLORIDE	03/26/2013	0.000	0.9998	OK	OK	OK	103.00	106.0	97.0	7.00	
CHLORIDE	03/26/2013					OK	104.00	96.0	95.0	0	
CHLORIDE	03/26/2013	0.000	0.9999	OK	OK	OK	101.00	104.0	104.0	1.00	
CHLORIDE	03/26/2013					OK	101.00	105.0			
CHLORIDE	03/26/2013							113.0			
CHLORIDE	03/27/2013					OK	104.00	101.0	105.0	2.00	
CHLORIDE	03/29/2013	0.000	0.9998	OK	OK			103.0			
CHLORIDE	03/29/2013							102.0			
Nitrate+Nitrite as N	03/28/2013	0.000	0.9996	OK	OK	OK	101.00	105.0	106.0	0	
Nitrate+Nitrite as N	03/28/2013					OK	101.00	96.0	96.0	0	
Nitrate+Nitrite as N	03/28/2013					OK	103.00	103.0	101.0	1.00	

SAMPLE MANAGEMENT SYSTEM
Wet Chemistry Data Validation Worksheet

RIN: 13035181 Lab Code: PAR Date Due: 04/23/2013
 Matrix: Water Site Code: SHP01 Date Completed: 04/02/2013

Analyte	Date Analyzed	CALIBRATION				Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	CCV	CCB						
Nitrate+Nitrite as N	03/28/2013					OK	102.00	97.0	98.0	0	
Nitrate+Nitrite as N	03/28/2013					OK	103.00	93.0	89.0	1.00	
SULFATE	03/26/2013	0.000	0.9998	OK	OK	OK	97.00	106.0	99.0	2.00	
SULFATE	03/26/2013					OK	98.00	98.0	97.0	1.00	
SULFATE	03/26/2013	0.000	0.9999	OK	OK	OK	96.00	95.0	100.0	0	
SULFATE	03/26/2013					OK	96.00	100.0			
SULFATE	03/26/2013							111.0			
SULFATE	03/27/2013					OK	100.00	87.0	94.0	2.00	
SULFATE	03/29/2013	0.000	0.9998	OK	OK			92.0			
SULFATE	03/29/2013							93.0			

General Information

Report Number (RIN): 13035182
Sample Event: March 18-21, 2013
Site(s): Shiprock Disposal Site (Terrace), New Mexico
Laboratory: ALS Laboratory Group, Fort Collins, Colorado
Work Order No.: 1303379
Analysis: Metals and Wet Chemistry
Validator: Stephen Donivan
Review Date: May 15, 2013

This validation was performed according to the *Environmental Procedures Catalog* (LMS/POL/S04325, continually updated), “*Standard Practice for Validation of Environmental 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 Method

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. Analytes and Methods

Sample Number	Location	Analyte	Flag	Reason
1303379-21	0820	Potassium	J	Matrix spike recovery
1303379-21	0820	Selenium	J	Serial dilution result
1303379-41	1049	Potassium	J	Matrix spike recovery
1303379-46	1070	Manganese	J	Field duplicate precision
1303379-52	1087	Potassium	J	Field duplicate precision
1303379-59	1215	Calcium	J	Field duplicate precision
1303379-59	1215	Magnesium	J	Field duplicate precision
1303379-59	1215	Manganese	J	Field duplicate precision
1303379-59	1215	Strontium	J	Field duplicate precision
1303379-62	1221	Potassium	J	Matrix spike recovery
1303379-64	1215 Duplicate	Calcium	J	Field duplicate precision

Table 9 (continued). Analytes and Methods

Sample Number	Location	Analyte	Flag	Reason
1303379-64	1215 Duplicate	Magnesium	J	Field duplicate precision
1303379-64	1215 Duplicate	Manganese	J	Field duplicate precision
1303379-64	1215 Duplicate	Strontium	J	Field duplicate precision
1303379-67	1087 Duplicate	Potassium	J	Field duplicate precision
1303379-68	1070 Duplicate	Manganese	J	Field duplicate precision

Sample Shipping/Receiving

ALS Laboratory Group in Fort Collins, Colorado, received 70 water samples on March 26, 2013, 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 between 2.2 and 5.2 °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.

Detection and Quantitation Limits

The MDL was reported for all analytes as required. The MDL, as defined in 40 CFR 136, is the minimum concentration of an analyte that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. The PQL for these analytes is the lowest concentration that can be reliably measured, and is defined as 5 times the MDL. The reported MDLs for all analytes demonstrate compliance with contractual requirements.

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 March 27, 2013, 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 with all calibration checks meeting the acceptance criteria.

Method EPA 353.2

Calibrations were performed for nitrate + nitrite as N on March 29 and 30, 2013, 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 with all calibration checks meeting the acceptance criteria.

Method SW-846 6010B

Calibrations for calcium, magnesium, manganese, potassium, sodium, and strontium were performed March 27, 2013, using three calibration standards. The correlation coefficient values were greater than 0.995. 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 with all calibration checks associated with reported results meeting 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 of 70 to 130 percent.

Method SW-846 6020A

Calibrations for selenium and uranium were performed March 27, 2013, 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. Initial and continuing calibration verification checks were made at the required frequency with all calibration checks associated with reported results meeting 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 of 70 to 130 percent. 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 March 28, 2013, 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 with all calibration checks meeting 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.

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

The 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. The potassium spike recoveries from samples 0820, 1049, and 1221 were above the acceptance range. Associated sample results are qualified with a “J” flag as estimated values.

Laboratory Replicate Analysis

Laboratory replicate analyses are used to determine laboratory precision for each sample matrix. The relative percent difference 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 MDL. All evaluated serial dilution data were acceptable with the following exceptions. The serial dilution for selenium prepared from sample 0820 did not meet the acceptance criteria. Because of the possible reduced accuracy due to matrix interference, the associated sample result is qualified with a “J” flag as an estimated value.

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

Table 10. Comparison of Major Anions and Cations

Site Code	Location	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
SHP02	0600	244.61	278.14	6.41
SHP02	0602	405.88	452.65	5.45
SHP02	0603	198.76	177.18	5.74
SHP02	0604	431.24	358.09	9.27
SHP02	0648	38.80	42.51	4.56
SHP02	0662	39.33	44.58	6.27
SHP02	0725	57.39	62.14	3.97
SHP02	0726	127.05	151.86	8.90
SHP02	0727	271.56	275.63	0.74
SHP02	0728	85.12	87.31	1.27
SHP02	0731	91.17	94.76	1.93
SHP02	0812	501.76	520.85	1.87
SHP02	0813	406.21	412.75	0.80
SHP02	0814	358.44	359.33	0.12
SHP02	0815	423.51	385.50	4.70
SHP02	0816	23.31	23.99	1.42
SHP02	0817	329.45	344.41	2.22
SHP02	0818	337.59	368.08	4.32
SHP02	0819	305.78	334.17	4.44
SHP02	0820	310.87	372.04	8.96
SHP02	0822	249.97	307.76	10.36
SHP02	0824	268.90	335.18	10.97
SHP02	0825	278.55	360.72	12.86
SHP02	0826	315.80	320.19	0.69
SHP02	0827	179.27	224.15	11.12
SHP02	0828	67.11	69.94	2.06
SHP02	0830	36.13	36.16	0.03
SHP02	0833	114.60	122.27	3.24
SHP02	0835	85.45	87.02	0.91
SHP02	0836	64.22	65.45	0.95
SHP02	0837	64.76	65.22	0.36
SHP02	0838	226.53	242.52	3.41
SHP02	0841	304.75	349.10	6.78
SHP02	0843	36.98	37.07	0.13
SHP02	0844	310.37	305.70	0.76

Table 10. Comparison of Major Anions and Cations

Site Code	Location	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
SHP02	0848	405.01	418.10	1.59
SHP02	0889	487.47	524.45	3.65
SHP02	1007	329.60	360.20	4.44
SHP02	1048	375.01	422.19	5.92
SHP02	1049	388.67	426.41	4.63
SHP02	1057	221.30	225.18	0.87
SHP02	1058	143.48	159.62	5.33
SHP02	1059	200.63	235.34	7.96
SHP02	1070	357.05	409.54	6.85
SHP02	1071	312.37	352.40	6.02
SHP02	1073	326.13	339.42	2.00
SHP02	1074	325.03	324.53	0.08
SHP02	1078	294.64	353.51	9.08
SHP02	1079	95.37	99.55	2.14
SHP02	1087	172.68	167.52	1.52
SHP02	1088	420.31	505.59	9.21
SHP02	1091	492.02	405.77	9.61
SHP02	1092	382.03	410.15	3.55
SHP02	1093R	292.12	303.35	1.89
SHP02	1095	230.41	251.85	4.44
SHP02	1096	310.37	374.84	9.41
SHP02	1215	996.10	915.79	4.20
SHP02	1219	43.95	42.93	1.17
SHP02	1221	479.01	574.88	9.10
SHP02	MW1	176.48	220.55	11.10

The charge balance differences for all wells were below 10 percent with the exception of locations 0822, 0824, 0825, 0827, and MW1. These are Category II or III wells where larger variations in the data are expected. There were no analytical errors identified during the review of the data associated with these locations. At locations 0730, 1068, and 1220 samples were collected for metals only and the charge balance difference cannot be calculated.

Electronic Data Deliverable (EDD) File

The revised EDD file arrived on May 1, 2013. Revision was necessary to correct some dilution factor errors that were noted during the preliminary review of the 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: 13035182 Lab Code: PAR Validator: Stephen Donovan Validation Date: 05/15/2013
Project: Shiprock Monitoring Analysis Type: Metals General Chem Rad Organics
of Samples: 70 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 were 7 duplicates evaluated.

SAMPLE MANAGEMENT SYSTEM
Metals Data Validation Worksheet

RIN: 13035182 Lab Code: PAR Date Due: 04/23/2013
 Matrix: Water Site Code: SHP01 Date Completed: 04/02/2013

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	CCV	CCB								
Calcium	ICP/ES	03/27/2013	0.0000	1.0000	OK	OK	OK	98.0	103.0	101.0	0.0	105.0	2.0	107.0
Calcium	ICP/ES	03/27/2013					OK	98.0	86.0	86.0	0.0	104.0	6.0	107.0
Calcium	ICP/ES	03/27/2013					OK	99.0			4.0	106.0	6.0	108.0
Calcium	ICP/ES	03/27/2013					OK	98.0			17.0	102.0	4.0	105.0
Magnesium	ICP/ES	03/27/2013	0.0000	1.0000	OK	OK	OK	100.0	107.0	104.0	0.0	108.0	1.0	107.0
Magnesium	ICP/ES	03/27/2013					OK	100.0	88.0	88.0	0.0	104.0	5.0	105.0
Magnesium	ICP/ES	03/27/2013					OK	101.0			4.0	110.0	2.0	108.0
Magnesium	ICP/ES	03/27/2013					OK	99.0			18.0	107.0	1.0	108.0
Manganese	ICP/ES	03/27/2013	0.0000	1.0000	OK	OK	OK	99.0	101.0	99.0	1.0	98.0	0.0	108.0
Manganese	ICP/ES	03/27/2013					OK	99.0	94.0	93.0	0.0	97.0		107.0
Manganese	ICP/ES	03/27/2013					OK	101.0	110.0	107.0	3.0	102.0		111.0
Manganese	ICP/ES	03/27/2013					OK	99.0	101.0	120.0	17.0	101.0		112.0
Potassium	ICP/ES	03/27/2013	0.0000	1.0000	OK	OK	OK	93.0	102.0	101.0	1.0			80.0
Potassium	ICP/ES	03/27/2013					OK	92.0	149.0	150.0	0.0			77.0
Potassium	ICP/ES	03/27/2013					OK	93.0	197.0	180.0	6.0			78.0
Potassium	ICP/ES	03/27/2013					OK	90.0	127.0	178.0	20.0			84.0
Selenium	ICP/MS	03/27/2013	0.0000	1.0000	OK	OK	OK	99.0	109.0	111.0	2.0		48.0	87.0
Selenium	ICP/MS	03/27/2013					OK	102.0	94.0	98.0	3.0		4.0	130.0

SAMPLE MANAGEMENT SYSTEM
Metals Data Validation Worksheet

RIN: 13035182 Lab Code: PAR Date Due: 04/23/2013
 Matrix: Water Site Code: SHP01 Date Completed: 04/02/2013

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	CCV	CCB								
Selenium	ICP/MS	03/27/2013					OK	100.0	89.0	88.0	0.0		4.0	102.0
Selenium	ICP/MS	03/27/2013					OK	103.0			3.0			103.0
Sodium	ICP/ES	03/27/2013	0.0000	1.0000	OK	OK	OK	93.0			0.0		7.0	81.0
Sodium	ICP/ES	03/27/2013					OK	93.0			0.0		8.0	83.0
Sodium	ICP/ES	03/27/2013					OK	94.0			0.0		5.0	85.0
Sodium	ICP/ES	03/27/2013					OK	93.0			10.0		10.0	86.0
Strontium	ICP/ES	03/27/2013	0.0000	1.0000	OK	OK	OK	97.0			0.0	96.0	6.0	94.0
Strontium	ICP/ES	03/27/2013					OK	97.0			0.0	101.0	4.0	101.0
Strontium	ICP/ES	03/27/2013					OK	99.0			4.0	101.0	3.0	99.0
Strontium	ICP/ES	03/27/2013					OK	97.0			17.0	96.0	5.0	92.0
Uranium	ICP/MS	03/27/2013	0.0000	1.0000	OK	OK	OK	97.0			2.0		3.0	110.0
Uranium	ICP/MS	03/27/2013					OK	104.0	105.0	98.0	1.0		5.0	104.0
Uranium	ICP/MS	03/27/2013					OK	102.0			1.0		1.0	104.0
Uranium	ICP/MS	03/27/2013					OK	103.0			3.0		4.0	102.0

SAMPLE MANAGEMENT SYSTEM
Wet Chemistry Data Validation Worksheet

RIN: 13035182 Lab Code: PAR Date Due: 04/23/2013
 Matrix: Water Site Code: SHP01 Date Completed: 04/02/2013

Analyte	Date Analyzed	CALIBRATION				Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	CCV	CCB						
AMMONIA AS N	03/27/2013	0.000	1.0000	OK	OK	OK	96.00	75.0	75.0	0	
AMMONIA AS N	03/27/2013					OK	97.00	83.0	88.0	6.00	
AMMONIA AS N	03/27/2013					OK	98.00	93.0	91.0	1.00	
AMMONIA AS N	03/27/2013					OK	95.00				
CHLORIDE	03/28/2013	0.000	1.0000	OK	OK	OK	99.00	101.0	99.0	1.00	
CHLORIDE	03/28/2013					OK	102.00	96.0	95.0	0	
CHLORIDE	03/29/2013					OK	101.00	102.0	96.0	2.00	
CHLORIDE	03/29/2013					OK	98.00	98.0	98.0	0	
CHLORIDE	03/29/2013						100.0				
CHLORIDE	03/29/2013						98.0				
Nitrate+Nitrite as N	03/29/2013	0.000	1.0000	OK	OK	OK	102.00	108.0	114.0	2.00	
Nitrate+Nitrite as N	03/29/2013					OK	101.00				
Nitrate+Nitrite as N	03/30/2013					OK	104.00	96.0	87.0	2.00	
Nitrate+Nitrite as N	03/30/2013					OK	103.00	93.0	93.0	0	
SULFATE	03/28/2013	0.000	0.9999	OK	OK	OK	97.00	95.0	94.0	1.00	
SULFATE	03/28/2013					OK	96.00	95.0	95.0	0	

SAMPLE MANAGEMENT SYSTEM
Wet Chemistry Data Validation Worksheet

RIN: 13035182 Lab Code: PAR Date Due: 04/23/2013
 Matrix: Water Site Code: SHP01 Date Completed: 04/02/2013

Analyte	Date Analyzed	CALIBRATION				Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	CCV	CCB						
SULFATE	03/28/2013						95.0				
SULFATE	03/29/2013					OK	96.00	102.0	93.0	1.00	
SULFATE	03/29/2013					OK	94.00	94.0		1.00	
SULFATE	03/29/2013						97.0				

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, 0604, 0726, 0727, 0730, 0731, 0812, 0814, 0816, 0817, 0819, 0820, 0822, 0824, 0825, 0826, 0827, 1007, 1058, 1059, 1068, 1069, 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.

Equipment Blank Assessment

Equipment blanks are prepared and analyzed to document contamination attributable to the sample collection process. An equipment blank (field ID 2211) was collected after decontamination of the tubing reel used to collect some surface water samples. There were no analytes detected in this blank. 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 relative percent difference (RPD) for duplicate results that are greater than 5 times the PQL should be less than 20 percent. The RPD is not used to evaluate results that are less than 5 times the PQL. For these results (RPD is NA on the Field Duplicates report), the range should be no greater than the PQL.

Duplicate samples were collected from floodplain locations 0610, 1112, and 1203. The duplicate results met the criteria with the following exceptions The manganese results from location 1203 and the potassium results from location 1112 had RSD values greater than 20 percent. The sample and associated duplicate results are qualified with a “J” flag as estimated values.

Duplicate samples were collected from terrace locations 1095, 1215, 1093R, 0818, 1087, 1070, and 1096. The duplicate results met the criteria with the following exceptions The calcium, magnesium, manganese, and strontium results from location 1215, the potassium results from location 1087, and the manganese results from location 1070 had RSD values greater than 20 percent. The sample and associated duplicate results are qualified with a “J” flag as estimated values.

During the review of the duplicate data, there were no analytical errors identified and sampling difficulties were not reported on the field data sheets. For those results where the RPD exceeded 20 percent, the precision observed is attributed to the complex sample matrix that required sample dilution prior to analysis for most analytes. The duplicate results are acceptable as qualified.

SAMPLE MANAGEMENT SYSTEM
Validation Report: Field Duplicates

RIN: 13035181 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 05/14/2013

Duplicate: 2210

Sample: 1203

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	0.1	U		1	0.1	U		1			MG/L
Calcium	74000			1	74000			1	0		UG/L
CHLORIDE	18			5	19			5	5.41		MG/L
Magnesium	13000			1	13000			1	0		UG/L
Manganese	15			1	11			1	30.77		UG/L
Nitrate+Nitrite as N	0.49			1	0.49			1	0		MG/L
Potassium	2700			1	2700			1	0		UG/L
Selenium	0.73			1	0.79			1	7.89		UG/L
Sodium	44000			1	44000			1	0		UG/L
Strontium	1000			1	1000			1	0		UG/L
SULFATE	180			5	180			5	0		MG/L
Uranium	1.9			1	1.9			1	0		UG/L

Duplicate: 2212

Sample: 0610

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	3.9			5	3.8			1	2.60		MG/L
Calcium	450000			10	450000			10	0		UG/L
CHLORIDE	200			100	210			100	4.88		MG/L
Magnesium	810000			10	810000			10	0		UG/L
Manganese	27	B		10	30	B		10	10.53		UG/L
Nitrate+Nitrite as N	290			200	290			200	0		MG/L
Potassium	94000			10	91000			10	3.24		UG/L
Selenium	69			100	65			50	5.97		UG/L
Sodium	1100000			10	1100000			10	0		UG/L
Strontium	6900			10	6800			10	1.46		UG/L
SULFATE	5100			100	5300			100	3.85		MG/L
Uranium	890			100	870			50	2.27		UG/L

Duplicate: 2215

Sample: 1112

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	13			20	12			5	8.00		MG/L
Calcium	410000			20	360000			1	12.99		UG/L
CHLORIDE	270			100	280			100	3.64		MG/L
Magnesium	850000			20	860000			20	1.17		UG/L
Manganese	1400			20	1200			1	15.38		UG/L
Nitrate+Nitrite as N	130			100	130			100	0		MG/L

SAMPLE MANAGEMENT SYSTEM
Validation Report: Field Duplicates

Page 2 of 2

RIN: 13035181 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 05/14/2013

Duplicate: 2215

Sample: 1112

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
Potassium	72000			20	100000			1	32.56		UG/L
Selenium	600			100	580			100	3.39		UG/L
Sodium	1700000			20	1700000			20	0		UG/L
Strontium	8000			20	6700			1	17.69		UG/L
SULFATE	7100			100	7200			100	1.40		MG/L
Uranium	910			100	880			100	3.35		UG/L

SAMPLE MANAGEMENT SYSTEM
Validation Report: Field Duplicates

RIN: 13035182 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 05/15/2013

Duplicate: 2319

Sample: 1095

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	440			100	430			100	2.30		MG/L
Calcium	810000			10	780000			5	3.77		UG/L
CHLORIDE	300			200	280			200	6.90		MG/L
Magnesium	1300000			10	1400000			5	7.41		UG/L
Manganese	34000			10	31000			5	9.23		UG/L
Nitrate+Nitrite as N	1800			2000	1900			2000	5.41		MG/L
Potassium	140000			10	160000			5	13.33		UG/L
Selenium	140			10	140			50	0		UG/L
Sodium	1100000			10	980000			25	11.54		UG/L
Strontium	8300			10	8300			5	0		UG/L
SULFATE	5200			200	4600			200	12.24		MG/L
Uranium	46			10	51			50	10.31		UG/L

Duplicate: 2320

Sample: 1215

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	30			10	31			10	3.28		MG/L
Calcium	550000			100	380000			5	36.56		UG/L
CHLORIDE	2100			500	2100			500	0		MG/L
Magnesium	5800000			100	4700000			50	20.95		UG/L
Manganese	600			100	450			5	28.57		UG/L
Nitrate+Nitrite as N	1600			1000	1500			1000	6.45		MG/L
Potassium	420000			100	480000			5	13.33		UG/L
Selenium	2100			200	2300			50	9.09		UG/L
Sodium	1.1E+07			100	9400000			250	15.69		UG/L
Strontium	14000			100	9800			5	35.29		UG/L
SULFATE	35000			500	36000	N		500	2.82		MG/L
Uranium	2800			200	2900			50	3.51		UG/L

Duplicate: 2466

Sample: 1093R

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	400			100	380			100	5.13		MG/L
Calcium	910000			10	950000			10	4.30		UG/L
CHLORIDE	550			200	540			200	1.83		MG/L
Magnesium	1800000			10	1900000			10	5.41		UG/L
Manganese	28000			10	29000			10	3.51		UG/L
Nitrate+Nitrite as N	2200			5000	2300			5000	4.44		MG/L

SAMPLE MANAGEMENT SYSTEM
Validation Report: Field Duplicates

Page 2 of 3

RIN: 13035182 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 05/15/2013

Duplicate: 2466

Sample: 1093R

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
Potassium	180000			10	190000			10	5.41		UG/L
Selenium	510			10	520			50	1.94		UG/L
Sodium	1500000			50	1600000			50	6.45		UG/L
Strontium	10000			10	11000			10	9.52		UG/L
SULFATE	5800			200	5700			200	1.74		MG/L
Uranium	100			10	110			50	9.52		UG/L

Duplicate: 2467

Sample: 0818

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	54			20	49			10	9.71		MG/L
Calcium	460000			50	460000			50	0		UG/L
CHLORIDE	1000			500	980			500	2.02		MG/L
Magnesium	1800000			50	1900000			50	5.41		UG/L
Manganese	530			50	540			50	1.87		UG/L
Nitrate+Nitrite as N	790			500	830			500	4.94		MG/L
Potassium	60000			50	60000			50	0		UG/L
Selenium	2300			100	2300			100	0		UG/L
Sodium	3700000			50	3700000			50	0		UG/L
Strontium	12000			50	13000			50	8.00		UG/L
SULFATE	13000			500	13000			500	0		MG/L
Uranium	120			100	120			100	0		UG/L

Duplicate: 2468

Sample: 1067

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	110			100	97			20	12.56		MG/L
Calcium	480000			10	470000			50	2.11		UG/L
CHLORIDE	250			200	250			200	0		MG/L
Magnesium	1100000			10	1000000			50	9.52		UG/L
Manganese	1100			10	1000			50	9.52		UG/L
Nitrate+Nitrite as N	230			200	230			200	0		MG/L
Potassium	92000			10	67000			50	31.45		UG/L
Selenium	30			50	33			50	9.52		UG/L
Sodium	1100000			10	980000			50	11.54		UG/L
Strontium	8700			10	8500			50	2.33		UG/L
SULFATE	6400			200	6300			200	1.57		MG/L

SAMPLE MANAGEMENT SYSTEM
Validation Report: Field Duplicates

RIN: 13035182 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 05/15/2013

Duplicate: 2468

Sample: 1087

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
Uranium	480			50	450			50	6.45		UG/L

Duplicate: 2810

Sample: 1070

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	2.4			1	2.6			1	8.00		MG/L
Calcium	420000			10	430000			100	2.35		UG/L
CHLORIDE	1100			500	1100			500	0		MG/L
Magnesium	1200000			10	1200000			100	0		UG/L
Manganese	230			10	160	B		100	35.90		UG/L
Nitrate+Nitrite as N	720			500	700			500	2.82		MG/L
Potassium	83000			10	47000	B		100			UG/L
Selenium	2600			100	2600			10	0		UG/L
Sodium	5400000			100	5700000			100	5.41		UG/L
Strontium	10000			10	9900			100	1.01		UG/L
SULFATE	15000			500	15000			500	0		MG/L
Uranium	81			100	80			10	1.24		UG/L

Duplicate: 2811

Sample: 1096

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	2.1			1	2.7			1	NA		MG/L
Calcium	390000			10	400000			20	2.53		UG/L
CHLORIDE	930			500	970			500	4.21		MG/L
Magnesium	920000			10	910000			20	1.09		UG/L
Manganese	110			10	110			20	0		UG/L
Nitrate+Nitrite as N	590			500	720			500	19.85		MG/L
Potassium	69000			10	59000			20	15.63		UG/L
Selenium	2900			50	2600			10	10.91		UG/L
Sodium	4900000			100	4900000			200	0		UG/L
Strontium	8700			10	8700			20	0		UG/L
SULFATE	14000			500	14000			500	0		MG/L
Uranium	87			50	78			10	10.91		UG/L

Certification

All laboratory analytical quality control criteria were met except as qualified in this report. The data qualifiers listed on the 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:

Mitchell R Bau, Gretchen R Baer
for S. Donovan, 6/18/13

Stephen Donovan

Data Validation Lead:

Mitchell R Bau, Gretchen R Baer
for S. Donovan, 6/18/13

Stephen Donovan

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 environmental database. The application compares the new data set (in standard environmental database units) 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. The review should include an evaluation of any notable trends in the data that may indicate the outliers represent true extreme values.

In-depth review of the selenium data from floodplain locations 0779 and 1113 that included duplicate analyses performed by different methods confirmed the reported results.

Data from floodplain locations 1128, 1136, and 1137, and terrace locations 0600 and 1091, show an overall downward or upward shift in concentration for multiple analytes measured by different methods, indicating that these results are representative of the samples collected.

There is no indication that there are errors associated with the data identified as potential outliers and the data from this event are acceptable as qualified.

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Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 13035181

Report Date: 05/22/2013

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N	N Below Detect	
						Lab	Data		Lab	Data		Lab	Data			
SHP01	0501	0001	03/18/2013	Chloride	22			20			6			25	0	No
SHP01	0608	N001	03/20/2013	Ammonia Total as N	58		F	420		JF	66		F	20	0	No
SHP01	0610	N001	03/20/2013	Uranium	0.89		F	2.1		FQ	0.9		F	27	0	No
SHP01	0614	N001	03/21/2013	Chloride	190		F	720		F	205			45	0	No
SHP01	0614	N001	03/21/2013	Magnesium	810		F	3200		F	940		F	45	0	No
SHP01	0614	N001	03/21/2013	Strontium	6.5		F	14.1			7.2		F	43	0	NA
SHP01	0614	N001	03/21/2013	Sulfate	6300		F	17000		F	6630		H	45	0	No
SHP01	0615	N001	03/21/2013	Magnesium	400		F	3400		F	420		F	42	0	NA
SHP01	0615	N001	03/21/2013	Nitrate + Nitrite as Nitrogen	1.3		F	1200		F	2.6		F	20	0	NA
SHP01	0615	N001	03/21/2013	Potassium	44		F	300		F	48		F	40	0	No
SHP01	0615	N001	03/21/2013	Selenium	0.028		F	1.81			0.049		F	42	0	NA
SHP01	0618	N001	03/19/2013	Ammonia Total as N	23		F	72		F	33.8		F	24	0	No
SHP01	0618	N001	03/19/2013	Manganese	4.4		F	11.3		F	5.97			31	0	NA
SHP01	0618	N001	03/19/2013	Nitrate + Nitrite as Nitrogen	2		F	360		F	6.1			25	0	No
SHP01	0618	N001	03/19/2013	Selenium	0.052		F	0.511		N	FJ	0.064		32	0	No
SHP01	0622	N001	03/21/2013	Magnesium	68		F	2305			86		F	12	0	No
SHP01	0622	N001	03/21/2013	Potassium	13		F	124			14		F	11	0	No
SHP01	0622	N001	03/21/2013	Sulfate	2400		F	14900			2600		F	12	0	NA
SHP01	0622	N001	03/21/2013	Uranium	0.055		F	3.07			0.073		F	12	0	NA

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 13035181

Report Date: 05/22/2013

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current	Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier		
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers			N	N Below Detect
						Lab	Data		Lab	Data		Lab	Data			
SHP01	0626	N001	03/21/2013	Nitrate + Nitrite as Nitrogen	0.061		F	0.05	U	F	0.01	U	F	12	9	NA
SHP01	0626	N001	03/21/2013	Sulfate	2200		F	9100			2300		F	37	0	NA
SHP01	0630	N001	03/19/2013	Magnesium	320		F	310		F	28		F	27	0	No
SHP01	0735	N001	03/18/2013	Selenium	0.019		F	0.27		F	0.022		F	44	1	No
SHP01	0736	N001	03/19/2013	Chloride	74		F	663			76		F	29	0	NA
SHP01	0736	N001	03/19/2013	Magnesium	44		F	1670			53		F	28	0	No
SHP01	0736	N001	03/19/2013	Potassium	15		F	72		F	18		F	27	0	No
SHP01	0736	N001	03/19/2013	Sodium	900		F	4800			910		F	30	0	No
SHP01	0736	N001	03/19/2013	Uranium	0.037		F	1.6			0.0479		F	32	0	No
SHP01	0766	N001	03/21/2013	Calcium	270		F	461			310		F	8	0	No
SHP01	0766	N001	03/21/2013	Magnesium	180		F	3110			230		F	8	0	NA
SHP01	0766	N001	03/21/2013	Potassium	32		F	171			36	E	F	8	0	No
SHP01	0766	N001	03/21/2013	Sodium	1500		F	6490			1600		F	8	0	No
SHP01	0766	N001	03/21/2013	Strontium	3.9		F	16			4.79		F	8	0	NA
SHP01	0766	N001	03/21/2013	Sulfate	4400		F	24600			5290		F	9	0	NA
SHP01	0766	N001	03/21/2013	Uranium	0.17		F	4.44			0.21		F	9	0	NA
SHP01	0768	N001	03/21/2013	Manganese	0.93		F	6			0.96		F	13	0	NA
SHP01	0768	N001	03/21/2013	Selenium	0.0009		F	0.768			0.0012		F	13	3	No
SHP01	0768	N001	03/21/2013	Uranium	0.13		F	1.4		F	0.15		F	13	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 13035181

Report Date: 05/22/2013

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier	
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N		N Below Detect
						Lab	Data		Lab	Data		Lab	Data			
SHP01	0773	N001	03/20/2013	Calcium	150		F	490		F	210		F	12	0	No
SHP01	0773	N001	03/20/2013	Chloride	54		F	197			60		F	12	0	No
SHP01	0773	N001	03/20/2013	Magnesium	170		F	911			230		F	12	0	NA
SHP01	0773	N001	03/20/2013	Potassium	26		F	67.9	E	J	27		F	12	0	No
SHP01	0773	N001	03/20/2013	Sodium	230		F	1030			300	E	F	12	0	No
SHP01	0773	N001	03/20/2013	Strontium	1.8		F	6.03			2.2		F	10	0	No
SHP01	0773	N001	03/20/2013	Sulfate	1200		F	5630			1700		F	13	0	NA
SHP01	0775	N001	03/21/2013	Magnesium	150		F	1750		L	170		F	10	0	NA
SHP01	0775	N001	03/21/2013	Nitrate + Nitrite as Nitrogen	0.27		F	0.18		F	0.01	U	F	8	6	NA
SHP01	0775	N001	03/21/2013	Potassium	31		F	120	E	JL	34.7	E	F	10	0	No
SHP01	0775	N001	03/21/2013	Uranium	0.15		F	2.5		L	0.17		F	11	0	NA
SHP01	0779	N001	03/19/2013	Selenium	0.075		F	0.035		F	0.001	B		13	3	Yes
SHP01	0792	N001	03/21/2013	Chloride	110		F	1100		F	150		F	14	0	No
SHP01	0792	N001	03/21/2013	Magnesium	210		F	2500		F	320		F	14	0	No
SHP01	0792	N001	03/21/2013	Sodium	1400		F	6500		F	2000		F	14	0	No
SHP01	0792	N001	03/21/2013	Sulfate	4500		F	27000		F	6170		F	14	0	NA
SHP01	0798	N001	03/21/2013	Chloride	150		F	908			160		F	10	0	No
SHP01	0798	N001	03/21/2013	Magnesium	270		F	2130			311		F	10	0	No
SHP01	0798	N001	03/21/2013	Potassium	34		F	180		F	41		F	10	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 13035181

Report Date: 05/22/2013

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N	N Below Detect	
						Lab	Data		Lab	Data		Lab	Data			
SHP01	0798	N001	03/21/2013	Selenium	0.0016		F	0.873			0.0022		F	10	0	No
SHP01	0798	N001	03/21/2013	Sodium	1600		F	4800		F	1700		F	10	0	No
SHP01	0798	N001	03/21/2013	Sulfate	5000		F	18000		F	5620		F	10	0	No
SHP01	0798	N001	03/21/2013	Uranium	0.25		F	2.78			0.315	E	F	10	0	No
SHP01	0854	0001	03/21/2013	Ammonia Total as N	1.9		F	8.9		F	3.5		F	7	0	No
SHP01	0854	0001	03/21/2013	Calcium	320		F	840		F	330		F	15	0	NA
SHP01	0854	0001	03/21/2013	Chloride	170		F	1400			240		F	15	0	NA
SHP01	0854	0001	03/21/2013	Magnesium	480		F	3780			690		F	15	0	No
SHP01	0854	0001	03/21/2013	Manganese	2.4		F	12.8			2.5		F	16	0	No
SHP01	0854	0001	03/21/2013	Nitrate + Nitrite as Nitrogen	0.9		F	120		F	5.5		F	7	0	No
SHP01	0854	0001	03/21/2013	Sodium	1700		F	7190			1900		FJ	15	0	No
SHP01	0854	0001	03/21/2013	Strontium	5.4		F	18.1			6		F	15	0	No
SHP01	0854	0001	03/21/2013	Sulfate	6200		F	27000			8000		F	16	0	NA
SHP01	0854	0001	03/21/2013	Uranium	0.16		F	4.42			0.76		F	16	0	No
SHP01	0855	N001	03/19/2013	Strontium	14		F	13		F	6.6		F	17	0	No
SHP01	0856	N001	03/19/2013	Ammonia Total as N	0.12		F	0.1	U	F	0.046	J	F	12	10	NA
SHP01	0856	N001	03/19/2013	Magnesium	47		F	119			48		F	18	0	No
SHP01	0856	N001	03/19/2013	Potassium	11		F	24		F	14		F	18	0	No
SHP01	0857	N001	03/21/2013	Chloride	230		F	221		F	17		F	14	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 13035181

Report Date: 05/22/2013

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N	N Below Detect	
						Lab	Data		Lab	Data		Lab	Data			
SHP01	0857	N001	03/21/2013	Magnesium	670		F	570		F	51		F	14	0	No
SHP01	0857	N001	03/21/2013	Manganese	6.6		F	6.3		F	0.67		F	15	0	No
SHP01	0857	N001	03/21/2013	Potassium	41		F	37		F	10		F	14	0	No
SHP01	0857	N001	03/21/2013	Selenium	0.01		F	0.0061		F	0.0001	U		15	6	No
SHP01	0857	N001	03/21/2013	Sodium	1200		F	880		F	140		F	14	0	No
SHP01	0857	N001	03/21/2013	Strontium	8.6		F	8.39		F	0.92		F	14	0	No
SHP01	0857	N001	03/21/2013	Sulfate	6000		F	5200		F	470		F	15	0	No
SHP01	0857	N001	03/21/2013	Uranium	0.84		F	0.769	E	F	0.076		FQ	15	0	No
SHP01	0899	0001	03/21/2013	Chloride	18			14			8.6			14	0	No
SHP01	0899	0001	03/21/2013	Sodium	43			40			19			14	0	No
SHP01	0899	0001	03/21/2013	Sulfate	180			140			100			14	0	No
SHP01	1008	N001	03/21/2013	Ammonia Total as N	2.6		F	21		F	3.9		F	14	0	No
SHP01	1008	N001	03/21/2013	Magnesium	280		F	2760			410		F	17	0	No
SHP01	1008	N001	03/21/2013	Manganese	1.8		F	12.3			2.3		F	18	0	No
SHP01	1008	N001	03/21/2013	Nitrate + Nitrite as Nitrogen	0.01	U	F	170		F	0.011		F	14	0	No
SHP01	1008	N001	03/21/2013	Potassium	36		F	160		F	45		F	17	0	No
SHP01	1008	N001	03/21/2013	Selenium	0.0038		F	0.24		F	0.0045		F	18	0	No
SHP01	1008	N001	03/21/2013	Sodium	1300		F	5110			1500		F	17	0	No
SHP01	1008	N001	03/21/2013	Strontium	5.2		F	13.7			5.3		F	17	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 13035181

Report Date: 05/22/2013

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N	N Below Detect	
						Lab	Data		Lab	Data		Lab	Data			
SHP01	1008	N001	03/21/2013	Sulfate	4600		F	19100			5600		F	18	0	No
SHP01	1008	N001	03/21/2013	Uranium	0.4		F	3.32			0.54		F	18	0	No
SHP01	1009	N001	03/20/2013	Potassium	18		F	51		F	19.7		F	14	0	No
SHP01	1089	N001	03/19/2013	Magnesium	200			1700			210			15	0	No
SHP01	1089	N001	03/19/2013	Nitrate + Nitrite as Nitrogen	0.59			83			0.73			19	0	No
SHP01	1089	N001	03/19/2013	Potassium	35			150			38.3			15	0	No
SHP01	1089	N001	03/19/2013	Sodium	1300			3700			1400			15	0	NA
SHP01	1104	N001	03/19/2013	Calcium	330			440			350			12	0	No
SHP01	1104	N001	03/19/2013	Magnesium	350			1600			460			12	0	No
SHP01	1104	N001	03/19/2013	Nitrate + Nitrite as Nitrogen	2.5			180		F	2.9			14	0	No
SHP01	1104	N001	03/19/2013	Potassium	44			140			46.9			12	0	No
SHP01	1104	N001	03/19/2013	Strontium	5.1			10			5.9			12	0	No
SHP01	1104	N001	03/19/2013	Sulfate	5100			19000		F	6100			14	0	No
SHP01	1104	N001	03/19/2013	Uranium	0.38			2.6		F	0.49			14	0	No
SHP01	1110	N001	03/19/2013	Calcium	360			450			374			13	0	NA
SHP01	1110	N001	03/19/2013	Chloride	200			590			220			13	0	No
SHP01	1110	N001	03/19/2013	Selenium	0.2			0.75			0.31			13	0	No
SHP01	1110	N001	03/19/2013	Sodium	1300			3200			1500			13	0	No
SHP01	1110	N001	03/19/2013	Strontium	7.4			11			7.6			13	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 13035181

Report Date: 05/22/2013

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N	N Below Detect	
						Lab	Data		Lab	Data		Lab	Data			
SHP01	1111	N001	03/21/2013	Calcium	360		F	560		F	370		F	12	0	NA
SHP01	1111	N001	03/21/2013	Chloride	330		F	540		F	340		F	12	0	No
SHP01	1111	N001	03/21/2013	Magnesium	850		F	1600		F	940		F	12	0	No
SHP01	1111	N001	03/21/2013	Manganese	1		F	0.97		F	0.34		F	12	0	No
SHP01	1111	N001	03/21/2013	Selenium	0.18		F	0.74		F	0.2		F	12	0	No
SHP01	1111	N001	03/21/2013	Sulfate	6900		F	12000		F	7500		F	12	0	No
SHP01	1111	N001	03/21/2013	Uranium	0.62		F	1.23		F	0.72		F	12	0	No
SHP01	1112	N001	03/21/2013	Ammonia Total as N	13		F	91		F	18		F	13	0	No
SHP01	1112	N001	03/21/2013	Chloride	270		F	530		F	290		F	13	0	No
SHP01	1112	N001	03/21/2013	Magnesium	850		F	2300		F	1000		F	13	0	No
SHP01	1112	N001	03/21/2013	Manganese	1.4		F	3.7		F	1.9		F	13	0	NA
SHP01	1112	N001	03/21/2013	Nitrate + Nitrite as Nitrogen	130		F	840		F	140		F	13	0	No
SHP01	1112	N001	03/21/2013	Potassium	72		FJ	170		F	88	E	F	13	0	No
SHP01	1112	N001	03/21/2013	Sulfate	7100		F	14000		F	8000		F	13	0	No
SHP01	1112	N001	03/21/2013	Uranium	0.91		F	2.4		F	1.2		F	13	0	No
SHP01	1113	0001	03/20/2013	Manganese	0.0079	B	F	2.4		F	0.0089	B	F	10	1	No
SHP01	1113	0001	03/20/2013	Potassium	73	E	FJ	230		F	77		FJ	10	0	No
SHP01	1113	0001	03/20/2013	Selenium	0.42		F	0.32		F	0.0087		F	10	0	Yes
SHP01	1114	N001	03/20/2013	Ammonia Total as N	75		F	440		F	82		F	12	0	NA

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 13035181

Report Date: 05/22/2013

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N	N Below Detect	
						Lab	Data		Lab	Data		Lab	Data			
SHP01	1117	N001	03/18/2013	Strontium	0.93		F	0.74		F	0.46		F	12	0	No
SHP01	1128	N001	03/18/2013	Ammonia Total as N	290		F	470		F	370		F	8	0	NA
SHP01	1128	N001	03/18/2013	Calcium	330		F	480		F	430		F	8	0	NA
SHP01	1128	N001	03/18/2013	Magnesium	1200		F	1850		F	1500		F	8	0	Yes
SHP01	1128	N001	03/18/2013	Manganese	2.7		F	5.33		F	4		F	8	0	NA
SHP01	1128	N001	03/18/2013	Strontium	6.4		F	12.1		F	8.5		F	8	0	No
SHP01	1128	N001	03/18/2013	Sulfate	7500		F	10000		F	8800		F	8	0	NA
SHP01	1128	N001	03/18/2013	Uranium	1.1		F	1.6		F	1.4		F	8	0	NA
SHP01	1132	N001	03/20/2013	Calcium	61		F	58		F	44		F	9	0	No
SHP01	1132	N001	03/20/2013	Chloride	18		F	15		F	8.8		F	9	0	No
SHP01	1132	N001	03/20/2013	Selenium	0.00013		F	0.0015	UN	F	0.00026		F	9	1	No
SHP01	1132	N001	03/20/2013	Sodium	42		F	41		F	30	E	FJ	9	0	No
SHP01	1132	N001	03/20/2013	Strontium	0.76		F	0.71		F	0.54		F	9	0	No
SHP01	1134	N001	03/20/2013	Calcium	55		F	190		F	61		F	7	0	No
SHP01	1134	N001	03/20/2013	Selenium	0.000051	B	F	0.0064		F	0.000099	B	UF	7	2	No
SHP01	1135	N001	03/19/2013	Ammonia Total as N	0.29		F	0.11		F	0.0642	J	UF	9	5	NA
SHP01	1135	N001	03/19/2013	Chloride	88		F	130		F	90		F	9	0	No
SHP01	1135	N001	03/19/2013	Magnesium	130		F	400		F	160		F	9	0	No
SHP01	1135	N001	03/19/2013	Manganese	1.7		F	3.2		F	2		F	9	0	NA

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 13035181

Report Date: 05/22/2013

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current	Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier		
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers			N	N Below Detect
						Lab	Data		Lab	Data		Lab	Data			
SHP01	1135	N001	03/19/2013	Potassium	20		F	47		F	21.2			9	0	No
SHP01	1135	N001	03/19/2013	Sodium	960		F	1700		F	1000		F	9	0	No
SHP01	1135	N001	03/19/2013	Sulfate	3400		F	6100		F	3800		F	9	0	NA
SHP01	1135	N001	03/19/2013	Uranium	0.09		F	0.24		F	0.11		F	9	0	No
SHP01	1136	N001	03/19/2013	Ammonia Total as N	0.19		F	0.1	U	F	0.0411	J	UF	8	6	NA
SHP01	1136	N001	03/19/2013	Calcium	660		F	480		F	62.9		F	8	0	No
SHP01	1136	N001	03/19/2013	Chloride	270		F	140		F	14.7			8	0	No
SHP01	1136	N001	03/19/2013	Magnesium	480		F	190		F	18.3		F	8	0	Yes
SHP01	1136	N001	03/19/2013	Manganese	4.8		F	3.5		F	0.863	E	F	8	0	No
SHP01	1136	N001	03/19/2013	Nitrate + Nitrite as Nitrogen	65		F	27		F	0.01	U	F	8	4	NA
SHP01	1136	N001	03/19/2013	Potassium	18		F	10		F	2.32	B		8	0	No
SHP01	1136	N001	03/19/2013	Sodium	940		F	290		F	64		F	8	0	Yes
SHP01	1136	N001	03/19/2013	Strontium	7.2		F	4.3		F	0.972		F	6	0	No
SHP01	1136	N001	03/19/2013	Sulfate	4600		F	2100		F	190			8	0	Yes
SHP01	1136	N001	03/19/2013	Uranium	0.59		F	0.13		F	0.00421	E	J	8	0	No
SHP01	1137	0001	03/21/2013	Ammonia Total as N	0.44		F	1.3		F	0.54		F	6	0	No
SHP01	1137	0001	03/21/2013	Calcium	640		F	400		F	124		F	6	0	No
SHP01	1137	0001	03/21/2013	Chloride	530		F	230		F	48.4		F	6	0	Yes
SHP01	1137	0001	03/21/2013	Magnesium	1400		F	560		F	184		F	6	0	Yes

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 13035181

Report Date: 05/22/2013

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N	N Below Detect	
						Lab	Data		Lab	Data		Lab	Data			
SHP01	1137	0001	03/21/2013	Manganese	5.7		F	2.8		F	0.924		F	6	0	Yes
SHP01	1137	0001	03/21/2013	Nitrate + Nitrite as Nitrogen	41		F	32		F	3.99		F	6	0	No
SHP01	1137	0001	03/21/2013	Potassium	52		F	29		F	12		F	6	0	Yes
SHP01	1137	0001	03/21/2013	Sodium	2000		F	1000		F	570		F	6	0	Yes
SHP01	1137	0001	03/21/2013	Strontium	11		F	5.2		F	1.72		F	6	0	Yes
SHP01	1137	0001	03/21/2013	Sulfate	10000		F	4800		F	2010		F	6	0	Yes
SHP01	1137	0001	03/21/2013	Uranium	1.8		F	0.6		F	0.172		F	6	0	Yes
SHP01	1138	N001	03/21/2013	Ammonia Total as N	0.44		F	0.43		F	0.271		F	6	0	No
SHP01	1138	N001	03/21/2013	Chloride	580		F	360		F	58		F	6	0	No
SHP01	1138	N001	03/21/2013	Magnesium	1500		F	980		F	120		F	6	0	No
SHP01	1138	N001	03/21/2013	Manganese	6.7		F	4.2		F	0.56		F	6	0	No
SHP01	1138	N001	03/21/2013	Potassium	54		F	46		F	17.8		F	6	0	No
SHP01	1138	N001	03/21/2013	Sodium	2100		F	1200		F	490		F	6	0	No
SHP01	1138	N001	03/21/2013	Strontium	12		F	9.2		F	1.1		F	6	0	No
SHP01	1138	N001	03/21/2013	Sulfate	11000		F	7700		F	1700		F	6	0	No
SHP01	1138	N001	03/21/2013	Uranium	2		F	1.3		F	0.16		F	6	0	No
SHP01	1139	0001	03/21/2013	Chloride	470		F	279		F	29		F	8	0	No
SHP01	1139	0001	03/21/2013	Magnesium	1100		F	922		F	50.6		F	8	0	No
SHP01	1139	0001	03/21/2013	Manganese	0.0023	B	F	0.728		F	0.04	UE	F	8	1	NA

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 13035181

Report Date: 05/22/2013

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current	Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier		
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers			N	N Below Detect
						Lab	Data		Lab	Data		Lab	Data			
SHP01	1139	0001	03/21/2013	Potassium	63		F	55		F	9.4	E	F	8	0	No
SHP01	1139	0001	03/21/2013	Sodium	2600		F	2020		F	183		F	8	0	No
SHP01	1139	0001	03/21/2013	Strontium	8.6		F	7.75		F	1.6		F	6	0	No
SHP01	1139	0001	03/21/2013	Sulfate	10000		F	6800		F	370		F	8	0	No
SHP01	1139	0001	03/21/2013	Uranium	1.2		F	0.845		F	0.102		F	8	0	No
SHP01	1140	N001	03/21/2013	Magnesium	920		F	1640		F	940		F	7	0	No
SHP01	1140	N001	03/21/2013	Nitrate + Nitrite as Nitrogen	34		F	320		F	66		F	7	0	No
SHP01	1140	N001	03/21/2013	Potassium	67		F	120		FJ	79		F	7	0	No
SHP01	1140	N001	03/21/2013	Uranium	1.1		F	2.26		F	1.2		F	7	0	No
SHP01	1141	N001	03/21/2013	Chloride	65		F	140		F	69		F	7	0	No
SHP01	1141	N001	03/21/2013	Magnesium	290		F	700		F	350		F	7	0	No
SHP01	1141	N001	03/21/2013	Nitrate + Nitrite as Nitrogen	0.68		F	58.5		F	8		F	7	0	No
SHP01	1141	N001	03/21/2013	Potassium	33		F	72		F	42		F	7	0	No
SHP01	1141	N001	03/21/2013	Selenium	0.096		F	0.706	N	F	0.097		F	7	0	No
SHP01	1141	N001	03/21/2013	Sodium	380		F	844		F	450		F	7	0	No
SHP01	1141	N001	03/21/2013	Sulfate	2700		F	5200		F	3200		F	7	0	No
SHP01	1141	N001	03/21/2013	Uranium	0.44		F	1.1		F	0.58		F	7	0	No
SHP01	1142	N001	03/20/2013	Calcium	70		F	67		F	53		F	8	0	No
SHP01	1142	N001	03/20/2013	Strontium	0.82		F	0.72		F	0.6		F	6	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 13035181

Report Date: 05/22/2013

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current	Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier		
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers			N	N Below Detect
						Lab	Data		Lab	Data		Lab	Data			
SHP01	1142	N001	03/20/2013	Sulfate	160		F	156		F	110		F	8	0	No
SHP01	1143	N001	03/19/2013	Ammonia Total as N	0.11		F	0.1	U	F	0.0502	J	UF	8	6	NA
SHP01	1143	N001	03/19/2013	Magnesium	63		F	88.6		F	65		F	8	0	No
SHP01	1143	N001	03/19/2013	Potassium	11		F	22		F	12		F	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.

NA: Statistical testing not applicable, data are not normally or lognormally distributed.

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data for Filtered Samples

Laboratory: ALS Laboratory Group

RIN: 13035182

Report Date: 05/22/2013

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier	
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N	N Below Detect		
						Lab	Data		Lab	Data		Lab	Data				
SHP02	0600	0001	03/20/2013	Calcium	250		FQ	470			340			FQ	19	0	Yes
SHP02	0600	0001	03/20/2013	Chloride	1400		FQ	680			79				19	0	Yes
SHP02	0600	0001	03/20/2013	Magnesium	260		FQ	858			510			FQ	19	0	Yes
SHP02	0600	0001	03/20/2013	Manganese	0.23	B	FQ	1.63		L	0.62				18	0	No
SHP02	0600	0001	03/20/2013	Potassium	30	B	FQ	103			45				19	0	No
SHP02	0600	0001	03/20/2013	Sodium	4800		FQ	4090			2450			L	19	0	No
SHP02	0600	0001	03/20/2013	Uranium	0.65		FQ	1.57			1.06				18	0	Yes
SHP02	0604	0001	03/20/2013	Magnesium	2100		FQ	1900		FQ	972			L	13	0	No
SHP02	0604	0001	03/20/2013	Manganese	1		FQ	0.85		FQ	0.0079	B	L		14	0	No
SHP02	0604	0001	03/20/2013	Nitrate + Nitrite as Nitrogen	630		FQ	1590		FQ	1000			FQ	7	0	No
SHP02	0604	0001	03/20/2013	Strontium	21		FQ	20.3		L	13.1			L	13	0	No
SHP02	0730	0001	03/19/2013	Uranium	0.008		FQ	0.0073		FQ	0.00056			F	18	0	No
SHP02	0814	0001	03/20/2013	Sulfate	12000		FQ	14000		FQ	12200			L	12	0	No
SHP02	0816	0001	03/21/2013	Potassium	6.8		FQ	17.8			11			FQ	8	0	No
SHP02	0816	0001	03/21/2013	Selenium	0.0077		FQ	0.242			0.015			FQ	9	0	No
SHP02	0816	0001	03/21/2013	Uranium	0.012		FQ	0.0749			0.014			FQ	9	0	No
SHP02	0817	0001	03/21/2013	Ammonia Total as N	970		FQ	960		F	480			FQ	10	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data for Filtered Samples

Laboratory: ALS Laboratory Group

RIN: 13035182

Report Date: 05/22/2013

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N	N Below Detect	
						Lab	Data		Lab	Data		Lab	Data			
SHP02	0817	0001	03/21/2013	Manganese	2.5		FQ	2.3		FQ	1.8		F	16	0	No
SHP02	0820	0001	03/20/2013	Chloride	9200		FQ	8800		FQ	1620		L	8	0	No
SHP02	0820	0001	03/20/2013	Sodium	6700		FQ	6620		L	4670		L	7	0	No
SHP02	0820	0001	03/20/2013	Sulfate	4600		FQ	7450		L	5000		FQ	8	0	No
SHP02	1059	0001	03/19/2013	Selenium	0.0098		FQ	0.225			0.021		FQ	5	0	No
SHP02	1068	0001	03/21/2013	Calcium	370		FQ	500		FQ	400		FQ	8	0	No
SHP02	1068	0001	03/21/2013	Strontium	6.8		FQ	11		FQ	7.5		FQ	8	0	No
SHP02	1073	0001	03/21/2013	Calcium	410			606		FQ	460		FQ	8	0	No
SHP02	1073	0001	03/21/2013	Manganese	0.068			1.3		FQ	0.13		FQ	8	0	No
SHP02	1073	0001	03/21/2013	Nitrate + Nitrite as Nitrogen	820			1690		FQ	980		FQ	8	0	No
SHP02	1073	0001	03/21/2013	Sodium	3500			2980		FQ	2400		FQ	8	0	No
SHP02	1073	0001	03/21/2013	Sulfate	12000			11000		FQ	8290		FQ	8	0	No
SHP02	1091	0001	03/18/2013	Ammonia Total as N	0.14			5.8			0.47			7	0	No
SHP02	1091	0001	03/18/2013	Calcium	600			540			460			6	0	No
SHP02	1091	0001	03/18/2013	Magnesium	3000			2900			2200			6	0	No
SHP02	1091	0001	03/18/2013	Sodium	4900			3900			3400			6	0	Yes
SHP02	1091	0001	03/18/2013	Strontium	18			15			13			6	0	NA

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data for Filtered Samples

Laboratory: ALS Laboratory Group

RIN: 13035182

Report Date: 05/22/2013

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N	N Below Detect	
						Lab	Data		Lab	Data		Lab	Data			
SHP02	1092	0001	03/18/2013	Nitrate + Nitrite as Nitrogen	670			2700			860			12	0	No
SHP02	1092	0001	03/18/2013	Potassium	61			220			88			8	0	No
SHP02	1092	0001	03/18/2013	Sodium	4400			4200			1800			8	0	No
SHP02	1092	0001	03/18/2013	Sulfate	15000			14000		J	5300			12	0	NA
SHP02	MW1	0001	03/20/2013	Chloride	5100		FQ	4700		FQ	3060		L	5	0	No
SHP02	MW1	0001	03/20/2013	Magnesium	34		FQ	33		B	26		L	5	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.

NA: Statistical testing not applicable, data are not normally or lognormally distributed.

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data for Filtered Samples

Laboratory: ALS Laboratory Group

RIN: 13035182

Report Date: 05/22/2013

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier	
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N	N Below Detect		
						Lab	Data		Lab	Data		Lab	Data				
SHP02	0600	0001	03/20/2013	Calcium	250		FQ	470			340			FQ	19	0	Yes
SHP02	0600	0001	03/20/2013	Chloride	1400		FQ	680			79				19	0	Yes
SHP02	0600	0001	03/20/2013	Magnesium	260		FQ	858			510			FQ	19	0	Yes
SHP02	0600	0001	03/20/2013	Manganese	0.23	B	FQ	1.63		L	0.62				18	0	No
SHP02	0600	0001	03/20/2013	Potassium	30	B	FQ	103			45				19	0	No
SHP02	0600	0001	03/20/2013	Sodium	4800		FQ	4090			2450			L	19	0	No
SHP02	0600	0001	03/20/2013	Uranium	0.65		FQ	1.57			1.06				18	0	Yes
SHP02	0604	0001	03/20/2013	Magnesium	2100		FQ	1900		FQ	972			L	13	0	No
SHP02	0604	0001	03/20/2013	Manganese	1		FQ	0.85		FQ	0.0079	B		L	14	0	No
SHP02	0604	0001	03/20/2013	Nitrate + Nitrite as Nitrogen	630		FQ	1590		FQ	1000			FQ	7	0	No
SHP02	0604	0001	03/20/2013	Strontium	21		FQ	20.3		L	13.1			L	13	0	No
SHP02	0730	0001	03/19/2013	Uranium	0.008		FQ	0.0073		FQ	0.00056			F	18	0	No
SHP02	0814	0001	03/20/2013	Sulfate	12000		FQ	14000		FQ	12200			L	12	0	No
SHP02	0816	0001	03/21/2013	Potassium	6.8		FQ	17.8			11			FQ	8	0	No
SHP02	0816	0001	03/21/2013	Selenium	0.0077		FQ	0.242			0.015			FQ	9	0	No
SHP02	0816	0001	03/21/2013	Uranium	0.012		FQ	0.0749			0.014			FQ	9	0	No
SHP02	0817	0001	03/21/2013	Ammonia Total as N	970		FQ	960		F	480			FQ	10	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data for Filtered Samples

Laboratory: ALS Laboratory Group

RIN: 13035182

Report Date: 05/22/2013

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N	N Below Detect	
						Lab	Data		Lab	Data		Lab	Data			
SHP02	0817	0001	03/21/2013	Manganese	2.5		FQ	2.3		FQ	1.8		F	16	0	No
SHP02	0820	0001	03/20/2013	Chloride	9200		FQ	8800		FQ	1620		L	8	0	No
SHP02	0820	0001	03/20/2013	Sodium	6700		FQ	6620		L	4670		L	7	0	No
SHP02	0820	0001	03/20/2013	Sulfate	4600		FQ	7450		L	5000		FQ	8	0	No
SHP02	1059	0001	03/19/2013	Selenium	0.0098		FQ	0.225			0.021		FQ	5	0	No
SHP02	1068	0001	03/21/2013	Calcium	370		FQ	500		FQ	400		FQ	8	0	No
SHP02	1068	0001	03/21/2013	Strontium	6.8		FQ	11		FQ	7.5		FQ	8	0	No
SHP02	1073	0001	03/21/2013	Calcium	410			606		FQ	460		FQ	8	0	No
SHP02	1073	0001	03/21/2013	Manganese	0.068			1.3		FQ	0.13		FQ	8	0	No
SHP02	1073	0001	03/21/2013	Nitrate + Nitrite as Nitrogen	820			1690		FQ	980		FQ	8	0	No
SHP02	1073	0001	03/21/2013	Sodium	3500			2980		FQ	2400		FQ	8	0	No
SHP02	1073	0001	03/21/2013	Sulfate	12000			11000		FQ	8290		FQ	8	0	No
SHP02	1091	0001	03/18/2013	Ammonia Total as N	0.14			5.8			0.47			7	0	No
SHP02	1091	0001	03/18/2013	Calcium	600			540			460			6	0	No
SHP02	1091	0001	03/18/2013	Magnesium	3000			2900			2200			6	0	No
SHP02	1091	0001	03/18/2013	Sodium	4900			3900			3400			6	0	Yes
SHP02	1091	0001	03/18/2013	Strontium	18			15			13			6	0	NA

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data for Filtered Samples

Laboratory: ALS Laboratory Group

RIN: 13035182

Report Date: 05/22/2013

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N	N Below Detect	
						Lab	Data		Lab	Data		Lab	Data			
SHP02	1092	0001	03/18/2013	Nitrate + Nitrite as Nitrogen	670			2700			860			12	0	No
SHP02	1092	0001	03/18/2013	Potassium	61			220			88			8	0	No
SHP02	1092	0001	03/18/2013	Sodium	4400			4200			1800			8	0	No
SHP02	1092	0001	03/18/2013	Sulfate	15000			14000		J	5300			12	0	NA
SHP02	MW1	0001	03/20/2013	Chloride	5100		FQ	4700		FQ	3060		L	5	0	No
SHP02	MW1	0001	03/20/2013	Magnesium	34		FQ	33		B	26		L	5	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.

NA: Statistical testing not applicable, data are not normally or lognormally distributed.

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: 05/22/2013

Location: 0608 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	10 - 15	330		F	0		
Ammonia Total as N	mg/L	03/20/2013	N001	10 - 15	58		F	0	2	
Calcium	mg/L	03/20/2013	N001	10 - 15	330		F	0	0.12	
Chloride	mg/L	03/20/2013	N001	10 - 15	220		F	0	20	
Magnesium	mg/L	03/20/2013	N001	10 - 15	500		F	0	0.13	
Manganese	mg/L	03/20/2013	N001	10 - 15	2.9		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	10 - 15	57		F	0	0.5	
Oxidation Reduction Potential	mV	03/20/2013	N001	10 - 15	123.8		F	0		
pH	s.u.	03/20/2013	N001	10 - 15	7.02		F	0		
Potassium	mg/L	03/20/2013	N001	10 - 15	54		F	0	1.1	
Selenium	mg/L	03/20/2013	N001	10 - 15	0.0028		F	0	0.00032	
Sodium	mg/L	03/20/2013	N001	10 - 15	1400		F	0	0.066	
Specific Conductance	umhos /cm	03/20/2013	N001	10 - 15	9759		F	0		
Strontium	mg/L	03/20/2013	N001	10 - 15	7.2		F	0	0.00078	
Sulfate	mg/L	03/20/2013	N001	10 - 15	5500		F	0	50	
Temperature	C	03/20/2013	N001	10 - 15	9.63		F	0		
Turbidity	NTU	03/20/2013	N001	10 - 15	5		F	0		
Uranium	mg/L	03/20/2013	N001	10 - 15	0.69		F	0	0.000029	

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

REPORT DATE: 05/22/2013

Location: 0610 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	4 - 9	284		F	0		
Ammonia Total as N	mg/L	03/20/2013	N001	4 - 9	3.9		F	0	0.5	
Ammonia Total as N	mg/L	03/20/2013	N002	4 - 9	3.8		F	0	0.1	
Calcium	mg/L	03/20/2013	N001	4 - 9	450		F	0	0.12	
Calcium	mg/L	03/20/2013	N002	4 - 9	450		F	0	0.12	
Chloride	mg/L	03/20/2013	N001	4 - 9	200		F	0	20	
Chloride	mg/L	03/20/2013	N002	4 - 9	210		F	0	20	
Magnesium	mg/L	03/20/2013	N001	4 - 9	810		F	0	0.13	
Magnesium	mg/L	03/20/2013	N002	4 - 9	810		F	0	0.13	
Manganese	mg/L	03/20/2013	N001	4 - 9	0.027	B	F	0	0.0011	
Manganese	mg/L	03/20/2013	N002	4 - 9	0.03	B	F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	4 - 9	290		F	0	2	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N002	4 - 9	290		F	0	2	
Oxidation Reduction Potential	mV	03/20/2013	N001	4 - 9	109.9		F	0		
pH	s.u.	03/20/2013	N001	4 - 9	7.1		F	0		
Potassium	mg/L	03/20/2013	N001	4 - 9	94		F	0	1.1	
Potassium	mg/L	03/20/2013	N002	4 - 9	91		F	0	1.1	
Selenium	mg/L	03/20/2013	N001	4 - 9	0.069		F	0	0.0032	

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

REPORT DATE: 05/22/2013

Location: 0610 WELL SE part of floodplain, well nest

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Selenium	mg/L	03/20/2013	N002	4	-	9	0.065		F	0	0.0016	
Sodium	mg/L	03/20/2013	N001	4	-	9	1100		F	0	0.066	
Sodium	mg/L	03/20/2013	N002	4	-	9	1100		F	0	0.066	
Specific Conductance	umhos/cm	03/20/2013	N001	4	-	9	9945		F	0		
Strontium	mg/L	03/20/2013	N001	4	-	9	6.9		F	0	0.00078	
Strontium	mg/L	03/20/2013	N002	4	-	9	6.8		F	0	0.00078	
Sulfate	mg/L	03/20/2013	N001	4	-	9	5100		F	0	50	
Sulfate	mg/L	03/20/2013	N002	4	-	9	5300		F	0	50	
Temperature	C	03/20/2013	N001	4	-	9	10.97		F	0		
Turbidity	NTU	03/20/2013	N001	4	-	9	1.37		F	0		
Uranium	mg/L	03/20/2013	N001	4	-	9	0.89		F	0	0.00029	
Uranium	mg/L	03/20/2013	N002	4	-	9	0.87		F	0	0.00015	

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

REPORT DATE: 05/22/2013

Location: 0611 WELL SE part of floodplain, well nest

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	9.5	-	14.5	571		F	0		
Ammonia Total as N	mg/L	03/20/2013	N001	9.5	-	14.5	2.5		F	0	0.1	
Calcium	mg/L	03/20/2013	N001	9.5	-	14.5	170		F	0	0.12	
Chloride	mg/L	03/20/2013	N001	9.5	-	14.5	520		F	0	20	
Magnesium	mg/L	03/20/2013	N001	9.5	-	14.5	90		F	0	0.13	
Manganese	mg/L	03/20/2013	N001	9.5	-	14.5	0.076		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	9.5	-	14.5	0.86		F	0	0.01	
Oxidation Reduction Potential	mV	03/20/2013	N001	9.5	-	14.5	78.2		F	0		
pH	s.u.	03/20/2013	N001	9.5	-	14.5	7.15		F	0		
Potassium	mg/L	03/20/2013	N001	9.5	-	14.5	13		F	0	1.1	
Selenium	mg/L	03/20/2013	N001	9.5	-	14.5	0.0014		F	0	0.000032	
Sodium	mg/L	03/20/2013	N001	9.5	-	14.5	2300		F	0	0.33	
Specific Conductance	umhos/cm	03/20/2013	N001	9.5	-	14.5	10910		F	0		
Strontium	mg/L	03/20/2013	N001	9.5	-	14.5	7.3		F	0	0.00078	
Sulfate	mg/L	03/20/2013	N001	9.5	-	14.5	5100		F	0	50	
Temperature	C	03/20/2013	N001	9.5	-	14.5	12.1		F	0		
Turbidity	NTU	03/20/2013	N001	9.5	-	14.5	1.39		F	0		
Uranium	mg/L	03/20/2013	N001	9.5	-	14.5	0.012		F	0	0.0000029	

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

REPORT DATE: 05/22/2013

Location: 0612 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	5 - 10	342		F	0		
Ammonia Total as N	mg/L	03/20/2013	N001	5 - 10	0.71		F	0	0.1	
Calcium	mg/L	03/20/2013	N001	5 - 10	120		F	0	0.06	
Chloride	mg/L	03/20/2013	N001	5 - 10	38		F	0	4	
Magnesium	mg/L	03/20/2013	N001	5 - 10	86		F	0	0.065	
Manganese	mg/L	03/20/2013	N001	5 - 10	1.3		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	5 - 10	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/20/2013	N001	5 - 10	-191.1		F	0		
pH	s.u.	03/20/2013	N001	5 - 10	7.24		F	0		
Potassium	mg/L	03/20/2013	N001	5 - 10	7		F	0	0.54	
Selenium	mg/L	03/20/2013	N001	5 - 10	0.0004		F	0	0.000032	
Sodium	mg/L	03/20/2013	N001	5 - 10	310		F	0	0.033	
Specific Conductance	umhos/cm	03/20/2013	N001	5 - 10	2631		F	0		
Strontium	mg/L	03/20/2013	N001	5 - 10	1.6		F	0	0.00039	
Sulfate	mg/L	03/20/2013	N001	5 - 10	960		F	0	10	
Temperature	C	03/20/2013	N001	5 - 10	10.87		F	0		
Turbidity	NTU	03/20/2013	N001	5 - 10	0.8		F	0		
Uranium	mg/L	03/20/2013	N001	5 - 10	0.069		F	0	0.0000029	

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

REPORT DATE: 05/22/2013

Location: 0614 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	10 - 15	404		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	10 - 15	42		F	0	1	
Calcium	mg/L	03/21/2013	N001	10 - 15	420		F	0	0.12	
Chloride	mg/L	03/21/2013	N001	10 - 15	190		F	0	20	
Magnesium	mg/L	03/21/2013	N001	10 - 15	810		F	0	0.13	
Manganese	mg/L	03/21/2013	N001	10 - 15	3.1		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	10 - 15	120		F	0	1	
Oxidation Reduction Potential	mV	03/21/2013	N001	10 - 15	238.9		F	0		
pH	s.u.	03/21/2013	N001	10 - 15	7.07		F	0		
Potassium	mg/L	03/21/2013	N001	10 - 15	82		F	0	1.1	
Selenium	mg/L	03/21/2013	N001	10 - 15	0.55		F	0	0.0032	
Sodium	mg/L	03/21/2013	N001	10 - 15	1200		F	0	0.066	
Specific Conductance	umhos/cm	03/21/2013	N001	10 - 15	10379		F	0		
Strontium	mg/L	03/21/2013	N001	10 - 15	6.5		F	0	0.00078	
Sulfate	mg/L	03/21/2013	N001	10 - 15	6300		F	0	50	
Temperature	C	03/21/2013	N001	10 - 15	10.52		F	0		
Turbidity	NTU	03/21/2013	N001	10 - 15	1.05		F	0		
Uranium	mg/L	03/21/2013	N001	10 - 15	0.96		F	0	0.00029	

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

REPORT DATE: 05/22/2013

Location: 0615 WELL S of floodplain fence, well nest

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	4.5	-	9.5	370		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	4.5	-	9.5	1.3		F	0	0.1	
Calcium	mg/L	03/21/2013	N001	4.5	-	9.5	430		F	0	0.06	
Chloride	mg/L	03/21/2013	N001	4.5	-	9.5	89		F	0	10	
Magnesium	mg/L	03/21/2013	N001	4.5	-	9.5	400		F	0	0.065	
Manganese	mg/L	03/21/2013	N001	4.5	-	9.5	1.3		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	4.5	-	9.5	1.3		F	0	0.01	
Oxidation Reduction Potential	mV	03/21/2013	N001	4.5	-	9.5	70.6		F	0		
pH	s.u.	03/21/2013	N001	4.5	-	9.5	7.15		F	0		
Potassium	mg/L	03/21/2013	N001	4.5	-	9.5	44		F	0	0.54	
Selenium	mg/L	03/21/2013	N001	4.5	-	9.5	0.028		F	0	0.0016	
Sodium	mg/L	03/21/2013	N001	4.5	-	9.5	610		F	0	0.033	
Specific Conductance	umhos/cm	03/21/2013	N001	4.5	-	9.5	6151		F	0		
Strontium	mg/L	03/21/2013	N001	4.5	-	9.5	4.7		F	0	0.00039	
Sulfate	mg/L	03/21/2013	N001	4.5	-	9.5	3600		F	0	25	
Temperature	C	03/21/2013	N001	4.5	-	9.5	11.02		F	0		
Turbidity	NTU	03/21/2013	N001	4.5	-	9.5	5.13		F	0		
Uranium	mg/L	03/21/2013	N001	4.5	-	9.5	0.51		F	0	0.00015	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	11 - 16	460		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	11 - 16	23		F	0	1	
Calcium	mg/L	03/19/2013	N001	11 - 16	380		F	0	0.12	
Chloride	mg/L	03/19/2013	N001	11 - 16	170		F	0	20	
Magnesium	mg/L	03/19/2013	N001	11 - 16	630		F	0	0.13	
Manganese	mg/L	03/19/2013	N001	11 - 16	4.4		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	11 - 16	2		F	0	0.02	
Oxidation Reduction Potential	mV	03/19/2013	N001	11 - 16	128.8		F	0		
pH	s.u.	03/19/2013	N001	11 - 16	6.91		F	0		
Potassium	mg/L	03/19/2013	N001	11 - 16	61		F	0	1.1	
Selenium	mg/L	03/19/2013	N001	11 - 16	0.052		F	0	0.0032	
Sodium	mg/L	03/19/2013	N001	11 - 16	1700		F	0	0.33	
Specific Conductance	umhos/cm	03/19/2013	N001	11 - 16	10954		F	0		
Strontium	mg/L	03/19/2013	N001	11 - 16	5.5		F	0	0.00078	
Sulfate	mg/L	03/19/2013	N001	11 - 16	6700		F	0	50	
Temperature	C	03/19/2013	N001	11 - 16	13.14		F	0		
Turbidity	NTU	03/19/2013	N001	11 - 16	2.25		F	0		
Uranium	mg/L	03/19/2013	N001	11 - 16	0.73		F	0	0.00029	

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

REPORT DATE: 05/22/2013

Location: 0619 WELL Center of floodplain

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	8 - 13	456		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	8 - 13	0.15		F	0	0.1	
Calcium	mg/L	03/21/2013	N001	8 - 13	270		F	0	0.12	
Chloride	mg/L	03/21/2013	N001	8 - 13	96		F	0	20	
Magnesium	mg/L	03/21/2013	N001	8 - 13	120		F	0	0.13	
Manganese	mg/L	03/21/2013	N001	8 - 13	1.6		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	8 - 13	0.041		F	0	0.01	
Oxidation Reduction Potential	mV	03/21/2013	N001	8 - 13	-120		F	0		
pH	s.u.	03/21/2013	N001	8 - 13	7.08		F	0		
Potassium	mg/L	03/21/2013	N001	8 - 13	19		F	0	1.1	
Selenium	mg/L	03/21/2013	N001	8 - 13	0.00068		F	0	0.000032	
Sodium	mg/L	03/21/2013	N001	8 - 13	1200		F	0	0.066	
Specific Conductance	umhos/cm	03/21/2013	N001	8 - 13	6770		F	0		
Strontium	mg/L	03/21/2013	N001	8 - 13	8		F	0	0.00078	
Sulfate	mg/L	03/21/2013	N001	8 - 13	3200		F	0	50	
Temperature	C	03/21/2013	N001	8 - 13	13.7		F	0		
Turbidity	NTU	03/21/2013	N001	8 - 13	4.34		F	0		
Uranium	mg/L	03/21/2013	N001	8 - 13	0.12		F	0	0.000015	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	5 - 10	262		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	5 - 10	0.1	U	F	0	0.1	
Calcium	mg/L	03/21/2013	N001	5 - 10	200		F	0	0.12	
Chloride	mg/L	03/21/2013	N001	5 - 10	69		F	0	10	
Magnesium	mg/L	03/21/2013	N001	5 - 10	68		F	0	0.13	
Manganese	mg/L	03/21/2013	N001	5 - 10	1		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	5 - 10	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/21/2013	N001	5 - 10	52.1		F	0		
pH	s.u.	03/21/2013	N001	5 - 10	7.23		F	0		
Potassium	mg/L	03/21/2013	N001	5 - 10	13		F	0	1.1	
Selenium	mg/L	03/21/2013	N001	5 - 10	0.014		F	0	0.00032	
Sodium	mg/L	03/21/2013	N001	5 - 10	860		F	0	0.066	
Specific Conductance	umhos/cm	03/21/2013	N001	5 - 10	5023		F	0		
Strontium	mg/L	03/21/2013	N001	5 - 10	6.7		F	0	0.00078	
Sulfate	mg/L	03/21/2013	N001	5 - 10	2400		F	0	25	
Temperature	C	03/21/2013	N001	5 - 10	11.39		F	0		
Turbidity	NTU	03/21/2013	N001	5 - 10	1.57		F	0		
Uranium	mg/L	03/21/2013	N001	5 - 10	0.055		F	0	0.000029	

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

REPORT DATE: 05/22/2013

Location: 0623 WELL Center of floodplain, well nest

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	10 - 15	475		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	10 - 15	0.1	U	F	0	0.1	
Calcium	mg/L	03/19/2013	N001	10 - 15	270		F	0	0.12	
Chloride	mg/L	03/19/2013	N001	10 - 15	75		F	0	10	
Magnesium	mg/L	03/19/2013	N001	10 - 15	58		F	0	0.13	
Manganese	mg/L	03/19/2013	N001	10 - 15	3		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	10 - 15	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/19/2013	N001	10 - 15	-4		F	0		
pH	s.u.	03/19/2013	N001	10 - 15	6.96		F	0		
Potassium	mg/L	03/19/2013	N001	10 - 15	12		F	0	1.1	
Selenium	mg/L	03/19/2013	N001	10 - 15	0.0011		F	0	0.00016	
Sodium	mg/L	03/19/2013	N001	10 - 15	1100		F	0	0.066	
Specific Conductance	umhos/cm	03/19/2013	N001	10 - 15	5890		F	0		
Strontium	mg/L	03/19/2013	N001	10 - 15	11		F	0	0.00078	
Sulfate	mg/L	03/19/2013	N001	10 - 15	2800		F	0	25	
Temperature	C	03/19/2013	N001	10 - 15	13.1		F	0		
Turbidity	NTU	03/19/2013	N001	10 - 15	1.84		F	0		
Uranium	mg/L	03/19/2013	N001	10 - 15	0.059		F	0	0.000015	

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

REPORT DATE: 05/22/2013

Location: 0625 WELL Center of floodplain, well nest

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	4.5	-	9.5	465		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	4.5	-	9.5	0.1	U	F	0	0.1	
Calcium	mg/L	03/19/2013	N001	4.5	-	9.5	270		F	0	0.12	
Chloride	mg/L	03/19/2013	N001	4.5	-	9.5	74		F	0	10	
Magnesium	mg/L	03/19/2013	N001	4.5	-	9.5	54		F	0	0.13	
Manganese	mg/L	03/19/2013	N001	4.5	-	9.5	4.8		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	4.5	-	9.5	0.016		F	0	0.01	
Oxidation Reduction Potential	mV	03/19/2013	N001	4.5	-	9.5	63.8		F	0		
pH	s.u.	03/19/2013	N001	4.5	-	9.5	6.96		F	0		
Potassium	mg/L	03/19/2013	N001	4.5	-	9.5	11		F	0	1.1	
Selenium	mg/L	03/19/2013	N001	4.5	-	9.5	0.0012		F	0	0.00016	
Sodium	mg/L	03/19/2013	N001	4.5	-	9.5	1100		F	0	0.066	
Specific Conductance	umhos/cm	03/19/2013	N001	4.5	-	9.5	5809		F	0		
Strontium	mg/L	03/19/2013	N001	4.5	-	9.5	12		F	0	0.00078	
Sulfate	mg/L	03/19/2013	N001	4.5	-	9.5	2800		F	0	25	
Temperature	C	03/19/2013	N001	4.5	-	9.5	12.15		F	0		
Turbidity	NTU	03/19/2013	N001	4.5	-	9.5	8.35		F	0		
Uranium	mg/L	03/19/2013	N001	4.5	-	9.5	0.043		F	0	0.000015	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	9.5 - 14.5	257		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	9.5 - 14.5	0.1	U	F	0	0.1	
Calcium	mg/L	03/21/2013	N001	9.5 - 14.5	190		F	0	0.12	
Chloride	mg/L	03/21/2013	N001	9.5 - 14.5	73		F	0	10	
Magnesium	mg/L	03/21/2013	N001	9.5 - 14.5	31		F	0	0.13	
Manganese	mg/L	03/21/2013	N001	9.5 - 14.5	2.3		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	9.5 - 14.5	0.061		F	0	0.01	
Oxidation Reduction Potential	mV	03/21/2013	N001	9.5 - 14.5	100.5		F	0		
pH	s.u.	03/21/2013	N001	9.5 - 14.5	7.41		F	0		
Potassium	mg/L	03/21/2013	N001	9.5 - 14.5	7.6	B	F	0	1.1	
Selenium	mg/L	03/21/2013	N001	9.5 - 14.5	0.0013		F	0	0.00016	
Sodium	mg/L	03/21/2013	N001	9.5 - 14.5	840		F	0	0.066	
Specific Conductance	umhos/cm	03/21/2013	N001	9.5 - 14.5	4635		F	0		
Strontium	mg/L	03/21/2013	N001	9.5 - 14.5	9.7		F	0	0.00078	
Sulfate	mg/L	03/21/2013	N001	9.5 - 14.5	2200		F	0	25	
Temperature	C	03/21/2013	N001	9.5 - 14.5	9.58		F	0		
Turbidity	NTU	03/21/2013	N001	9.5 - 14.5	3.19		F	0		
Uranium	mg/L	03/21/2013	N001	9.5 - 14.5	0.022		F	0	0.000015	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	6 - 10	260		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	6 - 10	0.1	U	F	0	0.1	
Calcium	mg/L	03/21/2013	N001	6 - 10	220		F	0	0.12	
Chloride	mg/L	03/21/2013	N001	6 - 10	110		F	0	20	
Magnesium	mg/L	03/21/2013	N001	6 - 10	52		F	0	0.13	
Manganese	mg/L	03/21/2013	N001	6 - 10	3.7		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	6 - 10	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/21/2013	N001	6 - 10	-205		F	0		
pH	s.u.	03/21/2013	N001	6 - 10	7.38		F	0		
Potassium	mg/L	03/21/2013	N001	6 - 10	10		F	0	1.1	
Selenium	mg/L	03/21/2013	N001	6 - 10	0.00091		F	0	0.000032	
Sodium	mg/L	03/21/2013	N001	6 - 10	1200		F	0	0.066	
Specific Conductance	umhos/cm	03/21/2013	N001	6 - 10	6345		F	0		
Strontium	mg/L	03/21/2013	N001	6 - 10	11		F	0	0.00078	
Sulfate	mg/L	03/21/2013	N001	6 - 10	3200		F	0	50	
Temperature	C	03/21/2013	N001	6 - 10	9.5		F	0		
Turbidity	NTU	03/21/2013	N001	6 - 10	8.27		F	0		
Uranium	mg/L	03/21/2013	N001	6 - 10	0.034		F	0	0.0000029	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	5 - 10	640		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	5 - 10	0.1	U	F	0	0.1	
Calcium	mg/L	03/19/2013	N001	5 - 10	350		F	0	0.12	
Chloride	mg/L	03/19/2013	N001	5 - 10	200		F	0	20	
Magnesium	mg/L	03/19/2013	N001	5 - 10	320		F	0	0.13	
Manganese	mg/L	03/19/2013	N001	5 - 10	2.5		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	5 - 10	32		F	0	0.5	
Oxidation Reduction Potential	mV	03/19/2013	N001	5 - 10	216.8		F	0		
pH	s.u.	03/19/2013	N001	5 - 10	6.86		F	0		
Potassium	mg/L	03/19/2013	N001	5 - 10	14		F	0	1.1	
Selenium	mg/L	03/19/2013	N001	5 - 10	0.19		F	0	0.0016	
Sodium	mg/L	03/19/2013	N001	5 - 10	1400		F	0	0.066	
Specific Conductance	umhos/cm	03/19/2013	N001	5 - 10	8511		F	0		
Strontium	mg/L	03/19/2013	N001	5 - 10	14		F	0	0.00078	
Sulfate	mg/L	03/19/2013	N001	5 - 10	4500		F	0	50	
Temperature	C	03/19/2013	N001	5 - 10	8.12		F	0		
Turbidity	NTU	03/19/2013	N001	5 - 10	1.03		F	0		
Uranium	mg/L	03/19/2013	N001	5 - 10	0.24		F	0	0.00015	

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

REPORT DATE: 05/22/2013

Location: 0734 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	2 - 4	486		FQ	0		
Ammonia Total as N	mg/L	03/19/2013	N001	2 - 4	0.1	U	FQ	0	0.1	
Calcium	mg/L	03/19/2013	N001	2 - 4	360		FQ	0	0.06	
Chloride	mg/L	03/19/2013	N001	2 - 4	160		FQ	0	20	
Magnesium	mg/L	03/19/2013	N001	2 - 4	280		FQ	0	0.065	
Manganese	mg/L	03/19/2013	N001	2 - 4	0.79		FQ	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	2 - 4	0.075		FQ	0	0.01	
Oxidation Reduction Potential	mV	03/19/2013	N001	2 - 4	190		FQ	0		
pH	s.u.	03/19/2013	N001	2 - 4	7.26		FQ	0		
Potassium	mg/L	03/19/2013	N001	2 - 4	20		FQ	0	0.54	
Selenium	mg/L	03/19/2013	N001	2 - 4	0.016		FQ	0	0.00032	
Sodium	mg/L	03/19/2013	N001	2 - 4	1800		FQ	0	0.16	
Specific Conductance	umhos/cm	03/19/2013	N001	2 - 4	9745		FQ	0		
Strontium	mg/L	03/19/2013	N001	2 - 4	10		FQ	0	0.00039	
Sulfate	mg/L	03/19/2013	N001	2 - 4	5400		FQ	0	50	
Temperature	C	03/19/2013	N001	2 - 4	7.76		FQ	0		
Turbidity	NTU	03/19/2013	N001	2 - 4	2.33		FQ	0		
Uranium	mg/L	03/19/2013	N001	2 - 4	0.07		FQ	0	0.000029	

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

REPORT DATE: 05/22/2013

Location: 0735 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/18/2013	N001	3 - 8	840		F	0		
Ammonia Total as N	mg/L	03/18/2013	N001	3 - 8	11		F	0	1	
Calcium	mg/L	03/18/2013	N001	3 - 8	400		F	0	0.6	
Chloride	mg/L	03/18/2013	N001	3 - 8	600		F	0	40	
Magnesium	mg/L	03/18/2013	N001	3 - 8	1200		F	0	0.65	
Manganese	mg/L	03/18/2013	N001	3 - 8	3.5		F	0	0.0057	
Nitrate + Nitrite as Nitrogen	mg/L	03/18/2013	N001	3 - 8	560		F	0	5	
Oxidation Reduction Potential	mV	03/18/2013	N001	3 - 8	246.8		F	0		
pH	s.u.	03/18/2013	N001	3 - 8	6.84		F	0		
Potassium	mg/L	03/18/2013	N001	3 - 8	45	B	F	0	5.4	
Selenium	mg/L	03/18/2013	N001	3 - 8	0.019		F	0	0.0016	
Sodium	mg/L	03/18/2013	N001	3 - 8	3500		F	0	0.33	
Specific Conductance	umhos /cm	03/18/2013	N001	3 - 8	19649		F	0		
Strontium	mg/L	03/18/2013	N001	3 - 8	10		F	0	0.0039	
Sulfate	mg/L	03/18/2013	N001	3 - 8	10000		F	0	100	
Temperature	C	03/18/2013	N001	3 - 8	8.83		F	0		
Turbidity	NTU	03/18/2013	N001	3 - 8	1.92		F	0		
Uranium	mg/L	03/18/2013	N001	3 - 8	0.3		F	0	0.00015	

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

REPORT DATE: 05/22/2013

Location: 0736 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	3 - 5	201		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	3 - 5	0.1	U	F	0	0.1	
Calcium	mg/L	03/19/2013	N001	3 - 5	340		F	0	0.12	
Chloride	mg/L	03/19/2013	N001	3 - 5	74		F	0	10	
Magnesium	mg/L	03/19/2013	N001	3 - 5	44		F	0	0.13	
Manganese	mg/L	03/19/2013	N001	3 - 5	0.58		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	3 - 5	0.038		F	0	0.01	
Oxidation Reduction Potential	mV	03/19/2013	N001	3 - 5	21.4		F	0		
pH	s.u.	03/19/2013	N001	3 - 5	7.35		F	0		
Potassium	mg/L	03/19/2013	N001	3 - 5	15		F	0	1.1	
Selenium	mg/L	03/19/2013	N001	3 - 5	0.00079		F	0	0.000032	
Sodium	mg/L	03/19/2013	N001	3 - 5	900		F	0	0.066	
Specific Conductance	umhos /cm	03/19/2013	N001	3 - 5	5322		F	0		
Strontium	mg/L	03/19/2013	N001	3 - 5	4.4		F	0	0.00078	
Sulfate	mg/L	03/19/2013	N001	3 - 5	2800		F	0	25	
Temperature	C	03/19/2013	N001	3 - 5	11.53		F	0		
Turbidity	NTU	03/19/2013	N001	3 - 5	1.99		F	0		
Uranium	mg/L	03/19/2013	N001	3 - 5	0.037		F	0	0.0000029	

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

REPORT DATE: 05/22/2013

Location: 0766 WELL Well Point

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	6.25	-	8.75	480		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	6.25	-	8.75	0.1	UN	FJ	0	0.1	
Calcium	mg/L	03/21/2013	N001	6.25	-	8.75	270		F	0	0.24	
Chloride	mg/L	03/21/2013	N001	6.25	-	8.75	130		F	0	20	
Magnesium	mg/L	03/21/2013	N001	6.25	-	8.75	180		F	0	0.26	
Manganese	mg/L	03/21/2013	N001	6.25	-	8.75	0.54		F	0	0.0023	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	6.25	-	8.75	0.024		F	0	0.01	
Oxidation Reduction Potential	mV	03/21/2013	N001	6.25	-	8.75	-65		F	0		
pH	s.u.	03/21/2013	N001	6.25	-	8.75	7.37		F	0		
Potassium	mg/L	03/21/2013	N001	6.25	-	8.75	32		F	0	2.2	
Selenium	mg/L	03/21/2013	N001	6.25	-	8.75	0.0007		F	0	0.00016	
Sodium	mg/L	03/21/2013	N001	6.25	-	8.75	1500		F	0	0.13	
Specific Conductance	umhos/cm	03/21/2013	N001	6.25	-	8.75	8060		F	0		
Strontium	mg/L	03/21/2013	N001	6.25	-	8.75	3.9		F	0	0.0016	
Sulfate	mg/L	03/21/2013	N001	6.25	-	8.75	4400		F	0	50	
Temperature	C	03/21/2013	N001	6.25	-	8.75	13.4		F	0		
Turbidity	NTU	03/21/2013	N001	6.25	-	8.75	4.33		F	0		
Uranium	mg/L	03/21/2013	N001	6.25	-	8.75	0.17		F	0	0.000015	

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

REPORT DATE: 05/22/2013

Location: 0768 WELL Well Point

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	4.58	-	7.08	635		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	4.58	-	7.08	0.1	U	F	0	0.1	
Calcium	mg/L	03/21/2013	N001	4.58	-	7.08	350		F	0	0.24	
Chloride	mg/L	03/21/2013	N001	4.58	-	7.08	130		F	0	20	
Magnesium	mg/L	03/21/2013	N001	4.58	-	7.08	180		F	0	0.26	
Manganese	mg/L	03/21/2013	N001	4.58	-	7.08	0.93		F	0	0.0023	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	4.58	-	7.08	0.018		F	0	0.01	
Oxidation Reduction Potential	mV	03/21/2013	N001	4.58	-	7.08	-105		F	0		
pH	s.u.	03/21/2013	N001	4.58	-	7.08	7.33		F	0		
Potassium	mg/L	03/21/2013	N001	4.58	-	7.08	38		F	0	2.2	
Selenium	mg/L	03/21/2013	N001	4.58	-	7.08	0.0009		F	0	0.00016	
Sodium	mg/L	03/21/2013	N001	4.58	-	7.08	1800		F	0	0.13	
Specific Conductance	umhos/cm	03/21/2013	N001	4.58	-	7.08	9709		F	0		
Strontium	mg/L	03/21/2013	N001	4.58	-	7.08	10		F	0	0.0016	
Sulfate	mg/L	03/21/2013	N001	4.58	-	7.08	5100		F	0	50	
Temperature	C	03/21/2013	N001	4.58	-	7.08	13.4		F	0		
Turbidity	NTU	03/21/2013	N001	4.58	-	7.08	8.09		F	0		
Uranium	mg/L	03/21/2013	N001	4.58	-	7.08	0.13		F	0	0.000015	

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

REPORT DATE: 05/22/2013

Location: 0773 WELL Well Point

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	4 - 6.5	258		F	0		
Ammonia Total as N	mg/L	03/20/2013	N001	4 - 6.5	1.1		F	0	0.1	
Calcium	mg/L	03/20/2013	N001	4 - 6.5	150		F	0	0.012	
Chloride	mg/L	03/20/2013	N001	4 - 6.5	54		F	0	10	
Magnesium	mg/L	03/20/2013	N001	4 - 6.5	170		F	0	0.013	
Manganese	mg/L	03/20/2013	N001	4 - 6.5	0.013		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	4 - 6.5	19		F	0	0.2	
Oxidation Reduction Potential	mV	03/20/2013	N001	4 - 6.5	85.6		F	0		
pH	s.u.	03/20/2013	N001	4 - 6.5	7.38		F	0		
Potassium	mg/L	03/20/2013	N001	4 - 6.5	26		F	0	0.11	
Selenium	mg/L	03/20/2013	N001	4 - 6.5	0.18		F	0	0.00032	
Sodium	mg/L	03/20/2013	N001	4 - 6.5	230		F	0	0.033	
Specific Conductance	umhos /cm	03/20/2013	N001	4 - 6.5	2737		F	0		
Strontium	mg/L	03/20/2013	N001	4 - 6.5	1.8		F	0	0.000078	
Sulfate	mg/L	03/20/2013	N001	4 - 6.5	1200		F	0	25	
Temperature	C	03/20/2013	N001	4 - 6.5	11.9		F	0		
Turbidity	NTU	03/20/2013	N001	4 - 6.5	1.16		F	0		
Uranium	mg/L	03/20/2013	N001	4 - 6.5	0.25		F	0	0.000029	

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

REPORT DATE: 05/22/2013

Location: 0775 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	4.25 - 6.75	395		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	4.25 - 6.75	0.1	U	F	0	0.1	
Calcium	mg/L	03/21/2013	N001	4.25 - 6.75	410		F	0	0.12	
Chloride	mg/L	03/21/2013	N001	4.25 - 6.75	110		F	0	20	
Magnesium	mg/L	03/21/2013	N001	4.25 - 6.75	150		F	0	0.13	
Manganese	mg/L	03/21/2013	N001	4.25 - 6.75	0.67		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	4.25 - 6.75	0.27		F	0	0.01	
Oxidation Reduction Potential	mV	03/21/2013	N001	4.25 - 6.75	30		F	0		
pH	s.u.	03/21/2013	N001	4.25 - 6.75	7.25		F	0		
Potassium	mg/L	03/21/2013	N001	4.25 - 6.75	31		F	0	1.1	
Selenium	mg/L	03/21/2013	N001	4.25 - 6.75	0.01		F	0	0.00016	
Sodium	mg/L	03/21/2013	N001	4.25 - 6.75	1300		F	0	0.066	
Specific Conductance	umhos/cm	03/21/2013	N001	4.25 - 6.75	7860		F	0		
Strontium	mg/L	03/21/2013	N001	4.25 - 6.75	5.8		F	0	0.00078	
Sulfate	mg/L	03/21/2013	N001	4.25 - 6.75	4300		F	0	50	
Temperature	C	03/21/2013	N001	4.25 - 6.75	12.6		F	0		
Turbidity	NTU	03/21/2013	N001	4.25 - 6.75	7.21		F	0		
Uranium	mg/L	03/21/2013	N001	4.25 - 6.75	0.15		F	0	0.000015	

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

REPORT DATE: 05/22/2013

Location: 0779 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (As CaCO3)	mg/L	03/19/2013	N001	7 - 9.5	792		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	7 - 9.5	1.3		F	0	0.1	
Calcium	mg/L	03/19/2013	N001	7 - 9.5	410		F	0	0.24	
Chloride	mg/L	03/19/2013	N001	7 - 9.5	550		F	0	40	
Magnesium	mg/L	03/19/2013	N001	7 - 9.5	1700		F	0	0.26	
Manganese	mg/L	03/19/2013	N001	7 - 9.5	2.6		F	0	0.0023	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	7 - 9.5	60		F	0	0.5	
Oxidation Reduction Potential	mV	03/19/2013	N001	7 - 9.5	119.2		F	0		
pH	s.u.	03/19/2013	N001	7 - 9.5	7.26		F	0		
Potassium	mg/L	03/19/2013	N001	7 - 9.5	130		F	0	2.2	
Selenium	mg/L	03/19/2013	N001	7 - 9.5	0.075		F	0	0.0032	
Sodium	mg/L	03/19/2013	N001	7 - 9.5	3400		F	0	0.33	
Specific Conductance	umhos /cm	03/19/2013	N001	7 - 9.5	20848		F	0		
Strontium	mg/L	03/19/2013	N001	7 - 9.5	12		F	0	0.0016	
Sulfate	mg/L	03/19/2013	N001	7 - 9.5	14000		F	0	100	
Temperature	C	03/19/2013	N001	7 - 9.5	12.67		F	0		
Turbidity	NTU	03/19/2013	N001	7 - 9.5	1.44		F	0		
Uranium	mg/L	03/19/2013	N001	7 - 9.5	2.2		F	0	0.00029	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	4.71	-	9.46	184		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	4.71	-	9.46	0.1	U	F	0	0.1	
Calcium	mg/L	03/19/2013	N001	4.71	-	9.46	82		F	0	0.012	
Chloride	mg/L	03/19/2013	N001	4.71	-	9.46	21		F	0	4	
Magnesium	mg/L	03/19/2013	N001	4.71	-	9.46	26		F	0	0.013	
Manganese	mg/L	03/19/2013	N001	4.71	-	9.46	2.9		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	4.71	-	9.46	0.022		F	0	0.01	
Oxidation Reduction Potential	mV	03/19/2013	N001	4.71	-	9.46	21.1		F	0		
pH	s.u.	03/19/2013	N001	4.71	-	9.46	7.73		F	0		
Potassium	mg/L	03/19/2013	N001	4.71	-	9.46	3.8		F	0	0.11	
Selenium	mg/L	03/19/2013	N001	4.71	-	9.46	0.00014		F	0	0.000032	
Sodium	mg/L	03/19/2013	N001	4.71	-	9.46	140		F	0	0.0066	
Specific Conductance	umhos/cm	03/19/2013	N001	4.71	-	9.46	1402		F	0		
Strontium	mg/L	03/19/2013	N001	4.71	-	9.46	1.1		F	0	0.000078	
Sulfate	mg/L	03/19/2013	N001	4.71	-	9.46	390		F	0	10	
Temperature	C	03/19/2013	N001	4.71	-	9.46	11.65		F	0		
Turbidity	NTU	03/19/2013	N001	4.71	-	9.46	5.77		F	0		
Uranium	mg/L	03/19/2013	N001	4.71	-	9.46	0.0067		F	0	0.0000029	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	4.375 - 9.375	160		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	4.375 - 9.375	0.1	U	F	0	0.1	
Calcium	mg/L	03/19/2013	N001	4.375 - 9.375	100		F	0	0.012	
Chloride	mg/L	03/19/2013	N001	4.375 - 9.375	22		F	0	4	
Magnesium	mg/L	03/19/2013	N001	4.375 - 9.375	34		F	0	0.013	
Manganese	mg/L	03/19/2013	N001	4.375 - 9.375	1.6		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	4.375 - 9.375	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/19/2013	N001	4.375 - 9.375	26.2		F	0		
pH	s.u.	03/19/2013	N001	4.375 - 9.375	7.72		F	0		
Potassium	mg/L	03/19/2013	N001	4.375 - 9.375	4		F	0	0.11	
Selenium	mg/L	03/19/2013	N001	4.375 - 9.375	0.00089		F	0	0.000032	
Sodium	mg/L	03/19/2013	N001	4.375 - 9.375	160		F	0	0.033	
Specific Conductance	umhos/cm	03/19/2013	N001	4.375 - 9.375	1480		F	0		
Strontium	mg/L	03/19/2013	N001	4.375 - 9.375	1.3		F	0	0.000078	
Sulfate	mg/L	03/19/2013	N001	4.375 - 9.375	550		F	0	10	
Temperature	C	03/19/2013	N001	4.375 - 9.375	11.53		F	0		
Turbidity	NTU	03/19/2013	N001	4.375 - 9.375	8.57		F	0		
Uranium	mg/L	03/19/2013	N001	4.375 - 9.375	0.0086		F	0	0.0000029	

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

REPORT DATE: 05/22/2013

Location: 0792 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	6 - 8	424		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	6 - 8	0.1	U	F	0	0.1	
Calcium	mg/L	03/21/2013	N001	6 - 8	380		F	0	0.12	
Chloride	mg/L	03/21/2013	N001	6 - 8	110		F	0	20	
Magnesium	mg/L	03/21/2013	N001	6 - 8	210		F	0	0.13	
Manganese	mg/L	03/21/2013	N001	6 - 8	2.5		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	6 - 8	0.022		F	0	0.01	
Oxidation Reduction Potential	mV	03/21/2013	N001	6 - 8	-21.1		F	0		
pH	s.u.	03/21/2013	N001	6 - 8	7.49		F	0		
Potassium	mg/L	03/21/2013	N001	6 - 8	34		F	0	1.1	
Selenium	mg/L	03/21/2013	N001	6 - 8	0.0029		F	0	0.00032	
Sodium	mg/L	03/21/2013	N001	6 - 8	1400		F	0	0.066	
Specific Conductance	umhos/cm	03/21/2013	N001	6 - 8	8368		F	0		
Strontium	mg/L	03/21/2013	N001	6 - 8	6.9		F	0	0.00078	
Sulfate	mg/L	03/21/2013	N001	6 - 8	4500		F	0	50	
Temperature	C	03/21/2013	N001	6 - 8	11.89		F	0		
Turbidity	NTU	03/21/2013	N001	6 - 8	3.9		F	0		
Uranium	mg/L	03/21/2013	N001	6 - 8	0.16		F	0	0.000029	

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

REPORT DATE: 05/22/2013

Location: 0793 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	5.2 - 7.2	480		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	5.2 - 7.2	5.5		F	0	0.5	
Calcium	mg/L	03/21/2013	N001	5.2 - 7.2	500		F	0	0.12	
Chloride	mg/L	03/21/2013	N001	5.2 - 7.2	230		F	0	20	
Magnesium	mg/L	03/21/2013	N001	5.2 - 7.2	750		F	0	0.13	
Manganese	mg/L	03/21/2013	N001	5.2 - 7.2	0.012	B	F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	5.2 - 7.2	21		F	0	0.2	
Oxidation Reduction Potential	mV	03/21/2013	N001	5.2 - 7.2	121.3		F	0		
pH	s.u.	03/21/2013	N001	5.2 - 7.2	6.99		F	0		
Potassium	mg/L	03/21/2013	N001	5.2 - 7.2	49		F	0	1.1	
Selenium	mg/L	03/21/2013	N001	5.2 - 7.2	0.36		F	0	0.0032	
Sodium	mg/L	03/21/2013	N001	5.2 - 7.2	1100		F	0	0.066	
Specific Conductance	umhos/cm	03/21/2013	N001	5.2 - 7.2	9369		F	0		
Strontium	mg/L	03/21/2013	N001	5.2 - 7.2	7.4		F	0	0.00078	
Sulfate	mg/L	03/21/2013	N001	5.2 - 7.2	6100		F	0	50	
Temperature	C	03/21/2013	N001	5.2 - 7.2	11.82		F	0		
Turbidity	NTU	03/21/2013	N001	5.2 - 7.2	1.28		F	0		
Uranium	mg/L	03/21/2013	N001	5.2 - 7.2	1.1		F	0	0.00029	

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

REPORT DATE: 05/22/2013

Location: 0797 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	7.3 - 9.3	511		FQ	0		
Ammonia Total as N	mg/L	03/20/2013	N001	7.3 - 9.3	0.1	U	FQ	0	0.1	
Calcium	mg/L	03/20/2013	N001	7.3 - 9.3	340		FQ	0	0.12	
Chloride	mg/L	03/20/2013	N001	7.3 - 9.3	290		FQ	0	20	
Magnesium	mg/L	03/20/2013	N001	7.3 - 9.3	96		FQ	0	0.13	
Manganese	mg/L	03/20/2013	N001	7.3 - 9.3	0.22		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	7.3 - 9.3	0.11		FQ	0	0.01	
Oxidation Reduction Potential	mV	03/20/2013	N001	7.3 - 9.3	71.3		FQ	0		
pH	s.u.	03/20/2013	N001	7.3 - 9.3	7.73		FQ	0		
Potassium	mg/L	03/20/2013	N001	7.3 - 9.3	7.5	B	FQ	0	1.1	
Selenium	mg/L	03/20/2013	N001	7.3 - 9.3	0.00068		FQ	0	0.000032	
Sodium	mg/L	03/20/2013	N001	7.3 - 9.3	1500		FQ	0	0.066	
Specific Conductance	umhos/cm	03/20/2013	N001	7.3 - 9.3	7982		FQ	0		
Strontium	mg/L	03/20/2013	N001	7.3 - 9.3	6.5		FQ	0	0.00078	
Sulfate	mg/L	03/20/2013	N001	7.3 - 9.3	4000		FQ	0	50	
Temperature	C	03/20/2013	N001	7.3 - 9.3	13.59		FQ	0		
Turbidity	NTU	03/20/2013	N001	7.3 - 9.3	6.55		FQ	0		
Uranium	mg/L	03/20/2013	N001	7.3 - 9.3	0.03		FQ	0	0.0000029	

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

REPORT DATE: 05/22/2013

Location: 0798 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	7.1 - 9.1	464		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	7.1 - 9.1	0.65		F	0	0.1	
Calcium	mg/L	03/21/2013	N001	7.1 - 9.1	410		F	0	0.24	
Chloride	mg/L	03/21/2013	N001	7.1 - 9.1	150		F	0	20	
Magnesium	mg/L	03/21/2013	N001	7.1 - 9.1	270		F	0	0.26	
Manganese	mg/L	03/21/2013	N001	7.1 - 9.1	1.8		F	0	0.0023	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	7.1 - 9.1	0.51		F	0	0.01	
Oxidation Reduction Potential	mV	03/21/2013	N001	7.1 - 9.1	110		F	0		
pH	s.u.	03/21/2013	N001	7.1 - 9.1	7.17		F	0		
Potassium	mg/L	03/21/2013	N001	7.1 - 9.1	34		F	0	2.2	
Selenium	mg/L	03/21/2013	N001	7.1 - 9.1	0.0016		F	0	0.000065	
Sodium	mg/L	03/21/2013	N001	7.1 - 9.1	1600		F	0	0.13	
Specific Conductance	umhos/cm	03/21/2013	N001	7.1 - 9.1	8920		F	0		
Strontium	mg/L	03/21/2013	N001	7.1 - 9.1	6		F	0	0.0016	
Sulfate	mg/L	03/21/2013	N001	7.1 - 9.1	5000		F	0	50	
Temperature	C	03/21/2013	N001	7.1 - 9.1	13.7		F	0		
Turbidity	NTU	03/21/2013	N001	7.1 - 9.1	4.66		F	0		
Uranium	mg/L	03/21/2013	N001	7.1 - 9.1	0.25		F	0	0.000029	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	5.6 - 15.4	262		F	0		
Ammonia Total as N	mg/L	03/20/2013	N001	5.6 - 15.4	0.1	U	F	0	0.1	
Calcium	mg/L	03/20/2013	N001	5.6 - 15.4	36		F	0	0.06	
Chloride	mg/L	03/20/2013	N001	5.6 - 15.4	40		F	0	4	
Magnesium	mg/L	03/20/2013	N001	5.6 - 15.4	9.7		F	0	0.065	
Manganese	mg/L	03/20/2013	N001	5.6 - 15.4	0.96		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	5.6 - 15.4	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/20/2013	N001	5.6 - 15.4	-71.4		F	0		
pH	s.u.	03/20/2013	N001	5.6 - 15.4	7.92		F	0		
Potassium	mg/L	03/20/2013	N001	5.6 - 15.4	1.7	B	F	0	0.54	
Selenium	mg/L	03/20/2013	N001	5.6 - 15.4	0.0029		F	0	0.000032	
Sodium	mg/L	03/20/2013	N001	5.6 - 15.4	330		F	0	0.033	
Specific Conductance	umhos/cm	03/20/2013	N001	5.6 - 15.4	1806		F	0		
Strontium	mg/L	03/20/2013	N001	5.6 - 15.4	0.61		F	0	0.00039	
Sulfate	mg/L	03/20/2013	N001	5.6 - 15.4	590		F	0	10	
Temperature	C	03/20/2013	N001	5.6 - 15.4	13.36		F	0		
Turbidity	NTU	03/20/2013	N001	5.6 - 15.4	9.97		F	0		
Uranium	mg/L	03/20/2013	N001	5.6 - 15.4	0.019		F	0	0.0000029	

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

REPORT DATE: 05/22/2013

Location: 0853 WELL S of floodplain fence

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	10 - 15	223		F	0		
Ammonia Total as N	mg/L	03/20/2013	N001	10 - 15	15		F	0	1	
Calcium	mg/L	03/20/2013	N001	10 - 15	210		F	0	0.012	
Chloride	mg/L	03/20/2013	N001	10 - 15	22		F	0	4	
Magnesium	mg/L	03/20/2013	N001	10 - 15	60		F	0	0.013	
Manganese	mg/L	03/20/2013	N001	10 - 15	0.89		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	10 - 15	0.013		F	0	0.01	
Oxidation Reduction Potential	mV	03/20/2013	N001	10 - 15	16.4		F	0		
pH	s.u.	03/20/2013	N001	10 - 15	7.16		F	0		
Potassium	mg/L	03/20/2013	N001	10 - 15	14		F	0	0.11	
Selenium	mg/L	03/20/2013	N001	10 - 15	0.000032	U	F	0	0.000032	
Sodium	mg/L	03/20/2013	N001	10 - 15	120		F	0	0.0066	
Specific Conductance	umhos/cm	03/20/2013	N001	10 - 15	1871		F	0		
Strontium	mg/L	03/20/2013	N001	10 - 15	2.1		F	0	0.000078	
Sulfate	mg/L	03/20/2013	N001	10 - 15	790		F	0	10	
Temperature	C	03/20/2013	N001	10 - 15	12.03		F	0		
Turbidity	NTU	03/20/2013	N001	10 - 15	4.4		F	0		
Uranium	mg/L	03/20/2013	N001	10 - 15	0.077		F	0	0.0000029	

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

REPORT DATE: 05/22/2013

Location: 0854 WELL NE part of floodplain

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	0001	9.05 - 11.55	580		F	0		
Ammonia Total as N	mg/L	03/21/2013	0001	9.05 - 11.55	1.9		F	0	0.1	
Calcium	mg/L	03/21/2013	0001	9.05 - 11.55	320		F	0	0.12	
Chloride	mg/L	03/21/2013	0001	9.05 - 11.55	170		F	0	20	
Magnesium	mg/L	03/21/2013	0001	9.05 - 11.55	480		F	0	0.13	
Manganese	mg/L	03/21/2013	0001	9.05 - 11.55	2.4		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	0001	9.05 - 11.55	0.9		F	0	0.01	
Oxidation Reduction Potential	mV	03/21/2013	N001	9.05 - 11.55	100		F	0		
pH	s.u.	03/21/2013	N001	9.05 - 11.55	7.21		F	0		
Potassium	mg/L	03/21/2013	0001	9.05 - 11.55	60		F	0	1.1	
Selenium	mg/L	03/21/2013	0001	9.05 - 11.55	0.0081		F	0	0.00065	
Sodium	mg/L	03/21/2013	0001	9.05 - 11.55	1700		F	0	0.33	
Specific Conductance	umhos/cm	03/21/2013	N001	9.05 - 11.55	10180		F	0		
Strontium	mg/L	03/21/2013	0001	9.05 - 11.55	5.4		F	0	0.00078	
Sulfate	mg/L	03/21/2013	0001	9.05 - 11.55	6200		F	0	50	
Temperature	C	03/21/2013	N001	9.05 - 11.55	11.7		F	0		
Turbidity	NTU	03/21/2013	N001	9.05 - 11.55	21.1		F	0		
Uranium	mg/L	03/21/2013	0001	9.05 - 11.55	0.16		F	0	0.000058	

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

REPORT DATE: 05/22/2013

Location: 0855 WELL NW part of floodplain

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	4.9	-	14.9	345		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	4.9	-	14.9	0.1	U	F	0	0.1	
Calcium	mg/L	03/19/2013	N001	4.9	-	14.9	340		F	0	0.12	
Chloride	mg/L	03/19/2013	N001	4.9	-	14.9	96		F	0	10	
Magnesium	mg/L	03/19/2013	N001	4.9	-	14.9	81		F	0	0.13	
Manganese	mg/L	03/19/2013	N001	4.9	-	14.9	1.9		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	4.9	-	14.9	6.7		F	0	0.1	
Oxidation Reduction Potential	mV	03/19/2013	N001	4.9	-	14.9	145.1		F	0		
pH	s.u.	03/19/2013	N001	4.9	-	14.9	7.18		F	0		
Potassium	mg/L	03/19/2013	N001	4.9	-	14.9	10		F	0	1.1	
Selenium	mg/L	03/19/2013	N001	4.9	-	14.9	0.035		F	0	0.00032	
Sodium	mg/L	03/19/2013	N001	4.9	-	14.9	1000		F	0	0.066	
Specific Conductance	umhos/cm	03/19/2013	N001	4.9	-	14.9	6015		F	0		
Strontium	mg/L	03/19/2013	N001	4.9	-	14.9	14		F	0	0.00078	
Sulfate	mg/L	03/19/2013	N001	4.9	-	14.9	3100		F	0	25	
Temperature	C	03/19/2013	N001	4.9	-	14.9	8.09		F	0		
Turbidity	NTU	03/19/2013	N001	4.9	-	14.9	2.71		F	0		
Uranium	mg/L	03/19/2013	N001	4.9	-	14.9	0.081		F	0	0.000029	

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

REPORT DATE: 05/22/2013

Location: 0856 WELL NW part of floodplain

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	18.8 - 23.8	223		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	18.8 - 23.8	0.12		F	0	0.1	
Calcium	mg/L	03/19/2013	N001	18.8 - 23.8	180		F	0	0.12	
Chloride	mg/L	03/19/2013	N001	18.8 - 23.8	75		F	0	10	
Magnesium	mg/L	03/19/2013	N001	18.8 - 23.8	47		F	0	0.13	
Manganese	mg/L	03/19/2013	N001	18.8 - 23.8	1.5		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	18.8 - 23.8	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/19/2013	N001	18.8 - 23.8	122		F	0		
pH	s.u.	03/19/2013	N001	18.8 - 23.8	7.36		F	0		
Potassium	mg/L	03/19/2013	N001	18.8 - 23.8	11		F	0	1.1	
Selenium	mg/L	03/19/2013	N001	18.8 - 23.8	0.00048		F	0	0.000032	
Sodium	mg/L	03/19/2013	N001	18.8 - 23.8	950		F	0	0.066	
Specific Conductance	umhos/cm	03/19/2013	N001	18.8 - 23.8	5218		F	0		
Strontium	mg/L	03/19/2013	N001	18.8 - 23.8	6		F	0	0.00078	
Sulfate	mg/L	03/19/2013	N001	18.8 - 23.8	2600		F	0	25	
Temperature	C	03/19/2013	N001	18.8 - 23.8	11.99		F	0		
Turbidity	NTU	03/19/2013	N001	18.8 - 23.8	1.32		F	0		
Uranium	mg/L	03/19/2013	N001	18.8 - 23.8	0.046		F	0	0.0000029	

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

REPORT DATE: 05/22/2013

Location: 0857 WELL Near E end of floodplain fence

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	13.2	-	18.2	570		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	13.2	-	18.2	12		F	0	0.5	
Calcium	mg/L	03/21/2013	N001	13.2	-	18.2	640		F	0	0.06	
Chloride	mg/L	03/21/2013	N001	13.2	-	18.2	230		F	0	20	
Magnesium	mg/L	03/21/2013	N001	13.2	-	18.2	670		F	0	0.065	
Manganese	mg/L	03/21/2013	N001	13.2	-	18.2	6.6		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	13.2	-	18.2	15		F	0	0.1	
Oxidation Reduction Potential	mV	03/21/2013	N001	13.2	-	18.2	114.1		F	0		
pH	s.u.	03/21/2013	N001	13.2	-	18.2	6.94		F	0		
Potassium	mg/L	03/21/2013	N001	13.2	-	18.2	41		F	0	0.54	
Selenium	mg/L	03/21/2013	N001	13.2	-	18.2	0.01		F	0	0.00032	
Sodium	mg/L	03/21/2013	N001	13.2	-	18.2	1200		F	0	0.16	
Specific Conductance	umhos/cm	03/21/2013	N001	13.2	-	18.2	9804		F	0		
Strontium	mg/L	03/21/2013	N001	13.2	-	18.2	8.6		F	0	0.00039	
Sulfate	mg/L	03/21/2013	N001	13.2	-	18.2	6000		F	0	50	
Temperature	C	03/21/2013	N001	13.2	-	18.2	14.09		F	0		
Turbidity	NTU	03/21/2013	N001	13.2	-	18.2	2.2		F	0		
Uranium	mg/L	03/21/2013	N001	13.2	-	18.2	0.84		F	0	0.000029	

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

REPORT DATE: 05/22/2013

Location: 1008 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	6.9 - 16.9	580		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	6.9 - 16.9	2.6		F	0	0.1	
Calcium	mg/L	03/21/2013	N001	6.9 - 16.9	420		F	0	0.24	
Chloride	mg/L	03/21/2013	N001	6.9 - 16.9	120		F	0	20	
Magnesium	mg/L	03/21/2013	N001	6.9 - 16.9	280		F	0	0.26	
Manganese	mg/L	03/21/2013	N001	6.9 - 16.9	1.8		F	0	0.0023	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	6.9 - 16.9	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/21/2013	N001	6.9 - 16.9	70		F	0		
pH	s.u.	03/21/2013	N001	6.9 - 16.9	7.13		F	0		
Potassium	mg/L	03/21/2013	N001	6.9 - 16.9	36		F	0	2.2	
Selenium	mg/L	03/21/2013	N001	6.9 - 16.9	0.0038		F	0	0.00016	
Sodium	mg/L	03/21/2013	N001	6.9 - 16.9	1300		F	0	0.13	
Specific Conductance	umhos/cm	03/21/2013	N001	6.9 - 16.9	8380		F	0		
Strontium	mg/L	03/21/2013	N001	6.9 - 16.9	5.2		F	0	0.0016	
Sulfate	mg/L	03/21/2013	N001	6.9 - 16.9	4600		F	0	50	
Temperature	C	03/21/2013	N001	6.9 - 16.9	12.6		F	0		
Turbidity	NTU	03/21/2013	N001	6.9 - 16.9	2.5		F	0		
Uranium	mg/L	03/21/2013	N001	6.9 - 16.9	0.4		F	0	0.000058	

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

REPORT DATE: 05/22/2013

Location: 1009 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	7.4 - 17.4	243		F	0		
Ammonia Total as N	mg/L	03/20/2013	N001	7.4 - 17.4	13		F	0	1	
Calcium	mg/L	03/20/2013	N001	7.4 - 17.4	400		F	0	0.12	
Chloride	mg/L	03/20/2013	N001	7.4 - 17.4	37		F	0	10	
Magnesium	mg/L	03/20/2013	N001	7.4 - 17.4	180		F	0	0.13	
Manganese	mg/L	03/20/2013	N001	7.4 - 17.4	0.97		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	7.4 - 17.4	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/20/2013	N001	7.4 - 17.4	9.1		F	0		
pH	s.u.	03/20/2013	N001	7.4 - 17.4	6.98		F	0		
Potassium	mg/L	03/20/2013	N001	7.4 - 17.4	18		F	0	1.1	
Selenium	mg/L	03/20/2013	N001	7.4 - 17.4	0.012		F	0	0.00032	
Sodium	mg/L	03/20/2013	N001	7.4 - 17.4	250		F	0	0.066	
Specific Conductance	umhos/cm	03/20/2013	N001	7.4 - 17.4	3771		F	0		
Strontium	mg/L	03/20/2013	N001	7.4 - 17.4	4		F	0	0.00078	
Sulfate	mg/L	03/20/2013	N001	7.4 - 17.4	2000		F	0	25	
Temperature	C	03/20/2013	N001	7.4 - 17.4	13.78		F	0		
Turbidity	NTU	03/20/2013	N001	7.4 - 17.4	1.05		F	0		
Uranium	mg/L	03/20/2013	N001	7.4 - 17.4	0.2		F	0	0.000029	

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

REPORT DATE: 05/22/2013

Location: 1089 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	4.8 - 14.8	390			0		
Ammonia Total as N	mg/L	03/19/2013	N001	4.8 - 14.8	0.31			0	0.1	
Calcium	mg/L	03/19/2013	N001	4.8 - 14.8	340			0	0.12	
Chloride	mg/L	03/19/2013	N001	4.8 - 14.8	120			0	20	
Magnesium	mg/L	03/19/2013	N001	4.8 - 14.8	200			0	0.13	
Manganese	mg/L	03/19/2013	N001	4.8 - 14.8	0.72			0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	4.8 - 14.8	0.59			0	0.01	
Oxidation Reduction Potential	mV	03/19/2013	N001	4.8 - 14.8	260			0		
pH	s.u.	03/19/2013	N001	4.8 - 14.8	7.35			0		
Potassium	mg/L	03/19/2013	N001	4.8 - 14.8	35			0	1.1	
Selenium	mg/L	03/19/2013	N001	4.8 - 14.8	0.0044			0	0.00032	
Sodium	mg/L	03/19/2013	N001	4.8 - 14.8	1300			0	0.066	
Specific Conductance	umhos /cm	03/19/2013	N001	4.8 - 14.8	7760			0		
Strontium	mg/L	03/19/2013	N001	4.8 - 14.8	5			0	0.00078	
Sulfate	mg/L	03/19/2013	N001	4.8 - 14.8	4400			0	50	
Temperature	C	03/19/2013	N001	4.8 - 14.8	11.3			0		
Turbidity	NTU	03/19/2013	N001	4.8 - 14.8	3.65			0		
Uranium	mg/L	03/19/2013	N001	4.8 - 14.8	0.22			0	0.000029	

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

REPORT DATE: 05/22/2013

Location: 1104 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	-	440			0		
Ammonia Total as N	mg/L	03/19/2013	N001	-	0.43			0	0.1	
Calcium	mg/L	03/19/2013	N001	-	330			0	0.24	
Chloride	mg/L	03/19/2013	N001	-	150			0	20	
Magnesium	mg/L	03/19/2013	N001	-	350			0	0.26	
Manganese	mg/L	03/19/2013	N001	-	0.81			0	0.0023	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	-	2.5			0	0.02	
Oxidation Reduction Potential	mV	03/19/2013	N001	-	265			0		
pH	s.u.	03/19/2013	N001	-	7.42			0		
Potassium	mg/L	03/19/2013	N001	-	44			0	2.2	
Selenium	mg/L	03/19/2013	N001	-	0.011			0	0.00032	
Sodium	mg/L	03/19/2013	N001	-	1600			0	0.13	
Specific Conductance	umhos /cm	03/19/2013	N001	-	8950			0		
Strontium	mg/L	03/19/2013	N001	-	5.1			0	0.0016	
Sulfate	mg/L	03/19/2013	N001	-	5100			0	50	
Temperature	C	03/19/2013	N001	-	10.7			0		
Turbidity	NTU	03/19/2013	N001	-	2.64			0		
Uranium	mg/L	03/19/2013	N001	-	0.38			0	0.000029	

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

REPORT DATE: 05/22/2013

Location: 1105 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	4.5 - 14.5	570		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	4.5 - 14.5	31		F	0	1	
Calcium	mg/L	03/21/2013	N001	4.5 - 14.5	450		F	0	0.24	
Chloride	mg/L	03/21/2013	N001	4.5 - 14.5	350		F	0	20	
Magnesium	mg/L	03/21/2013	N001	4.5 - 14.5	1200		F	0	0.26	
Manganese	mg/L	03/21/2013	N001	4.5 - 14.5	4.6		F	0	0.0023	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	4.5 - 14.5	140		F	0	1	
Oxidation Reduction Potential	mV	03/21/2013	N001	4.5 - 14.5	109.7		F	0		
pH	s.u.	03/21/2013	N001	4.5 - 14.5	6.87		F	0		
Potassium	mg/L	03/21/2013	N001	4.5 - 14.5	71		F	0	2.2	
Selenium	mg/L	03/21/2013	N001	4.5 - 14.5	0.2		F	0	0.0032	
Sodium	mg/L	03/21/2013	N001	4.5 - 14.5	1600		F	0	0.13	
Specific Conductance	umhos/cm	03/21/2013	N001	4.5 - 14.5	12950		F	0		
Strontium	mg/L	03/21/2013	N001	4.5 - 14.5	8.7		F	0	0.0016	
Sulfate	mg/L	03/21/2013	N001	4.5 - 14.5	8200		F	0	50	
Temperature	C	03/21/2013	N001	4.5 - 14.5	13.68		F	0		
Turbidity	NTU	03/21/2013	N001	4.5 - 14.5	2.37		F	0		
Uranium	mg/L	03/21/2013	N001	4.5 - 14.5	1.7		F	0	0.00029	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	0 - 0	204			0		
Ammonia Total as N	mg/L	03/19/2013	N001	0 - 0	29			0	2	
Calcium	mg/L	03/19/2013	N001	0 - 0	100			0	0.06	
Chloride	mg/L	03/19/2013	N001	0 - 0	52			0	10	
Magnesium	mg/L	03/19/2013	N001	0 - 0	160			0	0.065	
Manganese	mg/L	03/19/2013	N001	0 - 0	0.48			0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	0 - 0	52			0	0.5	
Oxidation Reduction Potential	mV	03/19/2013	N001	0 - 0	290			0		
pH	s.u.	03/19/2013	N001	0 - 0	7.38			0		
Potassium	mg/L	03/19/2013	N001	0 - 0	13			0	0.54	
Selenium	mg/L	03/19/2013	N001	0 - 0	0.014			0	0.00032	
Sodium	mg/L	03/19/2013	N001	0 - 0	210			0	0.033	
Specific Conductance	umhos/cm	03/19/2013	N001	0 - 0	2765			0		
Strontium	mg/L	03/19/2013	N001	0 - 0	1.5			0	0.00039	
Sulfate	mg/L	03/19/2013	N001	0 - 0	980			0	25	
Temperature	C	03/19/2013	N001	0 - 0	10.9			0		
Turbidity	NTU	03/19/2013	N001	0 - 0	4.36			0		
Uranium	mg/L	03/19/2013	N001	0 - 0	0.15			0	0.000029	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	0 - 0	312			0		
Ammonia Total as N	mg/L	03/19/2013	N001	0 - 0	1.5			0	0.1	
Calcium	mg/L	03/19/2013	N001	0 - 0	360			0	0.24	
Chloride	mg/L	03/19/2013	N001	0 - 0	200			0	20	
Magnesium	mg/L	03/19/2013	N001	0 - 0	570			0	0.26	
Manganese	mg/L	03/19/2013	N001	0 - 0	1			0	0.0023	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	0 - 0	36			0	0.5	
Oxidation Reduction Potential	mV	03/19/2013	N001	0 - 0	310			0		
pH	s.u.	03/19/2013	N001	0 - 0	7.12			0		
Potassium	mg/L	03/19/2013	N001	0 - 0	39			0	2.2	
Selenium	mg/L	03/19/2013	N001	0 - 0	0.2			0	0.0032	
Sodium	mg/L	03/19/2013	N001	0 - 0	1300			0	0.13	
Specific Conductance	umhos/cm	03/19/2013	N001	0 - 0	8780			0		
Strontium	mg/L	03/19/2013	N001	0 - 0	7.4			0	0.0016	
Sulfate	mg/L	03/19/2013	N001	0 - 0	5400			0	50	
Temperature	C	03/19/2013	N001	0 - 0	9.7			0		
Turbidity	NTU	03/19/2013	N001	0 - 0	4.56			0		
Uranium	mg/L	03/19/2013	N001	0 - 0	0.53			0	0.00029	

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

REPORT DATE: 05/22/2013

Location: 1111 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	7 - 12	892		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	7 - 12	0.44		F	0	0.1	
Calcium	mg/L	03/21/2013	N001	7 - 12	360		F	0	0.24	
Chloride	mg/L	03/21/2013	N001	7 - 12	330		F	0	20	
Magnesium	mg/L	03/21/2013	N001	7 - 12	850		F	0	0.26	
Manganese	mg/L	03/21/2013	N001	7 - 12	1		F	0	0.0023	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	7 - 12	25		F	0	0.2	
Oxidation Reduction Potential	mV	03/21/2013	N001	7 - 12	208.3		F	0		
pH	s.u.	03/21/2013	N001	7 - 12	6.81		F	0		
Potassium	mg/L	03/21/2013	N001	7 - 12	41		F	0	2.2	
Selenium	mg/L	03/21/2013	N001	7 - 12	0.18		F	0	0.0032	
Sodium	mg/L	03/21/2013	N001	7 - 12	1700		F	0	0.13	
Specific Conductance	umhos /cm	03/21/2013	N001	7 - 12	11009		F	0		
Strontium	mg/L	03/21/2013	N001	7 - 12	10		F	0	0.0016	
Sulfate	mg/L	03/21/2013	N001	7 - 12	6900		F	0	50	
Temperature	C	03/21/2013	N001	7 - 12	10.01		F	0		
Turbidity	NTU	03/21/2013	N001	7 - 12	1.67		F	0		
Uranium	mg/L	03/21/2013	N001	7 - 12	0.62		F	0	0.00029	

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

REPORT DATE: 05/22/2013

Location: 1112 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	7 - 12	534		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	7 - 12	13		F	0	2	
Ammonia Total as N	mg/L	03/21/2013	N002	7 - 12	12		F	0	0.5	
Calcium	mg/L	03/21/2013	N001	7 - 12	410		F	0	0.24	
Calcium	mg/L	03/21/2013	N002	7 - 12	360		F	0	0.012	
Chloride	mg/L	03/21/2013	N001	7 - 12	270		F	0	20	
Chloride	mg/L	03/21/2013	N002	7 - 12	280		F	0	20	
Magnesium	mg/L	03/21/2013	N001	7 - 12	850		F	0	0.26	
Magnesium	mg/L	03/21/2013	N002	7 - 12	860		F	0	0.26	
Manganese	mg/L	03/21/2013	N001	7 - 12	1.4		F	0	0.0023	
Manganese	mg/L	03/21/2013	N002	7 - 12	1.2		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	7 - 12	130		F	0	1	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N002	7 - 12	130		F	0	1	
Oxidation Reduction Potential	mV	03/21/2013	N001	7 - 12	238.3		F	0		
pH	s.u.	03/21/2013	N001	7 - 12	7.07		F	0		
Potassium	mg/L	03/21/2013	N001	7 - 12	72		FJ	0	2.2	
Potassium	mg/L	03/21/2013	N002	7 - 12	100		FJ	0	0.11	
Selenium	mg/L	03/21/2013	N001	7 - 12	0.6		F	0	0.0032	

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

REPORT DATE: 05/22/2013

Location: 1112 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Selenium	mg/L	03/21/2013	N002	7 - 12	0.58		F	0	0.0032	
Sodium	mg/L	03/21/2013	N001	7 - 12	1700		F	0	0.13	
Sodium	mg/L	03/21/2013	N002	7 - 12	1700		F	0	0.13	
Specific Conductance	umhos /cm	03/21/2013	N001	7 - 12	11601		F	0		
Strontium	mg/L	03/21/2013	N001	7 - 12	8		F	0	0.0016	
Strontium	mg/L	03/21/2013	N002	7 - 12	6.7		F	0	0.000078	
Sulfate	mg/L	03/21/2013	N001	7 - 12	7100		F	0	50	
Sulfate	mg/L	03/21/2013	N002	7 - 12	7200		F	0	50	
Temperature	C	03/21/2013	N001	7 - 12	9.48		F	0		
Turbidity	NTU	03/21/2013	N001	7 - 12	2.26		F	0		
Uranium	mg/L	03/21/2013	N001	7 - 12	0.91		F	0	0.00029	
Uranium	mg/L	03/21/2013	N002	7 - 12	0.88		F	0	0.00029	

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

REPORT DATE: 05/22/2013

Location: 1113 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	7 - 12	228		F	0		
Ammonia Total as N	mg/L	03/20/2013	0001	7 - 12	0.18		F	0	0.1	
Calcium	mg/L	03/20/2013	0001	7 - 12	470		F	0	0.12	
Chloride	mg/L	03/20/2013	0001	7 - 12	190		F	0	20	
Magnesium	mg/L	03/20/2013	0001	7 - 12	600		F	0	0.13	
Manganese	mg/L	03/20/2013	0001	7 - 12	0.0079	B	F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	0001	7 - 12	310		F	0	2	
Oxidation Reduction Potential	mV	03/20/2013	N001	7 - 12	102.6		F	0		
pH	s.u.	03/20/2013	N001	7 - 12	7.34		F	0		
Potassium	mg/L	03/20/2013	0001	7 - 12	73	E	FJ	0	1.1	
Selenium	mg/L	03/20/2013	0001	7 - 12	0.42		F	0	0.0016	
Sodium	mg/L	03/20/2013	0001	7 - 12	780		F	0	0.066	
Specific Conductance	umhos/cm	03/20/2013	N001	7 - 12	8405		F	0		
Strontium	mg/L	03/20/2013	0001	7 - 12	6.2		F	0	0.00078	
Sulfate	mg/L	03/20/2013	0001	7 - 12	4100		F	0	50	
Temperature	C	03/20/2013	N001	7 - 12	8.33		F	0		
Turbidity	NTU	03/20/2013	N001	7 - 12	8.6		F	0		
Uranium	mg/L	03/20/2013	0001	7 - 12	0.58		F	0	0.00015	

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

REPORT DATE: 05/22/2013

Location: 1114 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	7 - 12	510		F	0		
Ammonia Total as N	mg/L	03/20/2013	N001	7 - 12	75		F	0	2	
Calcium	mg/L	03/20/2013	N001	7 - 12	240		F	0	0.12	
Chloride	mg/L	03/20/2013	N001	7 - 12	130		F	0	10	
Magnesium	mg/L	03/20/2013	N001	7 - 12	420		F	0	0.13	
Manganese	mg/L	03/20/2013	N001	7 - 12	2.7		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	7 - 12	100		F	0	1	
Oxidation Reduction Potential	mV	03/20/2013	N001	7 - 12	132.2		F	0		
pH	s.u.	03/20/2013	N001	7 - 12	6.89		F	0		
Potassium	mg/L	03/20/2013	N001	7 - 12	41		F	0	1.1	
Selenium	mg/L	03/20/2013	N001	7 - 12	0.027		F	0	0.00065	
Sodium	mg/L	03/20/2013	N001	7 - 12	530		F	0	0.066	
Specific Conductance	umhos/cm	03/20/2013	N001	7 - 12	6023		F	0		
Strontium	mg/L	03/20/2013	N001	7 - 12	3.8		F	0	0.00078	
Sulfate	mg/L	03/20/2013	N001	7 - 12	2800		F	0	25	
Temperature	C	03/20/2013	N001	7 - 12	7.98		F	0		
Turbidity	NTU	03/20/2013	N001	7 - 12	1.4		F	0		
Uranium	mg/L	03/20/2013	N001	7 - 12	0.56		F	0	0.000058	

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

REPORT DATE: 05/22/2013

Location: 1115 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	7 - 12	580		F	0		
Ammonia Total as N	mg/L	03/20/2013	N001	7 - 12	140		F	0	20	
Calcium	mg/L	03/20/2013	N001	7 - 12	250		F	0	0.12	
Chloride	mg/L	03/20/2013	N001	7 - 12	180		F	0	20	
Magnesium	mg/L	03/20/2013	N001	7 - 12	570		F	0	0.13	
Manganese	mg/L	03/20/2013	N001	7 - 12	2.1		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	7 - 12	220		F	0	2	
Oxidation Reduction Potential	mV	03/20/2013	N001	7 - 12	82		F	0		
pH	s.u.	03/20/2013	N001	7 - 12	6.81		F	0		
Potassium	mg/L	03/20/2013	N001	7 - 12	65		F	0	1.1	
Selenium	mg/L	03/20/2013	N001	7 - 12	0.11		F	0	0.00065	
Sodium	mg/L	03/20/2013	N001	7 - 12	880		F	0	0.066	
Specific Conductance	umhos/cm	03/20/2013	N001	7 - 12	8588		F	0		
Strontium	mg/L	03/20/2013	N001	7 - 12	4.6		F	0	0.00078	
Sulfate	mg/L	03/20/2013	N001	7 - 12	4000		F	0	50	
Temperature	C	03/20/2013	N001	7 - 12	10.03		F	0		
Turbidity	NTU	03/20/2013	N001	7 - 12	0.87		F	0		
Uranium	mg/L	03/20/2013	N001	7 - 12	0.67		F	0	0.000058	

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

REPORT DATE: 05/22/2013

Location: 1117 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/18/2013	N001	7 - 12	142		F	0		
Ammonia Total as N	mg/L	03/18/2013	N001	7 - 12	0.1	U	F	0	0.1	
Calcium	mg/L	03/18/2013	N001	7 - 12	85		F	0	0.012	
Chloride	mg/L	03/18/2013	N001	7 - 12	19		F	0	1	
Magnesium	mg/L	03/18/2013	N001	7 - 12	13		F	0	0.013	
Manganese	mg/L	03/18/2013	N001	7 - 12	0.19		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/18/2013	N001	7 - 12	0.1		F	0	0.01	
Oxidation Reduction Potential	mV	03/18/2013	N001	7 - 12	139		F	0		
pH	s.u.	03/18/2013	N001	7 - 12	7.29		F	0		
Potassium	mg/L	03/18/2013	N001	7 - 12	2		F	0	0.11	
Selenium	mg/L	03/18/2013	N001	7 - 12	0.0022		F	0	0.000032	
Sodium	mg/L	03/18/2013	N001	7 - 12	41		F	0	0.0066	
Specific Conductance	umhos /cm	03/18/2013	N001	7 - 12	681		F	0		
Strontium	mg/L	03/18/2013	N001	7 - 12	0.93		F	0	0.000078	
Sulfate	mg/L	03/18/2013	N001	7 - 12	170		F	0	2.5	
Temperature	C	03/18/2013	N001	7 - 12	10.02		F	0		
Turbidity	NTU	03/18/2013	N001	7 - 12	1.01		F	0		
Uranium	mg/L	03/18/2013	N001	7 - 12	0.0075		F	0	0.0000029	

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

REPORT DATE: 05/22/2013

Location: 1128 WELL

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/18/2013	N001	6.81	-	11.81	700		F	0		
Ammonia Total as N	mg/L	03/18/2013	N001	6.81	-	11.81	290		F	0	20	
Calcium	mg/L	03/18/2013	N001	6.81	-	11.81	330		F	0	0.012	
Chloride	mg/L	03/18/2013	N001	6.81	-	11.81	330		F	0	40	
Magnesium	mg/L	03/18/2013	N001	6.81	-	11.81	1200		F	0	0.13	
Manganese	mg/L	03/18/2013	N001	6.81	-	11.81	2.7		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/18/2013	N001	6.81	-	11.81	580		F	0	5	
Oxidation Reduction Potential	mV	03/18/2013	N001	6.81	-	11.81	173.4		F	0		
pH	s.u.	03/18/2013	N001	6.81	-	11.81	6.69		F	0		
Potassium	mg/L	03/18/2013	N001	6.81	-	11.81	140		F	0	0.11	
Selenium	mg/L	03/18/2013	N001	6.81	-	11.81	0.023		F	0	0.0016	
Sodium	mg/L	03/18/2013	N001	6.81	-	11.81	1600		F	0	0.066	
Specific Conductance	umhos/cm	03/18/2013	N001	6.81	-	11.81	14984		F	0		
Strontium	mg/L	03/18/2013	N001	6.81	-	11.81	6.4		F	0	0.000078	
Sulfate	mg/L	03/18/2013	N001	6.81	-	11.81	7500		F	0	100	
Temperature	C	03/18/2013	N001	6.81	-	11.81	11.57		F	0		
Turbidity	NTU	03/18/2013	N001	6.81	-	11.81	1.11		F	0		
Uranium	mg/L	03/18/2013	N001	6.81	-	11.81	1.1		F	0	0.00015	

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

REPORT DATE: 05/22/2013

Location: 1132 WELL

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	6.07	-	11.07	129		F	0		
Ammonia Total as N	mg/L	03/20/2013	N001	6.07	-	11.07	1.3		F	0	0.1	
Calcium	mg/L	03/20/2013	N001	6.07	-	11.07	61		F	0	0.012	
Chloride	mg/L	03/20/2013	N001	6.07	-	11.07	18		F	0	1	
Magnesium	mg/L	03/20/2013	N001	6.07	-	11.07	20		F	0	0.013	
Manganese	mg/L	03/20/2013	N001	6.07	-	11.07	0.4		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	6.07	-	11.07	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/20/2013	N001	6.07	-	11.07	-89.4		F	0		
pH	s.u.	03/20/2013	N001	6.07	-	11.07	7.61		F	0		
Potassium	mg/L	03/20/2013	N001	6.07	-	11.07	2.4		F	0	0.11	
Selenium	mg/L	03/20/2013	N001	6.07	-	11.07	0.00013		F	0	0.000032	
Sodium	mg/L	03/20/2013	N001	6.07	-	11.07	42		F	0	0.0066	
Specific Conductance	umhos/cm	03/20/2013	N001	6.07	-	11.07	629		F	0		
Strontium	mg/L	03/20/2013	N001	6.07	-	11.07	0.76		F	0	0.000078	
Sulfate	mg/L	03/20/2013	N001	6.07	-	11.07	160		F	0	2.5	
Temperature	C	03/20/2013	N001	6.07	-	11.07	8.14		F	0		
Turbidity	NTU	03/20/2013	N001	6.07	-	11.07	1		F	0		
Uranium	mg/L	03/20/2013	N001	6.07	-	11.07	0.016		F	0	0.0000029	

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

REPORT DATE: 05/22/2013

Location: 1134 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	8.16 - 13.16	136		F	0		
Ammonia Total as N	mg/L	03/20/2013	N001	8.16 - 13.16	0.98		F	0	0.1	
Calcium	mg/L	03/20/2013	N001	8.16 - 13.16	55		F	0	0.012	
Chloride	mg/L	03/20/2013	N001	8.16 - 13.16	13		F	0	1	
Magnesium	mg/L	03/20/2013	N001	8.16 - 13.16	13		F	0	0.013	
Manganese	mg/L	03/20/2013	N001	8.16 - 13.16	0.45		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	8.16 - 13.16	0.025		F	0	0.01	
Oxidation Reduction Potential	mV	03/20/2013	N001	8.16 - 13.16	-69.5		F	0		
pH	s.u.	03/20/2013	N001	8.16 - 13.16	7.49		F	0		
Potassium	mg/L	03/20/2013	N001	8.16 - 13.16	2.2		F	0	0.11	
Selenium	mg/L	03/20/2013	N001	8.16 - 13.16	0.000051	B	F	0	0.000032	
Sodium	mg/L	03/20/2013	N001	8.16 - 13.16	40		F	0	0.0066	
Specific Conductance	umhos/cm	03/20/2013	N001	8.16 - 13.16	558		F	0		
Strontium	mg/L	03/20/2013	N001	8.16 - 13.16	0.65		F	0	0.000078	
Sulfate	mg/L	03/20/2013	N001	8.16 - 13.16	120		F	0	2.5	
Temperature	C	03/20/2013	N001	8.16 - 13.16	10.25		F	0		
Turbidity	NTU	03/20/2013	N001	8.16 - 13.16	0.83		F	0		
Uranium	mg/L	03/20/2013	N001	8.16 - 13.16	0.01		F	0	0.0000029	

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

REPORT DATE: 05/22/2013

Location: 1135 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	6.39 - 11.39	243		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	6.39 - 11.39	0.29		F	0	0.1	
Calcium	mg/L	03/19/2013	N001	6.39 - 11.39	350		F	0	0.12	
Chloride	mg/L	03/19/2013	N001	6.39 - 11.39	88		F	0	10	
Magnesium	mg/L	03/19/2013	N001	6.39 - 11.39	130		F	0	0.13	
Manganese	mg/L	03/19/2013	N001	6.39 - 11.39	1.7		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	6.39 - 11.39	0.042		F	0	0.01	
Oxidation Reduction Potential	mV	03/19/2013	N001	6.39 - 11.39	41.4		F	0		
pH	s.u.	03/19/2013	N001	6.39 - 11.39	7.22		F	0		
Potassium	mg/L	03/19/2013	N001	6.39 - 11.39	20		F	0	1.1	
Selenium	mg/L	03/19/2013	N001	6.39 - 11.39	0.00036		F	0	0.000032	
Sodium	mg/L	03/19/2013	N001	6.39 - 11.39	960		F	0	0.066	
Specific Conductance	umhos/cm	03/19/2013	N001	6.39 - 11.39	6086		F	0		
Strontium	mg/L	03/19/2013	N001	6.39 - 11.39	4.1		F	0	0.00078	
Sulfate	mg/L	03/19/2013	N001	6.39 - 11.39	3400		F	0	25	
Temperature	C	03/19/2013	N001	6.39 - 11.39	10.9		F	0		
Turbidity	NTU	03/19/2013	N001	6.39 - 11.39	9.68		F	0		
Uranium	mg/L	03/19/2013	N001	6.39 - 11.39	0.09		F	0	0.0000029	

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

REPORT DATE: 05/22/2013

Location: 1136 WELL

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	6.29	-	11.29	455		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	6.29	-	11.29	0.19		F	0	0.1	
Calcium	mg/L	03/19/2013	N001	6.29	-	11.29	660		F	0	0.12	
Chloride	mg/L	03/19/2013	N001	6.29	-	11.29	270		F	0	20	
Magnesium	mg/L	03/19/2013	N001	6.29	-	11.29	480		F	0	0.013	
Manganese	mg/L	03/19/2013	N001	6.29	-	11.29	4.8		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	6.29	-	11.29	65		F	0	0.5	
Oxidation Reduction Potential	mV	03/19/2013	N001	6.29	-	11.29	124.5		F	0		
pH	s.u.	03/19/2013	N001	6.29	-	11.29	7.01		F	0		
Potassium	mg/L	03/19/2013	N001	6.29	-	11.29	18		F	0	0.11	
Selenium	mg/L	03/19/2013	N001	6.29	-	11.29	0.0029		F	0	0.00016	
Sodium	mg/L	03/19/2013	N001	6.29	-	11.29	940		F	0	0.066	
Specific Conductance	umhos/cm	03/19/2013	N001	6.29	-	11.29	8394		F	0		
Strontium	mg/L	03/19/2013	N001	6.29	-	11.29	7.2		F	0	0.000078	
Sulfate	mg/L	03/19/2013	N001	6.29	-	11.29	4600		F	0	50	
Temperature	C	03/19/2013	N001	6.29	-	11.29	10.9		F	0		
Turbidity	NTU	03/19/2013	N001	6.29	-	11.29	1		F	0		
Uranium	mg/L	03/19/2013	N001	6.29	-	11.29	0.59		F	0	0.00029	

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

REPORT DATE: 05/22/2013

Location: 1137 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	0001	9.4 - 14.4	840		F	0		
Ammonia Total as N	mg/L	03/21/2013	0001	9.4 - 14.4	0.44		F	0	0.1	
Calcium	mg/L	03/21/2013	0001	9.4 - 14.4	640		F	0	0.06	
Chloride	mg/L	03/21/2013	0001	9.4 - 14.4	530		F	0	40	
Magnesium	mg/L	03/21/2013	0001	9.4 - 14.4	1400		F	0	0.065	
Manganese	mg/L	03/21/2013	0001	9.4 - 14.4	5.7		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	0001	9.4 - 14.4	41		F	0	0.5	
Oxidation Reduction Potential	mV	03/21/2013	N001	9.4 - 14.4	170		F	0		
pH	s.u.	03/21/2013	N001	9.4 - 14.4	7.21		F	0		
Potassium	mg/L	03/21/2013	0001	9.4 - 14.4	52		F	0	0.54	
Selenium	mg/L	03/21/2013	0001	9.4 - 14.4	0.005		F	0	0.00032	
Sodium	mg/L	03/21/2013	0001	9.4 - 14.4	2000		F	0	0.33	
Specific Conductance	umhos/cm	03/21/2013	N001	9.4 - 14.4	15060		F	0		
Strontium	mg/L	03/21/2013	0001	9.4 - 14.4	11		F	0	0.00039	
Sulfate	mg/L	03/21/2013	0001	9.4 - 14.4	10000		F	0	100	
Temperature	C	03/21/2013	N001	9.4 - 14.4	11.2		F	0		
Turbidity	NTU	03/21/2013	N001	9.4 - 14.4	57.4		F	0		
Uranium	mg/L	03/21/2013	0001	9.4 - 14.4	1.8		F	0	0.00029	

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

REPORT DATE: 05/22/2013

Location: 1138 WELL

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	8.09	-	13.09	805		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	8.09	-	13.09	0.44		F	0	0.1	
Calcium	mg/L	03/21/2013	N001	8.09	-	13.09	590		F	0	0.12	
Chloride	mg/L	03/21/2013	N001	8.09	-	13.09	580		F	0	40	
Magnesium	mg/L	03/21/2013	N001	8.09	-	13.09	1500		F	0	0.13	
Manganese	mg/L	03/21/2013	N001	8.09	-	13.09	6.7		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	8.09	-	13.09	48		F	0	0.5	
Oxidation Reduction Potential	mV	03/21/2013	N001	8.09	-	13.09	140		F	0		
pH	s.u.	03/21/2013	N001	8.09	-	13.09	7.19		F	0		
Potassium	mg/L	03/21/2013	N001	8.09	-	13.09	54		F	0	1.1	
Selenium	mg/L	03/21/2013	N001	8.09	-	13.09	0.0036		F	0	0.00065	
Sodium	mg/L	03/21/2013	N001	8.09	-	13.09	2100		F	0	0.33	
Specific Conductance	umhos/cm	03/21/2013	N001	8.09	-	13.09	15740		F	0		
Strontium	mg/L	03/21/2013	N001	8.09	-	13.09	12		F	0	0.00078	
Sulfate	mg/L	03/21/2013	N001	8.09	-	13.09	11000		F	0	100	
Temperature	C	03/21/2013	N001	8.09	-	13.09	11.3		F	0		
Turbidity	NTU	03/21/2013	N001	8.09	-	13.09	9.81		F	0		
Uranium	mg/L	03/21/2013	N001	8.09	-	13.09	2		F	0	0.000058	

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

REPORT DATE: 05/22/2013

Location: 1139 WELL

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	0001	6.19	-	11.19	608		F	0		
Ammonia Total as N	mg/L	03/21/2013	0001	6.19	-	11.19	0.1	U	F	0	0.1	
Calcium	mg/L	03/21/2013	0001	6.19	-	11.19	400		F	0	0.12	
Chloride	mg/L	03/21/2013	0001	6.19	-	11.19	470		F	0	40	
Magnesium	mg/L	03/21/2013	0001	6.19	-	11.19	1100		F	0	0.13	
Manganese	mg/L	03/21/2013	0001	6.19	-	11.19	0.0023	B	F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	0001	6.19	-	11.19	18		F	0	0.2	
Oxidation Reduction Potential	mV	03/21/2013	N001	6.19	-	11.19	120		F	0		
pH	s.u.	03/21/2013	N001	6.19	-	11.19	7.47		F	0		
Potassium	mg/L	03/21/2013	0001	6.19	-	11.19	63		F	0	1.1	
Selenium	mg/L	03/21/2013	0001	6.19	-	11.19	0.013		F	0	0.00065	
Sodium	mg/L	03/21/2013	0001	6.19	-	11.19	2600		F	0	0.33	
Specific Conductance	umhos/cm	03/21/2013	N001	6.19	-	11.19	15820		F	0		
Strontium	mg/L	03/21/2013	0001	6.19	-	11.19	8.6		F	0	0.00078	
Sulfate	mg/L	03/21/2013	0001	6.19	-	11.19	10000		F	0	100	
Temperature	C	03/21/2013	N001	6.19	-	11.19	11		F	0		
Turbidity	NTU	03/21/2013	N001	6.19	-	11.19	32.3		F	0		
Uranium	mg/L	03/21/2013	0001	6.19	-	11.19	1.2		F	0	0.000058	

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

REPORT DATE: 05/22/2013

Location: 1140 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	7.6 - 12.6	590		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	7.6 - 12.6	12		F	0	0.5	
Calcium	mg/L	03/21/2013	N001	7.6 - 12.6	420		F	0	0.12	
Chloride	mg/L	03/21/2013	N001	7.6 - 12.6	260		F	0	20	
Magnesium	mg/L	03/21/2013	N001	7.6 - 12.6	920		F	0	0.13	
Manganese	mg/L	03/21/2013	N001	7.6 - 12.6	2.8		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	7.6 - 12.6	34		F	0	0.5	
Oxidation Reduction Potential	mV	03/21/2013	N001	7.6 - 12.6	215.4		F	0		
pH	s.u.	03/21/2013	N001	7.6 - 12.6	6.94		F	0		
Potassium	mg/L	03/21/2013	N001	7.6 - 12.6	67		F	0	1.1	
Selenium	mg/L	03/21/2013	N001	7.6 - 12.6	0.19		F	0	0.0032	
Sodium	mg/L	03/21/2013	N001	7.6 - 12.6	1500		F	0	0.066	
Specific Conductance	umhos/cm	03/21/2013	N001	7.6 - 12.6	11271		F	0		
Strontium	mg/L	03/21/2013	N001	7.6 - 12.6	6.8		F	0	0.00078	
Sulfate	mg/L	03/21/2013	N001	7.6 - 12.6	7200		F	0	50	
Temperature	C	03/21/2013	N001	7.6 - 12.6	11.5		F	0		
Turbidity	NTU	03/21/2013	N001	7.6 - 12.6	2.13		F	0		
Uranium	mg/L	03/21/2013	N001	7.6 - 12.6	1.1		F	0	0.00029	

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

REPORT DATE: 05/22/2013

Location: 1141 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	5.6 - 10.6	330		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	5.6 - 10.6	9		F	0	0.5	
Calcium	mg/L	03/21/2013	N001	5.6 - 10.6	470		F	0	0.06	
Chloride	mg/L	03/21/2013	N001	5.6 - 10.6	65		F	0	10	
Magnesium	mg/L	03/21/2013	N001	5.6 - 10.6	290		F	0	0.065	
Manganese	mg/L	03/21/2013	N001	5.6 - 10.6	1.4		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	5.6 - 10.6	0.68		F	0	0.01	
Oxidation Reduction Potential	mV	03/21/2013	N001	5.6 - 10.6	59		F	0		
pH	s.u.	03/21/2013	N001	5.6 - 10.6	7.05		F	0		
Potassium	mg/L	03/21/2013	N001	5.6 - 10.6	33		F	0	0.54	
Selenium	mg/L	03/21/2013	N001	5.6 - 10.6	0.096		F	0	0.0032	
Sodium	mg/L	03/21/2013	N001	5.6 - 10.6	380		F	0	0.033	
Specific Conductance	umhos /cm	03/21/2013	N001	5.6 - 10.6	4829		F	0		
Strontium	mg/L	03/21/2013	N001	5.6 - 10.6	4.3		F	0	0.00039	
Sulfate	mg/L	03/21/2013	N001	5.6 - 10.6	2700		F	0	25	
Temperature	C	03/21/2013	N001	5.6 - 10.6	12.19		F	0		
Turbidity	NTU	03/21/2013	N001	5.6 - 10.6	2.37		F	0		
Uranium	mg/L	03/21/2013	N001	5.6 - 10.6	0.44		F	0	0.00029	

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

REPORT DATE: 05/22/2013

Location: 1142 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	9 - 14	118		F	0		
Ammonia Total as N	mg/L	03/20/2013	N001	9 - 14	0.1	U	F	0	0.1	
Calcium	mg/L	03/20/2013	N001	9 - 14	70		F	0	0.012	
Chloride	mg/L	03/20/2013	N001	9 - 14	18		F	0	1	
Magnesium	mg/L	03/20/2013	N001	9 - 14	14		F	0	0.013	
Manganese	mg/L	03/20/2013	N001	9 - 14	0.48		F	0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	9 - 14	0.022		F	0	0.01	
Oxidation Reduction Potential	mV	03/20/2013	N001	9 - 14	-44.2		F	0		
pH	s.u.	03/20/2013	N001	9 - 14	7.43		F	0		
Potassium	mg/L	03/20/2013	N001	9 - 14	2.2		F	0	0.11	
Selenium	mg/L	03/20/2013	N001	9 - 14	0.0029		F	0	0.00016	
Sodium	mg/L	03/20/2013	N001	9 - 14	36		F	0	0.0066	
Specific Conductance	umhos /cm	03/20/2013	N001	9 - 14	614		F	0		
Strontium	mg/L	03/20/2013	N001	9 - 14	0.82		F	0	0.000078	
Sulfate	mg/L	03/20/2013	N001	9 - 14	160		F	0	2.5	
Temperature	C	03/20/2013	N001	9 - 14	11.23		F	0		
Turbidity	NTU	03/20/2013	N001	9 - 14	1.39		F	0		
Uranium	mg/L	03/20/2013	N001	9 - 14	0.0057		F	0	0.000015	

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

REPORT DATE: 05/22/2013

Location: 1143 WELL

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	8.3	-	13.3	214		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	8.3	-	13.3	0.11		F	0	0.1	
Calcium	mg/L	03/19/2013	N001	8.3	-	13.3	190		F	0	0.12	
Chloride	mg/L	03/19/2013	N001	8.3	-	13.3	75		F	0	10	
Magnesium	mg/L	03/19/2013	N001	8.3	-	13.3	63		F	0	0.13	
Manganese	mg/L	03/19/2013	N001	8.3	-	13.3	1.1		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	8.3	-	13.3	0.01	U	F	0	0.01	
Oxidation Reduction Potential	mV	03/19/2013	N001	8.3	-	13.3	-12.9		F	0		
pH	s.u.	03/19/2013	N001	8.3	-	13.3	7.41		F	0		
Potassium	mg/L	03/19/2013	N001	8.3	-	13.3	11		F	0	1.1	
Selenium	mg/L	03/19/2013	N001	8.3	-	13.3	0.00022		F	0	0.000032	
Sodium	mg/L	03/19/2013	N001	8.3	-	13.3	900		F	0	0.066	
Specific Conductance	umhos/cm	03/19/2013	N001	8.3	-	13.3	5132		F	0		
Strontium	mg/L	03/19/2013	N001	8.3	-	13.3	2.6		F	0	0.00078	
Sulfate	mg/L	03/19/2013	N001	8.3	-	13.3	2600		F	0	25	
Temperature	C	03/19/2013	N001	8.3	-	13.3	10.18		F	0		
Turbidity	NTU	03/19/2013	N001	8.3	-	13.3	8.88		F	0		
Uranium	mg/L	03/19/2013	N001	8.3	-	13.3	0.053		F	0	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: 05/22/2013

Location: 0600 WELL Just N of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	0001	29 - 48.8	1312		FQ	0		
Ammonia Total as N	mg/L	03/20/2013	0001	29 - 48.8	14		FQ	0	0.5	
Calcium	mg/L	03/20/2013	0001	29 - 48.8	250		FQ	0	0.6	
Chloride	mg/L	03/20/2013	0001	29 - 48.8	1400		FQ	0	100	
Magnesium	mg/L	03/20/2013	0001	29 - 48.8	260		FQ	0	0.65	
Manganese	mg/L	03/20/2013	0001	29 - 48.8	0.23	B	FQ	0	0.0057	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	0001	29 - 48.8	88		FQ	0	1	
Oxidation Reduction Potential	mV	03/20/2013	N001	29 - 48.8	180		FQ	0		
pH	s.u.	03/20/2013	N001	29 - 48.8	6.85		FQ	0		
Potassium	mg/L	03/20/2013	0001	29 - 48.8	30	B	FQ	0	5.4	
Selenium	mg/L	03/20/2013	0001	29 - 48.8	0.0012		FQ	0	0.00032	
Sodium	mg/L	03/20/2013	0001	29 - 48.8	4800		FQ	0	0.33	
Specific Conductance	umhos/cm	03/20/2013	N001	29 - 48.8	11605		FQ	0		
Strontium	mg/L	03/20/2013	0001	29 - 48.8	8.7		FQ	0	0.0039	
Sulfate	mg/L	03/20/2013	0001	29 - 48.8	9900		FQ	0	250	
Temperature	C	03/20/2013	N001	29 - 48.8	15.8		FQ	0		
Turbidity	NTU	03/20/2013	N001	29 - 48.8	16.4		FQ	0		
Uranium	mg/L	03/20/2013	0001	29 - 48.8	0.65		FQ	0	0.000029	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	27	-	47	1866		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	27	-	47	93		F	0	2	
Calcium	mg/L	03/21/2013	N001	27	-	47	430		F	0	0.6	
Chloride	mg/L	03/21/2013	N001	27	-	47	2100		F	0	100	
Magnesium	mg/L	03/21/2013	N001	27	-	47	1600		F	0	0.65	
Manganese	mg/L	03/21/2013	N001	27	-	47	0.92		F	0	0.0057	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	27	-	47	30		F	0	0.5	
Oxidation Reduction Potential	mV	03/21/2013	N001	27	-	47	85.6		F	0		
pH	s.u.	03/21/2013	N001	27	-	47	7.29		F	0		
Potassium	mg/L	03/21/2013	N001	27	-	47	86		F	0	5.4	
Selenium	mg/L	03/21/2013	N001	27	-	47	0.0064		F	0	0.00032	
Sodium	mg/L	03/21/2013	N001	27	-	47	5600		F	0	0.33	
Specific Conductance	umhos/cm	03/21/2013	N001	27	-	47	27849		F	0		
Strontium	mg/L	03/21/2013	N001	27	-	47	18		F	0	0.0039	
Sulfate	mg/L	03/21/2013	N001	27	-	47	17000		F	0	250	
Temperature	C	03/21/2013	N001	27	-	47	16.41		F	0		
Turbidity	NTU	03/21/2013	N001	27	-	47	1.42		F	0		
Uranium	mg/L	03/21/2013	N001	27	-	47	0.51		F	0	0.000029	

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

REPORT DATE: 05/22/2013

Location: 0603 WELL Just SE of Disposal Cell

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	25.9 - 35.9	156		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	25.9 - 35.9	750		F	0	20	
Calcium	mg/L	03/19/2013	N001	25.9 - 35.9	1100		F	0	0.06	
Chloride	mg/L	03/19/2013	N001	25.9 - 35.9	170		F	0	40	
Magnesium	mg/L	03/19/2013	N001	25.9 - 35.9	700		F	0	0.065	
Manganese	mg/L	03/19/2013	N001	25.9 - 35.9	59		F	0	0.0057	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	25.9 - 35.9	1700		F	0	20	
Oxidation Reduction Potential	mV	03/19/2013	N001	25.9 - 35.9	215		F	0		
pH	s.u.	03/19/2013	N001	25.9 - 35.9	6.16		F	0		
Potassium	mg/L	03/19/2013	N001	25.9 - 35.9	150		F	0	0.54	
Selenium	mg/L	03/19/2013	N001	25.9 - 35.9	0.076		F	0	0.00032	
Sodium	mg/L	03/19/2013	N001	25.9 - 35.9	660		F	0	0.033	
Specific Conductance	umhos/cm	03/19/2013	N001	25.9 - 35.9	17890		F	0		
Strontium	mg/L	03/19/2013	N001	25.9 - 35.9	5.1		F	0	0.00039	
Sulfate	mg/L	03/19/2013	N001	25.9 - 35.9	2300		F	0	100	
Temperature	C	03/19/2013	N001	25.9 - 35.9	16.4		F	0		
Turbidity	NTU	03/19/2013	N001	25.9 - 35.9	4.12		F	0		
Uranium	mg/L	03/19/2013	N001	25.9 - 35.9	0.0078		F	0	0.000029	

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

REPORT DATE: 05/22/2013

Location: 0604 WELL Just W of radon cover borrow pit

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	0001	62.7 - 72.7	960		FQ	0		
Ammonia Total as N	mg/L	03/20/2013	0001	62.7 - 72.7	0.88		FQ	0	0.1	
Calcium	mg/L	03/20/2013	0001	62.7 - 72.7	610		FQ	0	0.6	
Chloride	mg/L	03/20/2013	0001	62.7 - 72.7	2300		FQ	0	100	
Magnesium	mg/L	03/20/2013	0001	62.7 - 72.7	2100		FQ	0	0.65	
Manganese	mg/L	03/20/2013	0001	62.7 - 72.7	1		FQ	0	0.0057	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	0001	62.7 - 72.7	630		FQ	0	10	
Oxidation Reduction Potential	mV	03/20/2013	N001	62.7 - 72.7	300		FQ	0		
pH	s.u.	03/20/2013	N001	62.7 - 72.7	6.76		FQ	0		
Potassium	mg/L	03/20/2013	0001	62.7 - 72.7	54		FQ	0	5.4	
Selenium	mg/L	03/20/2013	0001	62.7 - 72.7	0.75		FQ	0	0.00032	
Sodium	mg/L	03/20/2013	0001	62.7 - 72.7	5200		FQ	0	0.33	
Specific Conductance	umhos/cm	03/20/2013	N001	62.7 - 72.7	27110		FQ	0		
Strontium	mg/L	03/20/2013	0001	62.7 - 72.7	21		FQ	0	0.0039	
Sulfate	mg/L	03/20/2013	0001	62.7 - 72.7	11000		FQ	0	250	
Temperature	C	03/20/2013	N001	62.7 - 72.7	16.4		FQ	0		
Turbidity	NTU	03/20/2013	N001	62.7 - 72.7	14.2		FQ	0		
Uranium	mg/L	03/20/2013	0001	62.7 - 72.7	0.093		FQ	0	0.000029	

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

REPORT DATE: 05/22/2013

Location: 0648 WELL Artesian well W of Bob Lee Wash

Parameter	Units	Sample		Depth Range		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft	BLS)		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	1482	- 1777	70			0		
Ammonia Total as N	mg/L	03/21/2013	N001	1482	- 1777	0.44			0	0.1	
Calcium	mg/L	03/21/2013	N001	1482	- 1777	110			0	0.06	
Chloride	mg/L	03/21/2013	N001	1482	- 1777	55			0	10	
Magnesium	mg/L	03/21/2013	N001	1482	- 1777	13			0	0.065	
Manganese	mg/L	03/21/2013	N001	1482	- 1777	0.084			0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	1482	- 1777	0.01	U		0	0.01	
Oxidation Reduction Potential	mV	03/21/2013	N001	1482	- 1777	35			0		
pH	s.u.	03/21/2013	N001	1482	- 1777	8.02			0		
Potassium	mg/L	03/21/2013	N001	1482	- 1777	8.1			0	0.54	
Selenium	mg/L	03/21/2013	N001	1482	- 1777	0.000097	B		0	0.000032	
Sodium	mg/L	03/21/2013	N001	1482	- 1777	730			0	0.033	
Specific Conductance	umhos/cm	03/21/2013	N001	1482	- 1777	4230			0		
Strontium	mg/L	03/21/2013	N001	1482	- 1777	11			0	0.00039	
Sulfate	mg/L	03/21/2013	N001	1482	- 1777	1900			0	25	
Temperature	C	03/21/2013	N001	1482	- 1777	27.5			0		
Turbidity	NTU	03/21/2013	N001	1482	- 1777	2.65			0		
Uranium	mg/L	03/21/2013	N001	1482	- 1777	0.000018			0	0.0000029	

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

REPORT DATE: 05/22/2013

Location: 0725 WELL West side, lower Bob Lee Wash

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	7.5 - 17.5	243		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	7.5 - 17.5	0.1	U	F	0	0.1	
Calcium	mg/L	03/21/2013	N001	7.5 - 17.5	240		F	0	0.12	
Chloride	mg/L	03/21/2013	N001	7.5 - 17.5	76		F	0	10	
Magnesium	mg/L	03/21/2013	N001	7.5 - 17.5	92		F	0	0.13	
Manganese	mg/L	03/21/2013	N001	7.5 - 17.5	0.013	B	F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	7.5 - 17.5	14		F	0	0.1	
Oxidation Reduction Potential	mV	03/21/2013	N001	7.5 - 17.5	59.8		F	0		
pH	s.u.	03/21/2013	N001	7.5 - 17.5	7.38		F	0		
Potassium	mg/L	03/21/2013	N001	7.5 - 17.5	8	B	F	0	1.1	
Selenium	mg/L	03/21/2013	N001	7.5 - 17.5	0.015		F	0	0.00032	
Sodium	mg/L	03/21/2013	N001	7.5 - 17.5	860		F	0	0.066	
Specific Conductance	umhos/cm	03/21/2013	N001	7.5 - 17.5	5098		F	0		
Strontium	mg/L	03/21/2013	N001	7.5 - 17.5	10		F	0	0.00078	
Sulfate	mg/L	03/21/2013	N001	7.5 - 17.5	2600		F	0	25	
Temperature	C	03/21/2013	N001	7.5 - 17.5	10.06		F	0		
Turbidity	NTU	03/21/2013	N001	7.5 - 17.5	4.1		F	0		
Uranium	mg/L	03/21/2013	N001	7.5 - 17.5	0.088		F	0	0.000029	

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

REPORT DATE: 05/22/2013

Location: 0726 WELL West side, upper Bob Lee Wash

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	27.2	-	37.2	604	FQ	0			
Ammonia Total as N	mg/L	03/21/2013	N001	27.2	-	37.2	2.7	FQ	0	0.1		
Calcium	mg/L	03/21/2013	N001	27.2	-	37.2	230	FQ	0	0.12		
Chloride	mg/L	03/21/2013	N001	27.2	-	37.2	410	FQ	0	20		
Magnesium	mg/L	03/21/2013	N001	27.2	-	37.2	230	FQ	0	0.13		
Manganese	mg/L	03/21/2013	N001	27.2	-	37.2	0.38	FQ	0	0.0011		
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	27.2	-	37.2	17	FQ	0	0.2		
Oxidation Reduction Potential	mV	03/21/2013	N001	27.2	-	37.2	50.3	FQ	0			
pH	s.u.	03/21/2013	N001	27.2	-	37.2	7.51	FQ	0			
Potassium	mg/L	03/21/2013	N001	27.2	-	37.2	24	FQ	0	1.1		
Selenium	mg/L	03/21/2013	N001	27.2	-	37.2	0.026	FQ	0	0.00032		
Sodium	mg/L	03/21/2013	N001	27.2	-	37.2	2200	FQ	0	0.33		
Specific Conductance	umhos/cm	03/21/2013	N001	27.2	-	37.2	11107	FQ	0			
Strontium	mg/L	03/21/2013	N001	27.2	-	37.2	7	FQ	0	0.00078		
Sulfate	mg/L	03/21/2013	N001	27.2	-	37.2	6100	FQ	0	50		
Temperature	C	03/21/2013	N001	27.2	-	37.2	16.4	FQ	0			
Turbidity	NTU	03/21/2013	N001	27.2	-	37.2	6.77	FQ	0			
Uranium	mg/L	03/21/2013	N001	27.2	-	37.2	0.024	FQ	0	0.000029		

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

REPORT DATE: 05/22/2013

Location: 0727 WELL West side, upper Bob Lee Wash

Parameter	Units	Sample		Depth Range			Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	6.7	-	16.7	1452	FQ	0		
Ammonia Total as N	mg/L	03/21/2013	N001	6.7	-	16.7	0.31	FQ	0	0.1	
Calcium	mg/L	03/21/2013	N001	6.7	-	16.7	420	FQ	0	0.12	
Chloride	mg/L	03/21/2013	N001	6.7	-	16.7	400	FQ	0	40	
Magnesium	mg/L	03/21/2013	N001	6.7	-	16.7	1700	FQ	0	0.13	
Manganese	mg/L	03/21/2013	N001	6.7	-	16.7	0.99	FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	6.7	-	16.7	88	FQ	0	1	
Oxidation Reduction Potential	mV	03/21/2013	N001	6.7	-	16.7	220	FQ	0		
pH	s.u.	03/21/2013	N001	6.7	-	16.7	6.48	FQ	0		
Potassium	mg/L	03/21/2013	N001	6.7	-	16.7	69	FQ	0	1.1	
Selenium	mg/L	03/21/2013	N001	6.7	-	16.7	0.0021	FQ	0	0.00016	
Sodium	mg/L	03/21/2013	N001	6.7	-	16.7	2500	FQ	0	0.33	
Specific Conductance	umhos/cm	03/21/2013	N001	6.7	-	16.7	16745	FQ	0		
Strontium	mg/L	03/21/2013	N001	6.7	-	16.7	12	FQ	0	0.00078	
Sulfate	mg/L	03/21/2013	N001	6.7	-	16.7	11000	FQ	0	100	
Temperature	C	03/21/2013	N001	6.7	-	16.7	14.1	FQ	0		
Turbidity	NTU	03/21/2013	N001	6.7	-	16.7	7.02	FQ	0		
Uranium	mg/L	03/21/2013	N001	6.7	-	16.7	0.22	FQ	0	0.000015	

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

REPORT DATE: 05/22/2013

Location: 0728 WELL W of Disposal Cell

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	17 - 27	346		F	0		
Ammonia Total as N	mg/L	03/20/2013	N001	17 - 27	61		F	0	2	
Calcium	mg/L	03/20/2013	N001	17 - 27	500		F	0	0.06	
Chloride	mg/L	03/20/2013	N001	17 - 27	33		F	0	10	
Magnesium	mg/L	03/20/2013	N001	17 - 27	470		F	0	0.065	
Manganese	mg/L	03/20/2013	N001	17 - 27	0.91		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	17 - 27	34		F	0	0.5	
Oxidation Reduction Potential	mV	03/20/2013	N001	17 - 27	225		F	0		
pH	s.u.	03/20/2013	N001	17 - 27	6.79		F	0		
Potassium	mg/L	03/20/2013	N001	17 - 27	54		F	0	0.54	
Selenium	mg/L	03/20/2013	N001	17 - 27	0.0012		F	0	0.00016	
Sodium	mg/L	03/20/2013	N001	17 - 27	360		F	0	0.033	
Specific Conductance	umhos/cm	03/20/2013	N001	17 - 27	5855		F	0		
Strontium	mg/L	03/20/2013	N001	17 - 27	5.1		F	0	0.00039	
Sulfate	mg/L	03/20/2013	N001	17 - 27	3700		F	0	25	
Temperature	C	03/20/2013	N001	17 - 27	15.6		F	0		
Turbidity	NTU	03/20/2013	N001	17 - 27	1.65		F	0		
Uranium	mg/L	03/20/2013	N001	17 - 27	0.2		F	0	0.000015	

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

REPORT DATE: 05/22/2013

Location: 0730 WELL Just SW of Disposal Cell

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Calcium	mg/L	03/19/2013	0001	26.93 - 36.93	620		FQ	0	0.12	
Magnesium	mg/L	03/19/2013	0001	26.93 - 36.93	150		FQ	0	0.013	
Manganese	mg/L	03/19/2013	0001	26.93 - 36.93	26		FQ	0	0.0011	
Oxidation Reduction Potential	mV	03/19/2013	N001	26.93 - 36.93	305		FQ	0		
pH	s.u.	03/19/2013	N001	26.93 - 36.93	4.52		FQ	0		
Potassium	mg/L	03/19/2013	0001	26.93 - 36.93	23		FQ	0	0.11	
Selenium	mg/L	03/19/2013	0001	26.93 - 36.93	0.016		FQ	0	0.00016	
Sodium	mg/L	03/19/2013	0001	26.93 - 36.93	88		FQ	0	0.0066	
Specific Conductance	umhos /cm	03/19/2013	N001	26.93 - 36.93	4205		FQ	0		
Strontium	mg/L	03/19/2013	0001	26.93 - 36.93	2.9		FQ	0	0.000078	
Temperature	C	03/19/2013	N001	26.93 - 36.93	14.8		FQ	0		
Turbidity	NTU	03/19/2013	N001	26.93 - 36.93	53.1		FQ	0		
Uranium	mg/L	03/19/2013	0001	26.93 - 36.93	0.008		FQ	0	0.000015	

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

REPORT DATE: 05/22/2013

Location: 0731 WELL SE of Disposal Cell

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	17 - 27	260		FQ	0		
Ammonia Total as N	mg/L	03/20/2013	N001	17 - 27	29		FQ	0	1	
Calcium	mg/L	03/20/2013	N001	17 - 27	450		FQ	0	0.06	
Chloride	mg/L	03/20/2013	N001	17 - 27	99		FQ	0	20	
Magnesium	mg/L	03/20/2013	N001	17 - 27	410		FQ	0	0.065	
Manganese	mg/L	03/20/2013	N001	17 - 27	0.11		FQ	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	17 - 27	78		FQ	0	1	
Oxidation Reduction Potential	mV	03/20/2013	N001	17 - 27	230		FQ	0		
pH	s.u.	03/20/2013	N001	17 - 27	6.88		FQ	0		
Potassium	mg/L	03/20/2013	N001	17 - 27	39		FQ	0	0.54	
Selenium	mg/L	03/20/2013	N001	17 - 27	0.016		FQ	0	0.00016	
Sodium	mg/L	03/20/2013	N001	17 - 27	730		FQ	0	0.033	
Specific Conductance	umhos/cm	03/20/2013	N001	17 - 27	7800		FQ	0		
Strontium	mg/L	03/20/2013	N001	17 - 27	7.5		FQ	0	0.00039	
Sulfate	mg/L	03/20/2013	N001	17 - 27	3900		FQ	0	50	
Temperature	C	03/20/2013	N001	17 - 27	13.9		FQ	0		
Turbidity	NTU	03/20/2013	N001	17 - 27	4.85		FQ	0		
Uranium	mg/L	03/20/2013	N001	17 - 27	0.025		FQ	0	0.000015	

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

REPORT DATE: 05/22/2013

Location: 0812 WELL W of radon cover borrow pit

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	51.3	-	61.3	1360		FQ	0		
Ammonia Total as N	mg/L	03/20/2013	N001	51.3	-	61.3	0.1	U	FQ	0	0.1	
Calcium	mg/L	03/20/2013	N001	51.3	-	61.3	490		FQ	0	0.6	
Chloride	mg/L	03/20/2013	N001	51.3	-	61.3	2400		FQ	0	100	
Magnesium	mg/L	03/20/2013	N001	51.3	-	61.3	2500		FQ	0	0.65	
Manganese	mg/L	03/20/2013	N001	51.3	-	61.3	0.11	B	FQ	0	0.0057	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	51.3	-	61.3	1300		FQ	0	10	
Oxidation Reduction Potential	mV	03/20/2013	N001	51.3	-	61.3	415		FQ	0		
pH	s.u.	03/20/2013	N001	51.3	-	61.3	6.67		FQ	0		
Potassium	mg/L	03/20/2013	N001	51.3	-	61.3	66		FQ	0	5.4	
Selenium	mg/L	03/20/2013	N001	51.3	-	61.3	5.5		FQ	0	0.0032	
Sodium	mg/L	03/20/2013	N001	51.3	-	61.3	6200		FQ	0	0.33	
Specific Conductance	umhos/cm	03/20/2013	N001	51.3	-	61.3	33450		FQ	0		
Strontium	mg/L	03/20/2013	N001	51.3	-	61.3	15		FQ	0	0.0039	
Sulfate	mg/L	03/20/2013	N001	51.3	-	61.3	16000		FQ	0	250	
Temperature	C	03/20/2013	N001	51.3	-	61.3	15.6		FQ	0		
Turbidity	NTU	03/20/2013	N001	51.3	-	61.3	8.56		FQ	0		
Uranium	mg/L	03/20/2013	N001	51.3	-	61.3	0.13		FQ	0	0.00029	

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

REPORT DATE: 05/22/2013

Location: 0813 WELL W of radon cover borrow pit

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	40.8 - 50.8	794		F	0		
Ammonia Total as N	mg/L	03/20/2013	N001	40.8 - 50.8	57		F	0	2	
Calcium	mg/L	03/20/2013	N001	40.8 - 50.8	700		F	0	0.6	
Chloride	mg/L	03/20/2013	N001	40.8 - 50.8	740		F	0	100	
Magnesium	mg/L	03/20/2013	N001	40.8 - 50.8	3100		F	0	0.65	
Manganese	mg/L	03/20/2013	N001	40.8 - 50.8	0.63		F	0	0.0057	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	40.8 - 50.8	2700		F	0	20	
Oxidation Reduction Potential	mV	03/20/2013	N001	40.8 - 50.8	68.4		F	0		
pH	s.u.	03/20/2013	N001	40.8 - 50.8	6.75		F	0		
Potassium	mg/L	03/20/2013	N001	40.8 - 50.8	120		F	0	5.4	
Selenium	mg/L	03/20/2013	N001	40.8 - 50.8	0.086		F	0	0.00032	
Sodium	mg/L	03/20/2013	N001	40.8 - 50.8	2500		F	0	0.33	
Specific Conductance	umhos/cm	03/20/2013	N001	40.8 - 50.8	26550		F	0		
Strontium	mg/L	03/20/2013	N001	40.8 - 50.8	20		F	0	0.0039	
Sulfate	mg/L	03/20/2013	N001	40.8 - 50.8	8800		F	0	250	
Temperature	C	03/20/2013	N001	40.8 - 50.8	15.33		F	0		
Turbidity	NTU	03/20/2013	N001	40.8 - 50.8	8.22		F	0		
Uranium	mg/L	03/20/2013	N001	40.8 - 50.8	0.1		F	0	0.000029	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	0001	23.8 - 33.8	708		FQ	0		
Ammonia Total as N	mg/L	03/20/2013	0001	23.8 - 33.8	50		FQ	0	2	
Calcium	mg/L	03/20/2013	0001	23.8 - 33.8	450		FQ	0	0.12	
Chloride	mg/L	03/20/2013	0001	23.8 - 33.8	1000		FQ	0	100	
Magnesium	mg/L	03/20/2013	0001	23.8 - 33.8	2200		FQ	0	0.13	
Manganese	mg/L	03/20/2013	0001	23.8 - 33.8	1.2		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	0001	23.8 - 33.8	940		FQ	0	5	
Oxidation Reduction Potential	mV	03/20/2013	N001	23.8 - 33.8	255		FQ	0		
pH	s.u.	03/20/2013	N001	23.8 - 33.8	6.97		FQ	0		
Potassium	mg/L	03/20/2013	0001	23.8 - 33.8	130		FQ	0	1.1	
Selenium	mg/L	03/20/2013	0001	23.8 - 33.8	1.9		FQ	0	0.0016	
Sodium	mg/L	03/20/2013	0001	23.8 - 33.8	3400		FQ	0	0.66	
Specific Conductance	umhos/cm	03/20/2013	N001	23.8 - 33.8	24050		FQ	0		
Strontium	mg/L	03/20/2013	0001	23.8 - 33.8	12		FQ	0	0.00078	
Sulfate	mg/L	03/20/2013	0001	23.8 - 33.8	12000		FQ	0	250	
Temperature	C	03/20/2013	N001	23.8 - 33.8	16.4		FQ	0		
Turbidity	NTU	03/20/2013	N001	23.8 - 33.8	16.2		FQ	0		
Uranium	mg/L	03/20/2013	0001	23.8 - 33.8	0.086		FQ	0	0.00015	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	22.3	-	32.3	1305	F	0			
Ammonia Total as N	mg/L	03/21/2013	N001	22.3	-	32.3	0.68	F	0	0.1		
Calcium	mg/L	03/21/2013	N001	22.3	-	32.3	520	F	0	0.6		
Chloride	mg/L	03/21/2013	N001	22.3	-	32.3	560	F	0	100		
Magnesium	mg/L	03/21/2013	N001	22.3	-	32.3	2900	F	0	0.65		
Manganese	mg/L	03/21/2013	N001	22.3	-	32.3	1.7	F	0	0.0057		
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	22.3	-	32.3	730	F	0	5		
Oxidation Reduction Potential	mV	03/21/2013	N001	22.3	-	32.3	260	F	0			
pH	s.u.	03/21/2013	N001	22.3	-	32.3	6.53	F	0			
Potassium	mg/L	03/21/2013	N001	22.3	-	32.3	82	F	0	5.4		
Selenium	mg/L	03/21/2013	N001	22.3	-	32.3	0.025	F	0	0.00032		
Sodium	mg/L	03/21/2013	N001	22.3	-	32.3	3600	F	0	0.33		
Specific Conductance	umhos/cm	03/21/2013	N001	22.3	-	32.3	22780	F	0			
Strontium	mg/L	03/21/2013	N001	22.3	-	32.3	15	F	0	0.0039		
Sulfate	mg/L	03/21/2013	N001	22.3	-	32.3	14000	F	0	250		
Temperature	C	03/21/2013	N001	22.3	-	32.3	16.2	F	0			
Turbidity	NTU	03/21/2013	N001	22.3	-	32.3	3.83	F	0			
Uranium	mg/L	03/21/2013	N001	22.3	-	32.3	0.34	F	0	0.000029		

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

REPORT DATE: 05/22/2013

Location: 0816 WELL N of artesian well 648

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	0001	20.1 - 25.1	302		FQ	0		
Ammonia Total as N	mg/L	03/21/2013	0001	20.1 - 25.1	0.1	U	FQ	0	0.1	
Calcium	mg/L	03/21/2013	0001	20.1 - 25.1	60		FQ	0	0.06	
Chloride	mg/L	03/21/2013	0001	20.1 - 25.1	47		FQ	0	10	
Magnesium	mg/L	03/21/2013	0001	20.1 - 25.1	70		FQ	0	0.065	
Manganese	mg/L	03/21/2013	0001	20.1 - 25.1	0.00057	U	FQ	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	0001	20.1 - 25.1	17		FQ	0	0.2	
Oxidation Reduction Potential	mV	03/21/2013	N001	20.1 - 25.1	160		FQ	0		
pH	s.u.	03/21/2013	N001	20.1 - 25.1	7.71		FQ	0		
Potassium	mg/L	03/21/2013	0001	20.1 - 25.1	6.8		FQ	0	0.54	
Selenium	mg/L	03/21/2013	0001	20.1 - 25.1	0.0077		FQ	0	0.00016	
Sodium	mg/L	03/21/2013	0001	20.1 - 25.1	330		FQ	0	0.033	
Specific Conductance	umhos/cm	03/21/2013	N001	20.1 - 25.1	2735		FQ	0		
Strontium	mg/L	03/21/2013	0001	20.1 - 25.1	1.2		FQ	0	0.00039	
Sulfate	mg/L	03/21/2013	0001	20.1 - 25.1	740		FQ	0	25	
Temperature	C	03/21/2013	N001	20.1 - 25.1	15.6		FQ	0		
Turbidity	NTU	03/21/2013	N001	20.1 - 25.1	24.5		FQ	0		
Uranium	mg/L	03/21/2013	0001	20.1 - 25.1	0.012		FQ	0	0.000015	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	0001	21.6 - 31.62	1668		FQ	0		
Ammonia Total as N	mg/L	03/21/2013	0001	21.6 - 31.62	970		FQ	0	20	
Calcium	mg/L	03/21/2013	0001	21.6 - 31.62	490		FQ	0	0.6	
Chloride	mg/L	03/21/2013	0001	21.6 - 31.62	550		FQ	0	100	
Magnesium	mg/L	03/21/2013	0001	21.6 - 31.62	2000		FQ	0	0.65	
Manganese	mg/L	03/21/2013	0001	21.6 - 31.62	2.5		FQ	0	0.0057	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	0001	21.6 - 31.62	640		FQ	0	5	
Oxidation Reduction Potential	mV	03/21/2013	N001	21.6 - 31.62	148.3		FQ	0		
pH	s.u.	03/21/2013	N001	21.6 - 31.62	6.66		FQ	0		
Potassium	mg/L	03/21/2013	0001	21.6 - 31.62	220		FQ	0	5.4	
Selenium	mg/L	03/21/2013	0001	21.6 - 31.62	0.0065		FQ	0	0.00032	
Sodium	mg/L	03/21/2013	0001	21.6 - 31.62	1500		FQ	0	0.33	
Specific Conductance	umhos/cm	03/21/2013	N001	21.6 - 31.62	18574		FQ	0		
Strontium	mg/L	03/21/2013	0001	21.6 - 31.62	12		FQ	0	0.0039	
Sulfate	mg/L	03/21/2013	0001	21.6 - 31.62	12000		FQ	0	250	
Temperature	C	03/21/2013	N001	21.6 - 31.62	16.71		FQ	0		
Turbidity	NTU	03/21/2013	N001	21.6 - 31.62	83.4		FQ	0		
Uranium	mg/L	03/21/2013	0001	21.6 - 31.62	6.5		FQ	0	0.0029	

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

REPORT DATE: 05/22/2013

Location: 0818 WELL Just W of radon cover borrow pit

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	52 - 61.5	640			0		
Ammonia Total as N	mg/L	03/19/2013	N001	52 - 61.5	54			0	2	
Ammonia Total as N	mg/L	03/19/2013	N002	52 - 61.5	49			0	1	
Calcium	mg/L	03/19/2013	N001	52 - 61.5	460			0	0.6	
Calcium	mg/L	03/19/2013	N002	52 - 61.5	460			0	0.6	
Chloride	mg/L	03/19/2013	N001	52 - 61.5	1000			0	100	
Chloride	mg/L	03/19/2013	N002	52 - 61.5	980			0	100	
Magnesium	mg/L	03/19/2013	N001	52 - 61.5	1800			0	0.65	
Magnesium	mg/L	03/19/2013	N002	52 - 61.5	1900			0	0.65	
Manganese	mg/L	03/19/2013	N001	52 - 61.5	0.53			0	0.0057	
Manganese	mg/L	03/19/2013	N002	52 - 61.5	0.54			0	0.0057	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	52 - 61.5	790			0	5	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N002	52 - 61.5	830			0	5	
Oxidation Reduction Potential	mV	03/19/2013	N001	52 - 61.5	350			0		
pH	s.u.	03/19/2013	N001	52 - 61.5	6.7			0		
Potassium	mg/L	03/19/2013	N001	52 - 61.5	60			0	5.4	
Potassium	mg/L	03/19/2013	N002	52 - 61.5	60			0	5.4	
Selenium	mg/L	03/19/2013	N001	52 - 61.5	2.3			0	0.0032	

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

REPORT DATE: 05/22/2013

Location: 0818 WELL Just W of radon cover borrow pit

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Selenium	mg/L	03/19/2013	N002	52 - 61.5	2.3			0	0.0032	
Sodium	mg/L	03/19/2013	N001	52 - 61.5	3700			0	0.33	
Sodium	mg/L	03/19/2013	N002	52 - 61.5	3700			0	0.33	
Specific Conductance	umhos /cm	03/19/2013	N001	52 - 61.5	23200			0		
Strontium	mg/L	03/19/2013	N001	52 - 61.5	12			0	0.0039	
Strontium	mg/L	03/19/2013	N002	52 - 61.5	13			0	0.0039	
Sulfate	mg/L	03/19/2013	N001	52 - 61.5	13000			0	250	
Sulfate	mg/L	03/19/2013	N002	52 - 61.5	13000			0	250	
Temperature	C	03/19/2013	N001	52 - 61.5	13.9			0		
Turbidity	NTU	03/19/2013	N001	52 - 61.5	1.91			0		
Uranium	mg/L	03/19/2013	N001	52 - 61.5	0.12			0	0.00029	
Uranium	mg/L	03/19/2013	N002	52 - 61.5	0.12			0	0.00029	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	15.67 - 25.67	2018		FQ	0		
Ammonia Total as N	mg/L	03/21/2013	N001	15.67 - 25.67	480		FQ	0	20	
Calcium	mg/L	03/21/2013	N001	15.67 - 25.67	450		FQ	0	0.6	
Chloride	mg/L	03/21/2013	N001	15.67 - 25.67	770		FQ	0	100	
Magnesium	mg/L	03/21/2013	N001	15.67 - 25.67	1600		FQ	0	0.65	
Manganese	mg/L	03/21/2013	N001	15.67 - 25.67	1.9		FQ	0	0.0057	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	15.67 - 25.67	20		FQ	0	0.2	
Oxidation Reduction Potential	mV	03/21/2013	N001	15.67 - 25.67	100.9		FQ	0		
pH	s.u.	03/21/2013	N001	15.67 - 25.67	6.57		FQ	0		
Potassium	mg/L	03/21/2013	N001	15.67 - 25.67	160		FQ	0	5.4	
Selenium	mg/L	03/21/2013	N001	15.67 - 25.67	0.013		FQ	0	0.0016	
Sodium	mg/L	03/21/2013	N001	15.67 - 25.67	2600		FQ	0	0.33	
Specific Conductance	umhos/cm	03/21/2013	N001	15.67 - 25.67	17812		FQ	0		
Strontium	mg/L	03/21/2013	N001	15.67 - 25.67	9.9		FQ	0	0.0039	
Sulfate	mg/L	03/21/2013	N001	15.67 - 25.67	13000		FQ	0	250	
Temperature	C	03/21/2013	N001	15.67 - 25.67	16.95		FQ	0		
Turbidity	NTU	03/21/2013	N001	15.67 - 25.67	3.13		FQ	0		
Uranium	mg/L	03/21/2013	N001	15.67 - 25.67	1.4		FQ	0	0.00015	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	0001	149 - 151.5	634		FQ	0		
Ammonia Total as N	mg/L	03/20/2013	0001	149 - 151.5	0.76		FQ	0	0.1	
Calcium	mg/L	03/20/2013	0001	149 - 151.5	230		FQ	0	0.12	
Chloride	mg/L	03/20/2013	0001	149 - 151.5	9200		FQ	0	100	
Magnesium	mg/L	03/20/2013	0001	149 - 151.5	81		FQ	0	0.13	
Manganese	mg/L	03/20/2013	0001	149 - 151.5	0.5		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	0001	149 - 151.5	57		FQ	0	0.5	
Oxidation Reduction Potential	mV	03/20/2013	N001	149 - 151.5	170		FQ	0		
pH	s.u.	03/20/2013	N001	149 - 151.5	7.36		FQ	0		
Potassium	mg/L	03/20/2013	0001	149 - 151.5	30	N	JFQ	0	1.1	
Selenium	mg/L	03/20/2013	0001	149 - 151.5	0.0083	E	JFQ	0	0.00016	
Sodium	mg/L	03/20/2013	0001	149 - 151.5	6700		FQ	0	0.33	
Specific Conductance	umhos/cm	03/20/2013	N001	149 - 151.5	31840		FQ	0		
Strontium	mg/L	03/20/2013	0001	149 - 151.5	21		FQ	0	0.00078	
Sulfate	mg/L	03/20/2013	0001	149 - 151.5	4600		FQ	0	250	
Temperature	C	03/20/2013	N001	149 - 151.5	14.6		FQ	0		
Turbidity	NTU	03/20/2013	N001	149 - 151.5	33.4		FQ	0		
Uranium	mg/L	03/20/2013	0001	149 - 151.5	0.11		FQ	0	0.000015	

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

REPORT DATE: 05/22/2013

Location: 0822 WELL Just N of Disposal Cell, well nest

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	199 - 201.5	440		FQ	0		
Ammonia Total as N	mg/L	03/20/2013	N001	199 - 201.5	0.1	U	FQ	0	0.1	
Calcium	mg/L	03/20/2013	N001	199 - 201.5	150		FQ	0	0.12	
Chloride	mg/L	03/20/2013	N001	199 - 201.5	6600		FQ	0	100	
Magnesium	mg/L	03/20/2013	N001	199 - 201.5	67		FQ	0	0.13	
Manganese	mg/L	03/20/2013	N001	199 - 201.5	0.37		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	199 - 201.5	4.9		FQ	0	0.05	
Oxidation Reduction Potential	mV	03/20/2013	N001	199 - 201.5	170		FQ	0		
pH	s.u.	03/20/2013	N001	199 - 201.5	7.5		FQ	0		
Potassium	mg/L	03/20/2013	N001	199 - 201.5	67		FQ	0	1.1	
Selenium	mg/L	03/20/2013	N001	199 - 201.5	0.00076		FQ	0	0.00016	
Sodium	mg/L	03/20/2013	N001	199 - 201.5	5400		FQ	0	0.66	
Specific Conductance	umhos/cm	03/20/2013	N001	199 - 201.5	26250		FQ	0		
Strontium	mg/L	03/20/2013	N001	199 - 201.5	16		FQ	0	0.00078	
Sulfate	mg/L	03/20/2013	N001	199 - 201.5	5400		FQ	0	250	
Temperature	C	03/20/2013	N001	199 - 201.5	14.7		FQ	0		
Turbidity	NTU	03/20/2013	N001	199 - 201.5	8.14		FQ	0		
Uranium	mg/L	03/20/2013	N001	199 - 201.5	0.066		FQ	0	0.000015	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	198.5	-	201	375		FQ	0		
Ammonia Total as N	mg/L	03/20/2013	N001	198.5	-	201	4.2		FQ	0	0.1	
Calcium	mg/L	03/20/2013	N001	198.5	-	201	180		FQ	0	0.12	
Chloride	mg/L	03/20/2013	N001	198.5	-	201	7700		FQ	0	100	
Magnesium	mg/L	03/20/2013	N001	198.5	-	201	68		FQ	0	0.13	
Manganese	mg/L	03/20/2013	N001	198.5	-	201	0.49		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	198.5	-	201	1.7		FQ	0	0.01	
Oxidation Reduction Potential	mV	03/20/2013	N001	198.5	-	201	-80		FQ	0		
pH	s.u.	03/20/2013	N001	198.5	-	201	7.3		FQ	0		
Potassium	mg/L	03/20/2013	N001	198.5	-	201	51		FQ	0	1.1	
Selenium	mg/L	03/20/2013	N001	198.5	-	201	0.001		FQ	0	0.000032	
Sodium	mg/L	03/20/2013	N001	198.5	-	201	5800		FQ	0	0.66	
Specific Conductance	umhos/cm	03/20/2013	N001	198.5	-	201	28985		FQ	0		
Strontium	mg/L	03/20/2013	N001	198.5	-	201	19		FQ	0	0.00078	
Sulfate	mg/L	03/20/2013	N001	198.5	-	201	5300		FQ	0	250	
Temperature	C	03/20/2013	N001	198.5	-	201	16.3		FQ	0		
Turbidity	NTU	03/20/2013	N001	198.5	-	201	6.33		FQ	0		
Uranium	mg/L	03/20/2013	N001	198.5	-	201	0.055		FQ	0	0.0000029	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	147.79 - 150.23	340		FQ	0		
Ammonia Total as N	mg/L	03/20/2013	N001	147.79 - 150.23	3.6		FQ	0	0.1	
Calcium	mg/L	03/20/2013	N001	147.79 - 150.23	190		FQ	0	0.12	
Chloride	mg/L	03/20/2013	N001	147.79 - 150.23	9000		FQ	0	100	
Magnesium	mg/L	03/20/2013	N001	147.79 - 150.23	74		FQ	0	0.13	
Manganese	mg/L	03/20/2013	N001	147.79 - 150.23	0.55		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	147.79 - 150.23	1.5		FQ	0	0.01	
Oxidation Reduction Potential	mV	03/20/2013	N001	147.79 - 150.23	10		FQ	0		
pH	s.u.	03/20/2013	N001	147.79 - 150.23	7.35		FQ	0		
Potassium	mg/L	03/20/2013	N001	147.79 - 150.23	51		FQ	0	1.1	
Selenium	mg/L	03/20/2013	N001	147.79 - 150.23	0.00041		FQ	0	0.000065	
Sodium	mg/L	03/20/2013	N001	147.79 - 150.23	6000		FQ	0	0.66	
Specific Conductance	umhos/cm	03/20/2013	N001	147.79 - 150.23	30825		FQ	0		
Strontium	mg/L	03/20/2013	N001	147.79 - 150.23	19		FQ	0	0.00078	
Sulfate	mg/L	03/20/2013	N001	147.79 - 150.23	4800		FQ	0	250	
Temperature	C	03/20/2013	N001	147.79 - 150.23	16.3		FQ	0		
Turbidity	NTU	03/20/2013	N001	147.79 - 150.23	8.25		FQ	0		
Uranium	mg/L	03/20/2013	N001	147.79 - 150.23	0.023		FQ	0	0.0000058	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
						Lab	Data QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	10 - 20	1714		FQ 0		
Ammonia Total as N	mg/L	03/21/2013	N001	10 - 20	93		FQ 0	2	
Calcium	mg/L	03/21/2013	N001	10 - 20	440		FQ 0	0.6	
Chloride	mg/L	03/21/2013	N001	10 - 20	490		FQ 0	40	
Magnesium	mg/L	03/21/2013	N001	10 - 20	2400		FQ 0	0.65	
Manganese	mg/L	03/21/2013	N001	10 - 20	2.6		FQ 0	0.0057	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	10 - 20	20		FQ 0	0.2	
Oxidation Reduction Potential	mV	03/21/2013	N001	10 - 20	108.2		FQ 0		
pH	s.u.	03/21/2013	N001	10 - 20	6.67		FQ 0		
Potassium	mg/L	03/21/2013	N001	10 - 20	100		FQ 0	5.4	
Selenium	mg/L	03/21/2013	N001	10 - 20	0.013		FQ 0	0.0016	
Sodium	mg/L	03/21/2013	N001	10 - 20	2000		FQ 0	0.33	
Specific Conductance	umhos/cm	03/21/2013	N001	10 - 20	17840		FQ 0		
Strontium	mg/L	03/21/2013	N001	10 - 20	12		FQ 0	0.0039	
Sulfate	mg/L	03/21/2013	N001	10 - 20	13000		FQ 0	100	
Temperature	C	03/21/2013	N001	10 - 20	15.36		FQ 0		
Turbidity	NTU	03/21/2013	N001	10 - 20	7		FQ 0		
Uranium	mg/L	03/21/2013	N001	10 - 20	2.5		FQ 0	0.00015	

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

REPORT DATE: 05/22/2013

Location: 0827 WELL Just NW of Disposal Cell

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	0001	19.9 - 29.9	1464		FQ	0		
Ammonia Total as N	mg/L	03/20/2013	0001	19.9 - 29.9	3.8		FQ	0	0.1	
Calcium	mg/L	03/20/2013	0001	19.9 - 29.9	430		FQ	0	0.12	
Chloride	mg/L	03/20/2013	0001	19.9 - 29.9	470		FQ	0	40	
Magnesium	mg/L	03/20/2013	0001	19.9 - 29.9	1000		FQ	0	0.13	
Manganese	mg/L	03/20/2013	0001	19.9 - 29.9	0.32		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	0001	19.9 - 29.9	6.7		FQ	0	0.05	
Oxidation Reduction Potential	mV	03/20/2013	N001	19.9 - 29.9	170		FQ	0		
pH	s.u.	03/20/2013	N001	19.9 - 29.9	6.5		FQ	0		
Potassium	mg/L	03/20/2013	0001	19.9 - 29.9	45		FQ	0	1.1	
Selenium	mg/L	03/20/2013	0001	19.9 - 29.9	0.018		FQ	0	0.0016	
Sodium	mg/L	03/20/2013	0001	19.9 - 29.9	1700		FQ	0	0.33	
Specific Conductance	umhos /cm	03/20/2013	N001	19.9 - 29.9	16170		FQ	0		
Strontium	mg/L	03/20/2013	0001	19.9 - 29.9	9.2		FQ	0	0.00078	
Sulfate	mg/L	03/20/2013	0001	19.9 - 29.9	8700		FQ	0	100	
Temperature	C	03/20/2013	N001	19.9 - 29.9	14.5		FQ	0		
Turbidity	NTU	03/20/2013	N001	19.9 - 29.9	13.5		FQ	0		
Uranium	mg/L	03/20/2013	0001	19.9 - 29.9	0.91		FQ	0	0.00015	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	5.3 - 15.3	938		F	0		
Ammonia Total as N	mg/L	03/21/2013	N001	5.3 - 15.3	1.3		F	0	0.1	
Calcium	mg/L	03/21/2013	N001	5.3 - 15.3	330		F	0	0.06	
Chloride	mg/L	03/21/2013	N001	5.3 - 15.3	280		F	0	10	
Magnesium	mg/L	03/21/2013	N001	5.3 - 15.3	270		F	0	0.065	
Manganese	mg/L	03/21/2013	N001	5.3 - 15.3	1.1		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	5.3 - 15.3	23		F	0	0.2	
Oxidation Reduction Potential	mV	03/21/2013	N001	5.3 - 15.3	67.5		F	0		
pH	s.u.	03/21/2013	N001	5.3 - 15.3	7.2		F	0		
Potassium	mg/L	03/21/2013	N001	5.3 - 15.3	16		F	0	0.54	
Selenium	mg/L	03/21/2013	N001	5.3 - 15.3	0.014		F	0	0.0016	
Sodium	mg/L	03/21/2013	N001	5.3 - 15.3	640		F	0	0.033	
Specific Conductance	umhos/cm	03/21/2013	N001	5.3 - 15.3	5067		F	0		
Strontium	mg/L	03/21/2013	N001	5.3 - 15.3	4.5		F	0	0.00039	
Sulfate	mg/L	03/21/2013	N001	5.3 - 15.3	2000		F	0	25	
Temperature	C	03/21/2013	N001	5.3 - 15.3	13.58		F	0		
Turbidity	NTU	03/21/2013	N001	5.3 - 15.3	4.3		F	0		
Uranium	mg/L	03/21/2013	N001	5.3 - 15.3	0.69		F	0	0.00015	

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

REPORT DATE: 05/22/2013

Location: 0830 WELL Just SE of Disposal Cell

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	7.7	-	17.7	0	F	0			
Ammonia Total as N	mg/L	03/20/2013	N001	7.7	-	17.7	0.24	F	0	0.1		
Calcium	mg/L	03/20/2013	N001	7.7	-	17.7	560	F	0	0.12		
Chloride	mg/L	03/20/2013	N001	7.7	-	17.7	43	F	0	10		
Magnesium	mg/L	03/20/2013	N001	7.7	-	17.7	40	F	0	0.013		
Manganese	mg/L	03/20/2013	N001	7.7	-	17.7	3.4	F	0	0.00011		
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	7.7	-	17.7	52	F	0	0.5		
Oxidation Reduction Potential	mV	03/20/2013	N001	7.7	-	17.7	405	F	0			
pH	s.u.	03/20/2013	N001	7.7	-	17.7	3.86	F	0			
Potassium	mg/L	03/20/2013	N001	7.7	-	17.7	3.5	F	0	0.11		
Selenium	mg/L	03/20/2013	N001	7.7	-	17.7	0.022	F	0	0.00016		
Sodium	mg/L	03/20/2013	N001	7.7	-	17.7	110	F	0	0.0066		
Specific Conductance	umhos/cm	03/20/2013	N001	7.7	-	17.7	2950	F	0			
Strontium	mg/L	03/20/2013	N001	7.7	-	17.7	0.32	F	0	0.000078		
Sulfate	mg/L	03/20/2013	N001	7.7	-	17.7	1500	F	0	25		
Temperature	C	03/20/2013	N001	7.7	-	17.7	13.5	F	0			
Turbidity	NTU	03/20/2013	N001	7.7	-	17.7	1.22	F	0			
Uranium	mg/L	03/20/2013	N001	7.7	-	17.7	0.0045	F	0	0.000015		

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

REPORT DATE: 05/22/2013

Location: 0833 WELL Just NE of Dine College tract

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	24.9	-	34.9	486		F	0		
Ammonia Total as N	mg/L	03/20/2013	N001	24.9	-	34.9	0.1	U	F	0	0.1	
Calcium	mg/L	03/20/2013	N001	24.9	-	34.9	440		F	0	0.12	
Chloride	mg/L	03/20/2013	N001	24.9	-	34.9	390		F	0	20	
Magnesium	mg/L	03/20/2013	N001	24.9	-	34.9	590		F	0	0.13	
Manganese	mg/L	03/20/2013	N001	24.9	-	34.9	0.0088	B	F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	24.9	-	34.9	110		F	0	1	
Oxidation Reduction Potential	mV	03/20/2013	N001	24.9	-	34.9	67.4		F	0		
pH	s.u.	03/20/2013	N001	24.9	-	34.9	7.34		F	0		
Potassium	mg/L	03/20/2013	N001	24.9	-	34.9	19		F	0	1.1	
Selenium	mg/L	03/20/2013	N001	24.9	-	34.9	0.27		F	0	0.00032	
Sodium	mg/L	03/20/2013	N001	24.9	-	34.9	1000		F	0	0.066	
Specific Conductance	umhos/cm	03/20/2013	N001	24.9	-	34.9	8357		F	0		
Strontium	mg/L	03/20/2013	N001	24.9	-	34.9	6		F	0	0.00078	
Sulfate	mg/L	03/20/2013	N001	24.9	-	34.9	4500		F	0	50	
Temperature	C	03/20/2013	N001	24.9	-	34.9	14.1		F	0		
Turbidity	NTU	03/20/2013	N001	24.9	-	34.9	7.3		F	0		
Uranium	mg/L	03/20/2013	N001	24.9	-	34.9	0.12		F	0	0.000029	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	21.9 - 31.9	400		F	0		
Ammonia Total as N	mg/L	03/20/2013	N001	21.9 - 31.9	0.1	U	F	0	0.1	
Calcium	mg/L	03/20/2013	N001	21.9 - 31.9	430		F	0	0.06	
Chloride	mg/L	03/20/2013	N001	21.9 - 31.9	150		F	0	20	
Magnesium	mg/L	03/20/2013	N001	21.9 - 31.9	360		F	0	0.065	
Manganese	mg/L	03/20/2013	N001	21.9 - 31.9	0.019	B	F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	21.9 - 31.9	56		F	0	0.5	
Oxidation Reduction Potential	mV	03/20/2013	N001	21.9 - 31.9	84.1		F	0		
pH	s.u.	03/20/2013	N001	21.9 - 31.9	7.41		F	0		
Potassium	mg/L	03/20/2013	N001	21.9 - 31.9	13		F	0	0.54	
Selenium	mg/L	03/20/2013	N001	21.9 - 31.9	0.31		F	0	0.00032	
Sodium	mg/L	03/20/2013	N001	21.9 - 31.9	780		F	0	0.066	
Specific Conductance	umhos/cm	03/20/2013	N001	21.9 - 31.9	6250		F	0		
Strontium	mg/L	03/20/2013	N001	21.9 - 31.9	5.3		F	0	0.00039	
Sulfate	mg/L	03/20/2013	N001	21.9 - 31.9	3400		F	0	50	
Temperature	C	03/20/2013	N001	21.9 - 31.9	15.1		F	0		
Turbidity	NTU	03/20/2013	N001	21.9 - 31.9	8.1		F	0		
Uranium	mg/L	03/20/2013	N001	21.9 - 31.9	0.062		F	0	0.000029	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	26.8 - 36.8	302		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	26.8 - 36.8	0.1	U	F	0	0.1	
Calcium	mg/L	03/19/2013	N001	26.8 - 36.8	530		F	0	0.06	
Chloride	mg/L	03/19/2013	N001	26.8 - 36.8	68		F	0	10	
Magnesium	mg/L	03/19/2013	N001	26.8 - 36.8	260		F	0	0.065	
Manganese	mg/L	03/19/2013	N001	26.8 - 36.8	0.47		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	26.8 - 36.8	47		F	0	0.5	
Oxidation Reduction Potential	mV	03/19/2013	N001	26.8 - 36.8	98.5		F	0		
pH	s.u.	03/19/2013	N001	26.8 - 36.8	7.13		F	0		
Potassium	mg/L	03/19/2013	N001	26.8 - 36.8	5.2		F	0	0.54	
Selenium	mg/L	03/19/2013	N001	26.8 - 36.8	0.35		F	0	0.00032	
Sodium	mg/L	03/19/2013	N001	26.8 - 36.8	370		F	0	0.033	
Specific Conductance	umhos/cm	03/19/2013	N001	26.8 - 36.8	4518		F	0		
Strontium	mg/L	03/19/2013	N001	26.8 - 36.8	6.8		F	0	0.00039	
Sulfate	mg/L	03/19/2013	N001	26.8 - 36.8	2600		F	0	25	
Temperature	C	03/19/2013	N001	26.8 - 36.8	15.2		F	0		
Turbidity	NTU	03/19/2013	N001	26.8 - 36.8	3.84		F	0		
Uranium	mg/L	03/19/2013	N001	26.8 - 36.8	0.046		F	0	0.000029	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	17 - 27.1	410		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	17 - 27.1	0.1	U	F	0	0.1	
Calcium	mg/L	03/19/2013	N001	17 - 27.1	590		F	0	0.06	
Chloride	mg/L	03/19/2013	N001	17 - 27.1	72		F	0	10	
Magnesium	mg/L	03/19/2013	N001	17 - 27.1	250		F	0	0.065	
Manganese	mg/L	03/19/2013	N001	17 - 27.1	4.5		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	17 - 27.1	12		F	0	0.2	
Oxidation Reduction Potential	mV	03/19/2013	N001	17 - 27.1	98.9		F	0		
pH	s.u.	03/19/2013	N001	17 - 27.1	7.1		F	0		
Potassium	mg/L	03/19/2013	N001	17 - 27.1	9.6		F	0	0.54	
Selenium	mg/L	03/19/2013	N001	17 - 27.1	0.13		F	0	0.00032	
Sodium	mg/L	03/19/2013	N001	17 - 27.1	330		F	0	0.033	
Specific Conductance	umhos/cm	03/19/2013	N001	17 - 27.1	4417		F	0		
Strontium	mg/L	03/19/2013	N001	17 - 27.1	6.6		F	0	0.00039	
Sulfate	mg/L	03/19/2013	N001	17 - 27.1	2600		F	0	25	
Temperature	C	03/19/2013	N001	17 - 27.1	14.66		F	0		
Turbidity	NTU	03/19/2013	N001	17 - 27.1	8.14		F	0		
Uranium	mg/L	03/19/2013	N001	17 - 27.1	0.032		F	0	0.000029	

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

REPORT DATE: 05/22/2013

Location: 0838 WELL W part of Dine College tract

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	21.9 - 31.9	478		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	21.9 - 31.9	0.1	U	F	0	0.1	
Calcium	mg/L	03/19/2013	N001	21.9 - 31.9	470		F	0	0.12	
Chloride	mg/L	03/19/2013	N001	21.9 - 31.9	620		F	0	40	
Magnesium	mg/L	03/19/2013	N001	21.9 - 31.9	1400		F	0	0.13	
Manganese	mg/L	03/19/2013	N001	21.9 - 31.9	0.0011	U	F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	21.9 - 31.9	510		F	0	5	
Oxidation Reduction Potential	mV	03/19/2013	N001	21.9 - 31.9	115.4		F	0		
pH	s.u.	03/19/2013	N001	21.9 - 31.9	7.27		F	0		
Potassium	mg/L	03/19/2013	N001	21.9 - 31.9	27		F	0	1.1	
Selenium	mg/L	03/19/2013	N001	21.9 - 31.9	0.69		F	0	0.0016	
Sodium	mg/L	03/19/2013	N001	21.9 - 31.9	2000		F	0	0.33	
Specific Conductance	umhos/cm	03/19/2013	N001	21.9 - 31.9	15160		F	0		
Strontium	mg/L	03/19/2013	N001	21.9 - 31.9	11		F	0	0.00078	
Sulfate	mg/L	03/19/2013	N001	21.9 - 31.9	8600		F	0	100	
Temperature	C	03/19/2013	N001	21.9 - 31.9	15.1		F	0		
Turbidity	NTU	03/19/2013	N001	21.9 - 31.9	8.86		F	0		
Uranium	mg/L	03/19/2013	N001	21.9 - 31.9	0.16		F	0	0.00015	

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

REPORT DATE: 05/22/2013

Location: 0841 WELL S of Multipurpose Center tract, W of US Hwy 666

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Qualifiers			Detection Limit	Uncertainty
							Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	42	-	52		F	0		
Ammonia Total as N	mg/L	03/20/2013	N001	42	-	52	0.1	U	F	0	0.1
Calcium	mg/L	03/20/2013	N001	42	-	52	390		F	0	0.12
Chloride	mg/L	03/20/2013	N001	42	-	52	740		F	0	100
Magnesium	mg/L	03/20/2013	N001	42	-	52	750		F	0	0.13
Manganese	mg/L	03/20/2013	N001	42	-	52	0.042	B	F	0	0.0011
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	42	-	52	590		F	0	5
Oxidation Reduction Potential	mV	03/20/2013	N001	42	-	52	56.2		F	0	
pH	s.u.	03/20/2013	N001	42	-	52	7.38		F	0	
Potassium	mg/L	03/20/2013	N001	42	-	52	62		F	0	1.1
Selenium	mg/L	03/20/2013	N001	42	-	52	2.6		F	0	0.0032
Sodium	mg/L	03/20/2013	N001	42	-	52	5100		F	0	0.66
Specific Conductance	umhos/cm	03/20/2013	N001	42	-	52	23506		F	0	
Strontium	mg/L	03/20/2013	N001	42	-	52	7.9		F	0	0.00078
Sulfate	mg/L	03/20/2013	N001	42	-	52	13000		F	0	250
Temperature	C	03/20/2013	N001	42	-	52	15.44		F	0	
Turbidity	NTU	03/20/2013	N001	42	-	52	9.02		F	0	
Uranium	mg/L	03/20/2013	N001	42	-	52	0.091		F	0	0.00029

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	11.9 - 21.9	288		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	11.9 - 21.9	0.1	U	F	0	0.1	
Calcium	mg/L	03/19/2013	N001	11.9 - 21.9	320		F	0	0.06	
Chloride	mg/L	03/19/2013	N001	11.9 - 21.9	57		F	0	10	
Magnesium	mg/L	03/19/2013	N001	11.9 - 21.9	120		F	0	0.065	
Manganese	mg/L	03/19/2013	N001	11.9 - 21.9	2.2		F	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	11.9 - 21.9	7.8		F	0	0.1	
Oxidation Reduction Potential	mV	03/19/2013	N001	11.9 - 21.9	89.7		F	0		
pH	s.u.	03/19/2013	N001	11.9 - 21.9	7.32		F	0		
Potassium	mg/L	03/19/2013	N001	11.9 - 21.9	6.9		F	0	0.54	
Selenium	mg/L	03/19/2013	N001	11.9 - 21.9	0.41		F	0	0.00032	
Sodium	mg/L	03/19/2013	N001	11.9 - 21.9	250		F	0	0.033	
Specific Conductance	umhos/cm	03/19/2013	N001	11.9 - 21.9	2882		F	0		
Strontium	mg/L	03/19/2013	N001	11.9 - 21.9	3.8		F	0	0.00039	
Sulfate	mg/L	03/19/2013	N001	11.9 - 21.9	1400		F	0	25	
Temperature	C	03/19/2013	N001	11.9 - 21.9	13.96		F	0		
Turbidity	NTU	03/19/2013	N001	11.9 - 21.9	7.37		F	0		
Uranium	mg/L	03/19/2013	N001	11.9 - 21.9	0.022		F	0	0.000029	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	28.91 - 38.91	706		F	0		
Ammonia Total as N	mg/L	03/20/2013	N001	28.91 - 38.91	0.1	U	F	0	0.1	
Calcium	mg/L	03/20/2013	N001	28.91 - 38.91	550		F	0	0.12	
Chloride	mg/L	03/20/2013	N001	28.91 - 38.91	880		F	0	40	
Magnesium	mg/L	03/20/2013	N001	28.91 - 38.91	2200		F	0	0.13	
Manganese	mg/L	03/20/2013	N001	28.91 - 38.91	0.013	B	F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	28.91 - 38.91	820		F	0	5	
Oxidation Reduction Potential	mV	03/20/2013	N001	28.91 - 38.91	71.3		F	0		
pH	s.u.	03/20/2013	N001	28.91 - 38.91	7.65		F	0		
Potassium	mg/L	03/20/2013	N001	28.91 - 38.91	64		F	0	1.1	
Selenium	mg/L	03/20/2013	N001	28.91 - 38.91	1.6		F	0	0.0016	
Sodium	mg/L	03/20/2013	N001	28.91 - 38.91	2300		F	0	0.33	
Specific Conductance	umhos/cm	03/20/2013	N001	28.91 - 38.91	18625		F	0		
Strontium	mg/L	03/20/2013	N001	28.91 - 38.91	14		F	0	0.00078	
Sulfate	mg/L	03/20/2013	N001	28.91 - 38.91	10000		F	0	100	
Temperature	C	03/20/2013	N001	28.91 - 38.91	14.59		F	0		
Turbidity	NTU	03/20/2013	N001	28.91 - 38.91	5.03		F	0		
Uranium	mg/L	03/20/2013	N001	28.91 - 38.91	0.17		F	0	0.00015	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	45 - 142.58	1515		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	45 - 142.58	7.7		F	0	0.5	
Calcium	mg/L	03/19/2013	N001	45 - 142.58	450		F	0	0.6	
Chloride	mg/L	03/19/2013	N001	45 - 142.58	1200		F	0	100	
Magnesium	mg/L	03/19/2013	N001	45 - 142.58	610		F	0	0.65	
Manganese	mg/L	03/19/2013	N001	45 - 142.58	3.5		F	0	0.0057	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	45 - 142.58	0.015		F	0	0.01	
Oxidation Reduction Potential	mV	03/19/2013	N001	45 - 142.58	-50		F	0		
pH	s.u.	03/19/2013	N001	45 - 142.58	7.03		F	0		
Potassium	mg/L	03/19/2013	N001	45 - 142.58	28	B	F	0	5.4	
Selenium	mg/L	03/19/2013	N001	45 - 142.58	0.047		F	0	0.00032	
Sodium	mg/L	03/19/2013	N001	45 - 142.58	7600		F	0	0.33	
Specific Conductance	umhos/cm	03/19/2013	N001	45 - 142.58	26431		F	0		
Strontium	mg/L	03/19/2013	N001	45 - 142.58	24		F	0	0.0039	
Sulfate	mg/L	03/19/2013	N001	45 - 142.58	17000		F	0	250	
Temperature	C	03/19/2013	N001	45 - 142.58	15.07		F	0		
Turbidity	NTU	03/19/2013	N001	45 - 142.58	8.15		F	0		
Uranium	mg/L	03/19/2013	N001	45 - 142.58	0.018		F	0	0.000029	

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

REPORT DATE: 05/22/2013

Location: 1007 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	36.8 - 46.3	1360		FQ	0		
Ammonia Total as N	mg/L	03/20/2013	N001	36.8 - 46.3	11		FQ	0	0.5	
Calcium	mg/L	03/20/2013	N001	36.8 - 46.3	480		FQ	0	0.6	
Chloride	mg/L	03/20/2013	N001	36.8 - 46.3	590		FQ	0	40	
Magnesium	mg/L	03/20/2013	N001	36.8 - 46.3	2300		FQ	0	0.65	
Manganese	mg/L	03/20/2013	N001	36.8 - 46.3	1.7		FQ	0	0.0057	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	36.8 - 46.3	640		FQ	0	5	
Oxidation Reduction Potential	mV	03/20/2013	N001	36.8 - 46.3	125		FQ	0		
pH	s.u.	03/20/2013	N001	36.8 - 46.3	6.55		FQ	0		
Potassium	mg/L	03/20/2013	N001	36.8 - 46.3	92		FQ	0	5.4	
Selenium	mg/L	03/20/2013	N001	36.8 - 46.3	0.063		FQ	0	0.0032	
Sodium	mg/L	03/20/2013	N001	36.8 - 46.3	2600		FQ	0	0.33	
Specific Conductance	umhos/cm	03/20/2013	N001	36.8 - 46.3	20660		FQ	0		
Strontium	mg/L	03/20/2013	N001	36.8 - 46.3	12		FQ	0	0.0039	
Sulfate	mg/L	03/20/2013	N001	36.8 - 46.3	13000		FQ	0	100	
Temperature	C	03/20/2013	N001	36.8 - 46.3	17.3		FQ	0		
Turbidity	NTU	03/20/2013	N001	36.8 - 46.3	8.41		FQ	0		
Uranium	mg/L	03/20/2013	N001	36.8 - 46.3	2.3		FQ	0	0.00029	

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

REPORT DATE: 05/22/2013

Location: 1048 WELL Many Devils Wash, just E of knickpoint, flush mount.

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	0001	3.6	-	8.6	515		F	0		
Ammonia Total as N	mg/L	03/19/2013	0001	3.6	-	8.6	0.1	U	F	0	0.1	
Calcium	mg/L	03/19/2013	0001	3.6	-	8.6	370		F	0	0.12	
Chloride	mg/L	03/19/2013	0001	3.6	-	8.6	1400		F	0	100	
Magnesium	mg/L	03/19/2013	0001	3.6	-	8.6	1200		F	0	0.13	
Manganese	mg/L	03/19/2013	0001	3.6	-	8.6	0.0011	U	F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	0001	3.6	-	8.6	550		F	0	5	
Oxidation Reduction Potential	mV	03/19/2013	N001	3.6	-	8.6	160		F	0		
pH	s.u.	03/19/2013	N001	3.6	-	8.6	7.36		F	0		
Potassium	mg/L	03/19/2013	0001	3.6	-	8.6	40		F	0	1.1	
Selenium	mg/L	03/19/2013	0001	3.6	-	8.6	1.2		F	0	0.0016	
Sodium	mg/L	03/19/2013	0001	3.6	-	8.6	5900		F	0	0.66	
Specific Conductance	umhos/cm	03/19/2013	N001	3.6	-	8.6	28600		F	0		
Strontium	mg/L	03/19/2013	0001	3.6	-	8.6	8.6		F	0	0.00078	
Sulfate	mg/L	03/19/2013	0001	3.6	-	8.6	16000		F	0	250	
Temperature	C	03/19/2013	N001	3.6	-	8.6	12.5		F	0		
Turbidity	NTU	03/19/2013	N001	3.6	-	8.6	540		F	0		
Uranium	mg/L	03/19/2013	0001	3.6	-	8.6	0.14		F	0	0.00015	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Qualifiers			Detection Limit	Uncertainty
							Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	4.3	-	9.3		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	4.3	-	9.3	0.1	U	F	0	0.1
Calcium	mg/L	03/19/2013	N001	4.3	-	9.3	390		F	0	0.12
Chloride	mg/L	03/19/2013	N001	4.3	-	9.3	1500		F	0	100
Magnesium	mg/L	03/19/2013	N001	4.3	-	9.3	1300		F	0	0.13
Manganese	mg/L	03/19/2013	N001	4.3	-	9.3	0.0011	U	F	0	0.0011
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	4.3	-	9.3	550		F	0	5
Oxidation Reduction Potential	mV	03/19/2013	N001	4.3	-	9.3	160		F	0	
pH	s.u.	03/19/2013	N001	4.3	-	9.3	7.39		F	0	
Potassium	mg/L	03/19/2013	N001	4.3	-	9.3	43	N	JF	0	1.1
Selenium	mg/L	03/19/2013	N001	4.3	-	9.3	1.2		F	0	0.0016
Sodium	mg/L	03/19/2013	N001	4.3	-	9.3	6000		F	0	0.33
Specific Conductance	umhos/cm	03/19/2013	N001	4.3	-	9.3	28400		F	0	
Strontium	mg/L	03/19/2013	N001	4.3	-	9.3	9.1		F	0	0.00078
Sulfate	mg/L	03/19/2013	N001	4.3	-	9.3	16000		F	0	250
Temperature	C	03/19/2013	N001	4.3	-	9.3	13.6		F	0	
Turbidity	NTU	03/19/2013	N001	4.3	-	9.3	9.48		F	0	
Uranium	mg/L	03/19/2013	N001	4.3	-	9.3	0.15		F	0	0.00015

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

REPORT DATE: 05/22/2013

Location: 1057 WELL

Parameter	Units	Sample		Depth Range		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	36.66	- 41.66	304		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	36.66	- 41.66	220		F	0	10	
Calcium	mg/L	03/19/2013	N001	36.66	- 41.66	680		F	0	0.12	
Chloride	mg/L	03/19/2013	N001	36.66	- 41.66	280		F	0	40	
Magnesium	mg/L	03/19/2013	N001	36.66	- 41.66	1400		F	0	0.13	
Manganese	mg/L	03/19/2013	N001	36.66	- 41.66	14		F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	36.66	- 41.66	1500		F	0	10	
Oxidation Reduction Potential	mV	03/19/2013	N001	36.66	- 41.66	190		F	0		
pH	s.u.	03/19/2013	N001	36.66	- 41.66	6.31		F	0		
Potassium	mg/L	03/19/2013	N001	36.66	- 41.66	160		F	0	1.1	
Selenium	mg/L	03/19/2013	N001	36.66	- 41.66	0.065		F	0	0.00032	
Sodium	mg/L	03/19/2013	N001	36.66	- 41.66	1200		F	0	0.066	
Specific Conductance	umhos/cm	03/19/2013	N001	36.66	- 41.66	15770		F	0		
Strontium	mg/L	03/19/2013	N001	36.66	- 41.66	9.1		F	0	0.00078	
Sulfate	mg/L	03/19/2013	N001	36.66	- 41.66	5000		F	0	100	
Temperature	C	03/19/2013	N001	36.66	- 41.66	15.8		F	0		
Turbidity	NTU	03/19/2013	N001	36.66	- 41.66	5.84		F	0		
Uranium	mg/L	03/19/2013	N001	36.66	- 41.66	0.035		F	0	0.000029	

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

REPORT DATE: 05/22/2013

Location: 1058 WELL

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	41.7	-	51.2	630		FQ	0		
Ammonia Total as N	mg/L	03/19/2013	N001	41.7	-	51.2	2.5		FQ	0	0.1	
Calcium	mg/L	03/19/2013	N001	41.7	-	51.2	220		FQ	0	0.12	
Chloride	mg/L	03/19/2013	N001	41.7	-	51.2	1300		FQ	0	40	
Magnesium	mg/L	03/19/2013	N001	41.7	-	51.2	120		FQ	0	0.13	
Manganese	mg/L	03/19/2013	N001	41.7	-	51.2	0.18		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	41.7	-	51.2	0.01	U	FQ	0	0.01	
Oxidation Reduction Potential	mV	03/19/2013	N001	41.7	-	51.2	-110		FQ	0		
pH	s.u.	03/19/2013	N001	41.7	-	51.2	7.14		FQ	0		
Potassium	mg/L	03/19/2013	N001	41.7	-	51.2	16		FQ	0	1.1	
Selenium	mg/L	03/19/2013	N001	41.7	-	51.2	0.00022		FQ	0	0.000032	
Sodium	mg/L	03/19/2013	N001	41.7	-	51.2	2800		FQ	0	0.33	
Specific Conductance	umhos/cm	03/19/2013	N001	41.7	-	51.2	13700		FQ	0		
Strontium	mg/L	03/19/2013	N001	41.7	-	51.2	11		FQ	0	0.00078	
Sulfate	mg/L	03/19/2013	N001	41.7	-	51.2	5300		FQ	0	100	
Temperature	C	03/19/2013	N001	41.7	-	51.2	15.8		FQ	0		
Turbidity	NTU	03/19/2013	N001	41.7	-	51.2	9.62		FQ	0		
Uranium	mg/L	03/19/2013	N001	41.7	-	51.2	0.0033		FQ	0	0.0000029	

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

REPORT DATE: 05/22/2013

Location: 1059 WELL

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	0001	39.5	-	49	700		FQ	0		
Ammonia Total as N	mg/L	03/19/2013	0001	39.5	-	49	1.6		FQ	0	0.1	
Calcium	mg/L	03/19/2013	0001	39.5	-	49	320		FQ	0	0.12	
Chloride	mg/L	03/19/2013	0001	39.5	-	49	710		FQ	0	40	
Magnesium	mg/L	03/19/2013	0001	39.5	-	49	380		FQ	0	0.13	
Manganese	mg/L	03/19/2013	0001	39.5	-	49	0.053		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	0001	39.5	-	49	370		FQ	0	2	
Oxidation Reduction Potential	mV	03/19/2013	N001	39.5	-	49	180		FQ	0		
pH	s.u.	03/19/2013	N001	39.5	-	49	7.01		FQ	0		
Potassium	mg/L	03/19/2013	0001	39.5	-	49	27		FQ	0	1.1	
Selenium	mg/L	03/19/2013	0001	39.5	-	49	0.0098		FQ	0	0.00032	
Sodium	mg/L	03/19/2013	0001	39.5	-	49	3500		FQ	0	0.66	
Specific Conductance	umhos/cm	03/19/2013	N001	39.5	-	49	17875		FQ	0		
Strontium	mg/L	03/19/2013	0001	39.5	-	49	16		FQ	0	0.00078	
Sulfate	mg/L	03/19/2013	0001	39.5	-	49	8400		FQ	0	100	
Temperature	C	03/19/2013	N001	39.5	-	49	16		FQ	0		
Turbidity	NTU	03/19/2013	N001	39.5	-	49	21.6		FQ	0		
Uranium	mg/L	03/19/2013	0001	39.5	-	49	0.062		FQ	0	0.000029	

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

REPORT DATE: 05/22/2013

Location: 1068 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	0001	6.95 - 8.95	560		FQ	0		
Calcium	mg/L	03/21/2013	0001	6.95 - 8.95	370		FQ	0	0.06	
Magnesium	mg/L	03/21/2013	0001	6.95 - 8.95	710		FQ	0	0.065	
Manganese	mg/L	03/21/2013	0001	6.95 - 8.95	0.99		FQ	0	0.00057	
Oxidation Reduction Potential	mV	03/21/2013	N001	6.95 - 8.95	210		FQ	0		
pH	s.u.	03/21/2013	N001	6.95 - 8.95	7.27		FQ	0		
Potassium	mg/L	03/21/2013	0001	6.95 - 8.95	41		FQ	0	0.54	
Selenium	mg/L	03/21/2013	0001	6.95 - 8.95	0.032		FQ	0	0.00065	
Sodium	mg/L	03/21/2013	0001	6.95 - 8.95	890		FQ	0	0.16	
Specific Conductance	umhos /cm	03/21/2013	N001	6.95 - 8.95	9050		FQ	0		
Strontium	mg/L	03/21/2013	0001	6.95 - 8.95	6.8		FQ	0	0.00039	
Temperature	C	03/21/2013	N001	6.95 - 8.95	12.2		FQ	0		
Turbidity	NTU	03/21/2013	N001	6.95 - 8.95	152		FQ	0		
Uranium	mg/L	03/21/2013	0001	6.95 - 8.95	0.64		FQ	0	0.000058	

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

REPORT DATE: 05/22/2013

Location: 1069 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Oxidation Reduction Potential	mV	03/21/2013	N001	4.35 - 6.35	230			0		
pH	s.u.	03/21/2013	N001	4.35 - 6.35	7.19			0		
Specific Conductance	umhos/cm	03/21/2013	N001	4.35 - 6.35	13740			0		
Temperature	C	03/21/2013	N001	4.35 - 6.35	11.8			0		
Turbidity	NTU	03/21/2013	N001	4.35 - 6.35	1000	>		0		

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

REPORT DATE: 05/22/2013

Location: 1070 WELL

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	52.5	-	62	740			0		
Ammonia Total as N	mg/L	03/19/2013	N001	52.5	-	62	2.4			0	0.1	
Ammonia Total as N	mg/L	03/19/2013	N002	52.5	-	62	2.6			0	0.1	
Calcium	mg/L	03/19/2013	N001	52.5	-	62	420			0	0.12	
Calcium	mg/L	03/19/2013	N002	52.5	-	62	430			0	1.2	
Chloride	mg/L	03/19/2013	N001	52.5	-	62	1100			0	100	
Chloride	mg/L	03/19/2013	N002	52.5	-	62	1100			0	100	
Magnesium	mg/L	03/19/2013	N001	52.5	-	62	1200			0	0.13	
Magnesium	mg/L	03/19/2013	N002	52.5	-	62	1200			0	1.3	
Manganese	mg/L	03/19/2013	N001	52.5	-	62	0.23		J	0	0.0011	
Manganese	mg/L	03/19/2013	N002	52.5	-	62	0.16	B	J	0	0.011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	52.5	-	62	720			0	5	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N002	52.5	-	62	700			0	5	
Oxidation Reduction Potential	mV	03/19/2013	N001	52.5	-	62	180			0		
pH	s.u.	03/19/2013	N001	52.5	-	62	7.01			0		
Potassium	mg/L	03/19/2013	N001	52.5	-	62	83			0	1.1	
Potassium	mg/L	03/19/2013	N002	52.5	-	62	47	B		0	11	
Selenium	mg/L	03/19/2013	N001	52.5	-	62	2.6			0	0.0032	

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

REPORT DATE: 05/22/2013

Location: 1070 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Selenium	mg/L	03/19/2013	N002	52.5 - 62	2.6			0	0.00032	
Sodium	mg/L	03/19/2013	N001	52.5 - 62	5400			0	0.66	
Sodium	mg/L	03/19/2013	N002	52.5 - 62	5700			0	0.66	
Specific Conductance	umhos/cm	03/19/2013	N001	52.5 - 62	27750			0		
Strontium	mg/L	03/19/2013	N001	52.5 - 62	10			0	0.00078	
Strontium	mg/L	03/19/2013	N002	52.5 - 62	9.9			0	0.0078	
Sulfate	mg/L	03/19/2013	N001	52.5 - 62	15000			0	250	
Sulfate	mg/L	03/19/2013	N002	52.5 - 62	15000			0	250	
Temperature	C	03/19/2013	N001	52.5 - 62	14.6			0		
Turbidity	NTU	03/19/2013	N001	52.5 - 62	3.86			0		
Uranium	mg/L	03/19/2013	N001	52.5 - 62	0.081			0	0.00029	
Uranium	mg/L	03/19/2013	N002	52.5 - 62	0.08			0	0.000029	

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

REPORT DATE: 05/22/2013

Location: 1071 WELL

Parameter	Units	Sample		Depth Range		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft	BLS)		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	36.5	- 46	506			0		
Ammonia Total as N	mg/L	03/19/2013	N001	36.5	- 46	92			0	2	
Calcium	mg/L	03/19/2013	N001	36.5	- 46	460			0	0.6	
Chloride	mg/L	03/19/2013	N001	36.5	- 46	1100			0	100	
Magnesium	mg/L	03/19/2013	N001	36.5	- 46	1300			0	0.65	
Manganese	mg/L	03/19/2013	N001	36.5	- 46	3.1			0	0.0057	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	36.5	- 46	860			0	5	
Oxidation Reduction Potential	mV	03/19/2013	N001	36.5	- 46	155			0		
pH	s.u.	03/19/2013	N001	36.5	- 46	6.96			0		
Potassium	mg/L	03/19/2013	N001	36.5	- 46	66			0	5.4	
Selenium	mg/L	03/19/2013	N001	36.5	- 46	2.4			0	0.0032	
Sodium	mg/L	03/19/2013	N001	36.5	- 46	4000			0	0.33	
Specific Conductance	umhos/cm	03/19/2013	N001	36.5	- 46	23950			0		
Strontium	mg/L	03/19/2013	N001	36.5	- 46	11			0	0.0039	
Sulfate	mg/L	03/19/2013	N001	36.5	- 46	12000			0	250	
Temperature	C	03/19/2013	N001	36.5	- 46	11.7			0		
Turbidity	NTU	03/19/2013	N001	36.5	- 46	1.41			0		
Uranium	mg/L	03/19/2013	N001	36.5	- 46	0.12			0	0.00029	

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

REPORT DATE: 05/22/2013

Location: 1073 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Ammonia Total as N	mg/L	03/21/2013	0001	40.5 - 50	26			0	1	
Calcium	mg/L	03/21/2013	0001	40.5 - 50	410			0	0.12	
Chloride	mg/L	03/21/2013	0001	40.5 - 50	1100			0	100	
Magnesium	mg/L	03/21/2013	0001	40.5 - 50	1800			0	0.13	
Manganese	mg/L	03/21/2013	0001	40.5 - 50	0.068			0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	0001	40.5 - 50	820			0	5	
Potassium	mg/L	03/21/2013	0001	40.5 - 50	130			0	1.1	
Selenium	mg/L	03/21/2013	0001	40.5 - 50	2.2			0	0.0032	
Sodium	mg/L	03/21/2013	0001	40.5 - 50	3500			0	0.33	
Strontium	mg/L	03/21/2013	0001	40.5 - 50	9.8			0	0.00078	
Sulfate	mg/L	03/21/2013	0001	40.5 - 50	12000			0	250	
Uranium	mg/L	03/21/2013	0001	40.5 - 50	0.09			0	0.00029	

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

REPORT DATE: 05/22/2013

Location: 1074 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	27 - 36.5	1200		FQ	0		
Ammonia Total as N	mg/L	03/20/2013	N001	27 - 36.5	4.5		FQ	0	0.1	
Calcium	mg/L	03/20/2013	N001	27 - 36.5	610		FQ	0	0.12	
Chloride	mg/L	03/20/2013	N001	27 - 36.5	1100		FQ	0	40	
Magnesium	mg/L	03/20/2013	N001	27 - 36.5	2500		FQ	0	0.13	
Manganese	mg/L	03/20/2013	N001	27 - 36.5	1.9		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	27 - 36.5	1500		FQ	0	10	
Oxidation Reduction Potential	mV	03/20/2013	N001	27 - 36.5	160		FQ	0		
pH	s.u.	03/20/2013	N001	27 - 36.5	6.65		FQ	0		
Potassium	mg/L	03/20/2013	N001	27 - 36.5	55		FQ	0	1.1	
Selenium	mg/L	03/20/2013	N001	27 - 36.5	0.4		FQ	0	0.0032	
Sodium	mg/L	03/20/2013	N001	27 - 36.5	2000		FQ	0	0.33	
Specific Conductance	umhos/cm	03/20/2013	N001	27 - 36.5	21225		FQ	0		
Strontium	mg/L	03/20/2013	N001	27 - 36.5	12		FQ	0	0.00078	
Sulfate	mg/L	03/20/2013	N001	27 - 36.5	7800		FQ	0	100	
Temperature	C	03/20/2013	N001	27 - 36.5	16.9		FQ	0		
Turbidity	NTU	03/20/2013	N001	27 - 36.5	5.61		FQ	0		
Uranium	mg/L	03/20/2013	N001	27 - 36.5	2.1		FQ	0	0.00029	

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

REPORT DATE: 05/22/2013

Location: 1078 WELL

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	35.5	-	45	590			0		
Ammonia Total as N	mg/L	03/20/2013	N001	35.5	-	45	0.98			0	0.1	
Calcium	mg/L	03/20/2013	N001	35.5	-	45	480			0	0.12	
Chloride	mg/L	03/20/2013	N001	35.5	-	45	1000			0	100	
Magnesium	mg/L	03/20/2013	N001	35.5	-	45	1200			0	0.13	
Manganese	mg/L	03/20/2013	N001	35.5	-	45	0.067			0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	35.5	-	45	600			0	5	
Oxidation Reduction Potential	mV	03/20/2013	N001	35.5	-	45	260			0		
pH	s.u.	03/20/2013	N001	35.5	-	45	6.95			0		
Potassium	mg/L	03/20/2013	N001	35.5	-	45	80			0	1.1	
Selenium	mg/L	03/20/2013	N001	35.5	-	45	2.8			0	0.0032	
Sodium	mg/L	03/20/2013	N001	35.5	-	45	3900			0	0.66	
Specific Conductance	umhos/cm	03/20/2013	N001	35.5	-	45	24530			0		
Strontium	mg/L	03/20/2013	N001	35.5	-	45	11			0	0.00078	
Sulfate	mg/L	03/20/2013	N001	35.5	-	45	13000			0	250	
Temperature	C	03/20/2013	N001	35.5	-	45	15.5			0		
Turbidity	NTU	03/20/2013	N001	35.5	-	45	4.09			0		
Uranium	mg/L	03/20/2013	N001	35.5	-	45	0.13			0	0.00029	

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

REPORT DATE: 05/22/2013

Location: 1079 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	10.5 - 20	298		F	0		
Ammonia Total as N	mg/L	03/19/2013	N001	10.5 - 20	0.1	U	F	0	0.1	
Calcium	mg/L	03/19/2013	N001	10.5 - 20	910		F	0	0.12	
Chloride	mg/L	03/19/2013	N001	10.5 - 20	460		F	0	20	
Magnesium	mg/L	03/19/2013	N001	10.5 - 20	210		F	0	0.13	
Manganese	mg/L	03/19/2013	N001	10.5 - 20	0.0044	B	F	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	10.5 - 20	400		F	0	5	
Oxidation Reduction Potential	mV	03/19/2013	N001	10.5 - 20	77.9		F	0		
pH	s.u.	03/19/2013	N001	10.5 - 20	6.97		F	0		
Potassium	mg/L	03/19/2013	N001	10.5 - 20	11		F	0	1.1	
Selenium	mg/L	03/19/2013	N001	10.5 - 20	0.66		F	0	0.0016	
Sodium	mg/L	03/19/2013	N001	10.5 - 20	740		F	0	0.066	
Specific Conductance	umhos/cm	03/19/2013	N001	10.5 - 20	7690		F	0		
Strontium	mg/L	03/19/2013	N001	10.5 - 20	9.4		F	0	0.00078	
Sulfate	mg/L	03/19/2013	N001	10.5 - 20	2500		F	0	50	
Temperature	C	03/19/2013	N001	10.5 - 20	14.78		F	0		
Turbidity	NTU	03/19/2013	N001	10.5 - 20	9.78		F	0		
Uranium	mg/L	03/19/2013	N001	10.5 - 20	0.048		F	0	0.00015	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	0 - 0	540			0		
Ammonia Total as N	mg/L	03/19/2013	N001	0 - 0	110			0	10	
Ammonia Total as N	mg/L	03/19/2013	N002	0 - 0	97			0	2	
Calcium	mg/L	03/19/2013	N001	0 - 0	480			0	0.12	
Calcium	mg/L	03/19/2013	N002	0 - 0	470			0	0.6	
Chloride	mg/L	03/19/2013	N001	0 - 0	250			0	40	
Chloride	mg/L	03/19/2013	N002	0 - 0	250			0	40	
Magnesium	mg/L	03/19/2013	N001	0 - 0	1100			0	0.13	
Magnesium	mg/L	03/19/2013	N002	0 - 0	1000			0	0.65	
Manganese	mg/L	03/19/2013	N001	0 - 0	1.1			0	0.0011	
Manganese	mg/L	03/19/2013	N002	0 - 0	1			0	0.0057	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	0 - 0	230			0	2	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N002	0 - 0	230			0	2	
Oxidation Reduction Potential	mV	03/19/2013	N001	0 - 0	235			0		
pH	s.u.	03/19/2013	N001	0 - 0	6.95			0		
Potassium	mg/L	03/19/2013	N001	0 - 0	92		J	0	1.1	
Potassium	mg/L	03/19/2013	N002	0 - 0	67		J	0	5.4	
Selenium	mg/L	03/19/2013	N001	0 - 0	0.03			0	0.0016	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Selenium	mg/L	03/19/2013	N002	0 - 0	0.033			0	0.0016	
Sodium	mg/L	03/19/2013	N001	0 - 0	1100			0	0.066	
Sodium	mg/L	03/19/2013	N002	0 - 0	980			0	0.33	
Specific Conductance	umhos /cm	03/19/2013	N001	0 - 0	11420			0		
Strontium	mg/L	03/19/2013	N001	0 - 0	8.7			0	0.00078	
Strontium	mg/L	03/19/2013	N002	0 - 0	8.5			0	0.0039	
Sulfate	mg/L	03/19/2013	N001	0 - 0	6400			0	100	
Sulfate	mg/L	03/19/2013	N002	0 - 0	6300			0	100	
Temperature	C	03/19/2013	N001	0 - 0	12.6			0		
Turbidity	NTU	03/19/2013	N001	0 - 0	1.56			0		
Uranium	mg/L	03/19/2013	N001	0 - 0	0.48			0	0.00015	
Uranium	mg/L	03/19/2013	N002	0 - 0	0.45			0	0.00015	

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

REPORT DATE: 05/22/2013

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/18/2013	0001	0 - 0	850			0		
Ammonia Total as N	mg/L	03/18/2013	0001	0 - 0	0.1	U		0	0.1	
Calcium	mg/L	03/18/2013	0001	0 - 0	400			0	0.24	
Chloride	mg/L	03/18/2013	0001	0 - 0	1500			0	100	
Magnesium	mg/L	03/18/2013	0001	0 - 0	1200			0	0.26	
Manganese	mg/L	03/18/2013	0001	0 - 0	0.057	B		0	0.0023	
Nitrate + Nitrite as Nitrogen	mg/L	03/18/2013	0001	0 - 0	710			0	5	
Oxidation Reduction Potential	mV	03/18/2013	N001	0 - 0	255			0		
pH	s.u.	03/18/2013	N001	0 - 0	7.24			0		
Potassium	mg/L	03/18/2013	0001	0 - 0	51			0	2.2	
Selenium	mg/L	03/18/2013	0001	0 - 0	1.7			0	0.0016	
Sodium	mg/L	03/18/2013	0001	0 - 0	6900			0	1.3	
Specific Conductance	umhos/cm	03/18/2013	N001	0 - 0	31790			0		
Strontium	mg/L	03/18/2013	0001	0 - 0	9.7			0	0.0016	
Sulfate	mg/L	03/18/2013	0001	0 - 0	19000			0	250	
Temperature	C	03/18/2013	N001	0 - 0	10.6			0		
Turbidity	NTU	03/18/2013	N001	0 - 0	22			0		
Uranium	mg/L	03/18/2013	0001	0 - 0	0.19			0	0.00015	

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

REPORT DATE: 05/22/2013

Location: 1091 WELL

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/18/2013	0001	33	-	43	920			0		
Ammonia Total as N	mg/L	03/18/2013	0001	33	-	43	0.14			0	0.1	
Calcium	mg/L	03/18/2013	0001	33	-	43	600			0	0.6	
Chloride	mg/L	03/18/2013	0001	33	-	43	1100			0	100	
Magnesium	mg/L	03/18/2013	0001	33	-	43	3000			0	0.65	
Manganese	mg/L	03/18/2013	0001	33	-	43	1.6			0	0.0057	
Nitrate + Nitrite as Nitrogen	mg/L	03/18/2013	0001	33	-	43	1200			0	10	
Oxidation Reduction Potential	mV	03/18/2013	N001	33	-	43	280			0		
pH	s.u.	03/18/2013	N001	33	-	43	6.47			0		
Potassium	mg/L	03/18/2013	0001	33	-	43	71			0	5.4	
Selenium	mg/L	03/18/2013	0001	33	-	43	0.71			0	0.0016	
Sodium	mg/L	03/18/2013	0001	33	-	43	4900			0	0.33	
Specific Conductance	umhos/cm	03/18/2013	N001	33	-	43	24730			0		
Strontium	mg/L	03/18/2013	0001	33	-	43	18			0	0.0039	
Sulfate	mg/L	03/18/2013	0001	33	-	43	13000			0	250	
Temperature	C	03/18/2013	N001	33	-	43	14.3			0		
Turbidity	NTU	03/18/2013	N001	33	-	43	32.3			0		
Uranium	mg/L	03/18/2013	0001	33	-	43	0.11			0	0.00015	

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

REPORT DATE: 05/22/2013

Location: 1092 WELL

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/18/2013	0001	33	-	43	808			0		
Ammonia Total as N	mg/L	03/18/2013	0001	33	-	43	19			0	1	
Calcium	mg/L	03/18/2013	0001	33	-	43	460			0	0.6	
Chloride	mg/L	03/18/2013	0001	33	-	43	1200			0	100	
Magnesium	mg/L	03/18/2013	0001	33	-	43	2000			0	0.65	
Manganese	mg/L	03/18/2013	0001	33	-	43	1.9			0	0.0057	
Nitrate + Nitrite as Nitrogen	mg/L	03/18/2013	0001	33	-	43	670			0	5	
Oxidation Reduction Potential	mV	03/18/2013	N001	33	-	43	280			0		
pH	s.u.	03/18/2013	N001	33	-	43	6.63			0		
Potassium	mg/L	03/18/2013	0001	33	-	43	61			0	5.4	
Selenium	mg/L	03/18/2013	0001	33	-	43	1.2			0	0.0016	
Sodium	mg/L	03/18/2013	0001	33	-	43	4400			0	0.33	
Specific Conductance	umhos/cm	03/18/2013	N001	33	-	43	24850			0		
Strontium	mg/L	03/18/2013	0001	33	-	43	13			0	0.0039	
Sulfate	mg/L	03/18/2013	0001	33	-	43	15000			0	250	
Temperature	C	03/18/2013	N001	33	-	43	12.3			0		
Turbidity	NTU	03/18/2013	N001	33	-	43	21			0		
Uranium	mg/L	03/18/2013	0001	33	-	43	0.12			0	0.00015	

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

REPORT DATE: 05/22/2013

Location: 1093R WELL a replacement extraction well for 1093

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/18/2013	N001	34 - 38	500			0		
Ammonia Total as N	mg/L	03/18/2013	N001	34 - 38	400			0	10	
Ammonia Total as N	mg/L	03/18/2013	N002	34 - 38	380			0	10	
Calcium	mg/L	03/18/2013	N001	34 - 38	910			0	0.12	
Calcium	mg/L	03/18/2013	N002	34 - 38	950			0	0.12	
Chloride	mg/L	03/18/2013	N001	34 - 38	550			0	40	
Chloride	mg/L	03/18/2013	N002	34 - 38	540			0	40	
Magnesium	mg/L	03/18/2013	N001	34 - 38	1800			0	0.13	
Magnesium	mg/L	03/18/2013	N002	34 - 38	1900			0	0.13	
Manganese	mg/L	03/18/2013	N001	34 - 38	28			0	0.0011	
Manganese	mg/L	03/18/2013	N002	34 - 38	29			0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/18/2013	N001	34 - 38	2200			0	50	
Nitrate + Nitrite as Nitrogen	mg/L	03/18/2013	N002	34 - 38	2300			0	50	
Oxidation Reduction Potential	mV	03/18/2013	N001	34 - 38	330			0		
pH	s.u.	03/18/2013	N001	34 - 38	6.48			0		
Potassium	mg/L	03/18/2013	N001	34 - 38	180			0	1.1	
Potassium	mg/L	03/18/2013	N002	34 - 38	190			0	1.1	
Selenium	mg/L	03/18/2013	N001	34 - 38	0.51			0	0.00032	

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

REPORT DATE: 05/22/2013

Location: 1093R WELL a replacement extraction well for 1093

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Selenium	mg/L	03/18/2013	N002	34	-	38	0.52			0	0.0016	
Sodium	mg/L	03/18/2013	N001	34	-	38	1500			0	0.33	
Sodium	mg/L	03/18/2013	N002	34	-	38	1600			0	0.33	
Specific Conductance	umhos /cm	03/18/2013	N001	34	-	38	21150			0		
Strontium	mg/L	03/18/2013	N001	34	-	38	10			0	0.00078	
Strontium	mg/L	03/18/2013	N002	34	-	38	11			0	0.00078	
Sulfate	mg/L	03/18/2013	N001	34	-	38	5800			0	100	
Sulfate	mg/L	03/18/2013	N002	34	-	38	5700			0	100	
Temperature	C	03/18/2013	N001	34	-	38	12.6			0		
Turbidity	NTU	03/18/2013	N001	34	-	38	2.15			0		
Uranium	mg/L	03/18/2013	N001	34	-	38	0.1			0	0.000029	
Uranium	mg/L	03/18/2013	N002	34	-	38	0.11			0	0.00015	

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

REPORT DATE: 05/22/2013

Location: 1095 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/18/2013	N001	39 - 49	330			0		
Ammonia Total as N	mg/L	03/18/2013	N001	39 - 49	440			0	10	
Ammonia Total as N	mg/L	03/18/2013	N002	39 - 49	430			0	10	
Calcium	mg/L	03/18/2013	N001	39 - 49	810			0	0.12	
Calcium	mg/L	03/18/2013	N002	39 - 49	780			0	0.06	
Chloride	mg/L	03/18/2013	N001	39 - 49	300			0	40	
Chloride	mg/L	03/18/2013	N002	39 - 49	280			0	40	
Magnesium	mg/L	03/18/2013	N001	39 - 49	1300			0	0.13	
Magnesium	mg/L	03/18/2013	N002	39 - 49	1400			0	0.065	
Manganese	mg/L	03/18/2013	N001	39 - 49	34			0	0.0011	
Manganese	mg/L	03/18/2013	N002	39 - 49	31			0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/18/2013	N001	39 - 49	1800			0	20	
Nitrate + Nitrite as Nitrogen	mg/L	03/18/2013	N002	39 - 49	1900			0	20	
Oxidation Reduction Potential	mV	03/18/2013	N001	39 - 49	280			0		
pH	s.u.	03/18/2013	N001	39 - 49	6.5			0		
Potassium	mg/L	03/18/2013	N001	39 - 49	140			0	1.1	
Potassium	mg/L	03/18/2013	N002	39 - 49	160			0	0.54	
Selenium	mg/L	03/18/2013	N001	39 - 49	0.14			0	0.00032	

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

REPORT DATE: 05/22/2013

Location: 1095 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Selenium	mg/L	03/18/2013	N002	39 - 49	0.14			0	0.0016	
Sodium	mg/L	03/18/2013	N001	39 - 49	1100			0	0.066	
Sodium	mg/L	03/18/2013	N002	39 - 49	980			0	0.16	
Specific Conductance	umhos/cm	03/18/2013	N001	39 - 49	18465			0		
Strontium	mg/L	03/18/2013	N001	39 - 49	8.3			0	0.00078	
Strontium	mg/L	03/18/2013	N002	39 - 49	8.3			0	0.00039	
Sulfate	mg/L	03/18/2013	N001	39 - 49	5200			0	100	
Sulfate	mg/L	03/18/2013	N002	39 - 49	4600			0	100	
Temperature	C	03/18/2013	N001	39 - 49	14.8			0		
Turbidity	NTU	03/18/2013	N001	39 - 49	9.02			0		
Uranium	mg/L	03/18/2013	N001	39 - 49	0.046			0	0.000029	
Uranium	mg/L	03/18/2013	N002	39 - 49	0.051			0	0.00015	

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

REPORT DATE: 05/22/2013

Location: 1096 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (As CaCO3)	mg/L	03/19/2013	N001	57.5 - 66.5	750			0		
Ammonia Total as N	mg/L	03/19/2013	N001	57.5 - 66.5	2.1			0	0.1	
Ammonia Total as N	mg/L	03/19/2013	N002	57.5 - 66.5	2.7			0	0.1	
Calcium	mg/L	03/19/2013	N001	57.5 - 66.5	390			0	0.12	
Calcium	mg/L	03/19/2013	N002	57.5 - 66.5	400			0	0.24	
Chloride	mg/L	03/19/2013	N001	57.5 - 66.5	930			0	100	
Chloride	mg/L	03/19/2013	N002	57.5 - 66.5	970			0	100	
Magnesium	mg/L	03/19/2013	N001	57.5 - 66.5	920			0	0.13	
Magnesium	mg/L	03/19/2013	N002	57.5 - 66.5	910			0	0.26	
Manganese	mg/L	03/19/2013	N001	57.5 - 66.5	0.11			0	0.0011	
Manganese	mg/L	03/19/2013	N002	57.5 - 66.5	0.11			0	0.0023	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	57.5 - 66.5	590			0	5	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N002	57.5 - 66.5	720			0	5	
Oxidation Reduction Potential	mV	03/19/2013	N001	57.5 - 66.5	230			0		
pH	s.u.	03/19/2013	N001	57.5 - 66.5	7.22			0		
Potassium	mg/L	03/19/2013	N001	57.5 - 66.5	69			0	1.1	
Potassium	mg/L	03/19/2013	N002	57.5 - 66.5	59			0	2.2	
Selenium	mg/L	03/19/2013	N001	57.5 - 66.5	2.9			0	0.0016	

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

REPORT DATE: 05/22/2013

Location: 1096 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Selenium	mg/L	03/19/2013	N002	57.5 - 66.5	2.6			0	0.00032	
Sodium	mg/L	03/19/2013	N001	57.5 - 66.5	4900			0	0.66	
Sodium	mg/L	03/19/2013	N002	57.5 - 66.5	4900			0	1.3	
Specific Conductance	umhos/cm	03/19/2013	N001	57.5 - 66.5	25350			0		
Strontium	mg/L	03/19/2013	N001	57.5 - 66.5	8.7			0	0.00078	
Strontium	mg/L	03/19/2013	N002	57.5 - 66.5	8.7			0	0.0016	
Sulfate	mg/L	03/19/2013	N001	57.5 - 66.5	14000			0	250	
Sulfate	mg/L	03/19/2013	N002	57.5 - 66.5	14000			0	250	
Temperature	C	03/19/2013	N001	57.5 - 66.5	14.6			0		
Turbidity	NTU	03/19/2013	N001	57.5 - 66.5	1.72			0		
Uranium	mg/L	03/19/2013	N001	57.5 - 66.5	0.087			0	0.00015	
Uranium	mg/L	03/19/2013	N002	57.5 - 66.5	0.078			0	0.000029	

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

REPORT DATE: 05/22/2013

Location: MW1 WELL Just N of Disposal Cell

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	0001	-	1646		FQ	0		
Ammonia Total as N	mg/L	03/20/2013	0001	-	0.43		FQ	0	0.1	
Calcium	mg/L	03/20/2013	0001	-	67		FQ	0	0.12	
Chloride	mg/L	03/20/2013	0001	-	5100		FQ	0	100	
Magnesium	mg/L	03/20/2013	0001	-	34		FQ	0	0.13	
Manganese	mg/L	03/20/2013	0001	-	0.085		FQ	0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	0001	-	0.57		FQ	0	0.01	
Oxidation Reduction Potential	mV	03/20/2013	N001	-	180		FQ	0		
pH	s.u.	03/20/2013	N001	-	6.82		FQ	0		
Potassium	mg/L	03/20/2013	0001	-	19		FQ	0	1.1	
Selenium	mg/L	03/20/2013	0001	-	0.00037		FQ	0	0.000032	
Sodium	mg/L	03/20/2013	0001	-	3900		FQ	0	0.66	
Specific Conductance	umhos /cm	03/20/2013	N001	-	18200		FQ	0		
Strontium	mg/L	03/20/2013	0001	-	8.1		FQ	0	0.00078	
Sulfate	mg/L	03/20/2013	0001	-	2100		FQ	0	100	
Temperature	C	03/20/2013	N001	-	16.7		FQ	0		
Turbidity	NTU	03/20/2013	N001	-	19.2		FQ	0		
Uranium	mg/L	03/20/2013	0001	-	0.00053		FQ	0	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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**Surface Water Quality Data
Floodplain Locations**

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Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 05/22/2013

Location: 0501 SURFACE LOCATION S. bank San Juan River just E of Disposal Cell

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/18/2013	N001	134			0		
Ammonia Total as N	mg/L	03/18/2013	0001	0.1	U		0	0.1	
Ammonia Total as N	mg/L	03/18/2013	N002	0.1	U		0	0.1	
Calcium	mg/L	03/18/2013	0001	81			0	0.012	
Calcium	mg/L	03/18/2013	N002	82			0	0.012	
Chloride	mg/L	03/18/2013	0001	22			0	0.4	
Chloride	mg/L	03/18/2013	N002	21			0	1	
Magnesium	mg/L	03/18/2013	0001	14			0	0.013	
Magnesium	mg/L	03/18/2013	N002	14			0	0.013	
Manganese	mg/L	03/18/2013	0001	0.011	E	J	0	0.00011	
Manganese	mg/L	03/18/2013	N002	0.054			0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/18/2013	0001	0.53			0	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/18/2013	N002	0.52			0	0.01	
Oxidation Reduction Potential	mV	03/18/2013	N001	171			0		
pH	s.u.	03/18/2013	N001	8.48			0		
Potassium	mg/L	03/18/2013	0001	3			0	0.11	
Potassium	mg/L	03/18/2013	N002	3.2			0	0.11	
Selenium	mg/L	03/18/2013	0001	0.00083			0	0.000032	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 05/22/2013

Location: 0501 SURFACE LOCATION S. bank San Juan River just E of Disposal Cell

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Selenium	mg/L	03/18/2013	N002	0.00085			0	0.000032	
Sodium	mg/L	03/18/2013	0001	50	E	J	0	0.0066	
Sodium	mg/L	03/18/2013	N002	50			0	0.0066	
Specific Conductance	umhos/cm	03/18/2013	N001	717			0		
Strontium	mg/L	03/18/2013	0001	1.1			0	0.000078	
Strontium	mg/L	03/18/2013	N002	1.1			0	0.000078	
Sulfate	mg/L	03/18/2013	0001	210			0	2.5	
Sulfate	mg/L	03/18/2013	N002	210			0	2.5	
Temperature	C	03/18/2013	N001	13.19			0		
Turbidity	NTU	03/18/2013	N001	28.7			0		
Uranium	mg/L	03/18/2013	0001	0.0021			0	0.0000029	
Uranium	mg/L	03/18/2013	N002	0.0022			0	0.0000029	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 05/22/2013

Location: 0655 SURFACE LOCATION Ditch in NW end of floodplain

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	339			0		
Ammonia Total as N	mg/L	03/19/2013	N001	0.1	U		0	0.1	
Calcium	mg/L	03/19/2013	N001	290			0	0.12	
Chloride	mg/L	03/19/2013	N001	100			0	20	
Magnesium	mg/L	03/19/2013	N001	82			0	0.13	
Manganese	mg/L	03/19/2013	N001	0.32			0	0.0011	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	1.3			0	0.01	
Oxidation Reduction Potential	mV	03/19/2013	N001	165			0		
pH	s.u.	03/19/2013	N001	7.67			0		
Potassium	mg/L	03/19/2013	N001	12			0	1.1	
Selenium	mg/L	03/19/2013	N001	0.0058			0	0.00032	
Sodium	mg/L	03/19/2013	N001	1200			0	0.066	
Specific Conductance	umhos/cm	03/19/2013	N001	6745			0		
Strontium	mg/L	03/19/2013	N001	12			0	0.00078	
Sulfate	mg/L	03/19/2013	N001	3300			0	50	
Temperature	C	03/19/2013	N001	4.6			0		
Turbidity	NTU	03/19/2013	N001	7.86			0		
Uranium	mg/L	03/19/2013	N001	0.05			0	0.000029	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 05/22/2013

Location: 0897 SURFACE LOCATION S. bank San Juan River, just below Many Devils Wash confluence

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	0001	160			0		
Ammonia Total as N	mg/L	03/20/2013	0001	0.1	U		0	0.1	
Ammonia Total as N	mg/L	03/20/2013	N002	0.1	U		0	0.1	
Calcium	mg/L	03/20/2013	0001	76			0	0.012	
Calcium	mg/L	03/20/2013	N002	76			0	0.012	
Chloride	mg/L	03/20/2013	0001	18			0	1	
Chloride	mg/L	03/20/2013	N002	18			0	1	
Magnesium	mg/L	03/20/2013	0001	13			0	0.013	
Magnesium	mg/L	03/20/2013	N002	13			0	0.013	
Manganese	mg/L	03/20/2013	0001	0.023			0	0.00011	
Manganese	mg/L	03/20/2013	N002	0.099			0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	0001	0.6			0	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N002	0.56			0	0.01	
Oxidation Reduction Potential	mV	03/20/2013	N001	245			0		
pH	s.u.	03/20/2013	N001	7.78			0		
Potassium	mg/L	03/20/2013	0001	2.7			0	0.11	
Potassium	mg/L	03/20/2013	N002	3			0	0.11	
Selenium	mg/L	03/20/2013	0001	0.0015			0	0.000032	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 05/22/2013

Location: 0897 SURFACE LOCATION S. bank San Juan River, just below Many Devils Wash confluence

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Selenium	mg/L	03/20/2013	N002	0.0011			0	0.000032	
Sodium	mg/L	03/20/2013	0001	46			0	0.0066	
Sodium	mg/L	03/20/2013	N002	46	E	J	0	0.0066	
Specific Conductance	umhos/cm	03/20/2013	N001	690			0		
Strontium	mg/L	03/20/2013	0001	1			0	0.000078	
Strontium	mg/L	03/20/2013	N002	1			0	0.000078	
Sulfate	mg/L	03/20/2013	0001	180			0	2.5	
Sulfate	mg/L	03/20/2013	N002	180			0	2.5	
Temperature	C	03/20/2013	N001	5.75			0		
Turbidity	NTU	03/20/2013	N001	50.9			0		
Uranium	mg/L	03/20/2013	0001	0.0027			0	0.0000029	
Uranium	mg/L	03/20/2013	N002	0.002			0	0.0000029	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 05/22/2013

Location: 0898 SURFACE LOCATION S. bank San Juan River, N of floodplain background area

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	155			0		
Ammonia Total as N	mg/L	03/20/2013	0001	0.1	U		0	0.1	
Ammonia Total as N	mg/L	03/20/2013	N002	0.1	U		0	0.1	
Calcium	mg/L	03/20/2013	0001	75			0	0.012	
Calcium	mg/L	03/20/2013	N002	76			0	0.012	
Chloride	mg/L	03/20/2013	0001	19			0	1	
Chloride	mg/L	03/20/2013	N002	20			0	1	
Magnesium	mg/L	03/20/2013	0001	14			0	0.013	
Magnesium	mg/L	03/20/2013	N002	14			0	0.013	
Manganese	mg/L	03/20/2013	0001	0.014			0	0.00011	
Manganese	mg/L	03/20/2013	N002	0.082			0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	0001	0.49			0	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N002	0.46			0	0.01	
Oxidation Reduction Potential	mV	03/20/2013	N001	14			0		
pH	s.u.	03/20/2013	N001	8.56			0		
Potassium	mg/L	03/20/2013	0001	3			0	0.11	
Potassium	mg/L	03/20/2013	N002	3.2			0	0.11	
Selenium	mg/L	03/20/2013	0001	0.00082			0	0.000032	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 05/22/2013

Location: 0898 SURFACE LOCATION S. bank San Juan River, N of floodplain background area

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Selenium	mg/L	03/20/2013	N002	0.0011			0	0.000032	
Sodium	mg/L	03/20/2013	0001	46			0	0.0066	
Sodium	mg/L	03/20/2013	N002	46			0	0.0066	
Specific Conductance	umhos/cm	03/20/2013	N001	662			0		
Strontium	mg/L	03/20/2013	0001	1			0	0.000078	
Strontium	mg/L	03/20/2013	N002	1			0	0.000078	
Sulfate	mg/L	03/20/2013	0001	190			0	2.5	
Sulfate	mg/L	03/20/2013	N002	190			0	2.5	
Temperature	C	03/20/2013	N001	9.29			0		
Turbidity	NTU	03/20/2013	N001	53.4			0		
Uranium	mg/L	03/20/2013	0001	0.0021			0	0.0000029	
Uranium	mg/L	03/20/2013	N002	0.002			0	0.0000029	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 05/22/2013

Location: 0899 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	116			0		
Ammonia Total as N	mg/L	03/21/2013	0001	0.1	U		0	0.1	
Ammonia Total as N	mg/L	03/21/2013	N002	0.1	U		0	0.1	
Calcium	mg/L	03/21/2013	0001	74			0	0.012	
Calcium	mg/L	03/21/2013	N002	76			0	0.012	
Chloride	mg/L	03/21/2013	0001	18			0	1	
Chloride	mg/L	03/21/2013	N002	19			0	1	
Magnesium	mg/L	03/21/2013	0001	13			0	0.013	
Magnesium	mg/L	03/21/2013	N002	13			0	0.013	
Manganese	mg/L	03/21/2013	0001	0.011			0	0.00011	
Manganese	mg/L	03/21/2013	N002	0.058			0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	0001	0.49			0	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N002	0.48			0	0.01	
Oxidation Reduction Potential	mV	03/21/2013	N001	66.4			0		
pH	s.u.	03/21/2013	N001	8.4			0		
Potassium	mg/L	03/21/2013	0001	2.7			0	0.11	
Potassium	mg/L	03/21/2013	N002	2.9			0	0.11	
Selenium	mg/L	03/21/2013	0001	0.00071			0	0.000032	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 05/22/2013

Location: 0899 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Selenium	mg/L	03/21/2013	N002	0.00095			0	0.000032	
Sodium	mg/L	03/21/2013	0001	43			0	0.0066	
Sodium	mg/L	03/21/2013	N002	44			0	0.0066	
Specific Conductance	umhos/cm	03/21/2013	N001	719			0		
Strontium	mg/L	03/21/2013	0001	1			0	0.000078	
Strontium	mg/L	03/21/2013	N002	1			0	0.000078	
Sulfate	mg/L	03/21/2013	0001	180			0	2.5	
Sulfate	mg/L	03/21/2013	N002	180			0	2.5	
Temperature	C	03/21/2013	N001	14.03			0		
Turbidity	NTU	03/21/2013	N001	22.7			0		
Uranium	mg/L	03/21/2013	0001	0.0019			0	0.0000029	
Uranium	mg/L	03/21/2013	N002	0.0019			0	0.0000029	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 05/22/2013

Location: 0940 SURFACE LOCATION S. bank San Juan River about 2500 ft E of US Hwy 666 bridge

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	0001	128			0		
Ammonia Total as N	mg/L	03/21/2013	0001	0.1	U		0	0.1	
Ammonia Total as N	mg/L	03/21/2013	N002	0.1	U		0	0.1	
Calcium	mg/L	03/21/2013	0001	72			0	0.012	
Calcium	mg/L	03/21/2013	N002	73			0	0.012	
Chloride	mg/L	03/21/2013	0001	19			0	1	
Chloride	mg/L	03/21/2013	N002	19			0	1	
Magnesium	mg/L	03/21/2013	0001	14			0	0.013	
Magnesium	mg/L	03/21/2013	N002	14			0	0.013	
Manganese	mg/L	03/21/2013	0001	0.017			0	0.00011	
Manganese	mg/L	03/21/2013	N002	0.057			0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	0001	0.53			0	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N002	0.52			0	0.01	
Oxidation Reduction Potential	mV	03/21/2013	N001	140			0		
pH	s.u.	03/21/2013	N001	8.59			0		
Potassium	mg/L	03/21/2013	0001	2.7			0	0.11	
Potassium	mg/L	03/21/2013	N002	2.9			0	0.11	
Selenium	mg/L	03/21/2013	0001	0.00071			0	0.000032	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 05/22/2013

Location: 0940 SURFACE LOCATION S. bank San Juan River about 2500 ft E of US Hwy 666 bridge

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Selenium	mg/L	03/21/2013	N002	0.00087			0	0.000032	
Sodium	mg/L	03/21/2013	0001	45			0	0.0066	
Sodium	mg/L	03/21/2013	N002	45			0	0.0066	
Specific Conductance	umhos/cm	03/21/2013	N001	690			0		
Strontium	mg/L	03/21/2013	0001	0.99			0	0.000078	
Strontium	mg/L	03/21/2013	N002	1			0	0.000078	
Sulfate	mg/L	03/21/2013	0001	190			0	2.5	
Sulfate	mg/L	03/21/2013	N002	190			0	2.5	
Temperature	C	03/21/2013	N001	14.5			0		
Turbidity	NTU	03/21/2013	N001	30.5			0		
Uranium	mg/L	03/21/2013	0001	0.0031			0	0.0000029	
Uranium	mg/L	03/21/2013	N002	0.0032			0	0.0000029	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 05/22/2013

Location: 0956 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	120			0		
Ammonia Total as N	mg/L	03/21/2013	0001	0.1	U		0	0.1	
Ammonia Total as N	mg/L	03/21/2013	N002	0.1	U		0	0.1	
Calcium	mg/L	03/21/2013	0001	75			0	0.012	
Calcium	mg/L	03/21/2013	N002	76			0	0.012	
Chloride	mg/L	03/21/2013	0001	18			0	1	
Chloride	mg/L	03/21/2013	N002	19			0	1	
Magnesium	mg/L	03/21/2013	0001	13			0	0.013	
Magnesium	mg/L	03/21/2013	N002	13			0	0.013	
Manganese	mg/L	03/21/2013	0001	0.019			0	0.00011	
Manganese	mg/L	03/21/2013	N002	0.072			0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	0001	0.48			0	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N002	0.46			0	0.01	
Oxidation Reduction Potential	mV	03/21/2013	N001	108			0		
pH	s.u.	03/21/2013	N001	8.26			0		
Potassium	mg/L	03/21/2013	0001	2.8			0	0.11	
Potassium	mg/L	03/21/2013	N002	3			0	0.11	
Selenium	mg/L	03/21/2013	0001	0.00068			0	0.000032	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 05/22/2013

Location: 0956 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Selenium	mg/L	03/21/2013	N002	0.00074			0	0.000032	
Sodium	mg/L	03/21/2013	0001	43			0	0.0066	
Sodium	mg/L	03/21/2013	N002	44			0	0.0066	
Specific Conductance	umhos/cm	03/21/2013	N001	636			0		
Strontium	mg/L	03/21/2013	0001	1			0	0.000078	
Strontium	mg/L	03/21/2013	N002	1			0	0.000078	
Sulfate	mg/L	03/21/2013	0001	180			0	2.5	
Sulfate	mg/L	03/21/2013	N002	180			0	2.5	
Temperature	C	03/21/2013	N001	19.82			0		
Turbidity	NTU	03/21/2013	N001	33.7			0		
Uranium	mg/L	03/21/2013	0001	0.0019			0	0.0000029	
Uranium	mg/L	03/21/2013	N002	0.0019			0	0.0000029	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 05/22/2013

Location: 0965 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	130			0		
Ammonia Total as N	mg/L	03/21/2013	0001	0.1	U		0	0.1	
Ammonia Total as N	mg/L	03/21/2013	N002	0.1	U		0	0.1	
Calcium	mg/L	03/21/2013	0001	74			0	0.012	
Calcium	mg/L	03/21/2013	N002	74			0	0.012	
Chloride	mg/L	03/21/2013	0001	18			0	1	
Chloride	mg/L	03/21/2013	N002	18			0	1	
Magnesium	mg/L	03/21/2013	0001	13			0	0.013	
Magnesium	mg/L	03/21/2013	N002	13			0	0.013	
Manganese	mg/L	03/21/2013	0001	0.011			0	0.00011	
Manganese	mg/L	03/21/2013	N002	0.056			0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	0001	0.49			0	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N002	0.49			0	0.01	
Oxidation Reduction Potential	mV	03/21/2013	N001	143.6			0		
pH	s.u.	03/21/2013	N001	8.56			0		
Potassium	mg/L	03/21/2013	0001	2.8			0	0.11	
Potassium	mg/L	03/21/2013	N002	2.8			0	0.11	
Selenium	mg/L	03/21/2013	0001	0.00081			0	0.000032	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 05/22/2013

Location: 0965 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Selenium	mg/L	03/21/2013	N002	0.00057			0	0.000032	
Sodium	mg/L	03/21/2013	0001	43			0	0.0066	
Sodium	mg/L	03/21/2013	N002	42			0	0.0066	
Specific Conductance	umhos/cm	03/21/2013	N001	725			0		
Strontium	mg/L	03/21/2013	0001	1			0	0.000078	
Strontium	mg/L	03/21/2013	N002	0.99			0	0.000078	
Sulfate	mg/L	03/21/2013	0001	180			0	2.5	
Sulfate	mg/L	03/21/2013	N002	180			0	2.5	
Temperature	C	03/21/2013	N001	16.67			0		
Turbidity	NTU	03/21/2013	N001	29.3			0		
Uranium	mg/L	03/21/2013	0001	0.0019			0	0.0000029	
Uranium	mg/L	03/21/2013	N002	0.0019			0	0.0000029	

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

REPORT DATE: 05/22/2013

Location: 1118 TREATMENT SYSTEM Sump - seep vault

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	0 - 0	560			0		
Ammonia Total as N	mg/L	03/19/2013	N001	0 - 0	0.1	U		0	0.1	
Calcium	mg/L	03/19/2013	N001	0 - 0	400			0	0.06	
Chloride	mg/L	03/19/2013	N001	0 - 0	240			0	20	
Magnesium	mg/L	03/19/2013	N001	0 - 0	540			0	0.065	
Manganese	mg/L	03/19/2013	N001	0 - 0	0.00084	B	U	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	0 - 0	44			0	0.5	
Oxidation Reduction Potential	mV	03/19/2013	N001	0 - 0	375			0		
pH	s.u.	03/19/2013	N001	0 - 0	7.1			0		
Potassium	mg/L	03/19/2013	N001	0 - 0	34			0	0.54	
Selenium	mg/L	03/19/2013	N001	0 - 0	0.13			0	0.0016	
Sodium	mg/L	03/19/2013	N001	0 - 0	1400			0	0.16	
Specific Conductance	umhos/cm	03/19/2013	N001	0 - 0	9305			0		
Strontium	mg/L	03/19/2013	N001	0 - 0	9.8			0	0.00039	
Sulfate	mg/L	03/19/2013	N001	0 - 0	5600			0	50	
Temperature	C	03/19/2013	N001	0 - 0	8.4			0		
Turbidity	NTU	03/19/2013	N001	0 - 0	8.98			0		
Uranium	mg/L	03/19/2013	N001	0 - 0	0.38			0	0.00015	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 05/22/2013

Location: 1203 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	119			0		
Ammonia Total as N	mg/L	03/20/2013	0001	0.1	U		0	0.1	
Ammonia Total as N	mg/L	03/20/2013	0002	0.1	U		0	0.1	
Ammonia Total as N	mg/L	03/20/2013	N002	0.1	U		0	0.1	
Calcium	mg/L	03/20/2013	0001	74			0	0.012	
Calcium	mg/L	03/20/2013	0002	74			0	0.012	
Calcium	mg/L	03/20/2013	N002	76			0	0.012	
Chloride	mg/L	03/20/2013	0001	18			0	1	
Chloride	mg/L	03/20/2013	0002	19			0	1	
Chloride	mg/L	03/20/2013	N002	19			0	1	
Magnesium	mg/L	03/20/2013	0001	13			0	0.013	
Magnesium	mg/L	03/20/2013	0002	13			0	0.013	
Magnesium	mg/L	03/20/2013	N002	13			0	0.013	
Manganese	mg/L	03/20/2013	0001	0.015		J	0	0.00011	
Manganese	mg/L	03/20/2013	0002	0.011		J	0	0.00011	
Manganese	mg/L	03/20/2013	N002	0.075			0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	0001	0.49			0	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	0002	0.49			0	0.01	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 05/22/2013

Location: 1203 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N002	0.47			0	0.01	
Oxidation Reduction Potential	mV	03/20/2013	N001	69.5			0		
pH	s.u.	03/20/2013	N001	7.98			0		
Potassium	mg/L	03/20/2013	0001	2.7			0	0.11	
Potassium	mg/L	03/20/2013	0002	2.7			0	0.11	
Potassium	mg/L	03/20/2013	N002	3			0	0.11	
Selenium	mg/L	03/20/2013	0001	0.00073			0	0.000032	
Selenium	mg/L	03/20/2013	0002	0.00079			0	0.000032	
Selenium	mg/L	03/20/2013	N002	0.00089			0	0.000032	
Sodium	mg/L	03/20/2013	0001	44			0	0.0066	
Sodium	mg/L	03/20/2013	0002	44			0	0.0066	
Sodium	mg/L	03/20/2013	N002	45			0	0.0066	
Specific Conductance	umhos/cm	03/20/2013	N001	654			0		
Strontium	mg/L	03/20/2013	0001	1			0	0.000078	
Strontium	mg/L	03/20/2013	0002	1			0	0.000078	
Strontium	mg/L	03/20/2013	N002	1			0	0.000078	
Sulfate	mg/L	03/20/2013	0001	180			0	2.5	
Sulfate	mg/L	03/20/2013	0002	180			0	2.5	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 05/22/2013

Location: 1203 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Sulfate	mg/L	03/20/2013	N002	190			0	2.5	
Temperature	C	03/20/2013	N001	7.83			0		
Turbidity	NTU	03/20/2013	N001	52			0		
Uranium	mg/L	03/20/2013	0001	0.0019			0	0.0000029	
Uranium	mg/L	03/20/2013	0002	0.0019			0	0.0000029	
Uranium	mg/L	03/20/2013	N002	0.0019			0	0.0000029	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 05/22/2013

Location: 1205 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	114			0		
Ammonia Total as N	mg/L	03/20/2013	0001	0.1	U		0	0.1	
Ammonia Total as N	mg/L	03/20/2013	N002	0.1	U		0	0.1	
Calcium	mg/L	03/20/2013	0001	73			0	0.012	
Calcium	mg/L	03/20/2013	N002	77			0	0.012	
Chloride	mg/L	03/20/2013	0001	19			0	1	
Chloride	mg/L	03/20/2013	N002	19			0	1	
Magnesium	mg/L	03/20/2013	0001	12			0	0.013	
Magnesium	mg/L	03/20/2013	N002	13			0	0.013	
Manganese	mg/L	03/20/2013	0001	0.0097			0	0.00011	
Manganese	mg/L	03/20/2013	N002	0.09			0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	0001	0.5			0	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N002	0.48			0	0.01	
Oxidation Reduction Potential	mV	03/20/2013	N001	8			0		
pH	s.u.	03/20/2013	N001	8.29			0		
Potassium	mg/L	03/20/2013	0001	2.6			0	0.11	
Potassium	mg/L	03/20/2013	N002	3			0	0.11	
Selenium	mg/L	03/20/2013	0001	0.00075			0	0.000032	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)

REPORT DATE: 05/22/2013

Location: 1205 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Selenium	mg/L	03/20/2013	N002	0.00092			0	0.000032	
Sodium	mg/L	03/20/2013	0001	43			0	0.0066	
Sodium	mg/L	03/20/2013	N002	44	E	J	0	0.0066	
Specific Conductance	umhos/cm	03/20/2013	N001	649			0		
Strontium	mg/L	03/20/2013	0001	1			0	0.000078	
Strontium	mg/L	03/20/2013	N002	1			0	0.000078	
Sulfate	mg/L	03/20/2013	0001	180			0	2.5	
Sulfate	mg/L	03/20/2013	N002	180			0	2.5	
Temperature	C	03/20/2013	N001	11.33			0		
Turbidity	NTU	03/20/2013	N001	32.6			0		
Uranium	mg/L	03/20/2013	0001	0.0018			0	0.0000029	
Uranium	mg/L	03/20/2013	N002	0.0019			0	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.

**Surface Water Quality Data
Terrace Locations**

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Surface Water Quality Data by Location (USEE102) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 05/22/2013

Location: 0662 SURFACE LOCATION Bob Lee Wash, just below outflow ditch confluence

Parameter	Units	Sample Date	ID	Result	Qualifiers			Detection Limit	Uncertainty
					Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2013	N001	64			0		
Ammonia Total as N	mg/L	03/21/2013	N001	0.1	U		0	0.1	
Calcium	mg/L	03/21/2013	N001	110			0	0.06	
Chloride	mg/L	03/21/2013	N001	58			0	10	
Magnesium	mg/L	03/21/2013	N001	14			0	0.065	
Manganese	mg/L	03/21/2013	N001	0.0043	B		0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2013	N001	0.37			0	0.01	
Oxidation Reduction Potential	mV	03/21/2013	N001	170			0		
pH	s.u.	03/21/2013	N001	8.73			0		
Potassium	mg/L	03/21/2013	N001	8.5			0	0.54	
Selenium	mg/L	03/21/2013	N001	0.000095	B		0	0.000032	
Sodium	mg/L	03/21/2013	N001	740			0	0.033	
Specific Conductance	umhos/cm	03/21/2013	N001	4050			0		
Strontium	mg/L	03/21/2013	N001	12			0	0.00039	
Sulfate	mg/L	03/21/2013	N001	2000			0	25	
Temperature	C	03/21/2013	N001	17.4			0		
Turbidity	NTU	03/21/2013	N001	10.4			0		
Uranium	mg/L	03/21/2013	N001	0.00034			0	0.0000029	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 05/22/2013

Location: 0889 SURFACE LOCATION Many Devils Wash, just below knickpoint

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/19/2013	N001	575			0		
Ammonia Total as N	mg/L	03/19/2013	N001	0.1	U		0	0.1	
Calcium	mg/L	03/19/2013	N001	480			0	0.6	
Chloride	mg/L	03/19/2013	N001	1600			0	100	
Magnesium	mg/L	03/19/2013	N001	1600			0	0.65	
Manganese	mg/L	03/19/2013	N001	0.0057	U		0	0.0057	
Nitrate + Nitrite as Nitrogen	mg/L	03/19/2013	N001	720			0	5	
Oxidation Reduction Potential	mV	03/19/2013	N001	160			0		
pH	s.u.	03/19/2013	N001	8.1			0		
Potassium	mg/L	03/19/2013	N001	43	B		0	5.4	
Selenium	mg/L	03/19/2013	N001	1.7			0	0.0016	
Sodium	mg/L	03/19/2013	N001	7600			0	0.66	
Specific Conductance	umhos/cm	03/19/2013	N001	36520			0		
Strontium	mg/L	03/19/2013	N001	11			0	0.0039	
Sulfate	mg/L	03/19/2013	N001	20000			0	250	
Temperature	C	03/19/2013	N001	13.2			0		
Turbidity	NTU	03/19/2013	N001	37.2			0		
Uranium	mg/L	03/19/2013	N001	0.16			0	0.00015	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 05/22/2013

Location: 1215 SURFACE LOCATION Evaporation Pond

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/18/2013	0001	680			0		
Ammonia Total as N	mg/L	03/18/2013	0001	30			0	1	
Ammonia Total as N	mg/L	03/18/2013	0002	31			0	1	
Calcium	mg/L	03/18/2013	0001	550		J	0	1.2	
Calcium	mg/L	03/18/2013	0002	380		J	0	0.06	
Chloride	mg/L	03/18/2013	0001	2100			0	100	
Chloride	mg/L	03/18/2013	0002	2100			0	100	
Magnesium	mg/L	03/18/2013	0001	5800		J	0	1.3	
Magnesium	mg/L	03/18/2013	0002	4700		J	0	0.65	
Manganese	mg/L	03/18/2013	0001	0.6		J	0	0.011	
Manganese	mg/L	03/18/2013	0002	0.45		J	0	0.00057	
Nitrate + Nitrite as Nitrogen	mg/L	03/18/2013	0001	1600			0	10	
Nitrate + Nitrite as Nitrogen	mg/L	03/18/2013	0002	1500			0	10	
Oxidation Reduction Potential	mV	03/18/2013	N001	282			0		
pH	s.u.	03/18/2013	N001	8.14			0		
Potassium	mg/L	03/18/2013	0001	420			0	11	
Potassium	mg/L	03/18/2013	0002	480			0	0.54	
Selenium	mg/L	03/18/2013	0001	2.1			0	0.0065	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 05/22/2013

Location: 1215 SURFACE LOCATION Evaporation Pond

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Selenium	mg/L	03/18/2013	0002	2.3			0	0.0016	
Sodium	mg/L	03/18/2013	0001	11000			0	0.66	
Sodium	mg/L	03/18/2013	0002	9400			0	1.6	
Specific Conductance	umhos/cm	03/18/2013	N001	47150			0		
Strontium	mg/L	03/18/2013	0001	14		J	0	0.0078	
Strontium	mg/L	03/18/2013	0002	9.8		J	0	0.00039	
Sulfate	mg/L	03/18/2013	0001	35000			0	250	
Sulfate	mg/L	03/18/2013	0002	36000	N		0	250	
Temperature	C	03/18/2013	N001	16			0		
Turbidity	NTU	03/18/2013	N001	15.9			0		
Uranium	mg/L	03/18/2013	0001	2.8			0	0.00058	
Uranium	mg/L	03/18/2013	0002	2.9			0	0.00015	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 05/22/2013

Location: 1219 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/18/2013	N001	215			0		
Ammonia Total as N	mg/L	03/18/2013	N001	0.1	U		0	0.1	
Calcium	mg/L	03/18/2013	N001	580			0	0.12	
Chloride	mg/L	03/18/2013	N001	18			0	1	
Magnesium	mg/L	03/18/2013	N001	120			0	0.013	
Manganese	mg/L	03/18/2013	N001	0.011			0	0.00011	
Nitrate + Nitrite as Nitrogen	mg/L	03/18/2013	N001	9.1			0	0.1	
Oxidation Reduction Potential	mV	03/18/2013	N001	99.9			0		
pH	s.u.	03/18/2013	N001	7.65			0		
Potassium	mg/L	03/18/2013	N001	9.2			0	0.11	
Selenium	mg/L	03/18/2013	N001	0.052			0	0.00032	
Sodium	mg/L	03/18/2013	N001	110			0	0.0066	
Specific Conductance	umhos/cm	03/18/2013	N001	2883			0		
Strontium	mg/L	03/18/2013	N001	5.1			0	0.000078	
Sulfate	mg/L	03/18/2013	N001	1800			0	25	
Temperature	C	03/18/2013	N001	12.22			0		
Turbidity	NTU	03/18/2013	N001	8.77			0		
Uranium	mg/L	03/18/2013	N001	0.026			0	0.000029	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 05/22/2013

Location: 1220 SURFACE LOCATION Seep at the Eagles Nest Arroyo east of town

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Calcium	mg/L	03/19/2013	N001	320			0	0.012	
Magnesium	mg/L	03/19/2013	N001	82			0	0.013	
Manganese	mg/L	03/19/2013	N001	0.37			0	0.00011	
Potassium	mg/L	03/19/2013	N001	8.2			0	0.11	
Selenium	mg/L	03/19/2013	N001	0.078			0	0.00016	
Sodium	mg/L	03/19/2013	N001	82			0	0.0066	
Strontium	mg/L	03/19/2013	N001	2.9			0	0.000078	
Uranium	mg/L	03/19/2013	N001	0.023			0	0.000015	

Surface Water Quality Data by Location (USEE102) FOR SITE SHP02, Shiprock Disposal Site (Terrace)

REPORT DATE: 05/22/2013

Location: 1221 SURFACE LOCATION Many Devils Wash, 10 feet up from the river.

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/20/2013	N001	520			0		
Ammonia Total as N	mg/L	03/20/2013	N001	0.1	U		0	0.1	
Calcium	mg/L	03/20/2013	N001	390			0	0.6	
Chloride	mg/L	03/20/2013	N001	1900			0	100	
Magnesium	mg/L	03/20/2013	N001	1500			0	0.65	
Manganese	mg/L	03/20/2013	N001	0.0099	B		0	0.0057	
Nitrate + Nitrite as Nitrogen	mg/L	03/20/2013	N001	740			0	5	
Oxidation Reduction Potential	mV	03/20/2013	N001	280			0		
pH	s.u.	03/20/2013	N001	8.07			0		
Potassium	mg/L	03/20/2013	N001	41	BN	J	0	5.4	
Selenium	mg/L	03/20/2013	N001	1.6			0	0.0032	
Sodium	mg/L	03/20/2013	N001	7700			0	0.66	
Specific Conductance	umhos/cm	03/20/2013	N001	34700			0		
Strontium	mg/L	03/20/2013	N001	9.1			0	0.0039	
Sulfate	mg/L	03/20/2013	N001	22000			0	250	
Temperature	C	03/20/2013	N001	1.6			0		
Turbidity	NTU	03/20/2013	N001	16.4			0		
Uranium	mg/L	03/20/2013	N001	0.18			0	0.00029	

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

QA QUALIFIER:

- # Validated according to quality assurance guidelines.

Equipment Blank Data

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BLANKS REPORT

LAB: PARAGON/ALS LABORATORY GROUP (Fort Collins, CO)

RIN: 13035181

Report Date: 05/22/2013

Parameter	Site Code	Location ID	Sample		Units	Result	Qualifiers		Detection Limit	Uncertainty	Sample Type
			Date	ID			Lab	Data			
Ammonia Total as N	SHP01	0999	03/20/2013	N001	mg/L	0.1	U		0.1		E
Calcium	SHP01	0999	03/20/2013	N001	mg/L	0.027	B	U	0.012		E
Chloride	SHP01	0999	03/20/2013	N001	mg/L	0.2	U		0.2		E
Magnesium	SHP01	0999	03/20/2013	N001	mg/L	0.013	U		0.013		E
Manganese	SHP01	0999	03/20/2013	N001	mg/L	0.00011	U		0.00011		E
Nitrate + Nitrite as Nitrogen	SHP01	0999	03/20/2013	N001	mg/L	0.01	U		0.01		E
Potassium	SHP01	0999	03/20/2013	N001	mg/L	0.11	U		0.11		E
Selenium	SHP01	0999	03/20/2013	N001	mg/L	0.000057	B	U	0.000032		E
Sodium	SHP01	0999	03/20/2013	N001	mg/L	0.0066	U		0.0066		E
Strontium	SHP01	0999	03/20/2013	N001	mg/L	0.000078	U		0.000078		E
Sulfate	SHP01	0999	03/20/2013	N001	mg/L	0.5	U		0.5		E
Uranium	SHP01	0999	03/20/2013	N001	mg/L	0.000017		U	0.0000029		E

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.	

SAMPLE TYPES:

E Equipment Blank.

**Static Water Level Data
Floodplain Locations**

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STATIC WATER LEVELS (USEE700) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 05/22/2013

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)
0608		4893.35	03/20/2013	11:40:59	6.54	4886.81
0610		4895.7	03/20/2013	14:45:23	10.05	4885.65
0611		4895.62	03/20/2013	15:15:17	9.88	4885.74
0612		4893.35	03/20/2013	15:50:21	7.55	4885.8
0614		4892.79	03/21/2013	08:45:33	7.77	4885.02
0615		4892.23	03/21/2013	12:50:51	8.49	4883.74
0617		4891.9	03/19/2013	16:45:00	7.69	4884.21
0618		4891.51	03/19/2013	17:00:53	7.27	4884.24
0619		4892.19	03/21/2013	14:20:45	7.36	4884.83
0622		4890.06	03/21/2013	15:05:10	4.92	4885.14
0623		4891.19	03/19/2013	17:25:01	6.12	4885.07
0625		4891.23	03/19/2013	17:45:05	6.08	4885.15
0626		4891.4	03/21/2013	15:10:49	5.69	4885.71
0628		4889.87	03/21/2013	15:20:34	3.94	4885.93
0630		4887.62	03/19/2013	09:40:10	1.92	4885.7
0734		4886.55	03/19/2013	10:20:49	6.68	4879.87
0735		4895.85	03/18/2013	16:20:12	7.8	4888.05
0736		4887.99	03/19/2013	13:20:02	6.36	4881.63
0766		4892.55	03/21/2013	11:50:10	11.04	4881.51
0768		4892.33	03/21/2013	14:40:06	7.34	4884.99
0773		4894.87	03/20/2013	13:35:15	8.97	4885.9
0775		4892.2	03/21/2013	13:40:05	8.19	4884.01
0779		4893.86	03/19/2013	16:15:59	10.5	4883.36
0782R		4884.75	03/19/2013	14:50:30	7.82	4876.93
0783R		4884.09	03/19/2013	15:25:39	7.6	4876.49
0792		4891.52	03/21/2013	14:35:19	7.05	4884.47
0793		4891.05	03/21/2013	11:10:31	7	4884.05
0797		4908.04	03/20/2013	14:50:27	8.85	4899.19

STATIC WATER LEVELS (USEE700) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 05/22/2013

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)
0798		4891.55	03/21/2013	14:00:52	7.41	4884.14
0850	B	4907.51	03/20/2013	15:55:04	8.54	4898.97
0853		4891.41	03/20/2013	17:20:00	7.55	4883.86
0854		4890.09	03/21/2013	11:20:48	8.16	4881.93
0855		4888.18	03/19/2013	11:50:41	5.26	4882.92
0856		4887.57	03/19/2013	11:20:26	6.9	4880.67
0857		4894.02	03/21/2013	13:25:47	10.5	4883.52
0862		4893.83	03/20/2013	11:53:00	90.08	4803.75
0863		4893	03/20/2013	11:36:00	79.97	4813.03
1000		4892.17	03/21/2013	08:39:00	7.59	4884.58
1001		4892.44	03/21/2013	08:36:00	15.7	4876.74
1008		4890.8	03/21/2013	10:55:38	8.31	4882.49
1009		4892.1	03/20/2013	17:50:15	8.09	4884.01
1062		4892.51	03/20/2013	11:35:00	8.13	4884.38
1105	O	4892.4	03/21/2013	12:30:44	8.45	4883.95
1111		4889.85	03/21/2013	09:45:00	7.62	4882.23
1112		4890.01	03/21/2013	09:15:09	7.3	4882.71
1113		4892	03/20/2013	14:10:00	5.65	4886.35
1114		4892.86	03/20/2013	11:15:32	5.7	4887.16
1115		4895.59	03/20/2013	09:25:19	8.47	4887.12
1117		4896.7	03/18/2013	17:40:52	9.28	4887.42
1128		4897.63	03/18/2013	18:05:31	10.33	4887.3
1132		4894.5	03/20/2013	08:50:25	7.26	4887.24
1134		4895.88	03/20/2013	09:55:12	8.68	4887.2
1135		4890.71	03/19/2013	14:30:43	8.75	4881.96
1136		4892.47	03/19/2013	15:40:30	9.71	4882.76
1137		4891.3	03/21/2013	13:00:55	9.7	4881.6
1138		4891.48	03/21/2013	12:35:35	9.82	4881.66

STATIC WATER LEVELS (USEE700) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 05/22/2013

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)
1139		4890.44	03/21/2013	12:10:55	8.72	4881.72
1140		4891.53	03/21/2013	10:15:45	8.75	4882.78
1141		4892.48	03/21/2013	10:45:10	8.97	4883.51
1142		4894.34	03/20/2013	16:20:10	9.94	4884.4
1143		4888.07	03/19/2013	14:00:40	6.62	4881.45

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

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**Static Water Level Data
Terrace Locations**

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STATIC WATER LEVELS (UUSEE700) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 05/22/2013

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0600		4955.87	03/20/2013	12:10:25	34.09	4921.78	
0602		4956.89	03/21/2013	09:25:30	20.16	4936.73	
0603		4978.62	03/19/2013	17:10:41	31.88	4946.74	
0604		4995.87	03/20/2013	16:45:54	56.29	4939.58	
0725		4908.58	03/21/2013	11:55:41	13.55	4895.03	
0726		4939.95	03/21/2013	11:00:08	26.38	4913.57	
0727		4940.65	03/21/2013	09:20:00	7.2	4933.45	
0728		4964.46	03/20/2013	17:50:31	24.69	4939.77	
0730		4977.75	03/19/2013	17:40:19	37.15	4940.6	
0731		4972.15	03/20/2013	10:05:07	24.99	4947.16	
0800		4995.76	03/20/2013	12:00:00			D
0801		4995.29	03/20/2013	12:10:00			D
0802		4996.01	03/20/2013	12:20:00			D
0803		4994.4	03/20/2013	12:30:00			D
0812		5004.98	03/20/2013	16:20:02	60.86	4944.12	
0813		4984.37	03/20/2013	17:25:02	43.3	4941.07	
0814		4968.12	03/20/2013	17:15:08	32.11	4936.01	
0815		4953.67	03/21/2013	08:20:43	26.35	4927.32	
0816		4937.92	03/21/2013	09:00:15			B
0817		4957.34	03/21/2013	09:00:16	19	4938.34	
0819		4955.76	03/21/2013	10:05:56	20.24	4935.52	
0820		4954.95	03/20/2013	11:15:53	149.61	4805.34	
0822		4954.42	03/20/2013	10:55:44	146.79	4807.63	
0823		4957.65	03/20/2013	14:06:00			D
0824		4958.21	03/20/2013	14:55:20	190.7	4767.51	
0825		4958.68	03/20/2013	14:30:20	148.66	4810.02	
0826		4950.73	03/21/2013	10:35:34	17.62	4933.11	
0827		4946.92	03/20/2013	10:30:06	26.85	4920.07	

STATIC WATER LEVELS (UUSEE700) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 05/22/2013

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0828		4957.43	03/21/2013	12:15:12	21.25	4936.18	
0829		4941.94	03/21/2013	09:32:00			D
0830		4960.77	03/20/2013	15:50:54	17.33	4943.44	
0833		4940.52	03/20/2013	10:15:48	29.52	4911	
0835		4930.48	03/20/2013	09:30:25	22.45	4908.03	
0836		4901.74	03/19/2013	17:10:33	31.91	4869.83	
0837		4889.54	03/19/2013	16:40:39	22.97	4866.57	
0838		4937.7	03/19/2013	18:00:33	30.75	4906.95	
0841		4984.05	03/20/2013	12:40:55	45.13	4938.92	
0843		4883.56	03/19/2013	16:05:58	15.29	4868.27	
0844		4948.46	03/20/2013	11:00:05	32.21	4916.25	
0848		4949.91	03/19/2013	10:15:48	44.85	4905.06	
1002		4957.63	03/20/2013	13:35:00			D
1003		4957.84	03/20/2013	13:36:00			D
1004		4957.61	03/20/2013	13:37:00			B
1007		4962.01	03/20/2013	15:10:47	44.63	4917.38	
1011		4945.96	03/20/2013	10:19:00			D
1048		4921.35	03/19/2013	15:00:37	5.41	4915.94	
1049		4923.89	03/19/2013	14:30:34	6.71	4917.18	
1057		4984.83	03/19/2013	16:30:01	39.59	4945.24	
1058		4973.58	03/19/2013	15:55:55	28.41	4945.17	
1059		4970.52	03/19/2013	15:35:26	23.83	4946.69	
1067		4930.77	03/20/2013	12:00:00			D
1068		4927.97	03/21/2013	10:00:00	7.62	4920.35	
1069		4922.62	03/21/2013	09:52:00	6.41	4916.21	
1074		4959.52	03/20/2013	15:25:29	34	4925.52	
1079		4925.22	03/19/2013	13:10:41	20.92	4904.3	
DM7		4974.44	03/19/2013	17:19:00			D

STATIC WATER LEVELS (USEE700) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 05/22/2013

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
MW1		4955.64	03/20/2013	14:00:09	51.63	4904.01	

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

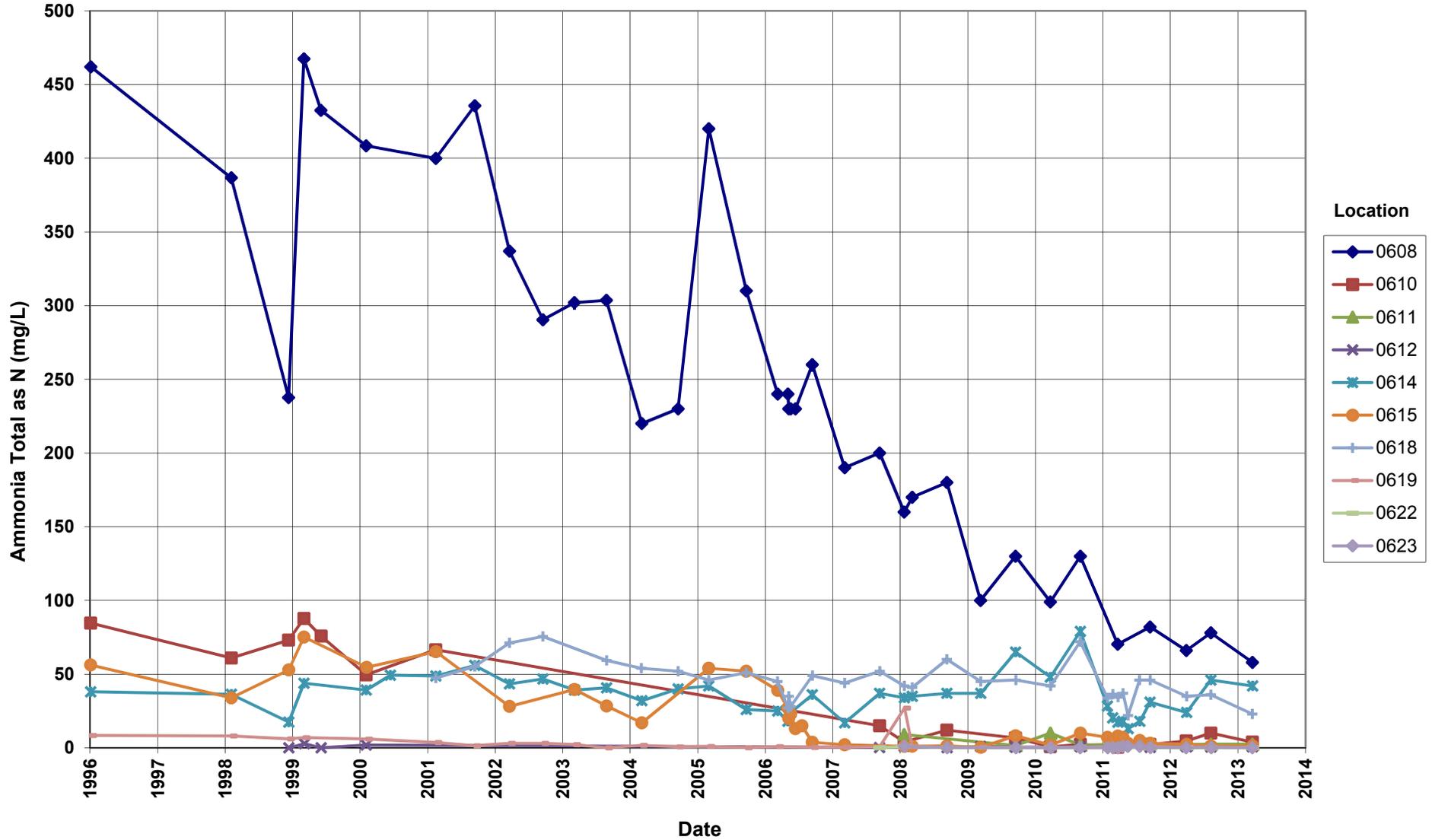
WATER LEVEL FLAGS: D Dry F Flowing B Below top of pump

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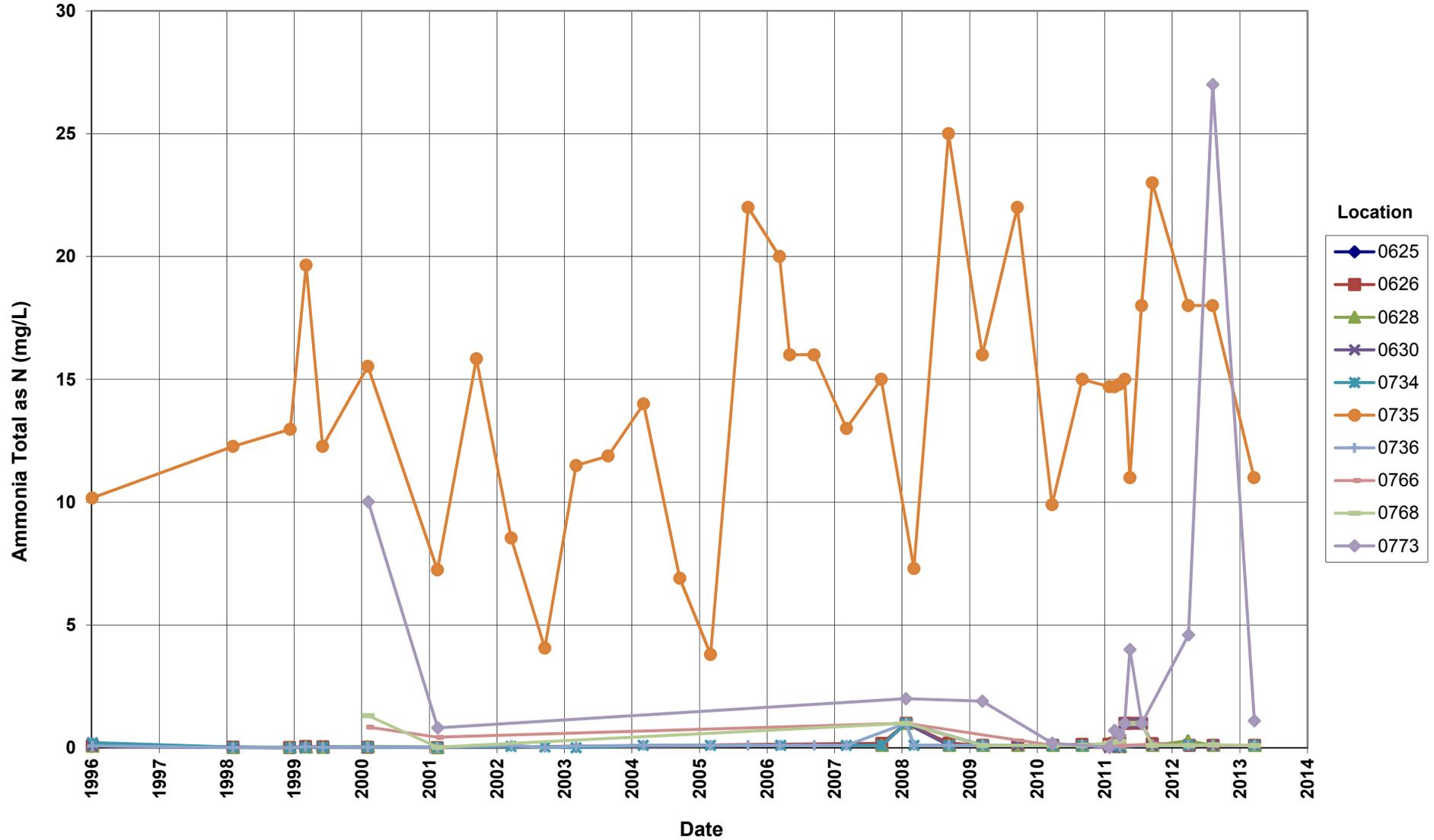
**Time-Concentration Graphs
Floodplain Groundwater Locations**

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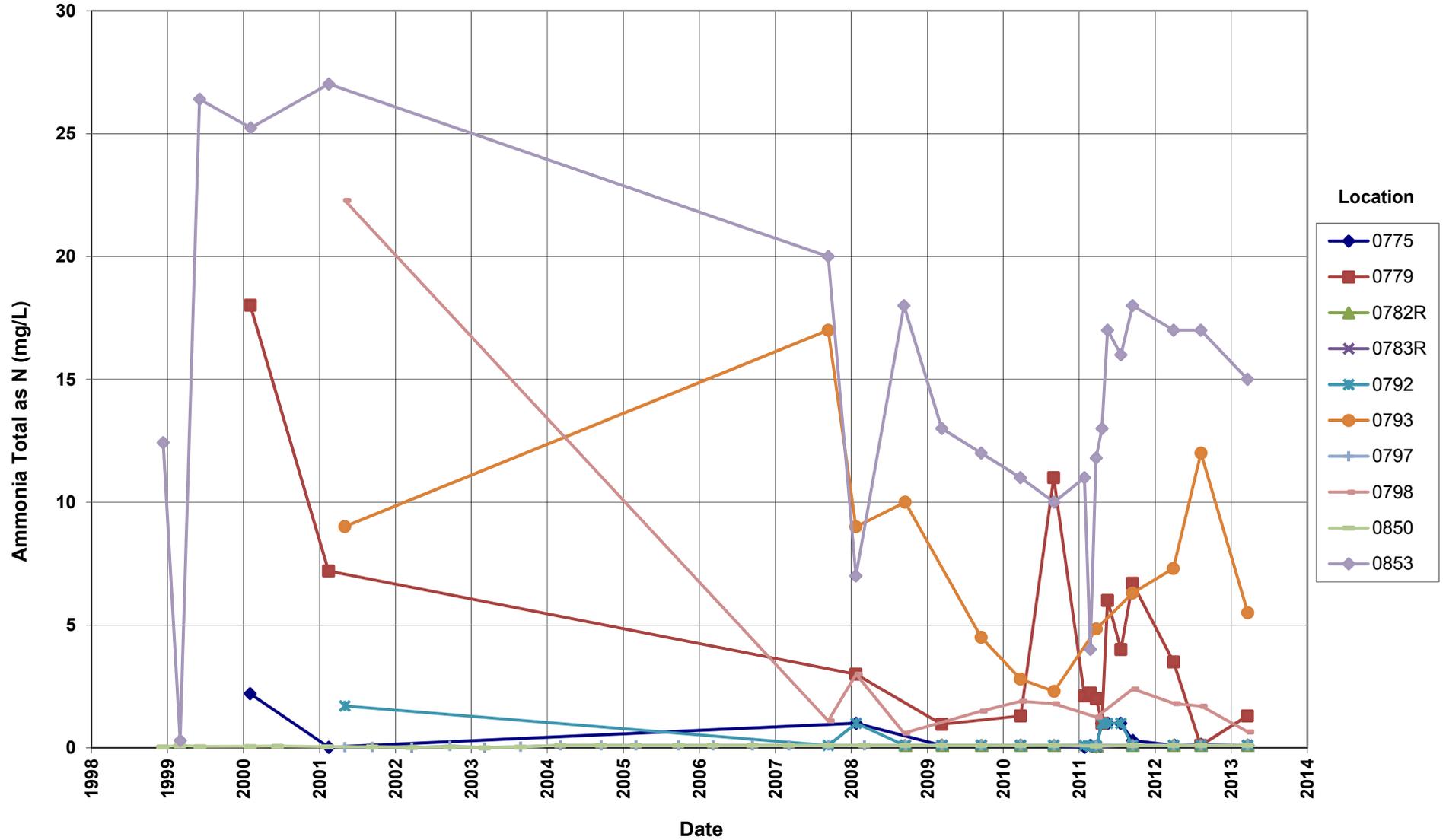
Shiprock Disposal Site (Floodplain) Ammonia Total as N Concentration



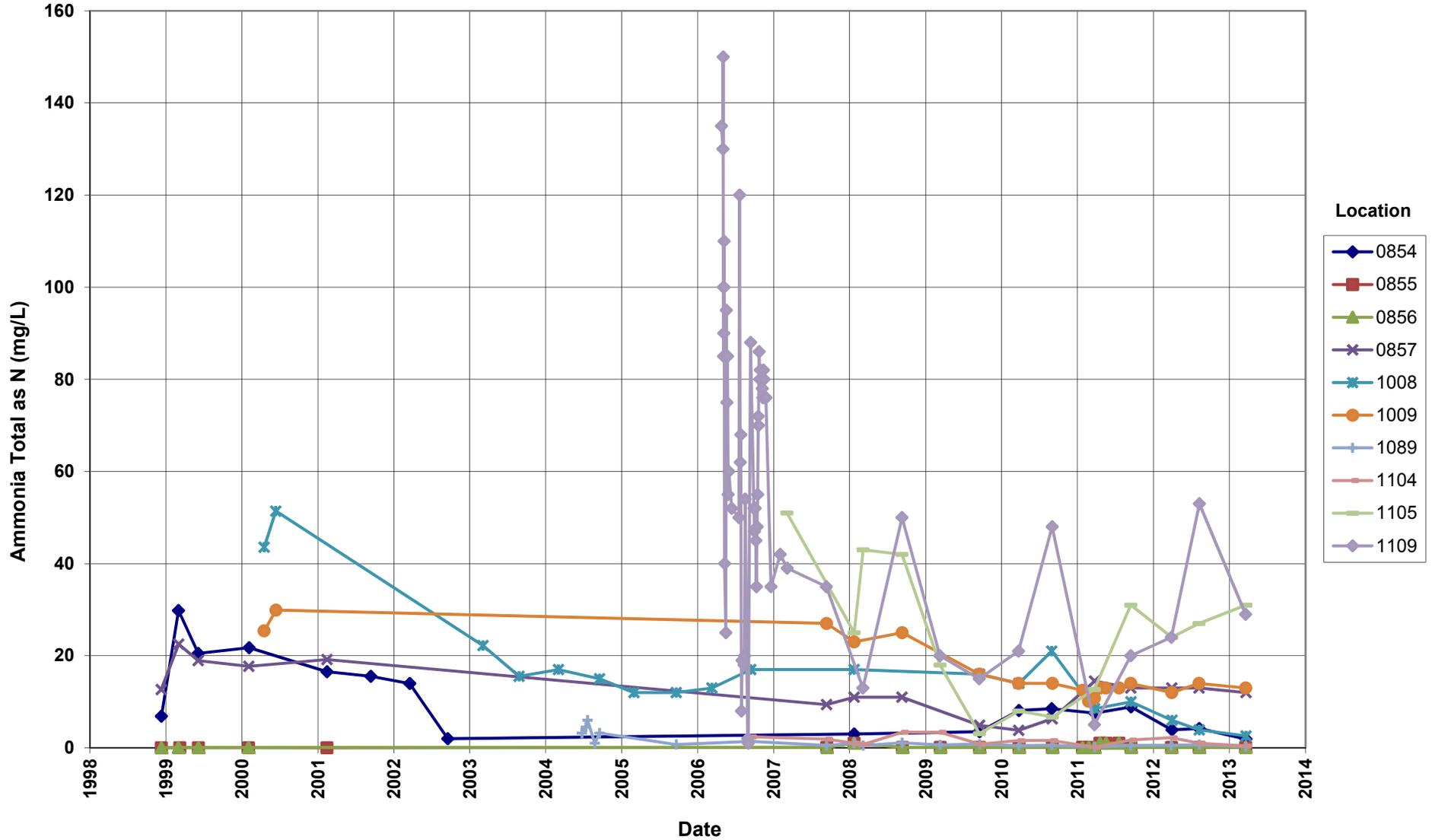
Shiprock Disposal Site (Floodplain) Ammonia Total as N Concentration



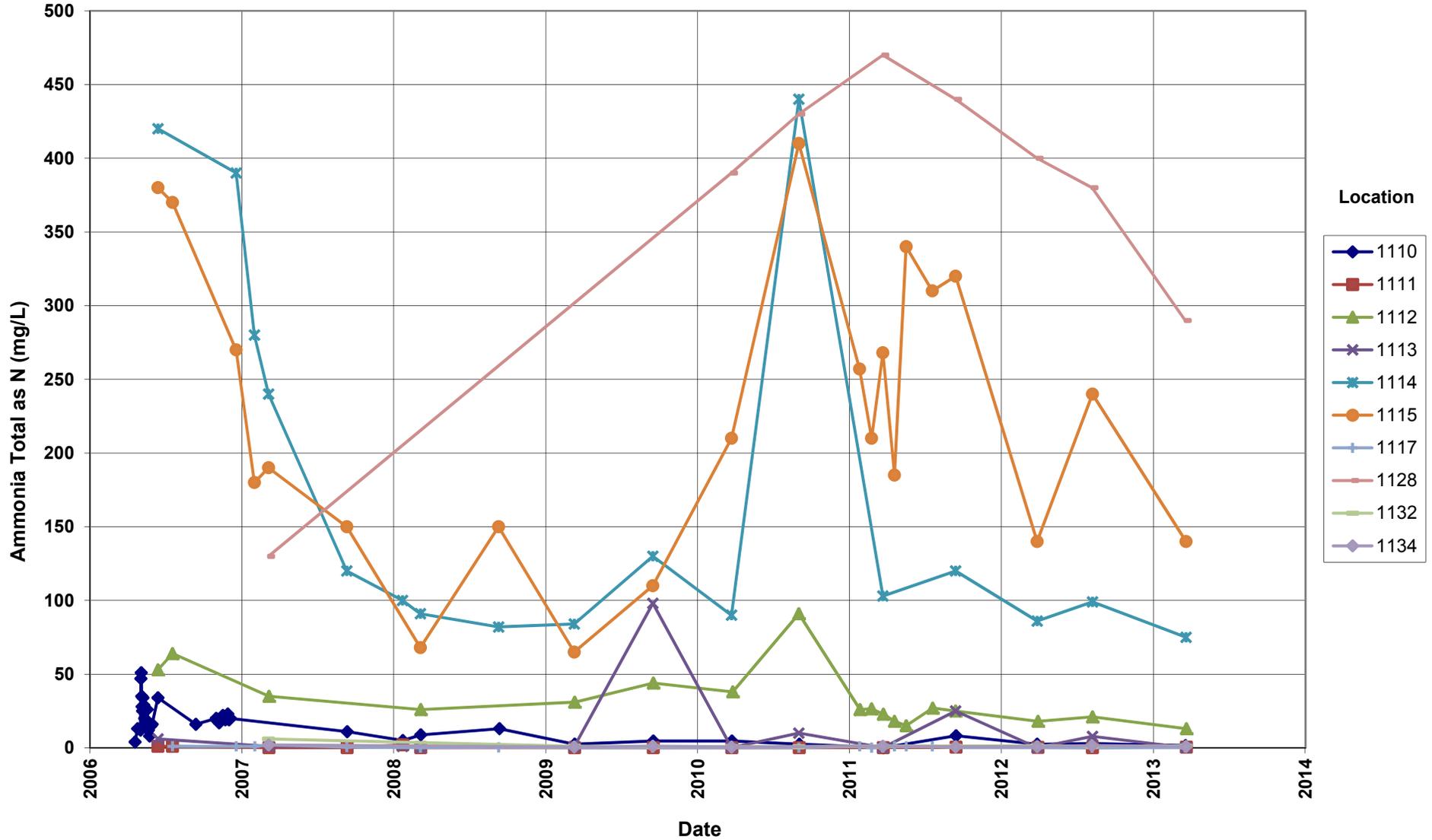
Shiprock Disposal Site (Floodplain) Ammonia Total as N Concentration



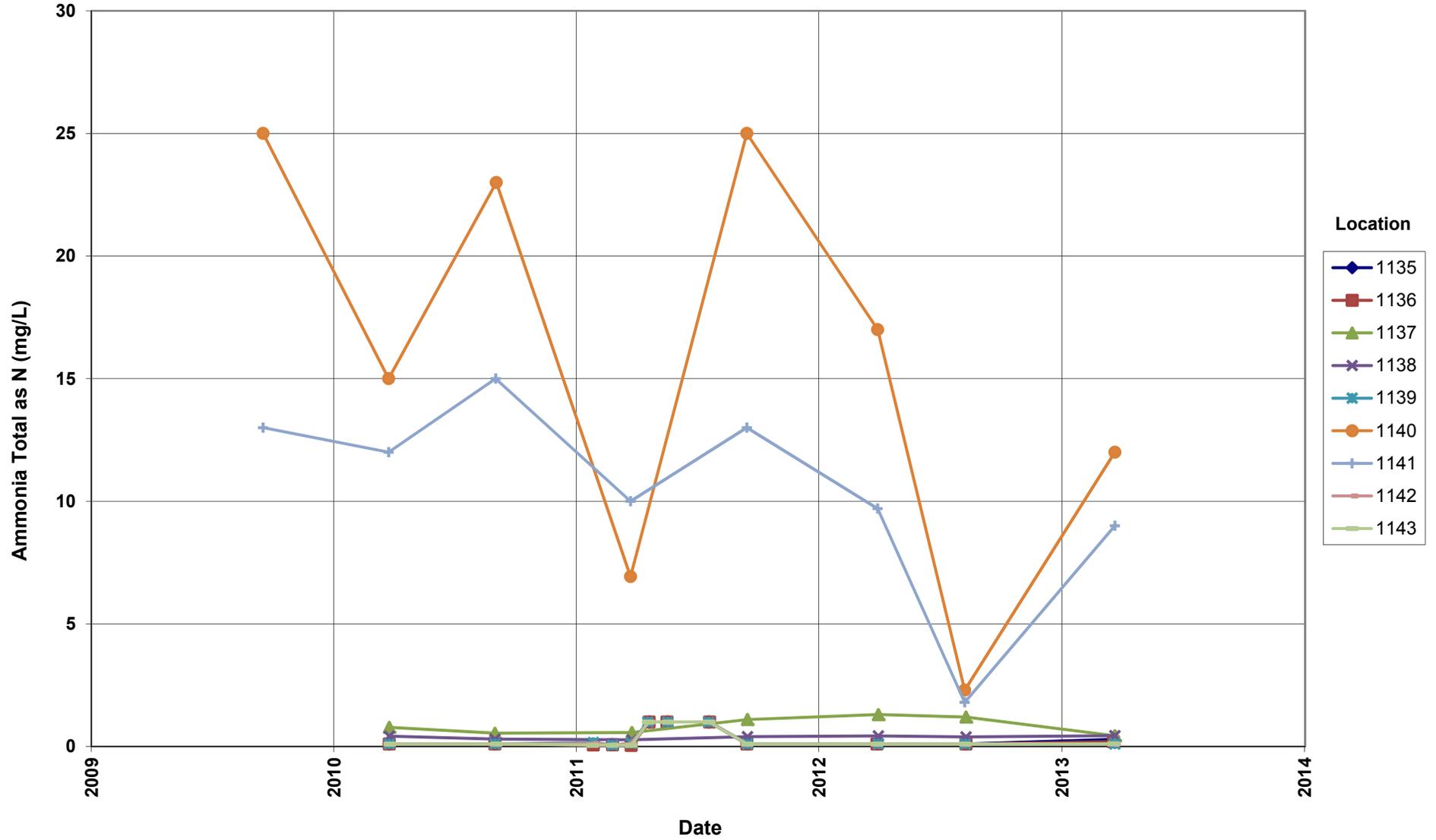
Shiprock Disposal Site (Floodplain) Ammonia Total as N Concentration



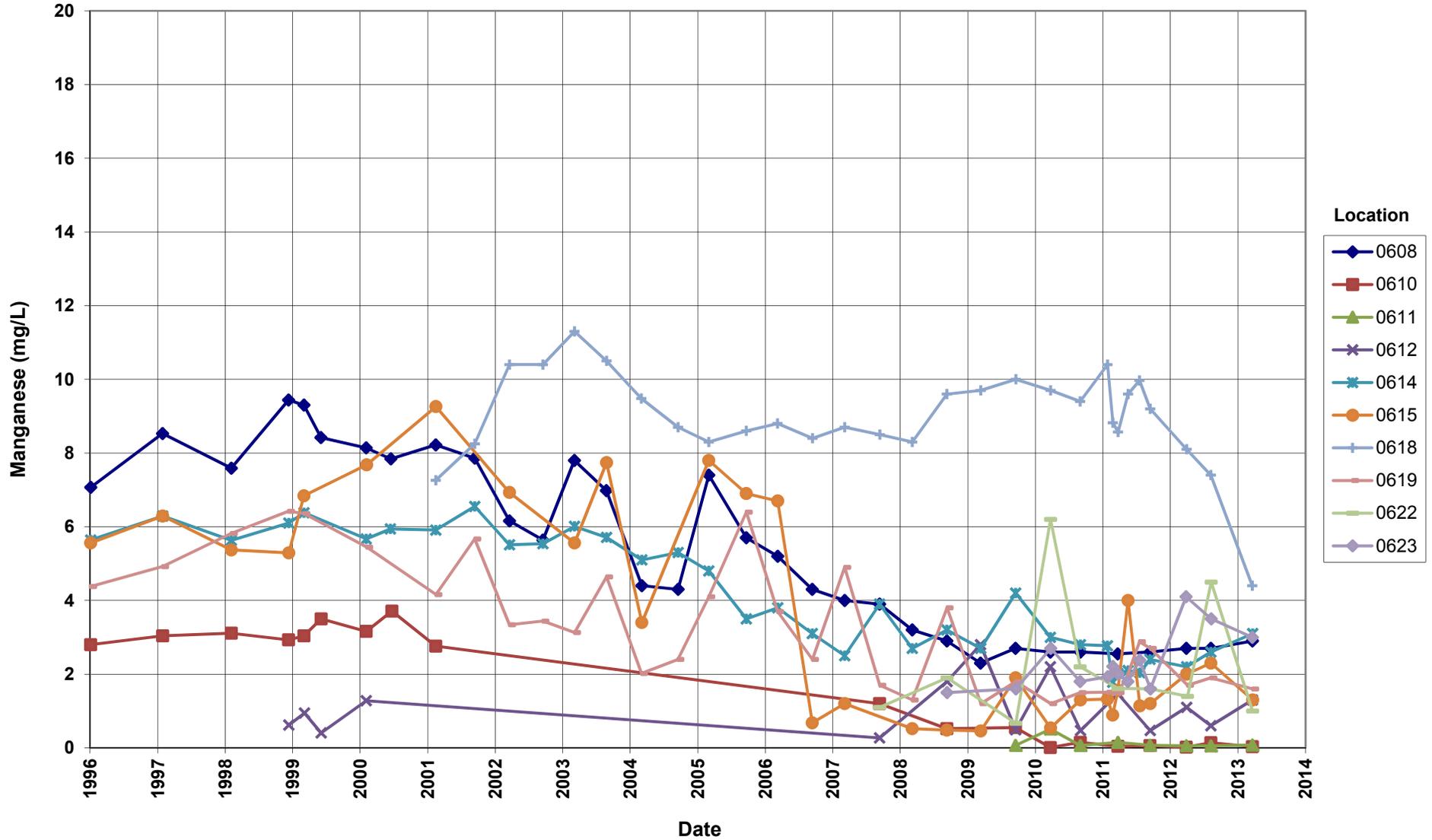
Shiprock Disposal Site (Floodplain) Ammonia Total as N Concentration



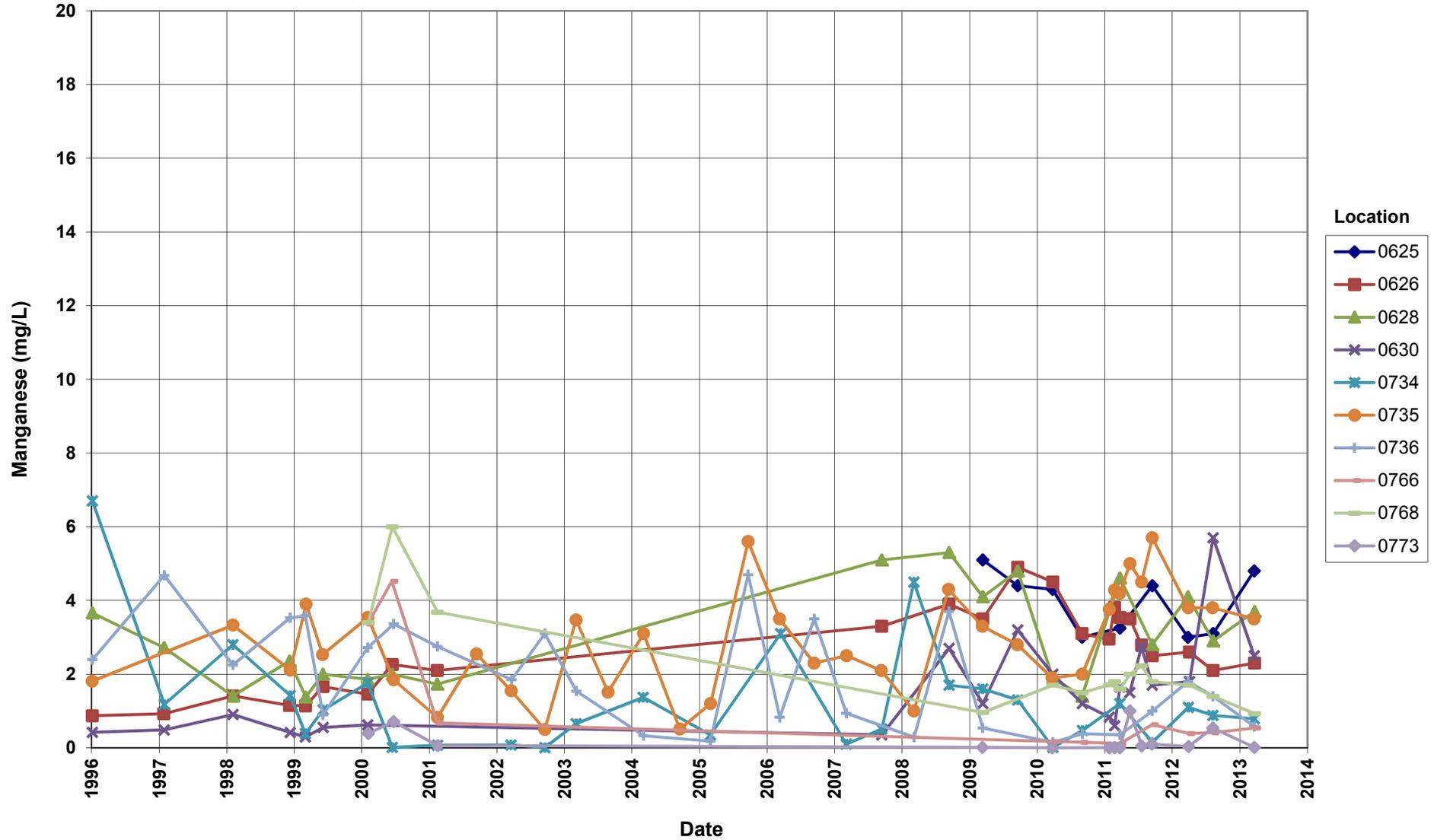
Shiprock Disposal Site (Floodplain) Ammonia Total as N Concentration



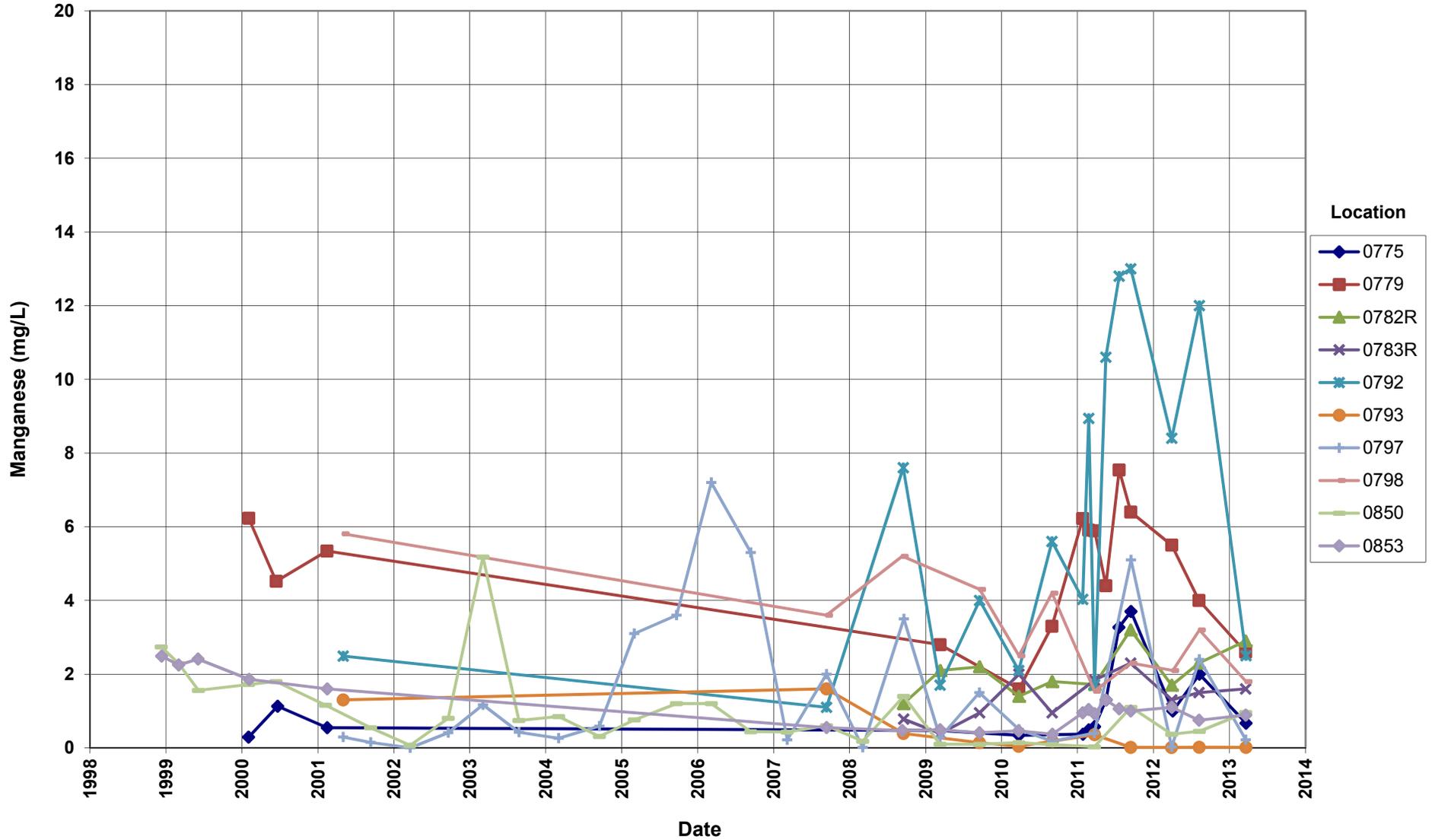
Shiprock Disposal Site (Floodplain) Manganese Concentration



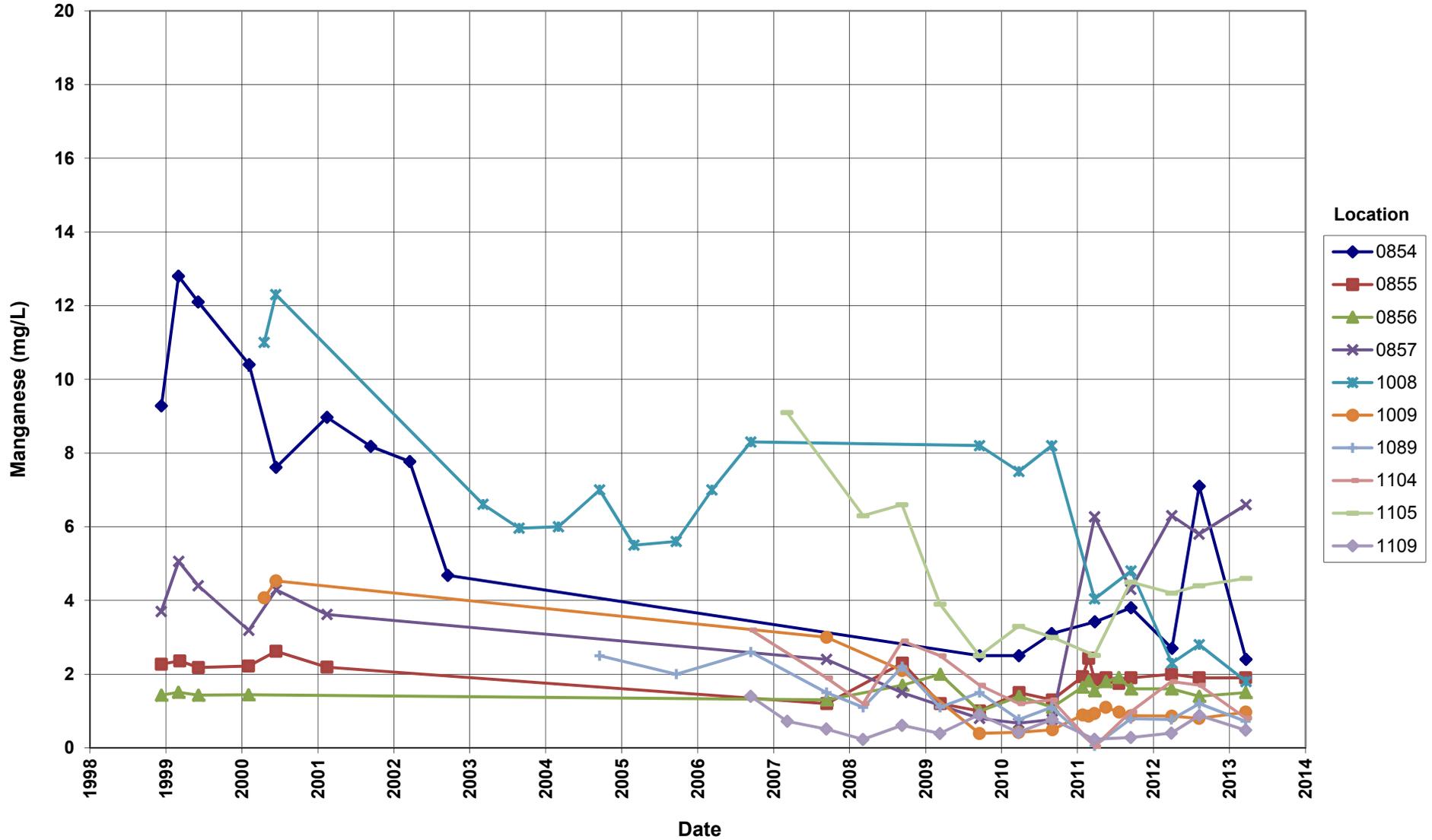
Shiprock Disposal Site (Floodplain) Manganese Concentration



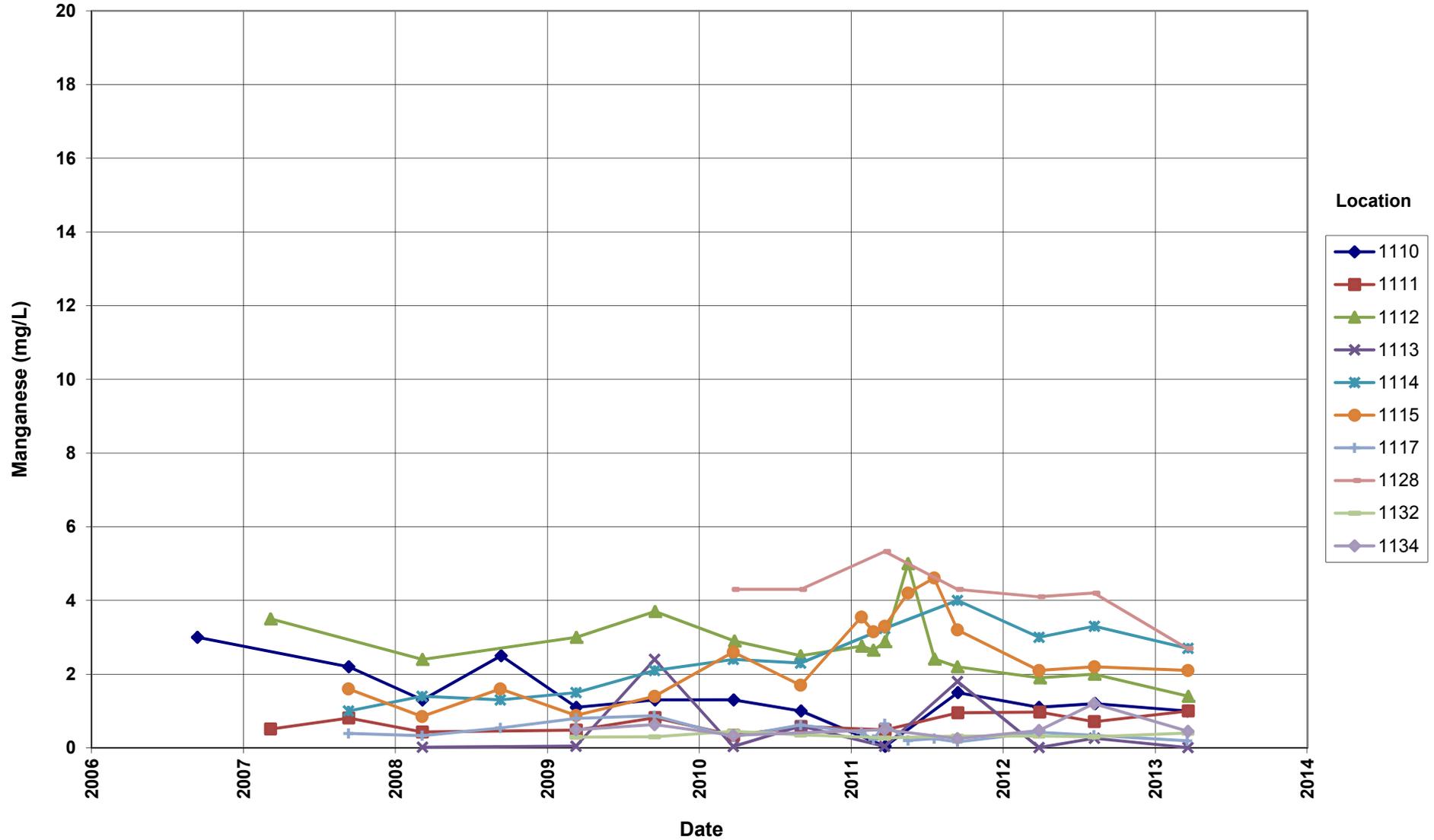
Shiprock Disposal Site (Floodplain) Manganese Concentration



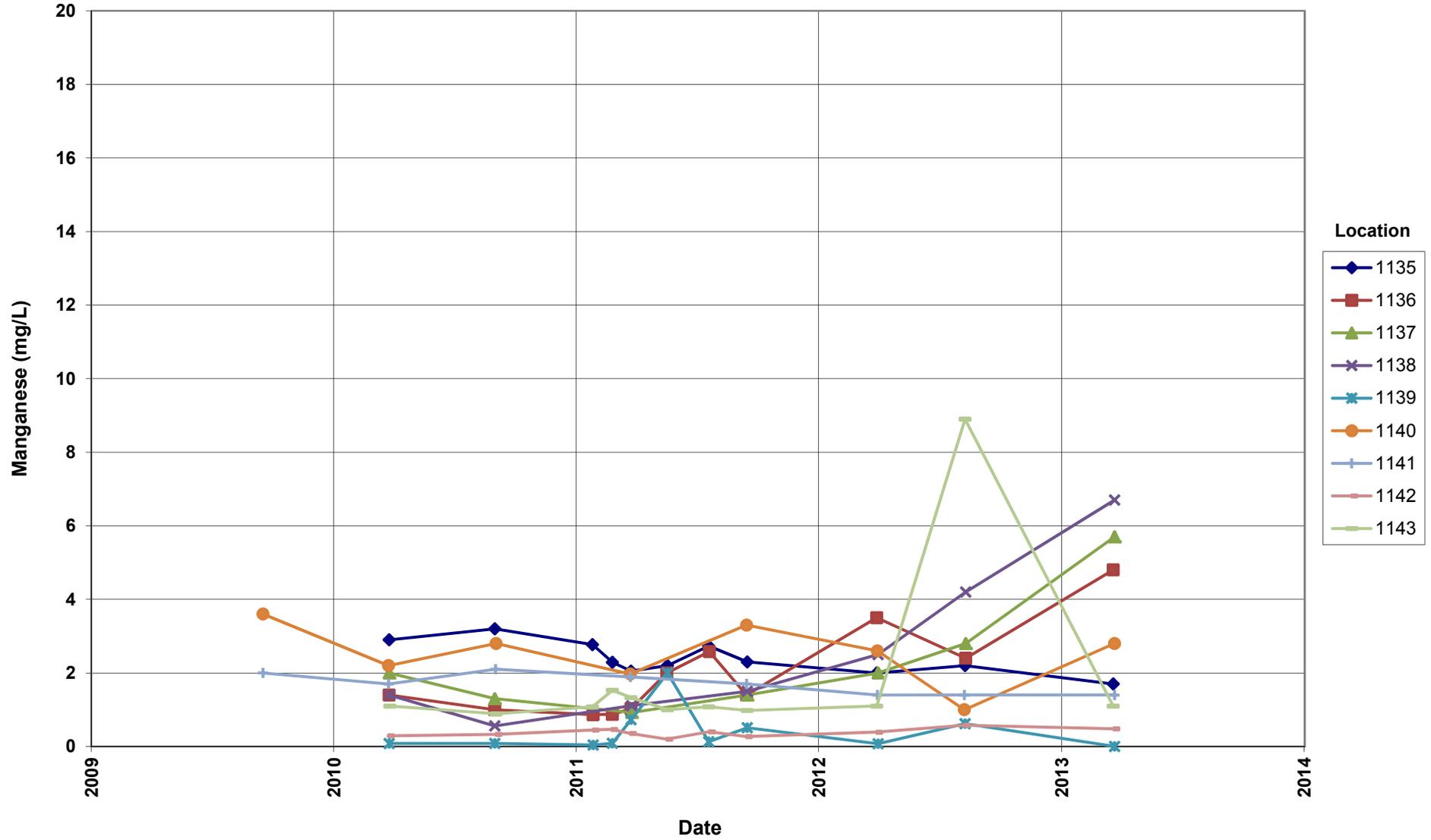
Shiprock Disposal Site (Floodplain) Manganese Concentration



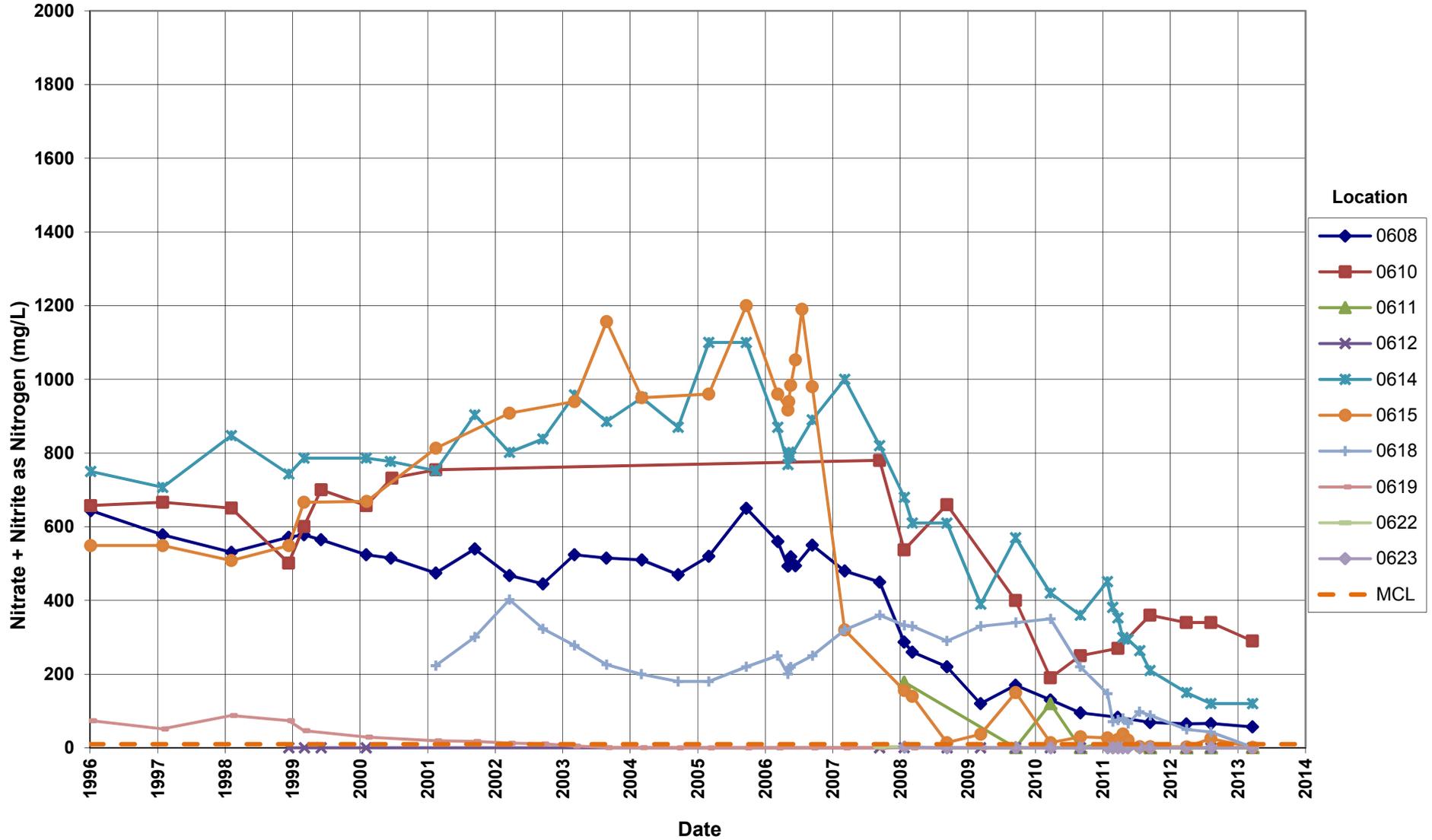
Shiprock Disposal Site (Floodplain) Manganese Concentration



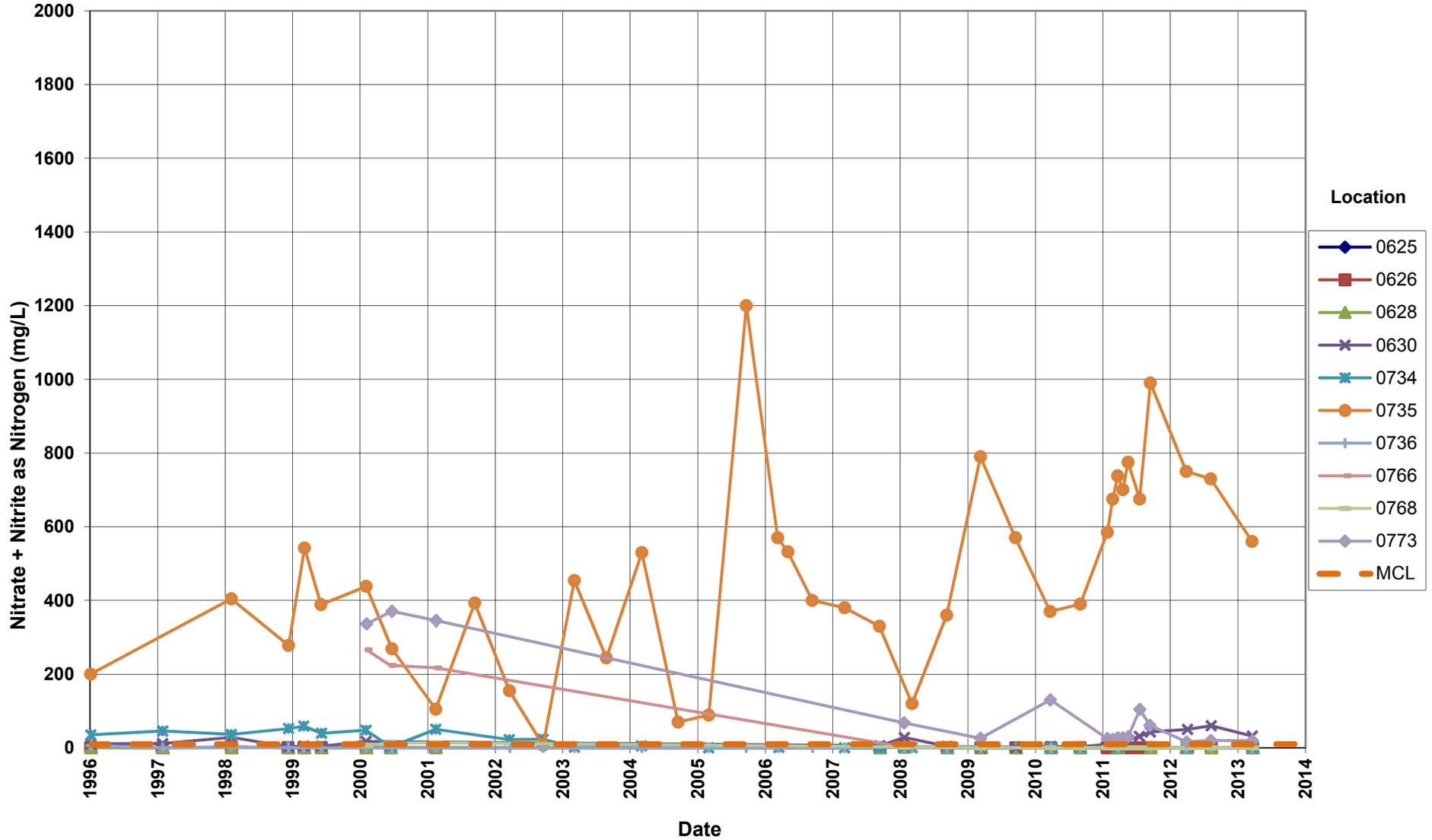
Shiprock Disposal Site (Floodplain) Manganese Concentration



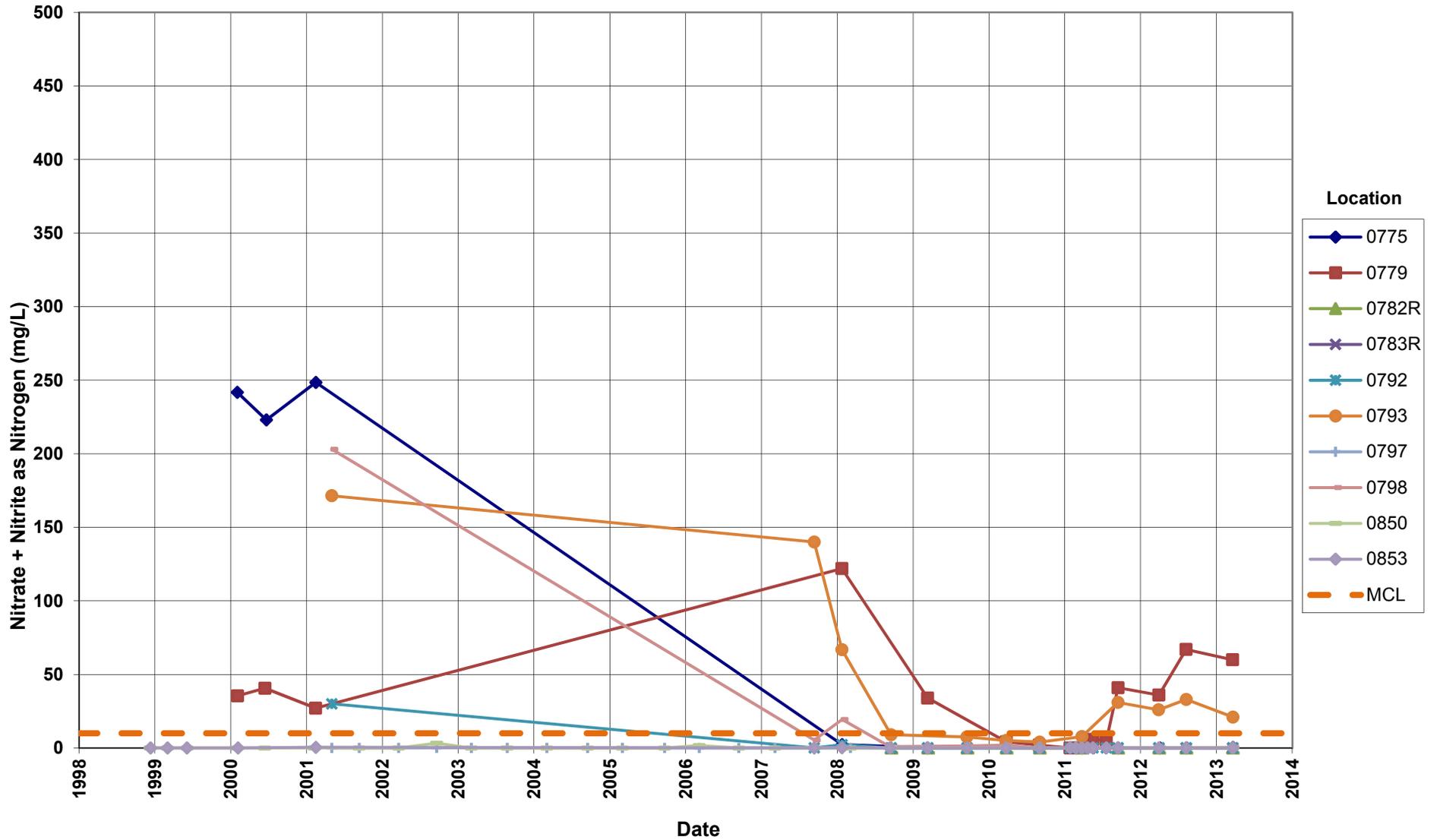
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
 Maximum Contaminant Level (MCL) = 10 mg/L



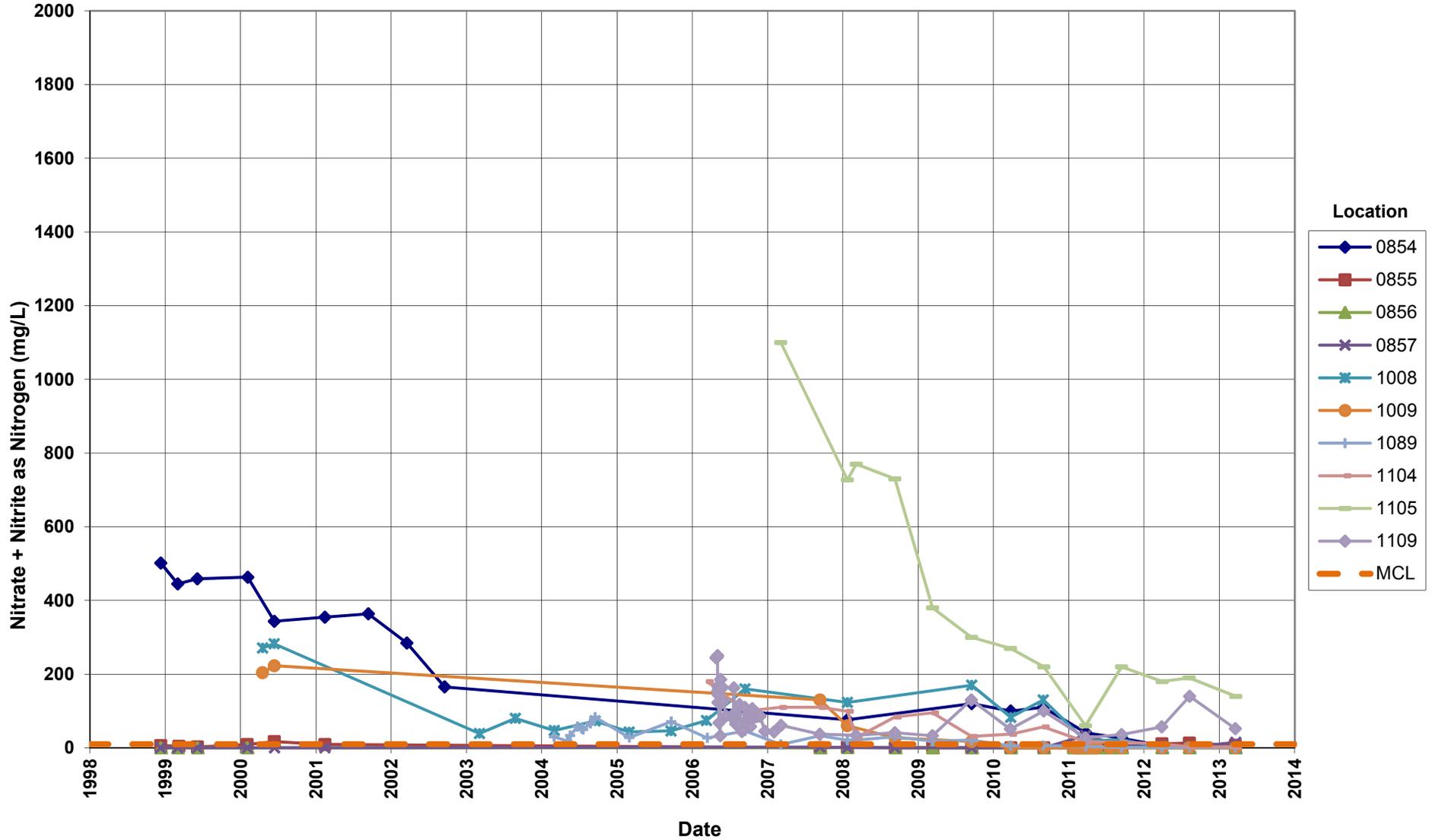
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
 Maximum Contaminant Level (MCL) = 10 mg/L



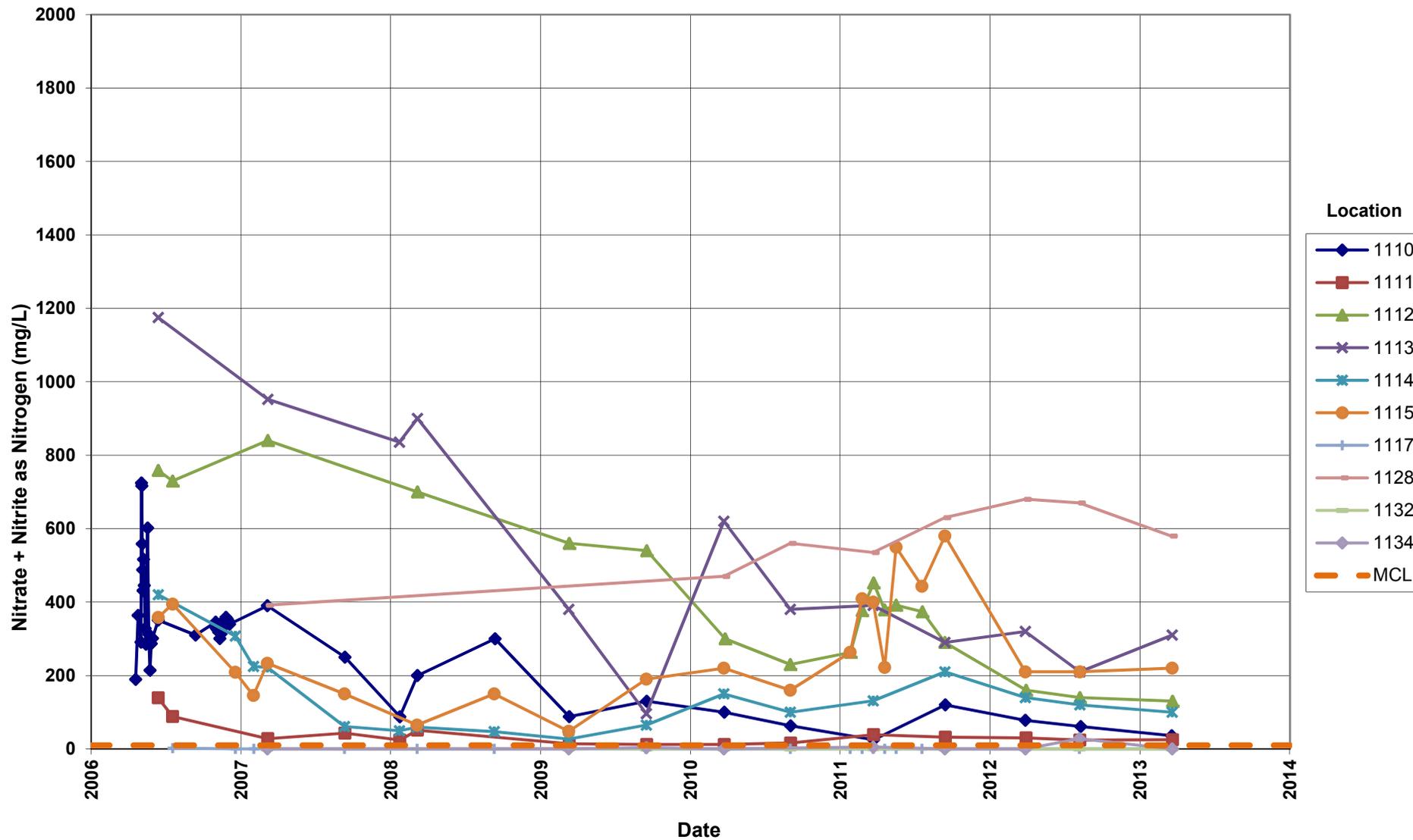
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
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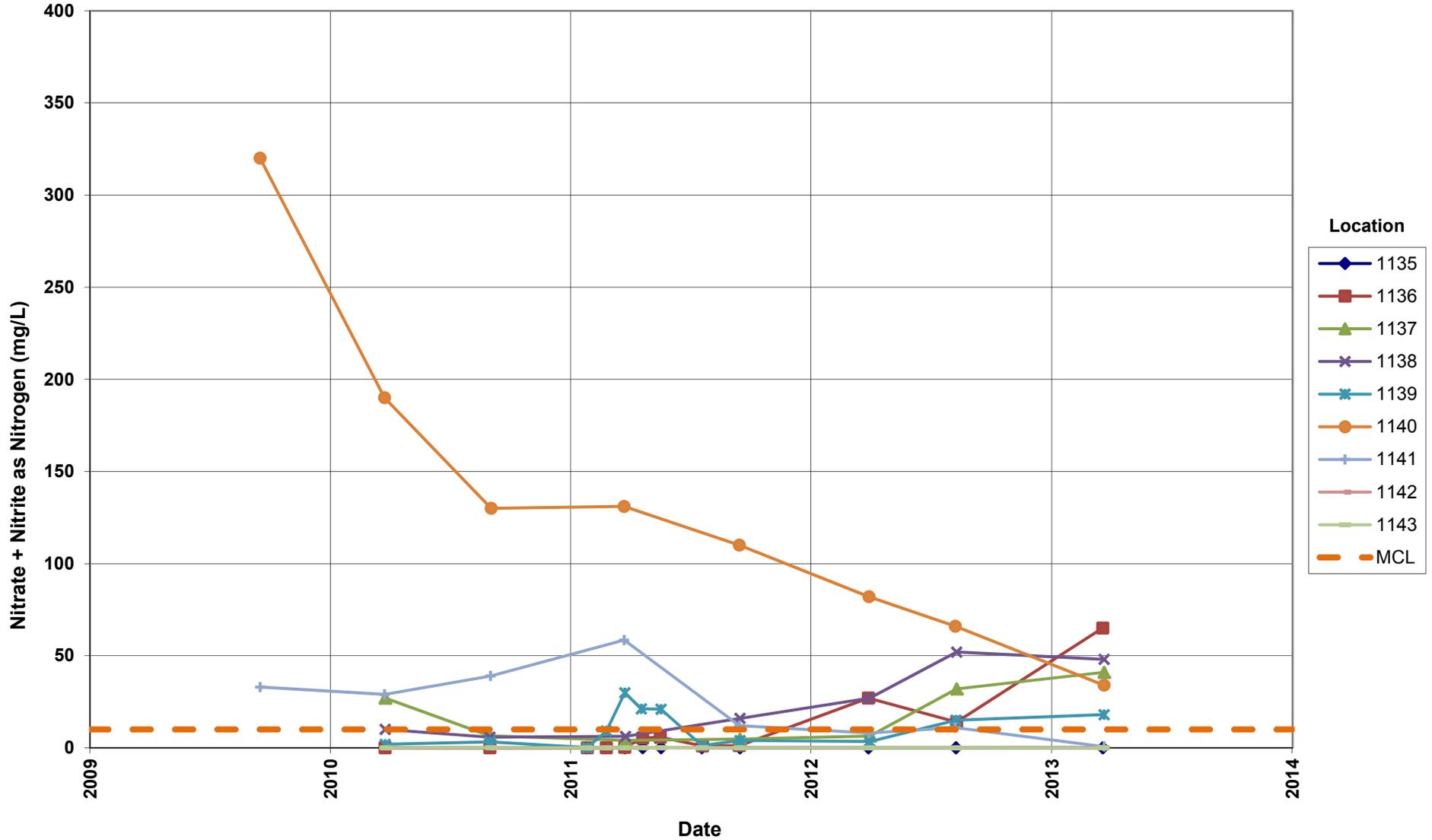
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level (MCL) = 10 mg/L



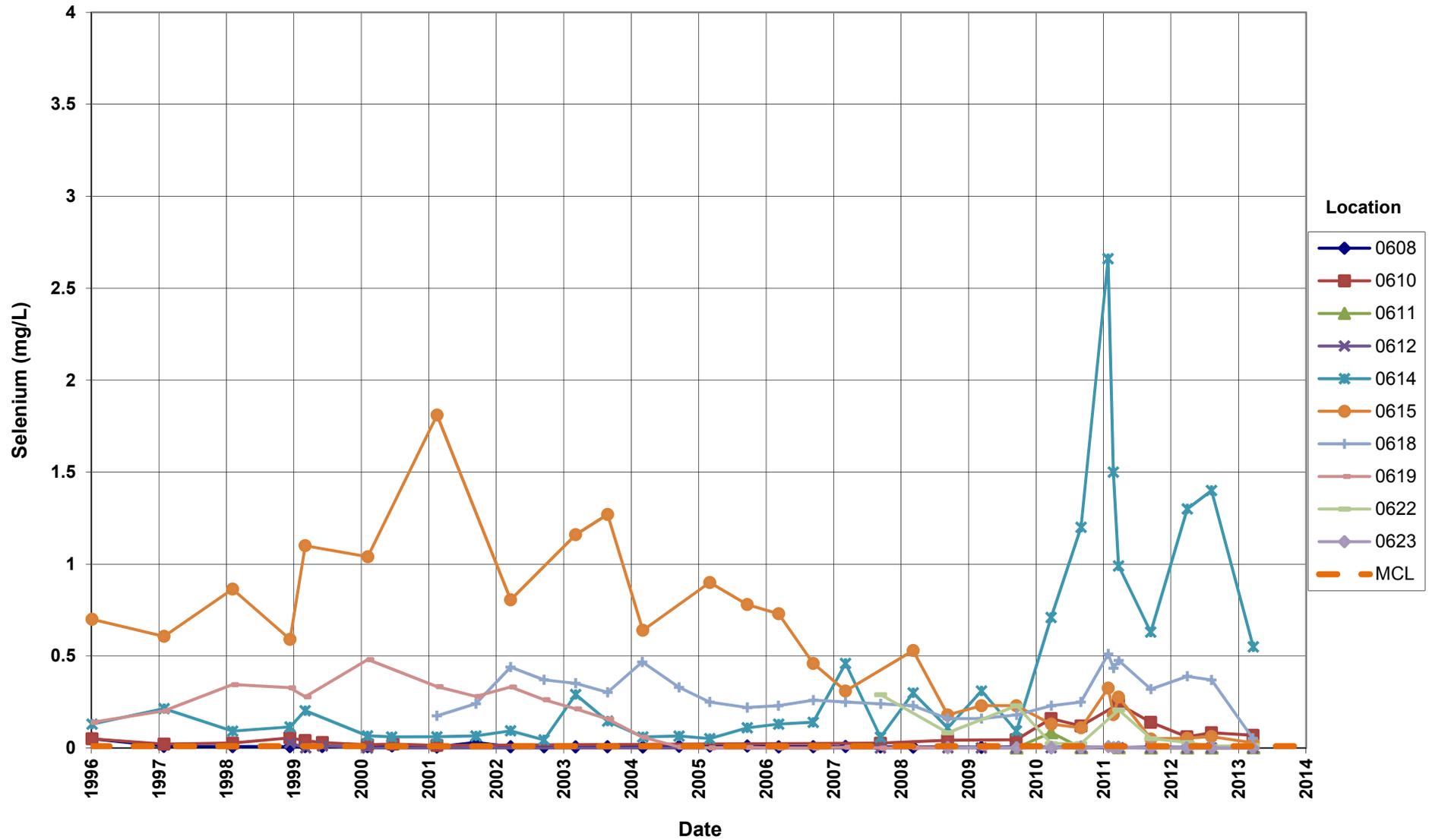
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
 Maximum Contaminant Level (MCL) = 10 mg/L



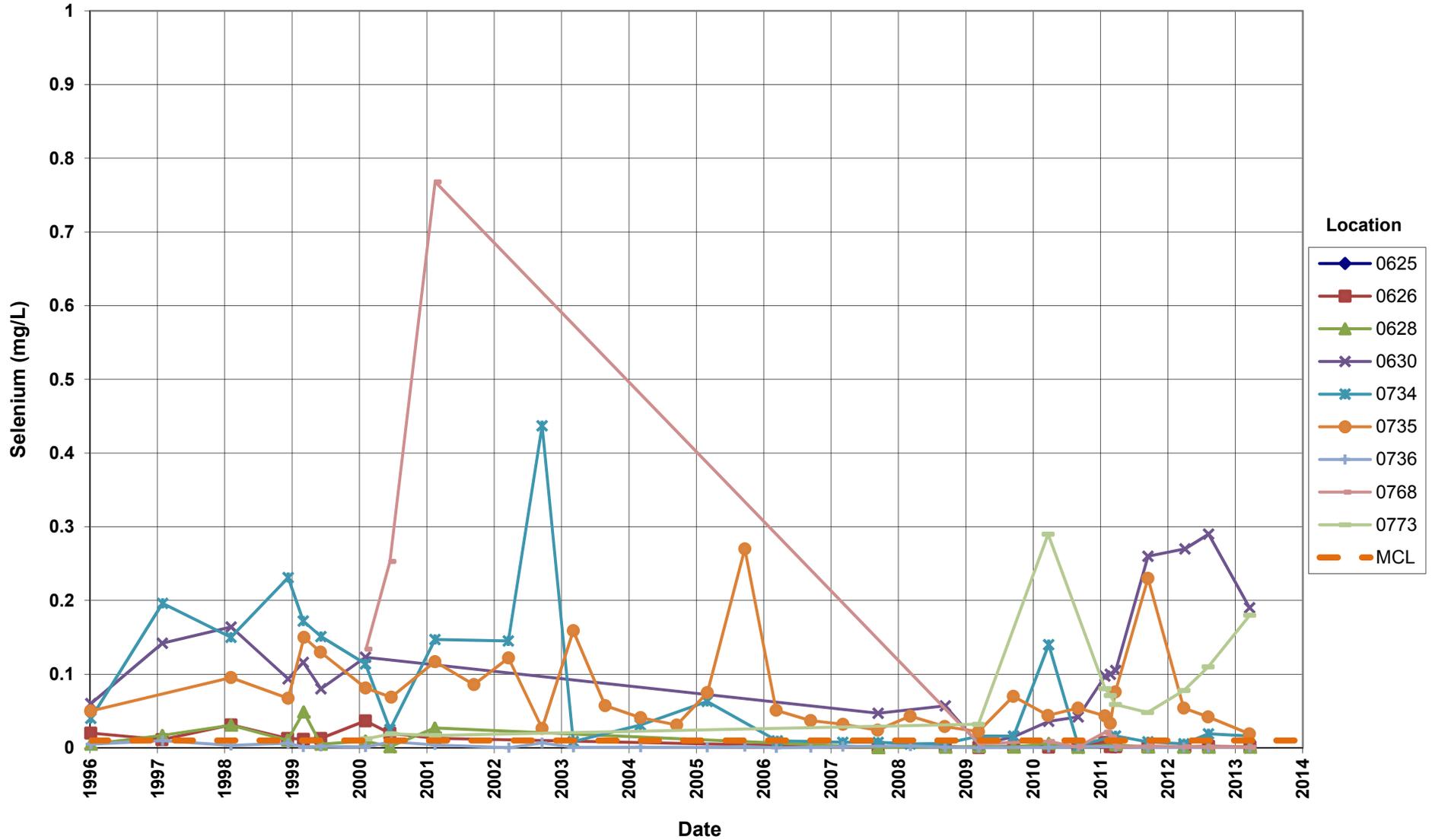
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level (MCL) = 10 mg/L



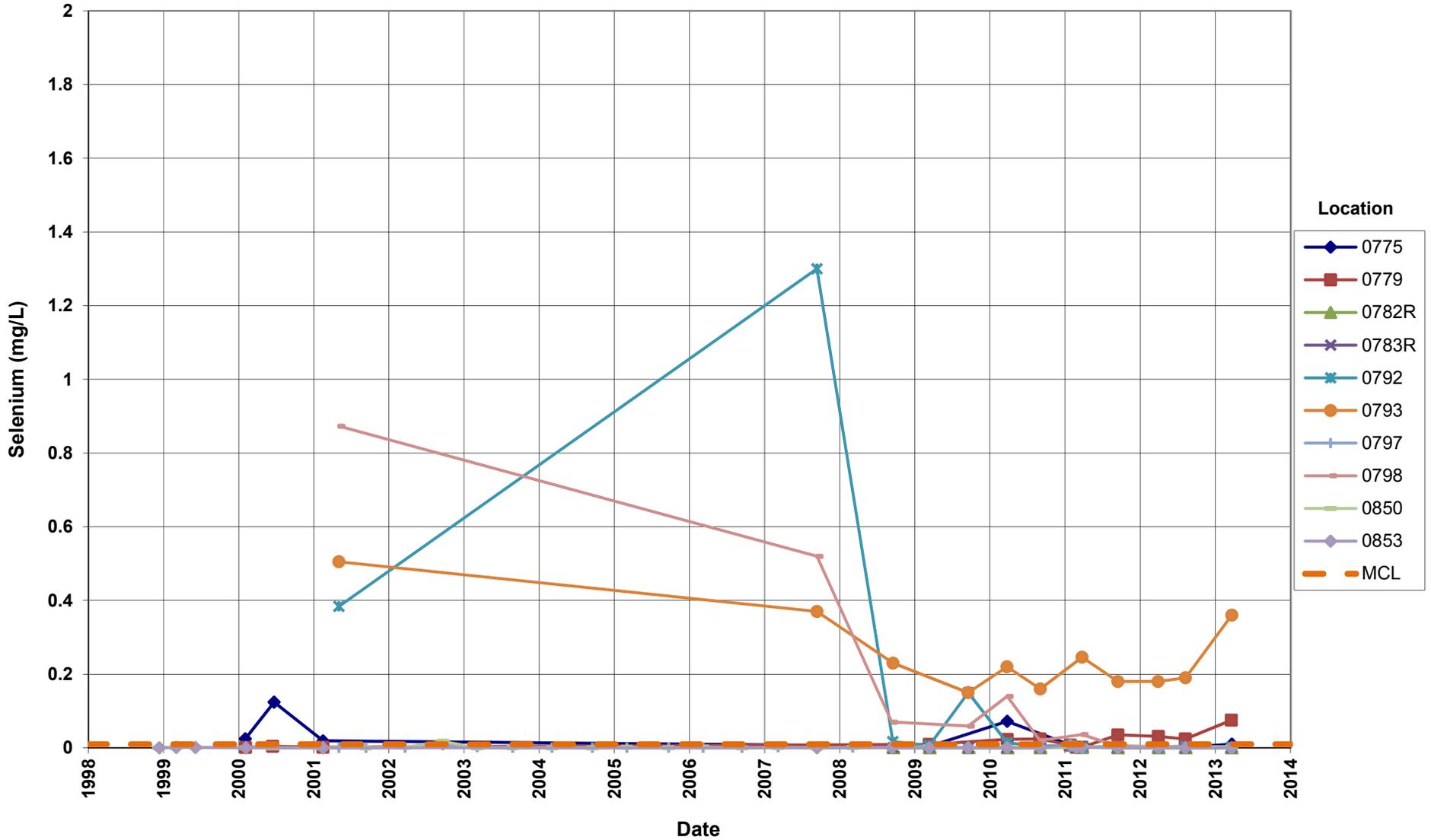
Shiprock Disposal Site (Floodplain)
Selenium Concentration
 Maximum Contaminant Level (MCL) = 0.01 mg/L



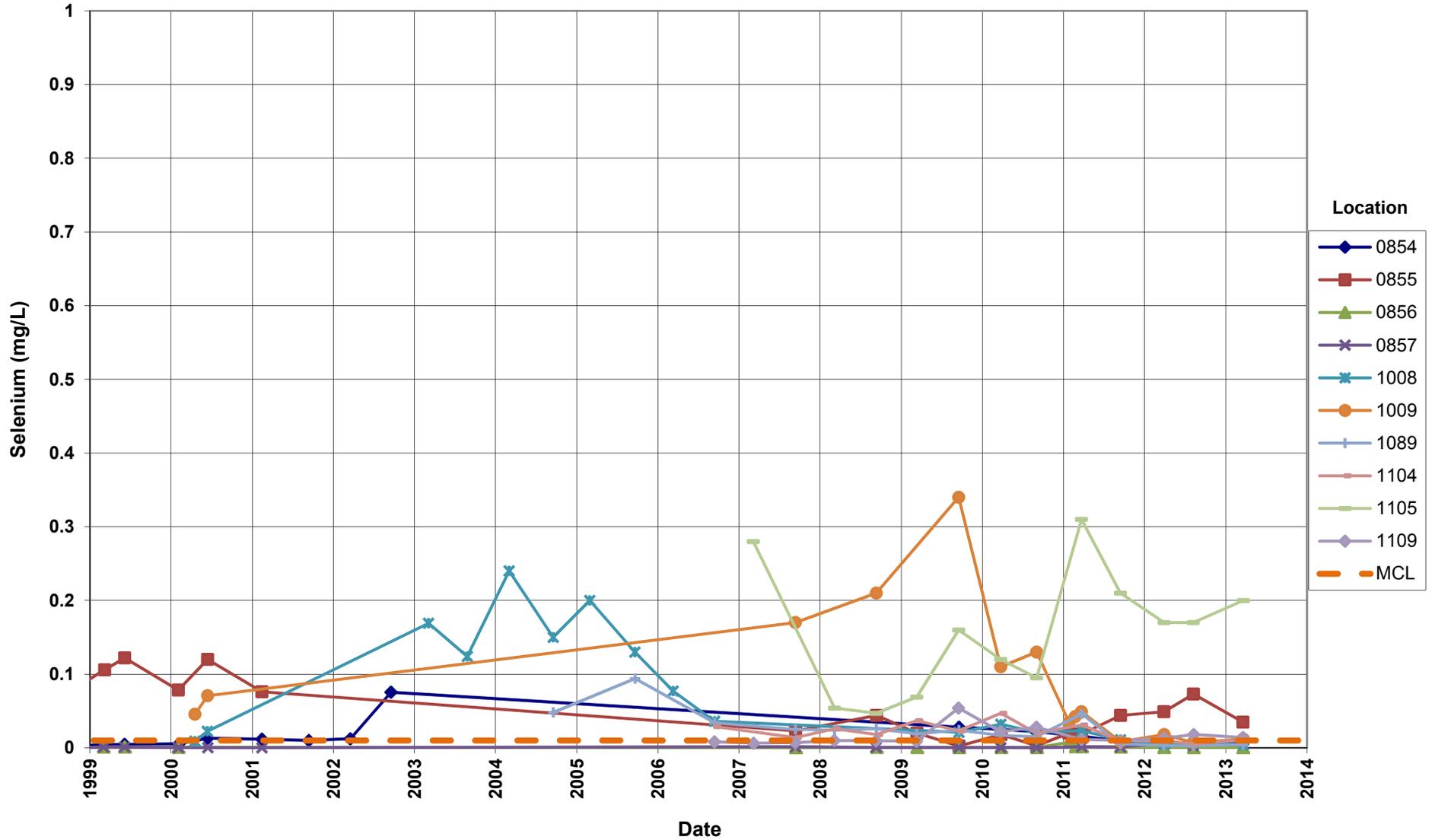
**Shiprock Disposal Site (Floodplain)
Selenium Concentration**
Maximum Contaminant Level (MCL) = 0.01 mg/L



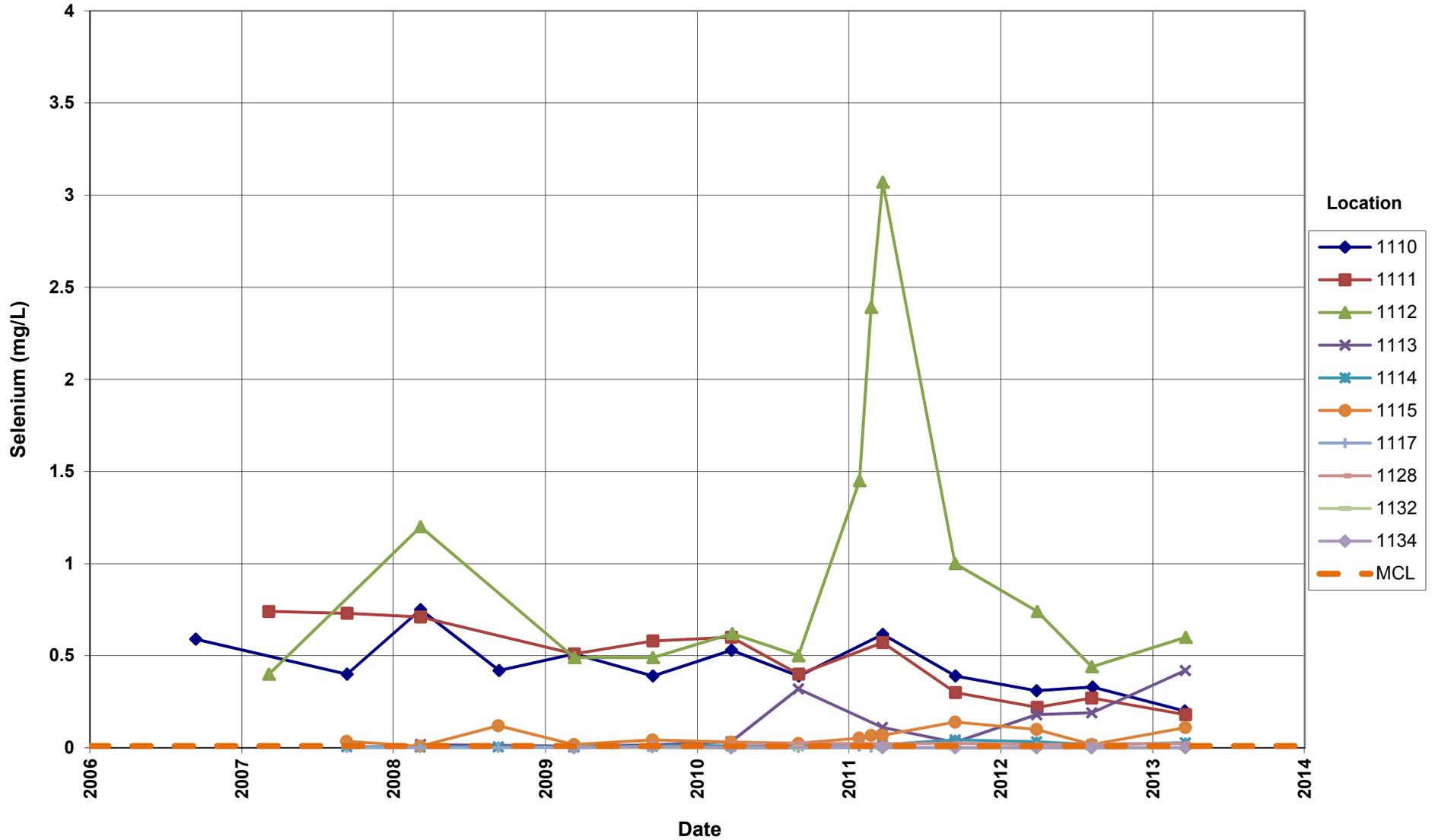
**Shiprock Disposal Site (Floodplain)
Selenium Concentration**
Maximum Contaminant Level (MCL) = 0.01 mg/L



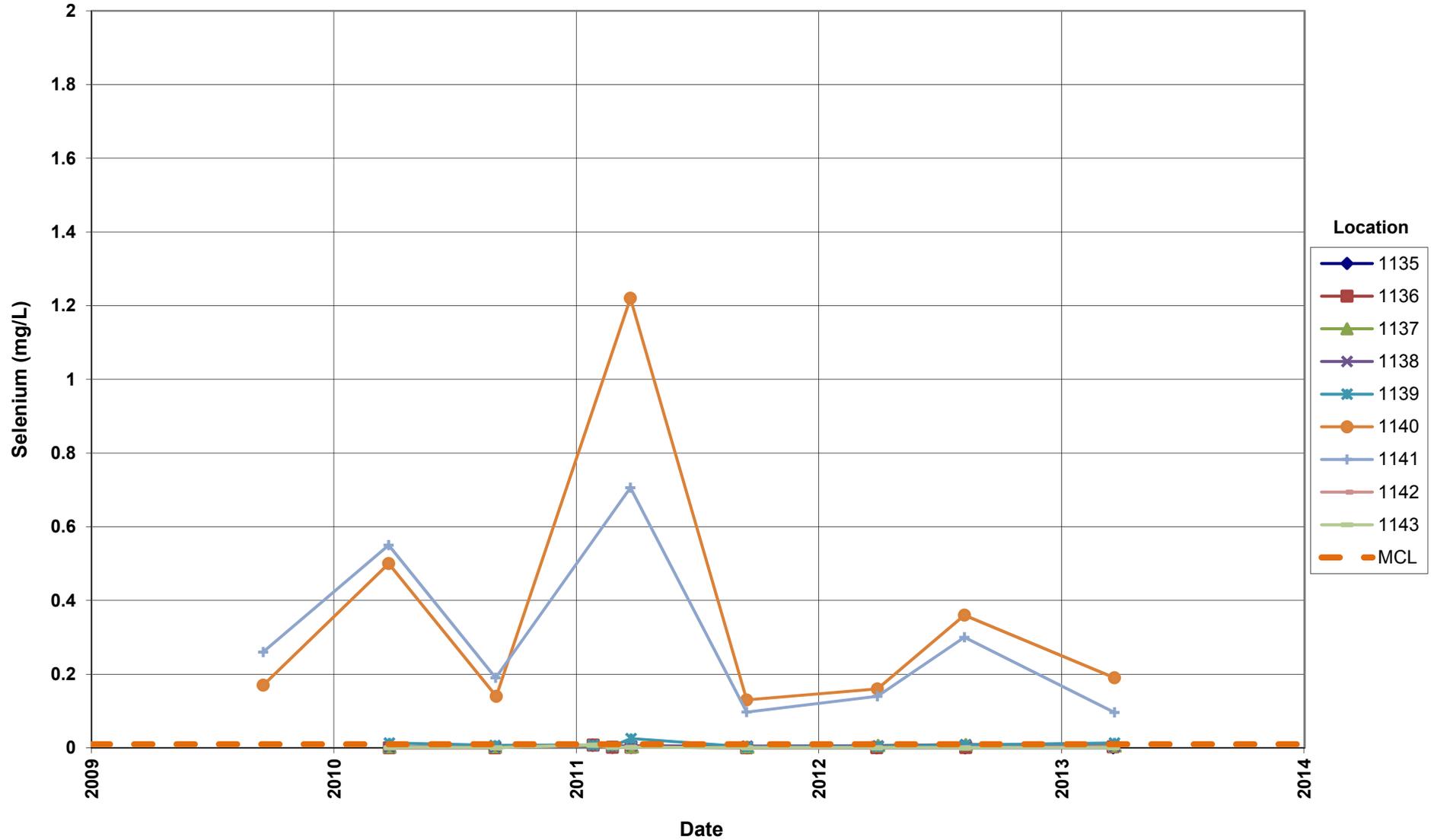
Shiprock Disposal Site (Floodplain)
Selenium Concentration
 Maximum Contaminant Level (MCL) = 0.01 mg/L



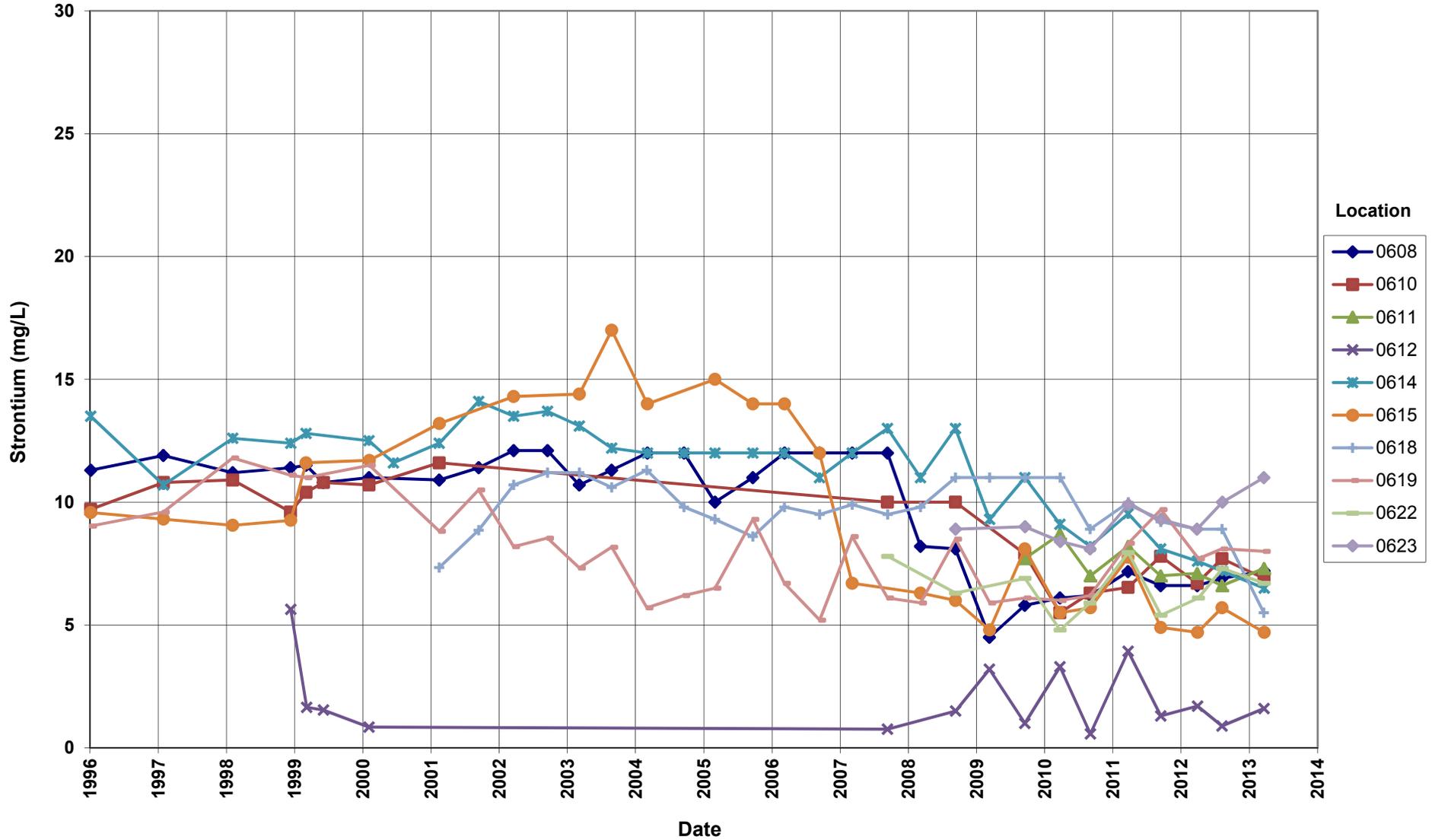
Shiprock Disposal Site (Floodplain)
Selenium Concentration
Maximum Contaminant Level (MCL) = 0.01 mg/L



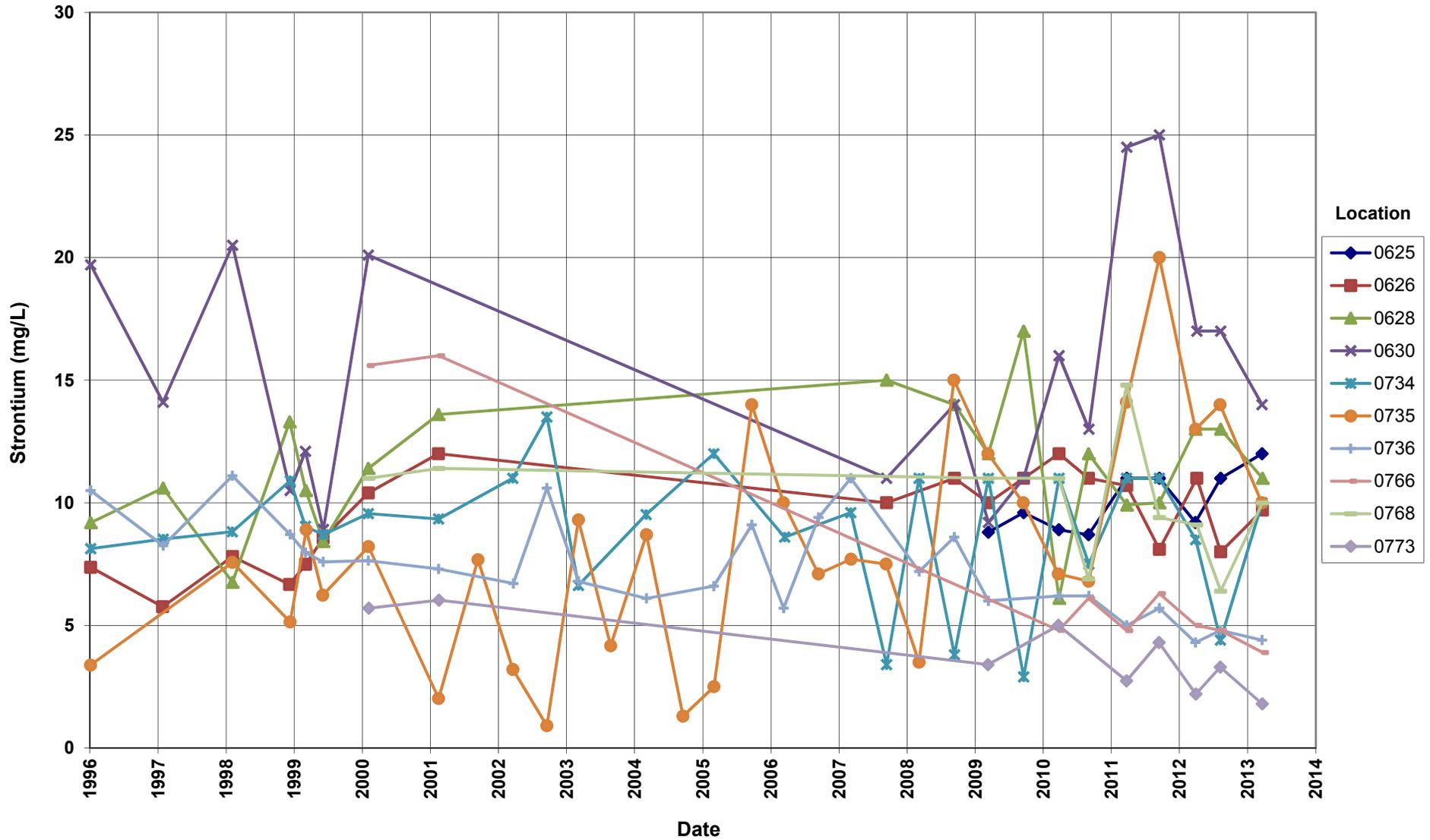
Shiprock Disposal Site (Floodplain)
Selenium Concentration
Maximum Contaminant Level (MCL) = 0.01 mg/L



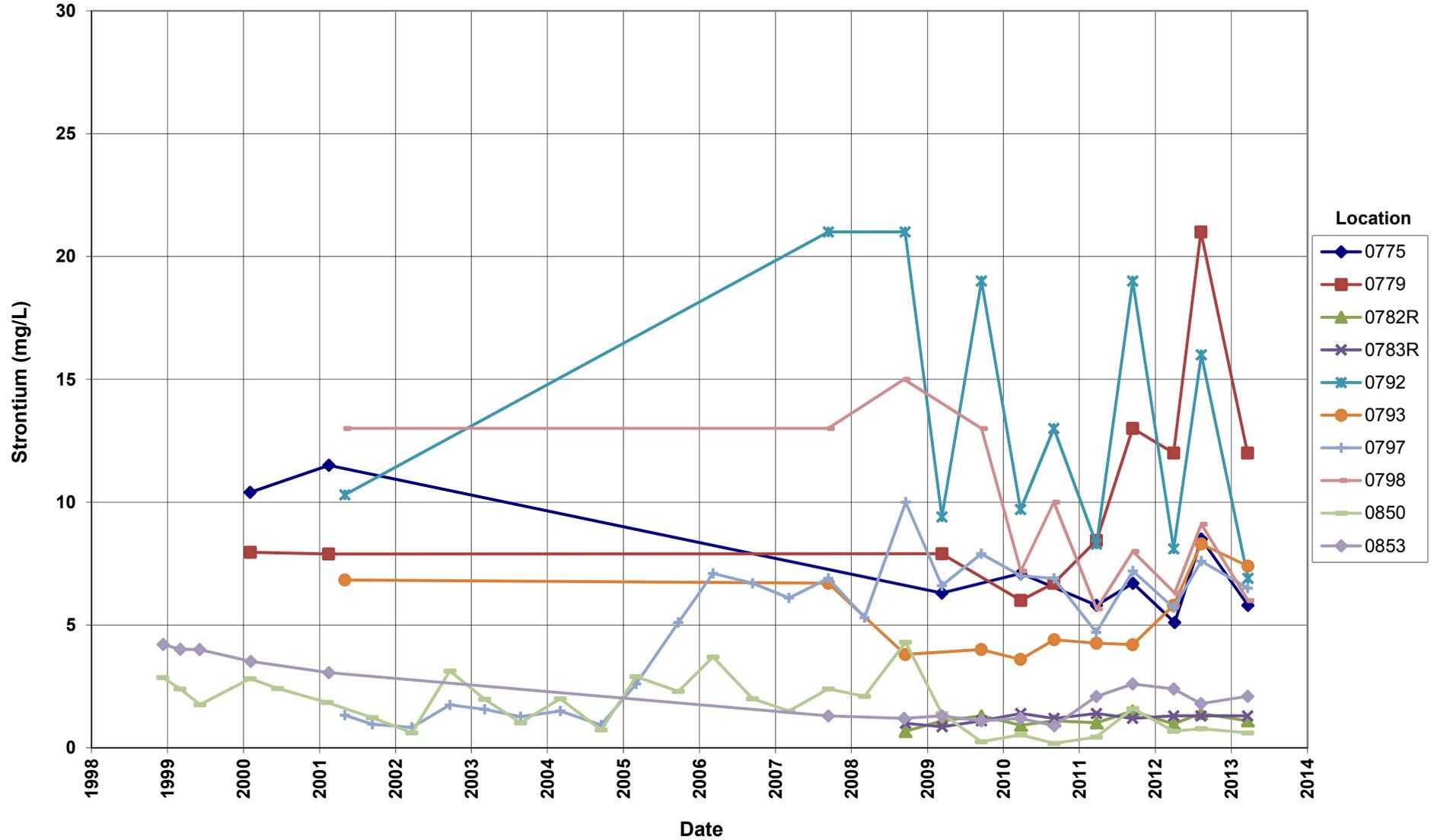
Shiprock Disposal Site (Floodplain) Strontium Concentration



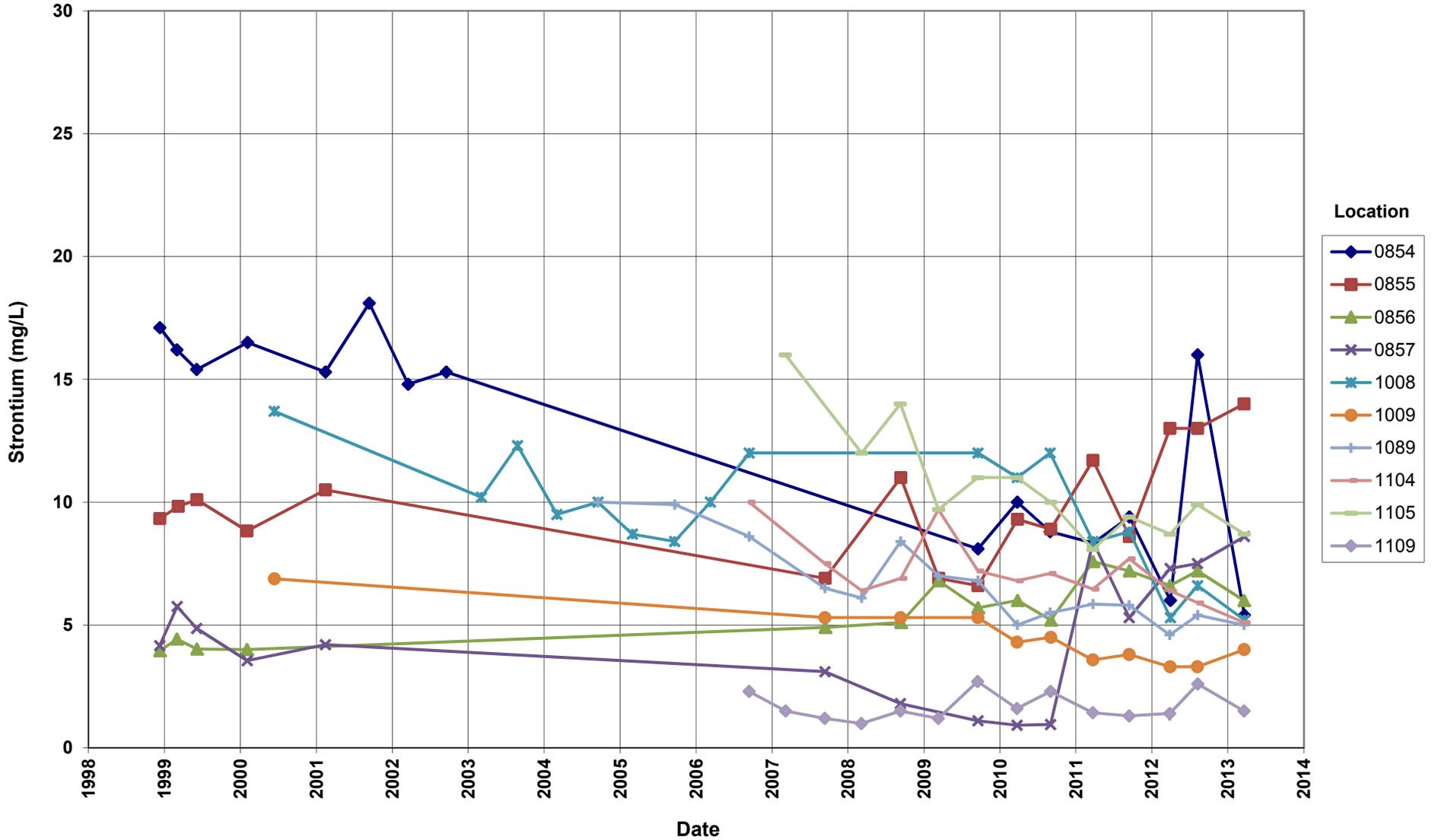
Shiprock Disposal Site (Floodplain) Strontium Concentration



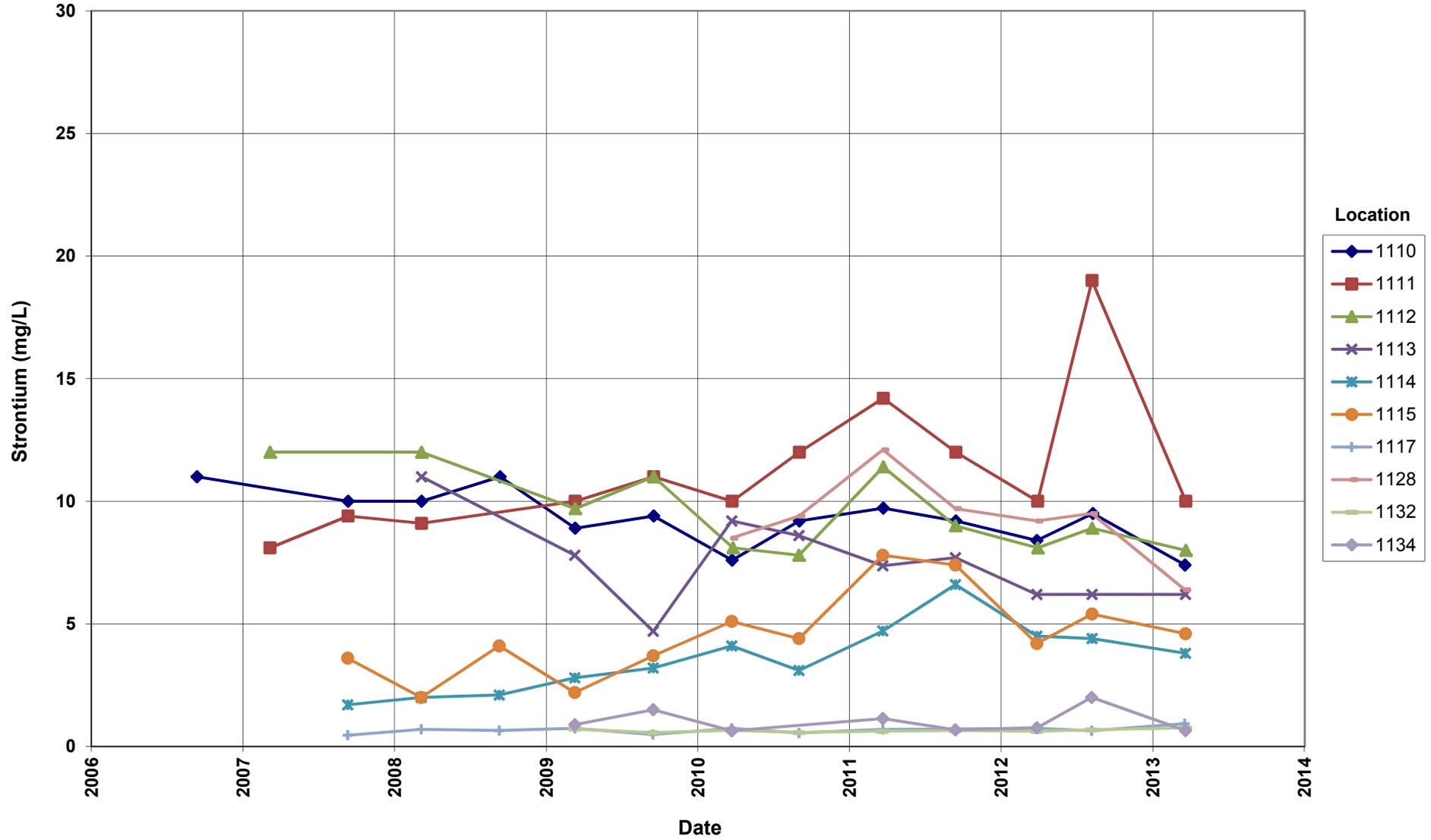
Shiprock Disposal Site (Floodplain) Strontium Concentration



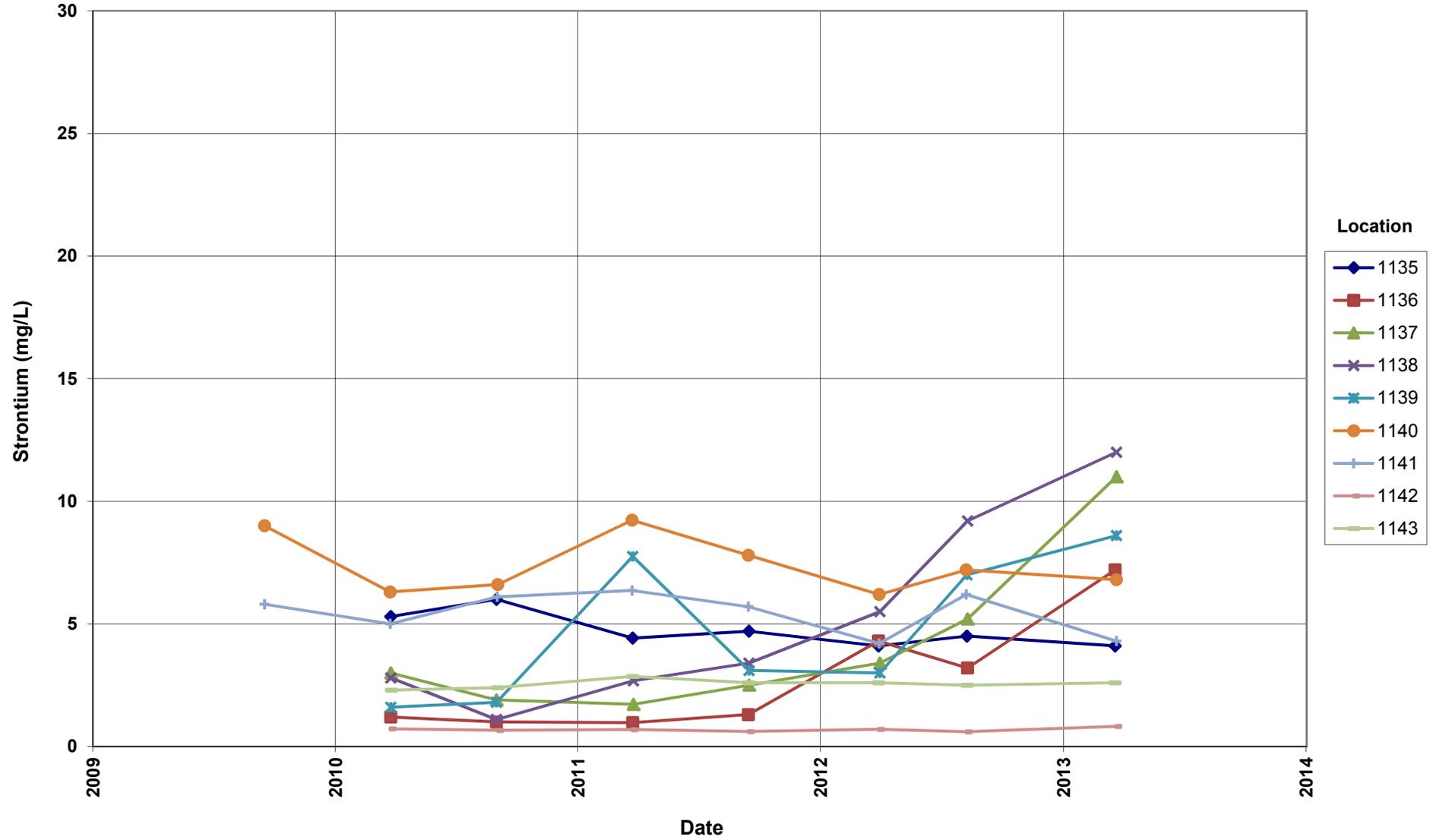
Shiprock Disposal Site (Floodplain) Strontium Concentration



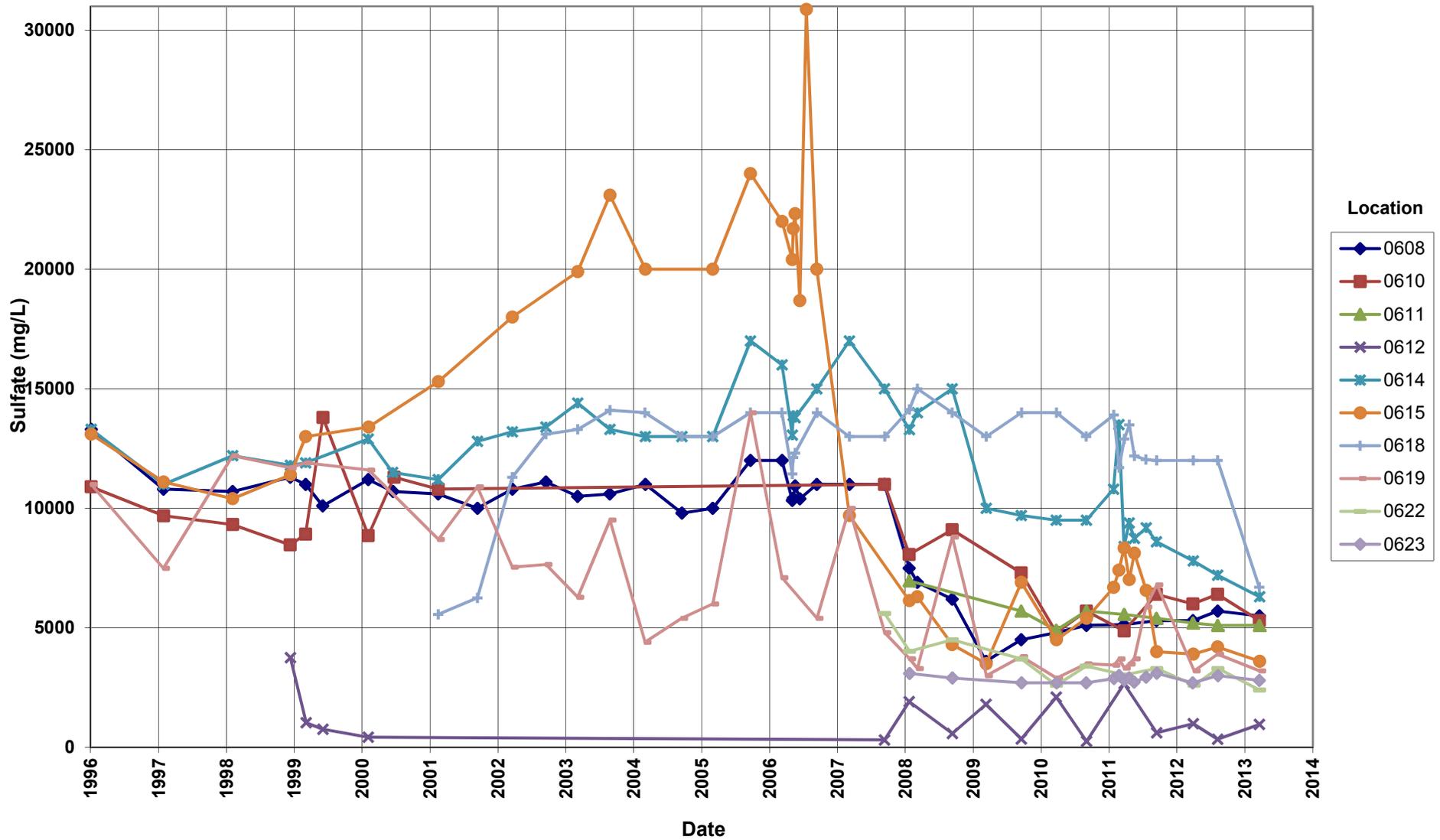
Shiprock Disposal Site (Floodplain) Strontium Concentration



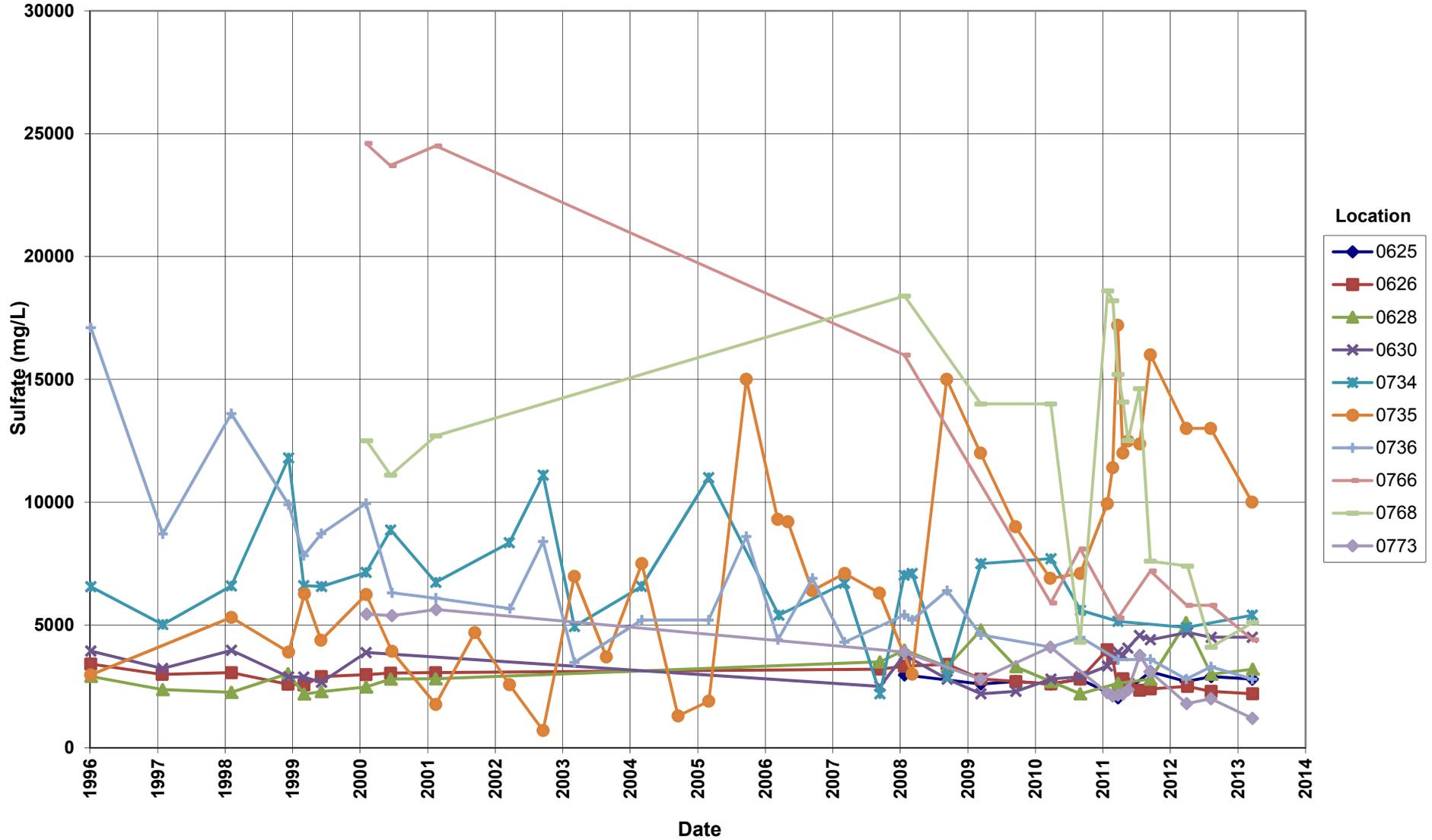
Shiprock Disposal Site (Floodplain) Strontium Concentration



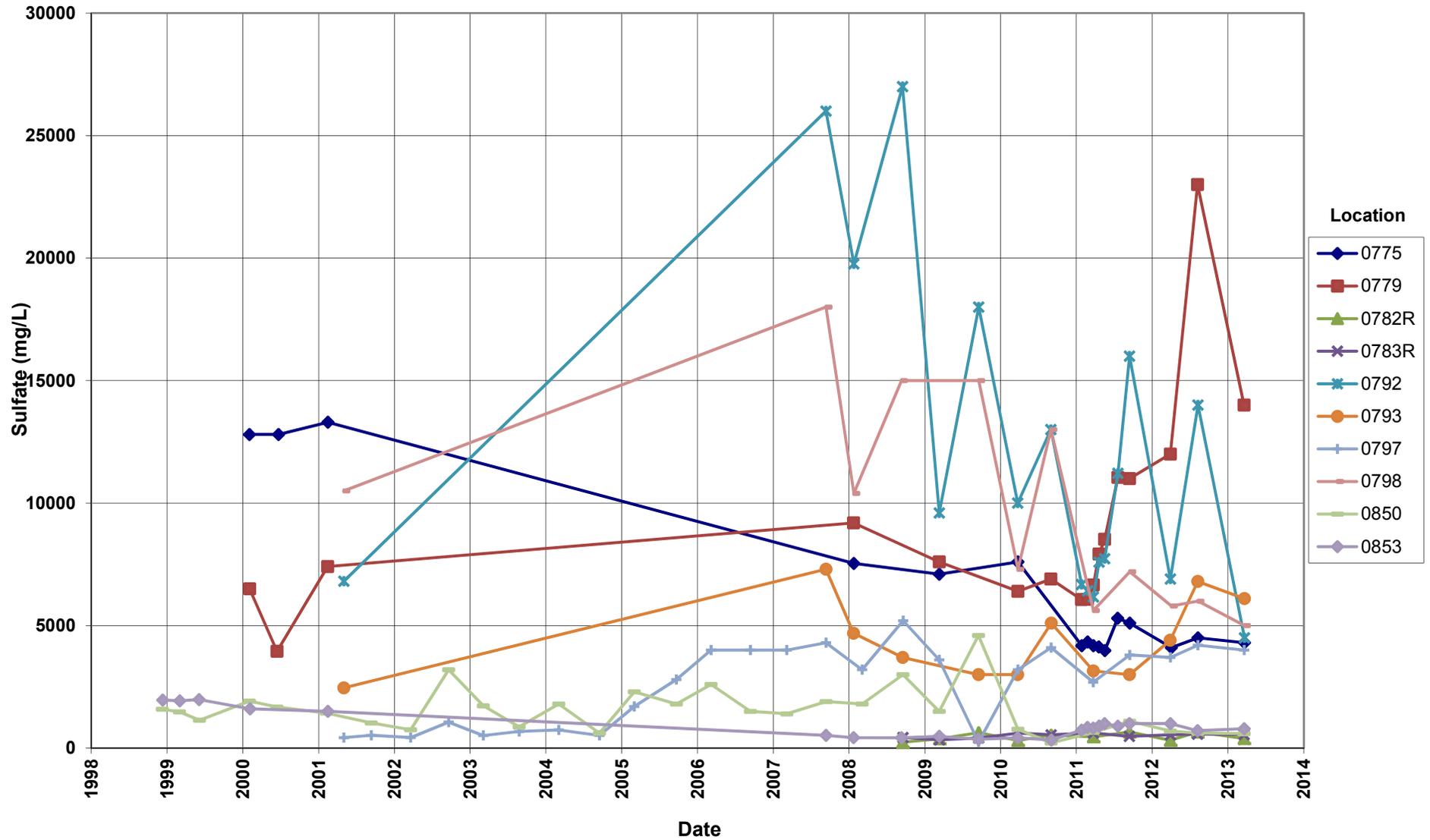
Shiprock Disposal Site (Floodplain) Sulfate Concentration



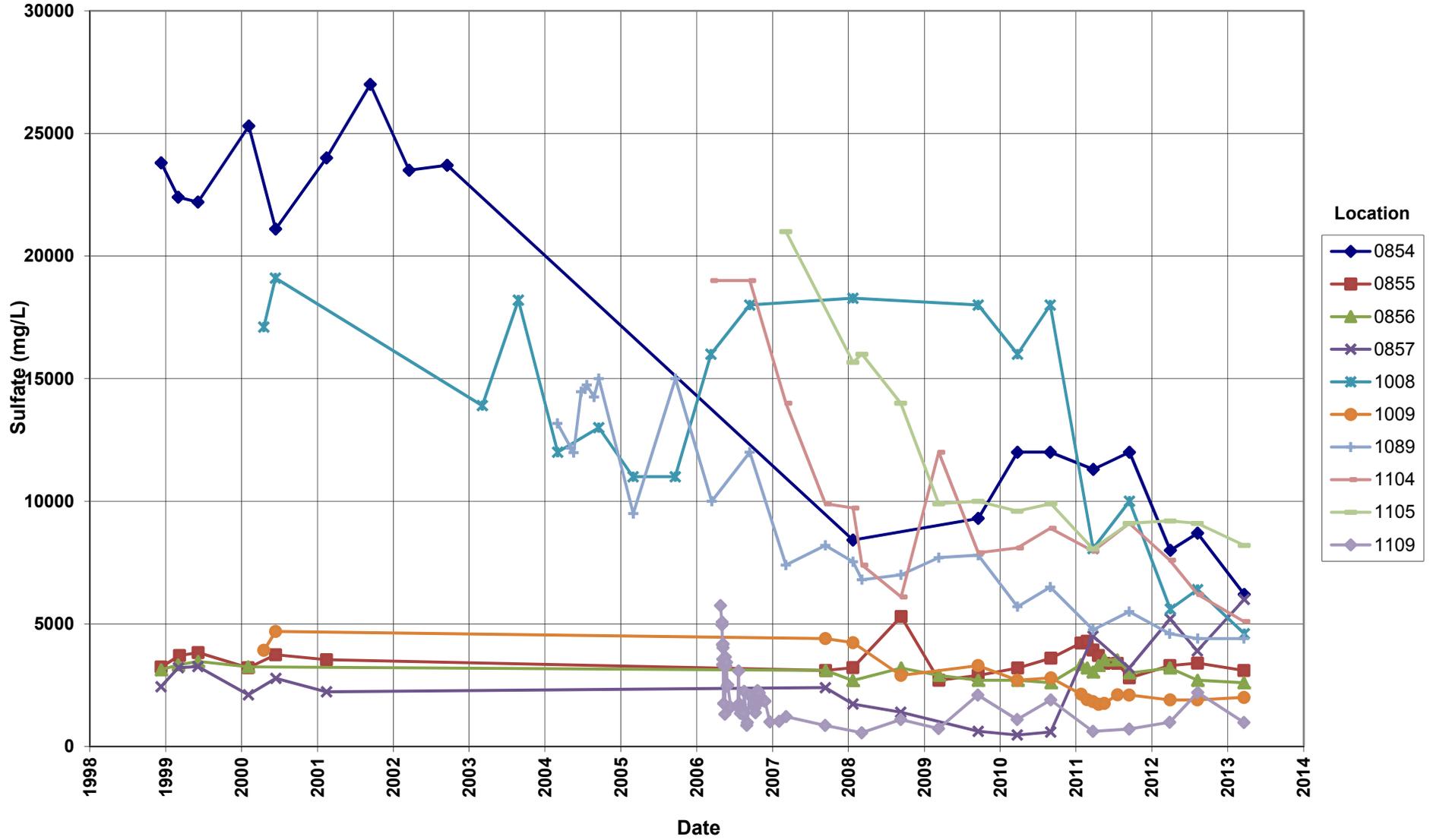
Shiprock Disposal Site (Floodplain) Sulfate Concentration



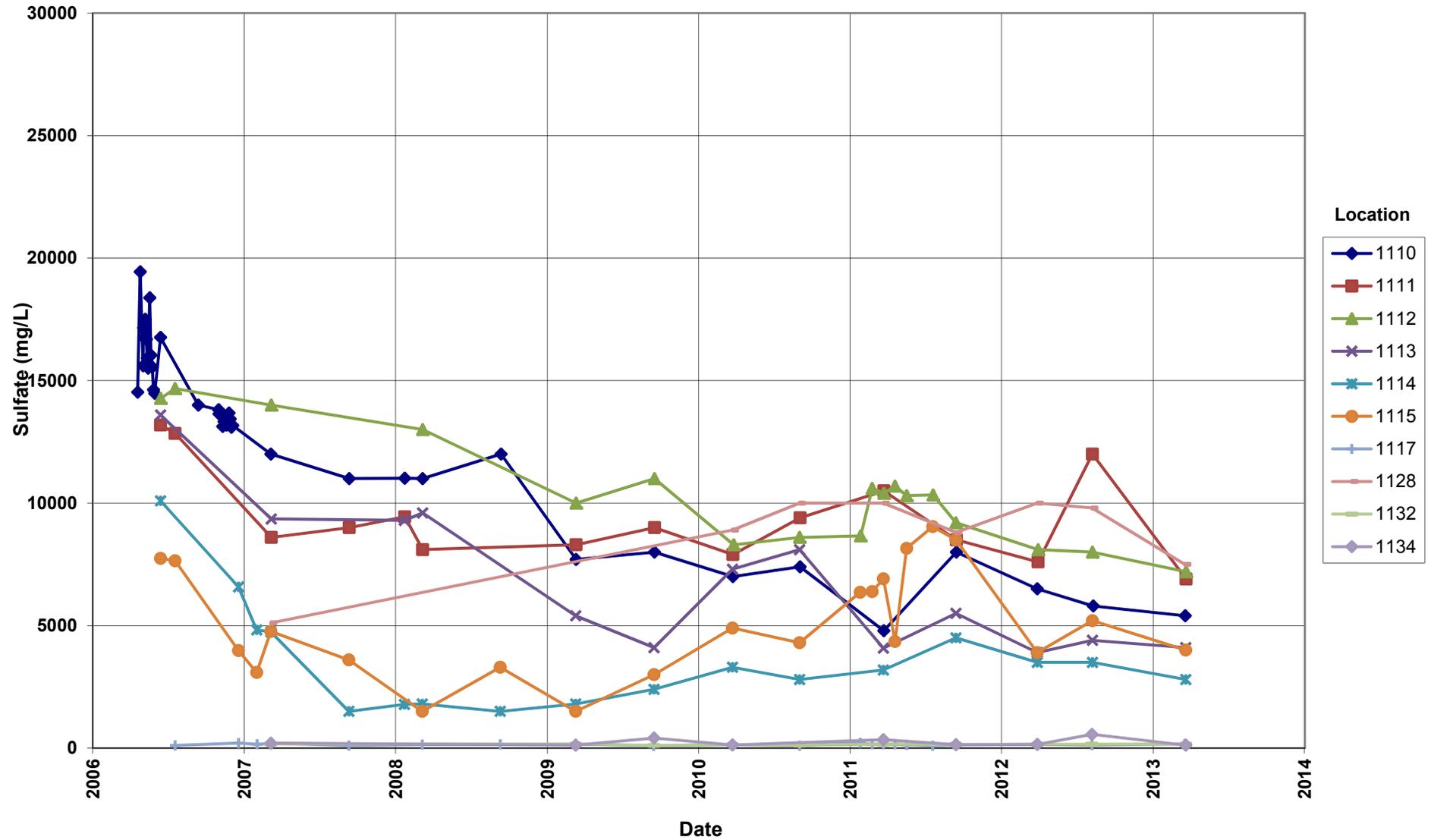
Shiprock Disposal Site (Floodplain) Sulfate Concentration



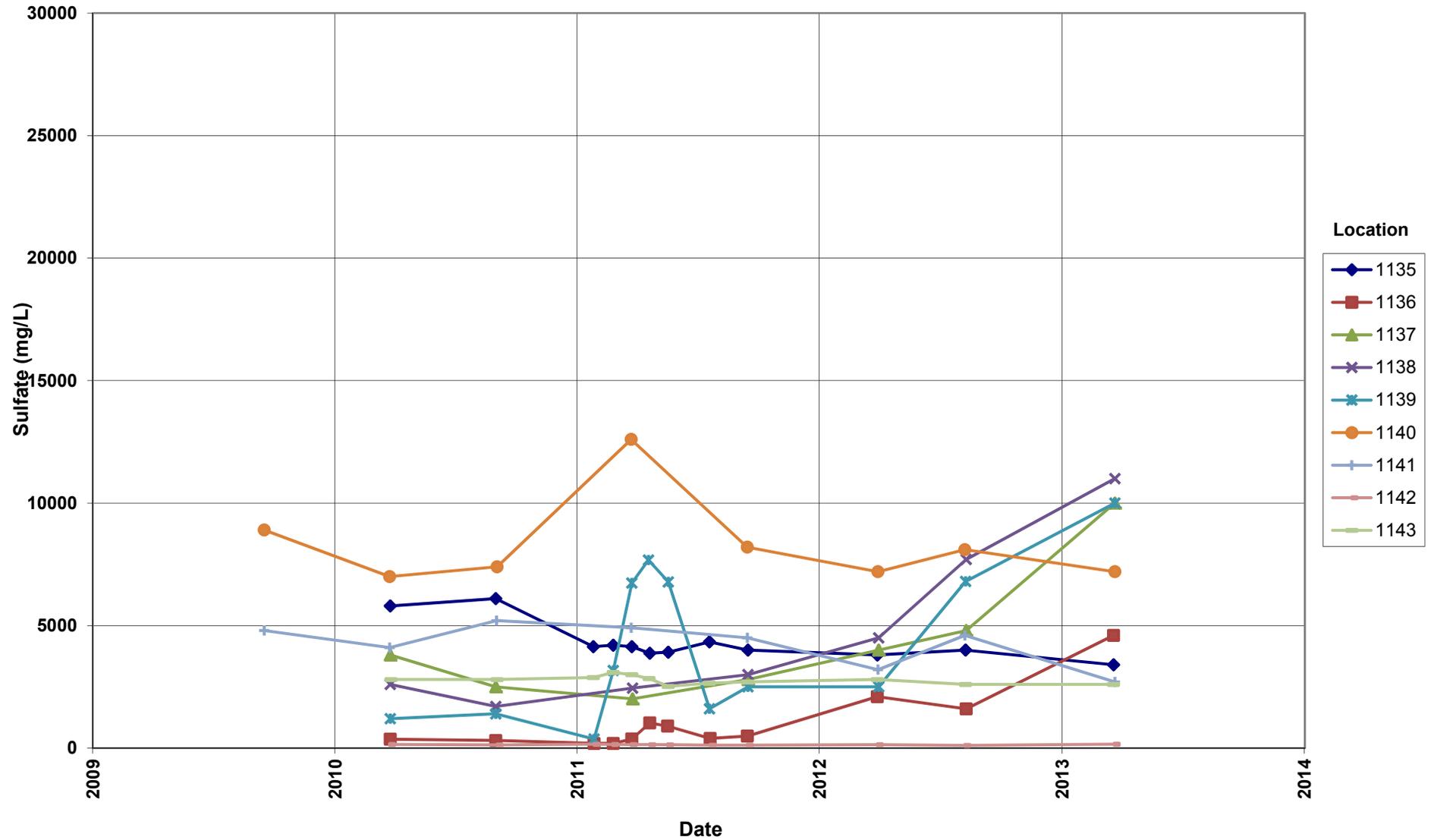
Shiprock Disposal Site (Floodplain) Sulfate Concentration



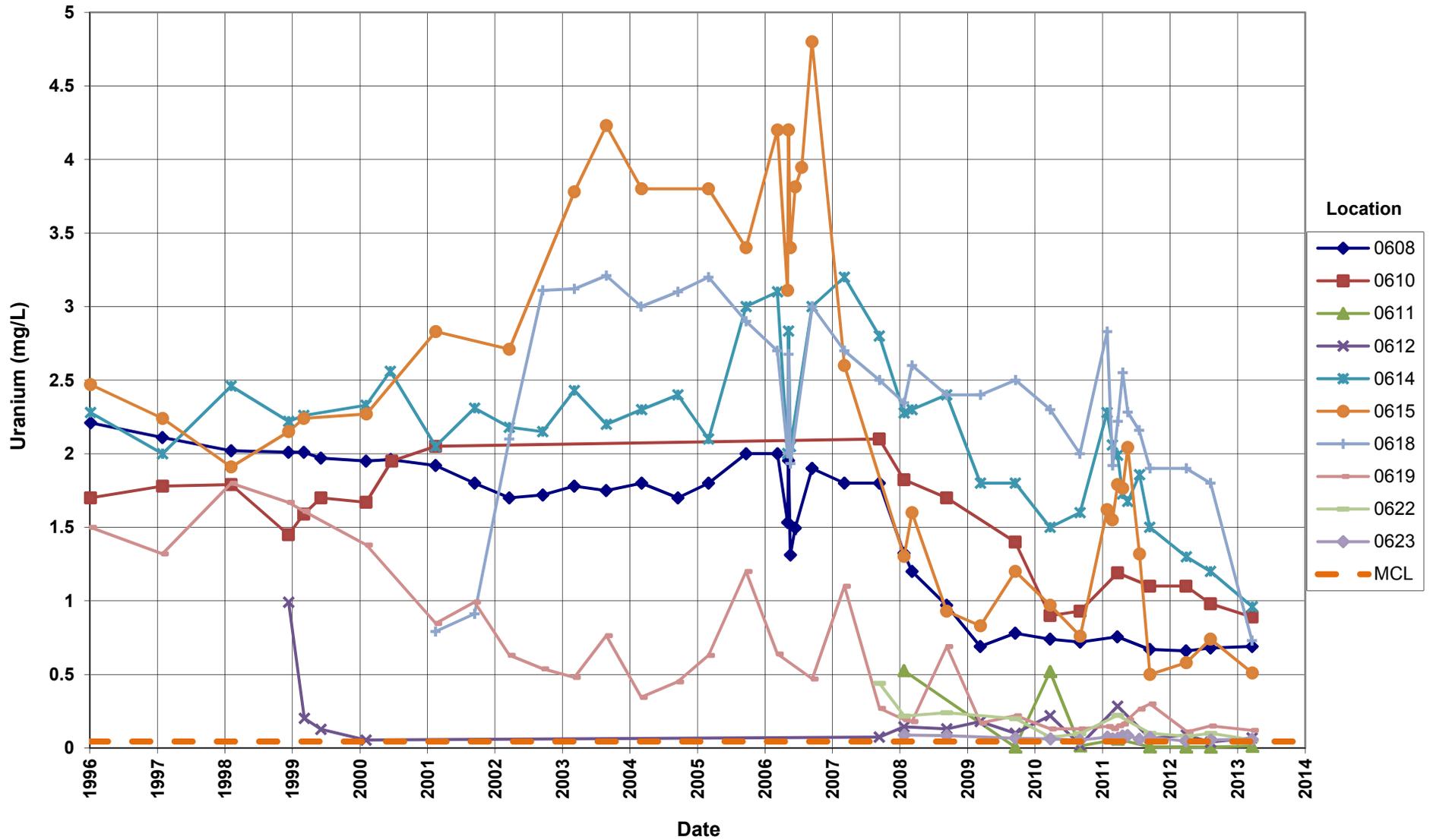
Shiprock Disposal Site (Floodplain) Sulfate Concentration



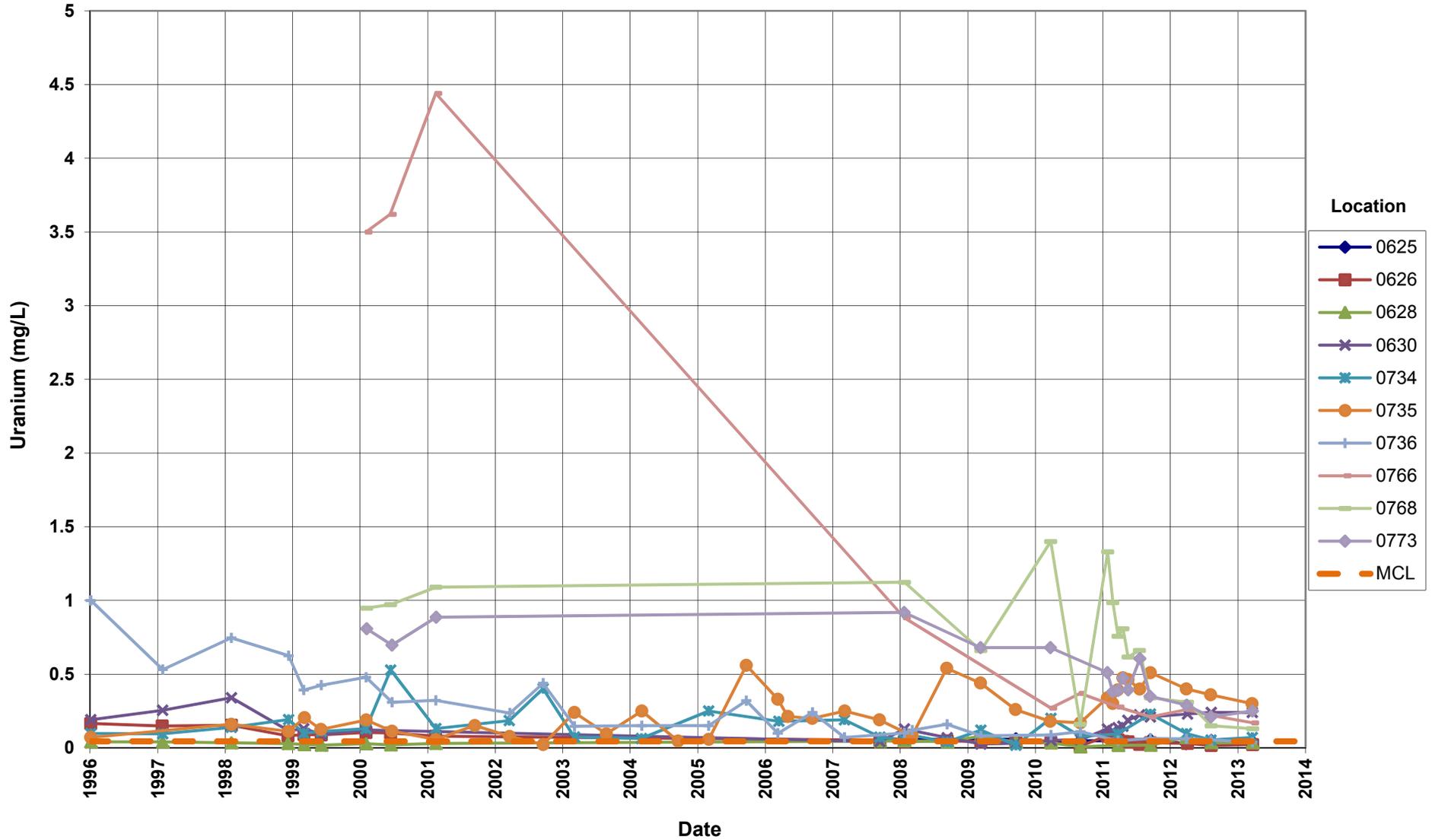
Shiprock Disposal Site (Floodplain) Sulfate Concentration



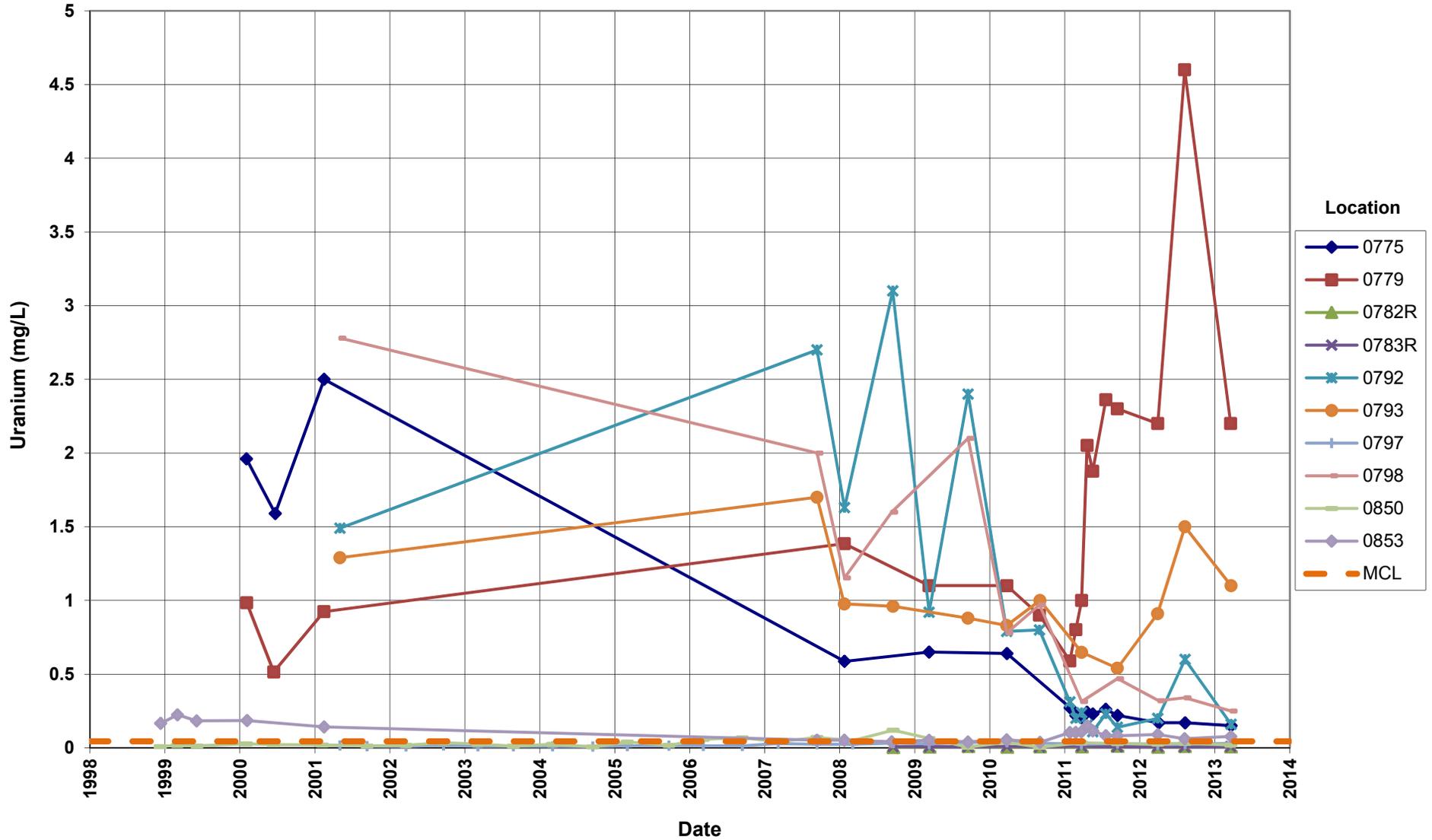
Shiprock Disposal Site (Floodplain)
Uranium Concentration
 Maximum Contaminant Level (MCL) = 0.044 mg/L



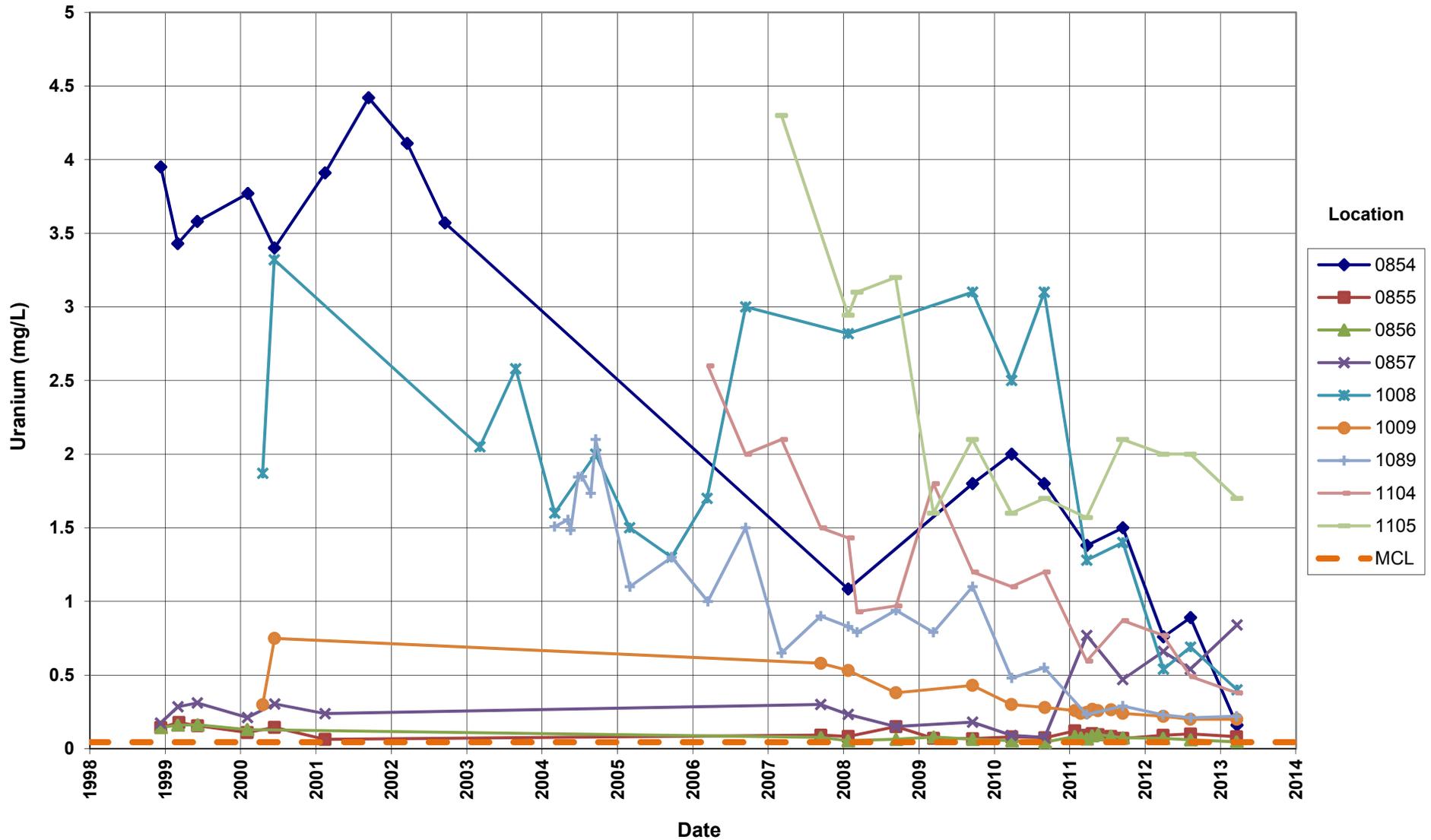
Shiprock Disposal Site (Floodplain)
Uranium Concentration
Maximum Contaminant Level (MCL) = 0.044 mg/L



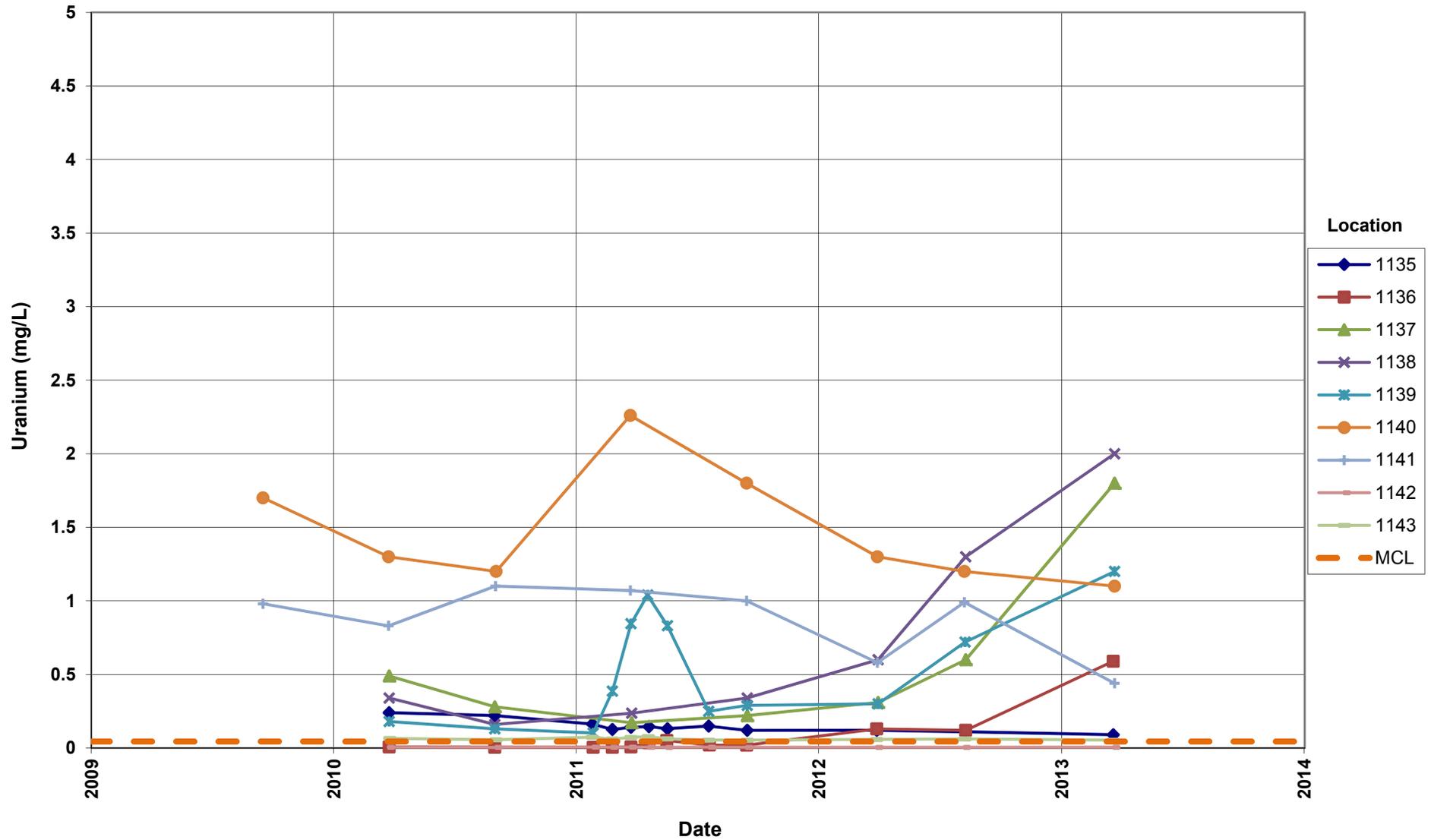
**Shiprock Disposal Site (Floodplain)
Uranium Concentration**
Maximum Contaminant Level (MCL) = 0.044 mg/L



Shiprock Disposal Site (Floodplain)
Uranium Concentration
 Maximum Contaminant Level (MCL) = 0.044 mg/L



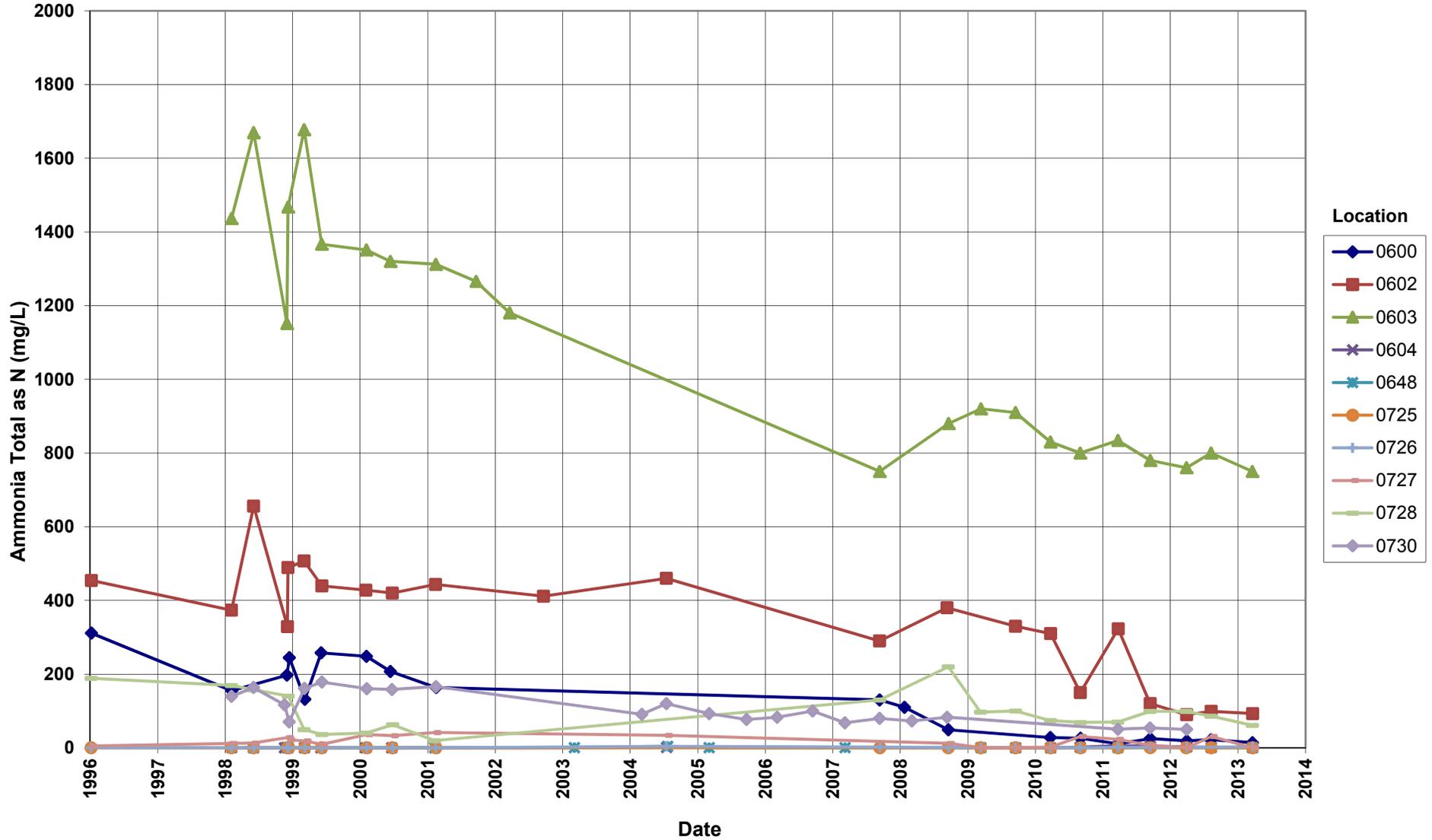
Shiprock Disposal Site (Floodplain)
Uranium Concentration
 Maximum Contaminant Level (MCL) = 0.044 mg/L



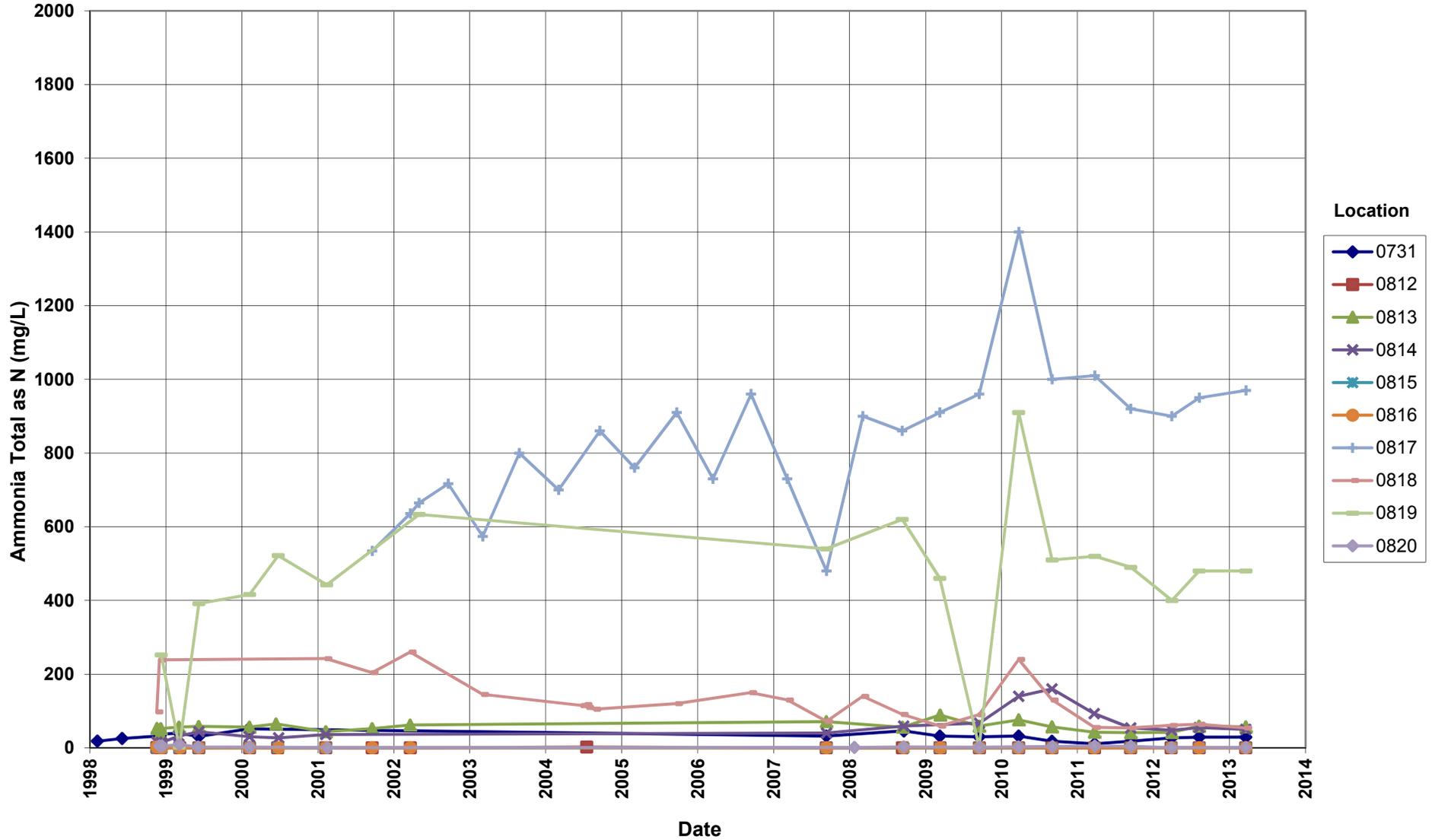
**Time-Concentration Graphs
Terrace Groundwater Locations**

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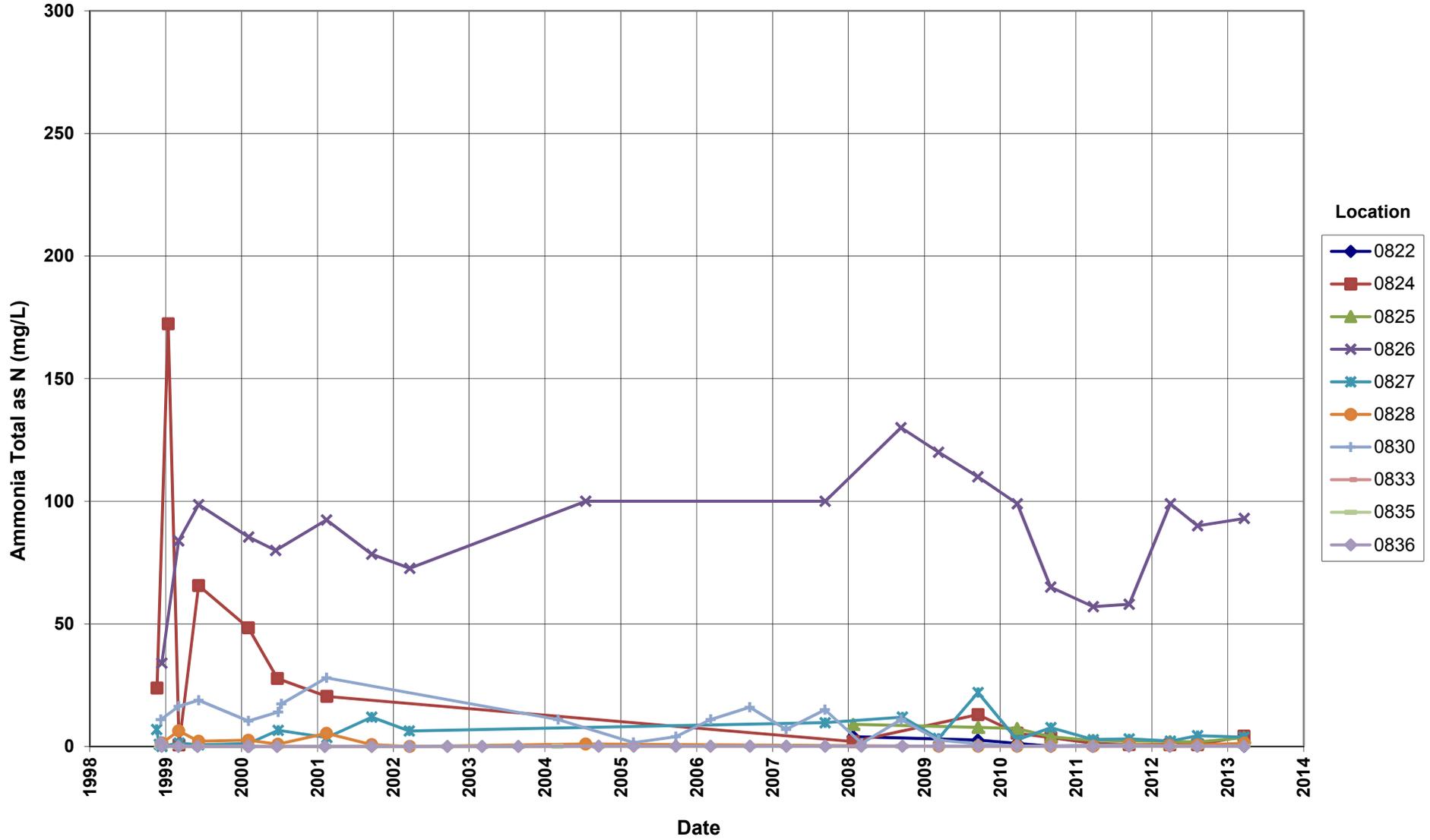
Shiprock Disposal Site (Terrace) Ammonia Total as N Concentration



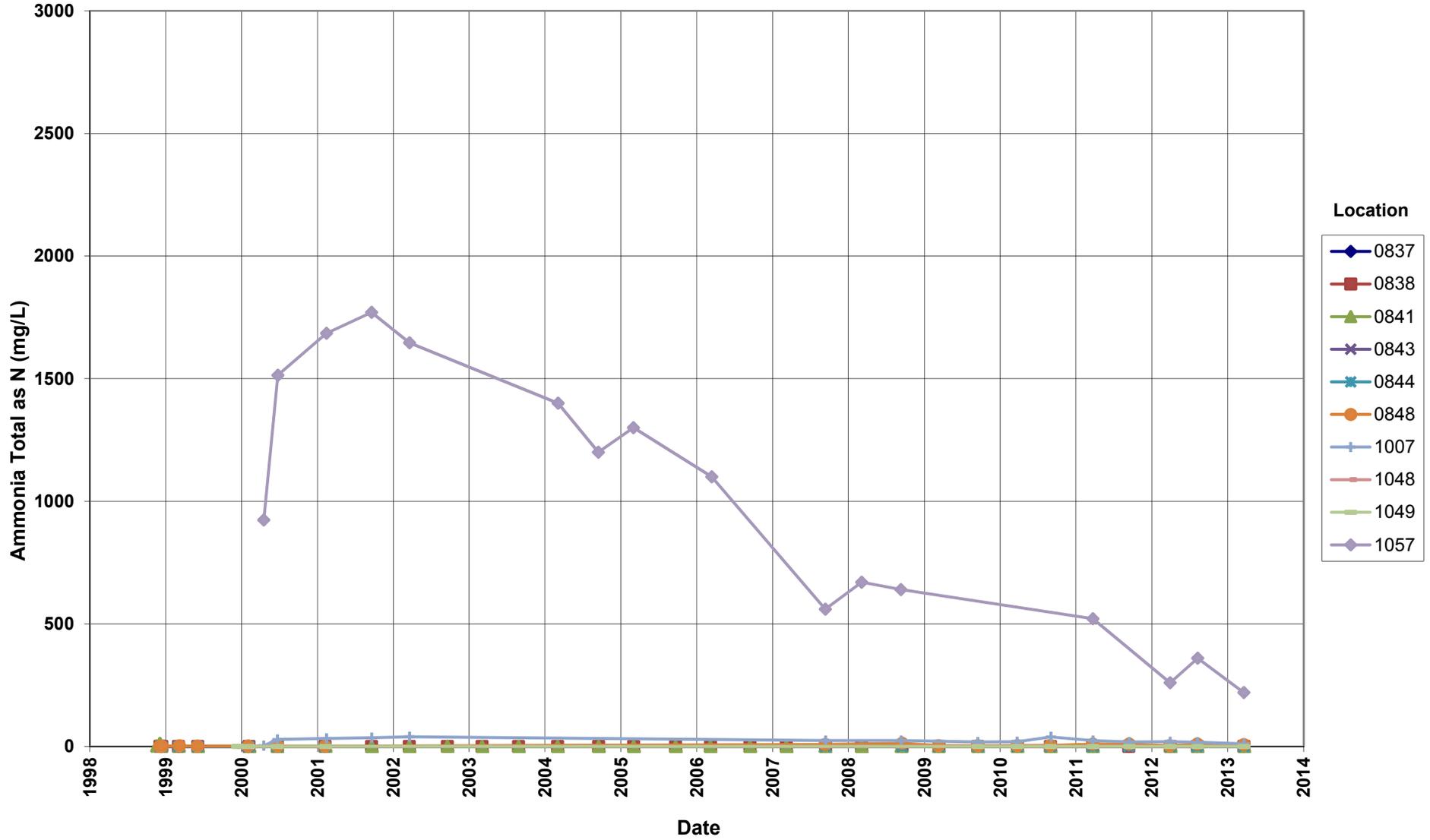
Shiprock Disposal Site (Terrace) Ammonia Total as N Concentration



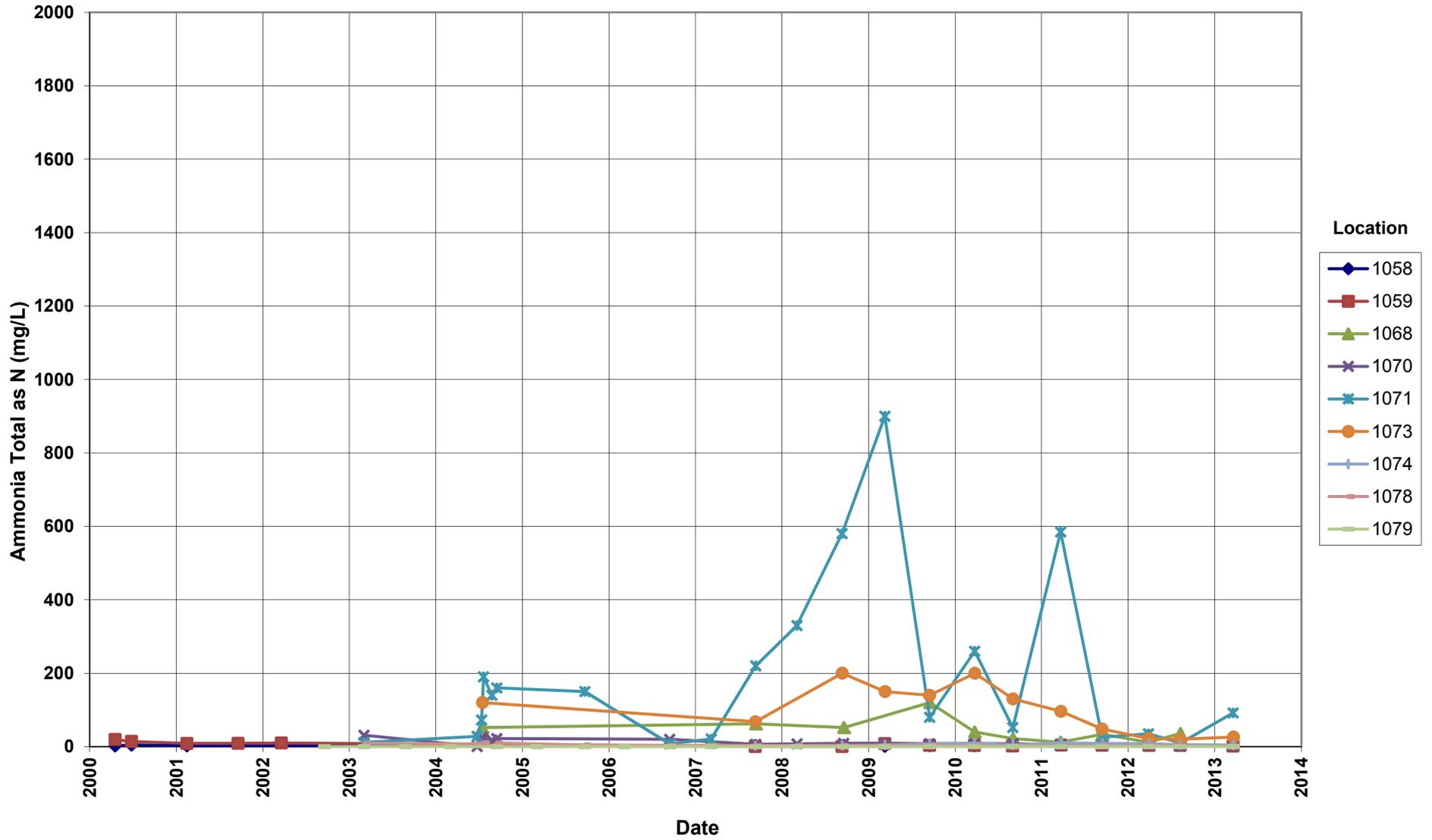
Shiprock Disposal Site (Terrace) Ammonia Total as N Concentration



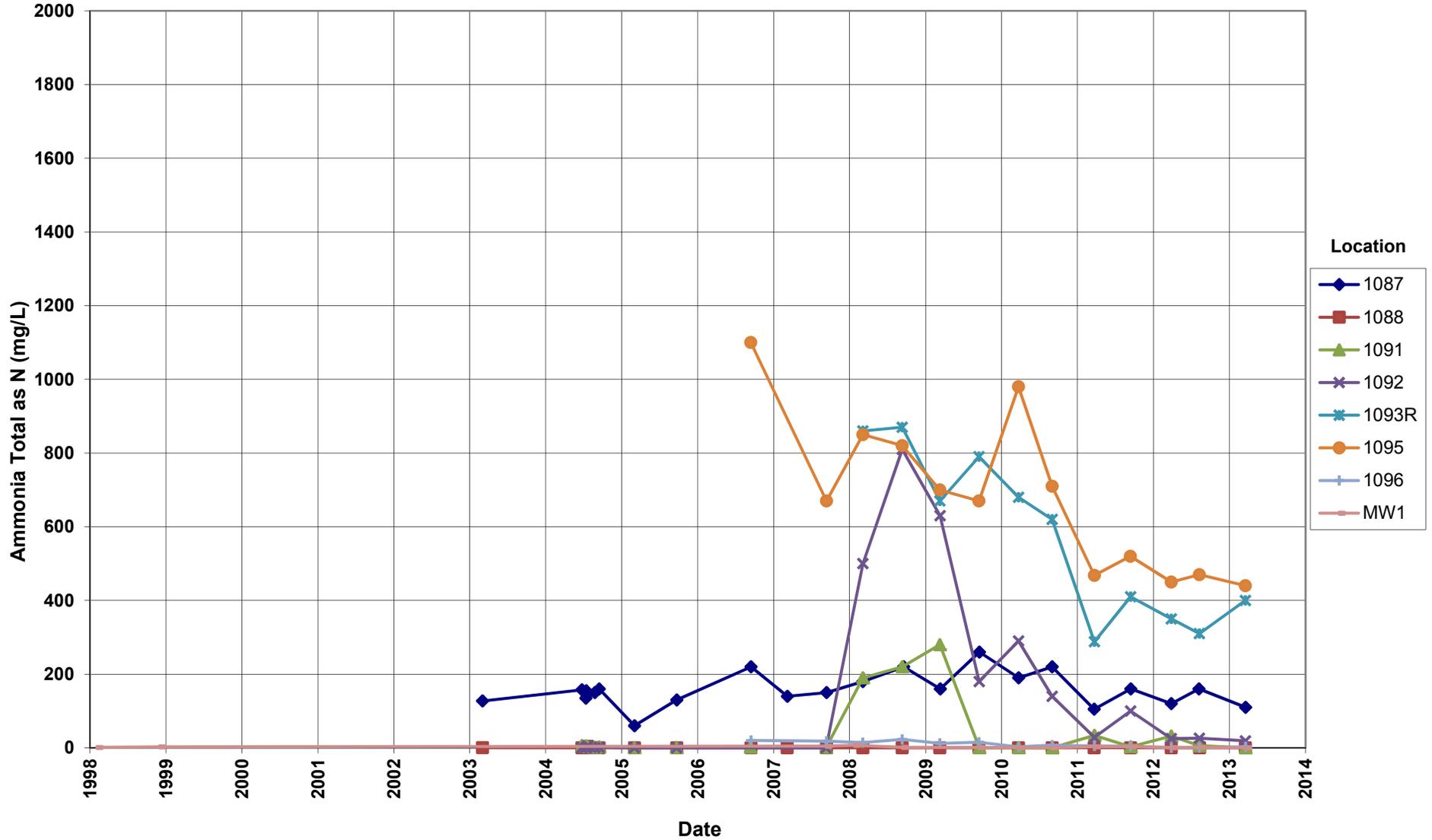
Shiprock Disposal Site (Terrace) Ammonia Total as N Concentration



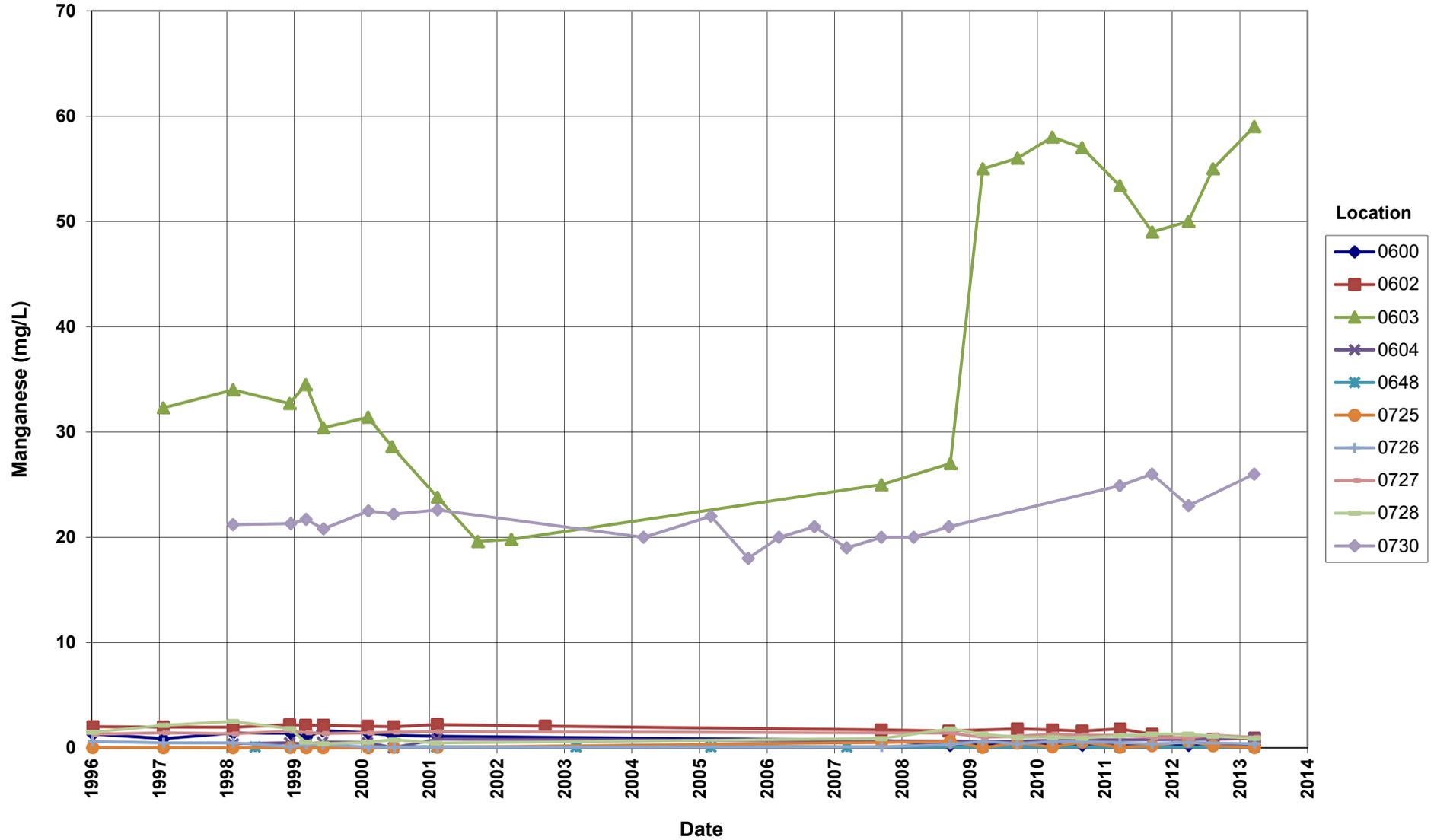
Shiprock Disposal Site (Terrace) Ammonia Total as N Concentration



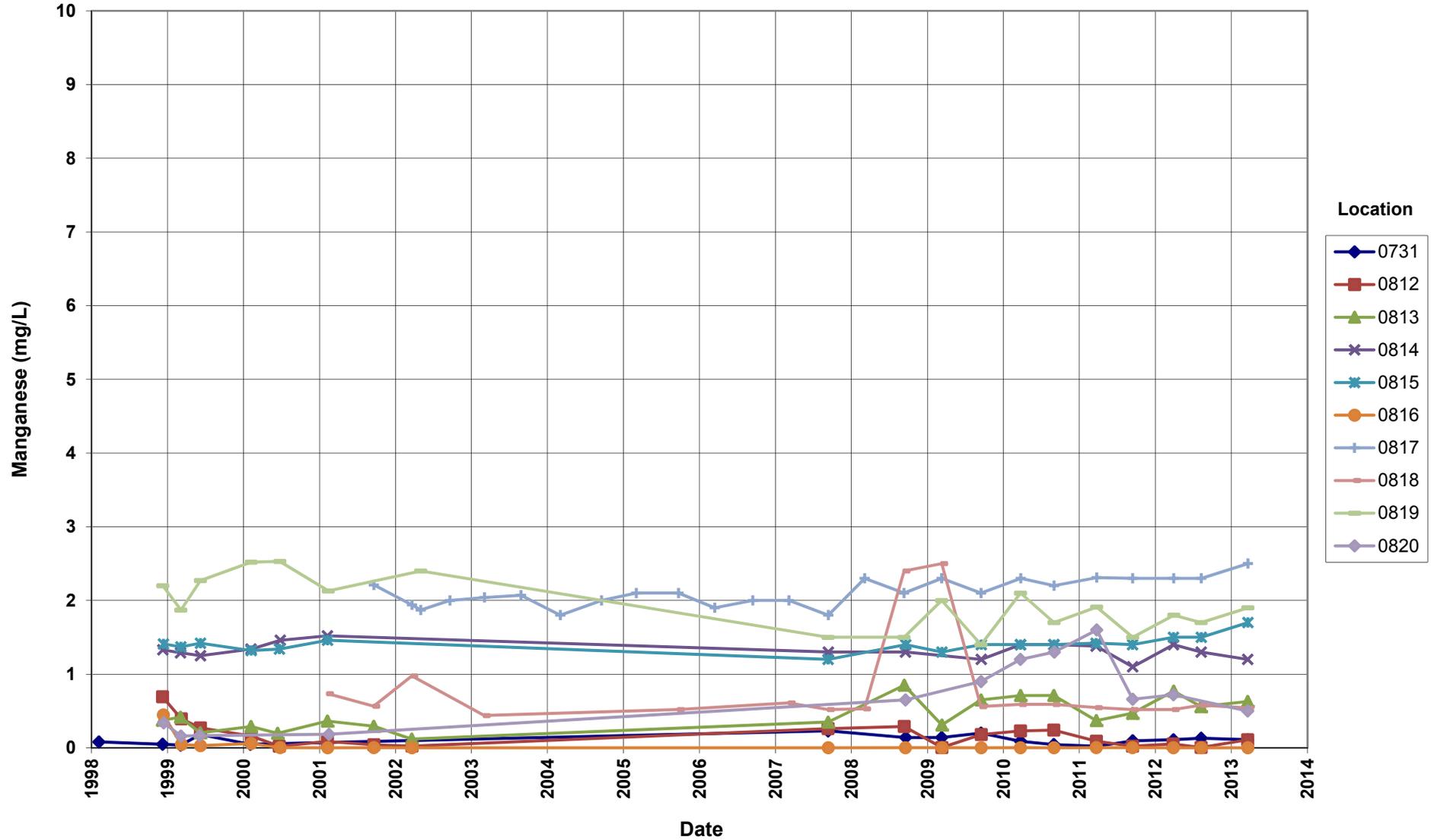
Shiprock Disposal Site (Terrace) Ammonia Total as N Concentration



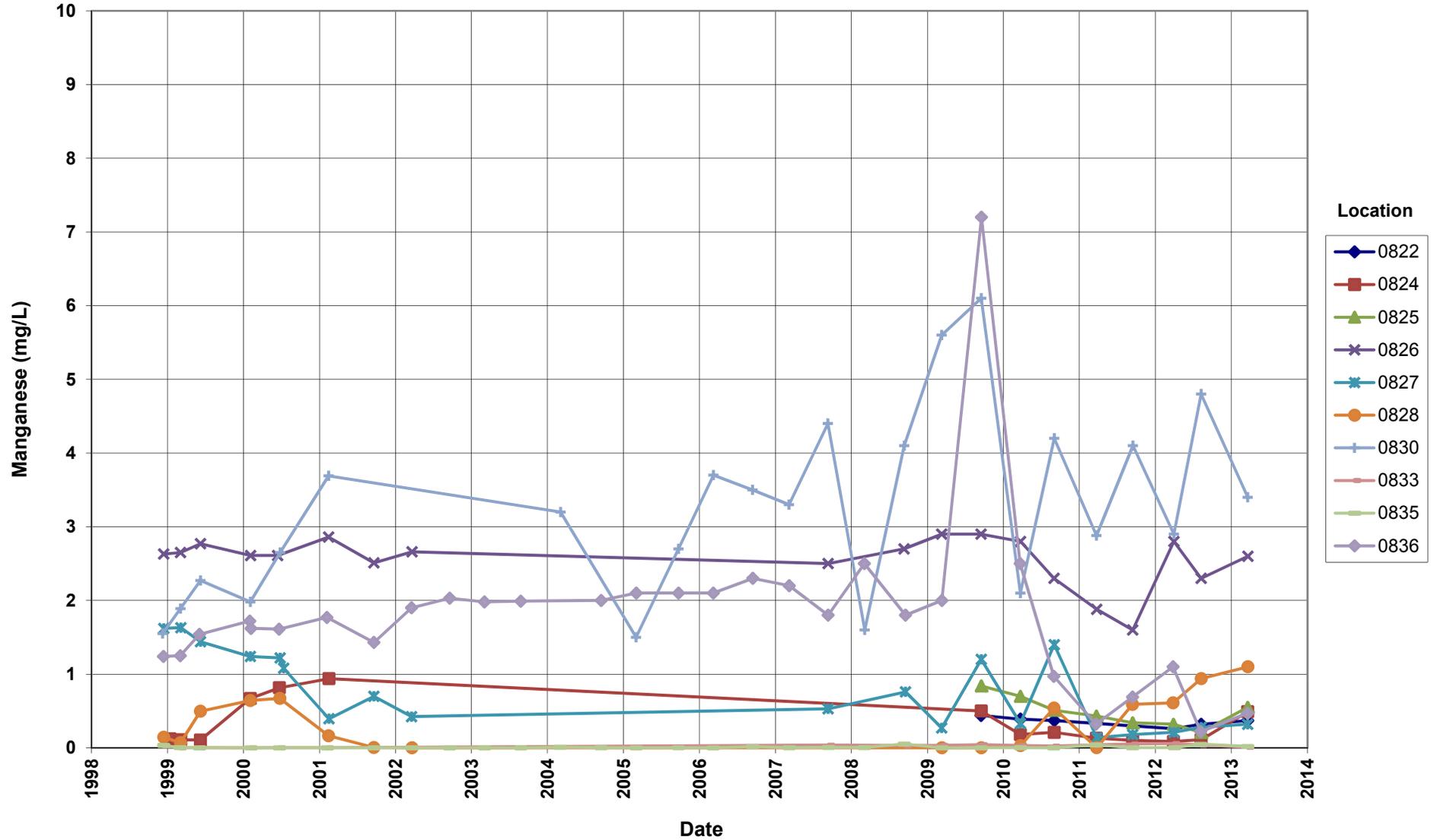
Shiprock Disposal Site (Terrace) Manganese Concentration



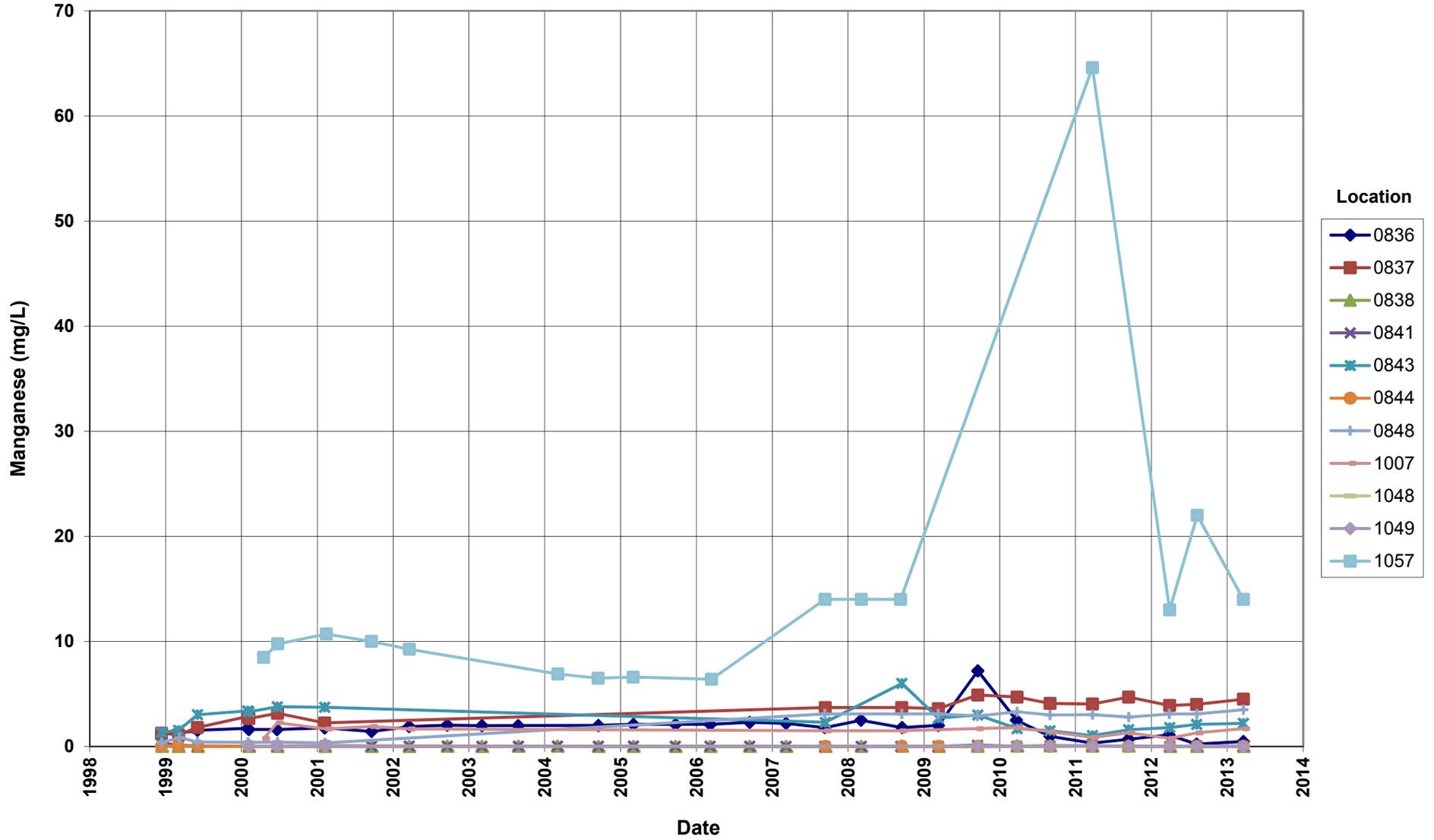
Shiprock Disposal Site (Terrace) Manganese Concentration



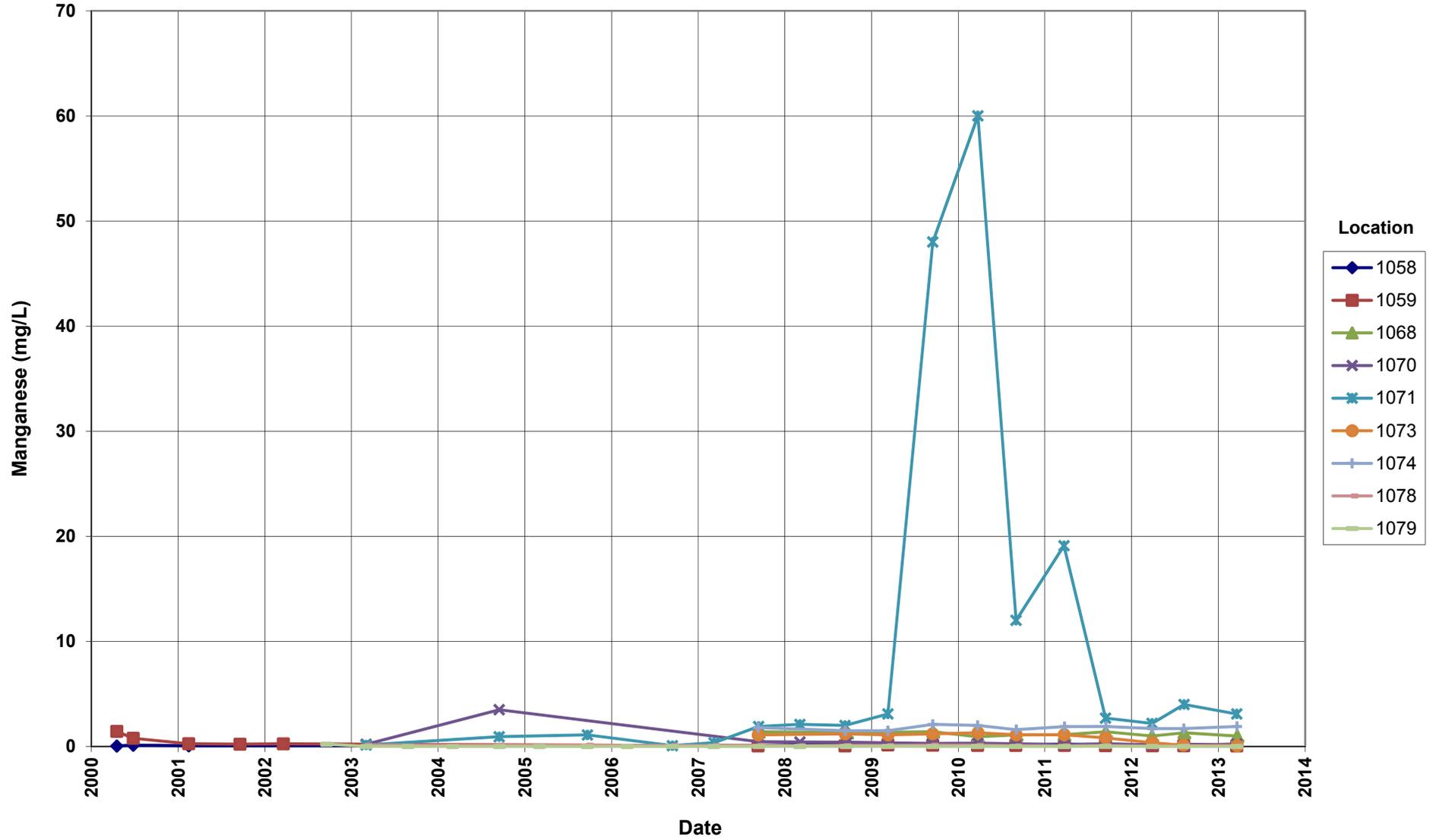
Shiprock Disposal Site (Terrace) Manganese Concentration



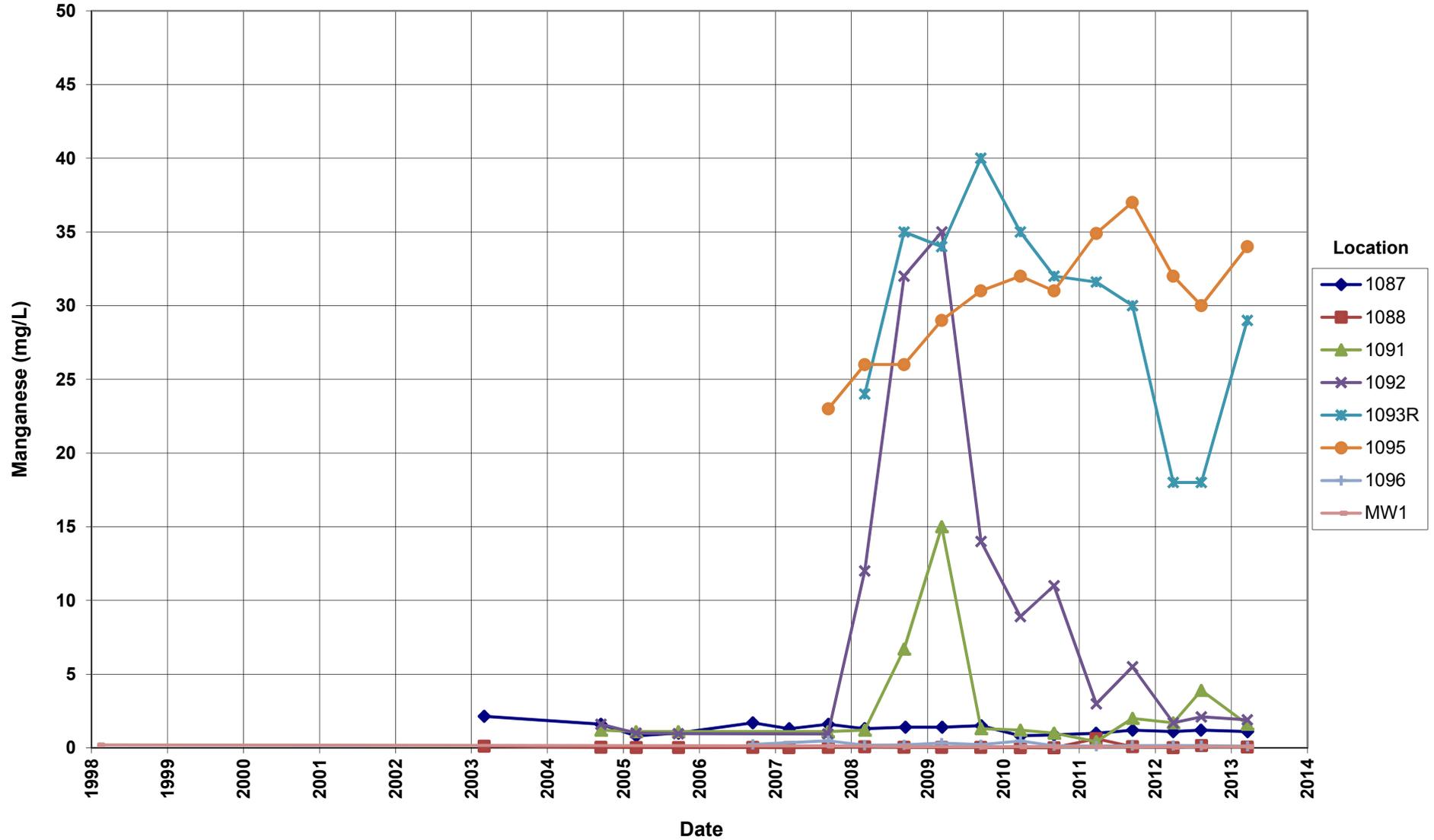
Shiprock Disposal Site (Terrace) Manganese Concentration



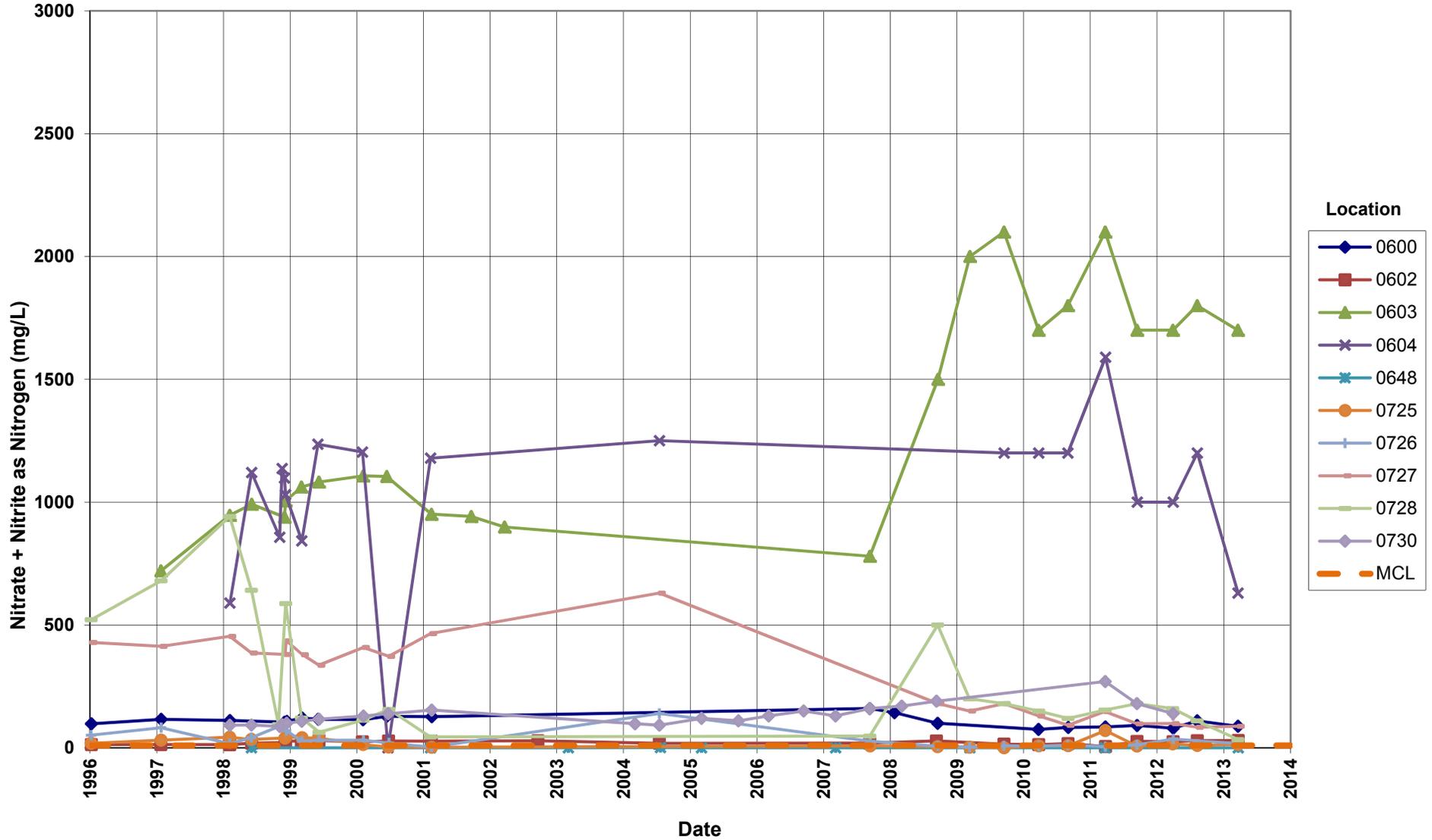
Shiprock Disposal Site (Terrace) Manganese Concentration



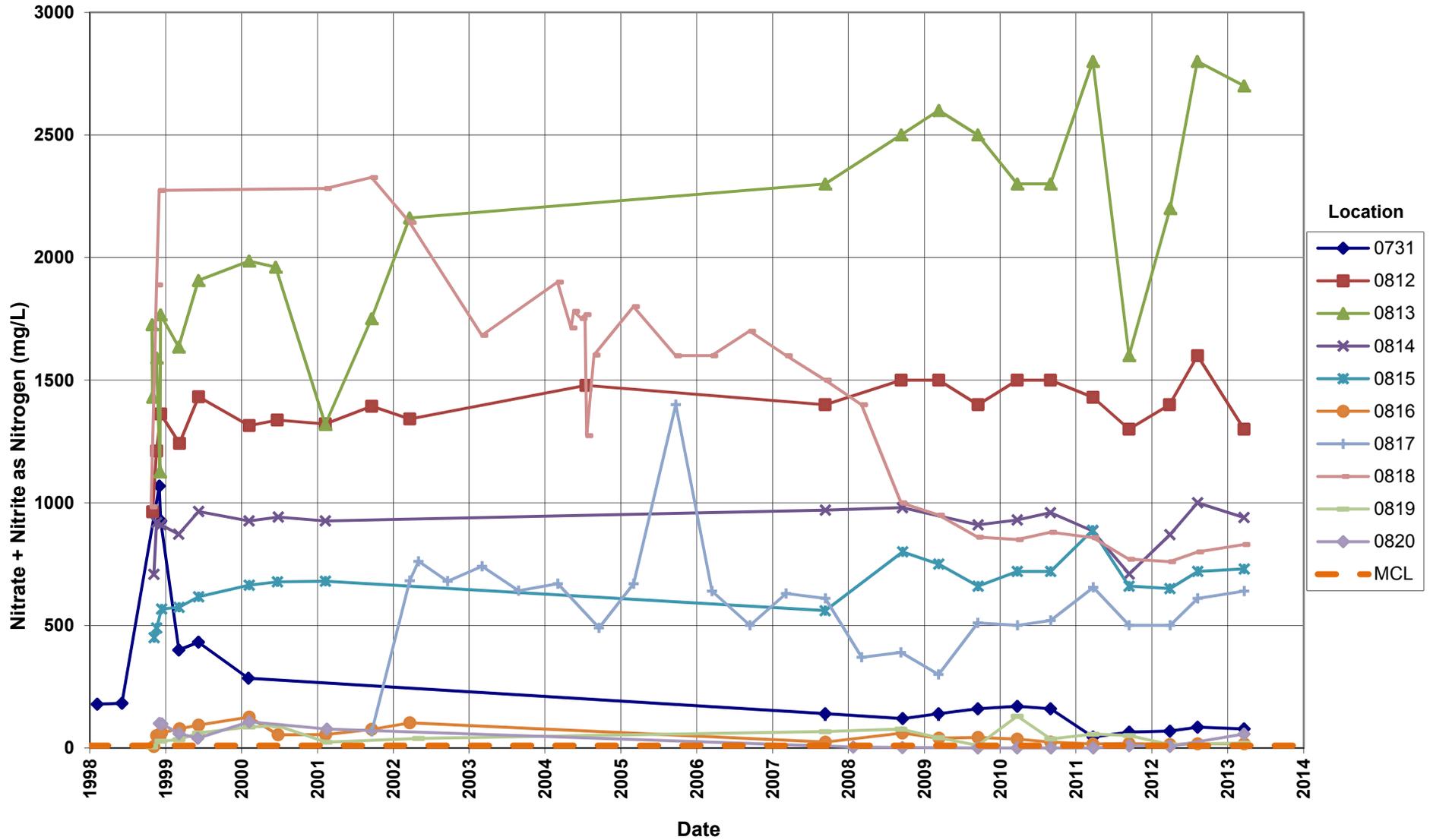
Shiprock Disposal Site (Terrace) Manganese Concentration



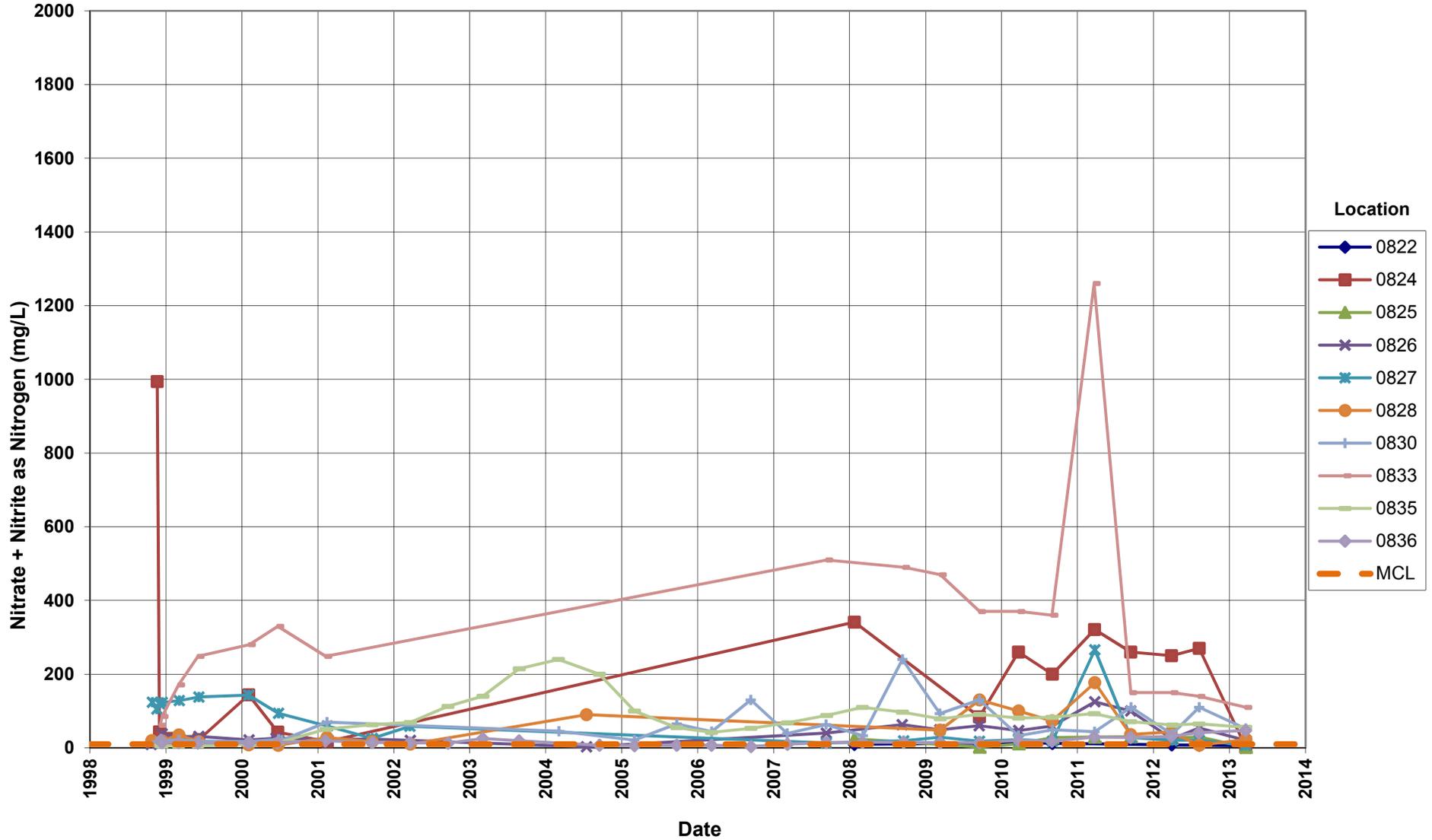
Shiprock Disposal Site (Terrace)
Nitrate + Nitrite as Nitrogen Concentration
 Maximum Contaminant Level (MCL) = 10 mg/L



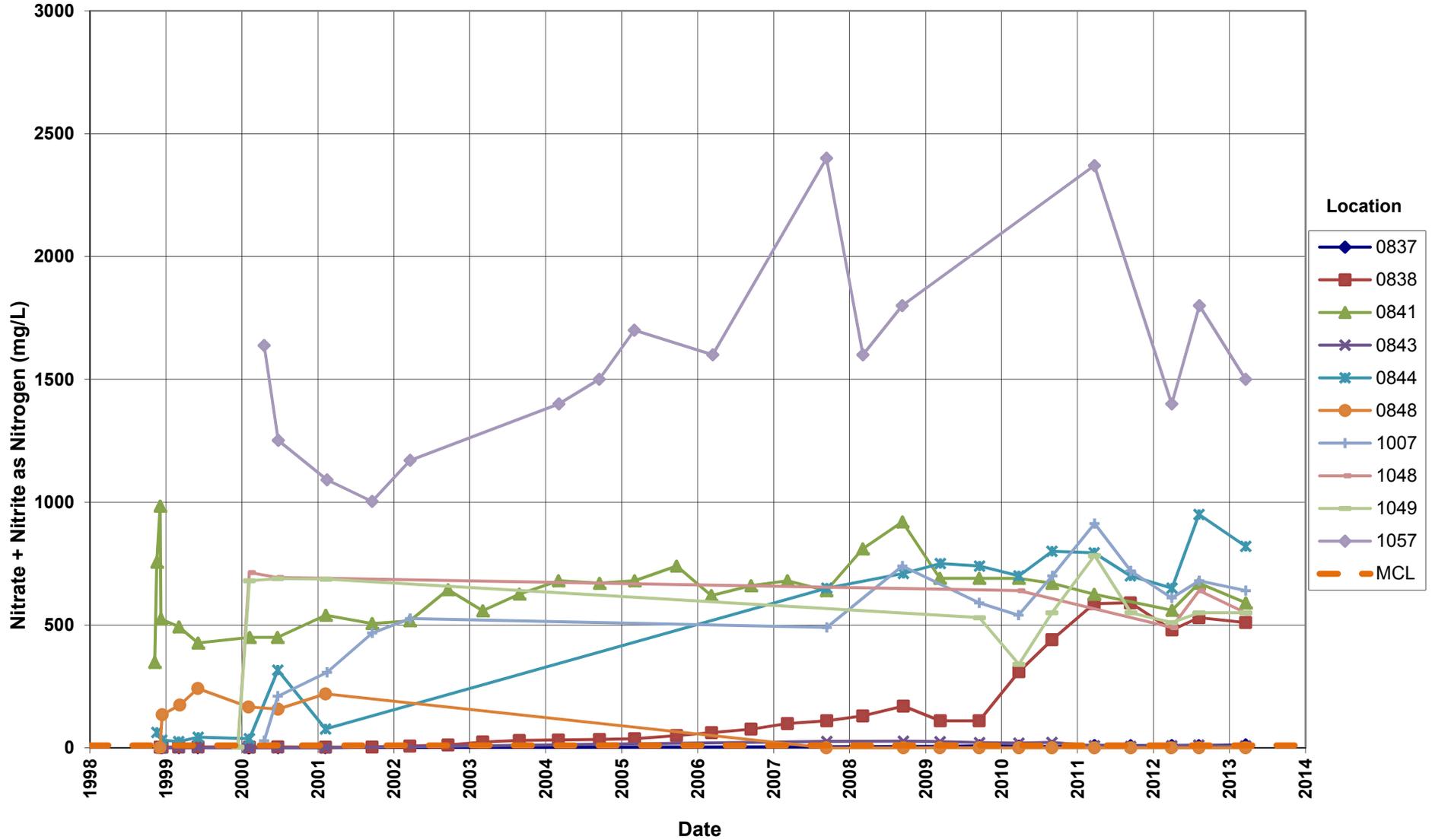
Shiprock Disposal Site (Terrace)
Nitrate + Nitrite as Nitrogen Concentration
 Maximum Contaminant Level (MCL) = 10 mg/L



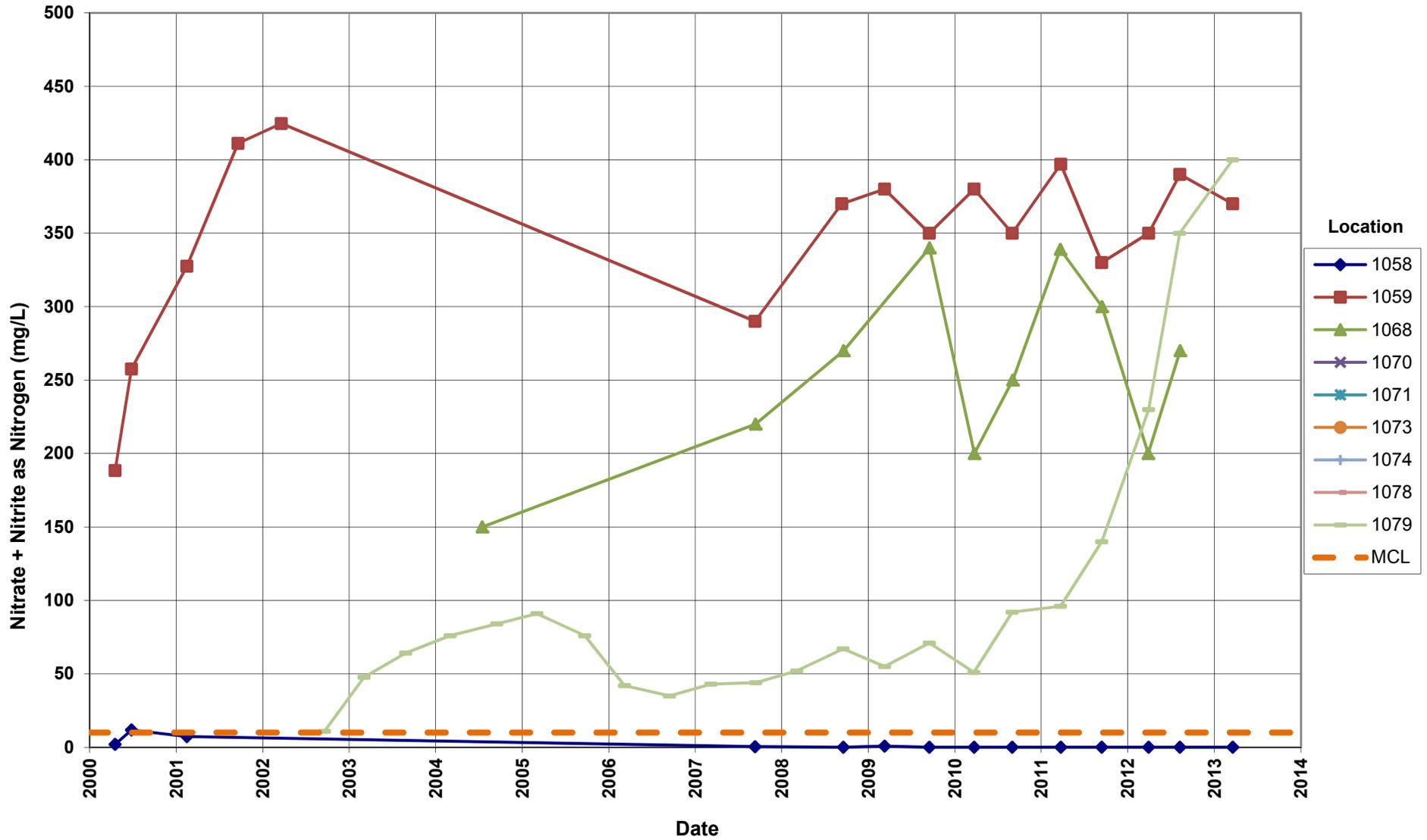
Shiprock Disposal Site (Terrace)
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level (MCL) = 10 mg/L



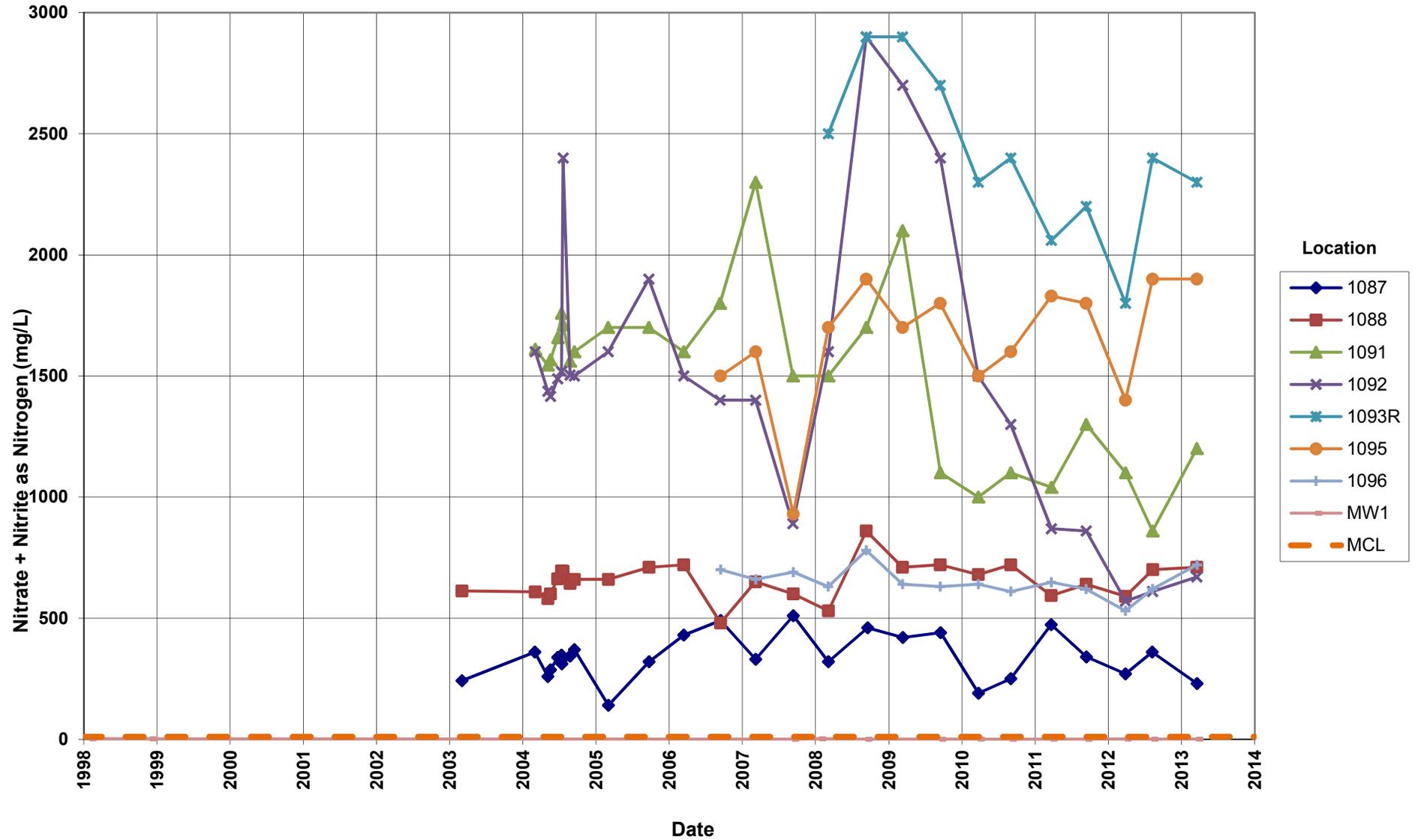
Shiprock Disposal Site (Terrace)
Nitrate + Nitrite as Nitrogen Concentration
 Maximum Contaminant Level (MCL) = 10 mg/L



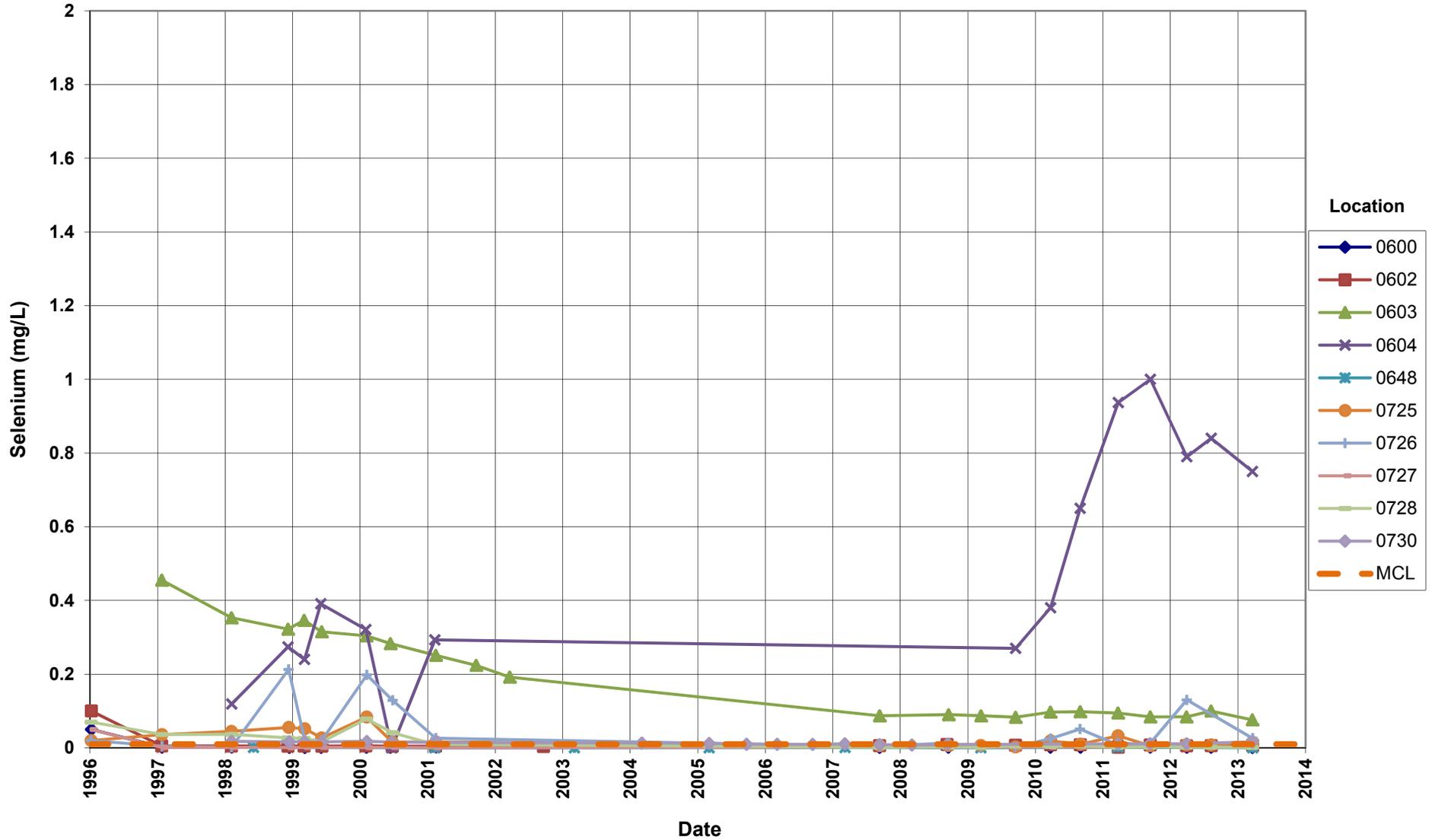
Shiprock Disposal Site (Terrace)
Nitrate + Nitrite as Nitrogen Concentration
 Maximum Contaminant Level (MCL) = 10 mg/L



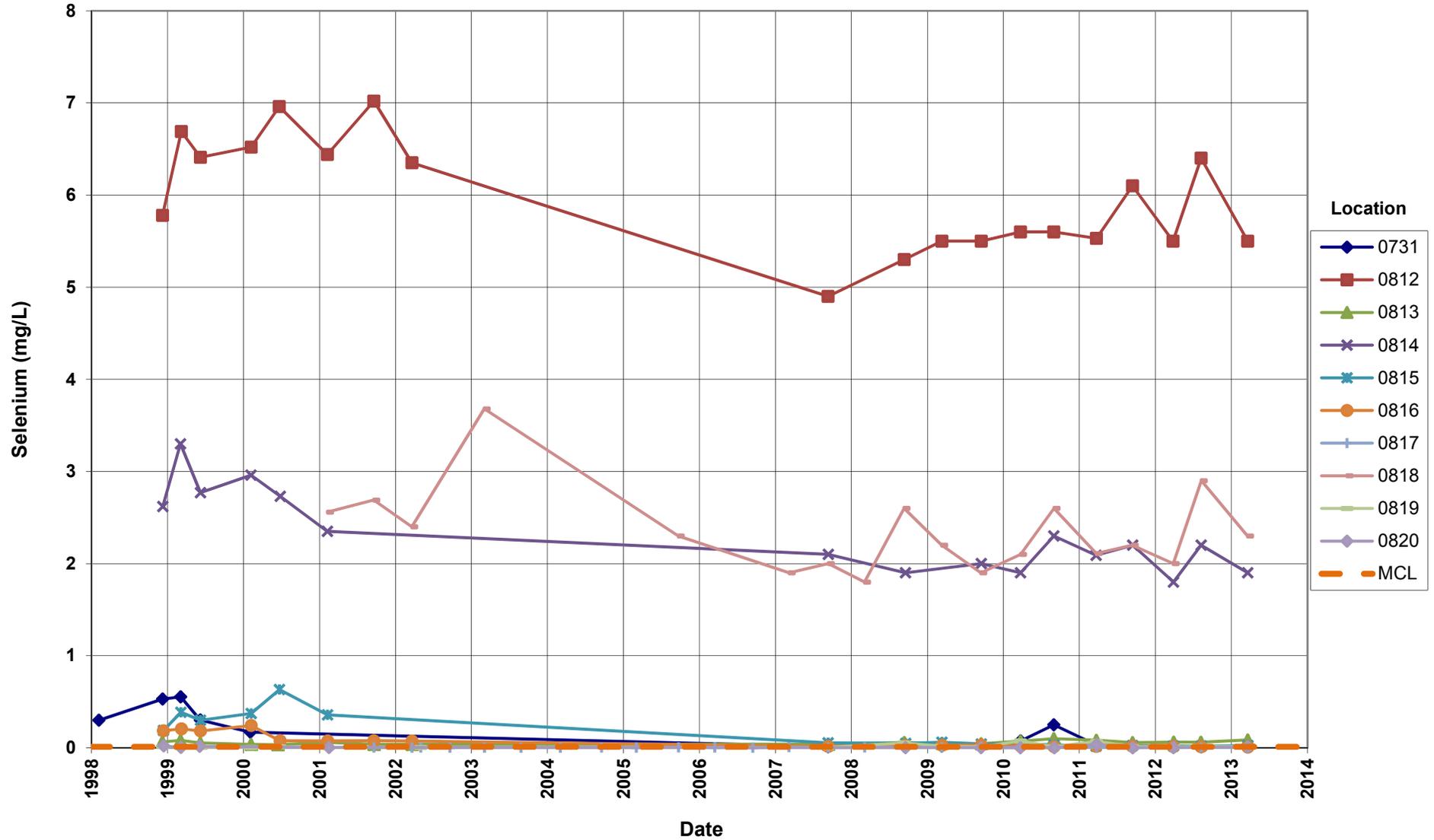
Shiprock Disposal Site (Terrace)
Nitrate + Nitrite as Nitrogen Concentration
 Maximum Contaminant Level (MCL) = 10 mg/L



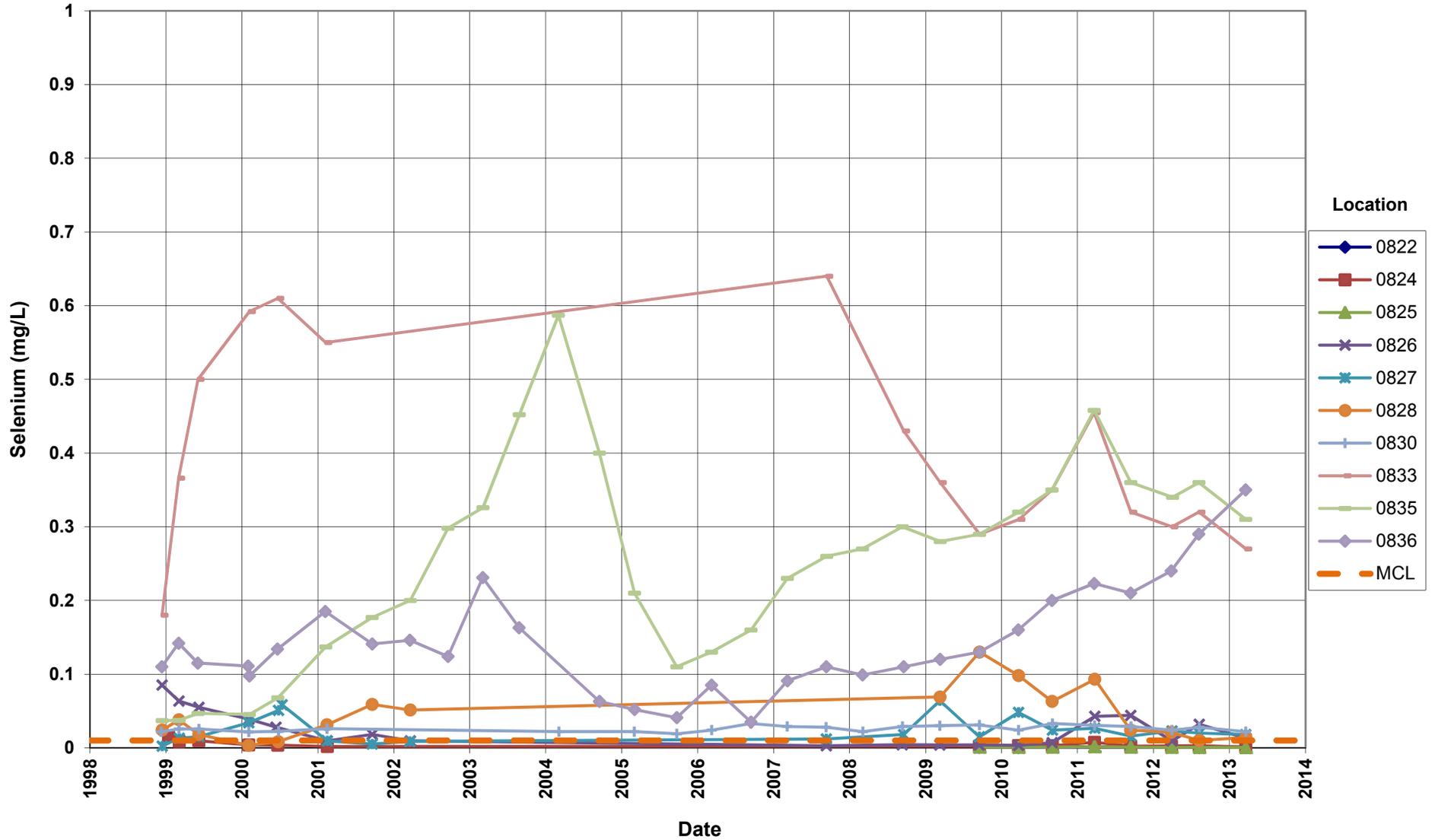
Shiprock Disposal Site (Terrace)
Selenium Concentration
Maximum Contaminant Level (MCL) = 0.01 mg/L



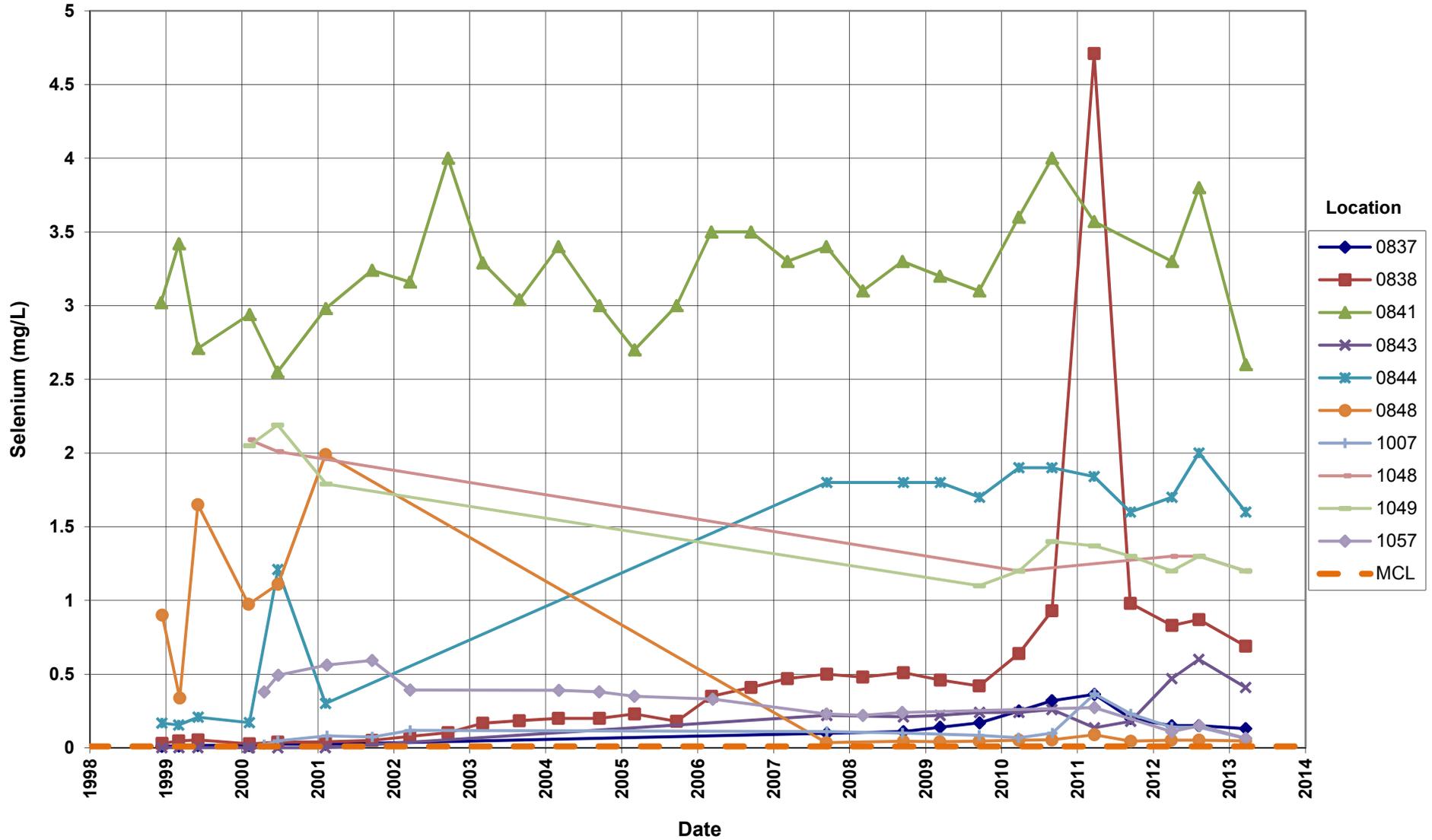
Shiprock Disposal Site (Terrace)
Selenium Concentration
 Maximum Contaminant Level (MCL) = 0.01 mg/L



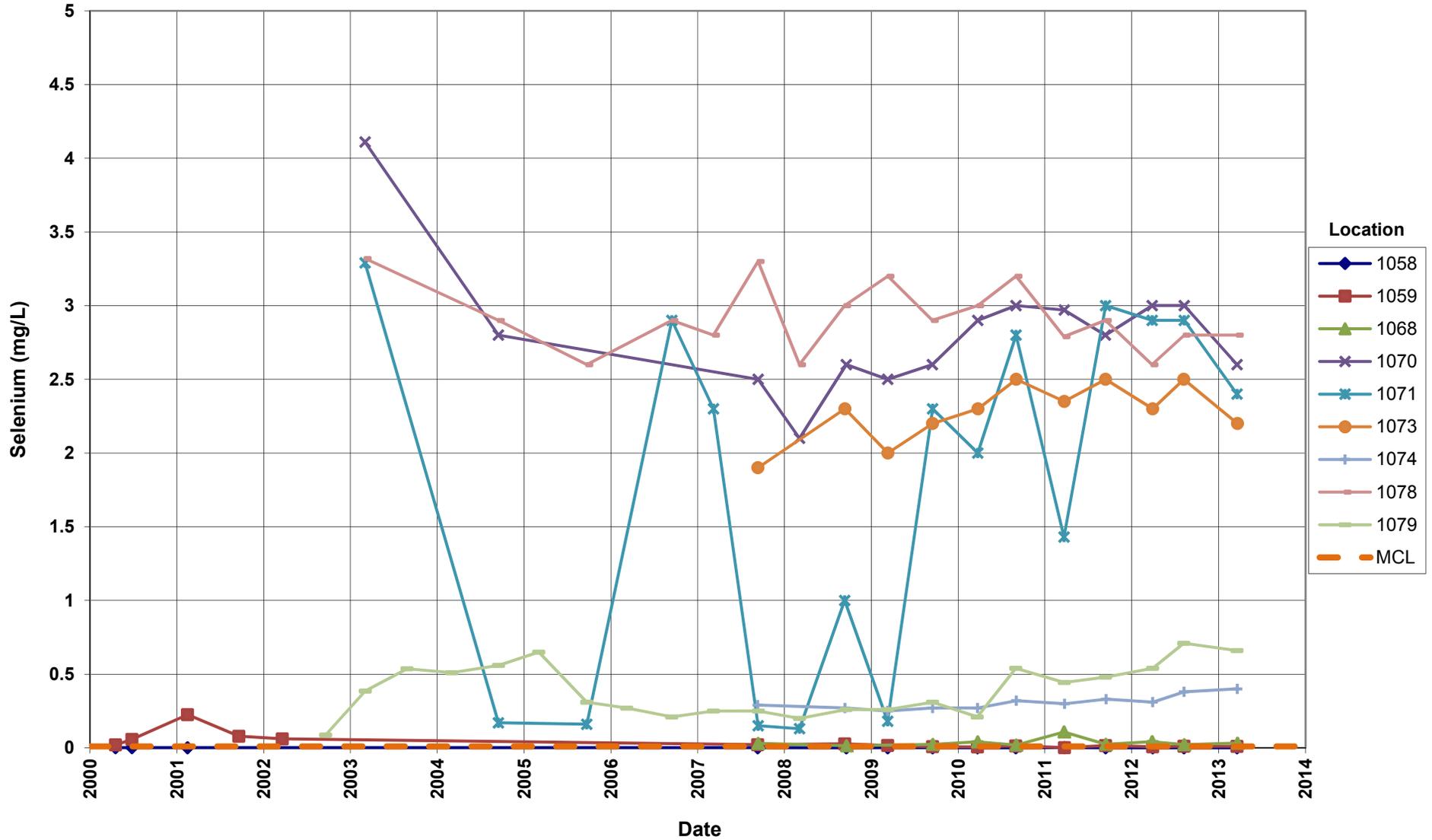
**Shiprock Disposal Site (Terrace)
Selenium Concentration**
Maximum Contaminant Level (MCL) = 0.01 mg/L



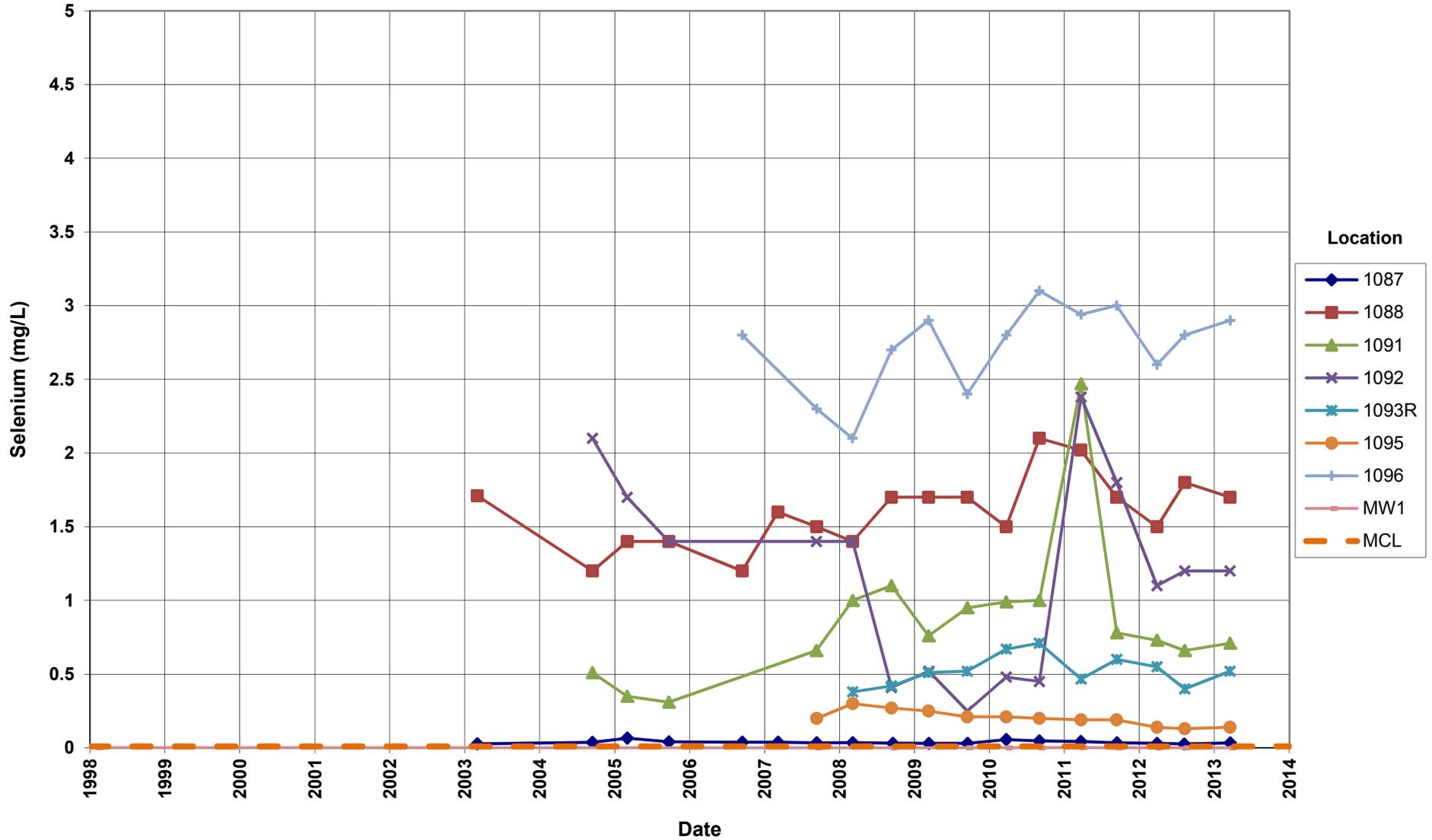
**Shiprock Disposal Site (Terrace)
Selenium Concentration**
Maximum Contaminant Level (MCL) = 0.01 mg/L



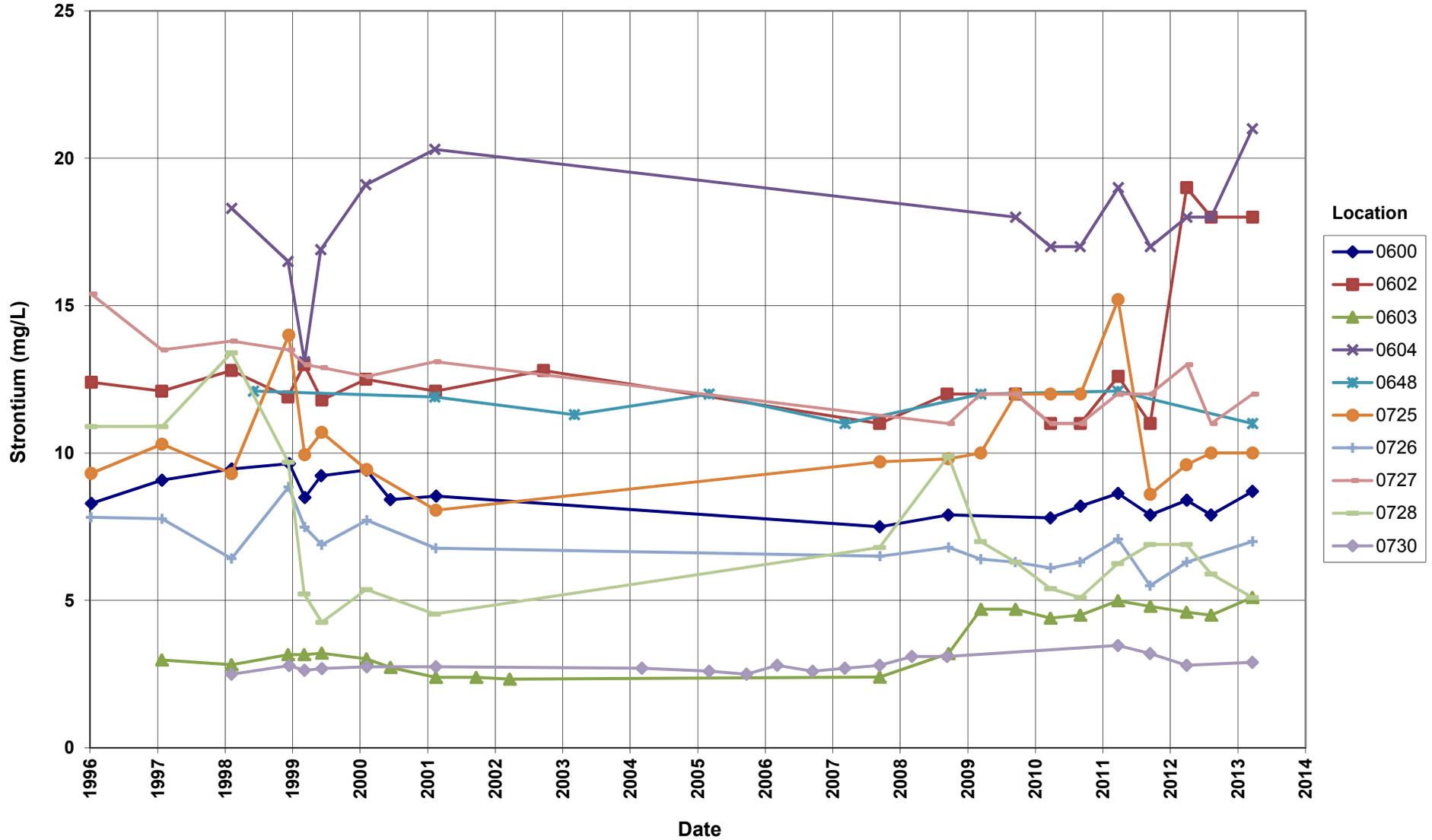
**Shiprock Disposal Site (Terrace)
Selenium Concentration**
Maximum Contaminant Level (MCL) = 0.01 mg/L



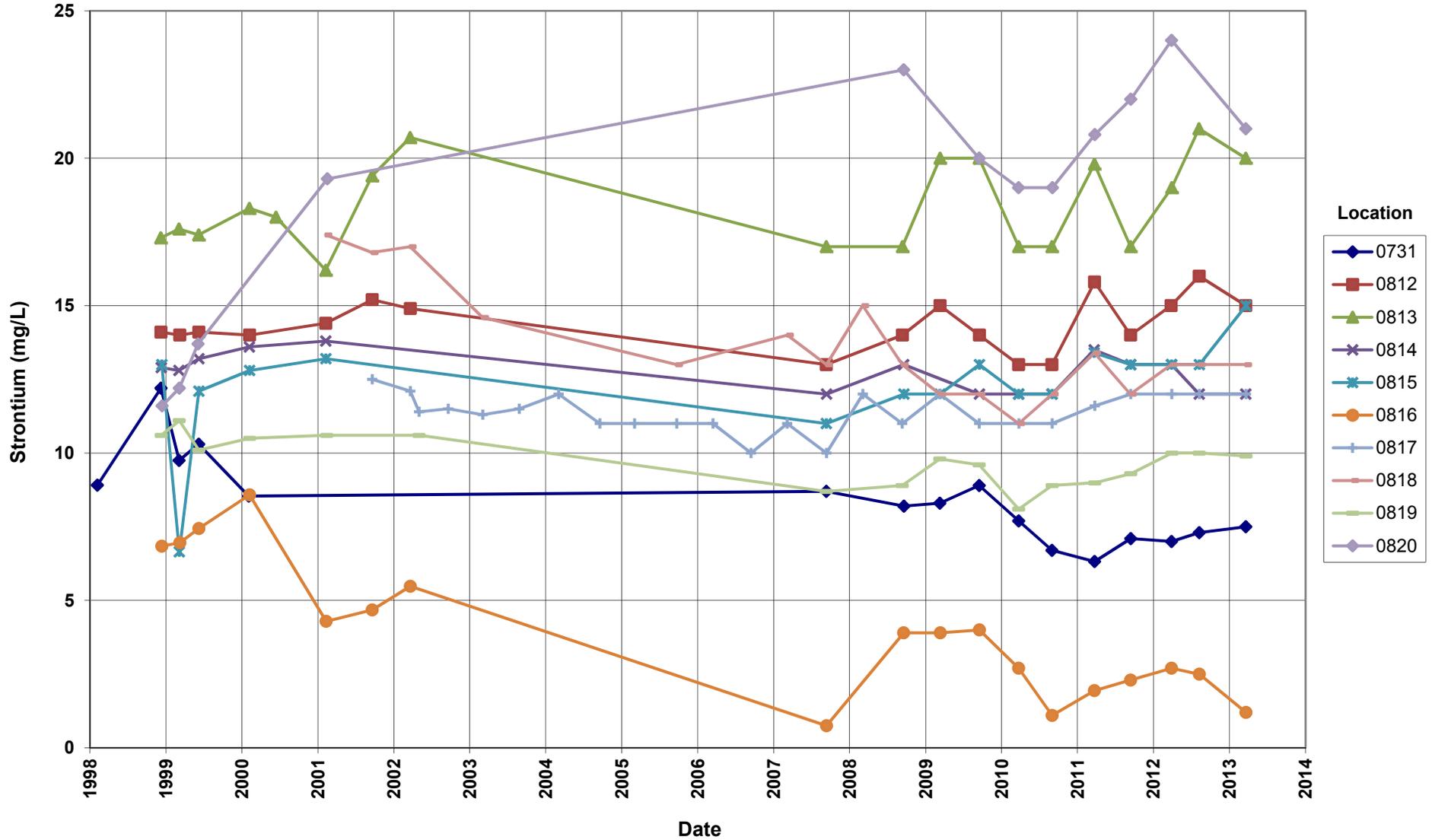
**Shiprock Disposal Site (Terrace)
Selenium Concentration**
Maximum Contaminant Level (MCL) = 0.01 mg/L



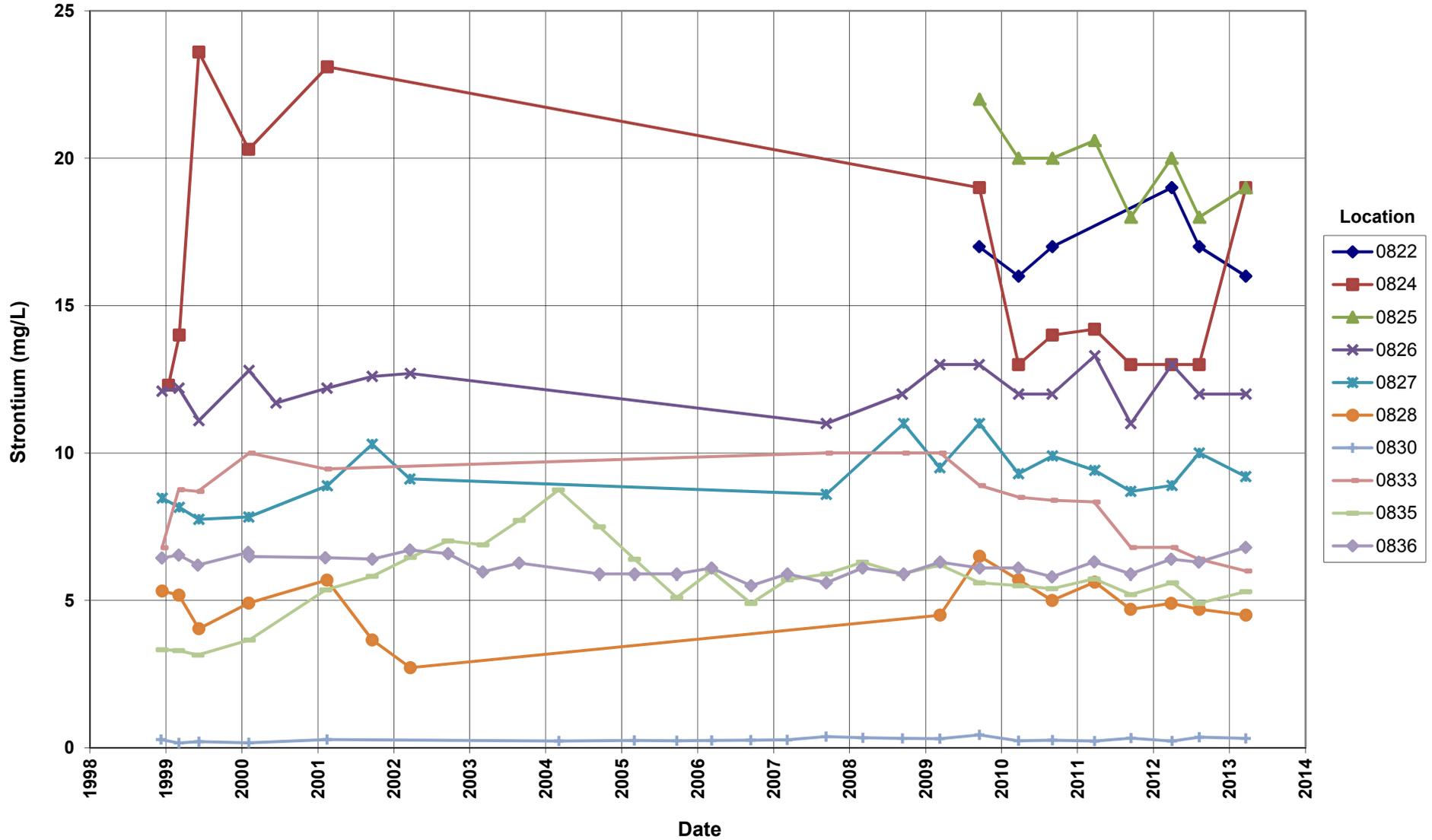
Shiprock Disposal Site (Terrace) Strontium Concentration



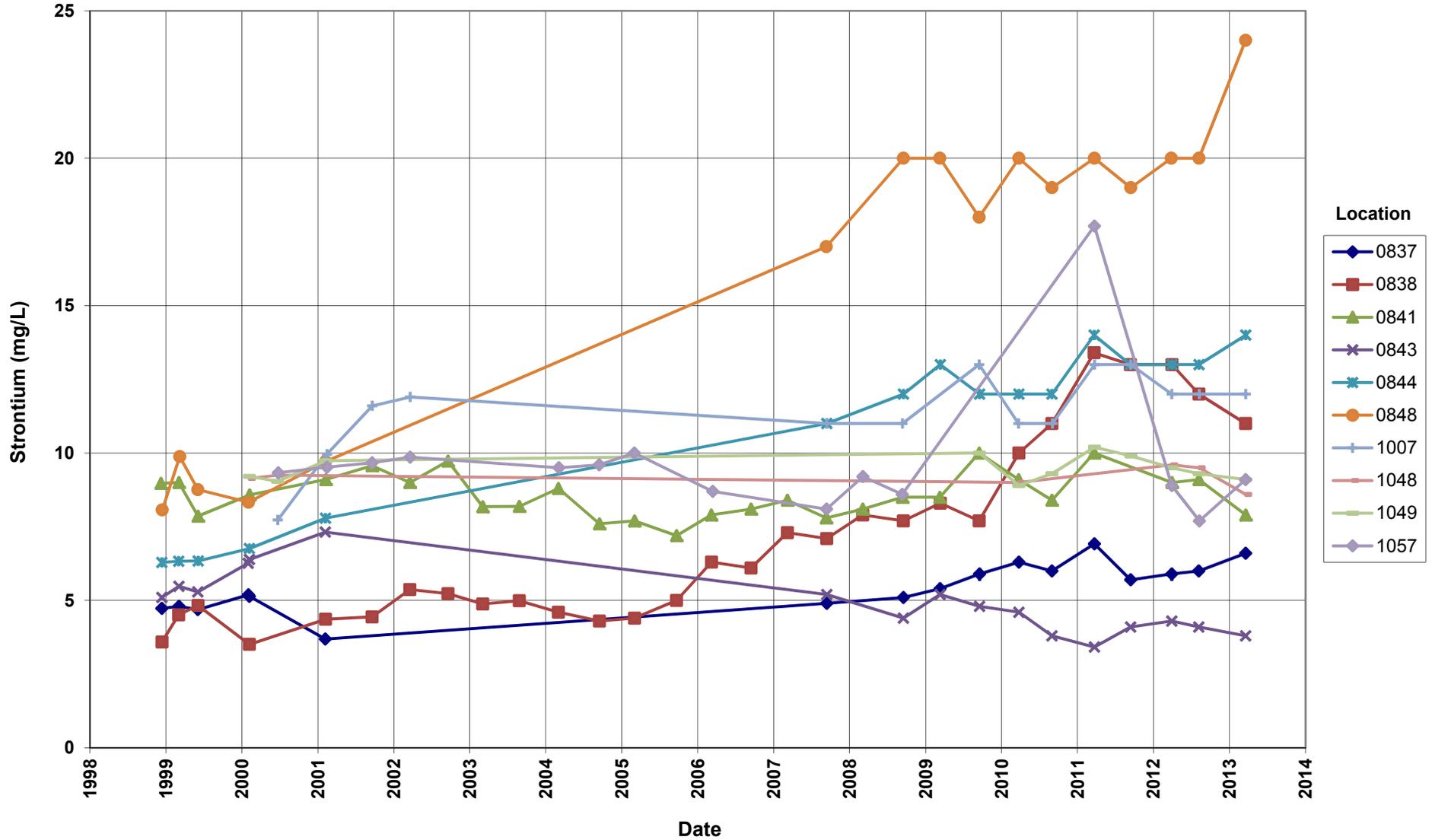
Shiprock Disposal Site (Terrace) Strontium Concentration



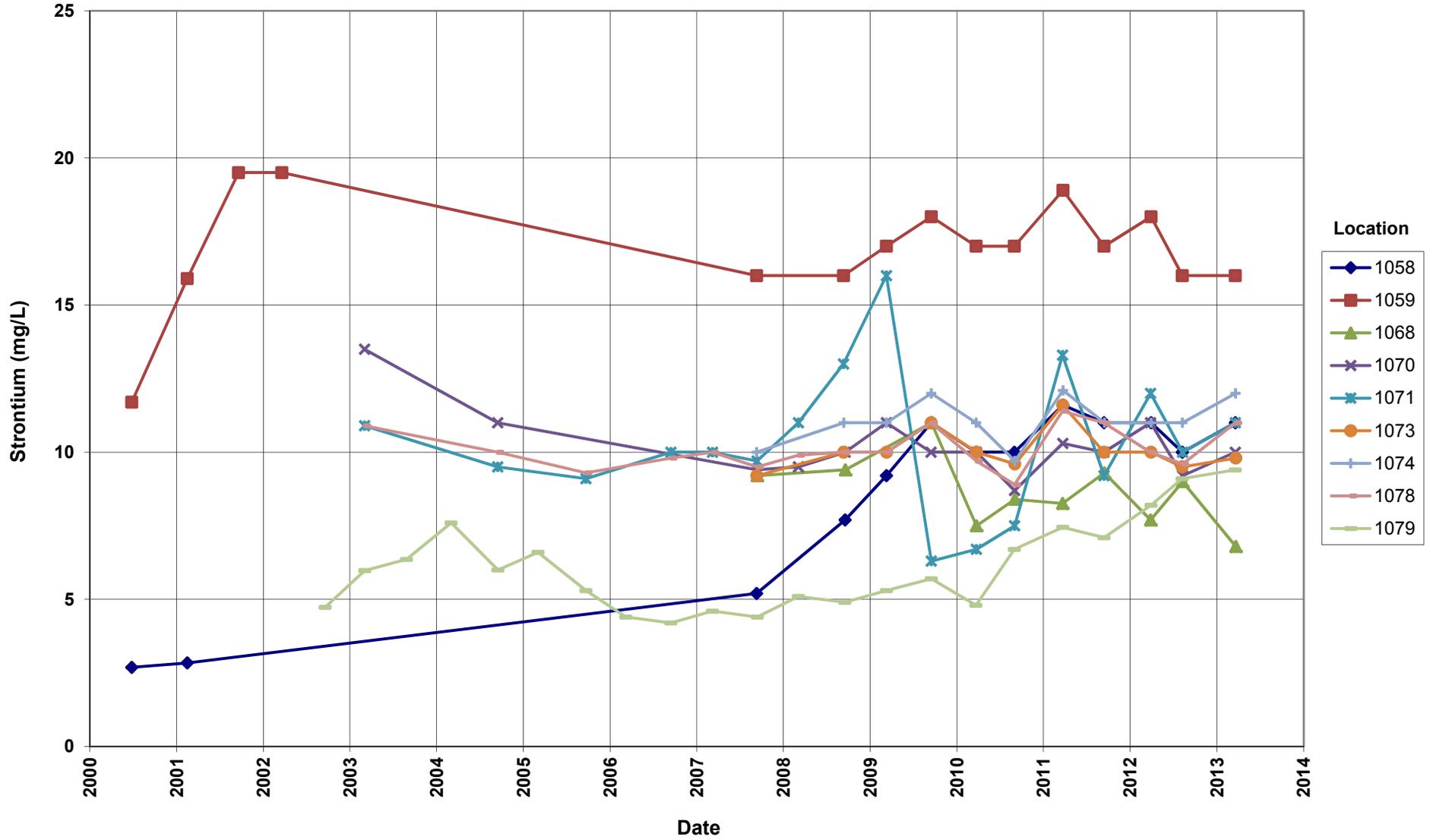
Shiprock Disposal Site (Terrace) Strontium Concentration



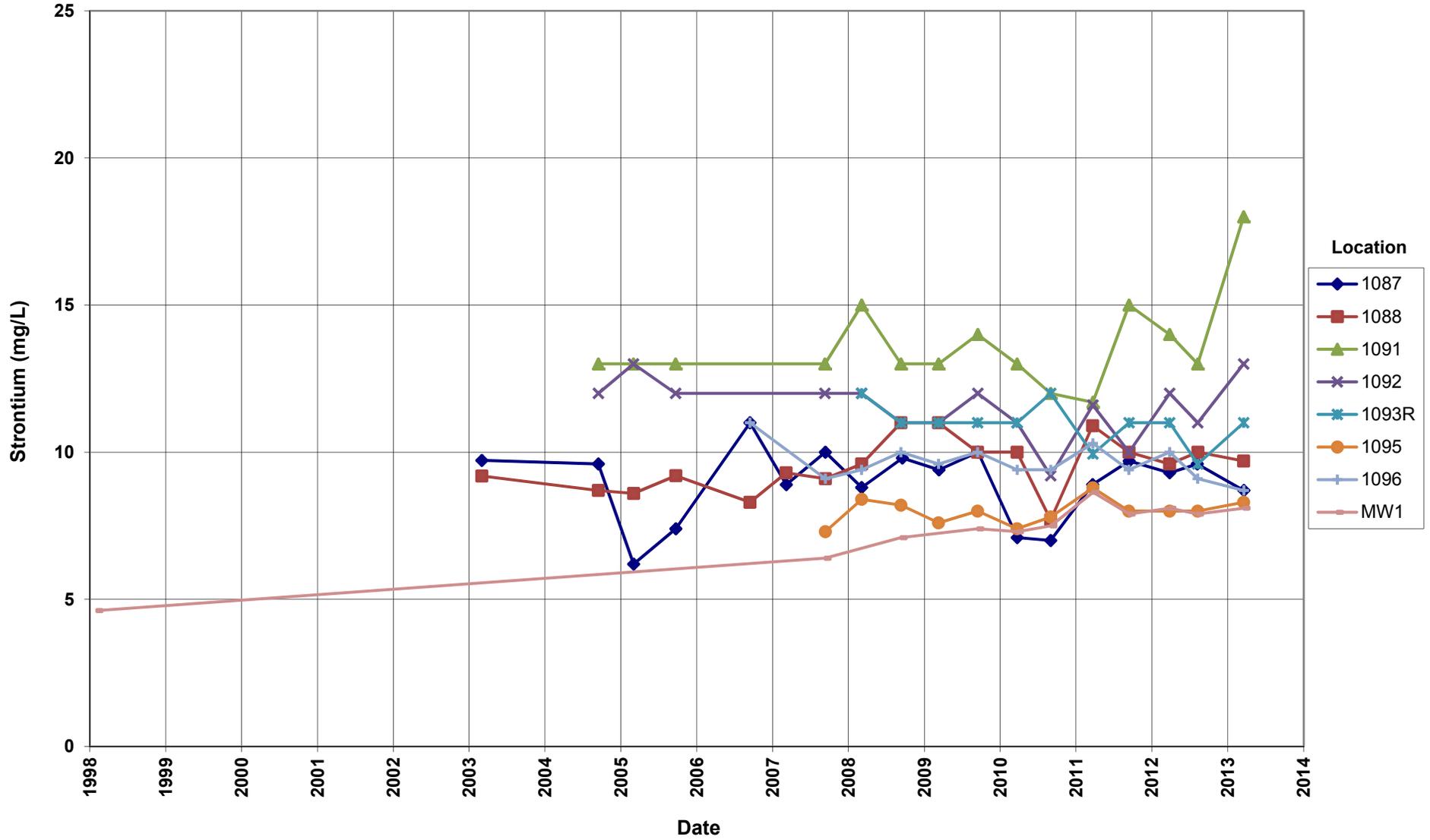
Shiprock Disposal Site (Terrace) Strontium Concentration



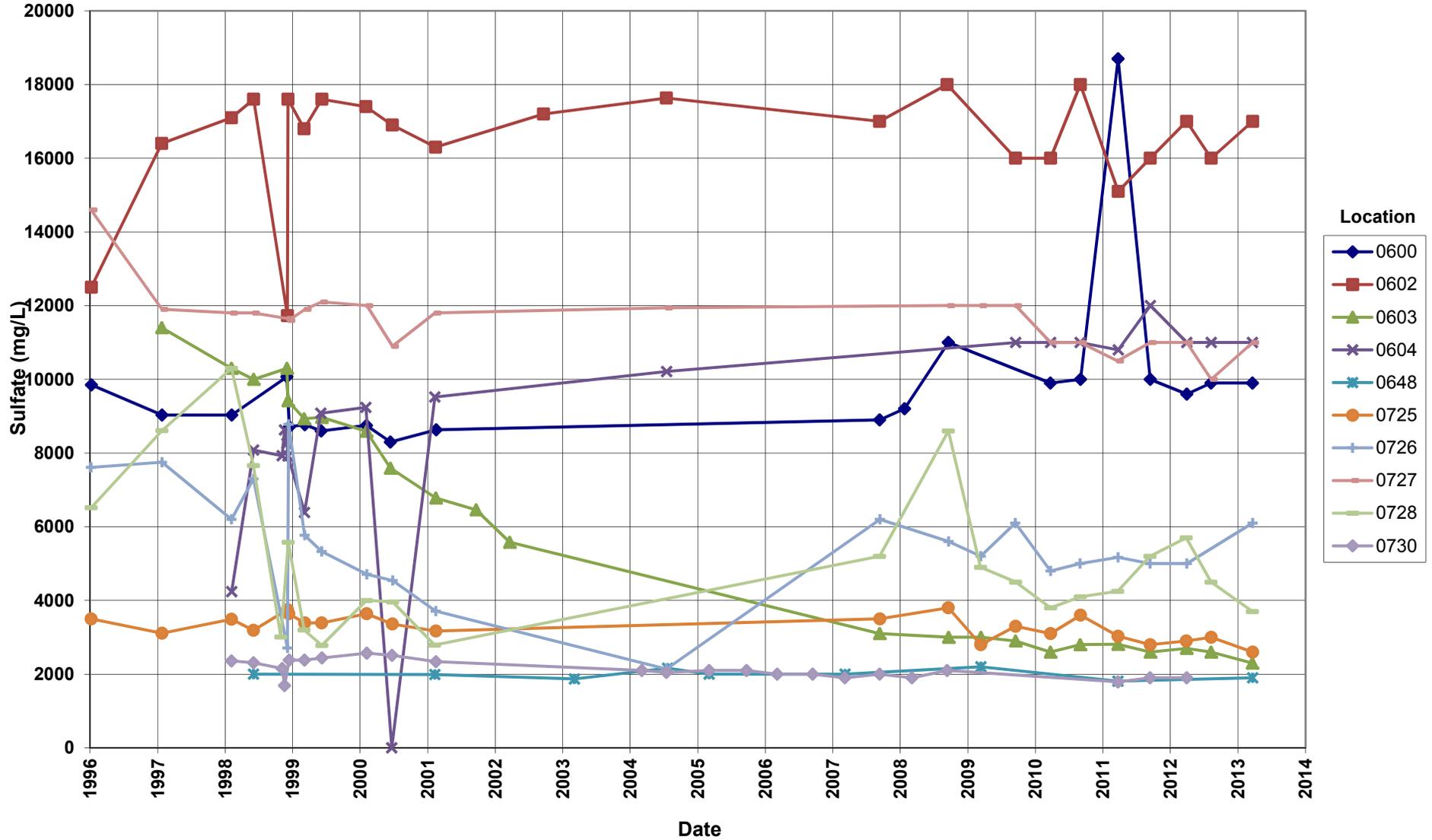
Shiprock Disposal Site (Terrace) Strontium Concentration



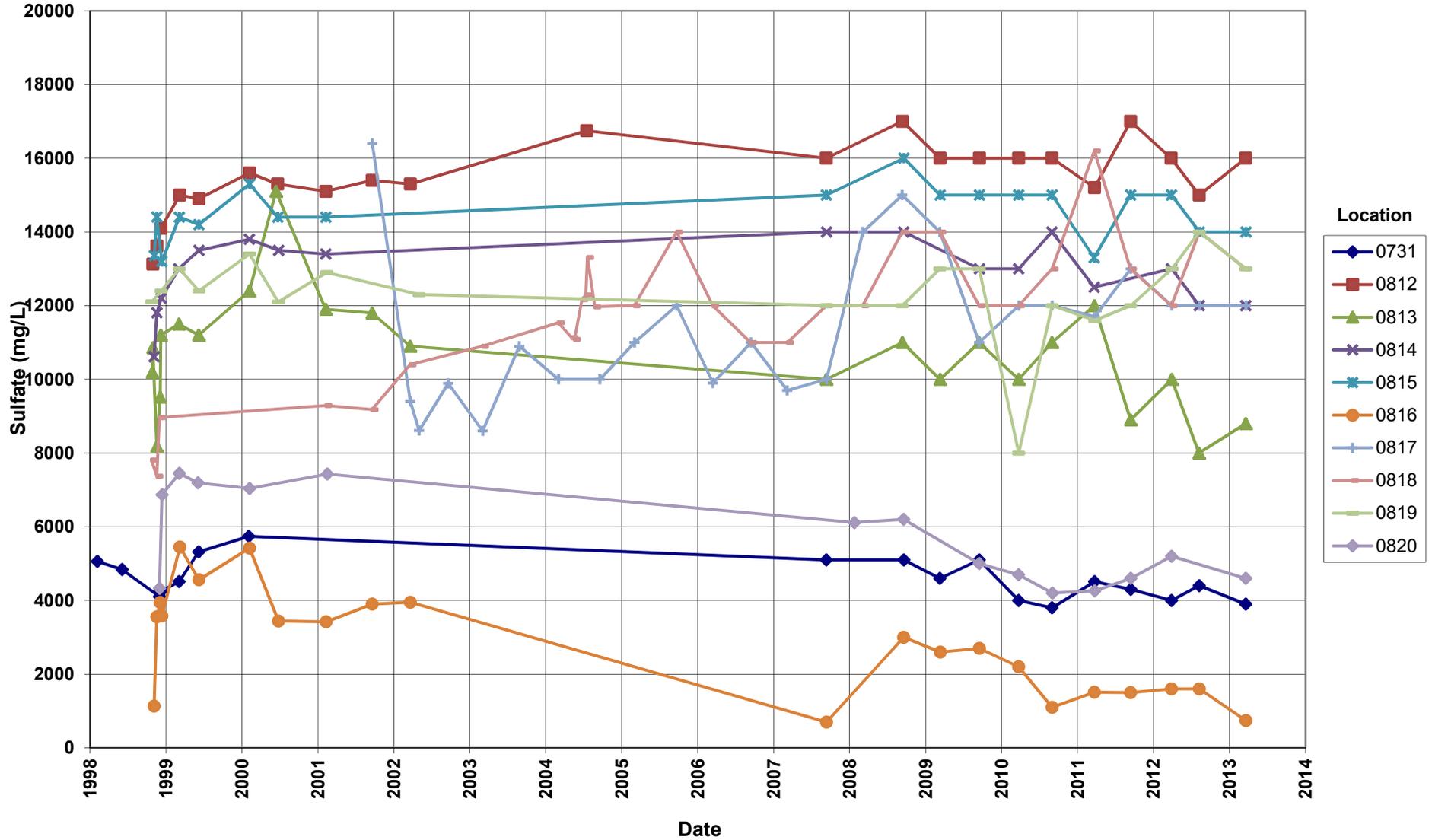
Shiprock Disposal Site (Terrace) Strontium Concentration



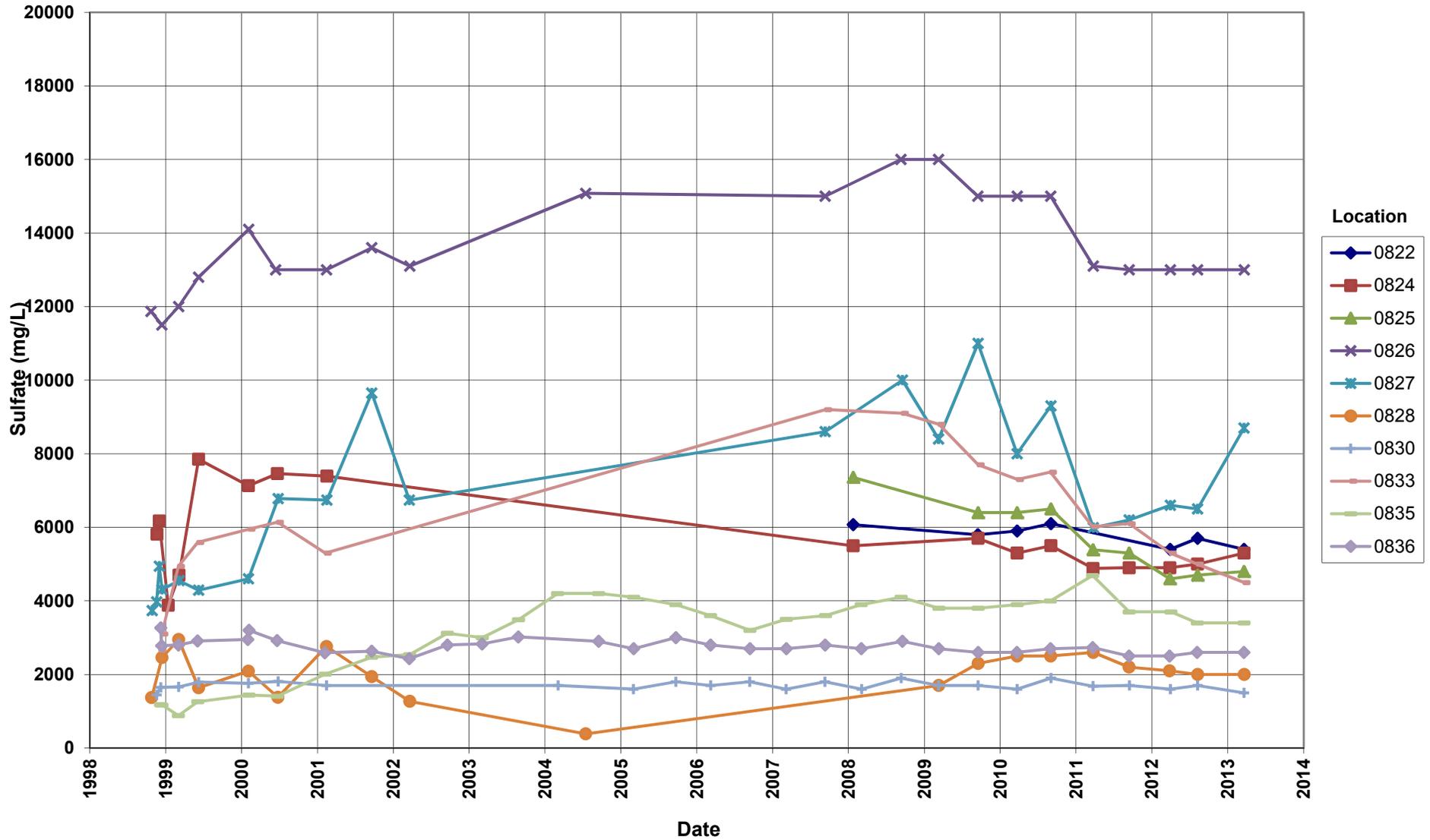
Shiprock Disposal Site (Terrace) Sulfate Concentration



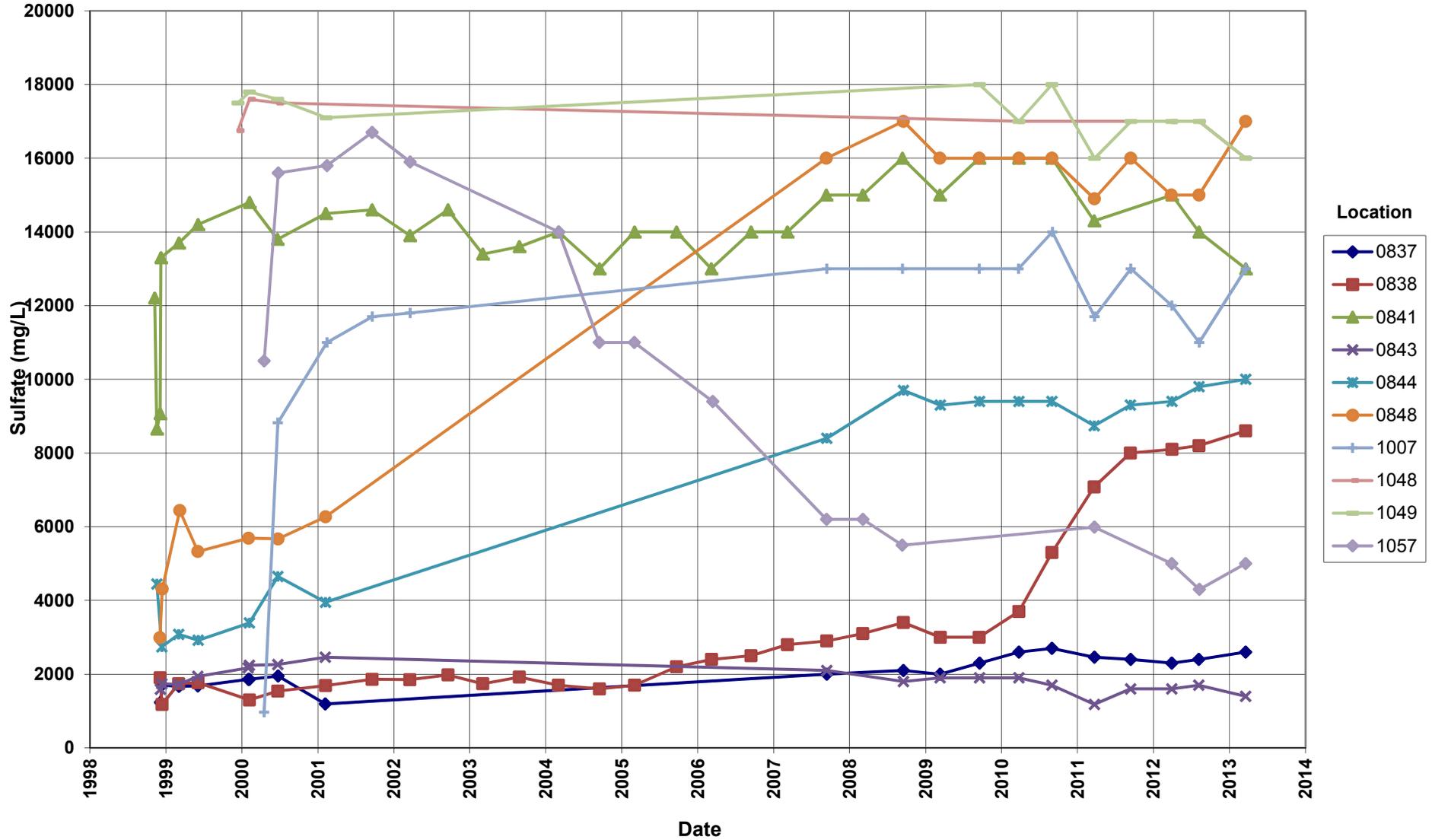
Shiprock Disposal Site (Terrace) Sulfate Concentration



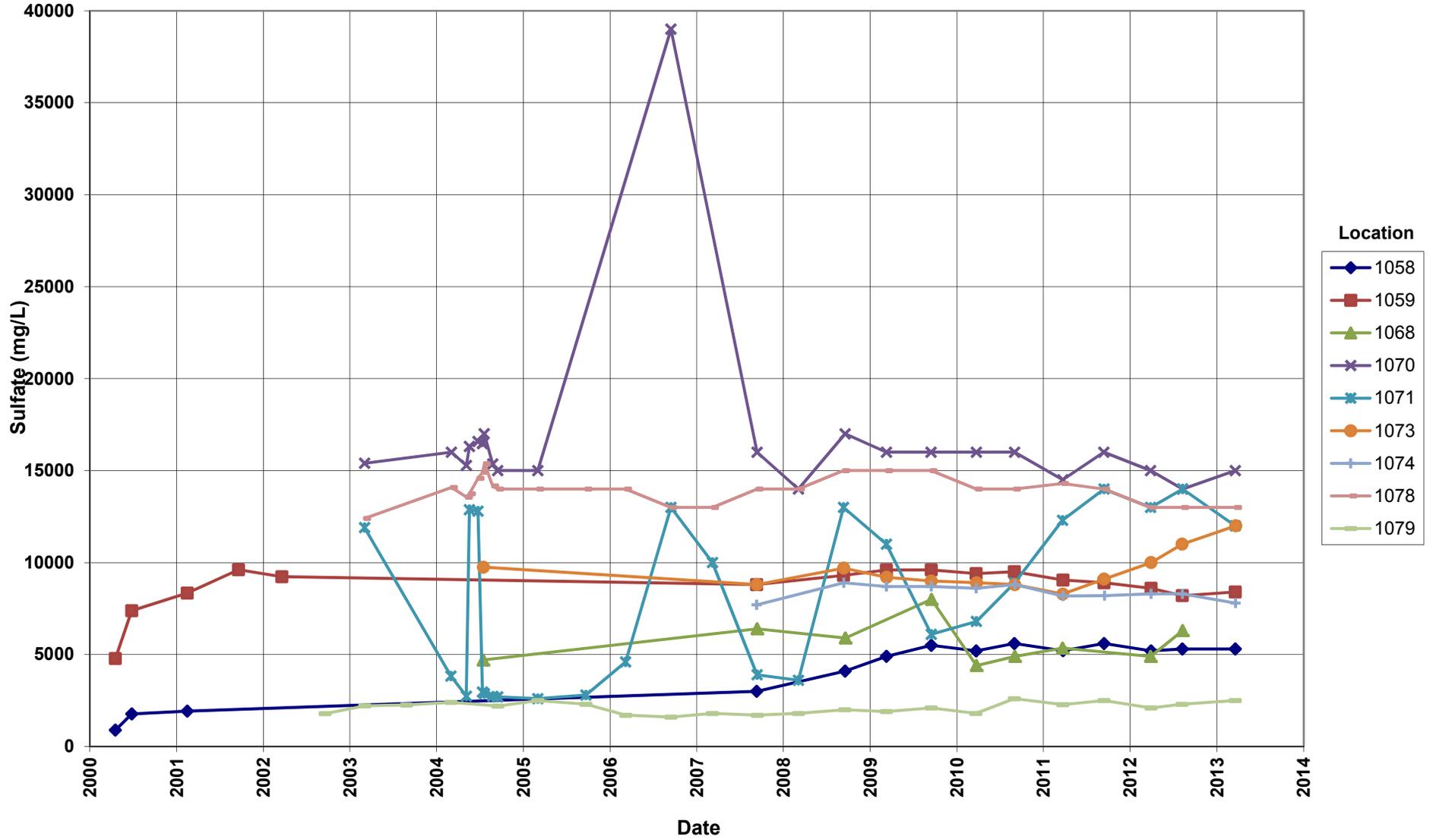
Shiprock Disposal Site (Terrace) Sulfate Concentration



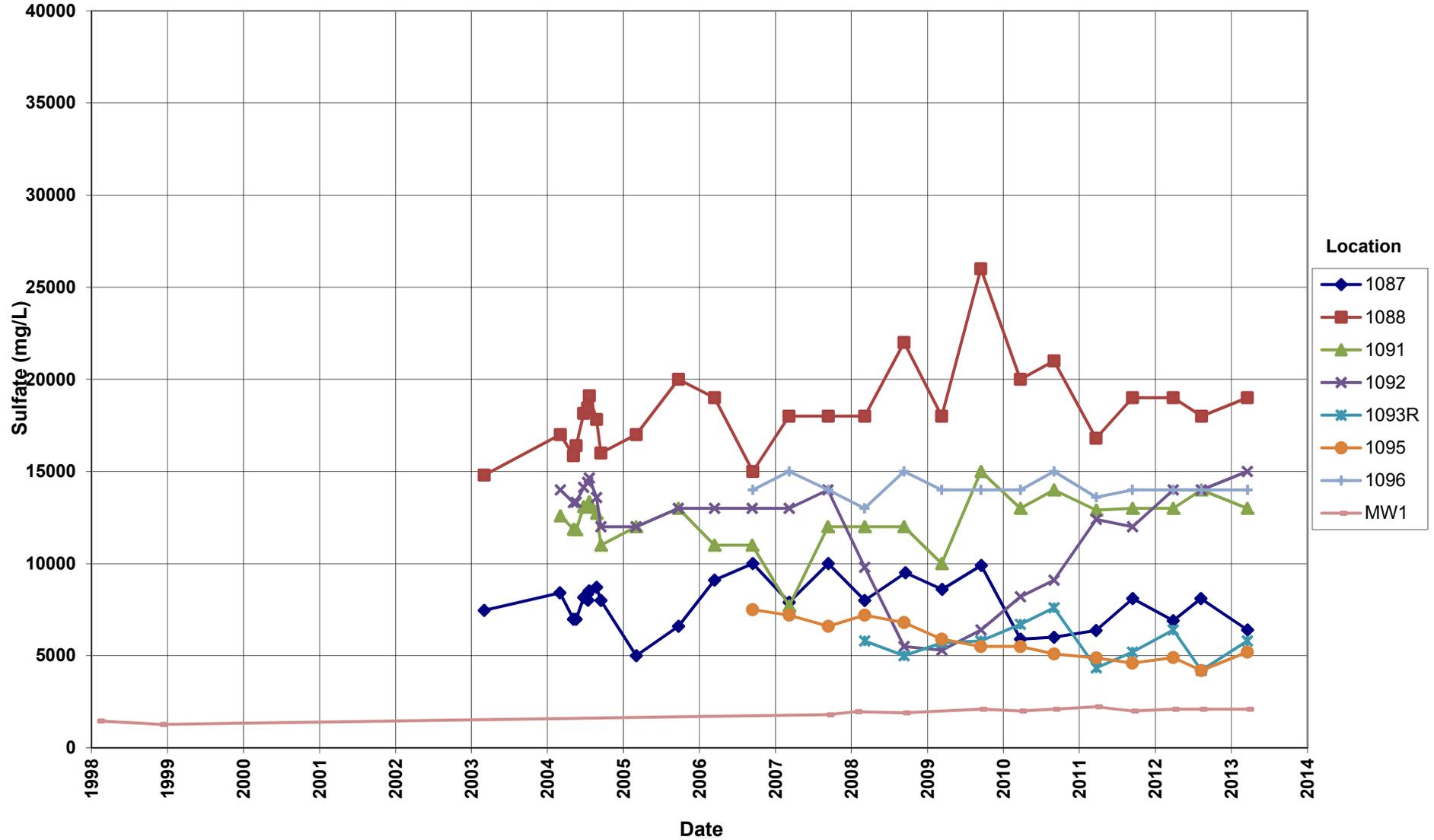
Shiprock Disposal Site (Terrace) Sulfate Concentration



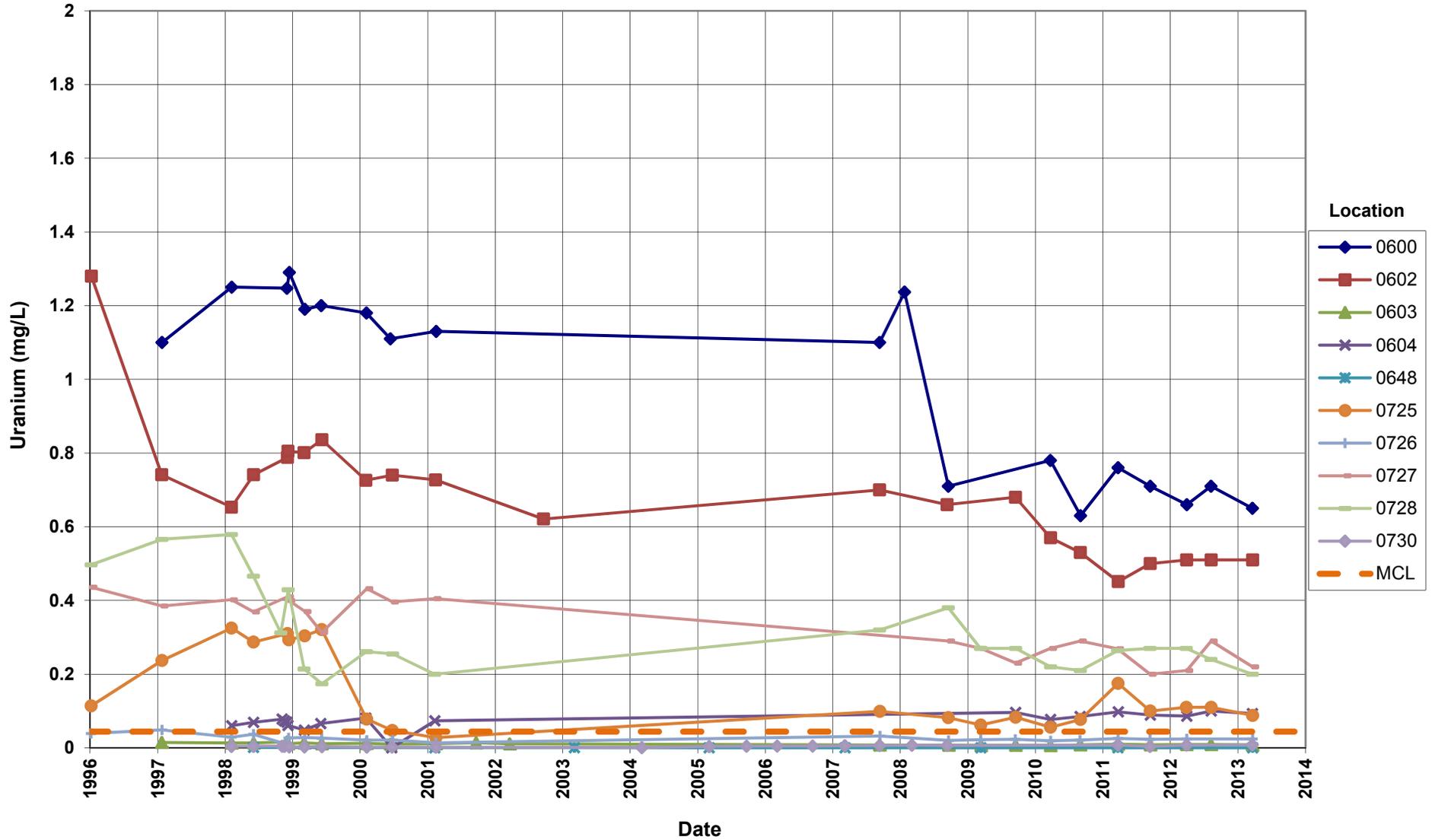
Shiprock Disposal Site (Terrace) Sulfate Concentration



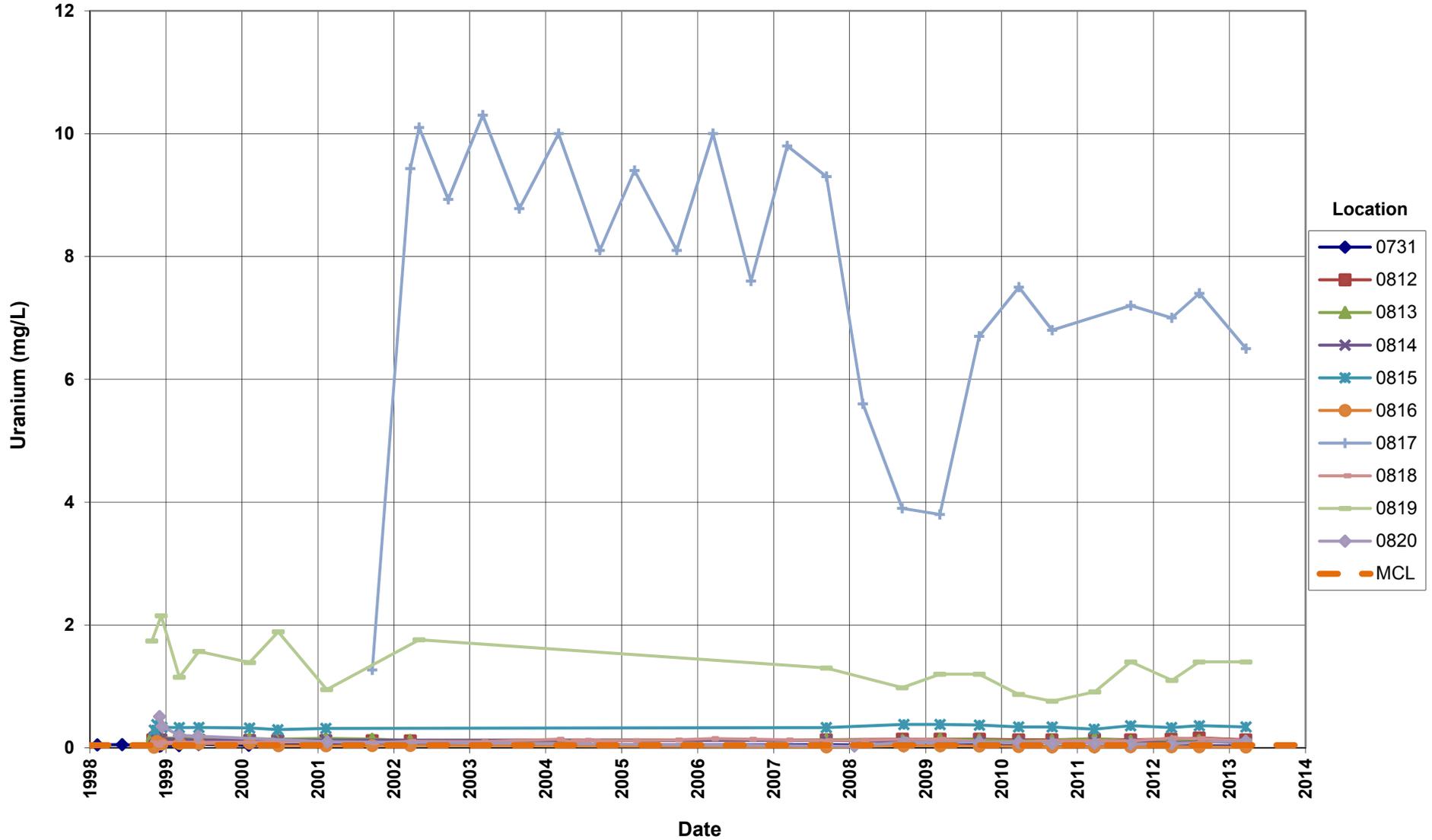
Shiprock Disposal Site (Terrace) Sulfate Concentration



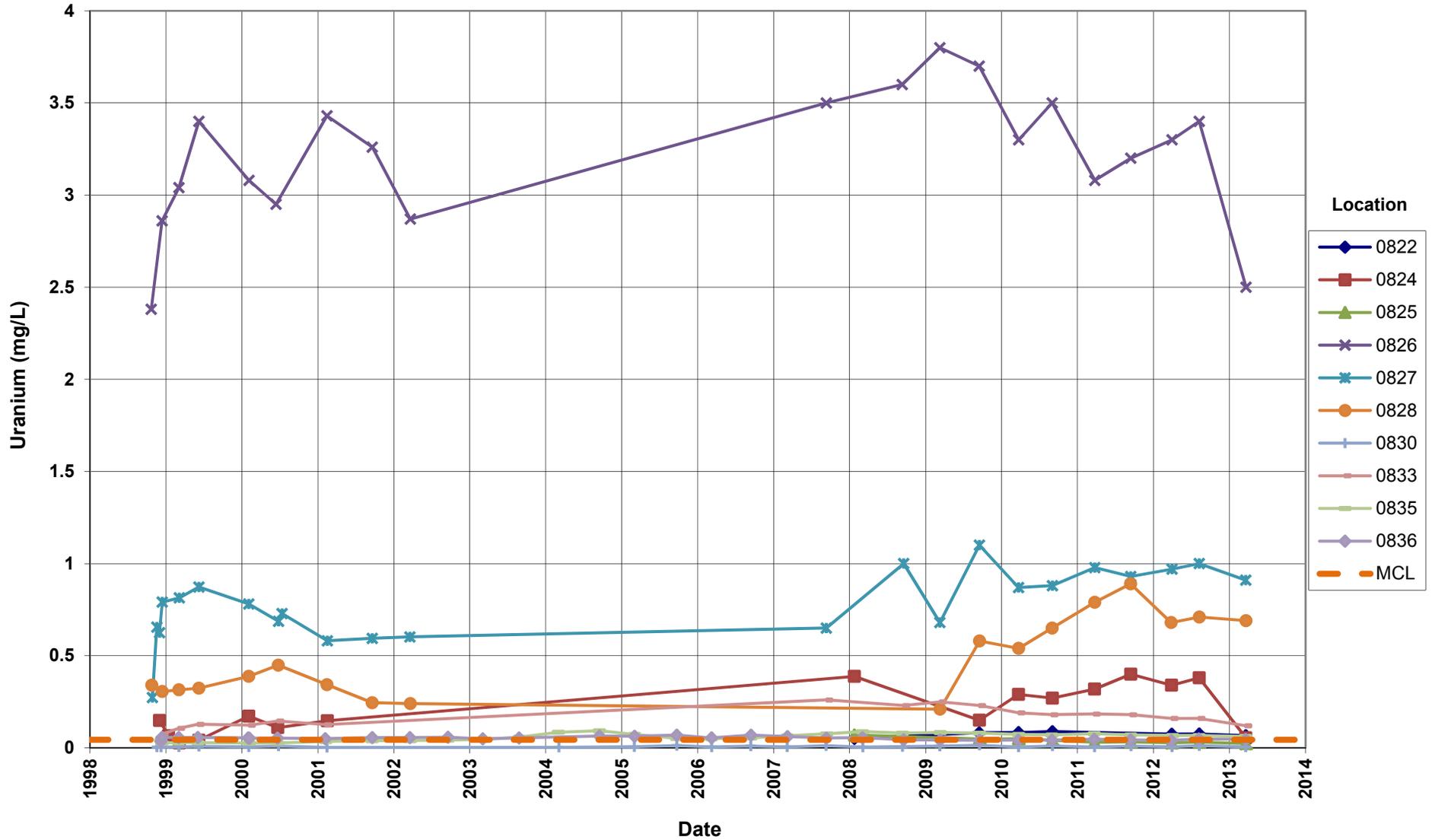
**Shiprock Disposal Site (Terrace)
Uranium Concentration**
Maximum Contaminant Level (MCL) = 0.044 mg/L



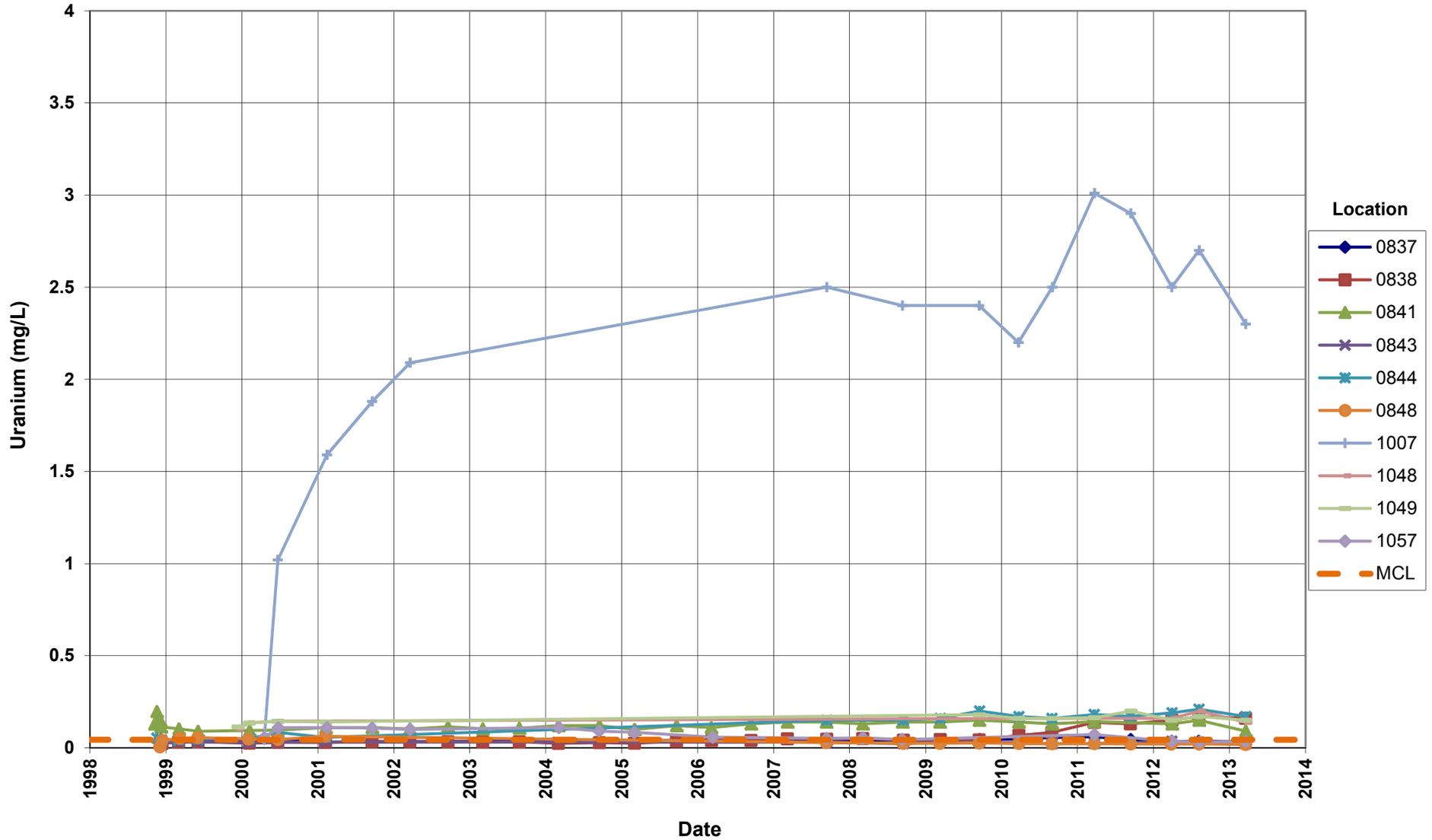
Shiprock Disposal Site (Terrace)
Uranium Concentration
Maximum Contaminant Level (MCL) = 0.044 mg/L



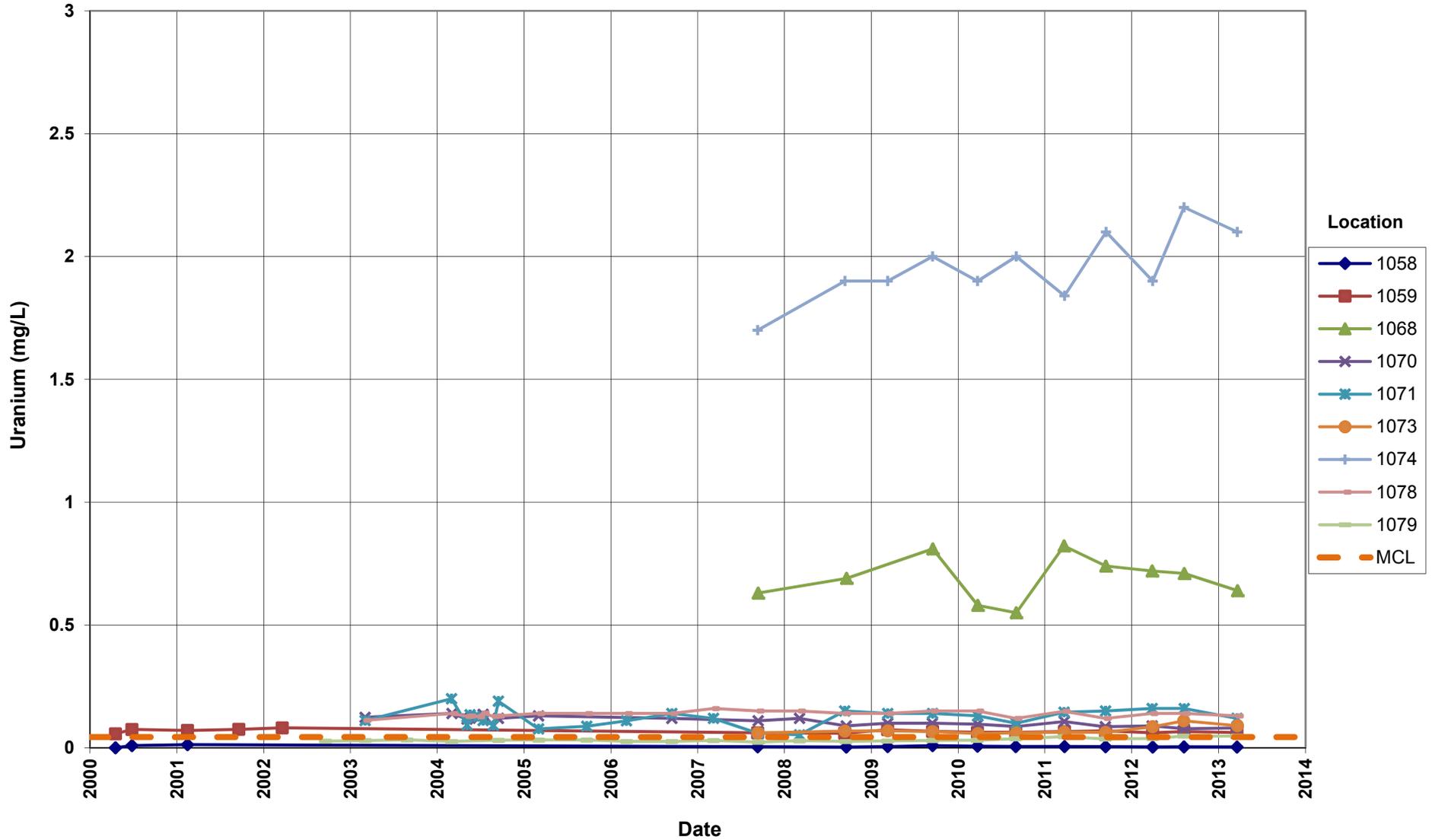
Shiprock Disposal Site (Terrace)
Uranium Concentration
 Maximum Contaminant Level (MCL) = 0.044 mg/L



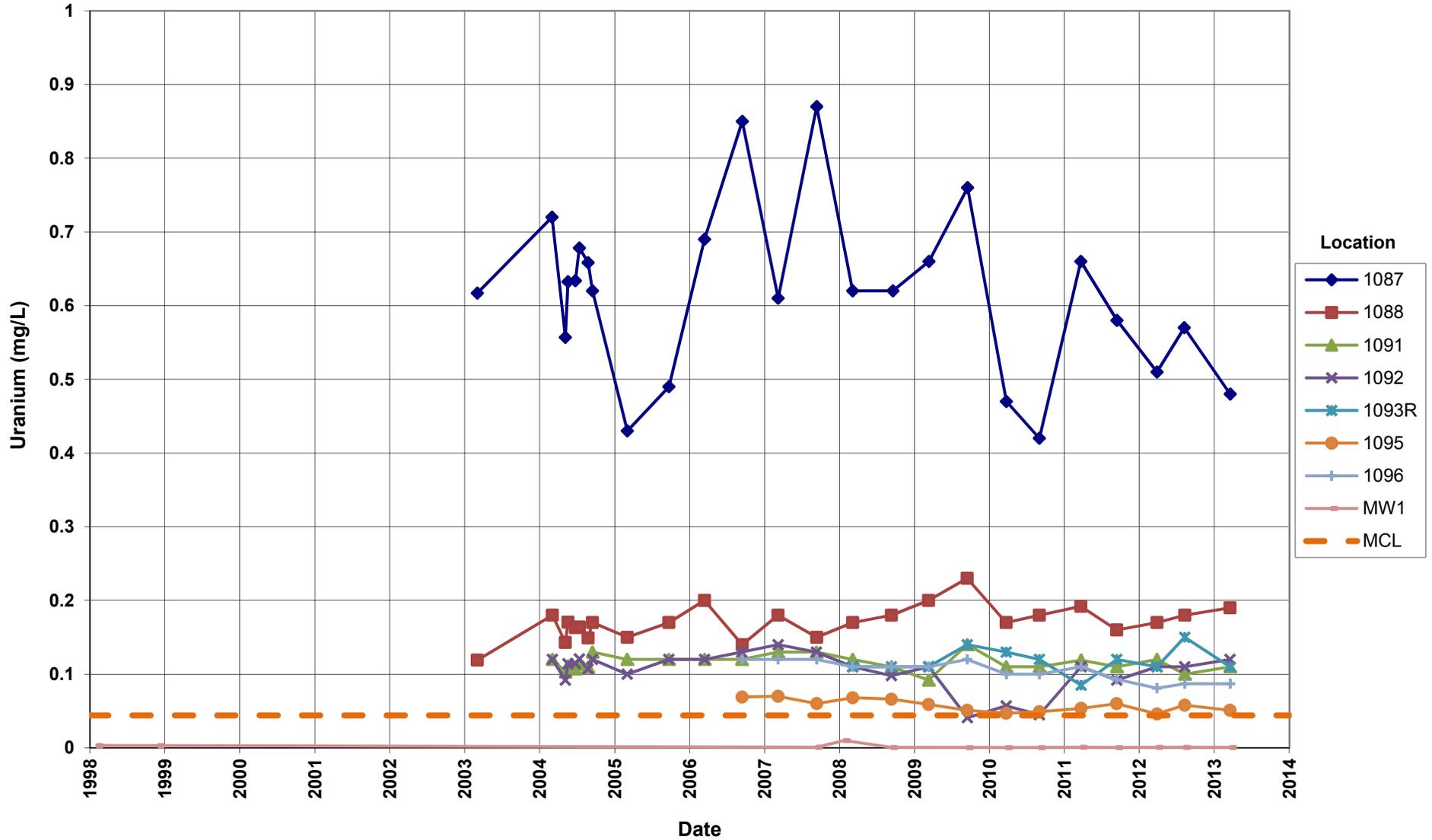
Shiprock Disposal Site (Terrace)
Uranium Concentration
Maximum Contaminant Level (MCL) = 0.044 mg/L



Shiprock Disposal Site (Terrace)
Uranium Concentration
Maximum Contaminant Level (MCL) = 0.044 mg/L



Shiprock Disposal Site (Terrace)
Uranium Concentration
Maximum Contaminant Level (MCL) = 0.044 mg/L



Attachment 3
Sampling and Analysis Work Order

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established 1959

Task Order LM00-501
Control Number 13-0409

March 12, 2013

U.S. Department of Energy
Office of Legacy Management
ATTN: Deborah Steckley
Site Manager
2597 Legacy Way
Grand Junction, CO 81503

SUBJECT: Contract No. DE-AM01-07LM00060, S.M. Stoller Corporation (Stoller)
March 2013 Environmental Sampling at Shiprock, New Mexico, Disposal Site-
Revised

REFERENCE: Task Order LM00-501-02-119-402, Shiprock, New Mexico, Disposal Site

Dear Ms. Steckley:

The purpose of this letter is to inform you of the upcoming sampling event at Shiprock, New Mexico. Enclosed are the map and tables specifying sample locations and analytes for monitoring at the Shiprock. Water quality data will be collected at this site as part of the routine environmental sampling currently scheduled to begin the week of March 18, 2013.

Samples collected at the following SHP01 (floodplain) locations will be both filtered and unfiltered: 0501, 0897, 0898, 0899, 0940, 0956, 0965, 1203, and 1205. Please note these locations are next to the San Juan River. DOE performs unfiltered sampling at these locations in response to a Navajo Nation EPA request.

The following lists show the monitoring wells (along with associated zone of completion) and surface locations scheduled for sampling during this event.

MONITORING WELLS

Floodplain

608 Km	623 A1	768 A1	798 A1	1009 A1	1113 A1	1136 A1
610 A1	625 A1	773 A1	850 A1	1089 A1	1114 A1	1137 A1
611 A1/Km	626 A1	775 A1	853 A1	1104 A1	1115 A1	1138 A1
612 A1	628 A1	779 A1	854 A1	1105 A1	1117 A1	1139 A1
614 A1	630 A1	782R A1	855 A1	1109 Nr	1128 A1	1140 A1
615 A1	734 A1	783R A1	856 A1	1110 Nr	1132 A1	1141 A1
618 A1	735 A1	792 A1	857 A1	1111 A1	1134 A1	1142 A1
619 A1	736 A1	793 A1	1008 A1	1112 A1	1135 A1	1143 A1
622 A1	766 A1	797 A1				

Terrace

600 Km	812 Al/Km	822 Km	833 Al	1002 Km	1060 Al/Km	1088 Nr
602 Km	813 Al/Km	823 Km	835 Al	1003 Km	1068 Al	1091 Al
603 Al/Km	814 Al/Km	824 Km	836 Al	1004 Km	1069 Al/Km	1092 Al
604 Km	815 Al/Km	825 Km	837 Al	1007 Al/Km	1070 Al/Km	1093R Al
648 Ju	816 Al/Km	826 Al/Km	838 Al	1011 Al/Km	1071 Al/Km	1095 Al
725 Al/Km	817 Km	827 Al/Km	841 Al	1048 Al/Km	1073 Al	1096 Al
726 Km	818 Al	828 Al/Km	843 Al	1049 Al/Km	1074 Al/Km	1120 Al
727 Km	819 Km	829 Km	844 Al/Km	1057 Al/Km	1078 Al/Km	1122 Al
728 Al/Km	820 Km	830 Km	846 Al	1058 Km	1079 Al	DM7 Km
730 Al	821 Km	832 Al/Km	848 Al/Km	1059 Km	1087 Nr	MW1 Km
731 Al/Km						

*NOTE: Al = Alluvium; Ju = Jurassic Morrison Formation; Km = Mancos Shale; Nr = No recovery of data for classifying

SURFACE LOCATIONS

Floodplain

501	897	899	956	1118	1203	1205
655	898	940	965			

Terrace

662	949	1215	1218	1219	1220	1221
889						

Water levels will be collected from additional (non-sampled) wells as shown in the attachment. All samples will be collected as directed in the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites*.

Please contact me at (970) 248-6652 if you have any questions.

Sincerely,



David Miller
Site Lead

DM/lcg/lb

Enclosures (3)

cc: (electronic)
Karl Stoeckle, DOE
Steve Donivan, Stoller
Lauren Goodknight, Stoller
David Miller, Stoller
EDD Delivery
re-grand.junction
File: SHP 410.02(A)

Sampling Frequencies for Locations at Shiprock, New Mexico

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
Monitoring Wells						
FLOODPLAIN - SHP01						
608		X				Low flow
610		X				
611		X				
612		X				
614		X				Low flow
615		X				Low flow
617					X	Data logger only
618		X				Low flow
619		X				Low flow
622		X				
623		X				
625		X				
626		X				
628		X				
630		X				
734		X				Low flow
735		X				Low flow
736		X				Low flow; data logger
766		X				
768		X				
773		X				
775		X				
779		X				
782R		X				
783R		X				
792		X				
793		X				
797		X				Low flow
798		X				
850		X				Low flow
853		X				
854		X				Data logger
855		X				
856		X				
857		X				Data logger
862					X	WLs only
863					X	WLs only
1000					X	WLs only
1001					X	WLs only

Sampling Frequencies for Locations at Shiprock, New Mexico

1008		X				Data logger
1009		X				
FLOODPLAIN - SHP01						
1062					X	WLs only
1089		X				U, SO4, N as NO3 only at vault
1104		X				U, SO4, N as NO3 only at vault
1105		X				
1109		X				Trench 2; U, SO4, N as NO3 only at vault
1110		X				Trench 1; U, SO4, N as NO3 only at vault
1111		X				Well point; U, SO4, N as NO3 only. Purge 1 casing vol then sample
1112		X				Well point; U, SO4, N as NO3 only. Purge 1 casing vol then sample
1113		X				Well point; U, SO4, N as NO3 only. Purge 1 casing vol then sample
1114		X				Well point; U, SO4, N as NO3 only. Purge 1 casing vol then sample
1115		X				Well point; U, SO4, N as NO3 only. Purge 1 casing vol then sample
1117		X				Well point; U, SO4, N as NO3 only. Purge 1 casing vol then sample
1128		X				
1132		X				
1134		X				
1135		X				
1136		X				
1137		X				
1138		X				
1139		X				
1140		X				
1141		X				
1142		X				
1143		X				
TERRACE - SHP02						
600		X				
602		X				Data logger
603		X				
604		X				Data logger
648				Odd year		Measure flow rate semiannually; sample biennially; next in 2013
725		X				Data logger
726		X				
727		X				
728		X				Data logger
730		X				Data logger
731		X				Data logger

Sampling Frequencies for Locations at Shiprock, New Mexico

800					X	WLs only
801					X	WLs only
802					X	WLs only
TERRACE - SHP02						
803					X	WLs only
812		X				
813		X				Data logger
814		X				
815		X				
816		X				
817		X				Low flow
818		X				Ext. well; U, SO4, N as NO3 only at vault
819		X				Data logger
820		X				
821		X				
822		X				
823		X				
824		X				
825		X				
826		X				Data logger
827		X				Data logger
828		X				Data logger
829		X				
830		X				Data logger
832		X				Low flow
833		X				
835		X				Low flow; data logger
836		X				Low flow; data logger
837		X				Data logger
838		X				Low flow
841		X				Low flow; data logger
843		X				Data logger
844		X				
846		X				Low flow; data logger
848		X				Data logger
1002		X				
1003		X				
1004		X				
1007		X				
1011		X				
1048		X				
1049		X				
1057		X				

Sampling Frequencies for Locations at Shiprock, New Mexico

1058		X				
1059		X				
1060		X				Low flow; data logger
TERRACE - SHP02						
1067					X	WL only; Bob Lee Wash
1068		X				Bob Lee Wash
1069		X				Bob Lee Wash; data logger
1070		X				Ext. well; U, SO4, N as NO3 only at vault
1071		X				Ext. well; U, SO4, N as NO3 only at vault
1073		X				Data logger
1074		X				
1078		X				Ext. well; U, SO4, N as NO3 only at vault
1079		X				Low flow
1087		X				SUMP-Bob Lee Wash
1088		X				SUMP-Many Devils Wash
1091		X				Ext. well; U, SO4, N as NO3 only at vault
1092		X				Ext. well; U, SO4, N as NO3 only at vault
1093R		X				Ext. well; U, SO4, N as NO3 only at vault
1095		X				Ext. well; U, SO4, N as NO3 only at vault
1096		X				Ext. well; U, SO4, N as NO3 only at vault
1120		X				
1122		X				
MW1		X				
DM7		X				
Surface Locations						
FLOODPLAIN - SHP01						
501		X				East of disposal cell
655		X				Drainage channel
897		X				Just below mouth of Many Devils Wash
898		X				San Juan River upgradient
899		X				
940		X				Just NE of 1004, San Juan River
956		X				San Juan River at intake
965		X				San Juan River about 1500' below dist. Channel
1118		X				Seep sump (423/426) U, SO4, N as NO3 only at vault
1203		X				East of disposal cell
1205		X				San Juan River E of well 853
TERRACE - SHP02						
662		X				Lower Bob Lee Wash

Sampling Frequencies for Locations at Shiprock, New Mexico

889		X				Many Devils Wash
949		X				
1215		X				
1218		X				NEW LOCATION
1219		X				NEW LOCATION
1220		X				NEW LOCATION
1221		X				NEW LOCATION

Sampling conducted in March and September

NOTE: All San Juan River locations will have both filtered and unfiltered samples collected

Constituent Sampling Breakdown

Site	Shiprock		Required Detection Limit (mg/L)	Analytical Method	Line Item Code
	Groundwater	Surface Water			
Analyte					
Approx. No. Samples/yr	244	38			
Field Measurements					
Alkalinity	X	X			
Dissolved Oxygen					
Redox Potential	X	X			
pH	X	X			
Specific Conductance	X	X			
Turbidity	X	X			
Temperature	X	X			
Laboratory Measurements					
Aluminum					
Ammonia as N (NH3-N)	X	X	0.1	EPA 350.1	WCH-A-005
Calcium	X	X	5	SW-846 6010	LMM-01
Chloride	X	X	0.5	SW-846 9056	MIS-A-039
Chromium					
Gross Alpha					
Gross Beta					
Iron					
Lead					
Magnesium	X	X	5	SW-846 6010	LMM-01
Manganese	X	X	0.005	SW-846 6010	LMM-01
Molybdenum					
Nickel					
Nickel-63					
Nitrate + Nitrite as N (NO3+NO2)-N	X	X	0.05	EPA 353.1	WCH-A-022
Potassium	X	X	1	SW-846 6010	LMM-01
Radium-226					
Radium-228					
Selenium	X	X	0.0001	SW-846 6020	LMM-02
Silica					
Sodium	X	X	1	SW-846 6010	LMM-01
Strontium	X	X	0.2	SW-846 6010	LMM-01
Sulfate	X	X	0.5	SW-846 9056	MIS-A-044
Sulfide					
Total Dissolved Solids					
Total Organic Carbon					
Uranium	X	X	0.0001	SW-846 6020	LMM-02
Vanadium					
Zinc					
Total No. of Analytes	12	12			

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

Attachment 4

Trip Report

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Memorandum

DATE: April 3, 2013
TO: David Miller
FROM: Daniel Sellers

SUBJECT: Sampling Trip Report

Site: Shiprock, NM, Floodplain (SHP01) and Terrace (SHP02)

Dates of Sampling Event: March 18-22, 2013

Team Members: Lauren Goodknight, Gretchen Baer, Jeff Price, Dan Sellers, Joe Treviño, and Dave Miller

Number of Locations Sampled: Samples were collected from 133 of the 149 locations identified on the sampling notification letter as follows:

	Locations That Were Sampled	Planned Locations
SHP01 monitoring wells	59	59
SHP02 monitoring wells	57	71
SHP01 surface locations	11	11
SHP02 surface locations	6	8

Data loggers were downloaded from the following SHP02 locations: 0602, 0813, 0836, 0841, 1073.

Locations Not Sampled/Reason: A total of 16 locations were not sampled for the following reasons:

- 2 dry surface water locations SHP02- 0949 and 1218.
- 14 wells locations: SHP02: 0821, 0823, 0829, 0832, 0846, 1002, 1003, 1004, 1011, 1060, 1069, 1120, 1122, and DM7 were dry or had insufficient water to sample.

Location Specific Information:

Location IDs	Site	Comments
0501, 0897, 0898, 0899, 0940, 0956, 0965, 1203, 1205	SHP01	Filtered and unfiltered samples were collected at all 9 locations on the San Juan River per the sampling notification letter. All other surface location samples collected were unfiltered regardless of turbidity per the program directive.
0612, 0619, 0766	SHP01	Sulfur odor; negative ORP.
0625, 0626, 0630, 0736, 0773, 1143	SHP01	Fine particles in sample water.
0734	SHP01	Well went dry as last bottle was collected. Very slow recovery.
0854, 1113, 1139	SHP01	Cat I. Needs to be re-developed: turbidity issues
0835, 0841, 1048	SHP02	Cat I. Needs to be redeveloped. Turbidity issues
1069	SHP02	This Cat III well had insufficient water for all samples. Parameters taken.
0727	SHP02	Changed to a Cat II.
0730, 1068, 1220	SHP02	Collected metals only. 1220 no parameters taken.

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

False ID	Site	Ticket	True ID	Sample Type	Associated Matrix
2210	SHP01	LEW 851	1203	Duplicate	Water
2211	SHP01	LEW 852	Associated with samples collected with non-dedicated equipment: 1203	Equipment Blank	Water
2212	SHP01	LEW 788	0610	Duplicate	Water
2215	SHP01	LEW 850	1112	Duplicate	Water
2319	SHP02	LEW 915	1095	Duplicate	Water
2320	SHP02	LEW 916	1215	Duplicate	Water
2466	SHP02	LEW 951	1093R	Duplicate	Water
2467	SHP02	LEW 952	0818	Duplicate	Water
2868	SHP02	LEW 953	1087	Duplicate	Water
2410	SHP02	LEW 904	1070	Duplicate	Water
2811	SHP02	LEW 905	1096	Duplicate	Water

Duplicates were collected by filling all bottles labeled with the location number first, then filling all bottles labeled with the false ID second.

Requisition Identification Number (RIN) Assigned: Samples were assigned to RIN 13035181 (SHP01-Floodplain) and 13035182 (SHP02-Terrace). Field data sheets can be found in Crow\sms\1035181 and Crow\sms\13035182 in the Field Data folders.

Sample Shipment: Samples were shipped overnight via FedEx from Grand Junction to ALS Laboratory Group in Ft Collins, CO, on March 25, 2013.

Water Level Measurements: Water levels were measured in all sampled wells and in 13 additional wells. A water level data report for these 13 wells (SHP01_13035181pdf) can be found in Crow\sms\FDCS\WATER LEVELS.

Well Inspection Summary: Inspections were performed at all wells accessed for sampling or water levels. Well SHP01-0799 needs a new lock. All other wells were in good condition unless otherwise noted in the FDSC Water Sampling Logs or PDA inspection reports.

Sampling Method: Samples were collected according to the *Sampling and Analysis Plan for the U. S. Department of Energy Office of Legacy Management Sites* (LMS/PLN/S04351).

Field Variance:

Turbidity criteria could not be met at following wells: SHP01- 0854, 1113, 1137,1139, and SHP02-1048. Samples from these wells were filtered.

Equipment: All equipment functioned properly. Multi-gas meters were used to verify the air quality in the vaults. Monitoring wells were sampled with a peristaltic pump and dedicated tubing, a bailer (dedicated or non-dedicated), or a dedicated pump. Extraction wells were sampled by spigot. Surface waters were sampled using a peristaltic pump and tubing reel with stainless steel weight or by container immersion. An equipment blank was collected after decontamination of non-dedicated equipment.

Institutional Controls:

Fences, Gates, and Locks: All gates were locked and in good condition.

Signs: Some signs have bullet holes but were legible.

Trespassing/Site Disturbances: None observed.

Site Issues:

Disposal Cell/Drainage Structure Integrity: No issues observed.

Vegetation/Noxious Weed Concerns: None.

Maintenance Requirements:

Access Issues: Some wells on the floodplain are only accessible by ATV due to sandy or muddy conditions.

Safety Issues: None.

Corrective Action Required/Taken: Installed bladder pump in well SHP02-1079. Need to replace lock on well 0799.

(DS/lcg)

cc: (electronic)
Deborah Steckley, DOE
David Miller, Stoller
Steve Donovan, Stoller
EDD Delivery

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