

Data Validation Package

March 2015
Groundwater and Surface Water
Sampling at the
Shiprock, New Mexico, Disposal Site

June 2015

This page intentionally left blank

Contents

Sampling Event Summary	1
Planned Sampling Map Shiprock, New Mexico, Disposal Site.....	7
Data Assessment Summary.....	9
Water Sampling Field Activities Verification Checklist	11
Laboratory Performance Assessment	13
Sampling Quality Control Assessment	38
Certification	47

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

Attachment 3—Sampling and Analysis Work Order

Attachment 4—Trip Report

This page intentionally left blank

Sampling Event Summary

Site: Shiprock, New Mexico, Disposal Site

Sampling Period: March 23–26, 2015

Groundwater and surface water sampling and analyses are performed semiannually at the Shiprock, New Mexico, Disposal 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). Samples were submitted for analyses in three groups identified by a requisition index number (RIN). Samples from floodplain locations were submitted under RIN 15036862 and from terrace locations under RIN 15036863.

Terrace locations are monitored to determine the progress of remediation and the extent of contamination. Floodplain locations are monitored to determine the progress of the natural flushing process.

As identified in the *Final Ground Water Compliance Action Plan for Remediation at the Shiprock, New Mexico, UMTRA Site* (July 2002), the contaminants of concern monitored at the Shiprock disposal site are ammonium, manganese, nitrate, selenium, strontium, sulfate, and uranium. Water quality parameters calcium, chloride, magnesium, potassium, and sodium are also monitored as stated in the plan.

Floodplain wells with contaminant concentrations that exceeded compliance standards and cleanup goals presented in the plan are listed in Table 1. Time-concentration graphs for the contaminants of concern in these wells are also included in this report.

Table 1. Shiprock Floodplain Locations that Exceed Compliance Standards and Cleanup Goals

Contaminant	Standard ^a	Location	Concentration
Manganese	2.74	0618	2.8
		0626	3.0
		0628	4.2
		0630	3.7
		0857	4.4
		1115	3.2
		1128	4.2
		1136	6.4
		1137	5.2
		1138	4.5
Nitrate/Nitrite as N	10	0608	17
		0610	190
		0611	110
		0614	110
		0630	25
		0735	610
		0773	120
		0857	17

Contaminant	Standard ^a	Location	Concentration
Nitrate/Nitrite as N	10	1109	55
		1110	52
		1111	12
		1112	140
		1113	240
		1114	60
		1115	140
		1118	83
		1128	650
		1136	33
		1137	11
Selenium	0.05	0610	0.29
		0611	0.27
		0612	0.07
		0614	0.27
		0630	0.17
		0735	0.08
		0773	0.49
		0779	0.12
		0857	0.09
		1105	0.09
		1110	0.39
		1111	0.20
		1112	0.78
		1113	0.37
		1114	0.09
		1115	0.12
		1118	0.40
Sulfate	2000	0608	6100
		0610	4600
		0611	4000
		0612	2200
		0614	5700
		0615	6200
		0618	5300
		0619	3000
		0622	2400
		0623	2600
		0625	2600
		0626	3000
		0628	5300
		0630	4300
		0655	3800
		0735	10,000

Contaminant	Standard ^a	Location	Concentration
Sulfate	2000	0736	2700
		0766	4300
		0768	4500
		0773	3900
		0775	4000
		0779	9900
		0792	4000
		0793	6100
		0797	4500
		0798	4100
		0850	2300
		0854	4600
		0855	3600
		0856	3200
		0857	6300
		1008	3900
		1089	3800
		1104	4900
		1105	5900
		1110	5200
		1111	5700
		1112	6000
		1113	4200
		1114	2100
		1115	2800
		1118	6500
		1128	9000
		1135	2600
		1136	9800
		1137	11,000
		1138	11,000
		1139	8100
		1140	6500
		1141	2300
		1143	2500
Uranium	0.044	0608	0.66
		0610	0.61
		0611	0.38
		0612	0.44
		0614	0.92
		0615	0.71
		0618	0.49
		0619	0.08
		0623	0.06
		0628	0.09
		0630	0.17
		0735	0.26
		0766	0.15
		0768	0.10

Contaminant	Standard ^a	Location	Concentration
Uranium	0.044	0773	0.48
		0775	0.15
		0779	1.00
		0792	0.31
		0793	0.72
		0798	0.16
		0850	0.07
		0853	0.08
		0854	0.28
		0855	0.08
		0856	0.08
		0857	0.76
		1008	0.17
		1009	0.15
		1089	0.16
		1104	0.30
		1105	0.79
		1109	0.15
		1110	0.49
		1111	0.35
		1112	0.79
		1113	0.54
		1114	0.33
		1115	0.46
		1118	0.47
		1128	1.20
		1135	0.06
		1136	1.20
		1137	1.50
		1138	1.30
		1139	0.60
		1140	0.54
		1141	0.41

^a Compliance standards and cleanup goals are listed in *Final Ground Water Compliance Action Plan for Remediation at the Shiprock, New Mexico, UMTRA Site* (July 2002), approved by the U.S. Nuclear Regulatory Commission; units are in milligrams per liter.

Both filtered and unfiltered samples from the river locations were submitted. River location analyte concentrations of filtered and unfiltered samples were compared to the maximum concentrations observed for location 0967, which is upstream from the site on the San Juan River and is used to perform background versus site comparisons. Analyte concentrations were generally below the maximum concentrations observed for the background location with the following exception. The selenium result for the unfiltered sample from location 1205 was slightly above the background concentration (0.006 mg/L vs 0.004 mg/L).

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

Location	Ammonium	Manganese	Nitrate	Selenium	Strontium	Sulfate	Uranium
Background ^a	0.1	4.7	1.2	0.0039	2.9	190	0.012
0501	ND ^b	0.28	0.46	0.001	0.78	130	0.002
0897	ND ^b	0.016	0.12	0.001	0.75	130	0.002
0899	ND ^b	1.3	0.43	0.002	0.82	120	0.002
0940	ND ^b	1.4	0.45	0.002	0.91	130	0.003
0956	ND ^b	0.24	0.47	0.001	0.75	130	0.002
0965	ND ^b	0.27	0.46	0.002	0.78	130	0.002
0967	ND ^b	0.24	0.45	0.001	0.80	130	0.002
1203	ND ^b	0.20	0.52	0.001	0.75	130	0.002
1205	ND ^b	3.7	0.53	0.006	1.2	130	0.006

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

^a Background maximum concentration observed for background location 0967.

^b ND = Not Detected.

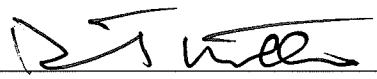
Table 3. Background Comparison for Floodplain River Locations (Filtered Samples)

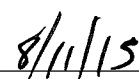
Location	Ammonium	Manganese	Nitrate/Nitrite as N	Selenium	Strontium	Sulfate	Uranium
Background ^a	0.1	0.022	1.2	0.0017	1.0	190	0.0032
0501	ND ^b	0.007	0.45	ND ^b	0.74	130	0.002
0897	ND ^b	0.017	0.58	0.001	0.75	150	0.007
0899	ND ^b	0.002	0.39	0.0004	0.73	120	0.002
0940	ND ^b	0.009	0.45	ND ^b	0.73	130	0.002
0956	ND ^b	0.002	0.48	0.0005	0.76	130	0.002
0965	ND ^b	0.003	0.46	0.001	0.73	130	0.002
0967	ND ^b	0.004	0.45	0.0003	0.76	130	0.002
1203	ND ^b	0.003	0.48	0.001	0.75	130	0.002
1205	ND ^b	0.064	0.48	ND ^b	0.73	130	0.002

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

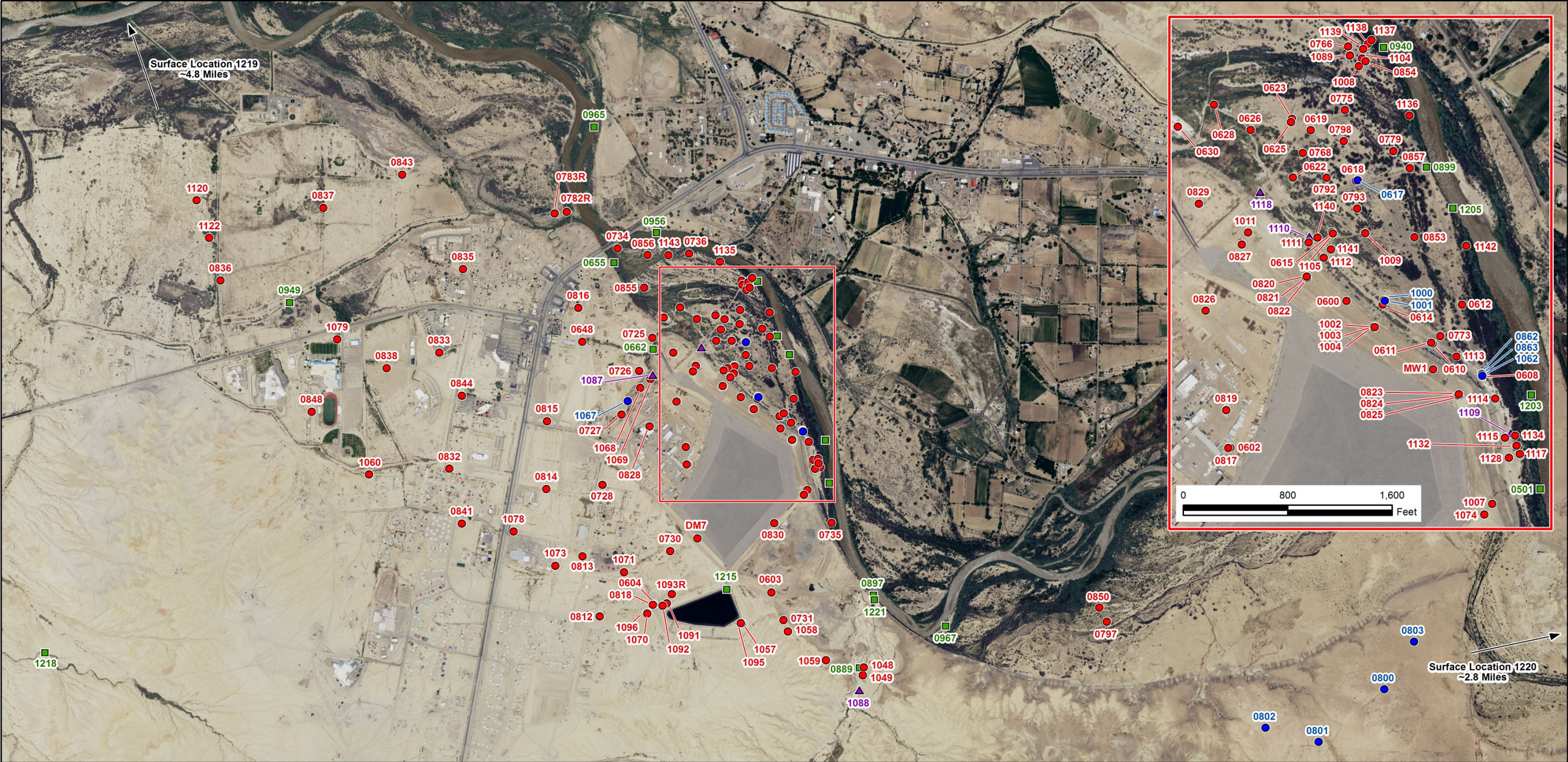
^a Background maximum concentration observed for background location 0967..

^b ND = Not Detected.


 David Miller, Site Lead
 Stoller Newport News Nuclear, Inc.,
 a wholly owned subsidiary of
 Huntington Ingalls Industries, Inc.


 Date

This page intentionally left blank



LEGEND

- WELL TO BE SAMPLED
- WELL TO BE SAMPLED (WATER LEVEL ONLY)
- SURFACE LOCATION TO BE SAMPLED
- ▲ TREATMENT SYSTEM LOCATION TO BE SAMPLED

0 1,750 3,500
Feet



U.S. DEPARTMENT OF ENERGY OFFICE OF LEGACY MANAGEMENT		Work Performed by Stoller Newport News Nuclear, Inc. Under DOE Contract Number DE-LM0000415	
Planned Sampling Map Shiprock, NM, Disposal Site March 2015			
DATE PREPARED: June 24, 2015		FILE NAME: S1270300-11x17	

Planned Sampling Map Shiprock, New Mexico, Disposal Site

This page intentionally left blank

Data Assessment Summary

This page intentionally left blank

Water Sampling Field Activities Verification Checklist

Project	Shiprock, New Mexico, Disposal Site	Date(s) of Water Sampling	March 23–26, 2015
Date(s) of Verification	May 27, 2015	Name of Verifier	Stephen Donovan

	Response (Yes, No, NA)	Comments
1. Is the SAP the primary document directing field procedures?	Yes	
List any Program Directives or other documents, SOPs, instructions.		Work Order letter dated February 27, 2015. Program Directive SHP-2015-01. Surface water locations SHP02-0949, 1218, and 1219 were dry. Well locations SHP01-0734 and SHP02-0821, 0823, 0829, 1002, 1003, 1004, 1011, 1048, 1060, 1120, 1122, and DM7 were dry or had insufficient water to sample.
2. Were the sampling locations specified in the planning documents sampled?	No	Well location SHP02-1088, was not sampled per the direction of the site lead.
3. Were calibrations conducted as specified in the above-named documents?	Yes	Calibrations were performed on March 20, 2015.
4. Was an operational check of the field equipment conducted daily?	Yes	
Did the operational checks meet criteria?	Yes	
5. Were the number and types (alkalinity, temperature, specific conductance, pH, turbidity, DO, ORP) of field measurements taken as specified?	Yes	
6. 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?	Yes	
Did the water level stabilize prior to sampling?	Yes	
Did pH, specific conductance, and turbidity measurements meet criteria prior to sampling?	Yes	
Was the flow rate less than 500 mL/min?	Yes	

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 0736, 0818, 0956, 1070, 1078, 1096, 1132, 1135.
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?	Yes	
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

RIN: 15036862
Sample Event: March 23–26, 2015
Site(s): Shiprock Disposal Site (Floodplain), New Mexico
Laboratory: ALS Laboratory Group, Fort Collins, Colorado
Work Order No.: 1503611
Analysis: Metals and Wet Chemistry
Validator: Stephen Donivan
Review Date: May 21, 2015

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 4.

Table 4. 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 5. Refer to the attached validation worksheets and the sections below for an explanation of the data qualifiers applied.

Table 5. Data Qualifiers

Sample Number	Location	Analyte	Flag	Reason
1503611-19	0736	Manganese	J	Field duplicate result
1503611-64	1132	Uranium	J	Field duplicate result
1503611-79	1132 Duplicate	Uranium	J	Field duplicate result
1503611-82	0736 Duplicate	Manganese	J	Field duplicate result
1503611-83	Equipment Blank	Calcium	U	Less than 5 times the calibration blank
1503611-83	Equipment Blank	Magnesium	U	Less than 5 times the calibration blank

Sample Shipping/Receiving

ALS Laboratory Group in Fort Collins, Colorado, received 83 water samples on March 31, 2015, 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 1.4 °C and 4.8 °C, which complies with requirements. All samples were received in the correct container types and had been preserved correctly for the requested analyses. The metals samples from locations 0768, 0779, 0857, and 0967 had pH values greater than 2 when received by the laboratory. The samples were acidified to a pH less than 2 and allowed to equilibrate prior to analysis. 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 April 8, 9, 13, and 14, 2015, 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 acceptable results.

Method EPA 353.2

Calibrations were performed for nitrate + nitrite as N on April 14 and 15, 2015, 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 April 9 and 10, 2015, using three calibration standards. The 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 ranges.

Method SW-846 6020A

Calibrations for selenium and uranium were performed April 9, 2015, 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. 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 April 8, 2015, 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. All method blank and calibration blank results associated with the samples were below the PQLs for all analytes with the exception of three ammonia as N continuing calibration blanks. The samples bracketed by these blanks either contained more than 10 times the concentration of ammonia as N that was detected in the blank or were reanalyzed with an acceptable blank.

Inductively Coupled Plasma Interference Check Sample Analysis

Interference check samples were analyzed at the required frequency to verify the instrument 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.

Laboratory Replicate Analysis

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

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.

Completeness

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

Chromatography Peak Integration

The integration of analyte peaks was reviewed for all chloride and sulfate data. All peak integrations were satisfactory.

Anion/Cation Balance

The anion/cation balance is used to determine if major ion concentrations have been quantified correctly. The total anions should balance with (be equal to) the total cations when expressed in milliequivalents per liter. Table 6 shows the total anion and cation results in the samples from this event and the charge balance, which is an RPD calculation. Typically, a charge balance difference of 10 percent is considered acceptable.

Table 6. Comparison of Major Anions and Cations

Location	Location Type	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
0501	Surface Water	5.35	4.88	4.6
0608	Groundwater	129.00	139.59	4.0
0610	Groundwater	112.36	117.17	2.1
0611	Groundwater	95.25	98.68	1.8
0612	Groundwater	57.50	59.81	2.0
0614	Groundwater	135.22	138.09	1.5
0615	Groundwater	135.87	144.80	3.2
0618	Groundwater	107.27	120.77	5.9
0619	Groundwater	66.72	71.55	3.5
0622	Groundwater	51.46	56.36	4.5
0623	Groundwater	59.91	64.88	4.0
0625	Groundwater	59.08	64.65	4.5
0626	Groundwater	62.40	70.69	6.2
0628	Groundwater	106.86	122.62	6.9
0630	Groundwater	95.53	107.11	5.7
0655	Surface Water	81.70	89.01	4.3
0735	Groundwater	255.09	282.52	5.1
0736	Groundwater	57.72	61.91	3.5
0766	Groundwater	89.78	99.27	5.0
0768	Groundwater	96.69	105.36	4.3
0773	Groundwater	96.39	99.65	1.7
0775	Groundwater	90.03	93.24	1.8
0779	Groundwater	212.04	225.81	3.2
0782R	Groundwater	14.78	15.03	0.9
0783R	Groundwater	18.70	19.38	1.8
0792	Groundwater	85.22	92.05	3.9
0793	Groundwater	135.67	140.75	1.8
0797	Groundwater	99.65	109.36	4.6
0798	Groundwater	90.43	94.36	2.1
0850	Groundwater	57.75	62.15	3.7
0853	Groundwater	20.58	19.87	1.8
0854	Groundwater	99.76	107.16	3.6
0855	Groundwater	81.31	84.61	2.0
0856	Groundwater	71.15	75.12	2.7
0857	Groundwater	142.55	146.50	1.4
0897	Surface Water	5.54	5.08	4.3
0899	Surface Water	5.16	4.86	3.0
0940	Surface Water	5.29	5.24	0.5
0956	Surface Water	5.33	5.04	2.8
0965	Surface Water	5.15	5.22	0.7
0967	Surface Water	5.70	5.00	6.5
1008	Groundwater	85.52	91.75	3.5
1009	Groundwater	27.24	28.37	2.0
1089	Groundwater	86.19	89.75	2.0
1104	Groundwater	106.40	115.02	3.9

Table 6 (continued). Comparison of Major Anions and Cations

Location	Location Type	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
1105	Groundwater	136.34	139.87	1.3
1109	Groundwater	32.64	32.99	0.5
1110	Groundwater	118.83	125.85	2.9
1111	Groundwater	131.68	137.38	2.1
1112	Groundwater	139.54	147.08	2.6
1113	Groundwater	113.68	114.09	0.2
1114	Groundwater	54.39	57.05	2.4
1115	Groundwater	148.45	81.28	29.2
1117	Groundwater	7.04	6.52	3.9
1118	Surface Water	154.46	165.88	3.6
1128	Groundwater	239.68	257.55	3.6
1132	Groundwater	6.47	6.31	1.2
1134	Groundwater	7.10	6.90	1.4
1135	Groundwater	58.28	60.99	2.3
1136	Groundwater	221.87	231.60	2.2
1137	Groundwater	246.84	257.01	2.0
1138	Groundwater	237.86	254.26	3.3
1139	Groundwater	175.83	185.94	2.8
1140	Groundwater	136.12	147.78	4.1
1141	Groundwater	52.57	55.11	2.4
1142	Groundwater	5.90	5.92	0.2
1143	Groundwater	53.85	58.05	3.8
1203	Surface Water	5.31	5.34	0.3
1205	Surface Water	5.21	5.40	1.8

meq/L = milliequivalents per liter

Samples from locations 0614 and 1115 had charge balances of 39.2 and 29.2 percent respectively. The laboratory was requested to reanalyze these samples to confirm the reported results. For the samples from location 0614, the charge balance for the results of the reanalysis was 1.5 percent. The reanalysis results of the samples from location 1115 confirmed the original analysis results. The measured alkalinity at this location was 480 mg/L, about half the values reported in recent sampling events and likely the cause of the elevated cation/anion balance.

Electronic Data Deliverable (EDD) File

The EDD file arrived on April 27, 2015. 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 that 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: 15036862 Lab Code: PAR Validator: Stephen Donovan Validation Date: 05/21/2015
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 4 duplicates evaluated.

SAMPLE MANAGEMENT SYSTEM

Page 1 of 3

Metals Data Validation Worksheet

RIN: 15036862

Lab Code: PAR

Date Due: 04/28/2015

Matrix: Water

Site Code: SHP01

Date Completed: 04/28/2015

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	04/09/2015	0.0000	1.0000	OK	OK	OK	100.0	98.0	93.0	2.0	104.0	0.0	94.0
Calcium	ICP/ES	04/09/2015					OK	99.0	90.0	89.0	0.0	100.0	0.0	97.0
Calcium	ICP/ES	04/09/2015					OK	100.0	100.0	99.0	0.0	98.0	0.0	78.0
Calcium	ICP/ES	04/09/2015					OK	102.0	94.0	99.0	2.0	103.0	0.0	79.0
Calcium	ICP/ES	04/09/2015					OK	100.0				104.0		
Calcium	ICP/ES	04/10/2015	0.0000	1.0000	OK	OK			96.0	96.0	0.0	103.0		
Magnesium	ICP/ES	04/09/2015	0.0000	1.0000	OK	OK	OK	99.0	99.0	97.0	2.0	107.0	1.0	110.0
Magnesium	ICP/ES	04/09/2015					OK	98.0	96.0	97.0	0.0	103.0	1.0	90.0
Magnesium	ICP/ES	04/09/2015					OK	99.0	98.0	98.0	0.0	100.0	2.0	113.0
Magnesium	ICP/ES	04/09/2015					OK	101.0	96.0	98.0	1.0	106.0		112.0
Magnesium	ICP/ES	04/09/2015						98.0				109.0		90.0
Magnesium	ICP/ES	04/10/2015	0.0000	1.0000	OK	OK			96.0	96.0	0.0	109.0		85.0
Manganese	ICP/ES	04/09/2015	0.0000	1.0000	OK	OK	OK	105.0	104.0	103.0	1.0	102.0	2.0	103.0
Manganese	ICP/ES	04/09/2015					OK	105.0	89.0	84.0	1.0	98.0	3.0	102.0
Manganese	ICP/ES	04/09/2015					OK	104.0	102.0	104.0	1.0	97.0		102.0
Manganese	ICP/ES	04/09/2015					OK	106.0	102.0	102.0	0.0	102.0		102.0
Manganese	ICP/ES	04/09/2015					OK	105.0				103.0		108.0
Manganese	ICP/ES	04/10/2015	0.0000	1.0000	OK	OK			104.0	104.0	0.0	103.0		104.0

SAMPLE MANAGEMENT SYSTEM

Page 2 of 3

Metals Data Validation Worksheet

RIN: 15036862

Lab Code: PAR

Date Due: 04/28/2015

Matrix: Water

Site Code: SHP01

Date Completed: 04/28/2015

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	04/09/2015	0.0000	1.0000	OK	OK	OK	96.0	99.0	98.0	1.0		7.0	94.0
Potassium	ICP/ES	04/09/2015					OK	97.0	104.0	104.0	0.0			94.0
Potassium	ICP/ES	04/09/2015					OK	97.0	101.0	104.0	2.0			87.0
Potassium	ICP/ES	04/09/2015					OK	99.0	102.0	102.0	0.0			90.0
Potassium	ICP/ES	04/09/2015					OK	96.0						99.0
Potassium	ICP/ES	04/10/2015	0.0000	1.0000	OK	OK			99.0	98.0	1.0			115.0
Selenium	ICP/MS	04/09/2015	0.0000	1.0000	OK	OK	OK	102.0	110.0	103.0	6.0	103.0		89.0
Selenium	ICP/MS	04/09/2015					OK	109.0	106.0	107.0	0.0			
Selenium	ICP/MS	04/09/2015					OK	102.0	110.0	112.0	2.0			
Selenium	ICP/MS	04/09/2015					OK	112.0	111.0	105.0	6.0			
Selenium	ICP/MS	04/09/2015					OK	116.0	109.0	106.0	3.0			
Sodium	ICP/ES	04/09/2015	0.0000	1.0000	OK	OK	OK	95.0	98.0	96.0	1.0		2.0	94.0
Sodium	ICP/ES	04/09/2015					OK	96.0	94.0	92.0	0.0		0.0	105.0
Sodium	ICP/ES	04/09/2015					OK	97.0	103.0	105.0	1.0		2.0	105.0
Sodium	ICP/ES	04/09/2015					OK	98.0	101.0	101.0	0.0		4.0	103.0
Sodium	ICP/ES	04/09/2015						96.0						94.0
Sodium	ICP/ES	04/10/2015	0.0000	1.0000	OK	OK			97.0	97.0	0.0			97.0
Strontium	ICP/ES	04/09/2015	0.0000	1.0000	OK	OK	OK	100.0	97.0	94.0	1.0	103.0	1.0	103.0

SAMPLE MANAGEMENT SYSTEM

Page 3 of 3

Metals Data Validation Worksheet

RIN: 15036862

Lab Code: PAR

Date Due: 04/28/2015

Matrix: Water

Site Code: SHP01

Date Completed: 04/28/2015

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								
Strontium	ICP/ES	04/09/2015					OK	102.0	95.0	92.0	1.0	99.0	1.0	104.0
Strontium	ICP/ES	04/09/2015					OK	101.0	104.0	105.0	0.0	97.0	1.0	103.0
Strontium	ICP/ES	04/09/2015					OK	104.0	99.0	100.0	0.0	103.0	0.0	105.0
Strontium	ICP/ES	04/09/2015					OK	102.0				101.0		104.0
Strontium	ICP/ES	04/10/2015	0.0000	1.0000	OK	OK			92.0	93.0	1.0	97.0		101.0
Uranium	ICP/MS	04/09/2015	0.0000	1.0000	OK	OK	OK	101.0	101.0	98.0	2.0	106.0	7.0	130.0
Uranium	ICP/MS	04/09/2015					OK	102.0	105.0	101.0	2.0		0.0	
Uranium	ICP/MS	04/09/2015					OK	103.0	108.0	104.0	3.0		2.0	
Uranium	ICP/MS	04/09/2015					OK	102.0	106.0	101.0	3.0		5.0	
Uranium	ICP/MS	04/09/2015					OK	103.0	101.0	104.0	2.0			

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 15036862 **Lab Code:** PAR **Date Due:** 04/28/2015
Matrix: Water **Site Code:** SHP01 **Date Completed:** 04/28/2015

Analyte	Date Analyzed	CALIBRATION				Method	LCS	MS	MSD	DUP	Serial Dil.
		Int.	R^2	CCV	CCB	Blank	%R	%R	%R	RPD	%R
AMMONIA AS N	04/08/2015	0.000	1.0000	OK	OK	OK	100.00	102.0	103.0	1.00	
AMMONIA AS N	04/09/2015	0.000	1.0000	OK	OK	OK	101.00	97.0	93.0	1.00	
AMMONIA AS N	04/13/2015	0.000	1.0000	OK	OK	OK	102.00	93.0	100.0	7.00	
AMMONIA AS N	04/14/2015	0.000	1.0000	OK	OK	OK	100.00	98.0	97.0	1.00	
AMMONIA AS N	04/14/2015					OK	102.00	98.0	98.0	1.00	
CHLORIDE	04/08/2015					OK	100.00	98.0	96.0	1.00	
CHLORIDE	04/09/2015					OK	100.00				
CHLORIDE	04/10/2015					OK	99.00	100.0	98.0	1.00	
CHLORIDE	04/10/2015					OK	99.00	104.0	102.0	1.00	
CHLORIDE	04/11/2015							101.0	101.0	0	
CHLORIDE	04/13/2015					OK	101.00	100.0	100.0	0	
Nitrate+Nitrite as N	04/14/2015	0.000	1.0000	OK	OK	OK	100.00	103.0	104.0	1.00	
Nitrate+Nitrite as N	04/15/2015	0.000	1.0000	OK	OK	OK	101.00	108.0	103.0	3.00	
Nitrate+Nitrite as N	04/15/2015					OK	99.00	113.0	114.0	0	
Nitrate+Nitrite as N	04/15/2015					OK	99.00	95.0	110.0	8.00	
Nitrate+Nitrite as N	04/15/2015					OK	100.00	106.0	103.0	2.00	

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 15036862

Lab Code: PAR

Date Due: 04/28/2015

Matrix: Water

Site Code: SHP01

Date Completed: 04/28/2015

Analyte	Date Analyzed	CALIBRATION				Method	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	CCV	CCB						
SULFATE	04/08/2015					OK	98.00				
SULFATE	04/09/2015					OK	97.00				
SULFATE	04/10/2015					OK	97.00	101.0	99.0	1.00	
SULFATE	04/10/2015					OK	97.00	106.0	103.0	1.00	
SULFATE	04/11/2015							100.0	98.0	0	
SULFATE	04/13/2015					OK	98.00	101.0	100.0	0	

General Information

RIN: 15036863
Sample Event: March 23–26, 2015
Site(s): Shiprock Disposal Site (Terrace), New Mexico
Laboratory: ALS Laboratory Group, Fort Collins, Colorado
Work Order No.: 1503604
Analysis: Metals and Wet Chemistry
Validator: Stephen Donovan
Review Date: May 22, 2015

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 7Table 4.

Table 7. 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 8Table 5. Refer to the attached validation worksheets and the sections below for an explanation of the data qualifiers applied.

Table 8. Data Qualifiers

Sample Number	Location	Analyte	Flag	Reason
1503604-1	0600	Selenium	J	PQL check result
1503604-9	0727	Selenium	J	PQL check result
1503604-10	0728	Selenium	J	PQL check result
1503604-18	0817	Selenium	J	PQL check result
1503604-19	0818	Manganese	J	Field duplicate result
1503604-21	0820	Manganese	J	Serial dilution result
1503604-21	0820	Potassium	J	Serial dilution result
1503604-22	0822	Selenium	J	PQL check result
1503604-23	0824	Selenium	J	PQL check result
1503604-24	0825	Selenium	J	PQL check result
1503604-25	0826	Selenium	J	PQL check result
1503604-43	1058	Selenium	U	Less than 5 times the method blank
1503604-47	1070	Nitrate + Nitrite as N	J	Field duplicate result
1503604-51	1078	Manganese	J	Field duplicate result
1503604-62	1078 Duplicate	Manganese	J	Field duplicate result
1503604-63	0818 Duplicate	Manganese	J	Field duplicate result
1503604-65	1070 Duplicate	Nitrate + Nitrite as N	J	Field duplicate result

Sample Shipping/Receiving

ALS Laboratory Group in Fort Collins, Colorado, received 66 water samples on March 31, 2015, accompanied by Chain of Custody forms. Copies of the air bills were included in the receiving documentation. The Chain of Custody forms were checked to confirm that all of the samples were listed and that signatures and dates were present, indicating sample relinquishment and receipt. The sample submittal documents, including the Chain of Custody forms, had no errors or omissions.

Preservation and Holding Times

The sample shipments were received intact with the temperatures inside the iced coolers at 1.8 °C and 2.4 °C, which complies with requirements. All samples were received in the correct container types and had been preserved correctly for the requested analyses. The metals samples from locations 0603, 0848, and 1215 had pH values greater than 2 when received by the laboratory. The samples were acidified to a pH less than 2 and allowed to equilibrate prior to analysis. 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 April 2, 6, and 8, 2015, 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 acceptable results.

Method EPA 353.2

Calibrations were performed for nitrate + nitrite as N on April 14, 2014, 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 April 7 and 8, 2015, using three calibration standards. The 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 percent to 130 percent with the exception of three sodium results. The associated sample sodium results were all greater than 5 times the PQL, requiring no qualification.

Method SW-846 6020A

Calibrations for selenium and uranium were performed April 7 and 8, 2015, 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. The selenium check results did not meet the acceptance criteria. Sample selenium results that are greater than the MDL but less than 5 times the PQL are qualified with a "J" flag as estimated values. 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 31, 2014, 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. All method blank and calibration blank results associated with the samples were below the PQLs for all analytes with the exception of two ammonia as N continuing calibration blanks. The samples bracketed by these blanks either contained more than 10 times the concentration of ammonia as N that was detected in the blank or were reanalyzed with an acceptable blank.

Inductively Coupled Plasma Interference Check Sample Analysis

Interference check samples were analyzed at the required frequency to verify the instrument interelement and background correction factors. All check sample results met the acceptance criteria.

Matrix Spike Analysis

MS/MSD samples are used to measure method performance in the sample matrix. The MS/MSD data are not evaluated when the concentration of the unspiked sample is greater than 4 times the spike concentration. The spikes met the recovery and precision criteria for all analytes evaluated with the following exception: The selenium spike recoveries from sample 0602 were above the acceptance range. 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 RPD for replicate results that are greater than 5 times the PQL should be less than 20 percent. For results that are less than 5 times the PQL, the range should be no greater than the PQL. The replicate results met these criteria, demonstrating acceptable laboratory precision for all samples, with the following exception: The selenium duplicate result for sample 0602 was above the acceptance range. Associated sample result is qualified with a “J” flag as an estimated value.

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 manganese and potassium serial dilution results for sample 0820 did not meet the acceptance criteria. The associated sample manganese and potassium 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. Table 9Table 6 shows the total anion and cation results in the samples from this event and the charge balance, which is an RPD calculation. Typically, a charge balance difference of 10 percent is considered acceptable.

The charge balance difference was below 10 percent, indicating that there are no significant errors associated with the measurement of major ion concentrations for all locations.

EDD File

The EDD file arrived on April 20, 2015. 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 that 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.

Table 9. Comparison of Major Anions and Cations

Location	Location Type	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
0600	Groundwater	250.45	278.72	5.34
0602	Groundwater	426.95	429.54	0.30
0603	Groundwater	202.29	213.59	2.72
0604	Groundwater	384.47	386.44	0.26
0648	Groundwater	40.56	41.43	1.07
0662	Surface Water	41.05	44.78	4.34
0725	Groundwater	64.33	69.40	3.79
0726	Groundwater	117.71	133.47	6.27
0727	Groundwater	239.27	245.31	1.25
0728	Groundwater	48.60	51.35	2.75
0730	Groundwater	44.39	46.44	2.25
0731	Groundwater	86.85	87.37	0.29
0812	Groundwater	510.52	504.63	0.58
0813	Groundwater	406.07	394.59	1.43
0814	Groundwater	358.38	349.29	1.29
0815	Groundwater	378.43	384.42	0.79
0816	Groundwater	48.25	50.00	1.78
0817	Groundwater	328.74	307.27	3.38
0818	Groundwater	351.61	353.18	0.22
0819	Groundwater	238.07	298.59	9.28
0820	Groundwater	338.36	370.38	4.52
0822	Groundwater	279.43	304.05	4.22
0824	Groundwater	295.08	324.07	4.68
0825	Groundwater	327.59	401.49	9.14
0826	Groundwater	256.28	263.95	1.47
0827	Groundwater	157.45	164.82	2.29
0828	Groundwater	56.76	57.10	0.30
0830	Groundwater	32.87	35.76	4.20
0832	Groundwater	136.44	149.63	4.61
0833	Groundwater	97.94	101.68	1.87
0835	Groundwater	5.81	6.52	5.81
0836	Groundwater	66.73	70.24	2.56
0837	Groundwater	68.29	71.75	2.48
0838	Groundwater	118.40	127.25	3.60
0841	Groundwater	354.25	368.72	2.00
0843	Groundwater	40.04	42.26	2.70
0844	Groundwater	304.62	298.17	1.07
0848	Groundwater	371.66	376.16	0.60
0889	Surface Water	503.09	504.68	0.16
1007	Groundwater	320.98	333.52	1.92
1049	Groundwater	412.10	384.85	3.42
1057	Groundwater	229.48	226.17	0.73
1058	Groundwater	160.12	164.24	1.27

Table 9 (continued). Comparison of Major Anions and Cations

Location	Location Type	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
1059	Groundwater	217.17	232.00	3.30
1069	Groundwater	215.85	184.89	7.73
1070	Groundwater	395.48	370.89	3.21
1071	Groundwater	332.85	318.35	2.23
1073	Groundwater	321.52	299.18	3.60
1074	Groundwater	293.21	315.70	3.69
1078	Groundwater	352.76	326.52	3.86
1079	Groundwater	85.62	86.16	0.31
1087	Groundwater	118.24	117.14	0.46
1091	Groundwater	382.60	374.09	1.12
1092	Groundwater	352.76	347.86	0.70
1093R	Groundwater	299.83	301.87	0.34
1095	Groundwater	244.22	240.58	0.75
1096	Groundwater	363.38	349.13	2.00
1215	Surface Water	2078.80	1945.54	3.31
1220	Surface Water	33.58	34.33	1.11
1221	Surface Water	518.15	558.04	3.71
MW1	Groundwater	204.34	238.23	7.66

meq/L = milliequivalents per liter

SAMPLE MANAGEMENT SYSTEM

General Data Validation Report

RIN: 15036863 Lab Code: PAR Validator: Stephen Donovan Validation Date: 05/22/2015
Project: Shiprock Monitoring Analysis Type: ☒ Metals ☒ General Chem ☐ Rad ☐ Organics
of Samples: 66 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 4 duplicates evaluated.

SAMPLE MANAGEMENT SYSTEM

Page 1 of 3

Metals Data Validation Worksheet

RIN: 15036863

Lab Code: PAR

Date Due: 04/28/2015

Matrix: Water

Site Code: SHP01

Date Completed: 04/28/2015

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	04/07/2015	0.0000	1.0000	OK	OK	OK	103.0	92.0	98.0	1.0	104.0	3.0	110.0
Calcium	ICP/ES	04/07/2015					OK	102.0	87.0	87.0	0.0	96.0	2.0	111.0
Calcium	ICP/ES	04/07/2015					OK	103.0				92.0	5.0	92.0
Calcium	ICP/ES	04/08/2015	0.0000	1.0000	OK	OK	OK	100.0			0.0	98.0	1.0	85.0
Calcium	ICP/ES	04/08/2015							103.0	109.0	0.0	107.0		112.0
Magnesium	ICP/ES	04/07/2015	0.0000	1.0000	OK	OK	OK	97.0	92.0	97.0	1.0	109.0	0.0	111.0
Magnesium	ICP/ES	04/07/2015					OK	99.0	91.0	89.0	0.0	101.0	3.0	119.0
Magnesium	ICP/ES	04/07/2015					OK	98.0				98.0	3.0	79.0
Magnesium	ICP/ES	04/08/2015	0.0000	1.0000	OK	OK	OK	98.0	86.0	85.0	0.0	105.0	2.0	92.0
Magnesium	ICP/ES	04/08/2015									0.0	111.0		115.0
Manganese	ICP/ES	04/07/2015	0.0000	1.0000	OK	OK	OK	107.0	107.0	108.0	0.0	106.0	0.0	107.0
Manganese	ICP/ES	04/07/2015					OK	108.0	102.0	104.0	1.0	98.0	14.0	107.0
Manganese	ICP/ES	04/07/2015					OK	105.0				96.0	6.0	105.0
Manganese	ICP/ES	04/08/2015	0.0000	1.0000	OK	OK	OK	106.0	87.0	86.0	0.0	106.0	1.0	107.0
Manganese	ICP/ES	04/08/2015							104.0	104.0	0.0	107.0		106.0
Potassium	ICP/ES	04/07/2015	0.0000	1.0000	OK	OK	OK	98.0	108.0	109.0	1.0		7.0	99.0
Potassium	ICP/ES	04/07/2015					OK	99.0	106.0	105.0	1.0		13.0	101.0
Potassium	ICP/ES	04/07/2015					OK	98.0					1.0	108.0

SAMPLE MANAGEMENT SYSTEM

Page 2 of 3

Metals Data Validation Worksheet

RIN: 15036863

Lab Code: PAR

Date Due: 04/28/2015

Matrix: Water

Site Code: SHP01

Date Completed: 04/28/2015

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	04/08/2015	0.0000	1.0000	OK	OK	OK	98.0	113.0	112.0	1.0			97.0
Potassium	ICP/ES	04/08/2015							112.0	112.0	0.0			114.0
Selenium	ICP/MS	04/07/2015	0.0000	1.0000	OK	OK	OK	100.0			8.0	100.0	3.0	56.0
Selenium	ICP/MS	04/08/2015	0.0000	1.0000	OK	OK	OK	105.0	113.0	108.0	5.0	100.0		45.0
Selenium	ICP/MS	04/08/2015					OK	109.0	105.0	103.0	1.0			
Selenium	ICP/MS	04/08/2015					OK	108.0	122.0	122.0	0.0			
Sodium	ICP/ES	04/07/2015	0.0000	1.0000	OK	OK	OK	98.0			1.0		5.0	93.0
Sodium	ICP/ES	04/07/2015					OK	99.0			1.0		2.0	110.0
Sodium	ICP/ES	04/07/2015					OK	98.0					3.0	122.0
Sodium	ICP/ES	04/08/2015	0.0000	1.0000	OK	OK	OK	99.0			3.0		1.0	130.0
Sodium	ICP/ES	04/09/2015									0.0			98.0
Strontium	ICP/ES	04/07/2015	0.0000	1.0000	OK	OK	OK	103.0			1.0	106.0	2.0	104.0
Strontium	ICP/ES	04/07/2015					OK	104.0			2.0	97.0	1.0	102.0
Strontium	ICP/ES	04/07/2015					OK	101.0				101.0	0.0	108.0
Strontium	ICP/ES	04/08/2015	0.0000	1.0000	OK	OK	OK	104.0			1.0	107.0	3.0	107.0
Strontium	ICP/ES	04/08/2015									0.0	108.0		106.0
Uranium	ICP/MS	04/07/2015	0.0000	1.0000	OK	OK	OK	102.0			6.0	101.0	5.0	100.0
Uranium	ICP/MS	04/08/2015	0.0000	1.0000	OK	OK	OK	98.0			2.0	101.0	10.0	110.0

SAMPLE MANAGEMENT SYSTEM

Page 3 of 3

Metals Data Validation Worksheet

RIN: 15036863

Lab Code: PAR

Date Due: 04/28/2015

Matrix: Water

Site Code: SHP01

Date Completed: 04/28/2015

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	04/08/2015					OK	98.0	84.0	87.0	0.0		1.0	
Uranium	ICP/MS	04/08/2015					OK	96.0	107.0	106.0	1.0		3.0	

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 15036863 **Lab Code:** PAR **Date Due:** 04/28/2015
Matrix: Water **Site Code:** SHP01 **Date Completed:** 04/28/2015

Analyte	Date Analyzed	CALIBRATION				Method	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	CCV	CCB						
AMMONIA AS N	04/02/2015	0.000	1.0000	OK	OK	OK	103.00	99.0	98.0	1.00	
AMMONIA AS N	04/06/2015	0.000	1.0000	OK	OK	OK	103.00	101.0	89.0	5.00	
AMMONIA AS N	04/08/2015	0.000	1.0000	OK	OK	OK	100.00	95.0	95.0	0	
AMMONIA AS N	04/08/2015					OK	100.00	88.0	88.0	0	
CHLORIDE	04/02/2015	0.000	1.0000	OK	OK	OK	99.00	95.0	95.0	0	
CHLORIDE	04/03/2015			OK	OK	OK	101.00				
CHLORIDE	04/06/2015			OK	OK	OK	97.00	97.0	100.0	2.00	
CHLORIDE	04/06/2015			OK	OK	OK	96.00	100.0	96.0	1.00	
CHLORIDE	04/07/2015							104.0	103.0	0	
Nitrate+Nitrite as N	04/14/2015	0.000	1.0000	OK	OK	OK	99.00	104.0	103.0	1.00	
Nitrate+Nitrite as N	04/14/2015					OK	101.00	104.0	105.0	1.00	
Nitrate+Nitrite as N	04/14/2015					OK	101.00	106.0	104.0	2.00	
Nitrate+Nitrite as N	04/14/2015					OK	100.00	102.0	102.0	0	
SULFATE	04/02/2015	0.000	1.0000	OK	OK	OK	97.00	95.0	93.0	1.00	
SULFATE	04/03/2015			OK	OK	OK	99.00				
SULFATE	04/06/2015			OK	OK	OK	94.00	86.0	94.0	2.00	

SAMPLE MANAGEMENT SYSTEM
Wet Chemistry Data Validation Worksheet

RIN: 15036863 **Lab Code:** PAR **Date Due:** 04/28/2015
Matrix: Water **Site Code:** SHP01 **Date Completed:** 04/28/2015

Analyte	Date Analyzed	CALIBRATION				Method	LCS	MS	MSD	DUP	Serial Dil.
		Int.	R^2	CCV	CCB	Blank	%R	%R	%R	RPD	%R
SULFATE	04/06/2015			OK	OK	OK	93.00	100.0	99.0	0	
SULFATE	04/07/2015							105.0	104.0	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.

Floodplain well 0797 and terrace wells 0600, 0602, 0604, 0727, 0730, 0812, 0814, 0817, 0819, 0820, 0822, 0824, 0825, 0826, 0827, 0832, 1007, 1058, 1059, 1068, 1069, 1073, 1074, and MW1 were classified as Category II or III. The sample results for these wells were further qualified with a “Q” flag, indicating the data are qualitative because of the sampling technique.

All surface water locations were collected via container immersion or through tubing reel and weight. A filtered sample and a non-filtered sample were collected at San Juan River locations 0501, 0897, 0899, 0940, 0956, 0965, 1203, and 1205. Only non-filtered samples were collected at all other surface water locations as per the Shiprock program directive.

Equipment Blank

Equipment blanks are prepared and analyzed to document contamination attributable the sample collection process. One equipment blank was submitted with these samples. Magnesium, potassium, sodium, strontium, sulfate, and uranium were detected in this blank. The concentrations of these analytes in the associated samples were much greater than the blank concentration, requiring no qualification.

Field Duplicate Analysis

Field duplicate samples are collected and analyzed as an indication of overall precision of the measurement process. The precision observed includes both field and laboratory precision and has more variability than laboratory duplicates, which measure only laboratory performance. The 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 the range should be no greater than the PQL. Duplicate samples were collected from floodplain locations 0736, 0956, 1132, and 1135; and terrace locations 0818, 1070, 1096, 1078, and 1096.

The floodplain duplicate results met the acceptance criteria for all analytes with the following exceptions: Uranium results for location 1132 and manganese results for location 0736 did not meet the acceptance criteria. The associated sample and duplicate results are qualified with a “J” flag as estimated values.

The terrace duplicate results met the acceptance criteria for all analytes with the following exceptions: The manganese duplicate results from locations 0818 and 1078 and the nitrate/nitrite as N results from location 1070 did not meet the acceptance criteria. The associated sample and duplicate results are qualified with a “J” flag as estimated values.

SAMPLE MANAGEMENT SYSTEM

Page 1 of 4

Validation Report: Equipment/Trip Blanks

RIN: 15036862 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 05/21/2015

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	1503611-83	SW6010	Potassium	130	J	100	UG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
1503611-1	NET 424	0501	2000	1		
1503611-2	NET 435	0501	3200	1		
1503611-37	NET 414	0897	2100	1		
1503611-38	NET 447	0897	2600	1		
1503611-39	NET 415	0899	2000	1		
1503611-40	NET 448	0899	3600	1		
1503611-41	NET 416	0940	1900	1		
1503611-42	NET 449	0940	6900	1		
1503611-43	NET 417	0956	1900	1		
1503611-44	NET 452	0956	2800	1		
1503611-45	NET 419	0965	1800	1		
1503611-46	NET 453	0965	3100	1		
1503611-47	NET 485	0967	2000	1		
1503611-48	NET 609	0967	3100	1		
1503611-75	NET 420	1203	2100	1		
1503611-76	NET 454	1203	2800	1		
1503611-77	NET 413	1205	1900	1		
1503611-78	NET 421	1205	9500	1		

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	1503611-83	SW6010	Sodium	240	J	93	UG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
1503611-1	NET 424	0501	28000	1		
1503611-2	NET 435	0501	29000	1		
1503611-37	NET 414	0897	31000	1		
1503611-38	NET 447	0897	30000	1		
1503611-39	NET 415	0899	28000	1		
1503611-40	NET 448	0899	28000	1		
1503611-41	NET 416	0940	29000	1		
1503611-42	NET 449	0940	31000	1		

SAMPLE MANAGEMENT SYSTEM

Page 2 of 4

Validation Report: Equipment/Trip Blanks

RIN: 15036862 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 05/21/2015

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	1503611-83		Sodium				

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
1503611-43	NET 417	0956	29000	1		
1503611-44	NET 452	0956	28000	1		
1503611-45	NET 419	0965	28000	1		
1503611-46	NET 453	0965	29000	1		
1503611-47	NET 485	0967	29000	1		
1503611-48	NET 609	0967	30000	1		
1503611-75	NET 420	1203	30000	1		
1503611-76	NET 454	1203	29000	1		
1503611-77	NET 413	1205	29000	1		
1503611-78	NET 421	1205	31000	1		

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	1503611-83	SW6010	Strontium	0.91	J	0.52	UG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
1503611-1	NET 424	0501	740	1		
1503611-2	NET 435	0501	780	1		
1503611-37	NET 414	0897	780	1		
1503611-38	NET 447	0897	750	1		
1503611-39	NET 415	0899	730	1		
1503611-40	NET 448	0899	820	1		
1503611-41	NET 416	0940	730	1		
1503611-42	NET 449	0940	910	1		
1503611-43	NET 417	0956	760	1		
1503611-44	NET 452	0956	750	1		
1503611-45	NET 419	0965	730	1		
1503611-46	NET 453	0965	780	1		
1503611-47	NET 485	0967	760	1		
1503611-48	NET 609	0967	800	1		
1503611-75	NET 420	1203	750	1		
1503611-76	NET 454	1203	750	1		

SAMPLE MANAGEMENT SYSTEM

Page 3 of 4

Validation Report: Equipment/Trip Blanks

RIN: 15036862 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 05/21/2015

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	1503611-83		Strontium				

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
1503611-77	NET 413	1205	730	1		
1503611-78	NET 421	1205	1200	1		

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	1503611-83	SW6020	Uranium	0.09	J	0.029	UG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
1503611-1	NET 424	0501	1.6	10		
1503611-2	NET 435	0501	1.9	10		
1503611-37	NET 414	0897	6.6	10		
1503611-38	NET 447	0897	2	10		
1503611-39	NET 415	0899	1.5	10		
1503611-40	NET 448	0899	2.2	10		
1503611-41	NET 416	0940	1.8	10		
1503611-42	NET 449	0940	3.4	10		
1503611-43	NET 417	0956	1.6	10		
1503611-44	NET 452	0956	1.7	10		
1503611-45	NET 419	0965	1.5	10		
1503611-46	NET 453	0965	1.8	10		
1503611-47	NET 485	0967	1.6	10		
1503611-48	NET 609	0967	1.7	10		
1503611-75	NET 420	1203	1.9	10		
1503611-76	NET 454	1203	1.8	10		
1503611-77	NET 413	1205	1.6	10		
1503611-78	NET 421	1205	6	10		

SAMPLE MANAGEMENT SYSTEM

Page 4 of 4

Validation Report: Equipment/Trip Blanks

RIN: 15036862 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 05/21/2015

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	1503611-83	SW9056	SULFATE	0.51		0.5	MG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
1503611-1	NET 424	0501	130	5		
1503611-2	NET 435	0501	130	5		
1503611-37	NET 414	0897	150	100		
1503611-38	NET 447	0897	130	5		
1503611-39	NET 415	0899	120	5		
1503611-40	NET 448	0899	120	5		
1503611-41	NET 416	0940	130	5		
1503611-42	NET 449	0940	130	5		
1503611-43	NET 417	0956	130	5		
1503611-44	NET 452	0956	130	5		
1503611-45	NET 419	0965	130	5		
1503611-46	NET 453	0965	130	5		
1503611-47	NET 485	0967	130	5		
1503611-48	NET 609	0967	130	5		
1503611-75	NET 420	1203	130	5		
1503611-76	NET 454	1203	130	5		
1503611-77	NET 413	1205	130	5		
1503611-78	NET 421	1205	130	5		

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

Page 1 of 2

RIN: 15036862 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 05/21/2015

Duplicate: 2210

Sample: 1132

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	0.79			1	0.77			1	2.56		MG/L
Calcium	58000			1	59000			1	1.71		UG/L
CHLORIDE	16			5	16			5	0		MG/L
Magnesium	17000			1	16000			1	6.06		UG/L
Manganese	400			1	420			1	4.88		UG/L
Nitrate+Nitrite as N	0.015			1	0.021			1			MG/L
Potassium	2400			1	2300			1	4.26		UG/L
Selenium	0.32	U		10	0.4	J		10			UG/L
Sodium	47000			1	45000			1	4.35		UG/L
Strontium	700			1	700			1	0		UG/L
SULFATE	170			5	170			5	0		MG/L
Uranium	17			10	12			10	34.48		UG/L

Duplicate: 2211

Sample: 0956

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	65000			1	69000			10	5.97		UG/L
CHLORIDE	13			5	12			5	8.00		MG/L
Magnesium	10000			1	11000			10	9.52		UG/L
Manganese	240			1	270			10	11.76		UG/L
Nitrate+Nitrite as N	0.47			1	0.5			1	6.19		MG/L
Potassium	2800			1	3300	J		10	16.39		UG/L
Selenium	0.84			5	1.2			10			UG/L
Sodium	28000			1	29000			10	3.51		UG/L
Strontium	750			1	780			10	3.92		UG/L
SULFATE	130			5	130			5	0		MG/L
Uranium	1.7			10	1.9			10	11.11		UG/L

Duplicate: 2215

Sample: 1135

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	0.36			1	0.23			1			MG/L
Calcium	260000			5	260000			5	0		UG/L
CHLORIDE	70			50	72			50	2.82		MG/L
Magnesium	74000			5	73000			5	1.36		UG/L
Manganese	1200			5	1200			5	0		UG/L
Nitrate+Nitrite as N	0.045			1	0.013			1			MG/L

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

Page 2 of 2

RIN: 15036862 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 05/21/2015

Duplicate: 2215

Sample: 1135

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
Potassium	16000			5	16000			5	0		UG/L
Selenium	0.32	U		10	0.32	U		10			UG/L
Sodium	890000			5	890000			5	0		UG/L
Strontium	3000			5	3000			5	0		UG/L
SULFATE	2600			50	2700			50	3.77		MG/L
Uranium	64			10	65			10	1.55		UG/L

Duplicate: 2592

Sample: 0736

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	320000			5	310000			5	3.17		UG/L
CHLORIDE	64			50	62			50	3.17		MG/L
Magnesium	32000			5	32000			5	0		UG/L
Manganese	75			5	98			5	26.59		UG/L
Nitrate+Nitrite as N	0.66			5	0.69			5	4.44		MG/L
Potassium	12000			5	12000			5	0		UG/L
Selenium	0.68			5	0.79	J		10			UG/L
Sodium	890000			5	870000			5	2.27		UG/L
Strontium	4300			5	4100			5	4.76		UG/L
SULFATE	2700			50	2600			50	3.77		MG/L
Uranium	33			10	34			10	2.99		UG/L

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

Page 1 of 2

RIN: 15036863 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 05/22/2015

Duplicate: 2319

Sample: 1078

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	1.4			1	1.4			1	0		MG/L
Calcium	420000			10	430000			10	2.35		UG/L
CHLORIDE	940			1000	900			1000			MG/L
Magnesium	1000000			10	970000			10	3.05		UG/L
Manganese	890			10	200			10	126.61		UG/L
Nitrate+Nitrite as N	540			500	550			500	1.83		MG/L
Potassium	51000			10	47000			10	8.16		UG/L
Selenium	2700			50	2400			50	11.76		UG/L
Sodium	5700000			50	5200000			50	9.17		UG/L
Strontium	10000			10	9800			10	2.02		UG/L
SULFATE	12000			1000	12000			1000	0		MG/L
Uranium	120			50	110			50	8.70		UG/L

Duplicate: 2320

Sample: 0818

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	58			25	57			25	1.74		MG/L
Calcium	460000			10	450000			10	2.20		UG/L
CHLORIDE	950			1000	910			1000			MG/L
Magnesium	1700000			10	1600000			10	6.06		UG/L
Manganese	580			10	470			10	20.95		UG/L
Nitrate+Nitrite as N	610			500	730			500	17.91		MG/L
Potassium	68000			10	66000			10	2.99		UG/L
Selenium	2100			100	2100			50	0		UG/L
Sodium	4200000			10	4000000			10	4.88		UG/L
Strontium	12000			10	11000			10	8.70		UG/L
SULFATE	13000			1000	12000			1000	8.00		MG/L
Uranium	110			100	110			50	0		UG/L

Duplicate: 2665

Sample: 1096

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	3.5			1	3.4			1	2.90		MG/L
Calcium	400000			10	410000			10	2.47		UG/L
CHLORIDE	930			1000	930			1000			MG/L
Magnesium	980000			10	980000			10	0		UG/L
Manganese	140			10	120			10	15.38		UG/L
Nitrate+Nitrite as N	550			500	590			500	7.02		MG/L

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

Page 2 of 2

RIN: 15036863 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 05/22/2015

Duplicate: 2665

Sample: 1096

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
Potassium	54000			10	52000			10	3.77		UG/L
Selenium	2000			50	2200			50	9.52		UG/L
Sodium	6000000			50	5900000			50	1.68		UG/L
Strontium	9400			10	9400			10	0		UG/L
SULFATE	13000			1000	13000			1000	0		MG/L
Uranium	73			50	78			50	6.62		UG/L

Duplicate: 2811

Sample: 1070

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	2.3			1	2.2			1	4.44		MG/L
Calcium	410000			10	430000			10	4.76		UG/L
CHLORIDE	1100			1000	1100			1000	0		MG/L
Magnesium	1100000			10	1100000			10	0		UG/L
Manganese	190			10	180			10	5.41		UG/L
Nitrate+Nitrite as N	510			500	710			500	32.79		MG/L
Potassium	56000			10	54000			10	3.64		UG/L
Selenium	2400			50	2800			10	15.38		UG/L
Sodium	6500000			50	6200000			50	4.72		UG/L
Strontium	10000			10	10000			10	0		UG/L
SULFATE	14000			1000	14000			1000	0		MG/L
Uranium	72			50	76			10	5.41		UG/L

Certification

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

Laboratory Coordinator:

Stephen Donovan
Stephen Donovan

6-25-2015
Date

Data Validation Lead:

Stephen Donovan
Stephen Donovan

6-25-2015
Date

This page intentionally left blank

Attachment 1

Assessment of Anomalous Data

This page intentionally left blank

Potential Outliers Report

This page intentionally left blank

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 can result from transcription errors, data-coding errors, or measurement system problems. However, outliers can also represent true extreme values of a distribution and can 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.** Do this 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 as to whether the data are normally distributed using the Shapiro-Wilk Test.
2. **Apply the appropriate statistical test.** Dixon's Test for extreme values 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.

Unfiltered surface water samples are expected to exhibit high variability in the results due to the heterogeneity of the samples and were not evaluated for outliers.

Twenty-four analytical results were identified as potential outliers. Ten of these results are for major cations/anions, where the reported concentrations are confirmed by the cation/anion balance. 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.

This page intentionally left blank

Data Validation Outliers Report - No Field Parameters

Comparison: Historical Data Beginning 01/01/2005 for Filtered Samples

Laboratory: ALS Laboratory Group

RIN: 15036862

Report Date: 06/11/2015

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current	Qualifiers		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
SHP01	0850	0001	03/25/2015	Magnesium	63.0		F	55.0		F	3.30	B	F	11	0	No
SHP01	0850	0001	03/25/2015	Selenium	0.00310		F	0.00260		FQ	0.00019		F	11	0	No
SHP01	0850	0001	03/25/2015	Sodium	940		F	830		F	150		FJ	11	0	No
SHP01	0850	0001	03/25/2015	Uranium	0.0730		F	0.0710		F	0.00460		F	11	0	No
SHP01	0897	0001	03/25/2015	Uranium	0.00660			0.00329	E	J	0.001			19	0	Yes
SHP01	0899	0001	03/25/2015	Selenium	0.00035	J		0.00160			0.00045			11	1	No
SHP01	0956	0001	03/26/2015	Manganese	0.00180	J		0.0280			0.00240	B		19	2	No
SHP01	0965	0001	03/26/2015	Manganese	0.00250	J		0.0320			0.00270	B		20	0	No

Data Validation Outliers Report - No Field Parameters
Comparison: Historical Data Beginning 01/01/2005 for Unfiltered Samples

Laboratory: ALS Laboratory Group

RIN: 15036862

Report Date: 06/11/2015

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current	Qualifiers		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
SHP01	0608	N001	03/24/2015	Ammonia Total as N	41.0		F	180		F	52.0		F	16	0	NA
SHP01	0608	N001	03/24/2015	Nitrate + Nitrite as Nitrogen	17.0		F	260	N	FJ	18.0		F	16	0	No
SHP01	0608	N001	03/24/2015	Potassium	45.0		F	130		F	50.0		F	16	0	NA
SHP01	0610	N001	03/24/2015	Magnesium	620		F	1600		FQ	690		F	13	0	No
SHP01	0610	N001	03/24/2015	Potassium	69.0		F	170		FQ	73.3		F	13	0	No
SHP01	0610	N001	03/24/2015	Selenium	0.290		F	0.240		F	0.0420		FQ	13	0	No
SHP01	0610	N001	03/24/2015	Sulfate	4600		F	9100		FQ	4800		F	13	0	No
SHP01	0611	N001	03/24/2015	Ammonia Total as N	0.170		F	10.00		F	1.60		F	11	0	NA
SHP01	0611	N001	03/24/2015	Calcium	400		F	350		F	140		F	11	0	NA
SHP01	0611	N001	03/24/2015	Chloride	130		F	570		F	220		F	11	0	NA
SHP01	0611	N001	03/24/2015	Manganese	0.0160	J	F	0.510		F	0.0530		F	11	0	NA
SHP01	0611	N001	03/24/2015	Selenium	0.270		F	0.0840		F	0.00043		F	11	0	NA
SHP01	0611	N001	03/24/2015	Sodium	870		F	2700		F	1300		F	11	0	Yes
SHP01	0611	N001	03/24/2015	Sulfate	4000		F	5700		F	4900		F	11	0	NA
SHP01	0612	N001	03/26/2015	Chloride	220		F	140		F	18.0		F	13	0	No
SHP01	0612	N001	03/26/2015	Magnesium	230		F	221		F	30.0		F	13	0	No
SHP01	0612	N001	03/26/2015	Sodium	650		F	585		F	82.0		F	13	0	No
SHP01	0612	N001	03/26/2015	Uranium	0.440		F	0.360		F	0.0210		F	13	0	Yes
SHP01	0614	N001	03/24/2015	Ammonia Total as N	15.0		F	79.0		F	17.4		F	17	0	No
SHP01	0614	N001	03/24/2015	Calcium	500		F	470		F	390		F	17	0	Yes

Data Validation Outliers Report - No Field Parameters
Comparison: Historical Data Beginning 01/01/2005 for Unfiltered Samples

Laboratory: ALS Laboratory Group

RIN: 15036862

Report Date: 06/11/2015

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current	Qualifiers		Historical Maximum	Qualifiers		Historical Minimum	Qualifiers		Number of Data Points		Statistical Outlier
					Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
SHP01	0614	N001	03/24/2015	Selenium	2.70		F	2.66	N	FJ	0.0930		F	17	0	No
SHP01	0615	N001	03/26/2015	Manganese	2.50		F	2.30		F	0.140		F	17	0	NA
SHP01	0618	N001	03/26/2015	Ammonia Total as N	14.0		F	72.0		F	16.0		F	17	0	No
SHP01	0618	N001	03/26/2015	Potassium	40.0		F	150		F	46.0		F	17	0	No
SHP01	0618	N001	03/26/2015	Selenium	0.00190		F	0.511	N	FJ	0.00220		F	17	0	No
SHP01	0619	N001	03/26/2015	Calcium	220		F	410		F	230		F	17	0	No
SHP01	0619	N001	03/26/2015	Selenium	0.00016	U	F	0.00750	UN	FJ	0.0003		F	17	3	NA
SHP01	0622	N001	03/26/2015	Ammonia Total as N	0.180		F	0.1000	U	F	0.0646	J	UF	12	12	NA
SHP01	0622	N001	03/26/2015	Magnesium	46.0		F	250		F	58.0		F	12	0	No
SHP01	0622	N001	03/26/2015	Manganese	0.110		F	6.20		F	0.390		F	12	0	No
SHP01	0622	N001	03/26/2015	Potassium	12.0		F	42.0		F	13.0		F	12	0	No
SHP01	0622	N001	03/26/2015	Uranium	0.0350		F	0.240		F	0.0380		F	12	0	No
SHP01	0623	N001	03/26/2015	Potassium	10.00		F	18.0		F	12.0		F	14	0	No
SHP01	0625	N001	03/26/2015	Manganese	1.80		F	5.10		F	2.50		F	12	0	No
SHP01	0625	N001	03/26/2015	Selenium	0.00054		F	0.00200		F	0.00094		F	12	1	No
SHP01	0736	N001	03/26/2015	Chloride	64.0		F	150		F	67.0		F	13	0	No
SHP01	0736	N001	03/26/2015	Magnesium	32.0		F	210		F	33.0		F	13	0	No
SHP01	0736	N001	03/26/2015	Manganese	0.0750		FJ	3.70		F	0.150		F	13	0	No
SHP01	0736	N001	03/26/2015	Nitrate + Nitrite as Nitrogen	0.660		F	0.360		F	0.01000	U	F	13	2	No
SHP01	0736	N001	03/26/2015	Potassium	12.0		F	52.0		F	15.0		F	13	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: Historical Data Beginning 01/01/2005 for Unfiltered Samples

Laboratory: ALS Laboratory Group

RIN: 15036862

Report Date: 06/11/2015

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current	Qualifiers		Historical Maximum	Qualifiers		Historical Minimum	Qualifiers		Number of Data Points		Statistical Outlier
					Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
SHP01	0773	N001	03/24/2015	Chloride	190		F	110		F	52.0		F	13	0	Yes
SHP01	0773	N001	03/24/2015	Selenium	0.490		F	0.290		F	0.0320		F	13	0	Yes
SHP01	0773	N001	03/24/2015	Sodium	700		F	650		F	220		F	13	0	Yes
SHP01	0773	N001	03/24/2015	Strontium	5.10		F	5.00		F	1.80		F	11	0	No
SHP01	0775	N001	03/26/2015	Nitrate + Nitrite as Nitrogen	3.60		F	0.270		F	0.01000	U	F	12	6	No
SHP01	0775	N001	03/26/2015	Potassium	27.0		F	79.0		F	28.0		F	12	0	No
SHP01	0783R	N001	03/24/2015	Nitrate + Nitrite as Nitrogen	0.120		F	0.0150		F	0.01000	U	F	13	11	NA
SHP01	0792	N001	03/26/2015	Magnesium	130		F	2100		F	150		F	16	0	No
SHP01	0792	N001	03/26/2015	Manganese	0.610		F	13.0		F	1.70		F	16	0	No
SHP01	0792	N001	03/26/2015	Nitrate + Nitrite as Nitrogen	2.00		F	0.0550		F	0.01000	U	F	16	6	NA
SHP01	0792	N001	03/26/2015	Potassium	28.0		F	230		F	29.0	B	FJ	16	0	No
SHP01	0793	N001	03/26/2015	Manganese	0.490		F	0.390		F	0.00930	B	F	12	1	No
SHP01	0793	N001	03/26/2015	Selenium	0.0350		F	0.360		F	0.0790		F	12	0	No
SHP01	0798	N001	03/26/2015	Ammonia Total as N	0.320		F	2.40		F	0.360		F	12	0	No
SHP01	0798	N001	03/26/2015	Calcium	350		F	610		F	380		F	12	0	No
SHP01	0798	N001	03/26/2015	Chloride	100.0		F	610		F	120		F	12	0	No
SHP01	0798	N001	03/26/2015	Magnesium	190		F	1600		F	210		F	12	0	No
SHP01	0798	N001	03/26/2015	Manganese	0.410		F	5.20		F	1.20		F	12	0	No
SHP01	0798	N001	03/26/2015	Potassium	26.0		F	170		F	34.0		F	12	0	No
SHP01	0798	N001	03/26/2015	Sodium	1300		F	4800		F	1500		F	12	0	No

Data Validation Outliers Report - No Field Parameters
Comparison: Historical Data Beginning 01/01/2005 for Unfiltered Samples

Laboratory: ALS Laboratory Group

RIN: 15036862

Report Date: 06/11/2015

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current	Qualifiers		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
SHP01	0798	N001	03/26/2015	Strontium	4.50		F	15.0		F	5.10		F	12	0	No
SHP01	0798	N001	03/26/2015	Sulfate	4100		F	15000		F	4800		F	12	0	NA
SHP01	0798	N001	03/26/2015	Uranium	0.160		F	2.10		F	0.200		F	12	0	No
SHP01	0854	N001	03/26/2015	Magnesium	250		F	1700		F	300		F	11	0	No
SHP01	0854	N001	03/26/2015	Potassium	40.0		F	170		F	49.0	B	F	11	0	No
SHP01	0854	N001	03/26/2015	Selenium	0.00036	J	F	0.0280		F	0.00067		F	11	0	No
SHP01	0854	N001	03/26/2015	Sulfate	4600		F	12000		F	4800		F	11	0	No
SHP01	0854	N001	03/26/2015	Uranium	0.280		F	2.00		F	0.350		F	11	0	No
SHP01	0856	N001	03/26/2015	Selenium	0.00032	U	F	0.00750	UN	FJ	0.00039		F	16	3	NA
SHP01	0856	N001	03/26/2015	Strontium	9.10		F	7.58		F	5.10		F	14	0	No
SHP01	1008	N001	03/26/2015	Ammonia Total as N	2.10		F	21.0		F	2.60		F	13	0	No
SHP01	1008	N001	03/26/2015	Magnesium	150		F	2300		F	160		F	13	0	No
SHP01	1008	N001	03/26/2015	Manganese	1.30		F	8.20		F	1.40		F	13	0	No
SHP01	1008	N001	03/26/2015	Potassium	30.0		F	160		F	34.0		F	13	0	No
SHP01	1008	N001	03/26/2015	Uranium	0.170		F	3.10		F	0.220		F	13	0	No
SHP01	1009	N001	03/26/2015	Ammonia Total as N	8.90		F	25.0		F	10.1			15	0	NA
SHP01	1009	N001	03/26/2015	Calcium	200		F	490		F	280		F	15	0	No
SHP01	1009	N001	03/26/2015	Chloride	26.0		F	72.0		F	26.8		F	15	0	NA
SHP01	1009	N001	03/26/2015	Magnesium	96.0		F	410		F	120		F	15	0	Yes
SHP01	1009	N001	03/26/2015	Potassium	16.0		F	40.0		F	18.0		F	15	0	No

Data Validation Outliers Report - No Field Parameters
Comparison: Historical Data Beginning 01/01/2005 for Unfiltered Samples

Laboratory: ALS Laboratory Group

RIN: 15036862

Report Date: 06/11/2015

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current	Qualifiers		Historical Maximum	Qualifiers		Historical Minimum	Qualifiers		Number of Data Points		Statistical Outlier
					Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
SHP01	1009	N001	03/26/2015	Sodium	190		F	470		F	210		F	15	0	No
SHP01	1009	N001	03/26/2015	Strontium	2.20		F	5.30		F	2.80		F	13	0	No
SHP01	1009	N001	03/26/2015	Sulfate	1100		F	3300		F	1500		F	15	0	No
SHP01	1009	N001	03/26/2015	Uranium	0.150		F	0.430		F	0.160		F	15	0	No
SHP01	1089	N001	03/26/2015	Magnesium	150			780		F	170			15	0	No
SHP01	1089	N001	03/26/2015	Potassium	28.0			86.0		F	33.0			15	0	No
SHP01	1089	N001	03/26/2015	Sulfate	3800			7800			4100			15	0	No
SHP01	1089	N001	03/26/2015	Uranium	0.160			1.10			0.200			15	0	NA
SHP01	1104	N001	03/26/2015	Strontium	4.90			9.70			5.00			14	0	No
SHP01	1105	N001	03/26/2015	Potassium	56.0		F	180		F	58.0		F	15	0	No
SHP01	1111	N001	03/24/2015	Calcium	320		F	560		F	340		F	14	0	NA
SHP01	1111	N001	03/24/2015	Chloride	230		F	540		F	280		F	14	0	No
SHP01	1111	N001	03/24/2015	Magnesium	600		F	1600		F	760		F	14	0	No
SHP01	1111	N001	03/24/2015	Sodium	1500		F	2880		F	1600		F	14	0	NA
SHP01	1111	N001	03/24/2015	Strontium	8.80		F	19.0		F	9.10		F	14	0	NA
SHP01	1111	N001	03/24/2015	Sulfate	5700		F	12000		F	6600		F	14	0	No
SHP01	1111	N001	03/24/2015	Uranium	0.350		F	1.23		F	0.500		F	14	0	No
SHP01	1113	N001	03/24/2015	Potassium	65.0		F	230		F	70.0		F	9	0	No
SHP01	1114	N001	03/24/2015	Ammonia Total as N	37.0		F	440		F	68.0		F	15	0	NA
SHP01	1114	N001	03/24/2015	Manganese	1.20		F	4.00		F	1.30		F	15	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: Historical Data Beginning 01/01/2005 for Unfiltered Samples

Laboratory: ALS Laboratory Group

RIN: 15036862

Report Date: 06/11/2015

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current	Qualifiers		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
SHP01	1114	N001	03/24/2015	Potassium	29.0		F	84.0		F	34.0		F	15	0	No
SHP01	1135	N001	03/26/2015	Ammonia Total as N	0.360		F	0.290		F	0.0689	J		12	3	NA
SHP01	1135	N001	03/26/2015	Calcium	260		F	407		F	280		F	12	0	No
SHP01	1135	N002	03/26/2015	Calcium	260		F	407		F	280		F	12	0	No
SHP01	1135	N001	03/26/2015	Magnesium	74.0		F	360		F	81.0		F	12	0	No
SHP01	1135	N002	03/26/2015	Magnesium	73.0		F	360		F	81.0		F	12	0	No
SHP01	1135	N001	03/26/2015	Manganese	1.20		F	2.90		F	1.40		F	12	0	NA
SHP01	1135	N002	03/26/2015	Manganese	1.20		F	2.90		F	1.40		F	12	0	NA
SHP01	1135	N001	03/26/2015	Potassium	16.0		F	39.0		F	18.0		F	12	0	No
SHP01	1135	N002	03/26/2015	Potassium	16.0		F	39.0		F	18.0		F	12	0	No
SHP01	1135	N001	03/26/2015	Strontium	3.00		F	5.30		F	3.30		F	10	0	No
SHP01	1135	N002	03/26/2015	Strontium	3.00		F	5.30		F	3.30		F	10	0	No
SHP01	1135	N001	03/26/2015	Sulfate	2600		F	5800		F	2700		F	12	0	No
SHP01	1136	N001	03/26/2015	Ammonia Total as N	8.20		F	6.20		F	0.0411	J	UF	13	7	NA
SHP01	1136	N001	03/26/2015	Magnesium	1200		F	1100		F	18.3		F	13	0	No
SHP01	1136	N001	03/26/2015	Manganese	6.40		F	5.90		F	0.863	E	F	13	0	No
SHP01	1136	N001	03/26/2015	Sodium	2200		F	1800		F	64.0		F	13	0	NA
SHP01	1136	N001	03/26/2015	Strontium	9.40		F	9.30		F	0.972		F	11	0	No
SHP01	1136	N001	03/26/2015	Sulfate	9800		F	9000		F	190			13	0	No
SHP01	1138	N001	03/26/2015	Ammonia Total as N	3.60		F	2.50		F	0.271		F	11	0	NA

Data Validation Outliers Report - No Field Parameters
Comparison: Historical Data Beginning 01/01/2005 for Unfiltered Samples

Laboratory: ALS Laboratory Group

RIN: 15036862

Report Date: 06/11/2015

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current	Qualifiers		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
SHP01	1138	N001	03/26/2015	Nitrate + Nitrite as Nitrogen	5.10		F	55.0		F	5.80		F	11	0	No
SHP01	1139	N001	03/26/2015	Selenium	0.00140		F	0.0252	N	F	0.00250		F	11	1	No
SHP01	1140	N001	03/25/2015	Chloride	140		F	461		F	180		F	11	0	No
SHP01	1140	N001	03/25/2015	Magnesium	490		F	1640		F	720		F	11	0	No
SHP01	1140	N001	03/25/2015	Nitrate + Nitrite as Nitrogen	0.280		F	320		F	4.00		F	11	0	No
SHP01	1140	N001	03/25/2015	Potassium	50.0		F	120		FJ	67.0		F	11	0	No
SHP01	1140	N001	03/25/2015	Selenium	0.0190		F	1.22	N	F	0.120		F	11	0	NA
SHP01	1140	N001	03/25/2015	Strontium	5.60		F	9.23		F	5.80		F	11	0	No
SHP01	1140	N001	03/25/2015	Sulfate	6500		F	12600		F	6700		F	11	0	No
SHP01	1140	N001	03/25/2015	Uranium	0.540		F	2.26		F	0.820		F	11	0	No
SHP01	1141	N001	03/26/2015	Calcium	350		F	560		F	400		F	11	0	No
SHP01	1141	N001	03/26/2015	Potassium	26.0		F	72.0		F	30.0		F	11	0	No
SHP01	1141	N001	03/26/2015	Selenium	0.0180		F	0.706	N	F	0.0210		F	11	0	No
SHP01	1141	N001	03/26/2015	Strontium	3.50		F	6.36		F	3.80		F	11	0	No
SHP01	1141	N001	03/26/2015	Sulfate	2300		F	5200		F	2400		F	11	0	No
SHP01	1142	N001	03/26/2015	Selenium	0.00035	J	F	0.00750	UN	FJ	0.00036		F	12	3	No
SHP01	1142	N001	03/26/2015	Uranium	0.01000		F	0.00760		F	0.00420		F	12	0	Yes
SHP01	1143	N001	03/26/2015	Calcium	170		F	242		F	180		F	12	0	No
SHP01	1143	N001	03/26/2015	Magnesium	50.0		F	88.6		F	59.0		F	12	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: Historical Data Beginning 01/01/2005 for Unfiltered Samples

Laboratory: ALS Laboratory Group

RIN: 15036863

Report Date: 06/11/2015

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current	Qualifiers		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
SHP02	0600	N001	03/25/2015	Nitrate + Nitrite as Nitrogen	120		FQ	110		FQ	75.0		FQ	10	0	No
SHP02	0600	N001	03/25/2015	Selenium	0.00140		FQJ	0.0150	UE	FQ	0.00160		FQ	10	1	NA
SHP02	0600	N001	03/25/2015	Uranium	0.930		FQ	0.810		FQ	0.630		FQ	10	0	NA
SHP02	0602	N001	03/26/2015	Nitrate + Nitrite as Nitrogen	38.0		FQ	31.0		FQ	5.17		FQ	13	0	No
SHP02	0602	N001	03/26/2015	Uranium	0.440		FQ	0.680		F	0.451	*EN	FQ	13	0	No
SHP02	0603	N001	03/25/2015	Uranium	0.0120		F	0.00976	*EN	F	0.00570		F	14	0	No
SHP02	0662	N001	03/26/2015	Selenium	0.00850			0.00210			0.000059	B		11	2	No
SHP02	0725	N001	03/25/2015	Manganese	0.00940	J	F	0.620		F	0.0130	B	F	15	0	No
SHP02	0725	N001	03/25/2015	Selenium	0.0630		F	0.0327	E	F	0.00250		F	15	0	Yes
SHP02	0726	N001	03/26/2015	Manganese	0.270		F	0.610		F	0.310		F	12	0	No
SHP02	0726	N001	03/26/2015	Nitrate + Nitrite as Nitrogen	42.0		F	36.0		F	2.20		F	12	0	Yes
SHP02	0727	N001	03/25/2015	Nitrate + Nitrite as Nitrogen	47.0		FQ	180		F	55.0		FQ	12	0	No
SHP02	0727	N001	03/25/2015	Selenium	0.00120		FQJ	0.00440		JFQ	0.00150	UE	F	12	1	NA
SHP02	0728	N001	03/24/2015	Ammonia Total as N	20.0		F	220		F	39.0		F	13	0	Yes
SHP02	0728	N001	03/24/2015	Calcium	540		F	510		F	460		F	13	0	Yes
SHP02	0728	N001	03/24/2015	Magnesium	190		F	1400		F	300		F	13	0	No
SHP02	0728	N001	03/24/2015	Manganese	0.400		F	1.80		F	0.690		F	13	0	Yes
SHP02	0728	N001	03/24/2015	Nitrate + Nitrite as Nitrogen	3.30		F	500		F	4.50		F	13	0	No
SHP02	0728	N001	03/24/2015	Potassium	27.0		F	150		F	39.0		F	13	0	No
SHP02	0728	N001	03/24/2015	Selenium	0.00071		FJ	0.00570		F	0.00110		F	13	1	No

Data Validation Outliers Report - No Field Parameters

Comparison: Historical Data Beginning 01/01/2005 for Unfiltered Samples

Laboratory: ALS Laboratory Group

RIN: 15036863

Report Date: 06/11/2015

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current	Qualifiers		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
SHP02	0728	N001	03/24/2015	Sodium	88.0		F	1400		F	210		F	13	0	No
SHP02	0728	N001	03/24/2015	Strontium	3.40		F	9.90		F	4.40		F	13	0	No
SHP02	0728	N001	03/24/2015	Sulfate	2200		F	8600		F	2800		F	13	0	No
SHP02	0728	N001	03/24/2015	Uranium	0.120		F	0.380		F	0.160		F	13	0	Yes
SHP02	0731	N001	03/25/2015	Sulfate	3600		F	5100		F	3800		F	14	0	No
SHP02	0812	N001	03/24/2015	Ammonia Total as N	0.150		FQ	0.1000	U	FQ	0.1000	U	FQ	7	7	NA
SHP02	0813	N001	03/24/2015	Selenium	0.150		F	0.130		F	0.0146	E	JF	15	0	No
SHP02	0815	N001	03/24/2015	Ammonia Total as N	1.30		F	1.20		F	0.1000	U	F	14	5	No
SHP02	0816	N001	03/26/2015	Manganese	0.00290	J	F	0.00200	B	FQ	0.00052	U	F	11	6	No
SHP02	0816	N001	03/26/2015	Sodium	780		F	720		FQ	320		FQ	11	0	No
SHP02	0817	N001	03/26/2015	Calcium	490		FQ	480		FQ	410		FQ	12	0	No
SHP02	0817	N001	03/26/2015	Manganese	2.80		FQ	2.50		FQ	2.00		FQ	12	0	Yes
SHP02	0818	N002	03/23/2015	Manganese	0.470		J	2.50			0.480			19	0	NA
SHP02	0818	N001	03/23/2015	Nitrate + Nitrite as Nitrogen	610			1400			710			19	0	NA
SHP02	0818	N001	03/23/2015	Sodium	4200			4100			2900			19	0	No
SHP02	0819	N001	03/26/2015	Magnesium	1100		FQ	1600		F	1250		FQ	13	0	NA
SHP02	0819	N001	03/26/2015	Potassium	130		FQ	260		JFQ	160		FQ	13	0	No
SHP02	0819	N001	03/26/2015	Strontium	7.50		FQ	10.00		F	8.10		FQ	13	0	Yes
SHP02	0827	N001	03/25/2015	Chloride	310		FQ	510		FQ	320		FQ	9	0	No
SHP02	0827	N001	03/25/2015	Uranium	0.730		FQ	1.10		FQ	0.870		FQ	9	0	No

Data Validation Outliers Report - No Field Parameters
Comparison: Historical Data Beginning 01/01/2005 for Unfiltered Samples

Laboratory: ALS Laboratory Group

RIN: 15036863

Report Date: 06/11/2015

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current	Qualifiers		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
SHP02	0828	N001	03/24/2015	Potassium	12.0		F	20.0		FJ	14.0		F	11	0	No
SHP02	0830	N001	03/25/2015	Manganese	0.990		F	6.10		F	1.10		F	15	0	No
SHP02	0833	N001	03/25/2015	Chloride	190		F	600		F	210		F	13	0	No
SHP02	0833	N001	03/25/2015	Manganese	0.0700		F	0.0590		F	0.00880	B	F	13	2	No
SHP02	0833	N001	03/25/2015	Uranium	0.0600		F	0.250		F	0.0690		F	13	0	No
SHP02	0835	N001	03/25/2015	Chloride	25.0		F	230		F	27.0		F	14	0	No
SHP02	0835	N001	03/25/2015	Magnesium	23.0		F	430		F	25.0		F	14	0	NA
SHP02	0835	N001	03/25/2015	Potassium	1.80		F	22.0		F	1.90		F	14	0	No
SHP02	0835	N001	03/25/2015	Sodium	30.0		F	957		F	34.0		F	14	0	NA
SHP02	0836	N001	03/24/2015	Ammonia Total as N	0.130		F	0.1000	U	F	0.0336	J	UF	15	15	NA
SHP02	0836	N001	03/24/2015	Chloride	88.0		F	80.0		F	32.0		F	15	0	No
SHP02	0836	N001	03/24/2015	Nitrate + Nitrite as Nitrogen	58.0		F	52.0		F	14.0		F	15	0	No
SHP02	0837	N001	03/24/2015	Nitrate + Nitrite as Nitrogen	95.0		F	94.0		F	5.10		F	13	0	NA
SHP02	0837	N001	03/24/2015	Selenium	0.560		F	0.430		F	0.110		F	13	0	No
SHP02	0837	N001	03/24/2015	Uranium	0.0290		F	0.0597	*EN	F	0.0320		F	13	0	No
SHP02	0838	N001	03/25/2015	Calcium	430		F	880		F	440		F	14	0	No
SHP02	0838	N001	03/25/2015	Selenium	0.300		F	4.71	E	F	0.420		F	14	0	NA
SHP02	0838	N001	03/25/2015	Strontium	7.10		F	13.4		F	7.70		F	14	0	No
SHP02	0844	N001	03/23/2015	Chloride	930		F	910		F	767		F	14	0	No
SHP02	0844	N001	03/23/2015	Selenium	0.320		F	2.00		F	1.60		F	14	0	Yes

Data Validation Outliers Report - No Field Parameters
Comparison: Historical Data Beginning 01/01/2005 for Unfiltered Samples

Laboratory: ALS Laboratory Group

RIN: 15036863

Report Date: 06/11/2015

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current	Qualifiers		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
SHP02	0844	N001	03/23/2015	Uranium	0.0330		F	0.210		F	0.150		F	14	0	Yes
SHP02	0889	N001	03/24/2015	Manganese	0.260			0.0630	B		0.00570	U		8	5	Yes
SHP02	1007	N001	03/25/2015	Selenium	0.0340		FQ	0.366	E	FQ	0.0630		FQ	8	0	No
SHP02	1049	N001	03/24/2015	Calcium	420		F	416		F	380		FQ	7	0	No
SHP02	1049	N001	03/24/2015	Sulfate	15000		F	18000		F	16000		F	7	0	No
SHP02	1049	N001	03/24/2015	Uranium	0.140		F	0.170		F	0.150		F	7	0	No
SHP02	1057	N001	03/24/2015	Manganese	11.0		F	64.6		J	12.0		F	10	0	NA
SHP02	1057	N001	03/24/2015	Selenium	0.0350		F	0.273	E	J	0.0480		F	10	0	No
SHP02	1058	N001	03/24/2015	Strontium	12.0		FQ	11.6		FQ	9.20		FQ	12	0	No
SHP02	1070	N001	03/23/2015	Nitrate + Nitrite as Nitrogen	510		J	970			590			17	0	No
SHP02	1071	N001	03/24/2015	Calcium	400			1600			410			14	0	NA
SHP02	1071	N001	03/24/2015	Manganese	0.900			60.0			1.90			14	0	NA
SHP02	1071	N001	03/24/2015	Nitrate + Nitrite as Nitrogen	470			2600			600			14	0	No
SHP02	1071	N001	03/24/2015	Sodium	4800			4500			1200			14	0	No
SHP02	1071	N001	03/24/2015	Uranium	0.170			0.160			0.0530			14	0	No
SHP02	1078	N002	03/23/2015	Chloride	900			1300			970			16	0	No
SHP02	1078	N001	03/23/2015	Chloride	940			1300			970			16	0	No
SHP02	1078	N002	03/23/2015	Manganese	0.200		J	0.130			0.0340	B		16	0	Yes
SHP02	1078	N001	03/23/2015	Manganese	0.890		J	0.130			0.0340	B		16	0	Yes
SHP02	1078	N001	03/23/2015	Sulfate	12000			15000			13000			16	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: Historical Data Beginning 01/01/2005 for Unfiltered Samples

Laboratory: ALS Laboratory Group

RIN: 15036863

Report Date: 06/11/2015

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current	Qualifiers		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
SHP02	1078	N002	03/23/2015	Sulfate	12000			15000			13000			16	0	No
SHP02	1078	N002	03/23/2015	Uranium	0.110			0.150			0.120			16	0	No
SHP02	1087	N001	03/26/2015	Ammonia Total as N	53.0			260			97.0			19	0	No
SHP02	1087	N001	03/26/2015	Chloride	210			380			240			19	0	NA
SHP02	1087	N001	03/26/2015	Magnesium	660			1800			860			19	0	No
SHP02	1087	N001	03/26/2015	Manganese	0.640			1.50			0.810			19	0	No
SHP02	1087	N001	03/26/2015	Nitrate + Nitrite as Nitrogen	120			473			190			19	0	No
SHP02	1087	N001	03/26/2015	Potassium	55.0			170			67.0	J		19	0	No
SHP02	1087	N001	03/26/2015	Sodium	900			1400			930			19	0	No
SHP02	1087	N001	03/26/2015	Strontium	6.80			10.00			7.00			19	0	No
SHP02	1087	N001	03/26/2015	Sulfate	4500			9900			5900			19	0	No
SHP02	1091	N001	03/24/2015	Nitrate + Nitrite as Nitrogen	700			2100			780			11	0	No
SHP02	1091	N001	03/24/2015	Selenium	0.510			2.47	E		0.680			11	0	NA
SHP02	1092	N001	03/24/2015	Ammonia Total as N	22.0			810			25.0			6	0	No
SHP02	1092	N001	03/24/2015	Chloride	1200			1100			650			6	0	No
SHP02	1092	N001	03/24/2015	Nitrate + Nitrite as Nitrogen	420			2900			570			6	0	No
SHP02	1095	N001	03/24/2015	Strontium	9.40			9.20			7.40			17	0	No
SHP02	1096	N001	03/23/2015	Selenium	2.00			3.10			2.10			18	0	No
SHP02	1096	N001	03/23/2015	Sodium	6000			5990			4100			18	0	No
SHP02	1096	N001	03/23/2015	Uranium	0.0730			0.120			0.0780			18	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: Historical Data Beginning 01/01/2005 for Unfiltered Samples

Laboratory: ALS Laboratory Group

RIN: 15036863

Report Date: 06/11/2015

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current	Qualifiers		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
SHP02	1215	N001	03/24/2015	Magnesium	13000			11000			2400			14	0	No
SHP02	1215	N001	03/24/2015	Uranium	0.0770			9.30			1.70			14	0	No
SHP02	1220	N001	03/25/2015	Selenium	0.280			0.0780			0.00650			7	0	Yes
SHP02	1220	N001	03/25/2015	Sodium	150			130			80.0			7	0	No
SHP02	1221	N001	03/25/2015	Ammonia Total as N	0.200			0.197		U	0.1000	U		7	6	NA
SHP02	1221	N001	03/25/2015	Manganese	1.30			0.590			0.00570	U		7	2	No
SHP02	MW1	N001	03/25/2015	Calcium	92.0		FQ	85.0		FQ	64.0		FQ	6	0	No
SHP02	MW1	N001	03/25/2015	Selenium	0.00760		FQ	0.00150	UE	FQ	0.00003	B	UFQ	6	3	Yes
SHP02	MW1	N001	03/25/2015	Strontium	10.00		FQ	9.70		FQ	7.10		FQ	6	0	No
SHP02	MW1	N001	03/25/2015	Sulfate	2800		FQ	2400		FQ	1900		FQ	6	0	No
SHP02	MW1	N001	03/25/2015	Uranium	0.00440		FQ	0.00340		FQ	0.00036		FQ	6	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: Data are not normally or lognormally distributed.

Attachment 2

Data Presentation

This page intentionally left blank

Groundwater Quality Data Floodplain Locations

This page intentionally left blank

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

REPORT DATE: 06/11/2015

Location: 0608 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	10	-	15	230		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	10	-	15	41		F	#	2.5	
Calcium	mg/L	03/24/2015	N001	10	-	15	330		F	#	0.12	
Chloride	mg/L	03/24/2015	N001	10	-	15	240		F	#	20	
Magnesium	mg/L	03/24/2015	N001	10	-	15	470		F	#	0.15	
Manganese	mg/L	03/24/2015	N001	10	-	15	2.6		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	10	-	15	17		F	#	0.1	
Oxidation Reduction Potential	mV	03/24/2015	N001	10	-	15	265		F	#		
pH	s.u.	03/24/2015	N001	10	-	15	7.24		F	#		
Potassium	mg/L	03/24/2015	N001	10	-	15	45		F	#	0.26	
Selenium	mg/L	03/24/2015	N001	10	-	15	0.005		F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	10	-	15	1600		F	#	0.23	
Specific Conductance	umhos/cm	03/24/2015	N001	10	-	15	9737		F	#		
Strontium	mg/L	03/24/2015	N001	10	-	15	7.4		F	#	0.0013	
Sulfate	mg/L	03/24/2015	N001	10	-	15	6100		F	#	50	
Temperature	C	03/24/2015	N001	10	-	15	12.91		F	#		
Turbidity	NTU	03/24/2015	N001	10	-	15	3.79		F	#		
Uranium	mg/L	03/24/2015	N001	10	-	15	0.66		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0610 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	4	-	9	180		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	4	-	9	0.63		F	#	0.1	
Calcium	mg/L	03/24/2015	N001	4	-	9	450		F	#	0.12	
Chloride	mg/L	03/24/2015	N001	4	-	9	150		F	#	10	
Magnesium	mg/L	03/24/2015	N001	4	-	9	620		F	#	0.15	
Manganese	mg/L	03/24/2015	N001	4	-	9	0.015	J	F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	4	-	9	190		F	#	2	
Oxidation Reduction Potential	mV	03/24/2015	N001	4	-	9	246		F	#		
pH	s.u.	03/24/2015	N001	4	-	9	7.36		F	#		
Potassium	mg/L	03/24/2015	N001	4	-	9	69		F	#	0.26	
Selenium	mg/L	03/24/2015	N001	4	-	9	0.29		F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	4	-	9	850		F	#	0.23	
Specific Conductance	umhos/cm	03/24/2015	N001	4	-	9	7823		F	#		
Strontium	mg/L	03/24/2015	N001	4	-	9	5.8		F	#	0.0013	
Sulfate	mg/L	03/24/2015	N001	4	-	9	4600		F	#	25	
Temperature	C	03/24/2015	N001	4	-	9	13.3		F	#		
Turbidity	NTU	03/24/2015	N001	4	-	9	1.49		F	#		
Uranium	mg/L	03/24/2015	N001	4	-	9	0.61		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0611 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	9.5	-	14.5	194		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	9.5	-	14.5	0.17		F	#	0.1	
Calcium	mg/L	03/24/2015	N001	9.5	-	14.5	400		F	#	0.12	
Chloride	mg/L	03/24/2015	N001	9.5	-	14.5	130		F	#	10	
Magnesium	mg/L	03/24/2015	N001	9.5	-	14.5	440		F	#	0.15	
Manganese	mg/L	03/24/2015	N001	9.5	-	14.5	0.016	J	F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	9.5	-	14.5	110		F	#	1	
Oxidation Reduction Potential	mV	03/24/2015	N001	9.5	-	14.5	260.6		F	#		
pH	s.u.	03/24/2015	N001	9.5	-	14.5	7.24		F	#		
Potassium	mg/L	03/24/2015	N001	9.5	-	14.5	43		F	#	0.26	
Selenium	mg/L	03/24/2015	N001	9.5	-	14.5	0.27		F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	9.5	-	14.5	870		F	#	0.23	
Specific Conductance	umhos/cm	03/24/2015	N001	9.5	-	14.5	6902		F	#		
Strontium	mg/L	03/24/2015	N001	9.5	-	14.5	6.4		F	#	0.0013	
Sulfate	mg/L	03/24/2015	N001	9.5	-	14.5	4000		F	#	25	
Temperature	C	03/24/2015	N001	9.5	-	14.5	12.47		F	#		
Turbidity	NTU	03/24/2015	N001	9.5	-	14.5	3.13		F	#		
Uranium	mg/L	03/24/2015	N001	9.5	-	14.5	0.38		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0612 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	5	-	10	390		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	5	-	10	0.43		F	#	0.1	
Calcium	mg/L	03/26/2015	N001	5	-	10	200		F	#	0.024	
Chloride	mg/L	03/26/2015	N001	5	-	10	220		F	#	10	
Magnesium	mg/L	03/26/2015	N001	5	-	10	230		F	#	0.03	
Manganese	mg/L	03/26/2015	N001	5	-	10	0.6		F	#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	5	-	10	0.011		F	#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	5	-	10	21		F	#		
pH	s.u.	03/26/2015	N001	5	-	10	7.1		F	#		
Potassium	mg/L	03/26/2015	N001	5	-	10	9.3		F	#	0.052	
Selenium	mg/L	03/26/2015	N001	5	-	10	0.073		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	5	-	10	650		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	5	-	10	4578		F	#		
Strontium	mg/L	03/26/2015	N001	5	-	10	3		F	#	0.00026	
Sulfate	mg/L	03/26/2015	N001	5	-	10	2200		F	#	25	
Temperature	C	03/26/2015	N001	5	-	10	10.65		F	#		
Turbidity	NTU	03/26/2015	N001	5	-	10	4.14		F	#		
Uranium	mg/L	03/26/2015	N001	5	-	10	0.44		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0614 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	10	-	15	324		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	10	-	15	15		F	#	2.5	
Calcium	mg/L	03/24/2015	N001	10	-	15	500		F	#	0.12	
Chloride	mg/L	03/24/2015	N001	10	-	15	180		F	#	20	
Magnesium	mg/L	03/24/2015	N001	10	-	15	720		F	#	0.15	
Manganese	mg/L	03/24/2015	N001	10	-	15	1.8		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	10	-	15	110		F	#	1	
Oxidation Reduction Potential	mV	03/24/2015	N001	10	-	15	120		F	#		
pH	s.u.	03/24/2015	N001	10	-	15	6.85		F	#		
Potassium	mg/L	03/24/2015	N001	10	-	15	77		F	#	0.26	
Selenium	mg/L	03/24/2015	N001	10	-	15	2.7		F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	10	-	15	1100		F	#	0.23	
Specific Conductance	umhos/cm	03/24/2015	N001	10	-	15	8809		F	#		
Strontium	mg/L	03/24/2015	N001	10	-	15	7.5		F	#	0.0013	
Sulfate	mg/L	03/24/2015	N001	10	-	15	5700		F	#	50	
Temperature	C	03/24/2015	N001	10	-	15	13.01		F	#		
Turbidity	NTU	03/24/2015	N001	10	-	15	5.93		F	#		
Uranium	mg/L	03/24/2015	N001	10	-	15	0.92		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0615 WELL S of floodplain fence, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	4.5	-	9.5	530		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	4.5	-	9.5	0.87		F	#	0.1	
Calcium	mg/L	03/26/2015	N001	4.5	-	9.5	450		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	4.5	-	9.5	180		F	#	20	
Magnesium	mg/L	03/26/2015	N001	4.5	-	9.5	670		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	4.5	-	9.5	2.5		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	4.5	-	9.5	0.46		F	#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	4.5	-	9.5	220		F	#		
pH	s.u.	03/26/2015	N001	4.5	-	9.5	6.84		F	#		
Potassium	mg/L	03/26/2015	N001	4.5	-	9.5	61		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	4.5	-	9.5	0.031		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	4.5	-	9.5	1300		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	4.5	-	9.5	9055		F	#		
Strontium	mg/L	03/26/2015	N001	4.5	-	9.5	6.6		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	4.5	-	9.5	6200		F	#	50	
Temperature	C	03/26/2015	N001	4.5	-	9.5	10.65		F	#		
Turbidity	NTU	03/26/2015	N001	4.5	-	9.5	1.62		F	#		
Uranium	mg/L	03/26/2015	N001	4.5	-	9.5	0.71		F	#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	11	-	16	352		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	11	-	16	14		F	#	2.5	
Calcium	mg/L	03/26/2015	N001	11	-	16	430		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	11	-	16	120		F	#	20	
Magnesium	mg/L	03/26/2015	N001	11	-	16	330		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	11	-	16	2.8		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	11	-	16	0.017		F	#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	11	-	16	116		F	#		
pH	s.u.	03/26/2015	N001	11	-	16	6.84		F	#		
Potassium	mg/L	03/26/2015	N001	11	-	16	40		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	11	-	16	0.0019		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	11	-	16	1300		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	11	-	16	8341		F	#		
Strontium	mg/L	03/26/2015	N001	11	-	16	4.5		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	11	-	16	5300		F	#	50	
Temperature	C	03/26/2015	N001	11	-	16	13.52		F	#		
Turbidity	NTU	03/26/2015	N001	11	-	16	3.38		F	#		
Uranium	mg/L	03/26/2015	N001	11	-	16	0.49		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0619 WELL Center of floodplain

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	8	-	13	340		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	8	-	13	0.34		F	#	0.1	
Calcium	mg/L	03/26/2015	N001	8	-	13	220		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	8	-	13	81		F	#	10	
Magnesium	mg/L	03/26/2015	N001	8	-	13	89		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	8	-	13	1.4		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	8	-	13	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	8	-	13	153.6		F	#		
pH	s.u.	03/26/2015	N001	8	-	13	7.29		F	#		
Potassium	mg/L	03/26/2015	N001	8	-	13	16		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	8	-	13	0.00016	U	F	#	0.00016	
Sodium	mg/L	03/26/2015	N001	8	-	13	1100		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	8	-	13	5766		F	#		
Strontium	mg/L	03/26/2015	N001	8	-	13	6.3		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	8	-	13	3000		F	#	25	
Temperature	C	03/26/2015	N001	8	-	13	13.81		F	#		
Turbidity	NTU	03/26/2015	N001	8	-	13	1.07		F	#		
Uranium	mg/L	03/26/2015	N001	8	-	13	0.079		F	#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	5	-	10	222		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	5	-	10	0.18		F	#	0.1	
Calcium	mg/L	03/26/2015	N001	5	-	10	170		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	5	-	10	69		F	#	10	
Magnesium	mg/L	03/26/2015	N001	5	-	10	46		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	5	-	10	0.11		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	5	-	10	0.038		F	#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	5	-	10	110		F	#		
pH	s.u.	03/26/2015	N001	5	-	10	7.21		F	#		
Potassium	mg/L	03/26/2015	N001	5	-	10	12		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	5	-	10	0.013		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	5	-	10	890		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	5	-	10	4555		F	#		
Strontium	mg/L	03/26/2015	N001	5	-	10	7		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	5	-	10	2400		F	#	25	
Temperature	C	03/26/2015	N001	5	-	10	10.96		F	#		
Turbidity	NTU	03/26/2015	N001	5	-	10	3.21		F	#		
Uranium	mg/L	03/26/2015	N001	5	-	10	0.035		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0623 WELL Center of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	10	-	15	440		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	10	-	15	0.12		F	#	0.1	
Calcium	mg/L	03/26/2015	N001	10	-	15	240		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	10	-	15	69		F	#	10	
Magnesium	mg/L	03/26/2015	N001	10	-	15	48		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	10	-	15	2.7		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	10	-	15	0.011		F	#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	10	-	15	230.8		F	#		
pH	s.u.	03/26/2015	N001	10	-	15	7.17		F	#		
Potassium	mg/L	03/26/2015	N001	10	-	15	10		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	10	-	15	0.00072		F	#	0.00016	
Sodium	mg/L	03/26/2015	N001	10	-	15	1000		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	10	-	15	5328		F	#		
Strontium	mg/L	03/26/2015	N001	10	-	15	10		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	10	-	15	2600		F	#	25	
Temperature	C	03/26/2015	N001	10	-	15	14.48		F	#		
Turbidity	NTU	03/26/2015	N001	10	-	15	1.83		F	#		
Uranium	mg/L	03/26/2015	N001	10	-	15	0.056		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0625 WELL Center of floodplain, well nest

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	4.5	-	9.5	430		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	4.5	-	9.5	0.1	U	F	#	0.1	
Calcium	mg/L	03/26/2015	N001	4.5	-	9.5	230		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	4.5	-	9.5	68		F	#	10	
Magnesium	mg/L	03/26/2015	N001	4.5	-	9.5	44		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	4.5	-	9.5	1.8		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	4.5	-	9.5	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	4.5	-	9.5	235.2		F	#		
pH	s.u.	03/26/2015	N001	4.5	-	9.5	7.15		F	#		
Potassium	mg/L	03/26/2015	N001	4.5	-	9.5	10		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	4.5	-	9.5	0.00054		F	#	0.00016	
Sodium	mg/L	03/26/2015	N001	4.5	-	9.5	1000		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	4.5	-	9.5	5234		F	#		
Strontium	mg/L	03/26/2015	N001	4.5	-	9.5	10		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	4.5	-	9.5	2600		F	#	25	
Temperature	C	03/26/2015	N001	4.5	-	9.5	13.88		F	#		
Turbidity	NTU	03/26/2015	N001	4.5	-	9.5	2.92		F	#		
Uranium	mg/L	03/26/2015	N001	4.5	-	9.5	0.04		F	#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	9.5	-	14.5	256		F	#		
Ammonia Total as N	mg/L	03/25/2015	N001	9.5	-	14.5	0.1	U	F	#	0.1	
Calcium	mg/L	03/25/2015	N001	9.5	-	14.5	300		F	#	0.12	
Chloride	mg/L	03/25/2015	N001	9.5	-	14.5	110		F	#	10	
Magnesium	mg/L	03/25/2015	N001	9.5	-	14.5	40		F	#	0.15	
Manganese	mg/L	03/25/2015	N001	9.5	-	14.5	3		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	9.5	-	14.5	0.012		F	#	0.01	
Oxidation Reduction Potential	mV	03/25/2015	N001	9.5	-	14.5	161		F	#		
pH	s.u.	03/25/2015	N001	9.5	-	14.5	7.08		F	#		
Potassium	mg/L	03/25/2015	N001	9.5	-	14.5	9.7		F	#	0.26	
Selenium	mg/L	03/25/2015	N001	9.5	-	14.5	0.00068		F	#	0.00016	
Sodium	mg/L	03/25/2015	N001	9.5	-	14.5	1000		F	#	0.23	
Specific Conductance	umhos/cm	03/25/2015	N001	9.5	-	14.5	5510		F	#		
Strontium	mg/L	03/25/2015	N001	9.5	-	14.5	17		F	#	0.0013	
Sulfate	mg/L	03/25/2015	N001	9.5	-	14.5	3000		F	#	25	
Temperature	C	03/25/2015	N001	9.5	-	14.5	9.69		F	#		
Turbidity	NTU	03/25/2015	N001	9.5	-	14.5	3.73		F	#		
Uranium	mg/L	03/25/2015	N001	9.5	-	14.5	0.023		F	#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	6	-	10	388		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	6	-	10	0.1	U	F	#	0.1	
Calcium	mg/L	03/26/2015	N001	6	-	10	290		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	6	-	10	160		F	#	20	
Magnesium	mg/L	03/26/2015	N001	6	-	10	110		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	6	-	10	4.2		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	6	-	10	0.011		F	#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	6	-	10	48.4		F	#		
pH	s.u.	03/26/2015	N001	6	-	10	7.26		F	#		
Potassium	mg/L	03/26/2015	N001	6	-	10	18		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	6	-	10	0.0012		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	6	-	10	1900		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	6	-	10	9260		F	#		
Strontium	mg/L	03/26/2015	N001	6	-	10	10		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	6	-	10	5300		F	#	50	
Temperature	C	03/26/2015	N001	6	-	10	9.66		F	#		
Turbidity	NTU	03/26/2015	N001	6	-	10	5.31		F	#		
Uranium	mg/L	03/26/2015	N001	6	-	10	0.093		F	#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	5	-	10	550		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	5	-	10	0.1	U	F	#	0.1	
Calcium	mg/L	03/26/2015	N001	5	-	10	340		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	5	-	10	170		F	#	10	
Magnesium	mg/L	03/26/2015	N001	5	-	10	260		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	5	-	10	3.7		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	5	-	10	25		F	#	0.2	
Oxidation Reduction Potential	mV	03/26/2015	N001	5	-	10	245.8		F	#		
pH	s.u.	03/26/2015	N001	5	-	10	7.04		F	#		
Potassium	mg/L	03/26/2015	N001	5	-	10	13		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	5	-	10	0.17		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	5	-	10	1300		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	5	-	10	7714		F	#		
Strontium	mg/L	03/26/2015	N001	5	-	10	13		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	5	-	10	4300		F	#	25	
Temperature	C	03/26/2015	N001	5	-	10	9.72		F	#		
Turbidity	NTU	03/26/2015	N001	5	-	10	2.83		F	#		
Uranium	mg/L	03/26/2015	N001	5	-	10	0.17		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0735 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2015	N001	3	-	8	706		F	#		
Ammonia Total as N	mg/L	03/23/2015	N001	3	-	8	9.5		F	#	2.5	
Calcium	mg/L	03/23/2015	N001	3	-	8	380		F	#	0.24	
Chloride	mg/L	03/23/2015	N001	3	-	8	590		F	#	50	
Magnesium	mg/L	03/23/2015	N001	3	-	8	1100		F	#	0.3	
Manganese	mg/L	03/23/2015	N001	3	-	8	2.7		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2015	N001	3	-	8	610		F	#	5	
Oxidation Reduction Potential	mV	03/23/2015	N001	3	-	8	211.7		F	#		
pH	s.u.	03/23/2015	N001	3	-	8	6.96		F	#		
Potassium	mg/L	03/23/2015	N001	3	-	8	48		F	#	0.52	
Selenium	mg/L	03/23/2015	N001	3	-	8	0.082		F	#	0.00032	
Sodium	mg/L	03/23/2015	N001	3	-	8	3300		F	#	0.47	
Specific Conductance	umhos/cm	03/23/2015	N001	3	-	8	18362		F	#		
Strontium	mg/L	03/23/2015	N001	3	-	8	9.6		F	#	0.0026	
Sulfate	mg/L	03/23/2015	N001	3	-	8	10000		F	#	120	
Temperature	C	03/23/2015	N001	3	-	8	10.74		F	#		
Turbidity	NTU	03/23/2015	N001	3	-	8	1.92		F	#		
Uranium	mg/L	03/23/2015	N001	3	-	8	0.26		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0736 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	3	-	5	192		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	3	-	5	0.1	U	F	#	0.1	
Ammonia Total as N	mg/L	03/26/2015	N002	3	-	5	0.1	U	F	#	0.1	
Calcium	mg/L	03/26/2015	N001	3	-	5	320		F	#	0.12	
Calcium	mg/L	03/26/2015	N002	3	-	5	310		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	3	-	5	64		F	#	10	
Chloride	mg/L	03/26/2015	N002	3	-	5	62		F	#	10	
Magnesium	mg/L	03/26/2015	N001	3	-	5	32		F	#	0.15	
Magnesium	mg/L	03/26/2015	N002	3	-	5	32		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	3	-	5	0.075		FJ	#	0.0012	
Manganese	mg/L	03/26/2015	N002	3	-	5	0.098		FJ	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	3	-	5	0.66		F	#	0.05	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N002	3	-	5	0.69		F	#	0.05	
Oxidation Reduction Potential	mV	03/26/2015	N001	3	-	5	202.3		F	#		
pH	s.u.	03/26/2015	N001	3	-	5	7.59		F	#		
Potassium	mg/L	03/26/2015	N001	3	-	5	12		F	#	0.26	
Potassium	mg/L	03/26/2015	N002	3	-	5	12		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	3	-	5	0.00068		F	#	0.00016	

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

REPORT DATE: 06/11/2015

Location: 0736 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/26/2015	N002	3	-	5	0.00079	J	F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	3	-	5	890		F	#	0.23	
Sodium	mg/L	03/26/2015	N002	3	-	5	870		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	3	-	5	4898		F	#		
Strontium	mg/L	03/26/2015	N001	3	-	5	4.3		F	#	0.0013	
Strontium	mg/L	03/26/2015	N002	3	-	5	4.1		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	3	-	5	2700		F	#	25	
Sulfate	mg/L	03/26/2015	N002	3	-	5	2600		F	#	25	
Temperature	C	03/26/2015	N001	3	-	5	12.91		F	#		
Turbidity	NTU	03/26/2015	N001	3	-	5	2.12		F	#		
Uranium	mg/L	03/26/2015	N001	3	-	5	0.033		F	#	0.000029	
Uranium	mg/L	03/26/2015	N002	3	-	5	0.034		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0766 WELL Well Point

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	6.25	-	8.75	324		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	6.25	-	8.75	0.11		F	#	0.1	
Calcium	mg/L	03/26/2015	N001	6.25	-	8.75	280		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	6.25	-	8.75	110		F	#	10	
Magnesium	mg/L	03/26/2015	N001	6.25	-	8.75	170		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	6.25	-	8.75	0.44		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	6.25	-	8.75	2.2		F	#	0.05	
Oxidation Reduction Potential	mV	03/26/2015	N001	6.25	-	8.75	21.7		F	#		
pH	s.u.	03/26/2015	N001	6.25	-	8.75	7.45		F	#		
Potassium	mg/L	03/26/2015	N001	6.25	-	8.75	32		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	6.25	-	8.75	0.0038		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	6.25	-	8.75	1400		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	6.25	-	8.75	7304		F	#		
Strontium	mg/L	03/26/2015	N001	6.25	-	8.75	4.5		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	6.25	-	8.75	4300		F	#	25	
Temperature	C	03/26/2015	N001	6.25	-	8.75	14.52		F	#		
Turbidity	NTU	03/26/2015	N001	6.25	-	8.75	9.68		F	#		
Uranium	mg/L	03/26/2015	N001	6.25	-	8.75	0.15		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0768 WELL Well Point

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	4.58	-	7.08	428		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	4.58	-	7.08	0.1	U	F	#	0.1	
Calcium	mg/L	03/26/2015	N001	4.58	-	7.08	330		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	4.58	-	7.08	110		F	#	20	
Magnesium	mg/L	03/26/2015	N001	4.58	-	7.08	170		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	4.58	-	7.08	0.98		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	4.58	-	7.08	0.031		F	#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	4.58	-	7.08	37		F	#		
pH	s.u.	03/26/2015	N001	4.58	-	7.08	7.16		F	#		
Potassium	mg/L	03/26/2015	N001	4.58	-	7.08	31		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	4.58	-	7.08	0.0023		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	4.58	-	7.08	1500		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	4.58	-	7.08	7991		F	#		
Strontium	mg/L	03/26/2015	N001	4.58	-	7.08	8.6		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	4.58	-	7.08	4500		F	#	50	
Temperature	C	03/26/2015	N001	4.58	-	7.08	12.69		F	#		
Turbidity	NTU	03/26/2015	N001	4.58	-	7.08	3.45		F	#		
Uranium	mg/L	03/26/2015	N001	4.58	-	7.08	0.1		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0773 WELL Well Point

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	4	-	6.5	226		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	4	-	6.5	0.17		F	#	0.1	
Calcium	mg/L	03/24/2015	N001	4	-	6.5	460		F	#	0.12	
Chloride	mg/L	03/24/2015	N001	4	-	6.5	190		F	#	10	
Magnesium	mg/L	03/24/2015	N001	4	-	6.5	510		F	#	0.15	
Manganese	mg/L	03/24/2015	N001	4	-	6.5	0.0027	J	F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	4	-	6.5	120		F	#	1	
Oxidation Reduction Potential	mV	03/24/2015	N001	4	-	6.5	273.3		F	#		
pH	s.u.	03/24/2015	N001	4	-	6.5	7.47		F	#		
Potassium	mg/L	03/24/2015	N001	4	-	6.5	36		F	#	0.26	
Selenium	mg/L	03/24/2015	N001	4	-	6.5	0.49		F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	4	-	6.5	700		F	#	0.23	
Specific Conductance	umhos/cm	03/24/2015	N001	4	-	6.5	6684		F	#		
Strontium	mg/L	03/24/2015	N001	4	-	6.5	5.1		F	#	0.0013	
Sulfate	mg/L	03/24/2015	N001	4	-	6.5	3900		F	#	25	
Temperature	C	03/24/2015	N001	4	-	6.5	14.89		F	#		
Turbidity	NTU	03/24/2015	N001	4	-	6.5	1.22		F	#		
Uranium	mg/L	03/24/2015	N001	4	-	6.5	0.48		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0775 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	4.25	-	6.75	344		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	4.25	-	6.75	0.1	U	F	#	0.1	
Calcium	mg/L	03/26/2015	N001	4.25	-	6.75	440		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	4.25	-	6.75	100		F	#	10	
Magnesium	mg/L	03/26/2015	N001	4.25	-	6.75	130		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	4.25	-	6.75	0.62		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	4.25	-	6.75	3.6		F	#	0.05	
Oxidation Reduction Potential	mV	03/26/2015	N001	4.25	-	6.75	85		F	#		
pH	s.u.	03/26/2015	N001	4.25	-	6.75	7.05		F	#		
Potassium	mg/L	03/26/2015	N001	4.25	-	6.75	27		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	4.25	-	6.75	0.014		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	4.25	-	6.75	1300		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	4.25	-	6.75	6849		F	#		
Strontium	mg/L	03/26/2015	N001	4.25	-	6.75	6.2		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	4.25	-	6.75	4000		F	#	25	
Temperature	C	03/26/2015	N001	4.25	-	6.75	13.76		F	#		
Turbidity	NTU	03/26/2015	N001	4.25	-	6.75	2.26		F	#		
Uranium	mg/L	03/26/2015	N001	4.25	-	6.75	0.15		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0779 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	7	-	9.5	566		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	7	-	9.5	1.7		F	#	0.1	
Calcium	mg/L	03/26/2015	N001	7	-	9.5	360		F	#	0.24	
Chloride	mg/L	03/26/2015	N001	7	-	9.5	280		F	#	40	
Magnesium	mg/L	03/26/2015	N001	7	-	9.5	850		F	#	0.3	
Manganese	mg/L	03/26/2015	N001	7	-	9.5	2.1		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	7	-	9.5	6.6		F	#	0.1	
Oxidation Reduction Potential	mV	03/26/2015	N001	7	-	9.5	133		F	#		
pH	s.u.	03/26/2015	N001	7	-	9.5	7.06		F	#		
Potassium	mg/L	03/26/2015	N001	7	-	9.5	81		F	#	0.52	
Selenium	mg/L	03/26/2015	N001	7	-	9.5	0.12		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	7	-	9.5	2800		F	#	0.47	
Specific Conductance	umhos/cm	03/26/2015	N001	7	-	9.5	14415		F	#		
Strontium	mg/L	03/26/2015	N001	7	-	9.5	8.2		F	#	0.0026	
Sulfate	mg/L	03/26/2015	N001	7	-	9.5	9900		F	#	100	
Temperature	C	03/26/2015	N001	7	-	9.5	13.64		F	#		
Turbidity	NTU	03/26/2015	N001	7	-	9.5	2.86		F	#		
Uranium	mg/L	03/26/2015	N001	7	-	9.5	1		F	#	0.00015	

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

REPORT DATE: 06/11/2015

Location: 0782R WELL Island area NW of US Hwy 491 bridge.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	4.71	-	9.46	184		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	4.71	-	9.46	0.1	U	F	#	0.1	
Calcium	mg/L	03/24/2015	N001	4.71	-	9.46	110		F	#	0.024	
Chloride	mg/L	03/24/2015	N001	4.71	-	9.46	26		F	#	2	
Magnesium	mg/L	03/24/2015	N001	4.71	-	9.46	27		F	#	0.03	
Manganese	mg/L	03/24/2015	N001	4.71	-	9.46	1.9		F	#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	4.71	-	9.46	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/24/2015	N001	4.71	-	9.46	47		F	#		
pH	s.u.	03/24/2015	N001	4.71	-	9.46	7.01		F	#		
Potassium	mg/L	03/24/2015	N001	4.71	-	9.46	2.8		F	#	0.052	
Selenium	mg/L	03/24/2015	N001	4.71	-	9.46	0.00032	U	F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	4.71	-	9.46	160		F	#	0.047	
Specific Conductance	umhos/cm	03/24/2015	N001	4.71	-	9.46	1360		F	#		
Strontium	mg/L	03/24/2015	N001	4.71	-	9.46	1.4		F	#	0.00026	
Sulfate	mg/L	03/24/2015	N001	4.71	-	9.46	510		F	#	5	
Temperature	C	03/24/2015	N001	4.71	-	9.46	10.42		F	#		
Turbidity	NTU	03/24/2015	N001	4.71	-	9.46	4.14		F	#		
Uranium	mg/L	03/24/2015	N001	4.71	-	9.46	0.0075	*	F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0783R WELL Island area NW of US Hwy 491 bridge.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	4.38	-	9.38	156		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	4.38	-	9.38	0.1	U	F	#	0.1	
Calcium	mg/L	03/24/2015	N001	4.38	-	9.38	130		F	#	0.024	
Chloride	mg/L	03/24/2015	N001	4.38	-	9.38	30		F	#	4	
Magnesium	mg/L	03/24/2015	N001	4.38	-	9.38	41		F	#	0.03	
Manganese	mg/L	03/24/2015	N001	4.38	-	9.38	2		F	#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	4.38	-	9.38	0.12		F	#	0.01	
Oxidation Reduction Potential	mV	03/24/2015	N001	4.38	-	9.38	75		F	#		
pH	s.u.	03/24/2015	N001	4.38	-	9.38	7.14		F	#		
Potassium	mg/L	03/24/2015	N001	4.38	-	9.38	4		F	#	0.052	
Selenium	mg/L	03/24/2015	N001	4.38	-	9.38	0.00059		F	#	0.00016	
Sodium	mg/L	03/24/2015	N001	4.38	-	9.38	200		F	#	0.047	
Specific Conductance	umhos/cm	03/24/2015	N001	4.38	-	9.38	1915		F	#		
Strontium	mg/L	03/24/2015	N001	4.38	-	9.38	1.6		F	#	0.00026	
Sulfate	mg/L	03/24/2015	N001	4.38	-	9.38	740		F	#	10	
Temperature	C	03/24/2015	N001	4.38	-	9.38	11.87		F	#		
Turbidity	NTU	03/24/2015	N001	4.38	-	9.38	3.06		F	#		
Uranium	mg/L	03/24/2015	N001	4.38	-	9.38	0.0095		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0792 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	6	-	8	262		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	6	-	8	0.1	U	F	#	0.1	
Calcium	mg/L	03/26/2015	N001	6	-	8	430		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	6	-	8	120		F	#	10	
Magnesium	mg/L	03/26/2015	N001	6	-	8	130		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	6	-	8	0.61		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	6	-	8	2		F	#	0.05	
Oxidation Reduction Potential	mV	03/26/2015	N001	6	-	8	229.8		F	#		
pH	s.u.	03/26/2015	N001	6	-	8	7.72		F	#		
Potassium	mg/L	03/26/2015	N001	6	-	8	28		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	6	-	8	0.01		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	6	-	8	1200		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	6	-	8	6807		F	#		
Strontium	mg/L	03/26/2015	N001	6	-	8	6.8		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	6	-	8	4000		F	#	25	
Temperature	C	03/26/2015	N001	6	-	8	13.8		F	#		
Turbidity	NTU	03/26/2015	N001	6	-	8	1.93		F	#		
Uranium	mg/L	03/26/2015	N001	6	-	8	0.31		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0793 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	5.2	-	7.2	460		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	5.2	-	7.2	3.8		F	#	0.1	
Calcium	mg/L	03/26/2015	N001	5.2	-	7.2	340		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	5.2	-	7.2	160		F	#	20	
Magnesium	mg/L	03/26/2015	N001	5.2	-	7.2	630		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	5.2	-	7.2	0.49		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	5.2	-	7.2	0.44		F	#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	5.2	-	7.2	118		F	#		
pH	s.u.	03/26/2015	N001	5.2	-	7.2	6.88		F	#		
Potassium	mg/L	03/26/2015	N001	5.2	-	7.2	49		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	5.2	-	7.2	0.035		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	5.2	-	7.2	1500		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	5.2	-	7.2	9187		F	#		
Strontium	mg/L	03/26/2015	N001	5.2	-	7.2	5.6		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	5.2	-	7.2	6100		F	#	50	
Temperature	C	03/26/2015	N001	5.2	-	7.2	12.9		F	#		
Turbidity	NTU	03/26/2015	N001	5.2	-	7.2	9.15		F	#		
Uranium	mg/L	03/26/2015	N001	5.2	-	7.2	0.72		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0797 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	7.3	-	9.3	360		FQ	#		
Ammonia Total as N	mg/L	03/25/2015	N001	7.3	-	9.3	0.1	U	FQ	#	0.1	
Calcium	mg/L	03/25/2015	N001	7.3	-	9.3	430		FQ	#	0.12	
Chloride	mg/L	03/25/2015	N001	7.3	-	9.3	300		FQ	#	20	
Magnesium	mg/L	03/25/2015	N001	7.3	-	9.3	100		FQ	#	0.15	
Manganese	mg/L	03/25/2015	N001	7.3	-	9.3	0.19		FQ	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	7.3	-	9.3	0.071		FQ	#	0.01	
Oxidation Reduction Potential	mV	03/25/2015	N001	7.3	-	9.3	119		FQ	#		
pH	s.u.	03/25/2015	N001	7.3	-	9.3	7.26		FQ	#		
Potassium	mg/L	03/25/2015	N001	7.3	-	9.3	7.9		FQ	#	0.26	
Selenium	mg/L	03/25/2015	N001	7.3	-	9.3	0.0015		FQ	#	0.00032	
Sodium	mg/L	03/25/2015	N001	7.3	-	9.3	1600		FQ	#	0.23	
Specific Conductance	umhos/cm	03/25/2015	N001	7.3	-	9.3	8686		FQ	#		
Strontium	mg/L	03/25/2015	N001	7.3	-	9.3	7.3		FQ	#	0.0013	
Sulfate	mg/L	03/25/2015	N001	7.3	-	9.3	4500		FQ	#	50	
Temperature	C	03/25/2015	N001	7.3	-	9.3	15.4		FQ	#		
Turbidity	NTU	03/25/2015	N001	7.3	-	9.3	2.13		FQ	#		
Uranium	mg/L	03/25/2015	N001	7.3	-	9.3	0.025		FQ	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0798 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	7.1	-	9.1	306		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	7.1	-	9.1	0.32		F	#	0.1	
Calcium	mg/L	03/26/2015	N001	7.1	-	9.1	350		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	7.1	-	9.1	100		F	#	10	
Magnesium	mg/L	03/26/2015	N001	7.1	-	9.1	190		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	7.1	-	9.1	0.41		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	7.1	-	9.1	0.77		F	#	0.05	
Oxidation Reduction Potential	mV	03/26/2015	N001	7.1	-	9.1	71		F	#		
pH	s.u.	03/26/2015	N001	7.1	-	9.1	7.04		F	#		
Potassium	mg/L	03/26/2015	N001	7.1	-	9.1	26		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	7.1	-	9.1	0.001		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	7.1	-	9.1	1300		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	7.1	-	9.1	7118		F	#		
Strontium	mg/L	03/26/2015	N001	7.1	-	9.1	4.5		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	7.1	-	9.1	4100		F	#	25	
Temperature	C	03/26/2015	N001	7.1	-	9.1	13.19		F	#		
Turbidity	NTU	03/26/2015	N001	7.1	-	9.1	1.55		F	#		
Uranium	mg/L	03/26/2015	N001	7.1	-	9.1	0.16		F	#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	0001	5.6	-	15.4	384		F	#		
Ammonia Total as N	mg/L	03/25/2015	0001	5.6	-	15.4	0.1	U	F	#	0.1	
Calcium	mg/L	03/25/2015	0001	5.6	-	15.4	230		F	#	0.12	
Chloride	mg/L	03/25/2015	0001	5.6	-	15.4	230		F	#	10	
Magnesium	mg/L	03/25/2015	0001	5.6	-	15.4	63		F	#	0.15	
Manganese	mg/L	03/25/2015	0001	5.6	-	15.4	0.18		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	0001	5.6	-	15.4	1.3		F	#	0.05	
Oxidation Reduction Potential	mV	03/25/2015	N001	5.6	-	15.4	82.2		F	#		
pH	s.u.	03/25/2015	N001	5.6	-	15.4	7.31		F	#		
Potassium	mg/L	03/25/2015	0001	5.6	-	15.4	4.5	J	F	#	0.26	
Selenium	mg/L	03/25/2015	0001	5.6	-	15.4	0.0031		F	#	0.00032	
Sodium	mg/L	03/25/2015	0001	5.6	-	15.4	940		F	#	0.23	
Specific Conductance	umhos/cm	03/25/2015	N001	5.6	-	15.4	5422		F	#		
Strontium	mg/L	03/25/2015	0001	5.6	-	15.4	3.5		F	#	0.0013	
Sulfate	mg/L	03/25/2015	0001	5.6	-	15.4	2300		F	#	25	
Temperature	C	03/25/2015	N001	5.6	-	15.4	14.58		F	#		
Turbidity	NTU	03/25/2015	N001	5.6	-	15.4	36.9		F	#		
Uranium	mg/L	03/25/2015	0001	5.6	-	15.4	0.073		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0853 WELL S of floodplain fence

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	10	-	15	210		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	10	-	15	15		F	#	2.5	
Calcium	mg/L	03/26/2015	N001	10	-	15	180		F	#	0.024	
Chloride	mg/L	03/26/2015	N001	10	-	15	24		F	#	4	
Magnesium	mg/L	03/26/2015	N001	10	-	15	55		F	#	0.03	
Manganese	mg/L	03/26/2015	N001	10	-	15	0.96		F	#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	10	-	15	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	10	-	15	149		F	#		
pH	s.u.	03/26/2015	N001	10	-	15	6.9		F	#		
Potassium	mg/L	03/26/2015	N001	10	-	15	12		F	#	0.052	
Selenium	mg/L	03/26/2015	N001	10	-	15	0.00032	U	F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	10	-	15	130		F	#	0.047	
Specific Conductance	umhos/cm	03/26/2015	N001	10	-	15	1714		F	#		
Strontium	mg/L	03/26/2015	N001	10	-	15	1.9		F	#	0.00026	
Sulfate	mg/L	03/26/2015	N001	10	-	15	720		F	#	10	
Temperature	C	03/26/2015	N001	10	-	15	12.37		F	#		
Turbidity	NTU	03/26/2015	N001	10	-	15	2.68		F	#		
Uranium	mg/L	03/26/2015	N001	10	-	15	0.078		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0854 WELL NE part of floodplain

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	9.05	-	11.55	414		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	9.05	-	11.55	2.9		F	#	0.1	
Calcium	mg/L	03/26/2015	N001	9.05	-	11.55	340		F	#	0.24	
Chloride	mg/L	03/26/2015	N001	9.05	-	11.55	110		F	#	20	
Magnesium	mg/L	03/26/2015	N001	9.05	-	11.55	250		F	#	0.3	
Manganese	mg/L	03/26/2015	N001	9.05	-	11.55	2.4		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	9.05	-	11.55	0.056		F	#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	9.05	-	11.55	76		F	#		
pH	s.u.	03/26/2015	N001	9.05	-	11.55	6.99		F	#		
Potassium	mg/L	03/26/2015	N001	9.05	-	11.55	40		F	#	0.52	
Selenium	mg/L	03/26/2015	N001	9.05	-	11.55	0.00036	J	F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	9.05	-	11.55	1400		F	#	0.47	
Specific Conductance	umhos/cm	03/26/2015	N001	9.05	-	11.55	7642		F	#		
Strontium	mg/L	03/26/2015	N001	9.05	-	11.55	4.6		F	#	0.0026	
Sulfate	mg/L	03/26/2015	N001	9.05	-	11.55	4600		F	#	50	
Temperature	C	03/26/2015	N001	9.05	-	11.55	12.88		F	#		
Turbidity	NTU	03/26/2015	N001	9.05	-	11.55	3.26		F	#		
Uranium	mg/L	03/26/2015	N001	9.05	-	11.55	0.28		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0855 WELL NW part of floodplain

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	4.9	-	14.9	332		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	4.9	-	14.9	0.1	U	F	#	0.1	
Calcium	mg/L	03/26/2015	N001	4.9	-	14.9	390		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	4.9	-	14.9	100		F	#	10	
Magnesium	mg/L	03/26/2015	N001	4.9	-	14.9	110		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	4.9	-	14.9	2.4		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	4.9	-	14.9	2.7		F	#	0.05	
Oxidation Reduction Potential	mV	03/26/2015	N001	4.9	-	14.9	250		F	#		
pH	s.u.	03/26/2015	N001	4.9	-	14.9	7.23		F	#		
Potassium	mg/L	03/26/2015	N001	4.9	-	14.9	11		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	4.9	-	14.9	0.039		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	4.9	-	14.9	1200		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	4.9	-	14.9	6606		F	#		
Strontium	mg/L	03/26/2015	N001	4.9	-	14.9	14		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	4.9	-	14.9	3600		F	#	25	
Temperature	C	03/26/2015	N001	4.9	-	14.9	9.3		F	#		
Turbidity	NTU	03/26/2015	N001	4.9	-	14.9	4.6		F	#		
Uranium	mg/L	03/26/2015	N001	4.9	-	14.9	0.08		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0856 WELL NW part of floodplain

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	18.8	-	23.8	302		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	18.8	-	23.8	0.1	U	F	#	0.1	
Calcium	mg/L	03/26/2015	N001	18.8	-	23.8	270		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	18.8	-	23.8	87		F	#	10	
Magnesium	mg/L	03/26/2015	N001	18.8	-	23.8	60		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	18.8	-	23.8	1.6		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	18.8	-	23.8	0.035		F	#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	18.8	-	23.8	229.7		F	#		
pH	s.u.	03/26/2015	N001	18.8	-	23.8	7.46		F	#		
Potassium	mg/L	03/26/2015	N001	18.8	-	23.8	13		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	18.8	-	23.8	0.00032	U	F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	18.8	-	23.8	1200		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	18.8	-	23.8	5957		F	#		
Strontium	mg/L	03/26/2015	N001	18.8	-	23.8	9.1		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	18.8	-	23.8	3200		F	#	25	
Temperature	C	03/26/2015	N001	18.8	-	23.8	13.28		F	#		
Turbidity	NTU	03/26/2015	N001	18.8	-	23.8	1.51		F	#		
Uranium	mg/L	03/26/2015	N001	18.8	-	23.8	0.08		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0857 WELL Near E end of floodplain fence

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	13.2	-	18.2	466		F	#		
Ammonia Total as N	mg/L	03/25/2015	N001	13.2	-	18.2	9.6		F	#	0.5	
Calcium	mg/L	03/25/2015	N001	13.2	-	18.2	510		F	#	0.12	
Chloride	mg/L	03/25/2015	N001	13.2	-	18.2	170		F	#	20	
Magnesium	mg/L	03/25/2015	N001	13.2	-	18.2	660		F	#	0.15	
Manganese	mg/L	03/25/2015	N001	13.2	-	18.2	4.4		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	13.2	-	18.2	17		F	#	0.1	
Oxidation Reduction Potential	mV	03/25/2015	N001	13.2	-	18.2	155		F	#		
pH	s.u.	03/25/2015	N001	13.2	-	18.2	6.79		F	#		
Potassium	mg/L	03/25/2015	N001	13.2	-	18.2	42		F	#	0.26	
Selenium	mg/L	03/25/2015	N001	13.2	-	18.2	0.091		F	#	0.00032	
Sodium	mg/L	03/25/2015	N001	13.2	-	18.2	1400		F	#	0.23	
Specific Conductance	umhos/cm	03/25/2015	N001	13.2	-	18.2	9278		F	#		
Strontium	mg/L	03/25/2015	N001	13.2	-	18.2	7.4		F	#	0.0013	
Sulfate	mg/L	03/25/2015	N001	13.2	-	18.2	6300		F	#	50	
Temperature	C	03/25/2015	N001	13.2	-	18.2	14.24		F	#		
Turbidity	NTU	03/25/2015	N001	13.2	-	18.2	2.55		F	#		
Uranium	mg/L	03/25/2015	N001	13.2	-	18.2	0.76		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1008 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	6.9	-	16.9	388		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	6.9	-	16.9	2.1		F	#	0.1	
Calcium	mg/L	03/26/2015	N001	6.9	-	16.9	400		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	6.9	-	16.9	99		F	#	20	
Magnesium	mg/L	03/26/2015	N001	6.9	-	16.9	150		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	6.9	-	16.9	1.3		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	6.9	-	16.9	0.031		F	#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	6.9	-	16.9	122.6		F	#		
pH	s.u.	03/26/2015	N001	6.9	-	16.9	7.25		F	#		
Potassium	mg/L	03/26/2015	N001	6.9	-	16.9	30		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	6.9	-	16.9	0.0027		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	6.9	-	16.9	1200		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	6.9	-	16.9	6859		F	#		
Strontium	mg/L	03/26/2015	N001	6.9	-	16.9	4.6		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	6.9	-	16.9	3900		F	#	50	
Temperature	C	03/26/2015	N001	6.9	-	16.9	12.59		F	#		
Turbidity	NTU	03/26/2015	N001	6.9	-	16.9	1.69		F	#		
Uranium	mg/L	03/26/2015	N001	6.9	-	16.9	0.17		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1009 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	7.4	-	17.4	236		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	7.4	-	17.4	8.9		F	#	0.5	
Calcium	mg/L	03/26/2015	N001	7.4	-	17.4	200		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	7.4	-	17.4	26		F	#	4	
Magnesium	mg/L	03/26/2015	N001	7.4	-	17.4	96		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	7.4	-	17.4	0.72		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	7.4	-	17.4	0.18		F	#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	7.4	-	17.4	182		F	#		
pH	s.u.	03/26/2015	N001	7.4	-	17.4	6.93		F	#		
Potassium	mg/L	03/26/2015	N001	7.4	-	17.4	16		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	7.4	-	17.4	0.009		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	7.4	-	17.4	190		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	7.4	-	17.4	2215		F	#		
Strontium	mg/L	03/26/2015	N001	7.4	-	17.4	2.2		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	7.4	-	17.4	1100		F	#	10	
Temperature	C	03/26/2015	N001	7.4	-	17.4	12.74		F	#		
Turbidity	NTU	03/26/2015	N001	7.4	-	17.4	1.74		F	#		
Uranium	mg/L	03/26/2015	N001	7.4	-	17.4	0.15		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1089 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	4.8	-	14.8	376			#		
Ammonia Total as N	mg/L	03/26/2015	N001	4.8	-	14.8	0.21			#	0.1	
Calcium	mg/L	03/26/2015	N001	4.8	-	14.8	330			#	0.12	
Chloride	mg/L	03/26/2015	N001	4.8	-	14.8	100			#	20	
Magnesium	mg/L	03/26/2015	N001	4.8	-	14.8	150			#	0.15	
Manganese	mg/L	03/26/2015	N001	4.8	-	14.8	0.64			#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	4.8	-	14.8	4.1			#	0.05	
Oxidation Reduction Potential	mV	03/26/2015	N001	4.8	-	14.8	186.3			#		
pH	s.u.	03/26/2015	N001	4.8	-	14.8	7.36			#		
Potassium	mg/L	03/26/2015	N001	4.8	-	14.8	28			#	0.26	
Selenium	mg/L	03/26/2015	N001	4.8	-	14.8	0.0062			#	0.00032	
Sodium	mg/L	03/26/2015	N001	4.8	-	14.8	1300			#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	4.8	-	14.8	6934			#		
Strontium	mg/L	03/26/2015	N001	4.8	-	14.8	4.9			#	0.0013	
Sulfate	mg/L	03/26/2015	N001	4.8	-	14.8	3800			#	50	
Temperature	C	03/26/2015	N001	4.8	-	14.8	13.69			#		
Turbidity	NTU	03/26/2015	N001	4.8	-	14.8	3.26			#		
Uranium	mg/L	03/26/2015	N001	4.8	-	14.8	0.16			#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1104 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	10	-	15	438			#		
Ammonia Total as N	mg/L	03/26/2015	N001	10	-	15	0.4			#	0.1	
Calcium	mg/L	03/26/2015	N001	10	-	15	340			#	0.12	
Chloride	mg/L	03/26/2015	N001	10	-	15	140			#	20	
Magnesium	mg/L	03/26/2015	N001	10	-	15	280			#	0.15	
Manganese	mg/L	03/26/2015	N001	10	-	15	0.94			#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	10	-	15	4			#	0.05	
Oxidation Reduction Potential	mV	03/26/2015	N001	10	-	15	201.8			#		
pH	s.u.	03/26/2015	N001	10	-	15	7.4			#		
Potassium	mg/L	03/26/2015	N001	10	-	15	40			#	0.26	
Selenium	mg/L	03/26/2015	N001	10	-	15	0.0053			#	0.00032	
Sodium	mg/L	03/26/2015	N001	10	-	15	1500			#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	10	-	15	8409			#		
Strontium	mg/L	03/26/2015	N001	10	-	15	4.9			#	0.0013	
Sulfate	mg/L	03/26/2015	N001	10	-	15	4900			#	50	
Temperature	C	03/26/2015	N001	10	-	15	14.77			#		
Turbidity	NTU	03/26/2015	N001	10	-	15	1.86			#		
Uranium	mg/L	03/26/2015	N001	10	-	15	0.3			#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1105 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	4.5	-	14.5	580		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	4.5	-	14.5	4.3		F	#	0.1	
Calcium	mg/L	03/26/2015	N001	4.5	-	14.5	490		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	4.5	-	14.5	170		F	#	20	
Magnesium	mg/L	03/26/2015	N001	4.5	-	14.5	650		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	4.5	-	14.5	2.4		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	4.5	-	14.5	8.9		F	#	0.1	
Oxidation Reduction Potential	mV	03/26/2015	N001	4.5	-	14.5	240		F	#		
pH	s.u.	03/26/2015	N001	4.5	-	14.5	6.83		F	#		
Potassium	mg/L	03/26/2015	N001	4.5	-	14.5	56		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	4.5	-	14.5	0.093		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	4.5	-	14.5	1300		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	4.5	-	14.5	8442		F	#		
Strontium	mg/L	03/26/2015	N001	4.5	-	14.5	6.4		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	4.5	-	14.5	5900		F	#	50	
Temperature	C	03/26/2015	N001	4.5	-	14.5	10.52		F	#		
Turbidity	NTU	03/26/2015	N001	4.5	-	14.5	1.61		F	#		
Uranium	mg/L	03/26/2015	N001	4.5	-	14.5	0.79		F	#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	0	-	0	226			#		
Ammonia Total as N	mg/L	03/26/2015	N001	0	-	0	25			#	2.5	
Calcium	mg/L	03/26/2015	N001	0	-	0	120			#	0.12	
Chloride	mg/L	03/26/2015	N001	0	-	0	58			#	5	
Magnesium	mg/L	03/26/2015	N001	0	-	0	160			#	0.15	
Manganese	mg/L	03/26/2015	N001	0	-	0	0.46			#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	0	-	0	55			#	0.5	
Oxidation Reduction Potential	mV	03/26/2015	N001	0	-	0	158			#		
pH	s.u.	03/26/2015	N001	0	-	0	7.33			#		
Potassium	mg/L	03/26/2015	N001	0	-	0	14			#	0.26	
Selenium	mg/L	03/26/2015	N001	0	-	0	0.018			#	0.00032	
Sodium	mg/L	03/26/2015	N001	0	-	0	260			#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	0	-	0	2949			#		
Strontium	mg/L	03/26/2015	N001	0	-	0	1.7			#	0.0013	
Sulfate	mg/L	03/26/2015	N001	0	-	0	1100			#	12	
Temperature	C	03/26/2015	N001	0	-	0	12.14			#		
Turbidity	NTU	03/26/2015	N001	0	-	0	4.16			#		
Uranium	mg/L	03/26/2015	N001	0	-	0	0.15			#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	0	-	0	454			#		
Ammonia Total as N	mg/L	03/26/2015	N001	0	-	0	2.1			#	0.1	
Calcium	mg/L	03/26/2015	N001	0	-	0	380			#	0.12	
Chloride	mg/L	03/26/2015	N001	0	-	0	170			#	20	
Magnesium	mg/L	03/26/2015	N001	0	-	0	510			#	0.15	
Manganese	mg/L	03/26/2015	N001	0	-	0	0.56			#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	0	-	0	52			#	0.5	
Oxidation Reduction Potential	mV	03/26/2015	N001	0	-	0	162.1			#		
pH	s.u.	03/26/2015	N001	0	-	0	7.27			#		
Potassium	mg/L	03/26/2015	N001	0	-	0	41			#	0.26	
Selenium	mg/L	03/26/2015	N001	0	-	0	0.39			#	0.00032	
Sodium	mg/L	03/26/2015	N001	0	-	0	1300			#	0.23	
Specific Conductance	umhos /cm	03/26/2015	N001	0	-	0	8693			#		
Strontium	mg/L	03/26/2015	N001	0	-	0	7.8			#	0.0013	
Sulfate	mg/L	03/26/2015	N001	0	-	0	5200			#	50	
Temperature	C	03/26/2015	N001	0	-	0	11.69			#		
Turbidity	NTU	03/26/2015	N001	0	-	0	2.9			#		
Uranium	mg/L	03/26/2015	N001	0	-	0	0.49			#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1111 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	7	-	12	568		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	7	-	12	0.37		F	#	0.1	
Calcium	mg/L	03/24/2015	N001	7	-	12	320		F	#	0.12	
Chloride	mg/L	03/24/2015	N001	7	-	12	230		F	#	20	
Magnesium	mg/L	03/24/2015	N001	7	-	12	600		F	#	0.15	
Manganese	mg/L	03/24/2015	N001	7	-	12	0.57		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	7	-	12	12		F	#	0.1	
Oxidation Reduction Potential	mV	03/24/2015	N001	7	-	12	127		F	#		
pH	s.u.	03/24/2015	N001	7	-	12	6.81		F	#		
Potassium	mg/L	03/24/2015	N001	7	-	12	35		F	#	0.26	
Selenium	mg/L	03/24/2015	N001	7	-	12	0.2		F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	7	-	12	1500		F	#	0.23	
Specific Conductance	umhos/cm	03/24/2015	N001	7	-	12	9055		F	#		
Strontium	mg/L	03/24/2015	N001	7	-	12	8.8		F	#	0.0013	
Sulfate	mg/L	03/24/2015	N001	7	-	12	5700		F	#	50	
Temperature	C	03/24/2015	N001	7	-	12	12.01		F	#		
Turbidity	NTU	03/24/2015	N001	7	-	12	4.05		F	#		
Uranium	mg/L	03/24/2015	N001	7	-	12	0.35		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1112 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	7	-	12	354		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	7	-	12	19		F	#	0.5	
Calcium	mg/L	03/24/2015	N001	7	-	12	430		F	#	0.12	
Chloride	mg/L	03/24/2015	N001	7	-	12	180		F	#	20	
Magnesium	mg/L	03/24/2015	N001	7	-	12	760		F	#	0.15	
Manganese	mg/L	03/24/2015	N001	7	-	12	1.6		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	7	-	12	140		F	#	1	
Oxidation Reduction Potential	mV	03/24/2015	N001	7	-	12	129		F	#		
pH	s.u.	03/24/2015	N001	7	-	12	6.85		F	#		
Potassium	mg/L	03/24/2015	N001	7	-	12	73		F	#	0.26	
Selenium	mg/L	03/24/2015	N001	7	-	12	0.78		F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	7	-	12	1200		F	#	0.23	
Specific Conductance	umhos/cm	03/24/2015	N001	7	-	12	9278		F	#		
Strontium	mg/L	03/24/2015	N001	7	-	12	7.2		F	#	0.0013	
Sulfate	mg/L	03/24/2015	N001	7	-	12	6000		F	#	50	
Temperature	C	03/24/2015	N001	7	-	12	11.49		F	#		
Turbidity	NTU	03/24/2015	N001	7	-	12	3.77		F	#		
Uranium	mg/L	03/24/2015	N001	7	-	12	0.79		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1113 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	7	-	12	250		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	7	-	12	15		F	#	1	
Calcium	mg/L	03/24/2015	N001	7	-	12	430		F	#	0.12	
Chloride	mg/L	03/24/2015	N001	7	-	12	160		F	#	20	
Magnesium	mg/L	03/24/2015	N001	7	-	12	600		F	#	0.15	
Manganese	mg/L	03/24/2015	N001	7	-	12	0.57		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	7	-	12	240		F	#	2	
Oxidation Reduction Potential	mV	03/24/2015	N001	7	-	12	248		F	#		
pH	s.u.	03/24/2015	N001	7	-	12	7.12		F	#		
Potassium	mg/L	03/24/2015	N001	7	-	12	65		F	#	0.26	
Selenium	mg/L	03/24/2015	N001	7	-	12	0.37		F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	7	-	12	920		F	#	0.23	
Specific Conductance	umhos/cm	03/24/2015	N001	7	-	12	7914		F	#		
Strontium	mg/L	03/24/2015	N001	7	-	12	5.7		F	#	0.0013	
Sulfate	mg/L	03/24/2015	N001	7	-	12	4200		F	#	50	
Temperature	C	03/24/2015	N001	7	-	12	11.68		F	#		
Turbidity	NTU	03/24/2015	N001	7	-	12	3.16		F	#		
Uranium	mg/L	03/24/2015	N001	7	-	12	0.54		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1114 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	7	-	12	318		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	7	-	12	37		F	#	2.5	
Calcium	mg/L	03/24/2015	N001	7	-	12	150		F	#	0.12	
Chloride	mg/L	03/24/2015	N001	7	-	12	95		F	#	10	
Magnesium	mg/L	03/24/2015	N001	7	-	12	280		F	#	0.15	
Manganese	mg/L	03/24/2015	N001	7	-	12	1.2		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	7	-	12	60		F	#	0.5	
Oxidation Reduction Potential	mV	03/24/2015	N001	7	-	12	242.2		F	#		
pH	s.u.	03/24/2015	N001	7	-	12	7.14		F	#		
Potassium	mg/L	03/24/2015	N001	7	-	12	29		F	#	0.26	
Selenium	mg/L	03/24/2015	N001	7	-	12	0.091		F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	7	-	12	470		F	#	0.23	
Specific Conductance	umhos/cm	03/24/2015	N001	7	-	12	4420		F	#		
Strontium	mg/L	03/24/2015	N001	7	-	12	2.1		F	#	0.0013	
Sulfate	mg/L	03/24/2015	N001	7	-	12	2100		F	#	25	
Temperature	C	03/24/2015	N001	7	-	12	11		F	#		
Turbidity	NTU	03/24/2015	N001	7	-	12	1.74		F	#		
Uranium	mg/L	03/24/2015	N001	7	-	12	0.33		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1115 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	7	-	12	480		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	7	-	12	99		F	#	10	
Calcium	mg/L	03/24/2015	N001	7	-	12	360		F	#	0.24	
Chloride	mg/L	03/24/2015	N001	7	-	12	120		F	#	10	
Magnesium	mg/L	03/24/2015	N001	7	-	12	730		F	#	0.3	
Manganese	mg/L	03/24/2015	N001	7	-	12	3.2		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	7	-	12	140		F	#	1	
Oxidation Reduction Potential	mV	03/24/2015	N001	7	-	12	213.2		F	#		
pH	s.u.	03/24/2015	N001	7	-	12	7.06		F	#		
Potassium	mg/L	03/24/2015	N001	7	-	12	91		F	#	0.52	
Selenium	mg/L	03/24/2015	N001	7	-	12	0.12		F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	7	-	12	1400		F	#	0.47	
Specific Conductance	umhos/cm	03/24/2015	N001	7	-	12	6123		F	#		
Strontium	mg/L	03/24/2015	N001	7	-	12	6.6		F	#	0.0026	
Sulfate	mg/L	03/24/2015	N001	7	-	12	2800		F	#	25	
Temperature	C	03/24/2015	N001	7	-	12	12.42		F	#		
Turbidity	NTU	03/24/2015	N001	7	-	12	1.84		F	#		
Uranium	mg/L	03/24/2015	N001	7	-	12	0.46		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1117 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2015	N001	7	-	12	124		F	#		
Ammonia Total as N	mg/L	03/23/2015	N001	7	-	12	0.1	U	F	#	0.1	
Calcium	mg/L	03/23/2015	N001	7	-	12	79		F	#	0.024	
Chloride	mg/L	03/23/2015	N001	7	-	12	17		F	#	1	
Magnesium	mg/L	03/23/2015	N001	7	-	12	14		F	#	0.03	
Manganese	mg/L	03/23/2015	N001	7	-	12	0.21		F	#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2015	N001	7	-	12	0.29		F	#	0.01	
Oxidation Reduction Potential	mV	03/23/2015	N001	7	-	12	119.4		F	#		
pH	s.u.	03/23/2015	N001	7	-	12	7.57		F	#		
Potassium	mg/L	03/23/2015	N001	7	-	12	2.1		F	#	0.052	
Selenium	mg/L	03/23/2015	N001	7	-	12	0.003		F	#	0.00032	
Sodium	mg/L	03/23/2015	N001	7	-	12	43		F	#	0.047	
Specific Conductance	umhos/cm	03/23/2015	N001	7	-	12	698		F	#		
Strontium	mg/L	03/23/2015	N001	7	-	12	0.87		F	#	0.00026	
Sulfate	mg/L	03/23/2015	N001	7	-	12	170		F	#	2.5	
Temperature	C	03/23/2015	N001	7	-	12	12.32		F	#		
Turbidity	NTU	03/23/2015	N001	7	-	12	0.77		F	#		
Uranium	mg/L	03/23/2015	N001	7	-	12	0.0057		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1128 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	6.81	-	11.81	680		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	6.81	-	11.81	280		F	#	20	
Calcium	mg/L	03/24/2015	N001	6.81	-	11.81	460		F	#	0.24	
Chloride	mg/L	03/24/2015	N001	6.81	-	11.81	360		F	#	50	
Magnesium	mg/L	03/24/2015	N001	6.81	-	11.81	1400		F	#	0.3	
Manganese	mg/L	03/24/2015	N001	6.81	-	11.81	4.2		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	6.81	-	11.81	650		F	#	5	
Oxidation Reduction Potential	mV	03/24/2015	N001	6.81	-	11.81	331.9		F	#		
pH	s.u.	03/24/2015	N001	6.81	-	11.81	6.67		F	#		
Potassium	mg/L	03/24/2015	N001	6.81	-	11.81	120		F	#	0.52	
Selenium	mg/L	03/24/2015	N001	6.81	-	11.81	0.024		F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	6.81	-	11.81	1800		F	#	0.47	
Specific Conductance	umhos/cm	03/24/2015	N001	6.81	-	11.81	16307		F	#		
Strontium	mg/L	03/24/2015	N001	6.81	-	11.81	8.9		F	#	0.0026	
Sulfate	mg/L	03/24/2015	N001	6.81	-	11.81	9000		F	#	120	
Temperature	C	03/24/2015	N001	6.81	-	11.81	12.16		F	#		
Turbidity	NTU	03/24/2015	N001	6.81	-	11.81	3.81		F	#		
Uranium	mg/L	03/24/2015	N001	6.81	-	11.81	1.2		F	#	0.00029	

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

REPORT DATE: 06/11/2015

Location: 1132 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	6.07	-	11.07	116		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	6.07	-	11.07	0.79		F	#	0.1	
Ammonia Total as N	mg/L	03/24/2015	N002	6.07	-	11.07	0.77		F	#	0.1	
Calcium	mg/L	03/24/2015	N001	6.07	-	11.07	58		F	#	0.024	
Calcium	mg/L	03/24/2015	N002	6.07	-	11.07	59		F	#	0.024	
Chloride	mg/L	03/24/2015	N001	6.07	-	11.07	16		F	#	1	
Chloride	mg/L	03/24/2015	N002	6.07	-	11.07	16		F	#	1	
Magnesium	mg/L	03/24/2015	N001	6.07	-	11.07	17		F	#	0.03	
Magnesium	mg/L	03/24/2015	N002	6.07	-	11.07	16		F	#	0.03	
Manganese	mg/L	03/24/2015	N001	6.07	-	11.07	0.4		F	#	0.00024	
Manganese	mg/L	03/24/2015	N002	6.07	-	11.07	0.42		F	#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	6.07	-	11.07	0.015		F	#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N002	6.07	-	11.07	0.021		F	#	0.01	
Oxidation Reduction Potential	mV	03/24/2015	N001	6.07	-	11.07	232		F	#		
pH	s.u.	03/24/2015	N001	6.07	-	11.07	7.77		F	#		
Potassium	mg/L	03/24/2015	N001	6.07	-	11.07	2.4		F	#	0.052	
Potassium	mg/L	03/24/2015	N002	6.07	-	11.07	2.3		F	#	0.052	
Selenium	mg/L	03/24/2015	N001	6.07	-	11.07	0.00032	U	F	#	0.00032	

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

REPORT DATE: 06/11/2015

Location: 1132 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/24/2015	N002	6.07 - 11.07	0.0004	J	F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	6.07 - 11.07	47		F	#	0.047	
Sodium	mg/L	03/24/2015	N002	6.07 - 11.07	45		F	#	0.047	
Specific Conductance	umhos/cm	03/24/2015	N001	6.07 - 11.07	622		F	#		
Strontium	mg/L	03/24/2015	N001	6.07 - 11.07	0.7		F	#	0.00026	
Strontium	mg/L	03/24/2015	N002	6.07 - 11.07	0.7		F	#	0.00026	
Sulfate	mg/L	03/24/2015	N001	6.07 - 11.07	170		F	#	2.5	
Sulfate	mg/L	03/24/2015	N002	6.07 - 11.07	170		F	#	2.5	
Temperature	C	03/24/2015	N001	6.07 - 11.07	10.55		F	#		
Turbidity	NTU	03/24/2015	N001	6.07 - 11.07	1.56		F	#		
Uranium	mg/L	03/24/2015	N001	6.07 - 11.07	0.017		FJ	#	0.000029	
Uranium	mg/L	03/24/2015	N002	6.07 - 11.07	0.012		FJ	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1134 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	8.16	-	13.16	135		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	8.16	-	13.16	0.62		F	#	0.1	
Calcium	mg/L	03/24/2015	N001	8.16	-	13.16	68		F	#	0.024	
Chloride	mg/L	03/24/2015	N001	8.16	-	13.16	16		F	#	1	
Magnesium	mg/L	03/24/2015	N001	8.16	-	13.16	16		F	#	0.03	
Manganese	mg/L	03/24/2015	N001	8.16	-	13.16	0.69		F	#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	8.16	-	13.16	0.031		F	#	0.01	
Oxidation Reduction Potential	mV	03/24/2015	N001	8.16	-	13.16	152.9		F	#		
pH	s.u.	03/24/2015	N001	8.16	-	13.16	7.42		F	#		
Potassium	mg/L	03/24/2015	N001	8.16	-	13.16	2.5		F	#	0.052	
Selenium	mg/L	03/24/2015	N001	8.16	-	13.16	0.00032	U	F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	8.16	-	13.16	52		F	#	0.047	
Specific Conductance	umhos/cm	03/24/2015	N001	8.16	-	13.16	695		F	#		
Strontium	mg/L	03/24/2015	N001	8.16	-	13.16	0.8		F	#	0.00026	
Sulfate	mg/L	03/24/2015	N001	8.16	-	13.16	180		F	#	2.5	
Temperature	C	03/24/2015	N001	8.16	-	13.16	11.42		F	#		
Turbidity	NTU	03/24/2015	N001	8.16	-	13.16	2.3		F	#		
Uranium	mg/L	03/24/2015	N001	8.16	-	13.16	0.011		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1135 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	6.39	-	11.39	244		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	6.39	-	11.39	0.36		F	#	0.1	
Ammonia Total as N	mg/L	03/26/2015	N002	6.39	-	11.39	0.23		F	#	0.1	
Calcium	mg/L	03/26/2015	N001	6.39	-	11.39	260		F	#	0.12	
Calcium	mg/L	03/26/2015	N002	6.39	-	11.39	260		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	6.39	-	11.39	70		F	#	10	
Chloride	mg/L	03/26/2015	N002	6.39	-	11.39	72		F	#	10	
Magnesium	mg/L	03/26/2015	N001	6.39	-	11.39	74		F	#	0.15	
Magnesium	mg/L	03/26/2015	N002	6.39	-	11.39	73		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	6.39	-	11.39	1.2		F	#	0.0012	
Manganese	mg/L	03/26/2015	N002	6.39	-	11.39	1.2		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	6.39	-	11.39	0.045		F	#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N002	6.39	-	11.39	0.013		F	#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	6.39	-	11.39	227.9		F	#		
pH	s.u.	03/26/2015	N001	6.39	-	11.39	7.48		F	#		
Potassium	mg/L	03/26/2015	N001	6.39	-	11.39	16		F	#	0.26	
Potassium	mg/L	03/26/2015	N002	6.39	-	11.39	16		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	6.39	-	11.39	0.00032	U	F	#	0.00032	

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

REPORT DATE: 06/11/2015

Location: 1135 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/26/2015	N002	6.39	-	11.39	0.00032	U	F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	6.39	-	11.39	890		F	#	0.23	
Sodium	mg/L	03/26/2015	N002	6.39	-	11.39	890		F	#	0.23	
Specific Conductance	umhos /cm	03/26/2015	N001	6.39	-	11.39	4988		F	#		
Strontium	mg/L	03/26/2015	N001	6.39	-	11.39	3		F	#	0.0013	
Strontium	mg/L	03/26/2015	N002	6.39	-	11.39	3		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	6.39	-	11.39	2600		F	#	25	
Sulfate	mg/L	03/26/2015	N002	6.39	-	11.39	2700		F	#	25	
Temperature	C	03/26/2015	N001	6.39	-	11.39	10.9		F	#		
Turbidity	NTU	03/26/2015	N001	6.39	-	11.39	9.19		F	#		
Uranium	mg/L	03/26/2015	N001	6.39	-	11.39	0.064		F	#	0.000029	
Uranium	mg/L	03/26/2015	N002	6.39	-	11.39	0.065		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1136 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	6.29	-	11.29	710		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	6.29	-	11.29	8.2		F	#	0.5	
Calcium	mg/L	03/26/2015	N001	6.29	-	11.29	520		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	6.29	-	11.29	390		F	#	40	
Magnesium	mg/L	03/26/2015	N001	6.29	-	11.29	1200		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	6.29	-	11.29	6.4		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	6.29	-	11.29	33		F	#	0.2	
Oxidation Reduction Potential	mV	03/26/2015	N001	6.29	-	11.29	137		F	#		
pH	s.u.	03/26/2015	N001	6.29	-	11.29	6.76		F	#		
Potassium	mg/L	03/26/2015	N001	6.29	-	11.29	29		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	6.29	-	11.29	0.013		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	6.29	-	11.29	2200		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	6.29	-	11.29	13914		F	#		
Strontium	mg/L	03/26/2015	N001	6.29	-	11.29	9.4		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	6.29	-	11.29	9800		F	#	100	
Temperature	C	03/26/2015	N001	6.29	-	11.29	11.54		F	#		
Turbidity	NTU	03/26/2015	N001	6.29	-	11.29	2.9		F	#		
Uranium	mg/L	03/26/2015	N001	6.29	-	11.29	1.2		F	#	0.00029	

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

REPORT DATE: 06/11/2015

Location: 1137 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	9.4	-	14.4	810		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	9.4	-	14.4	1.8		F	#	0.1	
Calcium	mg/L	03/26/2015	N001	9.4	-	14.4	410		F	#	0.24	
Chloride	mg/L	03/26/2015	N001	9.4	-	14.4	390		F	#	50	
Magnesium	mg/L	03/26/2015	N001	9.4	-	14.4	1200		F	#	0.3	
Manganese	mg/L	03/26/2015	N001	9.4	-	14.4	5.2		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	9.4	-	14.4	11		F	#	0.2	
Oxidation Reduction Potential	mV	03/26/2015	N001	9.4	-	14.4	210.6		F	#		
pH	s.u.	03/26/2015	N001	9.4	-	14.4	7.28		F	#		
Potassium	mg/L	03/26/2015	N001	9.4	-	14.4	48		F	#	0.52	
Selenium	mg/L	03/26/2015	N001	9.4	-	14.4	0.0088		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	9.4	-	14.4	2900		F	#	0.47	
Specific Conductance	umhos/cm	03/26/2015	N001	9.4	-	14.4	16373		F	#		
Strontium	mg/L	03/26/2015	N001	9.4	-	14.4	8.8		F	#	0.0026	
Sulfate	mg/L	03/26/2015	N001	9.4	-	14.4	11000		F	#	120	
Temperature	C	03/26/2015	N001	9.4	-	14.4	15.27		F	#		
Turbidity	NTU	03/26/2015	N001	9.4	-	14.4	1.24		F	#		
Uranium	mg/L	03/26/2015	N001	9.4	-	14.4	1.5		F	#	0.00029	

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

REPORT DATE: 06/11/2015

Location: 1138 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	8.09	-	13.09	778		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	8.09	-	13.09	3.6		F	#	0.1	
Calcium	mg/L	03/26/2015	N001	8.09	-	13.09	390		F	#	0.24	
Chloride	mg/L	03/26/2015	N001	8.09	-	13.09	330		F	#	40	
Magnesium	mg/L	03/26/2015	N001	8.09	-	13.09	1100		F	#	0.3	
Manganese	mg/L	03/26/2015	N001	8.09	-	13.09	4.5		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	8.09	-	13.09	5.1		F	#	0.1	
Oxidation Reduction Potential	mV	03/26/2015	N001	8.09	-	13.09	220.4		F	#		
pH	s.u.	03/26/2015	N001	8.09	-	13.09	7.29		F	#		
Potassium	mg/L	03/26/2015	N001	8.09	-	13.09	53		F	#	0.52	
Selenium	mg/L	03/26/2015	N001	8.09	-	13.09	0.0023		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	8.09	-	13.09	2900		F	#	0.47	
Specific Conductance	umhos/cm	03/26/2015	N001	8.09	-	13.09	15689		F	#		
Strontium	mg/L	03/26/2015	N001	8.09	-	13.09	8.3		F	#	0.0026	
Sulfate	mg/L	03/26/2015	N001	8.09	-	13.09	11000		F	#	100	
Temperature	C	03/26/2015	N001	8.09	-	13.09	11.89		F	#		
Turbidity	NTU	03/26/2015	N001	8.09	-	13.09	4.01		F	#		
Uranium	mg/L	03/26/2015	N001	8.09	-	13.09	1.3		F	#	0.00029	

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

REPORT DATE: 06/11/2015

Location: 1139 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	6.19	-	11.19	568		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	6.19	-	11.19	0.1	U	F	#	0.1	
Calcium	mg/L	03/26/2015	N001	6.19	-	11.19	380		F	#	0.24	
Chloride	mg/L	03/26/2015	N001	6.19	-	11.19	210		F	#	40	
Magnesium	mg/L	03/26/2015	N001	6.19	-	11.19	620		F	#	0.3	
Manganese	mg/L	03/26/2015	N001	6.19	-	11.19	0.1		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	6.19	-	11.19	0.18		F	#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	6.19	-	11.19	144.5		F	#		
pH	s.u.	03/26/2015	N001	6.19	-	11.19	7.52		F	#		
Potassium	mg/L	03/26/2015	N001	6.19	-	11.19	52		F	#	0.52	
Selenium	mg/L	03/26/2015	N001	6.19	-	11.19	0.0014		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	6.19	-	11.19	2400		F	#	0.47	
Specific Conductance	umhos/cm	03/26/2015	N001	6.19	-	11.19	12722		F	#		
Strontium	mg/L	03/26/2015	N001	6.19	-	11.19	6.8		F	#	0.0026	
Sulfate	mg/L	03/26/2015	N001	6.19	-	11.19	8100		F	#	100	
Temperature	C	03/26/2015	N001	6.19	-	11.19	11.59		F	#		
Turbidity	NTU	03/26/2015	N001	6.19	-	11.19	2.35		F	#		
Uranium	mg/L	03/26/2015	N001	6.19	-	11.19	0.6		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1140 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	7.6	-	12.6	424		F	#		
Ammonia Total as N	mg/L	03/25/2015	N001	7.6	-	12.6	7.2		F	#	0.5	
Calcium	mg/L	03/25/2015	N001	7.6	-	12.6	400		F	#	0.24	
Chloride	mg/L	03/25/2015	N001	7.6	-	12.6	140		F	#	20	
Magnesium	mg/L	03/25/2015	N001	7.6	-	12.6	490		F	#	0.3	
Manganese	mg/L	03/25/2015	N001	7.6	-	12.6	2		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	7.6	-	12.6	0.28		F	#	0.01	
Oxidation Reduction Potential	mV	03/25/2015	N001	7.6	-	12.6	173		F	#		
pH	s.u.	03/25/2015	N001	7.6	-	12.6	6.88		F	#		
Potassium	mg/L	03/25/2015	N001	7.6	-	12.6	50		F	#	0.52	
Selenium	mg/L	03/25/2015	N001	7.6	-	12.6	0.019		F	#	0.00032	
Sodium	mg/L	03/25/2015	N001	7.6	-	12.6	1700		F	#	0.47	
Specific Conductance	umhos/cm	03/25/2015	N001	7.6	-	12.6	9727		F	#		
Strontium	mg/L	03/25/2015	N001	7.6	-	12.6	5.6		F	#	0.0026	
Sulfate	mg/L	03/25/2015	N001	7.6	-	12.6	6500		F	#	50	
Temperature	C	03/25/2015	N001	7.6	-	12.6	11.82		F	#		
Turbidity	NTU	03/25/2015	N001	7.6	-	12.6	1.65		F	#		
Uranium	mg/L	03/25/2015	N001	7.6	-	12.6	0.54		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1141 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	5.6	-	10.6	296		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	5.6	-	10.6	8.5		F	#	2.5	
Calcium	mg/L	03/26/2015	N001	5.6	-	10.6	350		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	5.6	-	10.6	46		F	#	10	
Magnesium	mg/L	03/26/2015	N001	5.6	-	10.6	220		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	5.6	-	10.6	1.2		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	5.6	-	10.6	0.09		F	#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	5.6	-	10.6	107		F	#		
pH	s.u.	03/26/2015	N001	5.6	-	10.6	6.8		F	#		
Potassium	mg/L	03/26/2015	N001	5.6	-	10.6	26		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	5.6	-	10.6	0.018		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	5.6	-	10.6	360		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	5.6	-	10.6	3829		F	#		
Strontium	mg/L	03/26/2015	N001	5.6	-	10.6	3.5		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	5.6	-	10.6	2300		F	#	25	
Temperature	C	03/26/2015	N001	5.6	-	10.6	12.09		F	#		
Turbidity	NTU	03/26/2015	N001	5.6	-	10.6	3.3		F	#		
Uranium	mg/L	03/26/2015	N001	5.6	-	10.6	0.41		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1142 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	9	-	14	120		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	9	-	14	0.11		F	#	0.1	
Calcium	mg/L	03/26/2015	N001	9	-	14	61		F	#	0.024	
Chloride	mg/L	03/26/2015	N001	9	-	14	14		F	#	1	
Magnesium	mg/L	03/26/2015	N001	9	-	14	12		F	#	0.03	
Manganese	mg/L	03/26/2015	N001	9	-	14	0.31		F	#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	9	-	14	0.012		F	#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	9	-	14	31		F	#		
pH	s.u.	03/26/2015	N001	9	-	14	7.24		F	#		
Potassium	mg/L	03/26/2015	N001	9	-	14	2.3		F	#	0.052	
Selenium	mg/L	03/26/2015	N001	9	-	14	0.00035	J	F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	9	-	14	41		F	#	0.047	
Specific Conductance	umhos/cm	03/26/2015	N001	9	-	14	577		F	#		
Strontium	mg/L	03/26/2015	N001	9	-	14	0.72		F	#	0.00026	
Sulfate	mg/L	03/26/2015	N001	9	-	14	150		F	#	2.5	
Temperature	C	03/26/2015	N001	9	-	14	10.87		F	#		
Turbidity	NTU	03/26/2015	N001	9	-	14	1.06		F	#		
Uranium	mg/L	03/26/2015	N001	9	-	14	0.01		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1143 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	8.3	-	13.3	204		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	8.3	-	13.3	0.1	U	F	#	0.1	
Calcium	mg/L	03/26/2015	N001	8.3	-	13.3	170		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	8.3	-	13.3	68		F	#	10	
Magnesium	mg/L	03/26/2015	N001	8.3	-	13.3	50		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	8.3	-	13.3	1.2		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	8.3	-	13.3	0.012		F	#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	8.3	-	13.3	229.6		F	#		
pH	s.u.	03/26/2015	N001	8.3	-	13.3	7.68		F	#		
Potassium	mg/L	03/26/2015	N001	8.3	-	13.3	12		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	8.3	-	13.3	0.00032	U	F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	8.3	-	13.3	940		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	8.3	-	13.3	4774		F	#		
Strontium	mg/L	03/26/2015	N001	8.3	-	13.3	2.5		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	8.3	-	13.3	2500		F	#	25	
Temperature	C	03/26/2015	N001	8.3	-	13.3	11.81		F	#		
Turbidity	NTU	03/26/2015	N001	8.3	-	13.3	2.38		F	#		
Uranium	mg/L	03/26/2015	N001	8.3	-	13.3	0.045		F	#	0.000029	

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

This page intentionally left blank

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

REPORT DATE: 06/11/2015

Location: 0600 WELL Just N of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	29	-	48.8	1264		FQ	#		
Ammonia Total as N	mg/L	03/25/2015	N001	29	-	48.8	20		FQ	#	2.5	
Calcium	mg/L	03/25/2015	N001	29	-	48.8	270		FQ	#	0.24	
Chloride	mg/L	03/25/2015	N001	29	-	48.8	1300		FQ	#	100	
Magnesium	mg/L	03/25/2015	N001	29	-	48.8	260		FQ	#	0.3	
Manganese	mg/L	03/25/2015	N001	29	-	48.8	0.25		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	29	-	48.8	120		FQ	#	1	
Oxidation Reduction Potential	mV	03/25/2015	N001	29	-	48.8	31.5		FQ	#		
pH	s.u.	03/25/2015	N001	29	-	48.8	6.97		FQ	#		
Potassium	mg/L	03/25/2015	N001	29	-	48.8	33		FQ	#	0.52	
Selenium	mg/L	03/25/2015	N001	29	-	48.8	0.0014		FQJ	#	0.00016	
Sodium	mg/L	03/25/2015	N001	29	-	48.8	4900		FQ	#	0.47	
Specific Conductance	umhos/cm	03/25/2015	N001	29	-	48.8	21031		FQ	#		
Strontium	mg/L	03/25/2015	N001	29	-	48.8	7.9		FQ	#	0.0026	
Sulfate	mg/L	03/25/2015	N001	29	-	48.8	10000		FQ	#	250	
Temperature	C	03/25/2015	N001	29	-	48.8	15.86		FQ	#		
Turbidity	NTU	03/25/2015	N001	29	-	48.8	3.62		FQ	#		
Uranium	mg/L	03/25/2015	N001	29	-	48.8	0.93		FQ	#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	27	-	47	1582		FQ	#		
Ammonia Total as N	mg/L	03/26/2015	N001	27	-	47	66		FQ	#	2.5	
Calcium	mg/L	03/26/2015	N001	27	-	47	440		FQ	#	0.24	
Chloride	mg/L	03/26/2015	N001	27	-	47	2200		FQ	#	200	
Magnesium	mg/L	03/26/2015	N001	27	-	47	1400		FQ	#	0.3	
Manganese	mg/L	03/26/2015	N001	27	-	47	0.82		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	27	-	47	38		FQ	#	1	
Oxidation Reduction Potential	mV	03/26/2015	N001	27	-	47	224.9		FQ	#		
pH	s.u.	03/26/2015	N001	27	-	47	7.15		FQ	#		
Potassium	mg/L	03/26/2015	N001	27	-	47	78		FQ	#	0.52	
Selenium	mg/L	03/26/2015	N001	27	-	47	0.0042		FQ	#	0.00032	
Sodium	mg/L	03/26/2015	N001	27	-	47	6500		FQ	#	2.3	
Specific Conductance	umhos/cm	03/26/2015	N001	27	-	47	29876		FQ	#		
Strontium	mg/L	03/26/2015	N001	27	-	47	18		FQ	#	0.0026	
Sulfate	mg/L	03/26/2015	N001	27	-	47	16000		FQ	#	500	
Temperature	C	03/26/2015	N001	27	-	47	15.79		FQ	#		
Turbidity	NTU	03/26/2015	N001	27	-	47	4.68		FQ	#		
Uranium	mg/L	03/26/2015	N001	27	-	47	0.44		FQ	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0603 WELL Just SE of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	25.9	-	35.9	236		F	#		
Ammonia Total as N	mg/L	03/25/2015	N001	25.9	-	35.9	730		F	#	50	
Calcium	mg/L	03/25/2015	N001	25.9	-	35.9	1200		F	#	0.24	
Chloride	mg/L	03/25/2015	N001	25.9	-	35.9	170		F	#	20	
Magnesium	mg/L	03/25/2015	N001	25.9	-	35.9	690		F	#	0.3	
Manganese	mg/L	03/25/2015	N001	25.9	-	35.9	59		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	25.9	-	35.9	2100		F	#	20	
Oxidation Reduction Potential	mV	03/25/2015	N001	25.9	-	35.9	350.5		F	#		
pH	s.u.	03/25/2015	N001	25.9	-	35.9	6.27		F	#		
Potassium	mg/L	03/25/2015	N001	25.9	-	35.9	130		F	#	0.52	
Selenium	mg/L	03/25/2015	N001	25.9	-	35.9	0.079		F	#	0.00032	
Sodium	mg/L	03/25/2015	N001	25.9	-	35.9	690		F	#	0.47	
Specific Conductance	umhos/cm	03/25/2015	N001	25.9	-	35.9	17695		F	#		
Strontium	mg/L	03/25/2015	N001	25.9	-	35.9	5.3		F	#	0.0026	
Sulfate	mg/L	03/25/2015	N001	25.9	-	35.9	2600		F	#	50	
Temperature	C	03/25/2015	N001	25.9	-	35.9	15.9		F	#		
Turbidity	NTU	03/25/2015	N001	25.9	-	35.9	2.72		F	#		
Uranium	mg/L	03/25/2015	N001	25.9	-	35.9	0.012		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0604 WELL Just W of radon cover borrow pit

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	62.7	-	72.7	982		FQ	#		
Ammonia Total as N	mg/L	03/25/2015	N001	62.7	-	72.7	0.66		FQ	#	0.1	
Calcium	mg/L	03/25/2015	N001	62.7	-	72.7	520		FQ	#	0.24	
Chloride	mg/L	03/25/2015	N001	62.7	-	72.7	2100		FQ	#	200	
Magnesium	mg/L	03/25/2015	N001	62.7	-	72.7	1800		FQ	#	0.3	
Manganese	mg/L	03/25/2015	N001	62.7	-	72.7	0.8		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	62.7	-	72.7	1100		FQ	#	10	
Oxidation Reduction Potential	mV	03/25/2015	N001	62.7	-	72.7	251.4		FQ	#		
pH	s.u.	03/25/2015	N001	62.7	-	72.7	6.91		FQ	#		
Potassium	mg/L	03/25/2015	N001	62.7	-	72.7	49		FQ	#	0.52	
Selenium	mg/L	03/25/2015	N001	62.7	-	72.7	0.68		FQ	#	0.00032	
Sodium	mg/L	03/25/2015	N001	62.7	-	72.7	4800		FQ	#	0.47	
Specific Conductance	umhos/cm	03/25/2015	N001	62.7	-	72.7	26761		FQ	#		
Strontium	mg/L	03/25/2015	N001	62.7	-	72.7	18		FQ	#	0.0026	
Sulfate	mg/L	03/25/2015	N001	62.7	-	72.7	11000		FQ	#	500	
Temperature	C	03/25/2015	N001	62.7	-	72.7	16.92		FQ	#		
Turbidity	NTU	03/25/2015	N001	62.7	-	72.7	5.63		FQ	#		
Uranium	mg/L	03/25/2015	N001	62.7	-	72.7	0.089		FQ	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0648 WELL Artesian well W of Bob Lee Wash

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	1482	-	1777	16			#		
Ammonia Total as N	mg/L	03/24/2015	N001	1482	-	1777	0.47			#	0.1	
Calcium	mg/L	03/24/2015	N001	1482	-	1777	110			#	0.024	
Chloride	mg/L	03/24/2015	N001	1482	-	1777	55			#	10	
Magnesium	mg/L	03/24/2015	N001	1482	-	1777	13			#	0.03	
Manganese	mg/L	03/24/2015	N001	1482	-	1777	0.09			#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	1482	-	1777	0.01	U		#	0.01	
Oxidation Reduction Potential	mV	03/24/2015	N001	1482	-	1777	132.1			#		
pH	s.u.	03/24/2015	N001	1482	-	1777	7.99			#		
Potassium	mg/L	03/24/2015	N001	1482	-	1777	8.6			#	0.052	
Selenium	mg/L	03/24/2015	N001	1482	-	1777	0.00016	U		#	0.00016	
Sodium	mg/L	03/24/2015	N001	1482	-	1777	770			#	0.23	
Specific Conductance	umhos/cm	03/24/2015	N001	1482	-	1777	4226			#		
Strontium	mg/L	03/24/2015	N001	1482	-	1777	11			#	0.00026	
Sulfate	mg/L	03/24/2015	N001	1482	-	1777	1900			#	25	
Temperature	C	03/24/2015	N001	1482	-	1777	29.22			#		
Turbidity	NTU	03/24/2015	N001	1482	-	1777	1.26			#		
Uranium	mg/L	03/24/2015	N001	1482	-	1777	0.00002	J		#	0.000015	

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

REPORT DATE: 06/11/2015

Location: 0725 WELL West side, lower Bob Lee Wash

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	7.5	-	17.5	272		F	#		
Ammonia Total as N	mg/L	03/25/2015	N001	7.5	-	17.5	0.1	U	F	#	0.1	
Calcium	mg/L	03/25/2015	N001	7.5	-	17.5	310		F	#	0.12	
Chloride	mg/L	03/25/2015	N001	7.5	-	17.5	84		F	#	10	
Magnesium	mg/L	03/25/2015	N001	7.5	-	17.5	90		F	#	0.15	
Manganese	mg/L	03/25/2015	N001	7.5	-	17.5	0.0094	J	F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	7.5	-	17.5	17		F	#	0.2	
Oxidation Reduction Potential	mV	03/25/2015	N001	7.5	-	17.5	190.5		F	#		
pH	s.u.	03/25/2015	N001	7.5	-	17.5	7.29		F	#		
Potassium	mg/L	03/25/2015	N001	7.5	-	17.5	9.7		F	#	0.26	
Selenium	mg/L	03/25/2015	N001	7.5	-	17.5	0.063		F	#	0.00032	
Sodium	mg/L	03/25/2015	N001	7.5	-	17.5	940		F	#	0.23	
Specific Conductance	umhos/cm	03/25/2015	N001	7.5	-	17.5	5546		F	#		
Strontium	mg/L	03/25/2015	N001	7.5	-	17.5	14		F	#	0.0013	
Sulfate	mg/L	03/25/2015	N001	7.5	-	17.5	2900		F	#	25	
Temperature	C	03/25/2015	N001	7.5	-	17.5	11.77		F	#		
Turbidity	NTU	03/25/2015	N001	7.5	-	17.5	2.74		F	#		
Uranium	mg/L	03/25/2015	N001	7.5	-	17.5	0.097		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0726 WELL West side, upper Bob Lee Wash

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	27.2	-	37.2	560		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	27.2	-	37.2	2.1		F	#	0.1	
Calcium	mg/L	03/26/2015	N001	27.2	-	37.2	200		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	27.2	-	37.2	390		F	#	20	
Magnesium	mg/L	03/26/2015	N001	27.2	-	37.2	190		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	27.2	-	37.2	0.27		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	27.2	-	37.2	42		F	#	0.5	
Oxidation Reduction Potential	mV	03/26/2015	N001	27.2	-	37.2	185.4		F	#		
pH	s.u.	03/26/2015	N001	27.2	-	37.2	7.41		F	#		
Potassium	mg/L	03/26/2015	N001	27.2	-	37.2	19		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	27.2	-	37.2	0.13		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	27.2	-	37.2	2100		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	27.2	-	37.2	11503		F	#		
Strontium	mg/L	03/26/2015	N001	27.2	-	37.2	5.7		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	27.2	-	37.2	5200		F	#	50	
Temperature	C	03/26/2015	N001	27.2	-	37.2	16		F	#		
Turbidity	NTU	03/26/2015	N001	27.2	-	37.2	8.64		F	#		
Uranium	mg/L	03/26/2015	N001	27.2	-	37.2	0.024		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0727 WELL West side, upper Bob Lee Wash

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	6.7	-	16.7	1208		FQ	#		
Ammonia Total as N	mg/L	03/25/2015	N001	6.7	-	16.7	22		FQ	#	2.5	
Calcium	mg/L	03/25/2015	N001	6.7	-	16.7	430		FQ	#	0.24	
Chloride	mg/L	03/25/2015	N001	6.7	-	16.7	340		FQ	#	40	
Magnesium	mg/L	03/25/2015	N001	6.7	-	16.7	1600		FQ	#	0.3	
Manganese	mg/L	03/25/2015	N001	6.7	-	16.7	1.5		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	6.7	-	16.7	47		FQ	#	0.5	
Oxidation Reduction Potential	mV	03/25/2015	N001	6.7	-	16.7	214.8		FQ	#		
pH	s.u.	03/25/2015	N001	6.7	-	16.7	6.62		FQ	#		
Potassium	mg/L	03/25/2015	N001	6.7	-	16.7	69		FQ	#	0.52	
Selenium	mg/L	03/25/2015	N001	6.7	-	16.7	0.0012		FQJ	#	0.00016	
Sodium	mg/L	03/25/2015	N001	6.7	-	16.7	1900		FQ	#	0.47	
Specific Conductance	umhos/cm	03/25/2015	N001	6.7	-	16.7	14841		FQ	#		
Strontium	mg/L	03/25/2015	N001	6.7	-	16.7	11		FQ	#	0.0026	
Sulfate	mg/L	03/25/2015	N001	6.7	-	16.7	10000		FQ	#	100	
Temperature	C	03/25/2015	N001	6.7	-	16.7	14.51		FQ	#		
Turbidity	NTU	03/25/2015	N001	6.7	-	16.7	4.55		FQ	#		
Uranium	mg/L	03/25/2015	N001	6.7	-	16.7	0.29		FQ	#	0.000015	

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

REPORT DATE: 06/11/2015

Location: 0728 WELL W of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	17	-	27	226		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	17	-	27	20		F	#	2.5	
Calcium	mg/L	03/24/2015	N001	17	-	27	540		F	#	0.12	
Chloride	mg/L	03/24/2015	N001	17	-	27	28		F	#	10	
Magnesium	mg/L	03/24/2015	N001	17	-	27	190		F	#	0.15	
Manganese	mg/L	03/24/2015	N001	17	-	27	0.4		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	17	-	27	3.3		F	#	0.1	
Oxidation Reduction Potential	mV	03/24/2015	N001	17	-	27	136.1		F	#		
pH	s.u.	03/24/2015	N001	17	-	27	7.04		F	#		
Potassium	mg/L	03/24/2015	N001	17	-	27	27		F	#	0.26	
Selenium	mg/L	03/24/2015	N001	17	-	27	0.00071		FJ	#	0.00016	
Sodium	mg/L	03/24/2015	N001	17	-	27	88		F	#	0.23	
Specific Conductance	umhos/cm	03/24/2015	N001	17	-	27	3323		F	#		
Strontium	mg/L	03/24/2015	N001	17	-	27	3.4		F	#	0.0013	
Sulfate	mg/L	03/24/2015	N001	17	-	27	2200		F	#	25	
Temperature	C	03/24/2015	N001	17	-	27	16.03		F	#		
Turbidity	NTU	03/24/2015	N001	17	-	27	1.08		F	#		
Uranium	mg/L	03/24/2015	N001	17	-	27	0.12		F	#	0.000015	

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

REPORT DATE: 06/11/2015

Location: 0730 WELL Just SW of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	0001	26.93	-	36.93	0		FQ	#		
Ammonia Total as N	mg/L	03/24/2015	0001	26.93	-	36.93	39		FQ	#	5	
Calcium	mg/L	03/24/2015	0001	26.93	-	36.93	590		FQ	#	0.12	
Chloride	mg/L	03/24/2015	0001	26.93	-	36.93	16		FQ	#	10	
Magnesium	mg/L	03/24/2015	0001	26.93	-	36.93	110		FQ	#	0.15	
Manganese	mg/L	03/24/2015	0001	26.93	-	36.93	21		FQ	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	0001	26.93	-	36.93	90		FQ	#	0.5	
Oxidation Reduction Potential	mV	03/24/2015	N001	26.93	-	36.93	200.6		FQ	#		
pH	s.u.	03/24/2015	N001	26.93	-	36.93	4.72		FQ	#		
Potassium	mg/L	03/24/2015	0001	26.93	-	36.93	14		FQ	#	0.26	
Selenium	mg/L	03/24/2015	0001	26.93	-	36.93	0.017		FQ	#	0.00032	
Sodium	mg/L	03/24/2015	0001	26.93	-	36.93	62		FQ	#	0.23	
Specific Conductance	umhos/cm	03/24/2015	N001	26.93	-	36.93	3392		FQ	#		
Strontium	mg/L	03/24/2015	0001	26.93	-	36.93	2.7		FQ	#	0.0013	
Sulfate	mg/L	03/24/2015	0001	26.93	-	36.93	1900		FQ	#	25	
Temperature	C	03/24/2015	N001	26.93	-	36.93	15.96		FQ	#		
Turbidity	NTU	03/24/2015	N001	26.93	-	36.93	361		FQ	#		
Uranium	mg/L	03/24/2015	0001	26.93	-	36.93	0.0083		FQ	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0731 WELL SE of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	17	-	27	290		F	#		
Ammonia Total as N	mg/L	03/25/2015	N001	17	-	27	25		F	#	2.5	
Calcium	mg/L	03/25/2015	N001	17	-	27	440		F	#	0.12	
Chloride	mg/L	03/25/2015	N001	17	-	27	75		F	#	10	
Magnesium	mg/L	03/25/2015	N001	17	-	27	380		F	#	0.15	
Manganese	mg/L	03/25/2015	N001	17	-	27	0.11		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	17	-	27	63		F	#	0.5	
Oxidation Reduction Potential	mV	03/25/2015	N001	17	-	27	204.5		F	#		
pH	s.u.	03/25/2015	N001	17	-	27	6.94		F	#		
Potassium	mg/L	03/25/2015	N001	17	-	27	32		F	#	0.26	
Selenium	mg/L	03/25/2015	N001	17	-	27	0.013		F	#	0.00032	
Sodium	mg/L	03/25/2015	N001	17	-	27	710		F	#	0.23	
Specific Conductance	umhos/cm	03/25/2015	N001	17	-	27	8225		F	#		
Strontium	mg/L	03/25/2015	N001	17	-	27	7		F	#	0.0013	
Sulfate	mg/L	03/25/2015	N001	17	-	27	3600		F	#	25	
Temperature	C	03/25/2015	N001	17	-	27	15.73		F	#		
Turbidity	NTU	03/25/2015	N001	17	-	27	2.56		F	#		
Uranium	mg/L	03/25/2015	N001	17	-	27	0.025		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0812 WELL W of radon cover borrow pit

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	51.3	-	61.3	690		FQ	#		
Ammonia Total as N	mg/L	03/24/2015	N001	51.3	-	61.3	0.15		FQ	#	0.1	
Calcium	mg/L	03/24/2015	N001	51.3	-	61.3	480		FQ	#	0.24	
Chloride	mg/L	03/24/2015	N001	51.3	-	61.3	2300		FQ	#	400	
Magnesium	mg/L	03/24/2015	N001	51.3	-	61.3	2400		FQ	#	0.3	
Manganese	mg/L	03/24/2015	N001	51.3	-	61.3	0.21		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	51.3	-	61.3	1300		FQ	#	20	
Oxidation Reduction Potential	mV	03/24/2015	N001	51.3	-	61.3	250.3		FQ	#		
pH	s.u.	03/24/2015	N001	51.3	-	61.3	6.98		FQ	#		
Potassium	mg/L	03/24/2015	N001	51.3	-	61.3	69		FQ	#	0.52	
Selenium	mg/L	03/24/2015	N001	51.3	-	61.3	5.9		FQ	#	0.0032	
Sodium	mg/L	03/24/2015	N001	51.3	-	61.3	6600		FQ	#	2.3	
Specific Conductance	umhos/cm	03/24/2015	N001	51.3	-	61.3	32957		FQ	#		
Strontium	mg/L	03/24/2015	N001	51.3	-	61.3	15		FQ	#	0.0026	
Sulfate	mg/L	03/24/2015	N001	51.3	-	61.3	16000		FQ	#	1000	
Temperature	C	03/24/2015	N001	51.3	-	61.3	15.14		FQ	#		
Turbidity	NTU	03/24/2015	N001	51.3	-	61.3	9.26		FQ	#		
Uranium	mg/L	03/24/2015	N001	51.3	-	61.3	0.13		FQ	#	0.00029	

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

REPORT DATE: 06/11/2015

Location: 0813 WELL W of radon cover borrow pit

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	40.8	-	50.8	740		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	40.8	-	50.8	63		F	#	2.5	
Calcium	mg/L	03/24/2015	N001	40.8	-	50.8	680		F	#	0.24	
Chloride	mg/L	03/24/2015	N001	40.8	-	50.8	820		F	#	200	
Magnesium	mg/L	03/24/2015	N001	40.8	-	50.8	3000		F	#	0.3	
Manganese	mg/L	03/24/2015	N001	40.8	-	50.8	0.82		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	40.8	-	50.8	2400		F	#	20	
Oxidation Reduction Potential	mV	03/24/2015	N001	40.8	-	50.8	248.6		F	#		
pH	s.u.	03/24/2015	N001	40.8	-	50.8	6.68		F	#		
Potassium	mg/L	03/24/2015	N001	40.8	-	50.8	120		F	#	0.52	
Selenium	mg/L	03/24/2015	N001	40.8	-	50.8	0.15		F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	40.8	-	50.8	2700		F	#	0.47	
Specific Conductance	umhos/cm	03/24/2015	N001	40.8	-	50.8	26694		F	#		
Strontium	mg/L	03/24/2015	N001	40.8	-	50.8	18		F	#	0.0026	
Sulfate	mg/L	03/24/2015	N001	40.8	-	50.8	8900		F	#	500	
Temperature	C	03/24/2015	N001	40.8	-	50.8	16.35		F	#		
Turbidity	NTU	03/24/2015	N001	40.8	-	50.8	2.76		F	#		
Uranium	mg/L	03/24/2015	N001	40.8	-	50.8	0.092		F	#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	0001	23.8	-	33.8	636		FQ	#		
Ammonia Total as N	mg/L	03/24/2015	0001	23.8	-	33.8	48		FQ	#	2.5	
Calcium	mg/L	03/24/2015	0001	23.8	-	33.8	450		FQ	#	0.24	
Chloride	mg/L	03/24/2015	0001	23.8	-	33.8	1100		FQ	#	200	
Magnesium	mg/L	03/24/2015	0001	23.8	-	33.8	2000		FQ	#	0.3	
Manganese	mg/L	03/24/2015	0001	23.8	-	33.8	1.4		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	0001	23.8	-	33.8	780		FQ	#	10	
Oxidation Reduction Potential	mV	03/24/2015	N001	23.8	-	33.8	232.3		FQ	#		
pH	s.u.	03/24/2015	N001	23.8	-	33.8	7.07		FQ	#		
Potassium	mg/L	03/24/2015	0001	23.8	-	33.8	96		FQ	#	0.52	
Selenium	mg/L	03/24/2015	0001	23.8	-	33.8	1.8		FQ	#	0.0016	
Sodium	mg/L	03/24/2015	0001	23.8	-	33.8	3800		FQ	#	0.47	
Specific Conductance	umhos/cm	03/24/2015	N001	23.8	-	33.8	23660		FQ	#		
Strontium	mg/L	03/24/2015	0001	23.8	-	33.8	12		FQ	#	0.0026	
Sulfate	mg/L	03/24/2015	0001	23.8	-	33.8	12000		FQ	#	500	
Temperature	C	03/24/2015	N001	23.8	-	33.8	17.56		FQ	#		
Turbidity	NTU	03/24/2015	N001	23.8	-	33.8	45.2		FQ	#		
Uranium	mg/L	03/24/2015	0001	23.8	-	33.8	0.075		FQ	#	0.00015	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	22.3	-	32.3	1594		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	22.3	-	32.3	1.3		F	#	0.1	
Calcium	mg/L	03/24/2015	N001	22.3	-	32.3	450		F	#	0.24	
Chloride	mg/L	03/24/2015	N001	22.3	-	32.3	570		F	#	200	
Magnesium	mg/L	03/24/2015	N001	22.3	-	32.3	2500		F	#	0.3	
Manganese	mg/L	03/24/2015	N001	22.3	-	32.3	1.6		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	22.3	-	32.3	630		F	#	5	
Oxidation Reduction Potential	mV	03/24/2015	N001	22.3	-	32.3	227.4		F	#		
pH	s.u.	03/24/2015	N001	22.3	-	32.3	6.6		F	#		
Potassium	mg/L	03/24/2015	N001	22.3	-	32.3	83		F	#	0.52	
Selenium	mg/L	03/24/2015	N001	22.3	-	32.3	0.032		F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	22.3	-	32.3	3400		F	#	0.47	
Specific Conductance	umhos/cm	03/24/2015	N001	22.3	-	32.3	22643		F	#		
Strontium	mg/L	03/24/2015	N001	22.3	-	32.3	12		F	#	0.0026	
Sulfate	mg/L	03/24/2015	N001	22.3	-	32.3	14000		F	#	500	
Temperature	C	03/24/2015	N001	22.3	-	32.3	18.21		F	#		
Turbidity	NTU	03/24/2015	N001	22.3	-	32.3	2.81		F	#		
Uranium	mg/L	03/24/2015	N001	22.3	-	32.3	0.32		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0816 WELL N of artesian well 648

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	20.1	-	25.1	282		F	#		
Ammonia Total as N	mg/L	03/26/2015	N001	20.1	-	25.1	0.1	U	F	#	0.1	
Calcium	mg/L	03/26/2015	N001	20.1	-	25.1	99		F	#	0.12	
Chloride	mg/L	03/26/2015	N001	20.1	-	25.1	66		F	#	10	
Magnesium	mg/L	03/26/2015	N001	20.1	-	25.1	110		F	#	0.15	
Manganese	mg/L	03/26/2015	N001	20.1	-	25.1	0.0029	J	F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	20.1	-	25.1	12		F	#	0.1	
Oxidation Reduction Potential	mV	03/26/2015	N001	20.1	-	25.1	165.4		F	#		
pH	s.u.	03/26/2015	N001	20.1	-	25.1	7.76		F	#		
Potassium	mg/L	03/26/2015	N001	20.1	-	25.1	11		F	#	0.26	
Selenium	mg/L	03/26/2015	N001	20.1	-	25.1	0.012		F	#	0.00032	
Sodium	mg/L	03/26/2015	N001	20.1	-	25.1	780		F	#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	20.1	-	25.1	4288		F	#		
Strontium	mg/L	03/26/2015	N001	20.1	-	25.1	2		F	#	0.0013	
Sulfate	mg/L	03/26/2015	N001	20.1	-	25.1	2000		F	#	25	
Temperature	C	03/26/2015	N001	20.1	-	25.1	18.42		F	#		
Turbidity	NTU	03/26/2015	N001	20.1	-	25.1	7.88		F	#		
Uranium	mg/L	03/26/2015	N001	20.1	-	25.1	0.017		F	#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	21.6	-	31.62	1480		FQ	#		
Ammonia Total as N	mg/L	03/26/2015	N001	21.6	-	31.62	1000		FQ	#	50	
Calcium	mg/L	03/26/2015	N001	21.6	-	31.62	490		FQ	#	0.24	
Chloride	mg/L	03/26/2015	N001	21.6	-	31.62	560		FQ	#	200	
Magnesium	mg/L	03/26/2015	N001	21.6	-	31.62	1900		FQ	#	0.3	
Manganese	mg/L	03/26/2015	N001	21.6	-	31.62	2.8		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	21.6	-	31.62	460		FQ	#	5	
Oxidation Reduction Potential	mV	03/26/2015	N001	21.6	-	31.62	213.8		FQ	#		
pH	s.u.	03/26/2015	N001	21.6	-	31.62	6.54		FQ	#		
Potassium	mg/L	03/26/2015	N001	21.6	-	31.62	260		FQ	#	0.52	
Selenium	mg/L	03/26/2015	N001	21.6	-	31.62	0.0037		FQJ	#	0.00032	
Sodium	mg/L	03/26/2015	N001	21.6	-	31.62	1600		FQ	#	0.47	
Specific Conductance	umhos/cm	03/26/2015	N001	21.6	-	31.62	21601		FQ	#		
Strontium	mg/L	03/26/2015	N001	21.6	-	31.62	12		FQ	#	0.0026	
Sulfate	mg/L	03/26/2015	N001	21.6	-	31.62	11000		FQ	#	500	
Temperature	C	03/26/2015	N001	21.6	-	31.62	15.73		FQ	#		
Turbidity	NTU	03/26/2015	N001	21.6	-	31.62	5.22		FQ	#		
Uranium	mg/L	03/26/2015	N001	21.6	-	31.62	7.2		FQ	#	0.00029	

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

REPORT DATE: 06/11/2015

Location: 0818 WELL Just W of radon cover borrow pit

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2015	N001	52	-	61.5	608			#		
Ammonia Total as N	mg/L	03/23/2015	N001	52	-	61.5	58			#	2.5	
Ammonia Total as N	mg/L	03/23/2015	N002	52	-	61.5	57			#	2.5	
Calcium	mg/L	03/23/2015	N001	52	-	61.5	460			#	0.24	
Calcium	mg/L	03/23/2015	N002	52	-	61.5	450			#	0.24	
Chloride	mg/L	03/23/2015	N001	52	-	61.5	950			#	200	
Chloride	mg/L	03/23/2015	N002	52	-	61.5	910			#	200	
Magnesium	mg/L	03/23/2015	N001	52	-	61.5	1700			#	0.3	
Magnesium	mg/L	03/23/2015	N002	52	-	61.5	1600			#	0.3	
Manganese	mg/L	03/23/2015	N001	52	-	61.5	0.58		J	#	0.0024	
Manganese	mg/L	03/23/2015	N002	52	-	61.5	0.47		J	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2015	N001	52	-	61.5	610			#	5	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2015	N002	52	-	61.5	730			#	5	
Oxidation Reduction Potential	mV	03/23/2015	N001	52	-	61.5	243.6			#		
pH	s.u.	03/23/2015	N001	52	-	61.5	6.97			#		
Potassium	mg/L	03/23/2015	N001	52	-	61.5	68			#	0.52	
Potassium	mg/L	03/23/2015	N002	52	-	61.5	66			#	0.52	
Selenium	mg/L	03/23/2015	N001	52	-	61.5	2.1			#	0.0032	

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

REPORT DATE: 06/11/2015

Location: 0818 WELL Just W of radon cover borrow pit

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/23/2015	N002	52	-	61.5	2.1			#	0.0016	
Sodium	mg/L	03/23/2015	N001	52	-	61.5	4200			#	0.47	
Sodium	mg/L	03/23/2015	N002	52	-	61.5	4000			#	0.47	
Specific Conductance	umhos /cm	03/23/2015	N001	52	-	61.5	23393			#		
Strontium	mg/L	03/23/2015	N001	52	-	61.5	12			#	0.0026	
Strontium	mg/L	03/23/2015	N002	52	-	61.5	11			#	0.0026	
Sulfate	mg/L	03/23/2015	N001	52	-	61.5	13000			#	500	
Sulfate	mg/L	03/23/2015	N002	52	-	61.5	12000			#	500	
Temperature	C	03/23/2015	N001	52	-	61.5	16.67			#		
Turbidity	NTU	03/23/2015	N001	52	-	61.5	3.83			#		
Uranium	mg/L	03/23/2015	N001	52	-	61.5	0.11			#	0.00029	
Uranium	mg/L	03/23/2015	N002	52	-	61.5	0.11			#	0.00015	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	15.67	-	25.67	1328		FQ	#		
Ammonia Total as N	mg/L	03/26/2015	N001	15.67	-	25.67	370		FQ	#	20	
Calcium	mg/L	03/26/2015	N001	15.67	-	25.67	440		FQ	#	0.24	
Chloride	mg/L	03/26/2015	N001	15.67	-	25.67	670		FQ	#	100	
Magnesium	mg/L	03/26/2015	N001	15.67	-	25.67	1100		FQ	#	0.3	
Manganese	mg/L	03/26/2015	N001	15.67	-	25.67	1.5		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	15.67	-	25.67	46		FQ	#	0.5	
Oxidation Reduction Potential	mV	03/26/2015	N001	15.67	-	25.67	163.7		FQ	#		
pH	s.u.	03/26/2015	N001	15.67	-	25.67	6.49		FQ	#		
Potassium	mg/L	03/26/2015	N001	15.67	-	25.67	130		FQ	#	0.52	
Selenium	mg/L	03/26/2015	N001	15.67	-	25.67	0.054		FQ	#	0.00016	
Sodium	mg/L	03/26/2015	N001	15.67	-	25.67	2200		FQ	#	0.47	
Specific Conductance	umhos/cm	03/26/2015	N001	15.67	-	25.67	20734		FQ	#		
Strontium	mg/L	03/26/2015	N001	15.67	-	25.67	7.5		FQ	#	0.0026	
Sulfate	mg/L	03/26/2015	N001	15.67	-	25.67	12000		FQ	#	250	
Temperature	C	03/26/2015	N001	15.67	-	25.67	19.01		FQ	#		
Turbidity	NTU	03/26/2015	N001	15.67	-	25.67	5.36		FQ	#		
Uranium	mg/L	03/26/2015	N001	15.67	-	25.67	0.83		FQ	#	0.00029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	0001	149	-	151.5	642		FQ	#		
Ammonia Total as N	mg/L	03/25/2015	0001	149	-	151.5	1.3		FQ	#	0.1	
Calcium	mg/L	03/25/2015	0001	149	-	151.5	250		FQ	#	0.12	
Chloride	mg/L	03/25/2015	0001	149	-	151.5	9100		FQ	#	200	
Magnesium	mg/L	03/25/2015	0001	149	-	151.5	86		FQ	#	0.15	
Manganese	mg/L	03/25/2015	0001	149	-	151.5	0.5	E	FQJ	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	0001	149	-	151.5	71		FQ	#	1	
Oxidation Reduction Potential	mV	03/25/2015	N001	149	-	151.5	204.1		FQ	#		
pH	s.u.	03/25/2015	N001	149	-	151.5	7.05		FQ	#		
Potassium	mg/L	03/25/2015	0001	149	-	151.5	25	E	FQJ	#	0.26	
Selenium	mg/L	03/25/2015	0001	149	-	151.5	0.01		FQ	#	0.00032	
Sodium	mg/L	03/25/2015	0001	149	-	151.5	7300		FQ	#	2.3	
Specific Conductance	umhos/cm	03/25/2015	N001	149	-	151.5	31549		FQ	#		
Strontium	mg/L	03/25/2015	0001	149	-	151.5	24		FQ	#	0.0013	
Sulfate	mg/L	03/25/2015	0001	149	-	151.5	4600		FQ	#	500	
Temperature	C	03/25/2015	N001	149	-	151.5	14.5		FQ	#		
Turbidity	NTU	03/25/2015	N001	149	-	151.5	162		FQ	#		
Uranium	mg/L	03/25/2015	0001	149	-	151.5	0.089		FQ	#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	0001	199	-	201.5	510		FQ	#		
Ammonia Total as N	mg/L	03/25/2015	0001	199	-	201.5	0.94		FQ	#	0.1	
Calcium	mg/L	03/25/2015	0001	199	-	201.5	150		FQ	#	0.24	
Chloride	mg/L	03/25/2015	0001	199	-	201.5	6800		FQ	#	200	
Magnesium	mg/L	03/25/2015	0001	199	-	201.5	63		FQ	#	0.3	
Manganese	mg/L	03/25/2015	0001	199	-	201.5	0.4		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	0001	199	-	201.5	0.17		FQ	#	0.01	
Oxidation Reduction Potential	mV	03/25/2015	N001	199	-	201.5	-53.4		FQ	#		
pH	s.u.	03/25/2015	N001	199	-	201.5	7.34		FQ	#		
Potassium	mg/L	03/25/2015	0001	199	-	201.5	38		FQ	#	0.52	
Selenium	mg/L	03/25/2015	0001	199	-	201.5	0.0004	J	FQJ	#	0.00016	
Sodium	mg/L	03/25/2015	0001	199	-	201.5	6100		FQ	#	2.3	
Specific Conductance	umhos/cm	03/25/2015	N001	199	-	201.5	26348		FQ	#		
Strontium	mg/L	03/25/2015	0001	199	-	201.5	17		FQ	#	0.0026	
Sulfate	mg/L	03/25/2015	0001	199	-	201.5	4900		FQ	#	500	
Temperature	C	03/25/2015	N001	199	-	201.5	17.67		FQ	#		
Turbidity	NTU	03/25/2015	N001	199	-	201.5	46.8		FQ	#		
Uranium	mg/L	03/25/2015	0001	199	-	201.5	0.045		FQ	#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	198.5	-	201	370		FQ	#		
Ammonia Total as N	mg/L	03/25/2015	N001	198.5	-	201	4.8		FQ	#	1	
Calcium	mg/L	03/25/2015	N001	198.5	-	201	180		FQ	#	0.24	
Chloride	mg/L	03/25/2015	N001	198.5	-	201	7300		FQ	#	200	
Magnesium	mg/L	03/25/2015	N001	198.5	-	201	71		FQ	#	0.3	
Manganese	mg/L	03/25/2015	N001	198.5	-	201	0.58		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	198.5	-	201	5.6		FQ	#	0.05	
Oxidation Reduction Potential	mV	03/25/2015	N001	198.5	-	201	-10.3		FQ	#		
pH	s.u.	03/25/2015	N001	198.5	-	201	7.27		FQ	#		
Potassium	mg/L	03/25/2015	N001	198.5	-	201	43		FQ	#	0.52	
Selenium	mg/L	03/25/2015	N001	198.5	-	201	0.00072		FQJ	#	0.00016	
Sodium	mg/L	03/25/2015	N001	198.5	-	201	6400		FQ	#	2.3	
Specific Conductance	umhos/cm	03/25/2015	N001	198.5	-	201	26829		FQ	#		
Strontium	mg/L	03/25/2015	N001	198.5	-	201	19		FQ	#	0.0026	
Sulfate	mg/L	03/25/2015	N001	198.5	-	201	5300		FQ	#	500	
Temperature	C	03/25/2015	N001	198.5	-	201	16.23		FQ	#		
Turbidity	NTU	03/25/2015	N001	198.5	-	201	6.78		FQ	#		
Uranium	mg/L	03/25/2015	N001	198.5	-	201	0.098		FQ	#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	0001	147.79 - 150.23	488		FQ	#		
Ammonia Total as N	mg/L	03/25/2015	0001	147.79 - 150.23	3.9		FQ	#	0.1	
Calcium	mg/L	03/25/2015	0001	147.79 - 150.23	210		FQ	#	0.024	
Chloride	mg/L	03/25/2015	0001	147.79 - 150.23	9900		FQ	#	200	
Magnesium	mg/L	03/25/2015	0001	147.79 - 150.23	80		FQ	#	0.03	
Manganese	mg/L	03/25/2015	0001	147.79 - 150.23	0.58		FQ	#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	0001	147.79 - 150.23	0.51		FQ	#	0.01	
Oxidation Reduction Potential	mV	03/25/2015	N001	147.79 - 150.23	-7.7		FQ	#		
pH	s.u.	03/25/2015	N001	147.79 - 150.23	7.25		FQ	#		
Potassium	mg/L	03/25/2015	0001	147.79 - 150.23	36		FQ	#	0.052	
Selenium	mg/L	03/25/2015	0001	147.79 - 150.23	0.0009		FQJ	#	0.00016	
Sodium	mg/L	03/25/2015	0001	147.79 - 150.23	7100		FQ	#	2.3	
Specific Conductance	umhos/cm	03/25/2015	N001	147.79 - 150.23	30160		FQ	#		
Strontium	mg/L	03/25/2015	0001	147.79 - 150.23	22		FQ	#	0.0013	
Sulfate	mg/L	03/25/2015	0001	147.79 - 150.23	5400		FQ	#	500	
Temperature	C	03/25/2015	N001	147.79 - 150.23	15.4		FQ	#		
Turbidity	NTU	03/25/2015	N001	147.79 - 150.23	14.6		FQ	#		
Uranium	mg/L	03/25/2015	0001	147.79 - 150.23	0.033		FQ	#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	0001	10	-	20	1212		FQ	#		
Ammonia Total as N	mg/L	03/26/2015	0001	10	-	20	80		FQ	#	2.5	
Calcium	mg/L	03/26/2015	0001	10	-	20	430		FQ	#	0.24	
Chloride	mg/L	03/26/2015	0001	10	-	20	360		FQ	#	40	
Magnesium	mg/L	03/26/2015	0001	10	-	20	1800		FQ	#	0.3	
Manganese	mg/L	03/26/2015	0001	10	-	20	2.5		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	0001	10	-	20	7.4		FQ	#	0.2	
Oxidation Reduction Potential	mV	03/26/2015	N001	10	-	20	201.7		FQ	#		
pH	s.u.	03/26/2015	N001	10	-	20	6.65		FQ	#		
Potassium	mg/L	03/26/2015	0001	10	-	20	100		FQ	#	0.52	
Selenium	mg/L	03/26/2015	0001	10	-	20	0.0019		FQJ	#	0.00032	
Sodium	mg/L	03/26/2015	0001	10	-	20	1800		FQ	#	0.47	
Specific Conductance	umhos/cm	03/26/2015	N001	10	-	20	15466		FQ	#		
Strontium	mg/L	03/26/2015	0001	10	-	20	9.9		FQ	#	0.0026	
Sulfate	mg/L	03/26/2015	0001	10	-	20	11000		FQ	#	100	
Temperature	C	03/26/2015	N001	10	-	20	13.36		FQ	#		
Turbidity	NTU	03/26/2015	N001	10	-	20	16.3		FQ	#		
Uranium	mg/L	03/26/2015	0001	10	-	20	1.3		FQ	#	0.00029	

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

REPORT DATE: 06/11/2015

Location: 0827 WELL Just NW of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	19.9	-	29.9	1142		FQ	#		
Ammonia Total as N	mg/L	03/25/2015	N001	19.9	-	29.9	3.5		FQ	#	0.1	
Calcium	mg/L	03/25/2015	N001	19.9	-	29.9	450		FQ	#	0.24	
Chloride	mg/L	03/25/2015	N001	19.9	-	29.9	310		FQ	#	20	
Magnesium	mg/L	03/25/2015	N001	19.9	-	29.9	780		FQ	#	0.3	
Manganese	mg/L	03/25/2015	N001	19.9	-	29.9	0.34		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	19.9	-	29.9	29		FQ	#	0.25	
Oxidation Reduction Potential	mV	03/25/2015	N001	19.9	-	29.9	207.4		FQ	#		
pH	s.u.	03/25/2015	N001	19.9	-	29.9	6.58		FQ	#		
Potassium	mg/L	03/25/2015	N001	19.9	-	29.9	31		FQ	#	0.52	
Selenium	mg/L	03/25/2015	N001	19.9	-	29.9	0.031		FQ	#	0.0016	
Sodium	mg/L	03/25/2015	N001	19.9	-	29.9	1600		FQ	#	0.47	
Specific Conductance	umhos/cm	03/25/2015	N001	19.9	-	29.9	15165		FQ	#		
Strontium	mg/L	03/25/2015	N001	19.9	-	29.9	9.1		FQ	#	0.0026	
Sulfate	mg/L	03/25/2015	N001	19.9	-	29.9	6300		FQ	#	50	
Temperature	C	03/25/2015	N001	19.9	-	29.9	15.83		FQ	#		
Turbidity	NTU	03/25/2015	N001	19.9	-	29.9	5.37		FQ	#		
Uranium	mg/L	03/25/2015	N001	19.9	-	29.9	0.73		FQ	#	0.00015	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	5.3	-	15.3	806		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	5.3	-	15.3	1		F	#	0.1	
Calcium	mg/L	03/24/2015	N001	5.3	-	15.3	280		F	#	0.12	
Chloride	mg/L	03/24/2015	N001	5.3	-	15.3	170		F	#	10	
Magnesium	mg/L	03/24/2015	N001	5.3	-	15.3	250		F	#	0.15	
Manganese	mg/L	03/24/2015	N001	5.3	-	15.3	0.22		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	5.3	-	15.3	11		F	#	0.1	
Oxidation Reduction Potential	mV	03/24/2015	N001	5.3	-	15.3	186.6		F	#		
pH	s.u.	03/24/2015	N001	5.3	-	15.3	7.11		F	#		
Potassium	mg/L	03/24/2015	N001	5.3	-	15.3	12		F	#	0.26	
Selenium	mg/L	03/24/2015	N001	5.3	-	15.3	0.0096		F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	5.3	-	15.3	500		F	#	0.23	
Specific Conductance	umhos/cm	03/24/2015	N001	5.3	-	15.3	4337		F	#		
Strontium	mg/L	03/24/2015	N001	5.3	-	15.3	4.3		F	#	0.0013	
Sulfate	mg/L	03/24/2015	N001	5.3	-	15.3	1700		F	#	25	
Temperature	C	03/24/2015	N001	5.3	-	15.3	12.18		F	#		
Turbidity	NTU	03/24/2015	N001	5.3	-	15.3	1.9		F	#		
Uranium	mg/L	03/24/2015	N001	5.3	-	15.3	0.5		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0830 WELL Just SE of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	7.7	-	17.7	0		F	#		
Ammonia Total as N	mg/L	03/25/2015	N001	7.7	-	17.7	0.1	U	F	#	0.1	
Calcium	mg/L	03/25/2015	N001	7.7	-	17.7	510		F	#	0.12	
Chloride	mg/L	03/25/2015	N001	7.7	-	17.7	41		F	#	5	
Magnesium	mg/L	03/25/2015	N001	7.7	-	17.7	31		F	#	0.15	
Manganese	mg/L	03/25/2015	N001	7.7	-	17.7	0.99		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	7.7	-	17.7	18		F	#	0.2	
Oxidation Reduction Potential	mV	03/25/2015	N001	7.7	-	17.7	180.5		F	#		
pH	s.u.	03/25/2015	N001	7.7	-	17.7	5.14		F	#		
Potassium	mg/L	03/25/2015	N001	7.7	-	17.7	2.8	J	F	#	0.26	
Selenium	mg/L	03/25/2015	N001	7.7	-	17.7	0.018		F	#	0.00032	
Sodium	mg/L	03/25/2015	N001	7.7	-	17.7	110		F	#	0.23	
Specific Conductance	umhos/cm	03/25/2015	N001	7.7	-	17.7	2580		F	#		
Strontium	mg/L	03/25/2015	N001	7.7	-	17.7	0.35		F	#	0.0013	
Sulfate	mg/L	03/25/2015	N001	7.7	-	17.7	1600		F	#	12	
Temperature	C	03/25/2015	N001	7.7	-	17.7	12.39		F	#		
Turbidity	NTU	03/25/2015	N001	7.7	-	17.7	2.26		F	#		
Uranium	mg/L	03/25/2015	N001	7.7	-	17.7	0.0082		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0832 WELL SW corner of Multipurpose Center tract, W of US Hwy 491, flush mount.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2015	0001	21.1	-	31.1	208		FQ	#		
Ammonia Total as N	mg/L	03/23/2015	0001	21.1	-	31.1	0.1	U	FQ	#	0.1	
Calcium	mg/L	03/23/2015	0001	21.1	-	31.1	250		FQ	#	0.024	
Chloride	mg/L	03/23/2015	0001	21.1	-	31.1	180		FQ	#	20	
Magnesium	mg/L	03/23/2015	0001	21.1	-	31.1	600		FQ	#	0.3	
Manganese	mg/L	03/23/2015	0001	21.1	-	31.1	0.0016	J	FQ	#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2015	0001	21.1	-	31.1	100		FQ	#	1	
Oxidation Reduction Potential	mV	03/23/2015	N001	21.1	-	31.1	151		FQ	#		
pH	s.u.	03/23/2015	N001	21.1	-	31.1	7.27		FQ	#		
Potassium	mg/L	03/23/2015	0001	21.1	-	31.1	22		FQ	#	0.052	
Selenium	mg/L	03/23/2015	0001	21.1	-	31.1	0.66		FQ	#	0.00032	
Sodium	mg/L	03/23/2015	0001	21.1	-	31.1	1700		FQ	#	0.47	
Specific Conductance	umhos/cm	03/23/2015	N001	21.1	-	31.1	10158		FQ	#		
Strontium	mg/L	03/23/2015	0001	21.1	-	31.1	4.6		FQ	#	0.00026	
Sulfate	mg/L	03/23/2015	0001	21.1	-	31.1	6400		FQ	#	50	
Temperature	C	03/23/2015	N001	21.1	-	31.1	16.56		FQ	#		
Turbidity	NTU	03/23/2015	N001	21.1	-	31.1	141		FQ	#		
Uranium	mg/L	03/23/2015	0001	21.1	-	31.1	0.044		FQ	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0833 WELL Just NE of Dine College tract

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	24.9	-	34.9	384		F	#		
Ammonia Total as N	mg/L	03/25/2015	N001	24.9	-	34.9	0.1	U	F	#	0.1	
Calcium	mg/L	03/25/2015	N001	24.9	-	34.9	430		F	#	0.12	
Chloride	mg/L	03/25/2015	N001	24.9	-	34.9	190		F	#	10	
Magnesium	mg/L	03/25/2015	N001	24.9	-	34.9	420		F	#	0.15	
Manganese	mg/L	03/25/2015	N001	24.9	-	34.9	0.07		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	24.9	-	34.9	75		F	#	0.5	
Oxidation Reduction Potential	mV	03/25/2015	N001	24.9	-	34.9	168		F	#		
pH	s.u.	03/25/2015	N001	24.9	-	34.9	6.87		F	#		
Potassium	mg/L	03/25/2015	N001	24.9	-	34.9	19		F	#	0.26	
Selenium	mg/L	03/25/2015	N001	24.9	-	34.9	0.25		F	#	0.00032	
Sodium	mg/L	03/25/2015	N001	24.9	-	34.9	950		F	#	0.23	
Specific Conductance	umhos/cm	03/25/2015	N001	24.9	-	34.9	7085		F	#		
Strontium	mg/L	03/25/2015	N001	24.9	-	34.9	5.5		F	#	0.0013	
Sulfate	mg/L	03/25/2015	N001	24.9	-	34.9	4000		F	#	25	
Temperature	C	03/25/2015	N001	24.9	-	34.9	16.11		F	#		
Turbidity	NTU	03/25/2015	N001	24.9	-	34.9	4.08		F	#		
Uranium	mg/L	03/25/2015	N001	24.9	-	34.9	0.06		F	#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	21.9	-	31.9	144		F	#		
Ammonia Total as N	mg/L	03/25/2015	N001	21.9	-	31.9	0.1	U	F	#	0.1	
Calcium	mg/L	03/25/2015	N001	21.9	-	31.9	51		F	#	0.024	
Chloride	mg/L	03/25/2015	N001	21.9	-	31.9	25		F	#	1	
Magnesium	mg/L	03/25/2015	N001	21.9	-	31.9	23		F	#	0.03	
Manganese	mg/L	03/25/2015	N001	21.9	-	31.9	0.071		F	#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	21.9	-	31.9	0.33		F	#	0.01	
Oxidation Reduction Potential	mV	03/25/2015	N001	21.9	-	31.9	154		F	#		
pH	s.u.	03/25/2015	N001	21.9	-	31.9	7.61		F	#		
Potassium	mg/L	03/25/2015	N001	21.9	-	31.9	1.8		F	#	0.052	
Selenium	mg/L	03/25/2015	N001	21.9	-	31.9	0.0041		F	#	0.00016	
Sodium	mg/L	03/25/2015	N001	21.9	-	31.9	30		F	#	0.047	
Specific Conductance	umhos/cm	03/25/2015	N001	21.9	-	31.9	557		F	#		
Strontium	mg/L	03/25/2015	N001	21.9	-	31.9	0.6		F	#	0.00026	
Sulfate	mg/L	03/25/2015	N001	21.9	-	31.9	140		F	#	2.5	
Temperature	C	03/25/2015	N001	21.9	-	31.9	14.16		F	#		
Turbidity	NTU	03/25/2015	N001	21.9	-	31.9	7.21		F	#		
Uranium	mg/L	03/25/2015	N001	21.9	-	31.9	0.0037		F	#	0.000015	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	26.8	-	36.8	266		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	26.8	-	36.8	0.13		F	#	0.1	
Calcium	mg/L	03/24/2015	N001	26.8	-	36.8	510		F	#	0.12	
Chloride	mg/L	03/24/2015	N001	26.8	-	36.8	88		F	#	10	
Magnesium	mg/L	03/24/2015	N001	26.8	-	36.8	260		F	#	0.15	
Manganese	mg/L	03/24/2015	N001	26.8	-	36.8	0.33		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	26.8	-	36.8	58		F	#	0.5	
Oxidation Reduction Potential	mV	03/24/2015	N001	26.8	-	36.8	134		F	#		
pH	s.u.	03/24/2015	N001	26.8	-	36.8	6.62		F	#		
Potassium	mg/L	03/24/2015	N001	26.8	-	36.8	6.1		F	#	0.26	
Selenium	mg/L	03/24/2015	N001	26.8	-	36.8	0.45		F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	26.8	-	36.8	450		F	#	0.23	
Specific Conductance	umhos/cm	03/24/2015	N001	26.8	-	36.8	4784		F	#		
Strontium	mg/L	03/24/2015	N001	26.8	-	36.8	7		F	#	0.0013	
Sulfate	mg/L	03/24/2015	N001	26.8	-	36.8	2800		F	#	25	
Temperature	C	03/24/2015	N001	26.8	-	36.8	15.5		F	#		
Turbidity	NTU	03/24/2015	N001	26.8	-	36.8	3.66		F	#		
Uranium	mg/L	03/24/2015	N001	26.8	-	36.8	0.051		F	#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	17	-	27.1	288		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	17	-	27.1	0.1	U	F	#	0.1	
Calcium	mg/L	03/24/2015	N001	17	-	27.1	590		F	#	0.12	
Chloride	mg/L	03/24/2015	N001	17	-	27.1	180		F	#	10	
Magnesium	mg/L	03/24/2015	N001	17	-	27.1	250		F	#	0.15	
Manganese	mg/L	03/24/2015	N001	17	-	27.1	3.8		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	17	-	27.1	95		F	#	1	
Oxidation Reduction Potential	mV	03/24/2015	N001	17	-	27.1	126		F	#		
pH	s.u.	03/24/2015	N001	17	-	27.1	6.58		F	#		
Potassium	mg/L	03/24/2015	N001	17	-	27.1	11		F	#	0.26	
Selenium	mg/L	03/24/2015	N001	17	-	27.1	0.56		F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	17	-	27.1	410		F	#	0.23	
Specific Conductance	umhos/cm	03/24/2015	N001	17	-	27.1	4969		F	#		
Strontium	mg/L	03/24/2015	N001	17	-	27.1	7.2		F	#	0.0013	
Sulfate	mg/L	03/24/2015	N001	17	-	27.1	2600		F	#	25	
Temperature	C	03/24/2015	N001	17	-	27.1	14.64		F	#		
Turbidity	NTU	03/24/2015	N001	17	-	27.1	6.66		F	#		
Uranium	mg/L	03/24/2015	N001	17	-	27.1	0.029		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0838 WELL W part of Dine College tract

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	21.9	-	31.9	336		F	#		
Ammonia Total as N	mg/L	03/25/2015	N001	21.9	-	31.9	0.1	U	F	#	0.1	
Calcium	mg/L	03/25/2015	N001	21.9	-	31.9	430		F	#	0.12	
Chloride	mg/L	03/25/2015	N001	21.9	-	31.9	230		F	#	20	
Magnesium	mg/L	03/25/2015	N001	21.9	-	31.9	590		F	#	0.15	
Manganese	mg/L	03/25/2015	N001	21.9	-	31.9	0.0012	U	F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	21.9	-	31.9	110		F	#	1	
Oxidation Reduction Potential	mV	03/25/2015	N001	21.9	-	31.9	199		F	#		
pH	s.u.	03/25/2015	N001	21.9	-	31.9	6.91		F	#		
Potassium	mg/L	03/25/2015	N001	21.9	-	31.9	16		F	#	0.26	
Selenium	mg/L	03/25/2015	N001	21.9	-	31.9	0.3		F	#	0.00032	
Sodium	mg/L	03/25/2015	N001	21.9	-	31.9	1100		F	#	0.23	
Specific Conductance	umhos/cm	03/25/2015	N001	21.9	-	31.9	8136		F	#		
Strontium	mg/L	03/25/2015	N001	21.9	-	31.9	7.1		F	#	0.0013	
Sulfate	mg/L	03/25/2015	N001	21.9	-	31.9	5100		F	#	50	
Temperature	C	03/25/2015	N001	21.9	-	31.9	15.1		F	#		
Turbidity	NTU	03/25/2015	N001	21.9	-	31.9	1.49		F	#		
Uranium	mg/L	03/25/2015	N001	21.9	-	31.9	0.11		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0841 WELL S of Multipurpose Center tract, W of US Hwy 491

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2015	N001	42	-	52	656		F	#		
Ammonia Total as N	mg/L	03/23/2015	N001	42	-	52	0.1	U	F	#	0.1	
Calcium	mg/L	03/23/2015	N001	42	-	52	410		F	#	0.24	
Chloride	mg/L	03/23/2015	N001	42	-	52	830		F	#	200	
Magnesium	mg/L	03/23/2015	N001	42	-	52	920		F	#	0.3	
Manganese	mg/L	03/23/2015	N001	42	-	52	0.024	J	F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2015	N001	42	-	52	570		F	#	5	
Oxidation Reduction Potential	mV	03/23/2015	N001	42	-	52	230		F	#		
pH	s.u.	03/23/2015	N001	42	-	52	6.9		F	#		
Potassium	mg/L	03/23/2015	N001	42	-	52	50		F	#	0.52	
Selenium	mg/L	03/23/2015	N001	42	-	52	3.8		F	#	0.00032	
Sodium	mg/L	03/23/2015	N001	42	-	52	5900		F	#	2.3	
Specific Conductance	umhos/cm	03/23/2015	N001	42	-	52	24284		F	#		
Strontium	mg/L	03/23/2015	N001	42	-	52	9.2		F	#	0.0026	
Sulfate	mg/L	03/23/2015	N001	42	-	52	14000		F	#	500	
Temperature	C	03/23/2015	N001	42	-	52	16.49		F	#		
Turbidity	NTU	03/23/2015	N001	42	-	52	7.84		F	#		
Uranium	mg/L	03/23/2015	N001	42	-	52	0.13		F	#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	11.9	-	21.9	280		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	11.9	-	21.9	0.1	U	F	#	0.1	
Calcium	mg/L	03/24/2015	N001	11.9	-	21.9	310		F	#	0.12	
Chloride	mg/L	03/24/2015	N001	11.9	-	21.9	73		F	#	10	
Magnesium	mg/L	03/24/2015	N001	11.9	-	21.9	110		F	#	0.15	
Manganese	mg/L	03/24/2015	N001	11.9	-	21.9	2.2		F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	11.9	-	21.9	18		F	#	0.2	
Oxidation Reduction Potential	mV	03/24/2015	N001	11.9	-	21.9	107		F	#		
pH	s.u.	03/24/2015	N001	11.9	-	21.9	6.89		F	#		
Potassium	mg/L	03/24/2015	N001	11.9	-	21.9	7.9		F	#	0.26	
Selenium	mg/L	03/24/2015	N001	11.9	-	21.9	0.46		F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	11.9	-	21.9	350		F	#	0.23	
Specific Conductance	umhos/cm	03/24/2015	N001	11.9	-	21.9	3128		F	#		
Strontium	mg/L	03/24/2015	N001	11.9	-	21.9	3.8		F	#	0.0013	
Sulfate	mg/L	03/24/2015	N001	11.9	-	21.9	1600		F	#	25	
Temperature	C	03/24/2015	N001	11.9	-	21.9	14.08		F	#		
Turbidity	NTU	03/24/2015	N001	11.9	-	21.9	8.44		F	#		
Uranium	mg/L	03/24/2015	N001	11.9	-	21.9	0.024		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0844 WELL W part of Multipurpose Center tract, W of US Hwy 491, flush mount.

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2015	N001	28.91	-	38.91	616		F	#		
Ammonia Total as N	mg/L	03/23/2015	N001	28.91	-	38.91	0.1	U	F	#	0.1	
Calcium	mg/L	03/23/2015	N001	28.91	-	38.91	500		F	#	0.24	
Chloride	mg/L	03/23/2015	N001	28.91	-	38.91	930		F	#	100	
Magnesium	mg/L	03/23/2015	N001	28.91	-	38.91	1900		F	#	0.3	
Manganese	mg/L	03/23/2015	N001	28.91	-	38.91	0.0046	J	F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2015	N001	28.91	-	38.91	720		F	#	5	
Oxidation Reduction Potential	mV	03/23/2015	N001	28.91	-	38.91	179		F	#		
pH	s.u.	03/23/2015	N001	28.91	-	38.91	7.14		F	#		
Potassium	mg/L	03/23/2015	N001	28.91	-	38.91	51		F	#	0.52	
Selenium	mg/L	03/23/2015	N001	28.91	-	38.91	0.32		F	#	0.00032	
Sodium	mg/L	03/23/2015	N001	28.91	-	38.91	2800		F	#	0.47	
Specific Conductance	umhos/cm	03/23/2015	N001	28.91	-	38.91	18571		F	#		
Strontium	mg/L	03/23/2015	N001	28.91	-	38.91	14		F	#	0.0026	
Sulfate	mg/L	03/23/2015	N001	28.91	-	38.91	10000		F	#	250	
Temperature	C	03/23/2015	N001	28.91	-	38.91	16.73		F	#		
Turbidity	NTU	03/23/2015	N001	28.91	-	38.91	1.31		F	#		
Uranium	mg/L	03/23/2015	N001	28.91	-	38.91	0.033		F	#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	45	-	142.58	1500		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	45	-	142.58	8.9		F	#	0.5	
Calcium	mg/L	03/24/2015	N001	45	-	142.58	360		F	#	0.24	
Chloride	mg/L	03/24/2015	N001	45	-	142.58	1200		F	#	200	
Magnesium	mg/L	03/24/2015	N001	45	-	142.58	470		F	#	0.3	
Manganese	mg/L	03/24/2015	N001	45	-	142.58	2.8		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	45	-	142.58	0.032		F	#	0.01	
Oxidation Reduction Potential	mV	03/24/2015	N001	45	-	142.58	-17		F	#		
pH	s.u.	03/24/2015	N001	45	-	142.58	6.57		F	#		
Potassium	mg/L	03/24/2015	N001	45	-	142.58	30		F	#	0.52	
Selenium	mg/L	03/24/2015	N001	45	-	142.58	0.046		F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	45	-	142.58	7200		F	#	2.3	
Specific Conductance	umhos/cm	03/24/2015	N001	45	-	142.58	26123		F	#		
Strontium	mg/L	03/24/2015	N001	45	-	142.58	20		F	#	0.0026	
Sulfate	mg/L	03/24/2015	N001	45	-	142.58	15000		F	#	500	
Temperature	C	03/24/2015	N001	45	-	142.58	16.71		F	#		
Turbidity	NTU	03/24/2015	N001	45	-	142.58	2.7		F	#		
Uranium	mg/L	03/24/2015	N001	45	-	142.58	0.016		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1007 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	36.8	-	46.3	1238		FQ	#		
Ammonia Total as N	mg/L	03/25/2015	N001	36.8	-	46.3	16		FQ	#	2.5	
Calcium	mg/L	03/25/2015	N001	36.8	-	46.3	460		FQ	#	0.24	
Chloride	mg/L	03/25/2015	N001	36.8	-	46.3	570		FQ	#	100	
Magnesium	mg/L	03/25/2015	N001	36.8	-	46.3	2300		FQ	#	0.3	
Manganese	mg/L	03/25/2015	N001	36.8	-	46.3	1.3		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	36.8	-	46.3	600		FQ	#	5	
Oxidation Reduction Potential	mV	03/25/2015	N001	36.8	-	46.3	113.7		FQ	#		
pH	s.u.	03/25/2015	N001	36.8	-	46.3	6.56		FQ	#		
Potassium	mg/L	03/25/2015	N001	36.8	-	46.3	120		FQ	#	0.52	
Selenium	mg/L	03/25/2015	N001	36.8	-	46.3	0.034		FQ	#	0.00032	
Sodium	mg/L	03/25/2015	N001	36.8	-	46.3	2400		FQ	#	0.47	
Specific Conductance	umhos/cm	03/25/2015	N001	36.8	-	46.3	19254		FQ	#		
Strontium	mg/L	03/25/2015	N001	36.8	-	46.3	12		FQ	#	0.0026	
Sulfate	mg/L	03/25/2015	N001	36.8	-	46.3	12000		FQ	#	250	
Temperature	C	03/25/2015	N001	36.8	-	46.3	16.56		FQ	#		
Turbidity	NTU	03/25/2015	N001	36.8	-	46.3	8.06		FQ	#		
Uranium	mg/L	03/25/2015	N001	36.8	-	46.3	2.3		FQ	#	0.00029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	4.3	-	9.3	580		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	4.3	-	9.3	0.1	U	F	#	0.1	
Calcium	mg/L	03/24/2015	N001	4.3	-	9.3	420		F	#	1.2	
Chloride	mg/L	03/24/2015	N001	4.3	-	9.3	1300		F	#	200	
Magnesium	mg/L	03/24/2015	N001	4.3	-	9.3	1200		F	#	1.5	
Manganese	mg/L	03/24/2015	N001	4.3	-	9.3	0.012	U	F	#	0.012	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	4.3	-	9.3	340		F	#	5	
Oxidation Reduction Potential	mV	03/24/2015	N001	4.3	-	9.3	122.4		F	#		
pH	s.u.	03/24/2015	N001	4.3	-	9.3	7.44		F	#		
Potassium	mg/L	03/24/2015	N001	4.3	-	9.3	31	J	F	#	2.6	
Selenium	mg/L	03/24/2015	N001	4.3	-	9.3	1.2		F	#	0.0016	
Sodium	mg/L	03/24/2015	N001	4.3	-	9.3	6700		F	#	2.3	
Specific Conductance	umhos/cm	03/24/2015	N001	4.3	-	9.3	27860		F	#		
Strontium	mg/L	03/24/2015	N001	4.3	-	9.3	10		F	#	0.013	
Sulfate	mg/L	03/24/2015	N001	4.3	-	9.3	15000		F	#	500	
Temperature	C	03/24/2015	N001	4.3	-	9.3	13.29		F	#		
Turbidity	NTU	03/24/2015	N001	4.3	-	9.3	9.46		F	#		
Uranium	mg/L	03/24/2015	N001	4.3	-	9.3	0.14		F	#	0.00015	

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

REPORT DATE: 06/11/2015

Location: 1057 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	36.66	-	41.66	280		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	36.66	-	41.66	230		F	#	10	
Calcium	mg/L	03/24/2015	N001	36.66	-	41.66	660		F	#	0.24	
Chloride	mg/L	03/24/2015	N001	36.66	-	41.66	290		F	#	50	
Magnesium	mg/L	03/24/2015	N001	36.66	-	41.66	1400		F	#	0.3	
Manganese	mg/L	03/24/2015	N001	36.66	-	41.66	11		F	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	36.66	-	41.66	1400		F	#	10	
Oxidation Reduction Potential	mV	03/24/2015	N001	36.66	-	41.66	241.2		F	#		
pH	s.u.	03/24/2015	N001	36.66	-	41.66	6.46		F	#		
Potassium	mg/L	03/24/2015	N001	36.66	-	41.66	150		F	#	0.52	
Selenium	mg/L	03/24/2015	N001	36.66	-	41.66	0.035		F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	36.66	-	41.66	1400		F	#	0.47	
Specific Conductance	umhos/cm	03/24/2015	N001	36.66	-	41.66	16292		F	#		
Strontium	mg/L	03/24/2015	N001	36.66	-	41.66	10		F	#	0.0026	
Sulfate	mg/L	03/24/2015	N001	36.66	-	41.66	5400		F	#	120	
Temperature	C	03/24/2015	N001	36.66	-	41.66	14.6		F	#		
Turbidity	NTU	03/24/2015	N001	36.66	-	41.66	1.7		F	#		
Uranium	mg/L	03/24/2015	N001	36.66	-	41.66	0.039		F	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1058 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	41.7	-	51.2	616		FQ	#		
Ammonia Total as N	mg/L	03/24/2015	N001	41.7	-	51.2	3.8		FQ	#	0.1	
Calcium	mg/L	03/24/2015	N001	41.7	-	51.2	220		FQ	#	0.24	
Chloride	mg/L	03/24/2015	N001	41.7	-	51.2	1400		FQ	#	40	
Magnesium	mg/L	03/24/2015	N001	41.7	-	51.2	110		FQ	#	0.3	
Manganese	mg/L	03/24/2015	N001	41.7	-	51.2	0.17		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	41.7	-	51.2	0.014		FQ	#	0.01	
Oxidation Reduction Potential	mV	03/24/2015	N001	41.7	-	51.2	-17.8		FQ	#		
pH	s.u.	03/24/2015	N001	41.7	-	51.2	7.26		FQ	#		
Potassium	mg/L	03/24/2015	N001	41.7	-	51.2	14		FQ	#	0.52	
Selenium	mg/L	03/24/2015	N001	41.7	-	51.2	0.00024		UFQ	#	0.000032	
Sodium	mg/L	03/24/2015	N001	41.7	-	51.2	3200		FQ	#	0.47	
Specific Conductance	umhos/cm	03/24/2015	N001	41.7	-	51.2	13852		FQ	#		
Strontium	mg/L	03/24/2015	N001	41.7	-	51.2	12		FQ	#	0.0026	
Sulfate	mg/L	03/24/2015	N001	41.7	-	51.2	5400		FQ	#	100	
Temperature	C	03/24/2015	N001	41.7	-	51.2	15.49		FQ	#		
Turbidity	NTU	03/24/2015	N001	41.7	-	51.2	7.31		FQ	#		
Uranium	mg/L	03/24/2015	N001	41.7	-	51.2	0.0032		FQ	#	0.0000029	

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

REPORT DATE: 06/11/2015

Location: 1059 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	39.5	-	49	612		FQ	#		
Ammonia Total as N	mg/L	03/24/2015	N001	39.5	-	49	2.1		FQ	#	0.1	
Calcium	mg/L	03/24/2015	N001	39.5	-	49	300		FQ	#	0.24	
Chloride	mg/L	03/24/2015	N001	39.5	-	49	730		FQ	#	50	
Magnesium	mg/L	03/24/2015	N001	39.5	-	49	330		FQ	#	0.3	
Manganese	mg/L	03/24/2015	N001	39.5	-	49	0.077		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	39.5	-	49	340		FQ	#	2.5	
Oxidation Reduction Potential	mV	03/24/2015	N001	39.5	-	49	29.9		FQ	#		
pH	s.u.	03/24/2015	N001	39.5	-	49	7.14		FQ	#		
Potassium	mg/L	03/24/2015	N001	39.5	-	49	21		FQ	#	0.52	
Selenium	mg/L	03/24/2015	N001	39.5	-	49	0.0047		FQ	#	0.00032	
Sodium	mg/L	03/24/2015	N001	39.5	-	49	4000		FQ	#	0.47	
Specific Conductance	umhos/cm	03/24/2015	N001	39.5	-	49	17799		FQ	#		
Strontium	mg/L	03/24/2015	N001	39.5	-	49	17		FQ	#	0.0026	
Sulfate	mg/L	03/24/2015	N001	39.5	-	49	8400		FQ	#	120	
Temperature	C	03/24/2015	N001	39.5	-	49	15.94		FQ	#		
Turbidity	NTU	03/24/2015	N001	39.5	-	49	6.35		FQ	#		
Uranium	mg/L	03/24/2015	N001	39.5	-	49	0.062		FQ	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1068 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	0001	6.95	-	8.95	434		FQ	#		
Ammonia Total as N	mg/L	03/26/2015	0001	6.95	-	8.95	43		FQ	#	20	
Calcium	mg/L	03/26/2015	0001	6.95	-	8.95	310		FQ	#	0.24	
Magnesium	mg/L	03/26/2015	0001	6.95	-	8.95	580		FQ	#	0.3	
Manganese	mg/L	03/26/2015	0001	6.95	-	8.95	0.85		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	0001	6.95	-	8.95	110		FQ	#	2.5	
Oxidation Reduction Potential	mV	03/26/2015	N001	6.95	-	8.95	179		FQ	#		
pH	s.u.	03/26/2015	N001	6.95	-	8.95	7.05		FQ	#		
Potassium	mg/L	03/26/2015	0001	6.95	-	8.95	35		FQ	#	0.52	
Selenium	mg/L	03/26/2015	0001	6.95	-	8.95	0.11		FQ	#	0.00032	
Sodium	mg/L	03/26/2015	0001	6.95	-	8.95	880		FQ	#	0.47	
Specific Conductance	umhos /cm	03/26/2015	N001	6.95	-	8.95	8264		FQ	#		
Strontium	mg/L	03/26/2015	0001	6.95	-	8.95	5.9		FQ	#	0.0026	
Temperature	C	03/26/2015	N001	6.95	-	8.95	12.27		FQ	#		
Turbidity	NTU	03/26/2015	N001	6.95	-	8.95	470		FQ	#		
Uranium	mg/L	03/26/2015	0001	6.95	-	8.95	0.59		FQ	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1069 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	0001	4.35	-	6.35	526		FQ	#		
Ammonia Total as N	mg/L	03/26/2015	0001	4.35	-	6.35	0.1	U	FQ	#	0.1	
Calcium	mg/L	03/26/2015	0001	4.35	-	6.35	400		FQ	#	0.24	
Chloride	mg/L	03/26/2015	0001	4.35	-	6.35	340		FQ	#	20	
Magnesium	mg/L	03/26/2015	0001	4.35	-	6.35	1200		FQ	#	0.3	
Manganese	mg/L	03/26/2015	0001	4.35	-	6.35	0.0035	J	FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	0001	4.35	-	6.35	150		FQ	#	1	
Oxidation Reduction Potential	mV	03/26/2015	N001	4.35	-	6.35	197.4		FQ	#		
pH	s.u.	03/26/2015	N001	4.35	-	6.35	7.34		FQ	#		
Potassium	mg/L	03/26/2015	0001	4.35	-	6.35	50		FQ	#	0.52	
Selenium	mg/L	03/26/2015	0001	4.35	-	6.35	0.17		FQ	#	0.00032	
Sodium	mg/L	03/26/2015	0001	4.35	-	6.35	2200		FQ	#	0.47	
Specific Conductance	umhos/cm	03/26/2015	N001	4.35	-	6.35	18058		FQ	#		
Strontium	mg/L	03/26/2015	0001	4.35	-	6.35	10		FQ	#	0.0026	
Sulfate	mg/L	03/26/2015	0001	4.35	-	6.35	7400		FQ	#	50	
Temperature	C	03/26/2015	N001	4.35	-	6.35	10.65		FQ	#		
Turbidity	NTU	03/26/2015	N001	4.35	-	6.35	290		FQ	#		
Uranium	mg/L	03/26/2015	0001	4.35	-	6.35	1.6		FQ	#	0.00029	

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

REPORT DATE: 06/11/2015

Location: 1070 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2015	N001	52.5	-	62	598			#		
Ammonia Total as N	mg/L	03/23/2015	N001	52.5	-	62	2.3			#	0.1	
Ammonia Total as N	mg/L	03/23/2015	N002	52.5	-	62	2.2			#	0.1	
Calcium	mg/L	03/23/2015	N001	52.5	-	62	410			#	0.24	
Calcium	mg/L	03/23/2015	N002	52.5	-	62	430			#	0.24	
Chloride	mg/L	03/23/2015	N001	52.5	-	62	1100			#	200	
Chloride	mg/L	03/23/2015	N002	52.5	-	62	1100			#	200	
Magnesium	mg/L	03/23/2015	N001	52.5	-	62	1100			#	0.3	
Magnesium	mg/L	03/23/2015	N002	52.5	-	62	1100			#	0.3	
Manganese	mg/L	03/23/2015	N001	52.5	-	62	0.19			#	0.0024	
Manganese	mg/L	03/23/2015	N002	52.5	-	62	0.18			#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2015	N001	52.5	-	62	510		J	#	5	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2015	N002	52.5	-	62	710		J	#	5	
Oxidation Reduction Potential	mV	03/23/2015	N001	52.5	-	62	229.7			#		
pH	s.u.	03/23/2015	N001	52.5	-	62	6.98			#		
Potassium	mg/L	03/23/2015	N001	52.5	-	62	56			#	0.52	
Potassium	mg/L	03/23/2015	N002	52.5	-	62	54			#	0.52	
Selenium	mg/L	03/23/2015	N001	52.5	-	62	2.4			#	0.0016	

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

REPORT DATE: 06/11/2015

Location: 1070 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/23/2015	N002	52.5	-	62	2.8			#	0.00032	
Sodium	mg/L	03/23/2015	N001	52.5	-	62	6500			#	2.3	
Sodium	mg/L	03/23/2015	N002	52.5	-	62	6200			#	2.3	
Specific Conductance	umhos /cm	03/23/2015	N001	52.5	-	62	27052			#		
Strontium	mg/L	03/23/2015	N001	52.5	-	62	10			#	0.0026	
Strontium	mg/L	03/23/2015	N002	52.5	-	62	10			#	0.0026	
Sulfate	mg/L	03/23/2015	N001	52.5	-	62	14000			#	500	
Sulfate	mg/L	03/23/2015	N002	52.5	-	62	14000			#	500	
Temperature	C	03/23/2015	N001	52.5	-	62	15.27			#		
Turbidity	NTU	03/23/2015	N001	52.5	-	62	2.85			#		
Uranium	mg/L	03/23/2015	N001	52.5	-	62	0.072			#	0.00015	
Uranium	mg/L	03/23/2015	N002	52.5	-	62	0.076			#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1071 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	36.5	-	46	464			#		
Ammonia Total as N	mg/L	03/24/2015	N001	36.5	-	46	53			#	2.5	
Calcium	mg/L	03/24/2015	N001	36.5	-	46	400			#	0.24	
Chloride	mg/L	03/24/2015	N001	36.5	-	46	910			#	200	
Magnesium	mg/L	03/24/2015	N001	36.5	-	46	1200			#	0.3	
Manganese	mg/L	03/24/2015	N001	36.5	-	46	0.9			#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	36.5	-	46	470			#	5	
Oxidation Reduction Potential	mV	03/24/2015	N001	36.5	-	46	224.2			#		
pH	s.u.	03/24/2015	N001	36.5	-	46	7.19			#		
Potassium	mg/L	03/24/2015	N001	36.5	-	46	54			#	0.52	
Selenium	mg/L	03/24/2015	N001	36.5	-	46	2.8			#	0.00032	
Sodium	mg/L	03/24/2015	N001	36.5	-	46	4800			#	0.47	
Specific Conductance	umhos/cm	03/24/2015	N001	36.5	-	46	24227			#		
Strontium	mg/L	03/24/2015	N001	36.5	-	46	11			#	0.0026	
Sulfate	mg/L	03/24/2015	N001	36.5	-	46	12000			#	500	
Temperature	C	03/24/2015	N001	36.5	-	46	10.88			#		
Turbidity	NTU	03/24/2015	N001	36.5	-	46	3.06			#		
Uranium	mg/L	03/24/2015	N001	36.5	-	46	0.17			#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1073 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	0001	40.5	-	50	240		FQ	#		
Ammonia Total as N	mg/L	03/24/2015	0001	40.5	-	50	41		FQ	#	2.5	
Calcium	mg/L	03/24/2015	0001	40.5	-	50	480		FQ	#	0.24	
Chloride	mg/L	03/24/2015	0001	40.5	-	50	950		FQ	#	200	
Magnesium	mg/L	03/24/2015	0001	40.5	-	50	1800		FQ	#	0.3	
Manganese	mg/L	03/24/2015	0001	40.5	-	50	0.59		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	0001	40.5	-	50	890		FQ	#	5	
Oxidation Reduction Potential	mV	03/24/2015	N001	40.5	-	50	230.8		FQ	#		
pH	s.u.	03/24/2015	N001	40.5	-	50	7.31		FQ	#		
Potassium	mg/L	03/24/2015	0001	40.5	-	50	110		FQ	#	0.52	
Selenium	mg/L	03/24/2015	0001	40.5	-	50	2.4		FQ	#	0.00032	
Sodium	mg/L	03/24/2015	0001	40.5	-	50	3300		FQ	#	0.47	
Specific Conductance	umhos/cm	03/24/2015	N001	40.5	-	50	22080		FQ	#		
Strontium	mg/L	03/24/2015	0001	40.5	-	50	11		FQ	#	0.0026	
Sulfate	mg/L	03/24/2015	0001	40.5	-	50	9800		FQ	#	500	
Temperature	C	03/24/2015	N001	40.5	-	50	15.78		FQ	#		
Turbidity	NTU	03/24/2015	N001	40.5	-	50	33.4		FQ	#		
Uranium	mg/L	03/24/2015	0001	40.5	-	50	0.079		FQ	#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1074 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	27	-	36.5	1160		FQ	#		
Ammonia Total as N	mg/L	03/25/2015	N001	27	-	36.5	6.3		FQ	#	1	
Calcium	mg/L	03/25/2015	N001	27	-	36.5	540		FQ	#	0.24	
Chloride	mg/L	03/25/2015	N001	27	-	36.5	1100		FQ	#	100	
Magnesium	mg/L	03/25/2015	N001	27	-	36.5	2000		FQ	#	0.3	
Manganese	mg/L	03/25/2015	N001	27	-	36.5	1.7		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	27	-	36.5	1300		FQ	#	10	
Oxidation Reduction Potential	mV	03/25/2015	N001	27	-	36.5	137.2		FQ	#		
pH	s.u.	03/25/2015	N001	27	-	36.5	6.71		FQ	#		
Potassium	mg/L	03/25/2015	N001	27	-	36.5	40		FQ	#	0.52	
Selenium	mg/L	03/25/2015	N001	27	-	36.5	0.36		FQ	#	0.0032	
Sodium	mg/L	03/25/2015	N001	27	-	36.5	2300		FQ	#	0.47	
Specific Conductance	umhos/cm	03/25/2015	N001	27	-	36.5	20423		FQ	#		
Strontium	mg/L	03/25/2015	N001	27	-	36.5	12		FQ	#	0.0026	
Sulfate	mg/L	03/25/2015	N001	27	-	36.5	8100		FQ	#	250	
Temperature	C	03/25/2015	N001	27	-	36.5	16.58		FQ	#		
Turbidity	NTU	03/25/2015	N001	27	-	36.5	5.49		FQ	#		
Uranium	mg/L	03/25/2015	N001	27	-	36.5	1.8		FQ	#	0.00029	

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

REPORT DATE: 06/11/2015

Location: 1078 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2015	N001	35.5	-	45	580			#		
Ammonia Total as N	mg/L	03/23/2015	N001	35.5	-	45	1.4			#	0.1	
Ammonia Total as N	mg/L	03/23/2015	N002	35.5	-	45	1.4			#	0.1	
Calcium	mg/L	03/23/2015	N001	35.5	-	45	420			#	0.24	
Calcium	mg/L	03/23/2015	N002	35.5	-	45	430			#	0.24	
Chloride	mg/L	03/23/2015	N001	35.5	-	45	940			#	200	
Chloride	mg/L	03/23/2015	N002	35.5	-	45	900			#	200	
Magnesium	mg/L	03/23/2015	N001	35.5	-	45	1000			#	0.3	
Magnesium	mg/L	03/23/2015	N002	35.5	-	45	970			#	0.3	
Manganese	mg/L	03/23/2015	N001	35.5	-	45	0.89		J	#	0.0024	
Manganese	mg/L	03/23/2015	N002	35.5	-	45	0.2		J	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2015	N001	35.5	-	45	540			#	5	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2015	N002	35.5	-	45	550			#	5	
Oxidation Reduction Potential	mV	03/23/2015	N001	35.5	-	45	250			#		
pH	s.u.	03/23/2015	N001	35.5	-	45	7.04			#		
Potassium	mg/L	03/23/2015	N001	35.5	-	45	51			#	0.52	
Potassium	mg/L	03/23/2015	N002	35.5	-	45	47			#	0.52	
Selenium	mg/L	03/23/2015	N001	35.5	-	45	2.7			#	0.0016	

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

REPORT DATE: 06/11/2015

Location: 1078 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/23/2015	N002	35.5	-	45	2.4			#	0.0016	
Sodium	mg/L	03/23/2015	N001	35.5	-	45	5700			#	2.3	
Sodium	mg/L	03/23/2015	N002	35.5	-	45	5200			#	2.3	
Specific Conductance	umhos /cm	03/23/2015	N001	35.5	-	45	23780			#		
Strontium	mg/L	03/23/2015	N001	35.5	-	45	10			#	0.0026	
Strontium	mg/L	03/23/2015	N002	35.5	-	45	9.8			#	0.0026	
Sulfate	mg/L	03/23/2015	N001	35.5	-	45	12000			#	500	
Sulfate	mg/L	03/23/2015	N002	35.5	-	45	12000			#	500	
Temperature	C	03/23/2015	N001	35.5	-	45	19			#		
Turbidity	NTU	03/23/2015	N001	35.5	-	45	2.43			#		
Uranium	mg/L	03/23/2015	N001	35.5	-	45	0.12			#	0.00015	
Uranium	mg/L	03/23/2015	N002	35.5	-	45	0.11			#	0.00015	

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

REPORT DATE: 06/11/2015

Location: 1079 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	10.5	-	20	302		F	#		
Ammonia Total as N	mg/L	03/24/2015	N001	10.5	-	20	0.1	U	F	#	0.1	
Calcium	mg/L	03/24/2015	N001	10.5	-	20	560		F	#	0.12	
Chloride	mg/L	03/24/2015	N001	10.5	-	20	200		F	#	10	
Magnesium	mg/L	03/24/2015	N001	10.5	-	20	310		F	#	0.15	
Manganese	mg/L	03/24/2015	N001	10.5	-	20	0.0031	J	F	#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	10.5	-	20	110		F	#	1	
Oxidation Reduction Potential	mV	03/24/2015	N001	10.5	-	20	68		F	#		
pH	s.u.	03/24/2015	N001	10.5	-	20	6.62		F	#		
Potassium	mg/L	03/24/2015	N001	10.5	-	20	9.6		F	#	0.26	
Selenium	mg/L	03/24/2015	N001	10.5	-	20	0.28		F	#	0.00032	
Sodium	mg/L	03/24/2015	N001	10.5	-	20	730		F	#	0.23	
Specific Conductance	umhos/cm	03/24/2015	N001	10.5	-	20	6103		F	#		
Strontium	mg/L	03/24/2015	N001	10.5	-	20	7.9		F	#	0.0013	
Sulfate	mg/L	03/24/2015	N001	10.5	-	20	3200		F	#	25	
Temperature	C	03/24/2015	N001	10.5	-	20	14.94		F	#		
Turbidity	NTU	03/24/2015	N001	10.5	-	20	7.76		F	#		
Uranium	mg/L	03/24/2015	N001	10.5	-	20	0.044		F	#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	0	-	0	448			#		
Ammonia Total as N	mg/L	03/26/2015	N001	0	-	0	53			#	10	
Calcium	mg/L	03/26/2015	N001	0	-	0	390			#	0.24	
Chloride	mg/L	03/26/2015	N001	0	-	0	210			#	20	
Magnesium	mg/L	03/26/2015	N001	0	-	0	660			#	0.3	
Manganese	mg/L	03/26/2015	N001	0	-	0	0.64			#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	0	-	0	120			#	1	
Oxidation Reduction Potential	mV	03/26/2015	N001	0	-	0	187			#		
pH	s.u.	03/26/2015	N001	0	-	0	6.91			#		
Potassium	mg/L	03/26/2015	N001	0	-	0	55			#	0.52	
Selenium	mg/L	03/26/2015	N001	0	-	0	0.075			#	0.0016	
Sodium	mg/L	03/26/2015	N001	0	-	0	900			#	0.47	
Specific Conductance	umhos/cm	03/26/2015	N001	0	-	0	8491			#		
Strontium	mg/L	03/26/2015	N001	0	-	0	6.8			#	0.0026	
Sulfate	mg/L	03/26/2015	N001	0	-	0	4500			#	50	
Temperature	C	03/26/2015	N001	0	-	0	12.77			#		
Turbidity	NTU	03/26/2015	N001	0	-	0	2.65			#		
Uranium	mg/L	03/26/2015	N001	0	-	0	0.39			#	0.00015	

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

REPORT DATE: 06/11/2015

Location: 1091 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	33	-	43	980			#		
Ammonia Total as N	mg/L	03/24/2015	N001	33	-	43	0.1	U		#	0.1	
Calcium	mg/L	03/24/2015	N001	33	-	43	430			#	0.24	
Chloride	mg/L	03/24/2015	N001	33	-	43	1200			#	200	
Magnesium	mg/L	03/24/2015	N001	33	-	43	2200			#	0.3	
Manganese	mg/L	03/24/2015	N001	33	-	43	1.2			#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	33	-	43	700			#	5	
Oxidation Reduction Potential	mV	03/24/2015	N001	33	-	43	233.1			#		
pH	s.u.	03/24/2015	N001	33	-	43	6.89			#		
Potassium	mg/L	03/24/2015	N001	33	-	43	61			#	0.52	
Selenium	mg/L	03/24/2015	N001	33	-	43	0.51			#	0.0016	
Sodium	mg/L	03/24/2015	N001	33	-	43	4100			#	0.47	
Specific Conductance	umhos/cm	03/24/2015	N001	33	-	43	24634			#		
Strontium	mg/L	03/24/2015	N001	33	-	43	14			#	0.0026	
Sulfate	mg/L	03/24/2015	N001	33	-	43	13000			#	500	
Temperature	C	03/24/2015	N001	33	-	43	12.97			#		
Turbidity	NTU	03/24/2015	N001	33	-	43	3.07			#		
Uranium	mg/L	03/24/2015	N001	33	-	43	0.096			#	0.00015	

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

REPORT DATE: 06/11/2015

Location: 1092 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	33	-	43	668			#		
Ammonia Total as N	mg/L	03/24/2015	N001	33	-	43	22			#	2.5	
Calcium	mg/L	03/24/2015	N001	33	-	43	450			#	0.24	
Chloride	mg/L	03/24/2015	N001	33	-	43	1200			#	200	
Magnesium	mg/L	03/24/2015	N001	33	-	43	1700			#	0.3	
Manganese	mg/L	03/24/2015	N001	33	-	43	4.8			#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	33	-	43	420			#	5	
Oxidation Reduction Potential	mV	03/24/2015	N001	33	-	43	242.2			#		
pH	s.u.	03/24/2015	N001	33	-	43	7.06			#		
Potassium	mg/L	03/24/2015	N001	33	-	43	63			#	0.52	
Selenium	mg/L	03/24/2015	N001	33	-	43	0.62			#	0.00032	
Sodium	mg/L	03/24/2015	N001	33	-	43	4300			#	0.47	
Specific Conductance	umhos/cm	03/24/2015	N001	33	-	43	23880			#		
Strontium	mg/L	03/24/2015	N001	33	-	43	12			#	0.0026	
Sulfate	mg/L	03/24/2015	N001	33	-	43	13000			#	500	
Temperature	C	03/24/2015	N001	33	-	43	11.24			#		
Turbidity	NTU	03/24/2015	N001	33	-	43	6.07			#		
Uranium	mg/L	03/24/2015	N001	33	-	43	0.068			#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1093R WELL a replacement extraction well for 1093

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	34	-	38	610			#		
Ammonia Total as N	mg/L	03/24/2015	N001	34	-	38	350			#	50	
Calcium	mg/L	03/24/2015	N001	34	-	38	710			#	0.24	
Chloride	mg/L	03/24/2015	N001	34	-	38	620			#	200	
Magnesium	mg/L	03/24/2015	N001	34	-	38	1800			#	0.3	
Manganese	mg/L	03/24/2015	N001	34	-	38	17			#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	34	-	38	1800			#	10	
Oxidation Reduction Potential	mV	03/24/2015	N001	34	-	38	238.1			#		
pH	s.u.	03/24/2015	N001	34	-	38	6.67			#		
Potassium	mg/L	03/24/2015	N001	34	-	38	160			#	0.52	
Selenium	mg/L	03/24/2015	N001	34	-	38	0.53			#	0.00032	
Sodium	mg/L	03/24/2015	N001	34	-	38	2000			#	0.47	
Specific Conductance	umhos/cm	03/24/2015	N001	34	-	38	22320			#		
Strontium	mg/L	03/24/2015	N001	34	-	38	11			#	0.0026	
Sulfate	mg/L	03/24/2015	N001	34	-	38	6900			#	500	
Temperature	C	03/24/2015	N001	34	-	38	15.05			#		
Turbidity	NTU	03/24/2015	N001	34	-	38	3.3			#		
Uranium	mg/L	03/24/2015	N001	34	-	38	0.1			#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1095 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	39	-	49	334			#		
Ammonia Total as N	mg/L	03/24/2015	N001	39	-	49	410			#	10	
Calcium	mg/L	03/24/2015	N001	39	-	49	790			#	0.24	
Chloride	mg/L	03/24/2015	N001	39	-	49	330			#	100	
Magnesium	mg/L	03/24/2015	N001	39	-	49	1400			#	0.3	
Manganese	mg/L	03/24/2015	N001	39	-	49	34			#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	39	-	49	1600			#	20	
Oxidation Reduction Potential	mV	03/24/2015	N001	39	-	49	228.4			#		
pH	s.u.	03/24/2015	N001	39	-	49	6.57			#		
Potassium	mg/L	03/24/2015	N001	39	-	49	140			#	0.52	
Selenium	mg/L	03/24/2015	N001	39	-	49	0.11			#	0.00032	
Sodium	mg/L	03/24/2015	N001	39	-	49	1300			#	0.47	
Specific Conductance	umhos/cm	03/24/2015	N001	39	-	49	18285			#		
Strontium	mg/L	03/24/2015	N001	39	-	49	9.4			#	0.0026	
Sulfate	mg/L	03/24/2015	N001	39	-	49	5300			#	250	
Temperature	C	03/24/2015	N001	39	-	49	13.89			#		
Turbidity	NTU	03/24/2015	N001	39	-	49	2.35			#		
Uranium	mg/L	03/24/2015	N001	39	-	49	0.05			#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1096 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2015	N001	57.5	-	66.5	648			#		
Ammonia Total as N	mg/L	03/23/2015	N001	57.5	-	66.5	3.5			#	0.1	
Ammonia Total as N	mg/L	03/23/2015	N002	57.5	-	66.5	3.4			#	0.1	
Calcium	mg/L	03/23/2015	N001	57.5	-	66.5	400			#	0.24	
Calcium	mg/L	03/23/2015	N002	57.5	-	66.5	410			#	0.24	
Chloride	mg/L	03/23/2015	N001	57.5	-	66.5	930			#	200	
Chloride	mg/L	03/23/2015	N002	57.5	-	66.5	930			#	200	
Magnesium	mg/L	03/23/2015	N001	57.5	-	66.5	980			#	0.3	
Magnesium	mg/L	03/23/2015	N002	57.5	-	66.5	980			#	0.3	
Manganese	mg/L	03/23/2015	N001	57.5	-	66.5	0.14			#	0.0024	
Manganese	mg/L	03/23/2015	N002	57.5	-	66.5	0.12			#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2015	N001	57.5	-	66.5	550			#	5	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2015	N002	57.5	-	66.5	590			#	5	
Oxidation Reduction Potential	mV	03/23/2015	N001	57.5	-	66.5	233			#		
pH	s.u.	03/23/2015	N001	57.5	-	66.5	7.14			#		
Potassium	mg/L	03/23/2015	N001	57.5	-	66.5	54			#	0.52	
Potassium	mg/L	03/23/2015	N002	57.5	-	66.5	52			#	0.52	
Selenium	mg/L	03/23/2015	N001	57.5	-	66.5	2			#	0.0016	

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

REPORT DATE: 06/11/2015

Location: 1096 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/23/2015	N002	57.5	-	66.5	2.2			#	0.0016	
Sodium	mg/L	03/23/2015	N001	57.5	-	66.5	6000			#	2.3	
Sodium	mg/L	03/23/2015	N002	57.5	-	66.5	5900			#	2.3	
Specific Conductance	umhos /cm	03/23/2015	N001	57.5	-	66.5	25402			#		
Strontium	mg/L	03/23/2015	N001	57.5	-	66.5	9.4			#	0.0026	
Strontium	mg/L	03/23/2015	N002	57.5	-	66.5	9.4			#	0.0026	
Sulfate	mg/L	03/23/2015	N001	57.5	-	66.5	13000			#	500	
Sulfate	mg/L	03/23/2015	N002	57.5	-	66.5	13000			#	500	
Temperature	C	03/23/2015	N001	57.5	-	66.5	15.48			#		
Turbidity	NTU	03/23/2015	N001	57.5	-	66.5	3.79			#		
Uranium	mg/L	03/23/2015	N001	57.5	-	66.5	0.073			#	0.00015	
Uranium	mg/L	03/23/2015	N002	57.5	-	66.5	0.078			#	0.00015	

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

REPORT DATE: 06/11/2015

Location: MW1 WELL Just N of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	-	1520		FQ	#		
Ammonia Total as N	mg/L	03/25/2015	N001	-	0.88		FQ	#	0.1	
Calcium	mg/L	03/25/2015	N001	-	92		FQ	#	0.24	
Chloride	mg/L	03/25/2015	N001	-	5300		FQ	#	100	
Magnesium	mg/L	03/25/2015	N001	-	40		FQ	#	0.3	
Manganese	mg/L	03/25/2015	N001	-	0.28		FQ	#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	-	0.44		FQ	#	0.01	
Oxidation Reduction Potential	mV	03/25/2015	N001	-	68.6		FQ	#		
pH	s.u.	03/25/2015	N001	-	6.96		FQ	#		
Potassium	mg/L	03/25/2015	N001	-	17		FQ	#	0.52	
Selenium	mg/L	03/25/2015	N001	-	0.0076		FQ	#	0.00016	
Sodium	mg/L	03/25/2015	N001	-	4500		FQ	#	0.47	
Specific Conductance	umhos /cm	03/25/2015	N001	-	20184		FQ	#		
Strontium	mg/L	03/25/2015	N001	-	10		FQ	#	0.0026	
Sulfate	mg/L	03/25/2015	N001	-	2800		FQ	#	250	
Temperature	C	03/25/2015	N001	-	17.12		FQ	#		
Turbidity	NTU	03/25/2015	N001	-	4.67		FQ	#		
Uranium	mg/L	03/25/2015	N001	-	0.0044		FQ	#	0.000015	

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

LAB QUALIFIERS:

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

DATA QUALIFIERS:

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

QA QUALIFIER:

Validated according to quality assurance guidelines.

Surface Water Quality Data Floodplain Locations

This page intentionally left blank

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N002	89			#		
Ammonia Total as N	mg/L	03/24/2015	0001	0.1	U		#	0.1	
Ammonia Total as N	mg/L	03/24/2015	N001	0.1	U		#	0.1	
Calcium	mg/L	03/24/2015	0001	65			#	0.024	
Calcium	mg/L	03/24/2015	N001	67			#	0.024	
Chloride	mg/L	03/24/2015	0001	13			#	0.2	
Chloride	mg/L	03/24/2015	N001	13			#	0.2	
Magnesium	mg/L	03/24/2015	0001	10			#	0.03	
Magnesium	mg/L	03/24/2015	N001	11			#	0.03	
Manganese	mg/L	03/24/2015	0001	0.0066			#	0.00024	
Manganese	mg/L	03/24/2015	N001	0.28			#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	0001	0.45			#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	0.46			#	0.01	
Oxidation Reduction Potential	mV	03/24/2015	N002	221.2			#		
pH	s.u.	03/24/2015	N002	8.29			#		
Potassium	mg/L	03/24/2015	0001	2			#	0.052	
Potassium	mg/L	03/24/2015	N001	3.2			#	0.052	
Selenium	mg/L	03/24/2015	0001	0.00032	U		#	0.00032	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/24/2015	N001	0.0012			#	0.00032	
Sodium	mg/L	03/24/2015	0001	28			#	0.047	
Sodium	mg/L	03/24/2015	N001	29			#	0.047	
Specific Conductance	umhos/cm	03/24/2015	N002	513			#		
Strontium	mg/L	03/24/2015	0001	0.74			#	0.00026	
Strontium	mg/L	03/24/2015	N001	0.78			#	0.00026	
Sulfate	mg/L	03/24/2015	0001	130			#	2.5	
Sulfate	mg/L	03/24/2015	N001	130			#	2.5	
Temperature	C	03/24/2015	N002	10.62			#		
Turbidity	NTU	03/24/2015	N002	93.5			#		
Uranium	mg/L	03/24/2015	0001	0.0016			#	0.000029	
Uranium	mg/L	03/24/2015	N001	0.0019			#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0655 SURFACE LOCATION Ditch in NW end of floodplain

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	330			#		
Ammonia Total as N	mg/L	03/26/2015	N001	0.1	U		#	0.1	
Calcium	mg/L	03/26/2015	N001	310			#	0.024	
Chloride	mg/L	03/26/2015	N001	110			#	10	
Magnesium	mg/L	03/26/2015	N001	110			#	0.03	
Manganese	mg/L	03/26/2015	N001	0.28			#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	2.6			#	0.05	
Oxidation Reduction Potential	mV	03/26/2015	N001	203.8			#		
pH	s.u.	03/26/2015	N001	8.03			#		
Potassium	mg/L	03/26/2015	N001	14			#	0.052	
Selenium	mg/L	03/26/2015	N001	0.011			#	0.00032	
Sodium	mg/L	03/26/2015	N001	1300			#	0.47	
Specific Conductance	umhos/cm	03/26/2015	N001	6894			#		
Strontium	mg/L	03/26/2015	N001	12			#	0.00026	
Sulfate	mg/L	03/26/2015	N001	3800			#	25	
Temperature	C	03/26/2015	N001	15.02			#		
Turbidity	NTU	03/26/2015	N001	4.22			#		
Uranium	mg/L	03/26/2015	N001	0.046			#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	0001	96			#		
Ammonia Total as N	mg/L	03/25/2015	0001	0.1	U		#	0.1	
Ammonia Total as N	mg/L	03/25/2015	N001	0.1	U		#	0.1	
Calcium	mg/L	03/25/2015	0001	66			#	0.024	
Calcium	mg/L	03/25/2015	N001	65			#	0.024	
Chloride	mg/L	03/25/2015	0001	20	U		#	20	
Chloride	mg/L	03/25/2015	N001	13			#	1	
Magnesium	mg/L	03/25/2015	0001	10			#	0.03	
Magnesium	mg/L	03/25/2015	N001	11			#	0.03	
Manganese	mg/L	03/25/2015	0001	0.017			#	0.00024	
Manganese	mg/L	03/25/2015	N001	0.16			#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	0001	0.58			#	0.05	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	0.12			#	0.01	
Oxidation Reduction Potential	mV	03/25/2015	N002	133.7			#		
pH	s.u.	03/25/2015	N002	8.31			#		
Potassium	mg/L	03/25/2015	0001	2.1			#	0.052	
Potassium	mg/L	03/25/2015	N001	2.6			#	0.052	
Selenium	mg/L	03/25/2015	0001	0.0011			#	0.00032	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/25/2015	N001	0.0012			#	0.00032	
Sodium	mg/L	03/25/2015	0001	31			#	0.047	
Sodium	mg/L	03/25/2015	N001	30			#	0.047	
Specific Conductance	umhos/cm	03/25/2015	N002	666			#		
Strontium	mg/L	03/25/2015	0001	0.78			#	0.00026	
Strontium	mg/L	03/25/2015	N001	0.75			#	0.00026	
Sulfate	mg/L	03/25/2015	0001	150			#	50	
Sulfate	mg/L	03/25/2015	N001	130			#	2.5	
Temperature	C	03/25/2015	N002	11.48			#		
Turbidity	NTU	03/25/2015	N002	78.7			#		
Uranium	mg/L	03/25/2015	0001	0.0066			#	0.000029	
Uranium	mg/L	03/25/2015	N001	0.002			#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0899 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	0001	100			#		
Ammonia Total as N	mg/L	03/25/2015	0001	0.1	U		#	0.1	
Ammonia Total as N	mg/L	03/25/2015	N001	0.1	U		#	0.1	
Calcium	mg/L	03/25/2015	0001	62			#	0.024	
Calcium	mg/L	03/25/2015	N001	82			#	0.024	
Chloride	mg/L	03/25/2015	0001	12			#	1	
Chloride	mg/L	03/25/2015	N001	12			#	1	
Magnesium	mg/L	03/25/2015	0001	9.5			#	0.03	
Magnesium	mg/L	03/25/2015	N001	12			#	0.03	
Manganese	mg/L	03/25/2015	0001	0.0022	J		#	0.00024	
Manganese	mg/L	03/25/2015	N001	1.3			#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	0001	0.39			#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	0.43			#	0.01	
Oxidation Reduction Potential	mV	03/25/2015	N002	95			#		
pH	s.u.	03/25/2015	N002	7.61			#		
Potassium	mg/L	03/25/2015	0001	2			#	0.052	
Potassium	mg/L	03/25/2015	N001	3.6			#	0.052	
Selenium	mg/L	03/25/2015	0001	0.00035	J		#	0.00032	

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

REPORT DATE: 06/11/2015

Location: 0899 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/25/2015	N001	0.0015			#	0.00032	
Sodium	mg/L	03/25/2015	0001	28			#	0.047	
Sodium	mg/L	03/25/2015	N001	28			#	0.047	
Specific Conductance	umhos/cm	03/25/2015	N002	500			#		
Strontium	mg/L	03/25/2015	0001	0.73			#	0.00026	
Strontium	mg/L	03/25/2015	N001	0.82			#	0.00026	
Sulfate	mg/L	03/25/2015	0001	120			#	2.5	
Sulfate	mg/L	03/25/2015	N001	120			#	2.5	
Temperature	C	03/25/2015	N002	14.87			#		
Turbidity	NTU	03/25/2015	N002	91			#		
Uranium	mg/L	03/25/2015	0001	0.0015			#	0.000029	
Uranium	mg/L	03/25/2015	N001	0.0022			#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0940 SURFACE LOCATION S. bank San Juan River about 2500 ft E of US Hwy 491 bridge

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N002	108			#		
Ammonia Total as N	mg/L	03/26/2015	0001	0.1	U		#	0.1	
Ammonia Total as N	mg/L	03/26/2015	N001	0.1	U		#	0.1	
Calcium	mg/L	03/26/2015	0001	63			#	0.024	
Calcium	mg/L	03/26/2015	N001	93			#	0.024	
Chloride	mg/L	03/26/2015	0001	12			#	1	
Chloride	mg/L	03/26/2015	N001	12			#	1	
Magnesium	mg/L	03/26/2015	0001	9.9			#	0.03	
Magnesium	mg/L	03/26/2015	N001	17			#	0.03	
Manganese	mg/L	03/26/2015	0001	0.0094			#	0.00024	
Manganese	mg/L	03/26/2015	N001	1.4			#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	0001	0.45			#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	0.45			#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N002	129.4			#		
pH	s.u.	03/26/2015	N002	8.35			#		
Potassium	mg/L	03/26/2015	0001	1.9			#	0.052	
Potassium	mg/L	03/26/2015	N001	6.9			#	0.052	
Selenium	mg/L	03/26/2015	0001	0.00032	U		#	0.00032	

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

REPORT DATE: 06/11/2015

Location: 0940 SURFACE LOCATION S. bank San Juan River about 2500 ft E of US Hwy 491 bridge

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/26/2015	N001	0.0022			#	0.00032	
Sodium	mg/L	03/26/2015	0001	29			#	0.047	
Sodium	mg/L	03/26/2015	N001	31			#	0.047	
Specific Conductance	umhos/cm	03/26/2015	N002	523			#		
Strontium	mg/L	03/26/2015	0001	0.73			#	0.00026	
Strontium	mg/L	03/26/2015	N001	0.91			#	0.00026	
Sulfate	mg/L	03/26/2015	0001	130			#	2.5	
Sulfate	mg/L	03/26/2015	N001	130			#	2.5	
Temperature	C	03/26/2015	N002	17.55			#		
Turbidity	NTU	03/26/2015	N002	56.7			#		
Uranium	mg/L	03/26/2015	0001	0.0018			#	0.000029	
Uranium	mg/L	03/26/2015	N001	0.0034			#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0956 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N002	98			#		
Ammonia Total as N	mg/L	03/26/2015	0001	0.1	U		#	0.1	
Ammonia Total as N	mg/L	03/26/2015	N001	0.1	U		#	0.1	
Ammonia Total as N	mg/L	03/26/2015	N003	0.1	U		#	0.1	
Calcium	mg/L	03/26/2015	0001	64			#	0.024	
Calcium	mg/L	03/26/2015	N001	65			#	0.024	
Calcium	mg/L	03/26/2015	N003	69			#	0.24	
Chloride	mg/L	03/26/2015	0001	12			#	1	
Chloride	mg/L	03/26/2015	N001	13			#	1	
Chloride	mg/L	03/26/2015	N003	12			#	1	
Magnesium	mg/L	03/26/2015	0001	9.8			#	0.03	
Magnesium	mg/L	03/26/2015	N001	10			#	0.03	
Magnesium	mg/L	03/26/2015	N003	11			#	0.3	
Manganese	mg/L	03/26/2015	0001	0.0018	J		#	0.00024	
Manganese	mg/L	03/26/2015	N001	0.24			#	0.00024	
Manganese	mg/L	03/26/2015	N003	0.27			#	0.0024	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	0001	0.48			#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	0.47			#	0.01	

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

REPORT DATE: 06/11/2015

Location: 0956 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N003	0.5			#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N002	228			#		
pH	s.u.	03/26/2015	N002	8.35			#		
Potassium	mg/L	03/26/2015	0001	1.9			#	0.052	
Potassium	mg/L	03/26/2015	N001	2.8			#	0.052	
Potassium	mg/L	03/26/2015	N003	3.3	J		#	0.52	
Selenium	mg/L	03/26/2015	0001	0.00053	J		#	0.00032	
Selenium	mg/L	03/26/2015	N001	0.00084			#	0.00016	
Selenium	mg/L	03/26/2015	N003	0.0012			#	0.00032	
Sodium	mg/L	03/26/2015	0001	29			#	0.047	
Sodium	mg/L	03/26/2015	N001	28			#	0.047	
Sodium	mg/L	03/26/2015	N003	29			#	0.47	
Specific Conductance	umhos/cm	03/26/2015	N002	508			#		
Strontium	mg/L	03/26/2015	0001	0.76			#	0.00026	
Strontium	mg/L	03/26/2015	N001	0.75			#	0.00026	
Strontium	mg/L	03/26/2015	N003	0.78			#	0.0026	
Sulfate	mg/L	03/26/2015	0001	130			#	2.5	
Sulfate	mg/L	03/26/2015	N001	130			#	2.5	

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

REPORT DATE: 06/11/2015

Location: 0956 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Sulfate	mg/L	03/26/2015	N003	130			#	2.5	
Temperature	C	03/26/2015	N002	8.32			#		
Turbidity	NTU	03/26/2015	N002	112			#		
Uranium	mg/L	03/26/2015	0001	0.0016			#	0.000029	
Uranium	mg/L	03/26/2015	N001	0.0017			#	0.000029	
Uranium	mg/L	03/26/2015	N003	0.0019			#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0965 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N002	107			#		
Ammonia Total as N	mg/L	03/26/2015	0001	0.1	U		#	0.1	
Ammonia Total as N	mg/L	03/26/2015	N001	0.1	U		#	0.1	
Calcium	mg/L	03/26/2015	0001	62			#	0.024	
Calcium	mg/L	03/26/2015	N001	68			#	0.024	
Chloride	mg/L	03/26/2015	0001	12			#	1	
Chloride	mg/L	03/26/2015	N001	12			#	1	
Magnesium	mg/L	03/26/2015	0001	9.4			#	0.03	
Magnesium	mg/L	03/26/2015	N001	11			#	0.03	
Manganese	mg/L	03/26/2015	0001	0.0025	J		#	0.00024	
Manganese	mg/L	03/26/2015	N001	0.27			#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	0001	0.46			#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	0.46			#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N002	203.3			#		
pH	s.u.	03/26/2015	N002	8.16			#		
Potassium	mg/L	03/26/2015	0001	1.8			#	0.052	
Potassium	mg/L	03/26/2015	N001	3.1			#	0.052	
Selenium	mg/L	03/26/2015	0001	0.00078			#	0.00016	

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

REPORT DATE: 06/11/2015

Location: 0965 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/26/2015	N001	0.0016			#	0.00032	
Sodium	mg/L	03/26/2015	0001	28			#	0.047	
Sodium	mg/L	03/26/2015	N001	29			#	0.047	
Specific Conductance	umhos/cm	03/26/2015	N002	529			#		
Strontium	mg/L	03/26/2015	0001	0.73			#	0.00026	
Strontium	mg/L	03/26/2015	N001	0.78			#	0.00026	
Sulfate	mg/L	03/26/2015	0001	130			#	2.5	
Sulfate	mg/L	03/26/2015	N001	130			#	2.5	
Temperature	C	03/26/2015	N002	7.94			#		
Turbidity	NTU	03/26/2015	N002	98.2			#		
Uranium	mg/L	03/26/2015	0001	0.0015			#	0.000029	
Uranium	mg/L	03/26/2015	N001	0.0018			#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 0967 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	0001	95			#		
Ammonia Total as N	mg/L	03/25/2015	0001	0.1	U		#	0.1	
Ammonia Total as N	mg/L	03/25/2015	N001	0.1	U		#	0.1	
Calcium	mg/L	03/25/2015	0001	64			#	0.024	
Calcium	mg/L	03/25/2015	N001	68			#	0.024	
Chloride	mg/L	03/25/2015	0001	13			#	1	
Chloride	mg/L	03/25/2015	N001	13			#	1	
Magnesium	mg/L	03/25/2015	0001	9.7			#	0.03	
Magnesium	mg/L	03/25/2015	N001	11			#	0.03	
Manganese	mg/L	03/25/2015	0001	0.0036	J		#	0.00024	
Manganese	mg/L	03/25/2015	N001	0.24			#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	0001	0.45			#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	0.45			#	0.01	
Oxidation Reduction Potential	mV	03/25/2015	N002	123			#		
pH	s.u.	03/25/2015	N002	8.46			#		
Potassium	mg/L	03/25/2015	0001	2			#	0.052	
Potassium	mg/L	03/25/2015	N001	3.1			#	0.052	
Selenium	mg/L	03/25/2015	0001	0.00034	J		#	0.00032	

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

REPORT DATE: 06/11/2015

Location: 0967 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/25/2015	N001	0.00094			#	0.00016	
Sodium	mg/L	03/25/2015	0001	29			#	0.047	
Sodium	mg/L	03/25/2015	N001	30			#	0.047	
Specific Conductance	umhos/cm	03/25/2015	N002	611			#		
Strontium	mg/L	03/25/2015	0001	0.76			#	0.00026	
Strontium	mg/L	03/25/2015	N001	0.8			#	0.00026	
Sulfate	mg/L	03/25/2015	0001	130			#	2.5	
Sulfate	mg/L	03/25/2015	N001	130			#	2.5	
Temperature	C	03/25/2015	N002	15.3			#		
Turbidity	NTU	03/25/2015	N002	67.4			#		
Uranium	mg/L	03/25/2015	0001	0.0016			#	0.000029	
Uranium	mg/L	03/25/2015	N001	0.0017			#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1118 TREATMENT SYSTEM Sump - seep vault

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	0	-	0	808			#		
Ammonia Total as N	mg/L	03/26/2015	N001	0	-	0	0.1	U		#	0.1	
Calcium	mg/L	03/26/2015	N001	0	-	0	440			#	0.12	
Chloride	mg/L	03/26/2015	N001	0	-	0	300			#	20	
Magnesium	mg/L	03/26/2015	N001	0	-	0	750			#	0.15	
Manganese	mg/L	03/26/2015	N001	0	-	0	0.02	J		#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	0	-	0	83			#	1	
Oxidation Reduction Potential	mV	03/26/2015	N001	0	-	0	154.1			#		
pH	s.u.	03/26/2015	N001	0	-	0	7.61			#		
Potassium	mg/L	03/26/2015	N001	0	-	0	39			#	0.26	
Selenium	mg/L	03/26/2015	N001	0	-	0	0.4			#	0.00032	
Sodium	mg/L	03/26/2015	N001	0	-	0	1600			#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	0	-	0	11042			#		
Strontium	mg/L	03/26/2015	N001	0	-	0	10			#	0.0013	
Sulfate	mg/L	03/26/2015	N001	0	-	0	6500			#	50	
Temperature	C	03/26/2015	N001	0	-	0	11.22			#		
Turbidity	NTU	03/26/2015	N001	0	-	0	9.33			#		
Uranium	mg/L	03/26/2015	N001	0	-	0	0.47			#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1203 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N002	113			#		
Ammonia Total as N	mg/L	03/24/2015	0001	0.1	U		#	0.1	
Ammonia Total as N	mg/L	03/24/2015	N001	0.1	U		#	0.1	
Calcium	mg/L	03/24/2015	0001	63			#	0.024	
Calcium	mg/L	03/24/2015	N001	64			#	0.024	
Chloride	mg/L	03/24/2015	0001	12			#	1	
Chloride	mg/L	03/24/2015	N001	12			#	1	
Magnesium	mg/L	03/24/2015	0001	9.6			#	0.03	
Magnesium	mg/L	03/24/2015	N001	10			#	0.03	
Manganese	mg/L	03/24/2015	0001	0.0029	J		#	0.00024	
Manganese	mg/L	03/24/2015	N001	0.2			#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	0001	0.48			#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	0.52			#	0.01	
Oxidation Reduction Potential	mV	03/24/2015	N002	208.2			#		
pH	s.u.	03/24/2015	N002	8.35			#		
Potassium	mg/L	03/24/2015	0001	2.1			#	0.052	
Potassium	mg/L	03/24/2015	N001	2.8			#	0.052	
Selenium	mg/L	03/24/2015	0001	0.00047	J		#	0.00032	

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

REPORT DATE: 06/11/2015

Location: 1203 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/24/2015	N001	0.001	J		#	0.00032	
Sodium	mg/L	03/24/2015	0001	30			#	0.047	
Sodium	mg/L	03/24/2015	N001	29			#	0.047	
Specific Conductance	umhos/cm	03/24/2015	N002	511			#		
Strontium	mg/L	03/24/2015	0001	0.75			#	0.00026	
Strontium	mg/L	03/24/2015	N001	0.75			#	0.00026	
Sulfate	mg/L	03/24/2015	0001	130			#	2.5	
Sulfate	mg/L	03/24/2015	N001	130			#	2.5	
Temperature	C	03/24/2015	N002	14.63			#		
Turbidity	NTU	03/24/2015	N002	10.5			#		
Uranium	mg/L	03/24/2015	0001	0.0019			#	0.000029	
Uranium	mg/L	03/24/2015	N001	0.0018			#	0.000029	

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

REPORT DATE: 06/11/2015

Location: 1205 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	0001	116			#		
Ammonia Total as N	mg/L	03/26/2015	0001	0.1	U		#	0.1	
Ammonia Total as N	mg/L	03/26/2015	N001	0.1	U		#	0.1	
Calcium	mg/L	03/26/2015	0001	62			#	0.024	
Calcium	mg/L	03/26/2015	N001	150			#	0.024	
Chloride	mg/L	03/26/2015	0001	12			#	1	
Chloride	mg/L	03/26/2015	N001	12			#	1	
Magnesium	mg/L	03/26/2015	0001	9.6			#	0.03	
Magnesium	mg/L	03/26/2015	N001	25			#	0.03	
Manganese	mg/L	03/26/2015	0001	0.064			#	0.00024	
Manganese	mg/L	03/26/2015	N001	3.7			#	0.00024	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	0001	0.48			#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	0.53			#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N002	46			#		
pH	s.u.	03/26/2015	N002	7.67			#		
Potassium	mg/L	03/26/2015	0001	1.9			#	0.052	
Potassium	mg/L	03/26/2015	N001	9.5			#	0.052	
Selenium	mg/L	03/26/2015	0001	0.00032	U		#	0.00032	

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

REPORT DATE: 06/11/2015

Location: 1205 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	03/26/2015	N001	0.0063			#	0.00032	
Sodium	mg/L	03/26/2015	0001	29			#	0.047	
Sodium	mg/L	03/26/2015	N001	31			#	0.047	
Specific Conductance	umhos/cm	03/26/2015	N002	505			#		
Strontium	mg/L	03/26/2015	0001	0.73			#	0.00026	
Strontium	mg/L	03/26/2015	N001	1.2			#	0.00026	
Sulfate	mg/L	03/26/2015	0001	130			#	2.5	
Sulfate	mg/L	03/26/2015	N001	130			#	2.5	
Temperature	C	03/26/2015	N002	12.8			#		
Turbidity	NTU	03/26/2015	N002	1000	>		#		
Uranium	mg/L	03/26/2015	0001	0.0016			#	0.000029	
Uranium	mg/L	03/26/2015	N001	0.006			#	0.000029	

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

This page intentionally left blank

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/26/2015	N001	78			#		
Ammonia Total as N	mg/L	03/26/2015	N001	0.33			#	0.1	
Calcium	mg/L	03/26/2015	N001	110			#	0.12	
Chloride	mg/L	03/26/2015	N001	55			#	10	
Magnesium	mg/L	03/26/2015	N001	14			#	0.15	
Manganese	mg/L	03/26/2015	N001	0.038			#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/26/2015	N001	0.35			#	0.01	
Oxidation Reduction Potential	mV	03/26/2015	N001	122.3			#		
pH	s.u.	03/26/2015	N001	8.04			#		
Potassium	mg/L	03/26/2015	N001	8.1			#	0.26	
Selenium	mg/L	03/26/2015	N001	0.0085			#	0.00032	
Sodium	mg/L	03/26/2015	N001	780			#	0.23	
Specific Conductance	umhos/cm	03/26/2015	N001	3996			#		
Strontium	mg/L	03/26/2015	N001	11			#	0.0013	
Sulfate	mg/L	03/26/2015	N001	2000			#	25	
Temperature	C	03/26/2015	N001	19.39			#		
Turbidity	NTU	03/26/2015	N001	13.5			#		
Uranium	mg/L	03/26/2015	N001	0.0015			#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	592			#		
Ammonia Total as N	mg/L	03/24/2015	N001	0.24			#	0.1	
Calcium	mg/L	03/24/2015	N001	420			#	0.12	
Chloride	mg/L	03/24/2015	N001	1600			#	400	
Magnesium	mg/L	03/24/2015	N001	1400			#	0.15	
Manganese	mg/L	03/24/2015	N001	0.26			#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	730			#	5	
Oxidation Reduction Potential	mV	03/24/2015	N001	113.2			#		
pH	s.u.	03/24/2015	N001	8.2			#		
Potassium	mg/L	03/24/2015	N001	53			#	0.26	
Selenium	mg/L	03/24/2015	N001	1.7			#	0.0016	
Sodium	mg/L	03/24/2015	N001	8400			#	2.3	
Specific Conductance	umhos/cm	03/24/2015	N001	34303			#		
Strontium	mg/L	03/24/2015	N001	11			#	0.0013	
Sulfate	mg/L	03/24/2015	N001	19000			#	1000	
Temperature	C	03/24/2015	N001	19.05			#		
Turbidity	NTU	03/24/2015	N001	27.1			#		
Uranium	mg/L	03/24/2015	N001	0.17			#	0.00015	

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

REPORT DATE: 06/11/2015

Location: 1215 SURFACE LOCATION Evaporation Pond

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2015	N001	842			#		
Ammonia Total as N	mg/L	03/24/2015	N001	26			#	2.5	
Calcium	mg/L	03/24/2015	N001	550			#	1.2	
Chloride	mg/L	03/24/2015	N001	4200			#	1000	
Magnesium	mg/L	03/24/2015	N001	13000			#	1.5	
Manganese	mg/L	03/24/2015	N001	0.51			#	0.012	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2015	N001	2900			#	50	
Oxidation Reduction Potential	mV	03/24/2015	N001	253.3			#		
pH	s.u.	03/24/2015	N001	8.18			#		
Potassium	mg/L	03/24/2015	N001	900			#	2.6	
Selenium	mg/L	03/24/2015	N001	2.2			#	0.0065	
Sodium	mg/L	03/24/2015	N001	22000			#	2.3	
Specific Conductance	umhos/cm	03/24/2015	N001	365			#		
Strontium	mg/L	03/24/2015	N001	20			#	0.013	
Sulfate	mg/L	03/24/2015	N001	77000			#	2500	
Temperature	C	03/24/2015	N001	18.84			#		
Turbidity	NTU	03/24/2015	N001	8.31			#		
Uranium	mg/L	03/24/2015	N001	0.077			#	0.00058	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	188			#		
Ammonia Total as N	mg/L	03/25/2015	N001	0.1	U		#	0.1	
Calcium	mg/L	03/25/2015	N001	340			#	0.12	
Chloride	mg/L	03/25/2015	N001	48			#	5	
Magnesium	mg/L	03/25/2015	N001	120			#	0.15	
Manganese	mg/L	03/25/2015	N001	0.017	J		#	0.0012	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	1			#	0.05	
Oxidation Reduction Potential	mV	03/25/2015	N001	197			#		
pH	s.u.	03/25/2015	N001	8.05			#		
Potassium	mg/L	03/25/2015	N001	4.3	J		#	0.26	
Selenium	mg/L	03/25/2015	N001	0.28			#	0.00032	
Sodium	mg/L	03/25/2015	N001	150			#	0.23	
Specific Conductance	umhos/cm	03/25/2015	N001	2358			#		
Strontium	mg/L	03/25/2015	N001	4.4			#	0.0013	
Sulfate	mg/L	03/25/2015	N001	1400			#	12	
Temperature	C	03/25/2015	N001	12.78			#		
Turbidity	NTU	03/25/2015	N001	26.8			#		
Uranium	mg/L	03/25/2015	N001	0.038			#	0.000029	

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

REPORT DATE: 06/11/2015

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

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2015	N001	610			#		
Ammonia Total as N	mg/L	03/25/2015	N001	0.2			#	0.1	
Calcium	mg/L	03/25/2015	N001	470			#	2.4	
Chloride	mg/L	03/25/2015	N001	1800			#	400	
Magnesium	mg/L	03/25/2015	N001	1500			#	3	
Manganese	mg/L	03/25/2015	N001	1.3			#	0.024	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2015	N001	810			#	5	
Oxidation Reduction Potential	mV	03/25/2015	N001	268.4			#		
pH	s.u.	03/25/2015	N001	8.26			#		
Potassium	mg/L	03/25/2015	N001	53	J		#	5.2	
Selenium	mg/L	03/25/2015	N001	1.7			#	0.0016	
Sodium	mg/L	03/25/2015	N001	8500			#	4.7	
Specific Conductance	umhos/cm	03/25/2015	N001	35854			#		
Strontium	mg/L	03/25/2015	N001	11			#	0.026	
Sulfate	mg/L	03/25/2015	N001	21000			#	1000	
Temperature	C	03/25/2015	N001	10.2			#		
Turbidity	NTU	03/25/2015	N001	370			#		
Uranium	mg/L	03/25/2015	N001	0.19			#	0.00015	

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.

Equipment Blank Data

This page intentionally left blank

BLANKS REPORT

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

RIN: 15036862

Report Date: 06/11/2015

Parameter	Site Code	Location ID	Sample Date	ID	Units	Result	Qualifiers Lab	Data	Detection Limit	Uncertainty	Sample Type
Ammonia Total as N	SHP01	0999	03/26/2015	N001	mg/L	0.1	U		0.1		E
Calcium	SHP01	0999	03/26/2015	N001	mg/L	0.13	J	U	0.049		E
Chloride	SHP01	0999	03/26/2015	N001	mg/L	0.2	U		0.2		E
Magnesium	SHP01	0999	03/26/2015	N001	mg/L	0.13	J	U	0.06		E
Manganese	SHP01	0999	03/26/2015	N001	mg/L	0.00049	U		0.00049		E
Nitrate + Nitrite as Nitrogen	SHP01	0999	03/26/2015	N001	mg/L	0.01	U		0.01		E
Potassium	SHP01	0999	03/26/2015	N001	mg/L	0.13	J		0.1		E
Selenium	SHP01	0999	03/26/2015	N001	mg/L	0.00032	U		0.00032		E
Sodium	SHP01	0999	03/26/2015	N001	mg/L	0.24	J		0.093		E
Strontium	SHP01	0999	03/26/2015	N001	mg/L	0.00091	J		0.00052		E
Sulfate	SHP01	0999	03/26/2015	N001	mg/L	0.51			0.5		E
Uranium	SHP01	0999	03/26/2015	N001	mg/L	0.00009	J		0.000029		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.
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.

SAMPLE TYPES:

E Equipment Blank.

Static Water Level Data Floodplain Locations

This page intentionally left blank

STATIC WATER LEVELS (USEE700) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 06/11/2015

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0608		4893.35	03/24/2015	14:32:56	5.99	4887.36	
0610		4895.7	03/24/2015	16:10:36	9.21	4886.49	
0611		4895.62	03/24/2015	16:34:59	9.09	4886.53	
0612		4893.35	03/26/2015	10:20:52	6.92	4886.43	
0614		4892.79	03/24/2015	16:10:48	7.07	4885.72	
0615		4892.23	03/26/2015	09:00:19	7.7	4884.53	
0617		4891.9	03/24/2015	16:22:00	6.86	4885.04	
0618		4891.51	03/26/2015	14:25:09	7.38	4884.13	
0619		4892.19	03/26/2015	16:05:16	6.81	4885.38	
0622		4890.06	03/26/2015	15:00:45	4	4886.06	
0623		4891.19	03/26/2015	15:45:10	5.56	4885.63	
0625		4891.23	03/26/2015	15:25:42	5.57	4885.66	
0626		4891.4	03/25/2015	13:30:10	5.22	4886.18	
0628		4889.87	03/26/2015	18:25:45	3.88	4885.99	
0630		4887.62	03/26/2015	18:25:08	1.6	4886.02	
0734		4886.55	03/26/2015	12:08:00			D
0735		4895.85	03/23/2015	16:30:21	5.99	4889.86	
0736		4887.99	03/26/2015	11:25:38	5.78	4882.21	
0766		4892.55	03/26/2015	16:45:57	9.98	4882.57	
0768		4892.33	03/26/2015	15:30:54	6.65	4885.68	
0773		4894.87	03/24/2015	17:11:19	8.2	4886.67	
0775		4892.2	03/26/2015	16:20:42	7.65	4884.55	
0779		4893.86	03/26/2015	13:55:00	9.84	4884.02	
0782R		4884.75	03/24/2015	09:20:44	6.36	4878.39	
0783R		4884.09	03/24/2015	09:45:36	6.29	4877.8	
0792		4891.52	03/26/2015	14:55:02	6.26	4885.26	
0793		4891.05	03/26/2015	11:50:05	6.17	4884.88	
0797		4908.04	03/25/2015	11:35:20	9.17	4898.87	

STATIC WATER LEVELS (USEE700) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 06/11/2015

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0798		4891.55	03/26/2015	15:55:11	6.7	4884.85	
0850	B	4907.51	03/25/2015	11:15:41	8.18	4899.33	
0853		4891.41	03/26/2015	09:50:14	6.74	4884.67	
0854		4890.09	03/26/2015	16:45:47	7.5	4882.59	
0855		4888.18	03/26/2015	12:00:43	4.72	4883.46	
0856		4887.57	03/26/2015	13:35:47	6.06	4881.51	
0857		4894.02	03/25/2015	17:40:31	9.83	4884.19	
0862		4893.83	03/24/2015	14:48:00	88.54	4805.29	
0863		4893	03/24/2015	14:52:00	77.71	4815.29	
1000		4892.17	03/24/2015	16:20:00	7.03	4885.14	
1001		4892.44	03/24/2015	16:19:00	13.42	4879.02	
1008		4890.8	03/26/2015	16:50:47	7.52	4883.28	
1009		4892.1	03/26/2015	09:25:07	7.23	4884.87	
1062		4892.51	03/24/2015	14:56:00	7.76	4884.75	
1105	O	4892.4	03/26/2015	08:35:02	7.7	4884.7	
1111		4889.85	03/24/2015	17:10:33	6.82	4883.03	
1112		4890.01	03/24/2015	16:45:38	6.81	4883.2	
1113		4892	03/24/2015	15:27:13	5.04	4886.96	
1114		4892.86	03/24/2015	12:09:29	5.24	4887.62	
1115		4895.59	03/24/2015	11:21:44	8.21	4887.38	
1117		4896.7	03/23/2015	17:25:53	8.98	4887.72	
1128		4897.63	03/24/2015	09:45:26	10.11	4887.52	
1132		4894.5	03/24/2015	10:25:13	6.97	4887.53	
1134		4895.88	03/24/2015	10:55:05	8.41	4887.47	
1135		4890.71	03/26/2015	10:55:47	8	4882.71	
1136		4892.47	03/26/2015	13:20:37	9	4883.47	
1137		4891.3	03/26/2015	15:20:42	8.71	4882.59	
1138		4891.48	03/26/2015	16:05:17	8.89	4882.59	

STATIC WATER LEVELS (USEE700) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 06/11/2015

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
1139		4890.44	03/26/2015	16:30:28	7.86	4882.58	
1140		4891.53	03/25/2015	12:55:57	8.08	4883.45	
1141		4892.48	03/26/2015	12:15:13	8.5	4883.98	
1142		4894.34	03/26/2015	10:45:27	9.31	4885.03	
1143		4888.07	03/26/2015	14:15:52	5.9	4882.17	

FLOW CODES: B BACKGROUND C CROSS GRADIENT D DOWNGRADIENT F OFFSITE
 N UNKNOWN O ONSITE U UPGRADIENT

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

This page intentionally left blank

Static Water Level Data Terrace Locations

This page intentionally left blank

STATIC WATER LEVELS (USEE700) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 06/11/2015

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0600		4955.87	03/25/2015	12:15:23	33.55	4922.32	
0602		4956.89	03/26/2015	08:30:32	22.73	4934.16	
0603		4978.62	03/25/2015	08:40:35	31.93	4946.69	
0604		4995.87	03/25/2015	16:55:27	56.22	4939.65	
0648		4943.8	03/24/2015	14:00:47			F
0725		4908.58	03/25/2015	17:40:54	13.75	4894.83	
0726		4939.95	03/26/2015	12:05:19	25.2	4914.75	
0727		4940.65	03/25/2015	17:15:47	6.93	4933.72	
0728		4964.46	03/24/2015	14:30:24	24.53	4939.93	
0730		4977.75	03/24/2015	14:50:03	35.98	4941.77	
0731		4972.15	03/25/2015	09:00:38	24.32	4947.83	
0800		4995.76	03/25/2015	09:59:00			D
0801		4995.29	03/25/2015	09:53:00			D
0802		4996.01	03/25/2015	09:52:00			D
0803		4994.4	03/25/2015	10:03:00			D
0812		5004.98	03/24/2015	11:15:47	61.36	4943.62	
0813		4984.37	03/24/2015	11:45:39	43.78	4940.59	
0814		4968.12	03/24/2015	12:30:13	32.48	4935.64	
0815		4953.67	03/24/2015	13:40:24	26.65	4927.02	
0816		4937.92	03/26/2015	11:30:09	24.92	4913	
0817		4957.34	03/26/2015	09:05:46	19.46	4937.88	
0819		4955.76	03/26/2015	12:25:45	20.58	4935.18	
0820		4954.95	03/25/2015	11:20:44	150.59	4804.36	
0821		4955.46	03/25/2015	11:26:00			D
0822		4954.42	03/25/2015	11:55:25	135.45	4818.97	
0823		4957.65	03/25/2015	12:50:00			D
0824		4958.21	03/25/2015	13:30:19	192.6	4765.61	
0825		4958.68	03/25/2015	13:00:39	152	4806.68	

STATIC WATER LEVELS (USEE700) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 06/11/2015

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0826		4950.73	03/26/2015	09:40:25	17.95	4932.78	
0827		4946.92	03/25/2015	10:10:01	26.3	4920.62	
0828		4957.43	03/24/2015	08:20:52	21.38	4936.05	
0829		4941.94	03/26/2015	10:10:00			D
0830		4960.77	03/25/2015	16:25:17	16.13	4944.64	
0832		4964.65	03/23/2015	17:35:46	28.94	4935.71	
0833		4940.52	03/25/2015	11:25:08	27.51	4913.01	
0835		4930.48	03/25/2015	09:10:32	18.74	4911.74	
0836		4901.74	03/24/2015	12:00:20	32.7	4869.04	
0837		4889.54	03/24/2015	11:10:58	23.51	4866.03	
0838		4937.7	03/25/2015	10:00:56	28.76	4908.94	
0841		4984.05	03/23/2015	16:10:33			B
0843		4883.56	03/24/2015	10:35:14	15.02	4868.54	
0844		4948.46	03/23/2015	17:00:44	32.14	4916.32	
0848		4949.91	03/24/2015	14:35:18	44.62	4905.29	
1002		4957.63	03/25/2015	12:23:00			D
1003		4957.84	03/25/2015	12:24:00			D
1004		4957.61	03/25/2015	12:25:00			D
1007		4962.01	03/25/2015	15:40:57	43.93	4918.08	
1011		4945.96	03/25/2015	11:01:00			D
1048		4921.35	03/24/2015	17:10:00			D
1049		4923.89	03/24/2015	16:45:03	7.2	4916.69	
1057		4984.83	03/24/2015	09:45:14	39.62	4945.21	
1058		4973.58	03/24/2015	15:40:54	28.22	4945.36	
1059		4970.52	03/24/2015	15:55:38	23.38	4947.14	
1060		4970.62	03/25/2015	12:07:00			D
1067		4930.77	03/24/2015	11:10:00			D
1068		4927.97	03/26/2015	10:45:33	7.28	4920.69	

STATIC WATER LEVELS (USEE700) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 06/11/2015

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
1069		4922.62	03/26/2015	10:30:24	3.3	4919.32	
1073		4991.43	03/24/2015	12:10:25	50.22	4941.21	
1074		4959.52	03/25/2015	15:55:23	33.32	4926.2	
1079		4925.22	03/24/2015	15:25:04	20.8	4904.42	
1120		4890.98	03/24/2015	12:19:00			D
1122		4893.62	03/24/2015	11:19:00			D
DM7		4974.44	03/24/2015	15:21:00			D
MW1		4955.64	03/25/2015	12:40:34	53.73	4901.91	

FLOW CODES: B BACKGROUND C CROSS GRADIENT D DOWNGRADIENT F OFFSITE
N UNKNOWN O ONSITE U UPGRADIENT

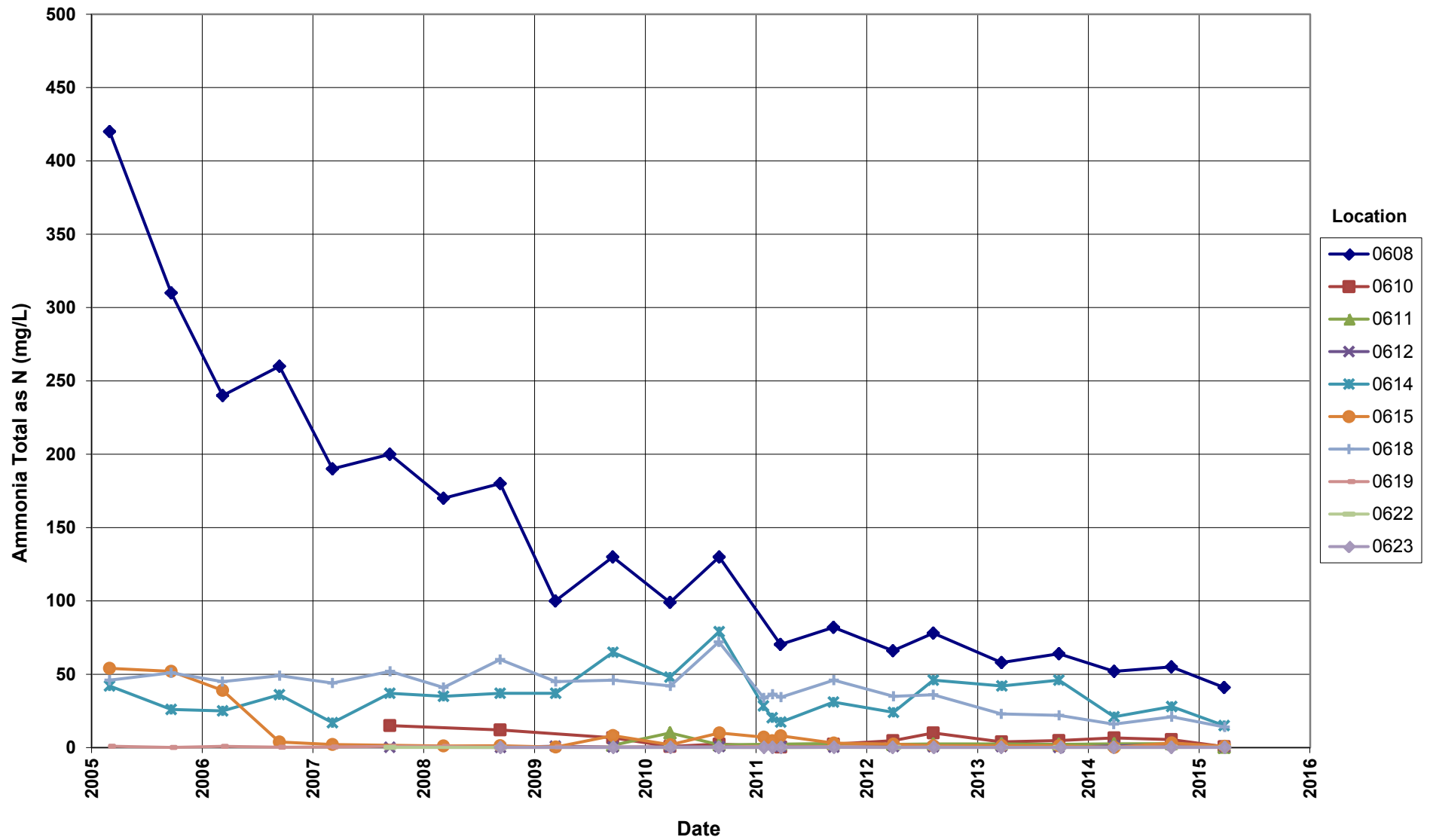
WATER LEVEL FLAGS: D Dry F Flowing B Below top of pump

This page intentionally left blank

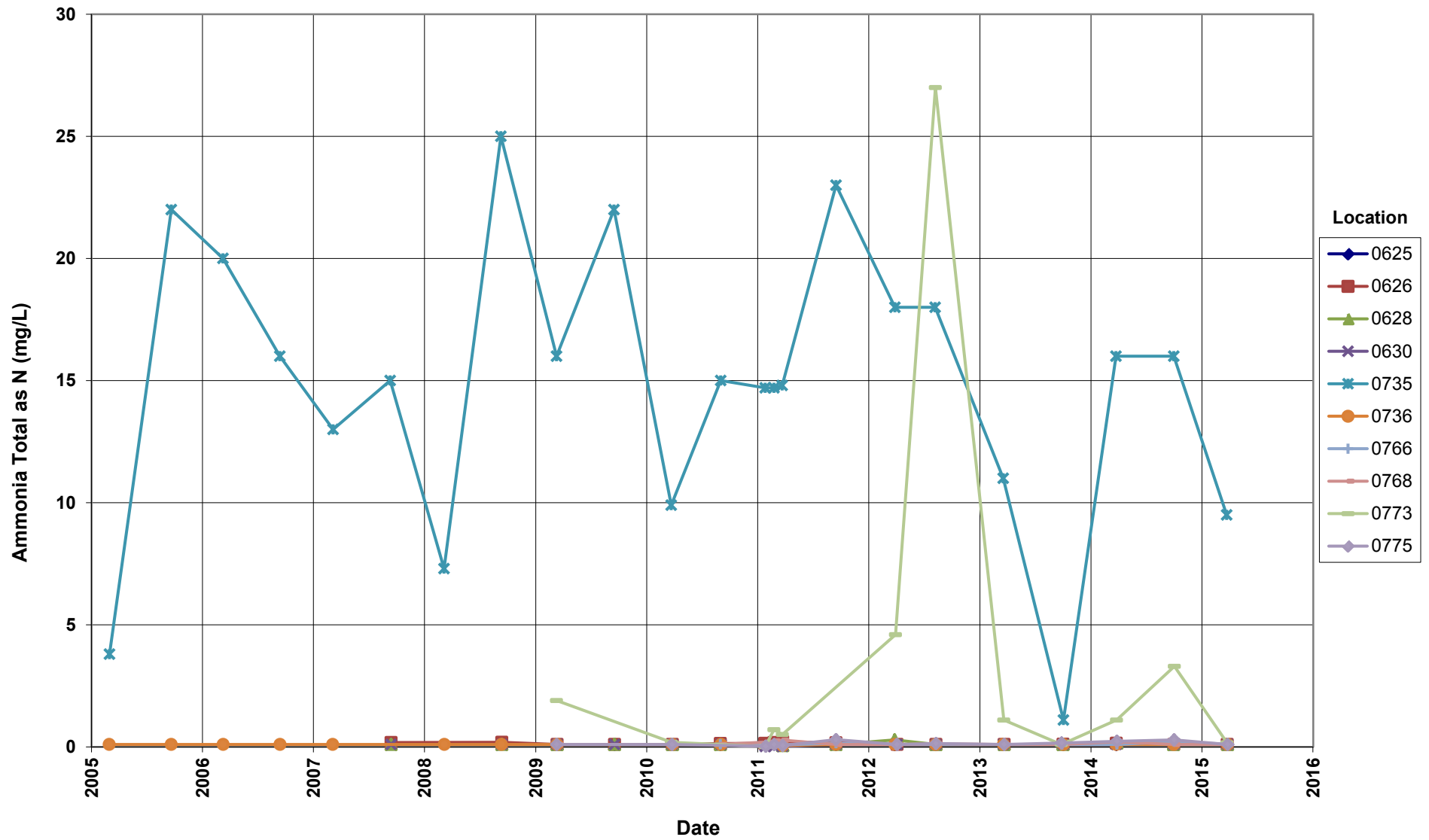
Time-Concentration Graphs Floodplain Groundwater Locations

This page intentionally left blank

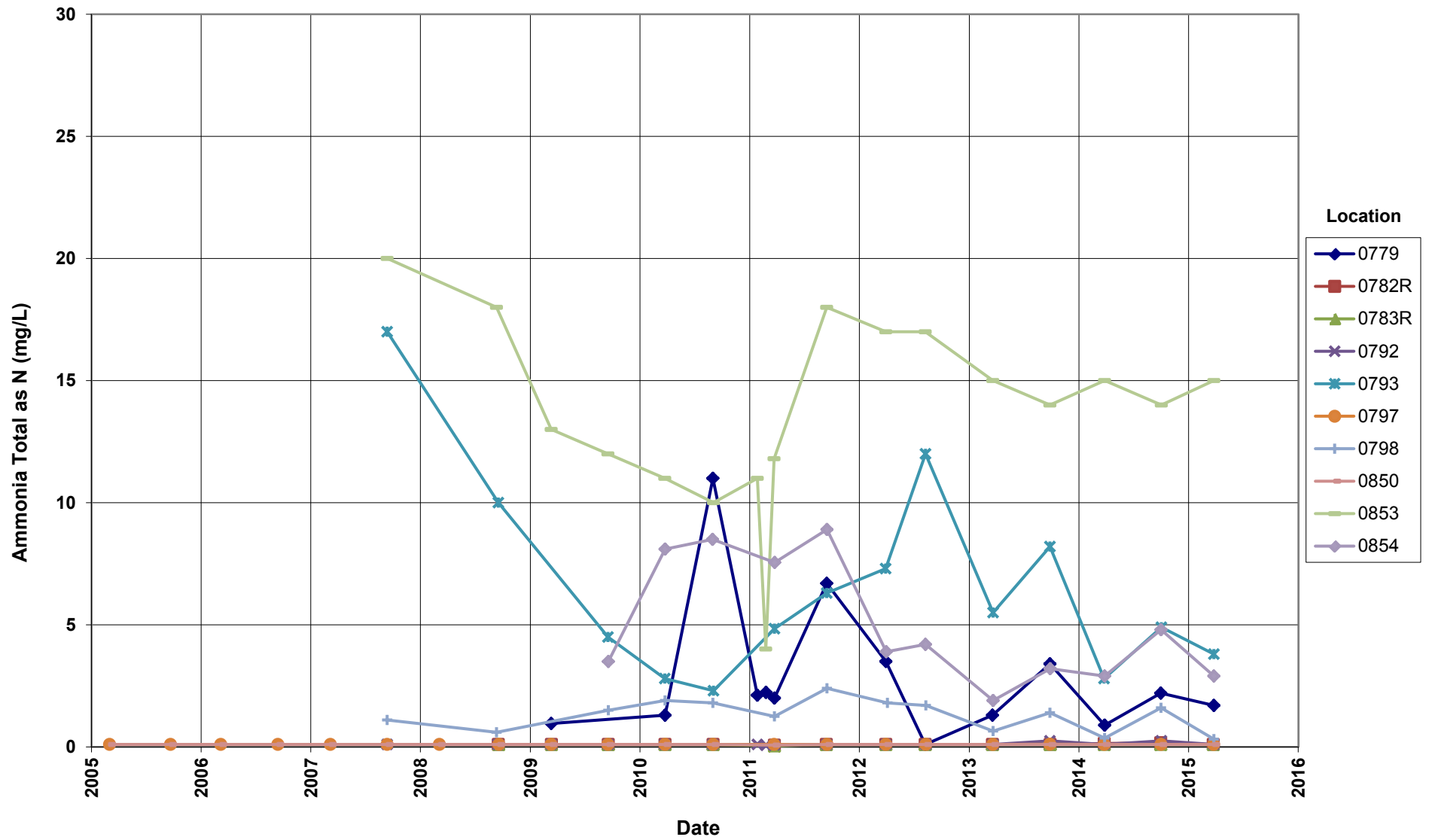
Shiprock Disposal Site (Floodplain)
Ammonia Total as N Concentration



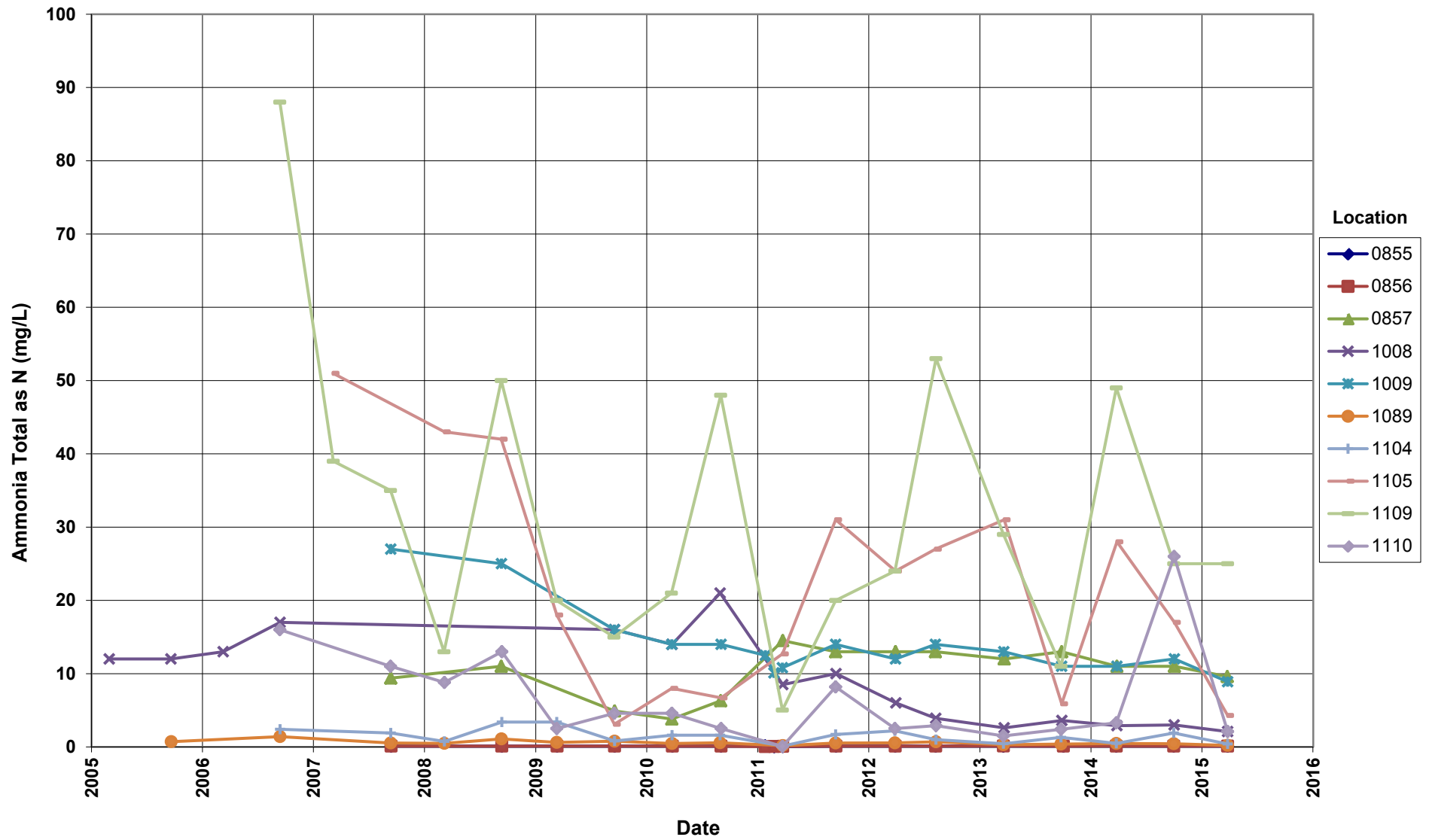
Shiprock Disposal Site (Floodplain)
Ammonia Total as N Concentration



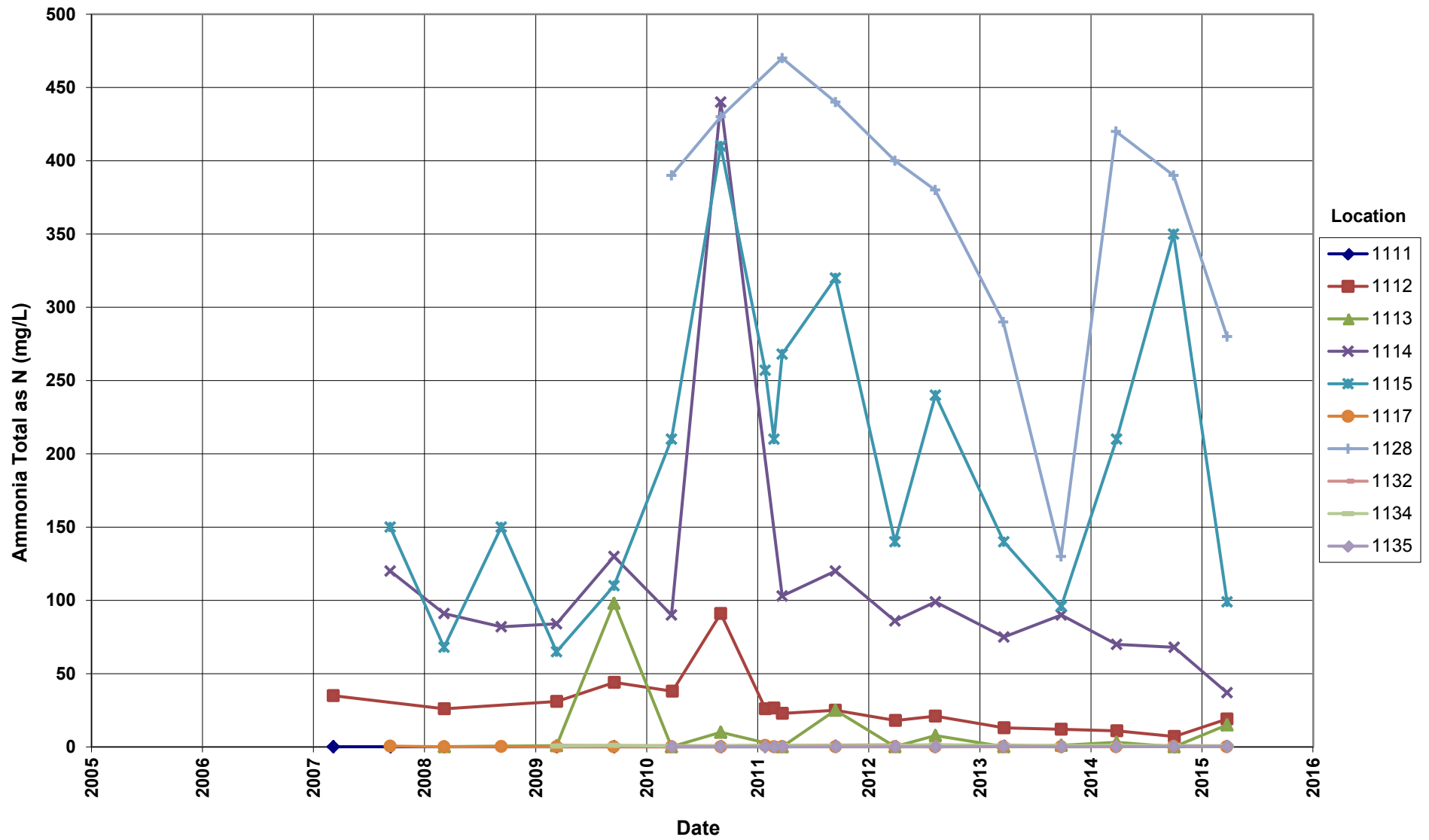
Shiprock Disposal Site (Floodplain) Ammonia Total as N Concentration



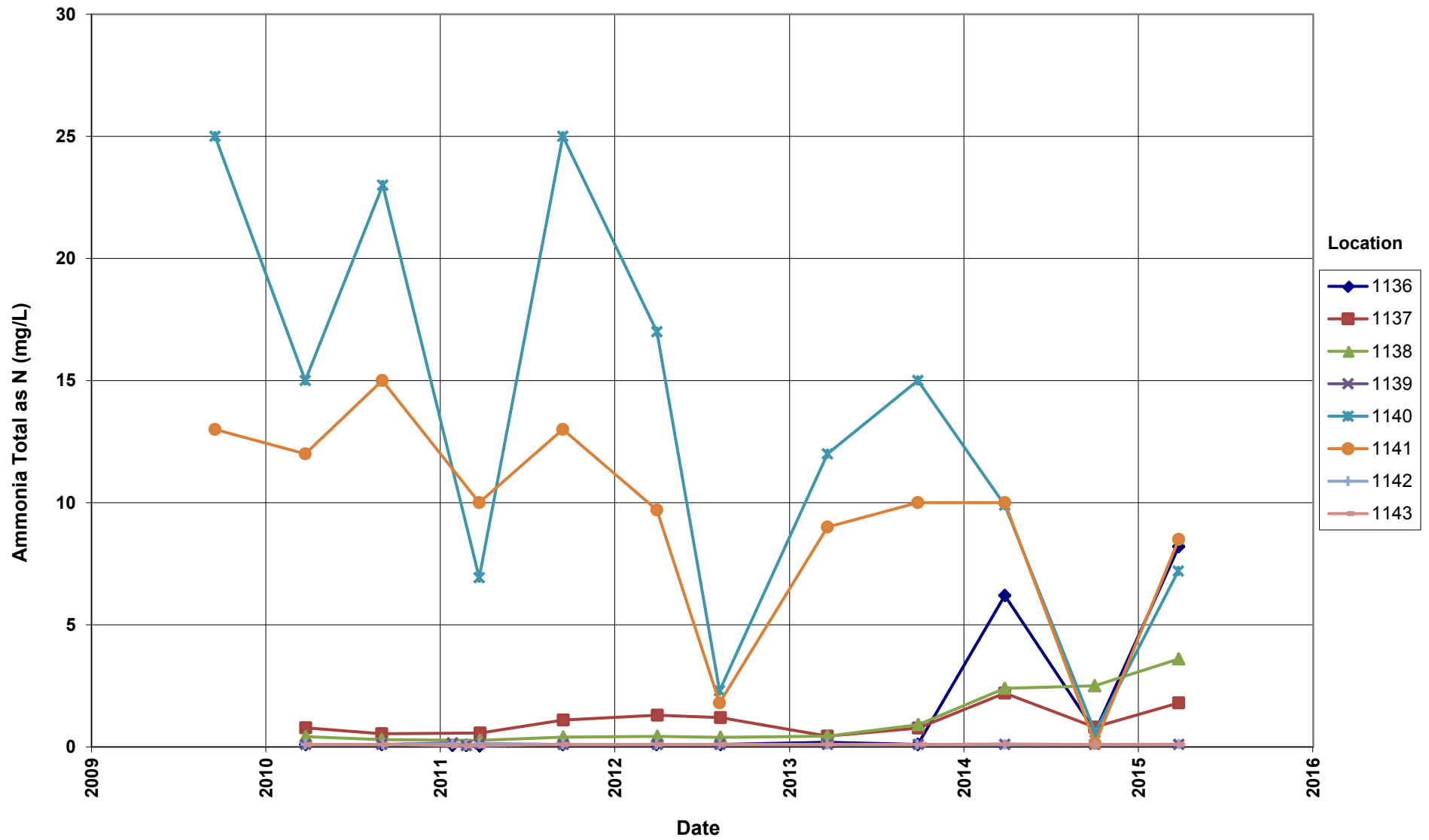
Shiprock Disposal Site (Floodplain)
Ammonia Total as N Concentration



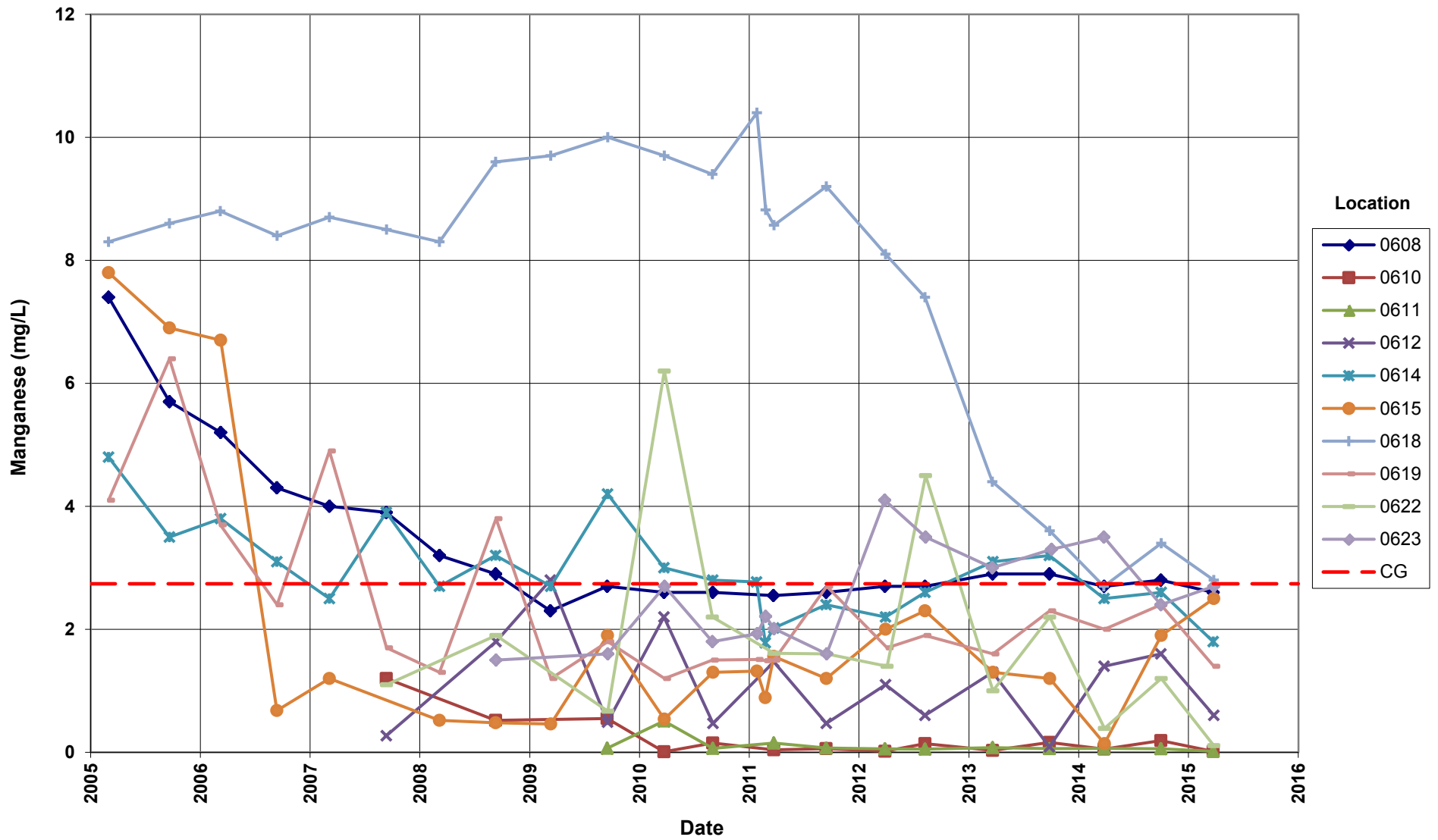
Shiprock Disposal Site (Floodplain)
Ammonia Total as N Concentration



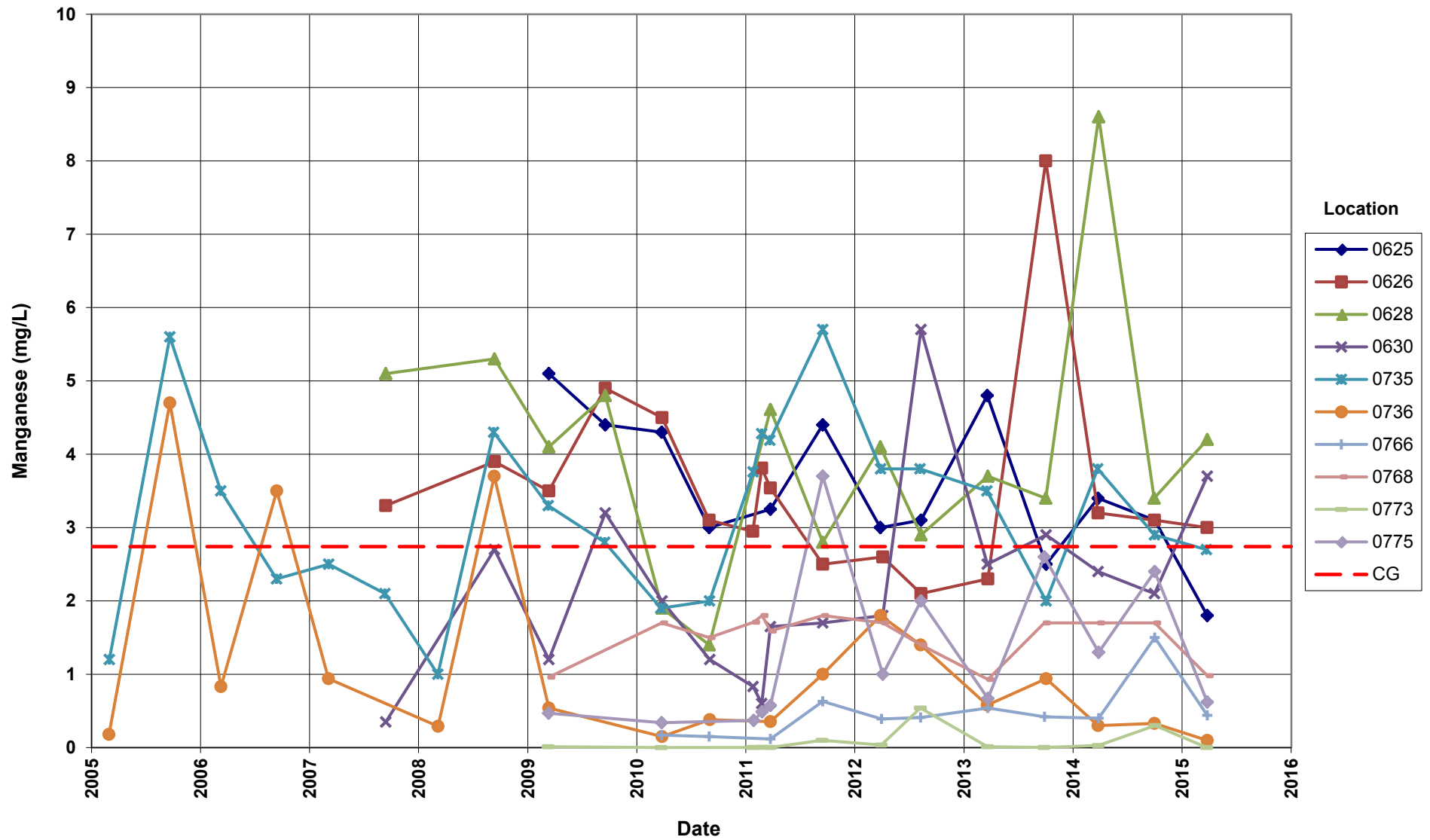
Shiprock Disposal Site (Floodplain)
Ammonia Total as N Concentration



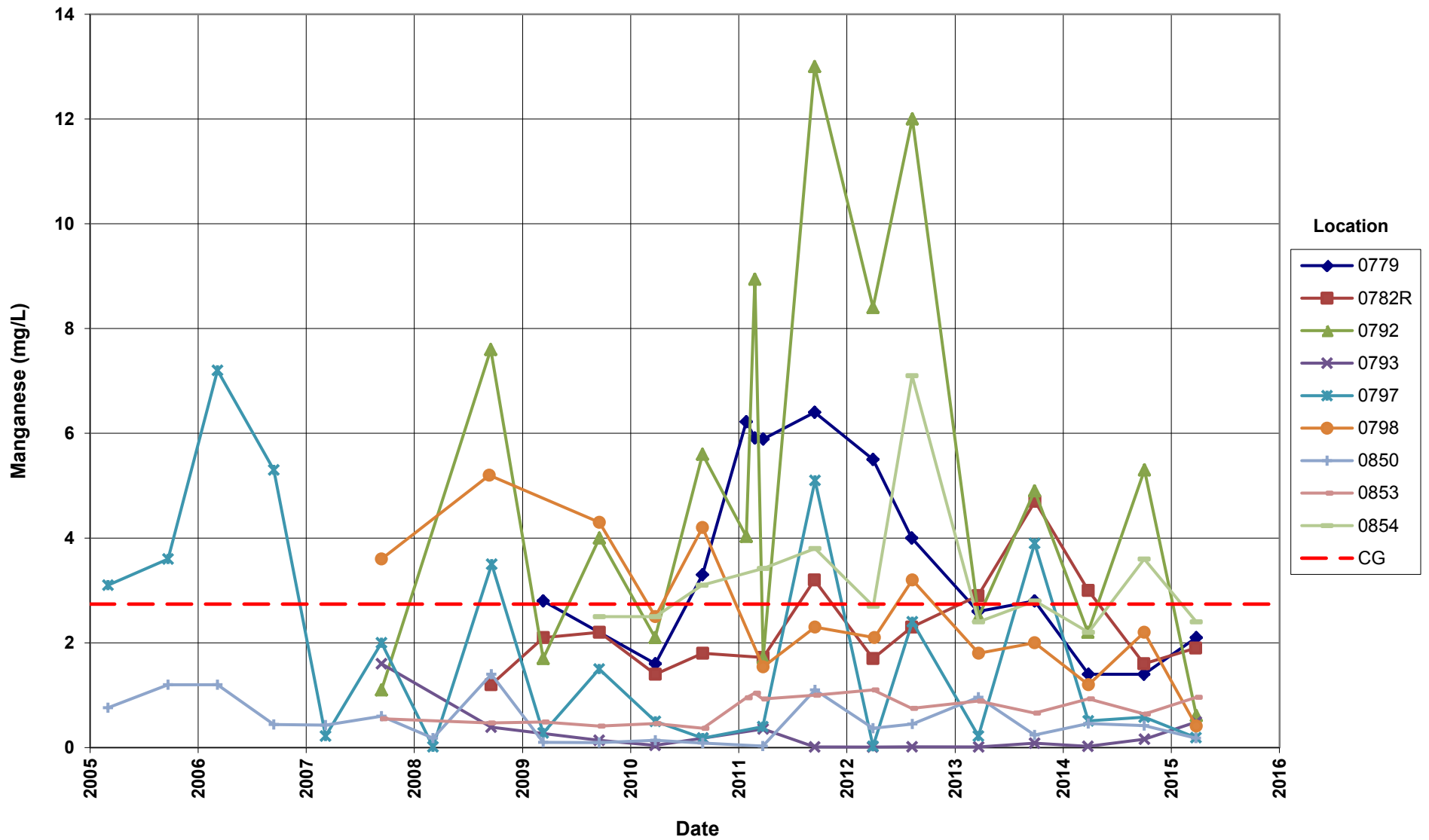
Shiprock Disposal Site (Floodplain)
Manganese Concentration
Cleanup Goal (CG) = 2.74 mg/L



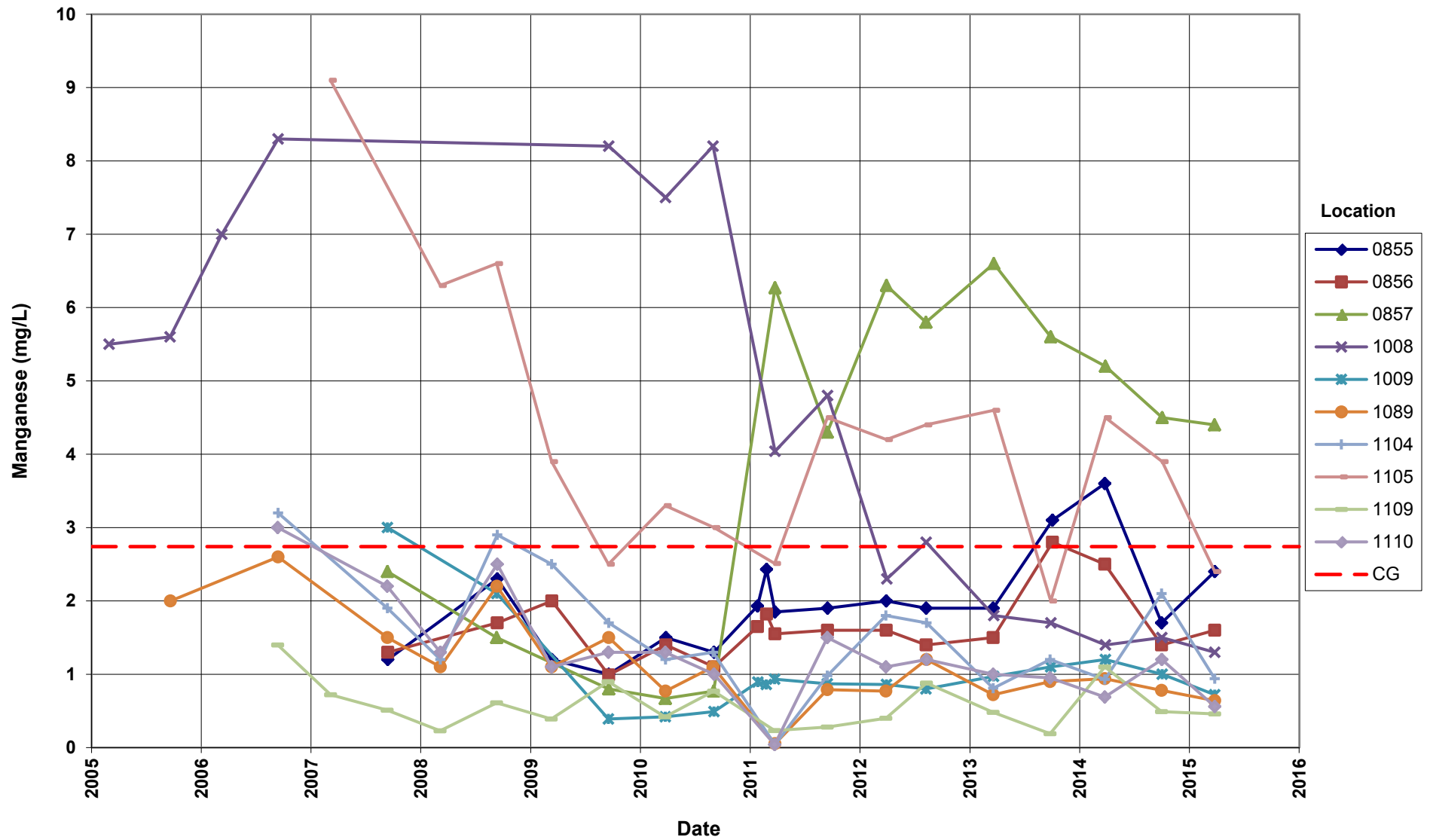
Shiprock Disposal Site (Floodplain)
Manganese Concentration
Cleanup Goal (CG) = 2.74 mg/L



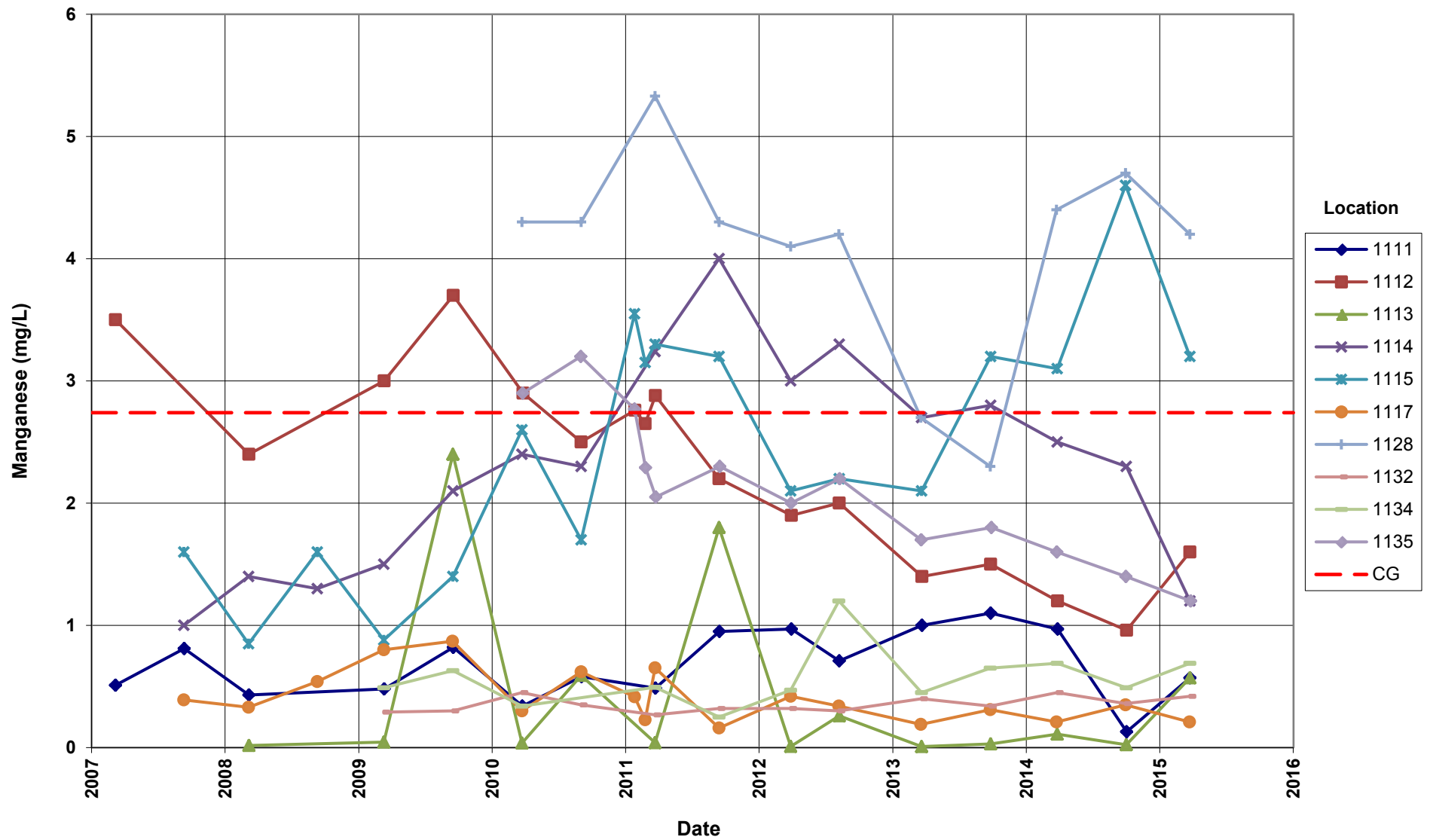
Shiprock Disposal Site (Floodplain)
Manganese Concentration
Cleanup Goal (CG) = 2.74 mg/L



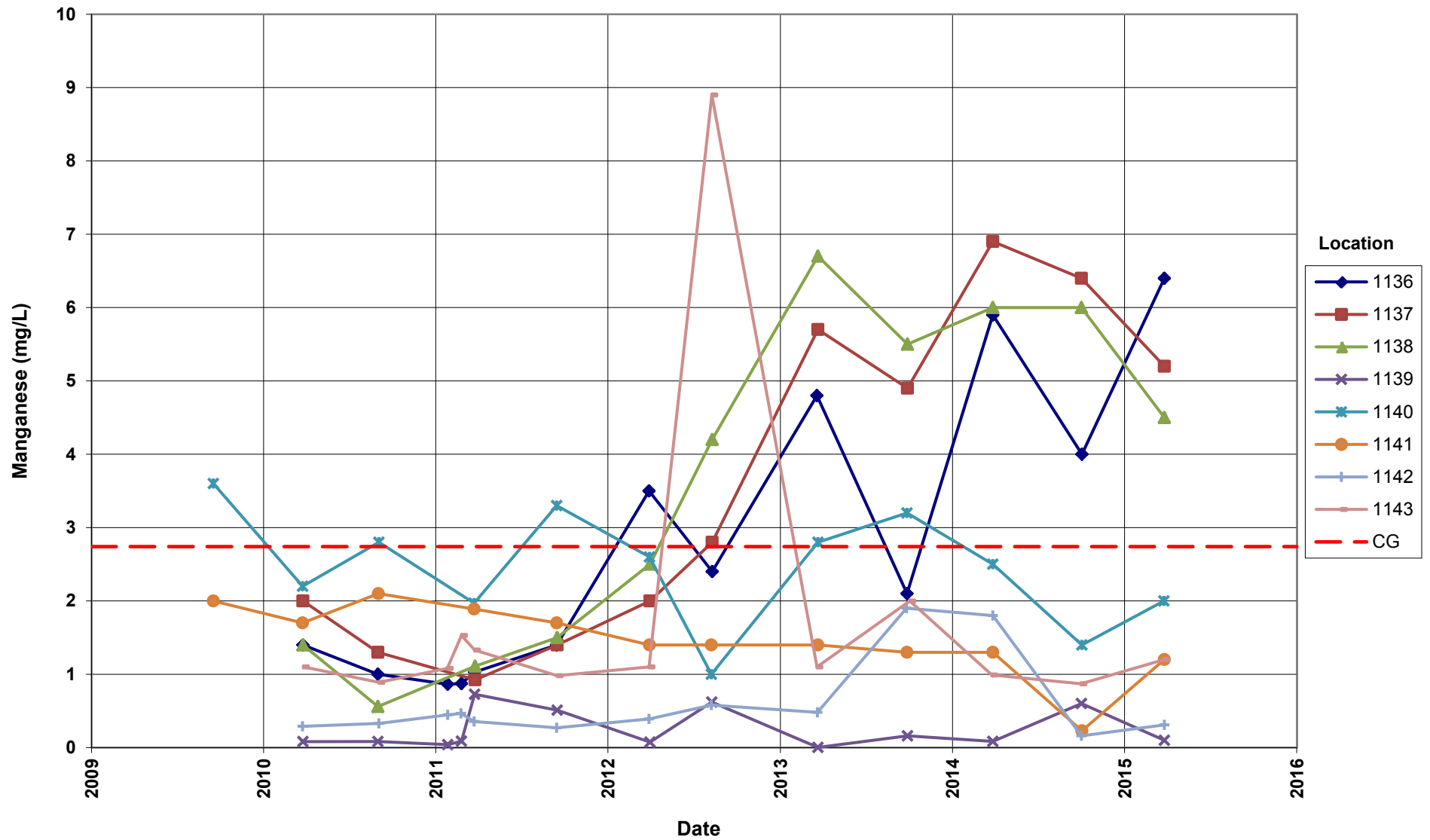
Shiprock Disposal Site (Floodplain)
Manganese Concentration
Cleanup Goal (CG) = 2.74 mg/L



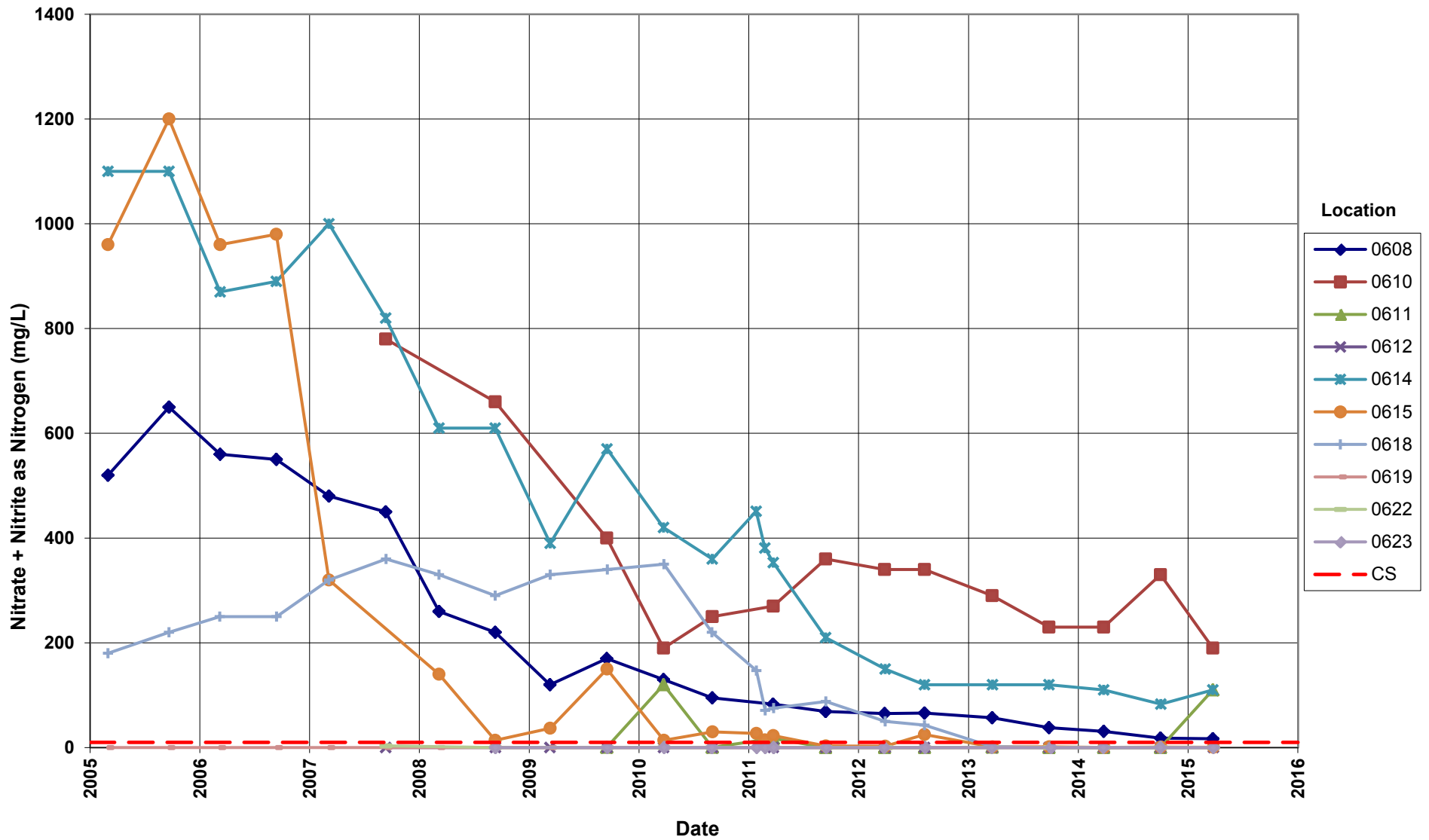
Shiprock Disposal Site (Floodplain)
Manganese Concentration
Cleanup Goal (CG) = 2.74 mg/L



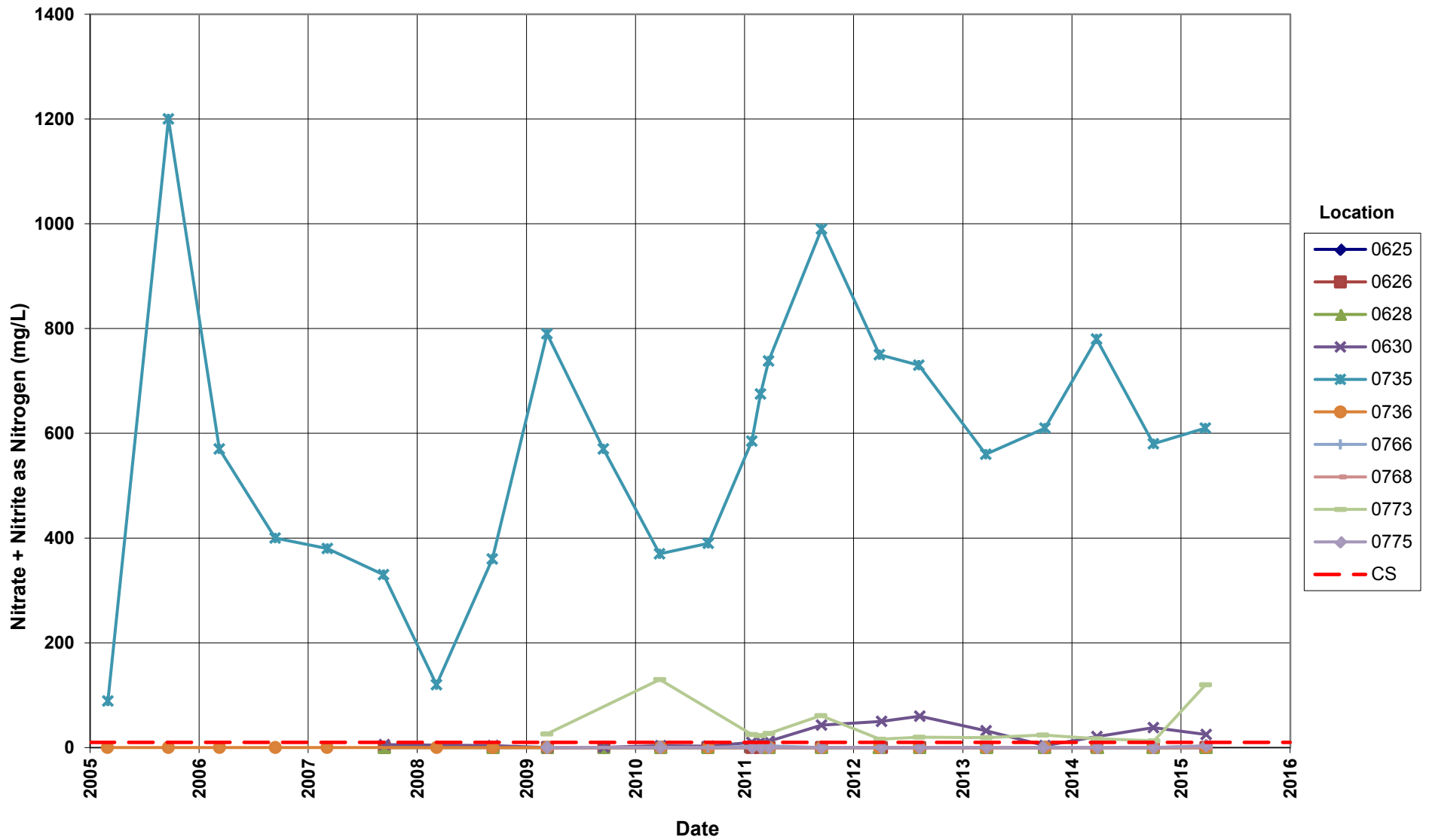
Shiprock Disposal Site (Floodplain)
Manganese Concentration
Cleanup Goal (CG) = 2.74 mg/L



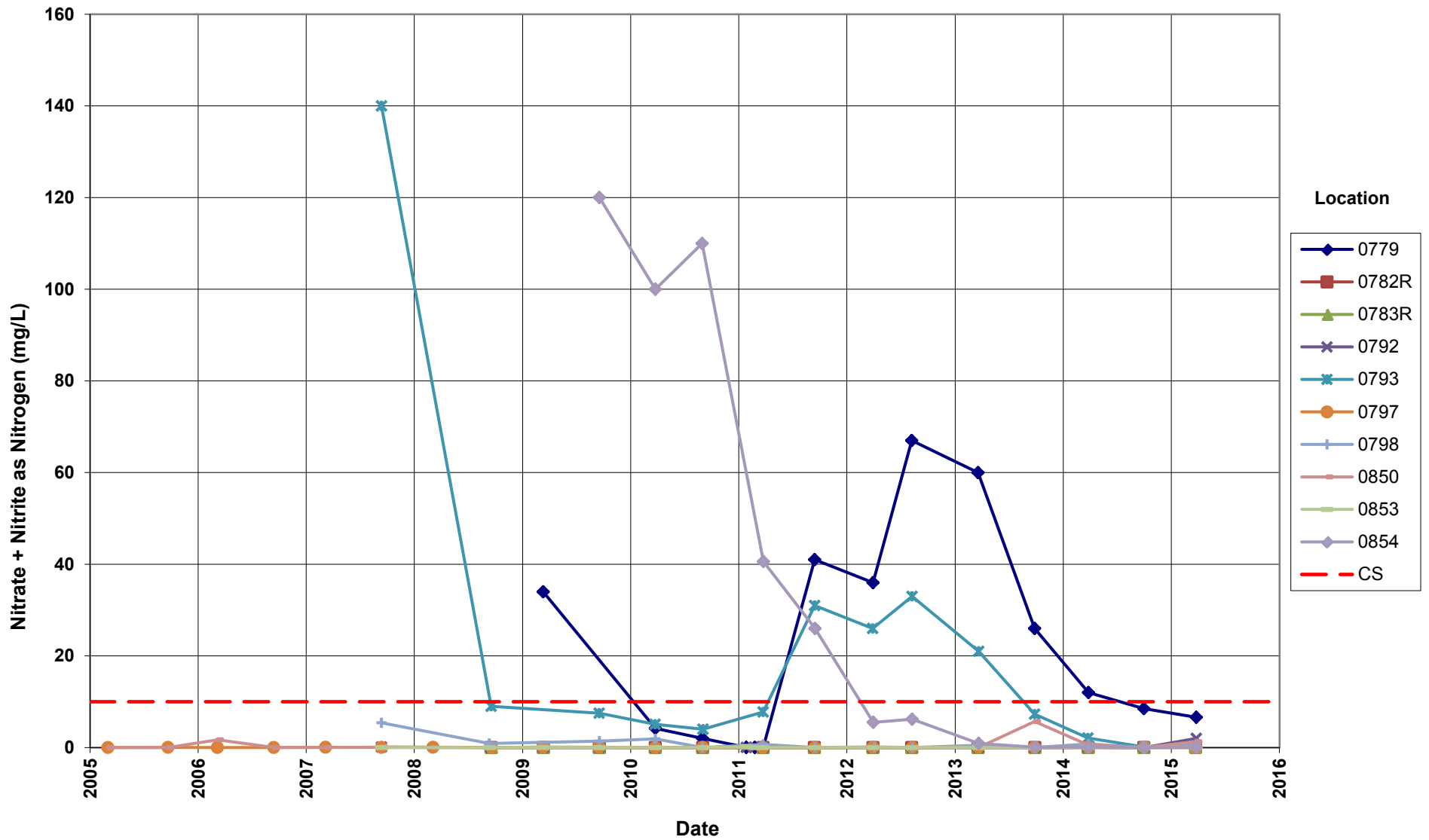
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
 Compliance Standard (CS) = 10 mg/L



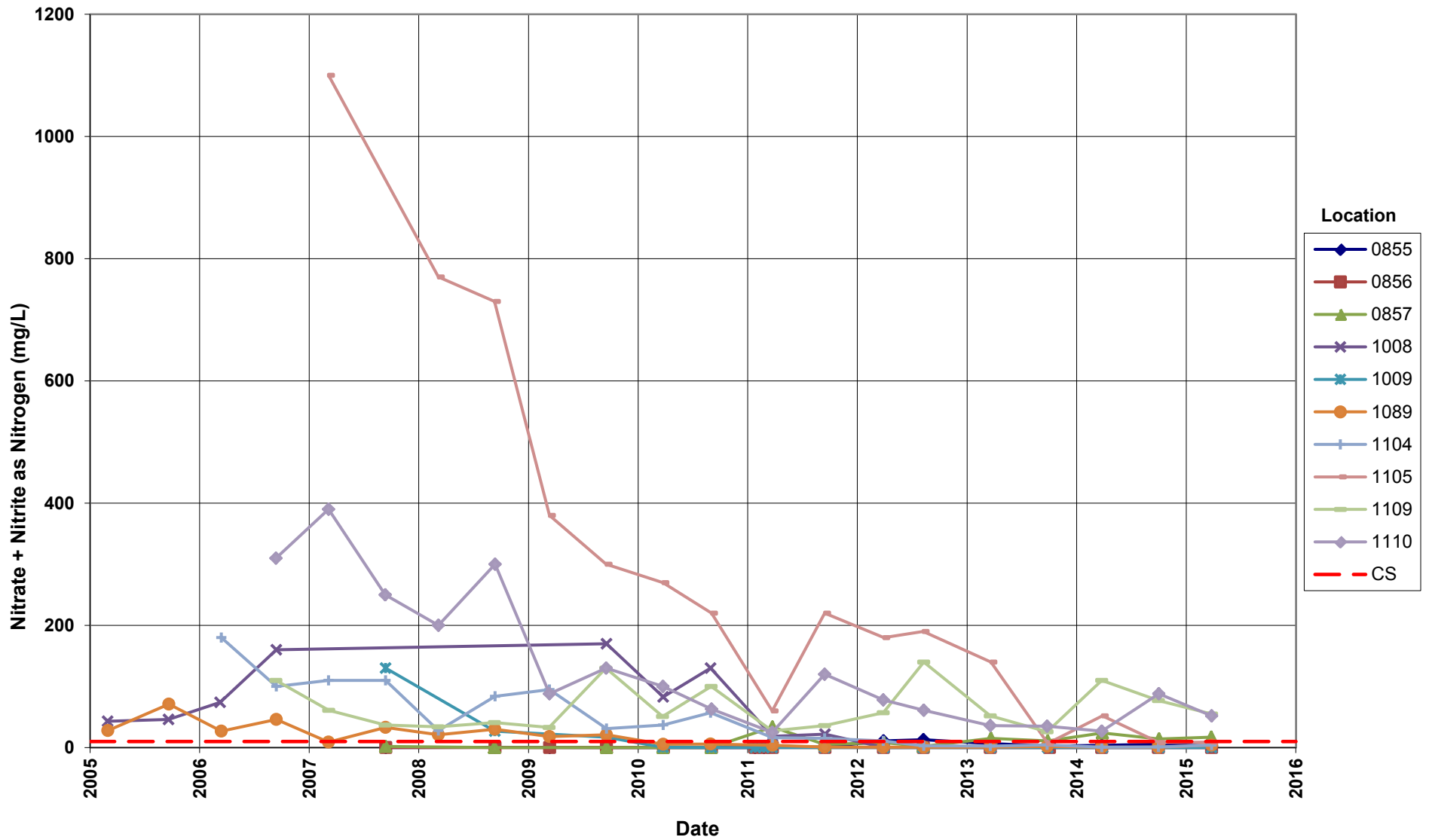
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
Compliance Standard (CS) = 10 mg/L



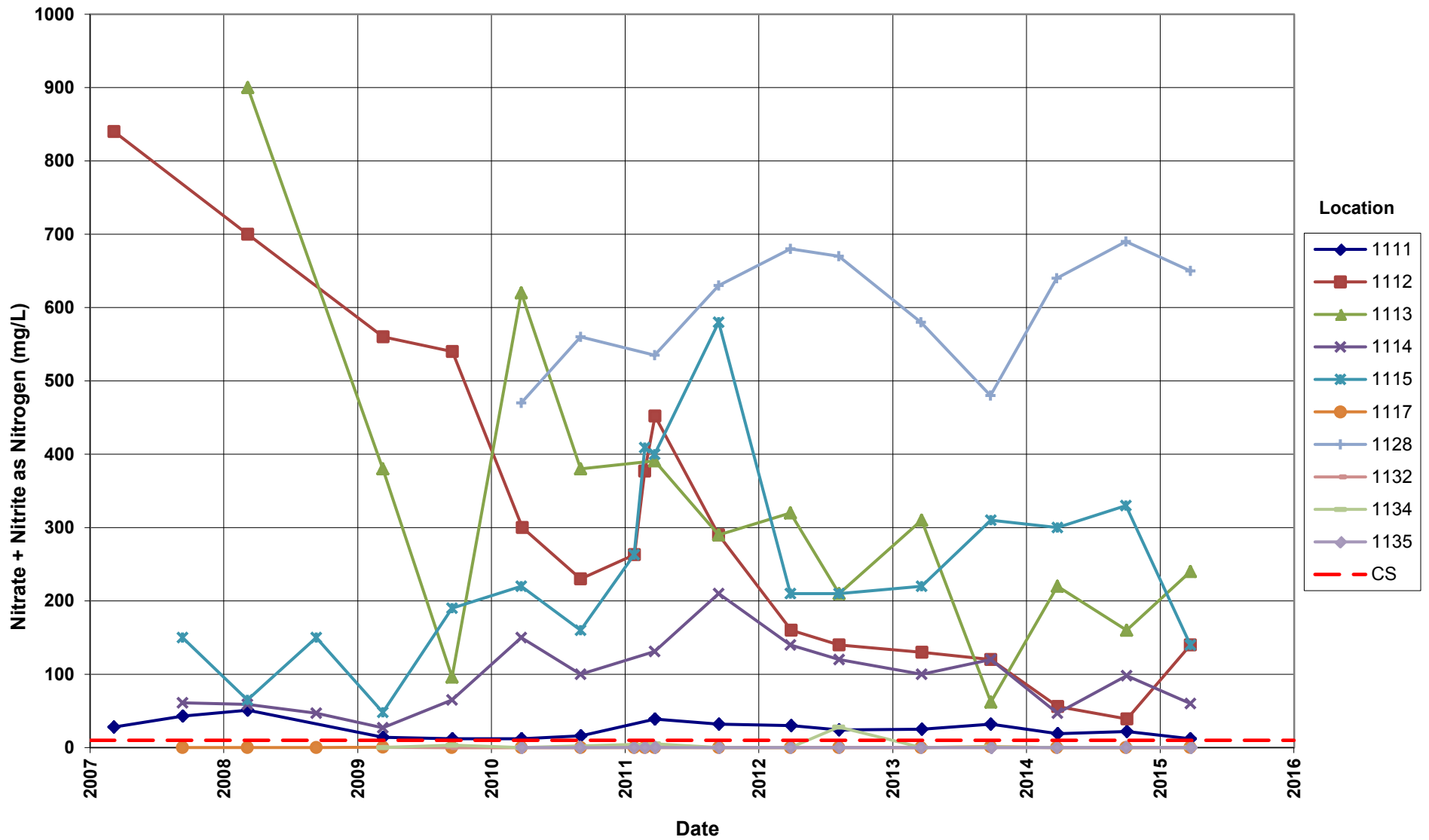
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
 Compliance Standard (CS) = 10 mg/L



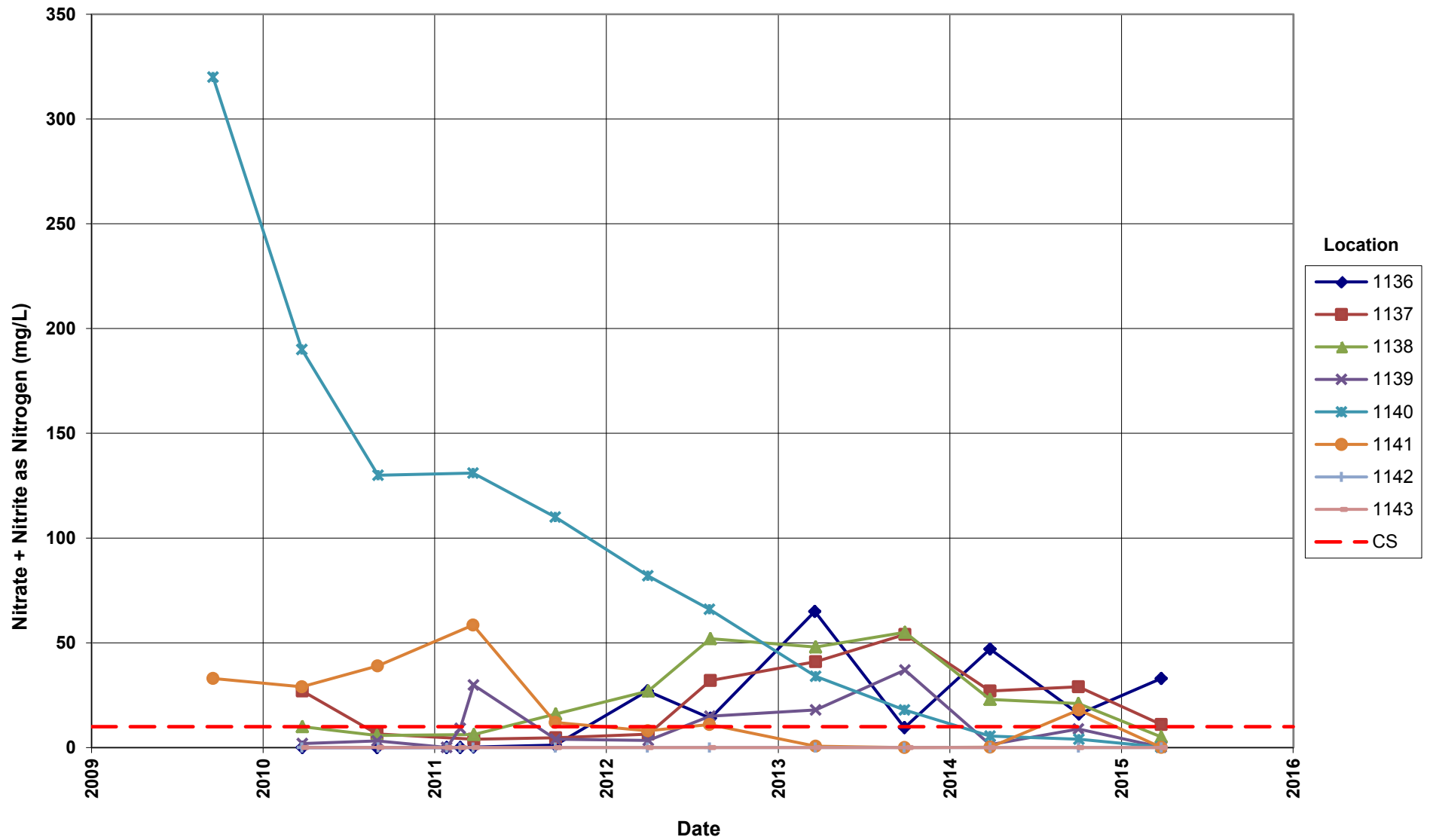
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
Compliance Standard (CS) = 10 mg/L



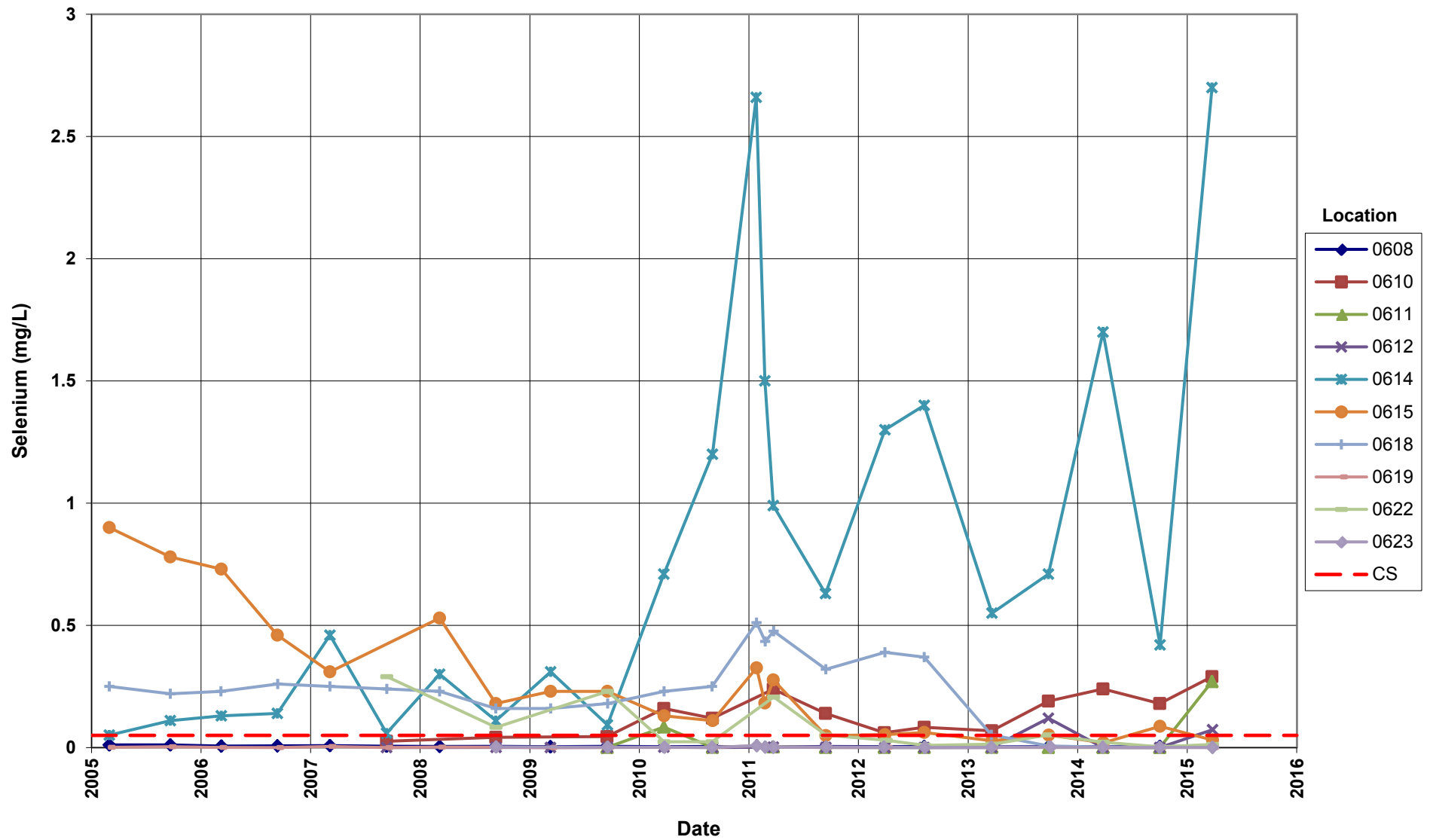
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
 Compliance Standard (CS) = 10 mg/L



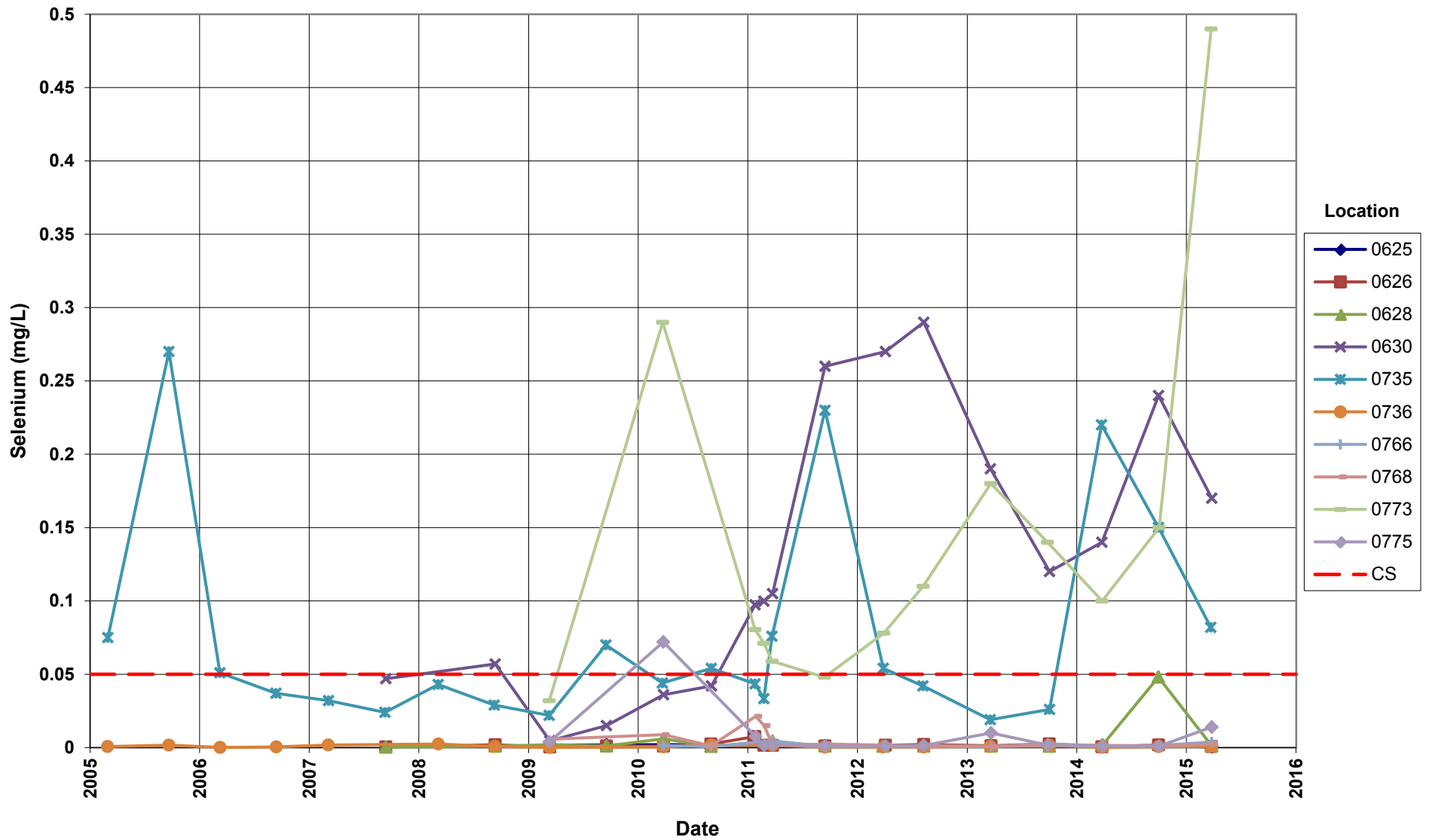
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
Compliance Standard (CS) = 10 mg/L



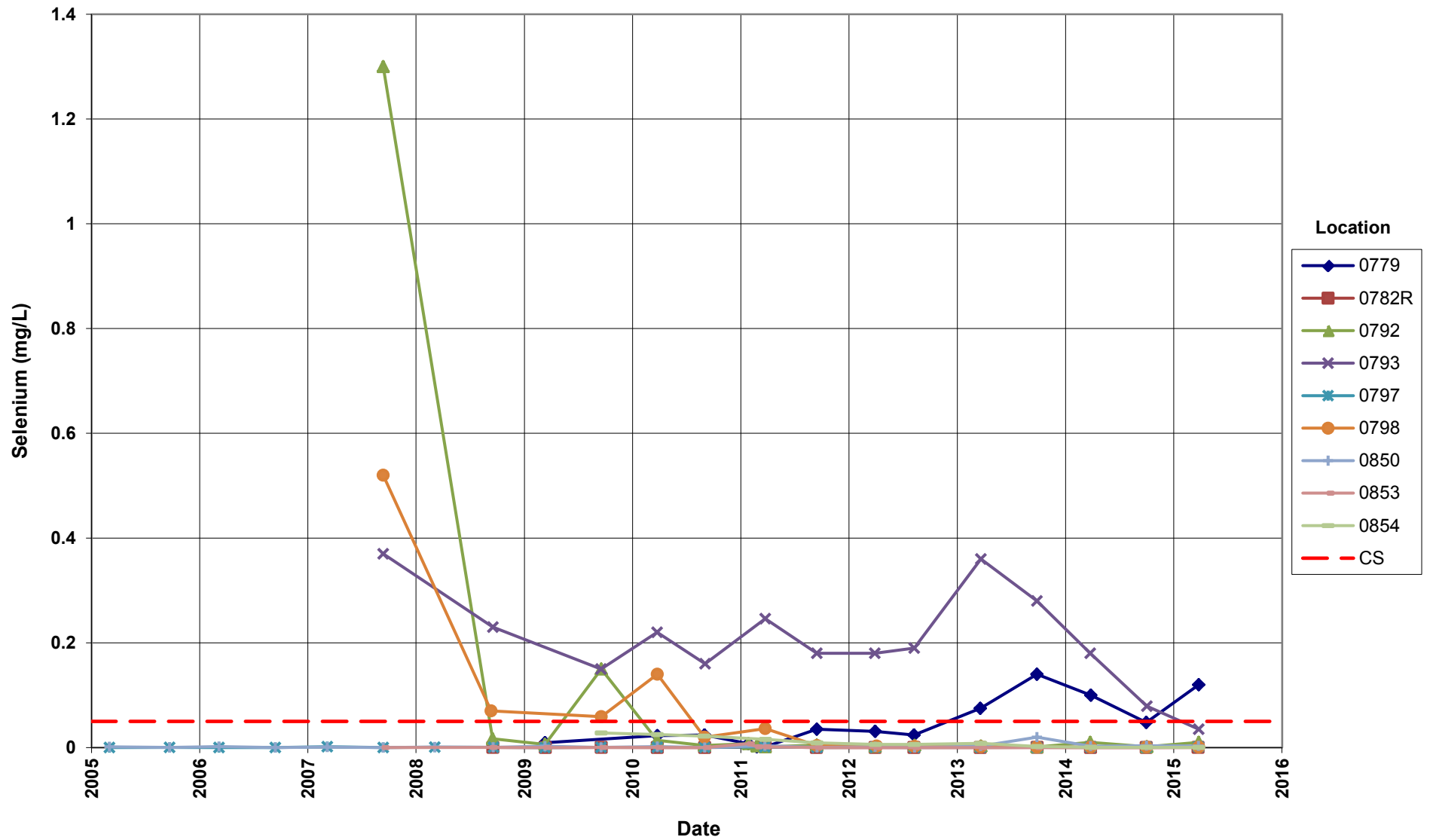
Shiprock Disposal Site (Floodplain)
Selenium Concentration
Compliance Standard (CS) = 0.05 mg/L



Shiprock Disposal Site (Floodplain)
Selenium Concentration
Compliance Standard (CS) = 0.05 mg/L



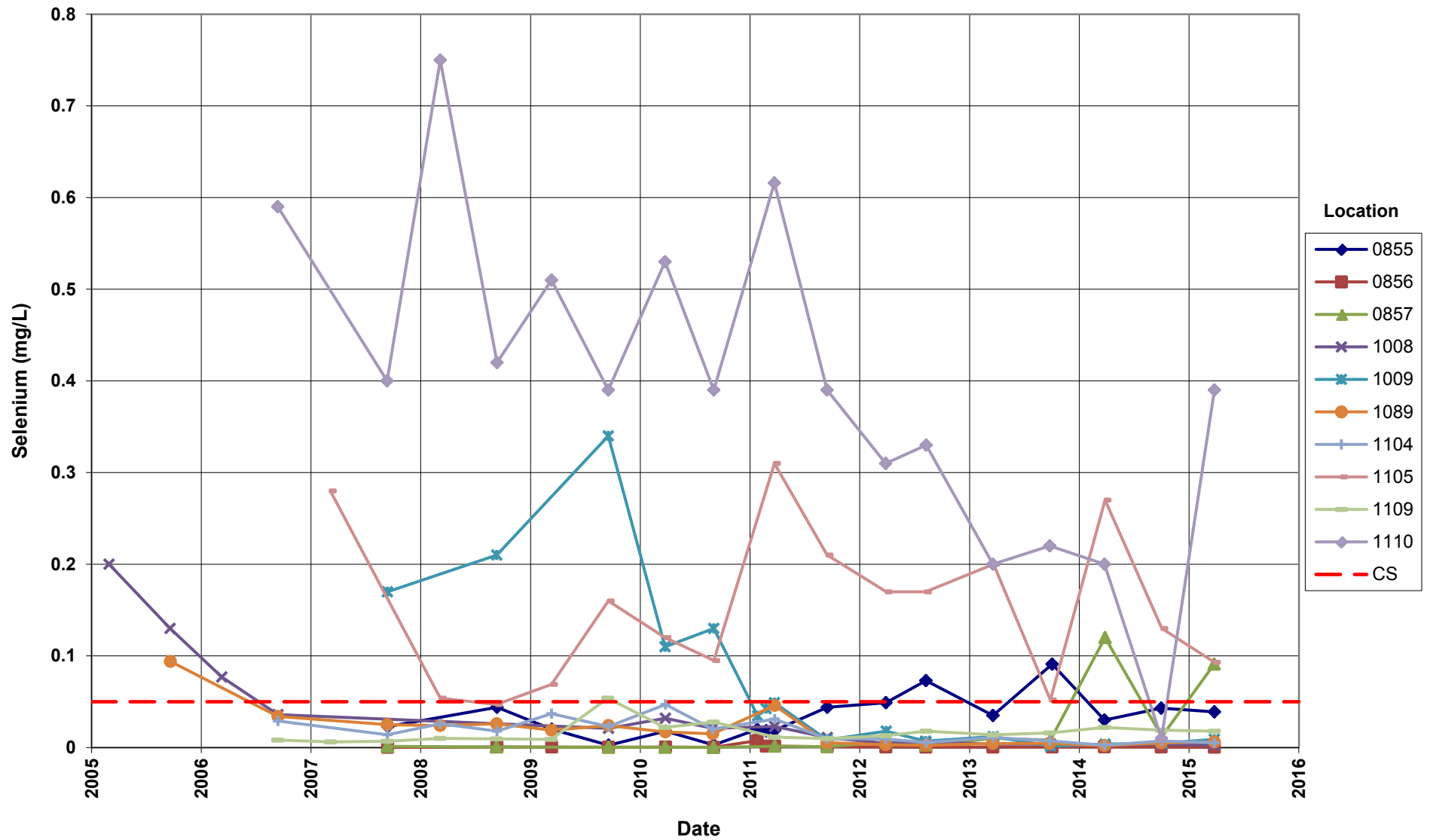
Shiprock Disposal Site (Floodplain)
Selenium Concentration
Compliance Standard (CS) = 0.05 mg/L



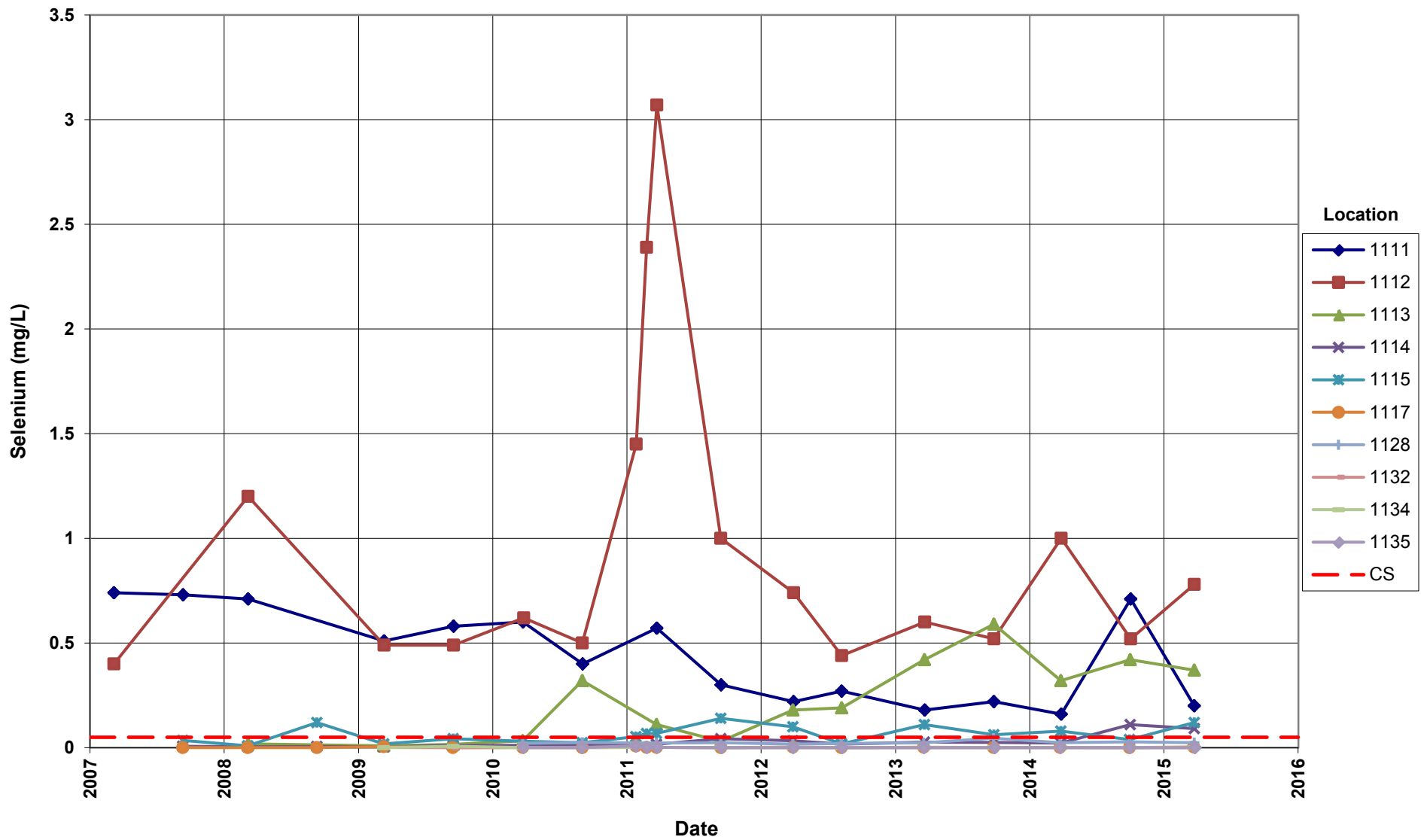
Shiprock Disposal Site (Floodplain)

Selenium Concentration

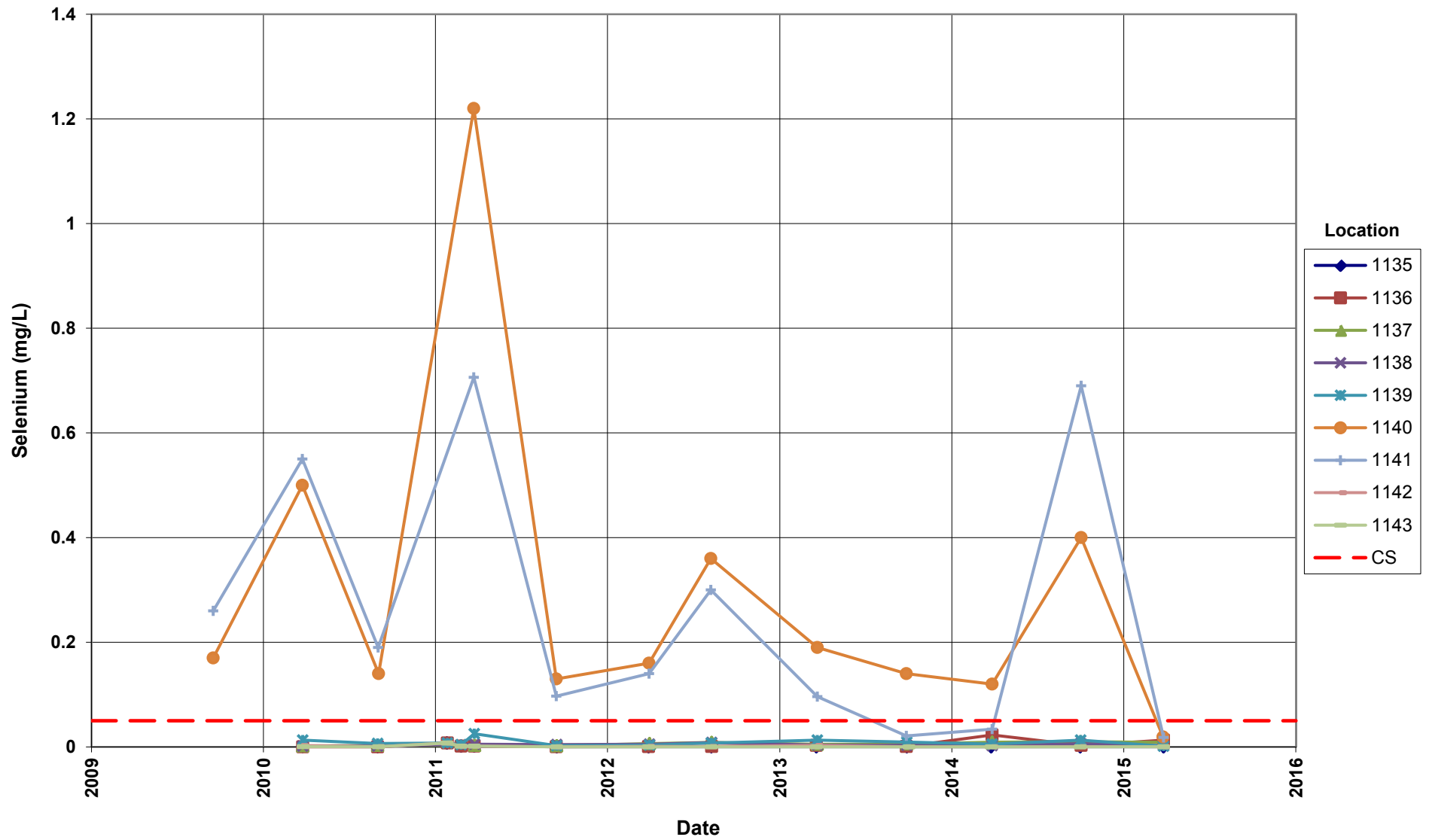
Compliance Standard (CS) = 0.05 mg/L



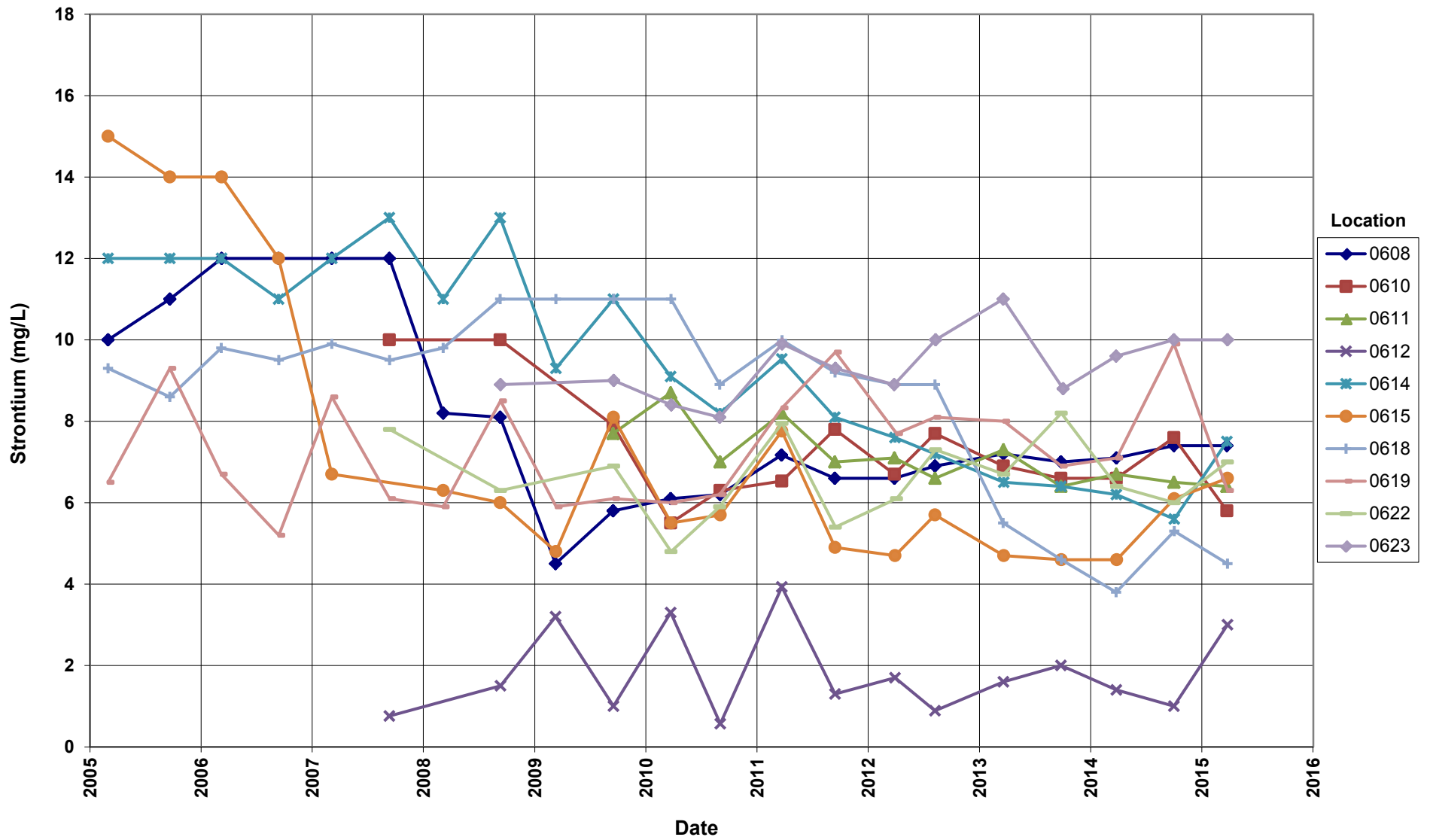
Shiprock Disposal Site (Floodplain)
Selenium Concentration
Compliance Standard (CS) = 0.05 mg/L



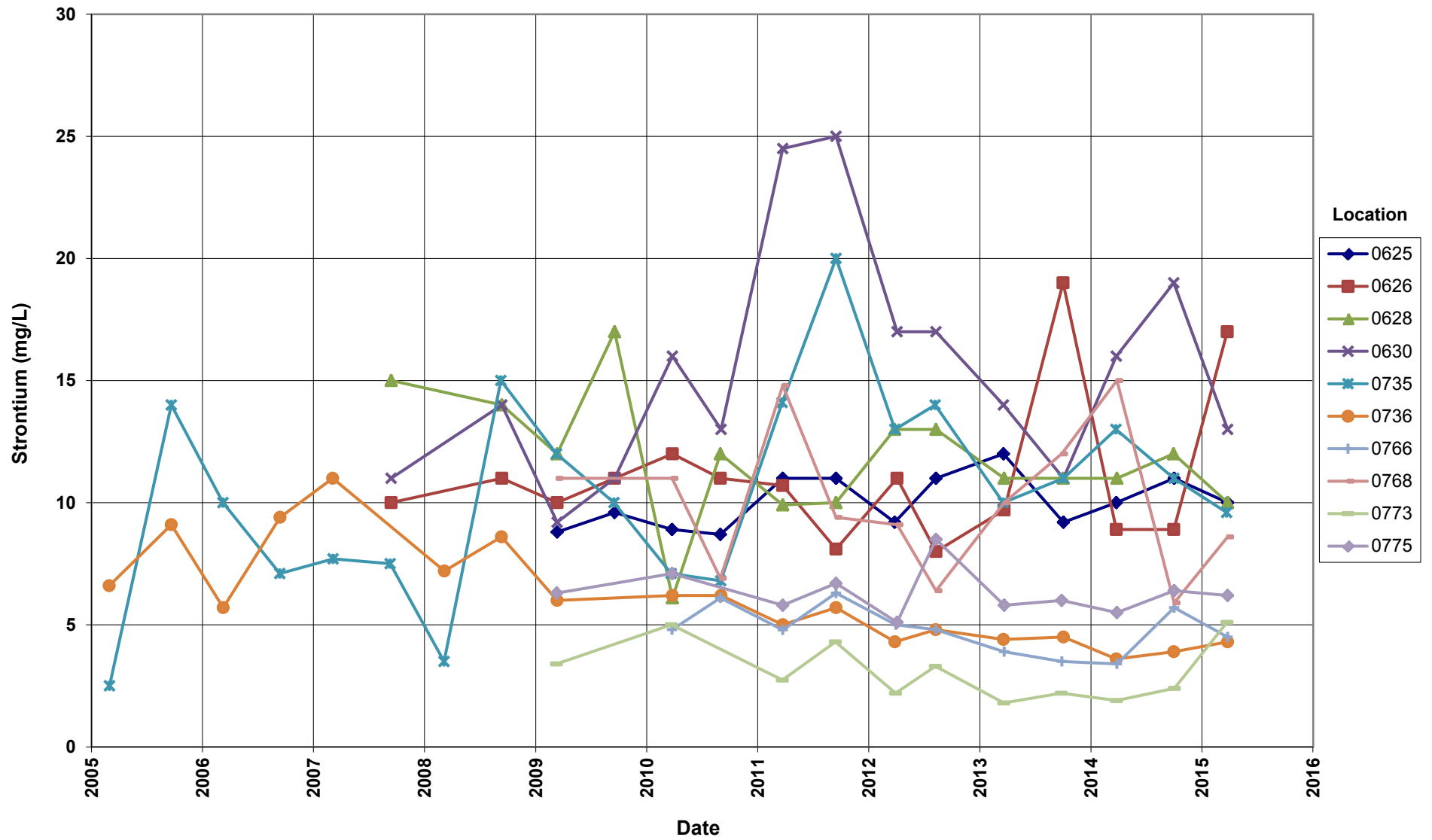
Shiprock Disposal Site (Floodplain)
Selenium Concentration
Compliance Standard (CS) = 0.05 mg/L



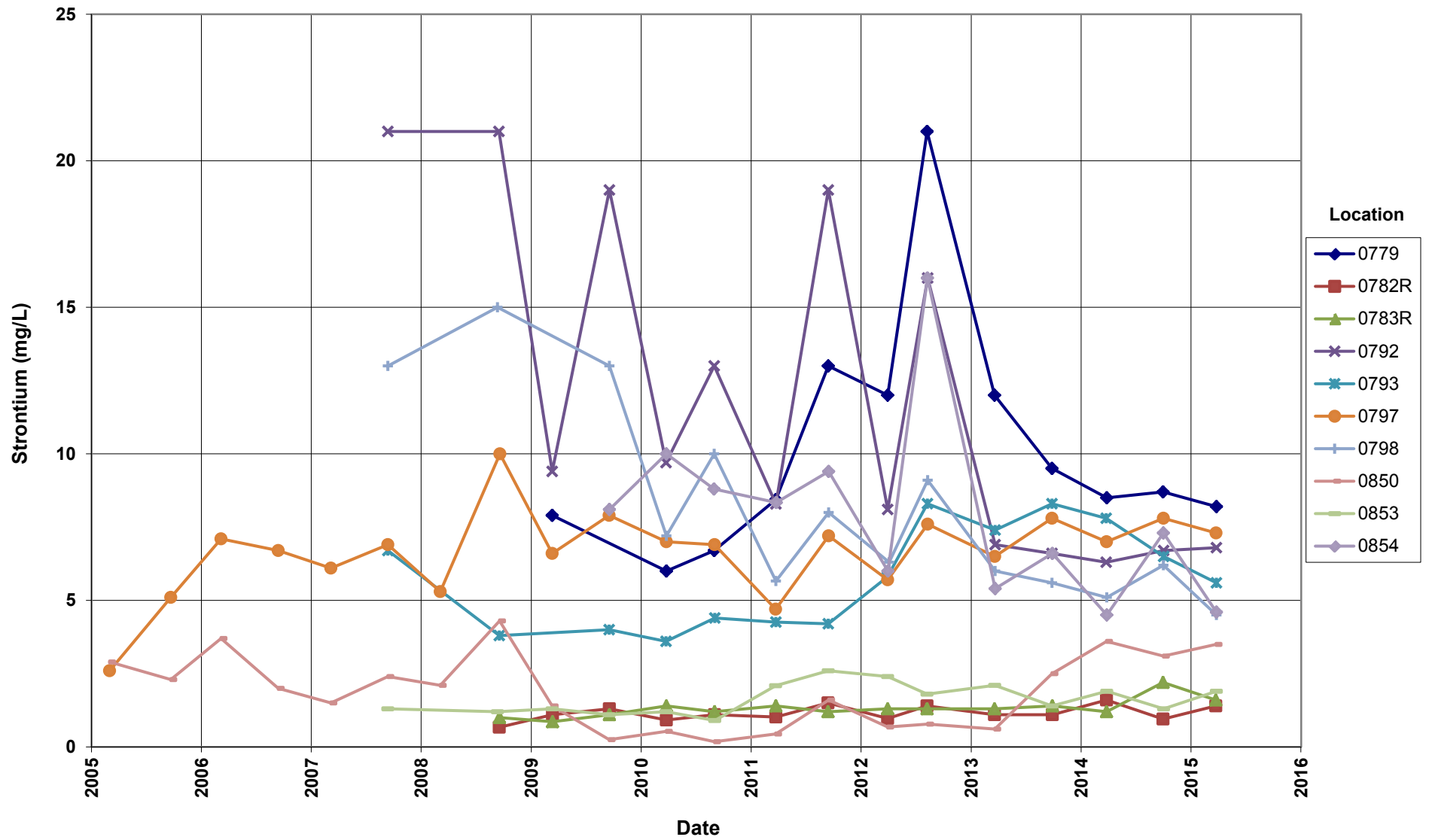
Shiprock Disposal Site (Floodplain) Strontium Concentration



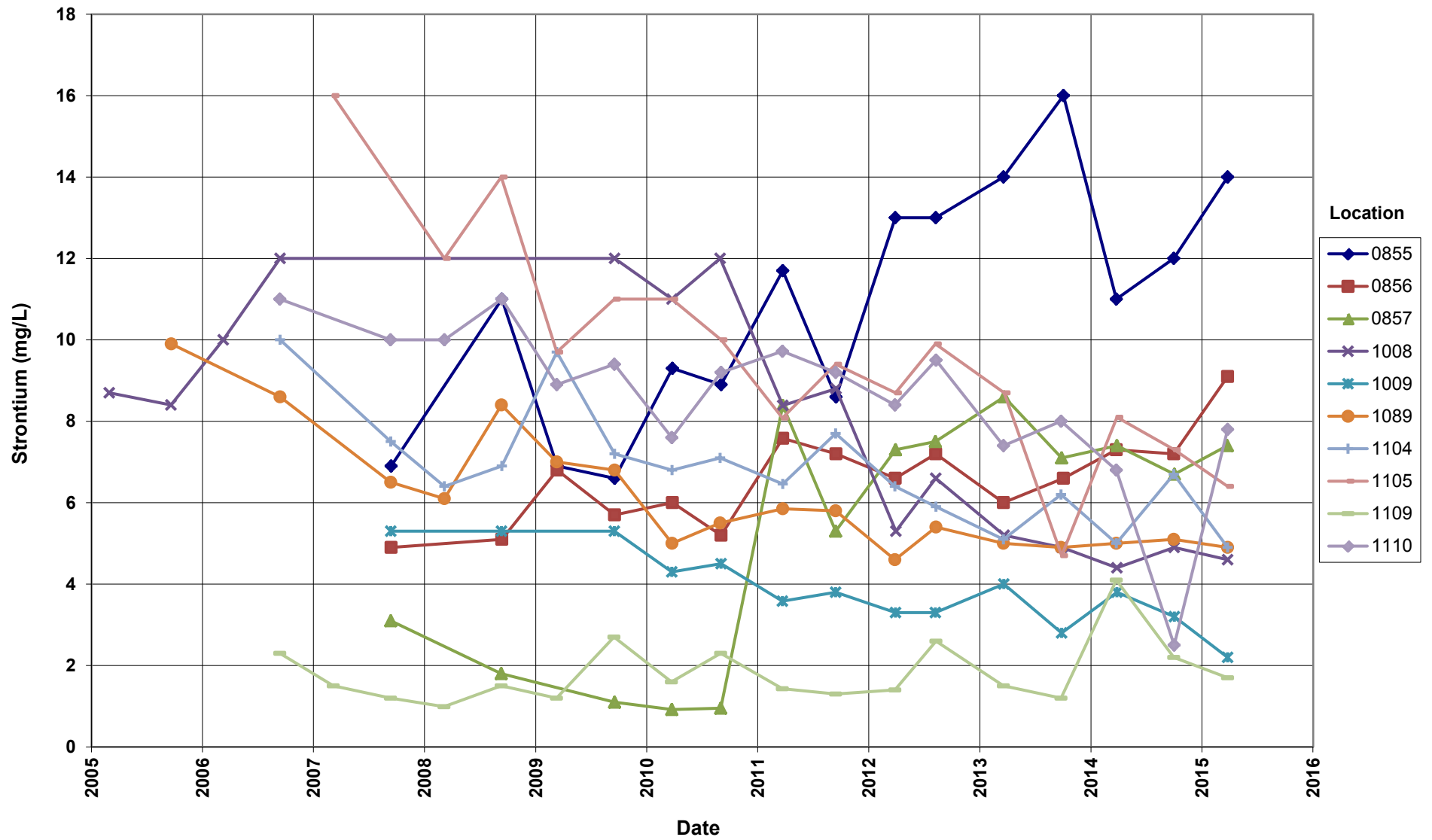
Shiprock Disposal Site (Floodplain) Strontium Concentration



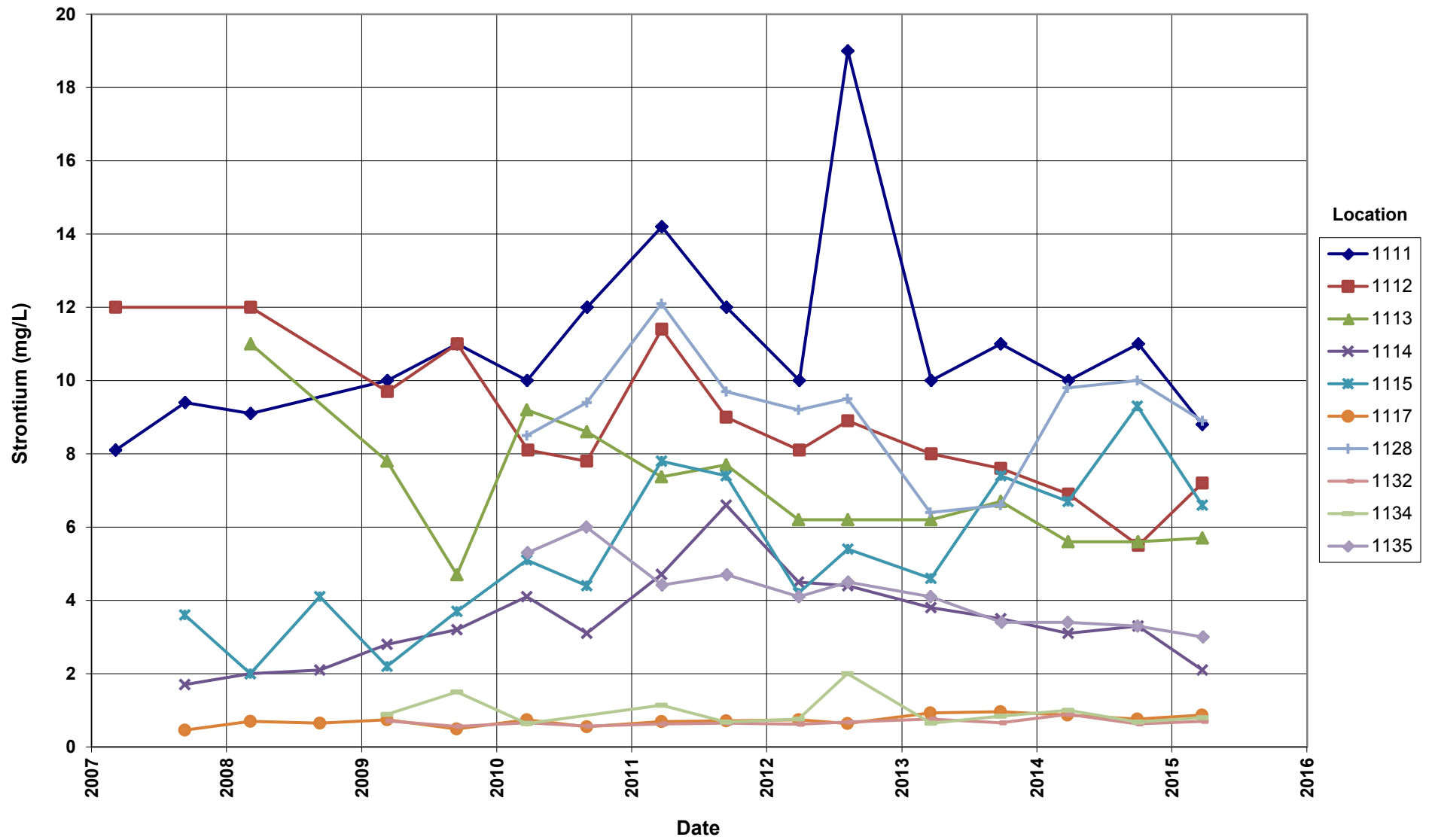
Shiprock Disposal Site (Floodplain) Strontium Concentration



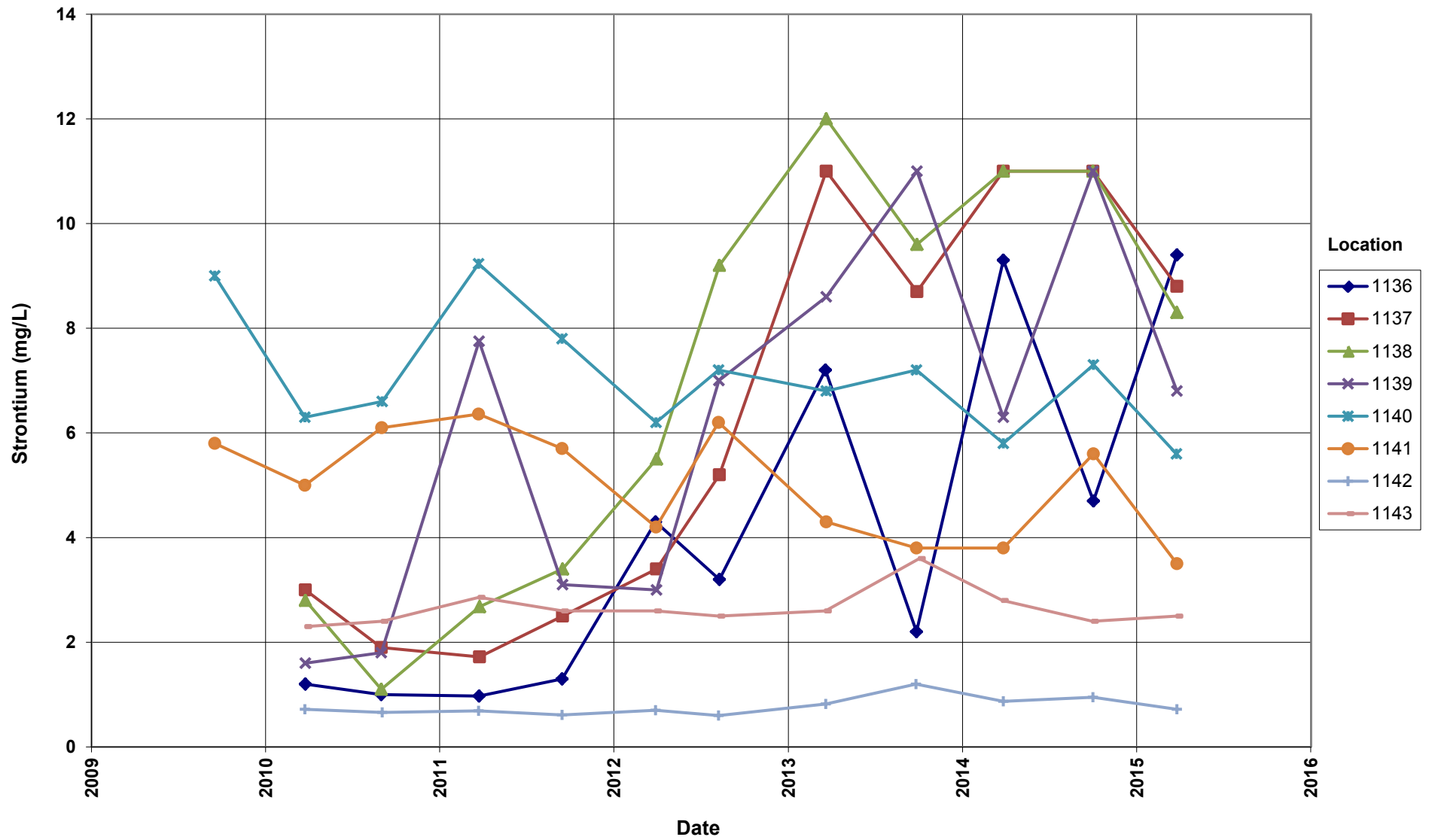
Shiprock Disposal Site (Floodplain) Strontium Concentration



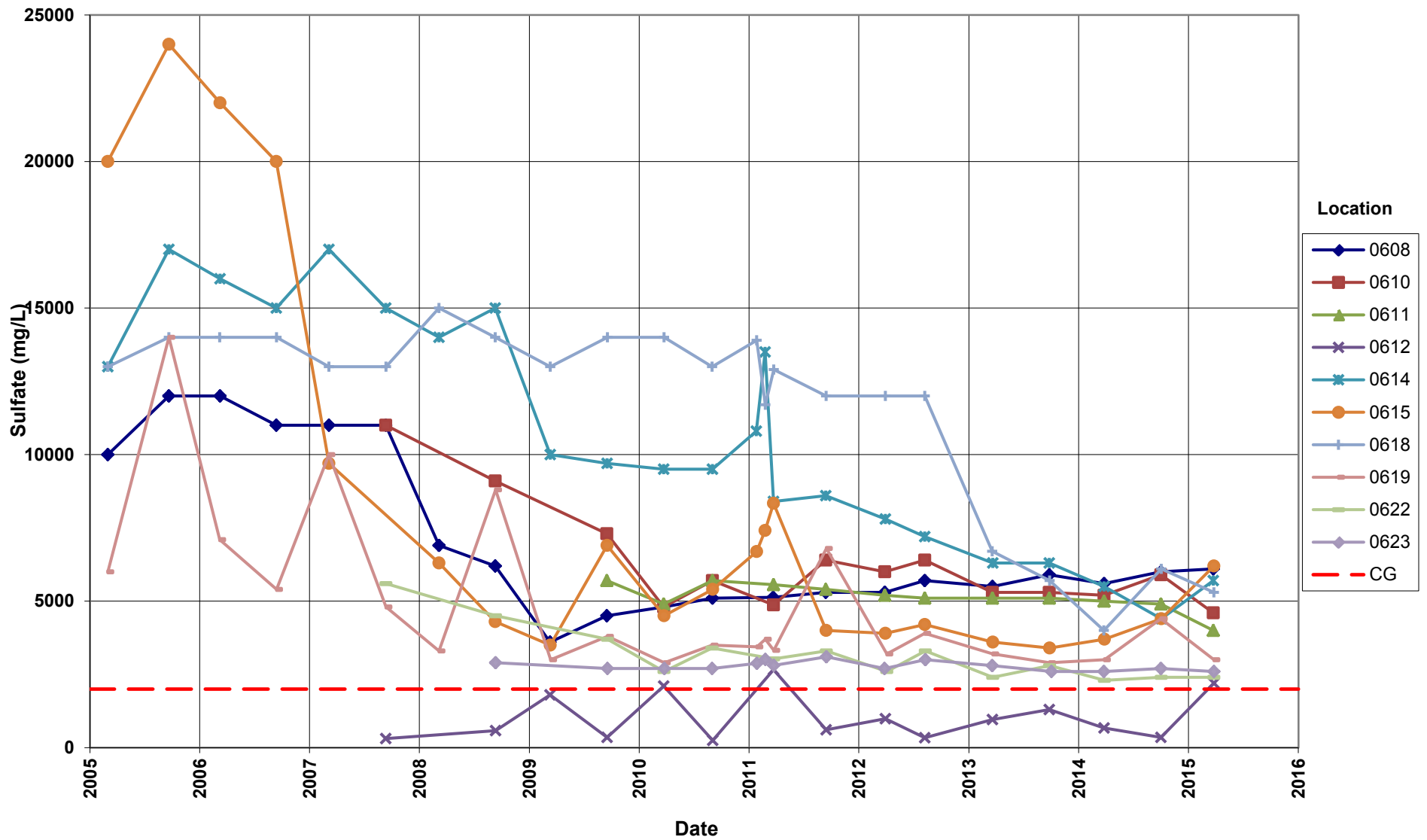
Shiprock Disposal Site (Floodplain) Strontium Concentration



Shiprock Disposal Site (Floodplain) Strontium Concentration



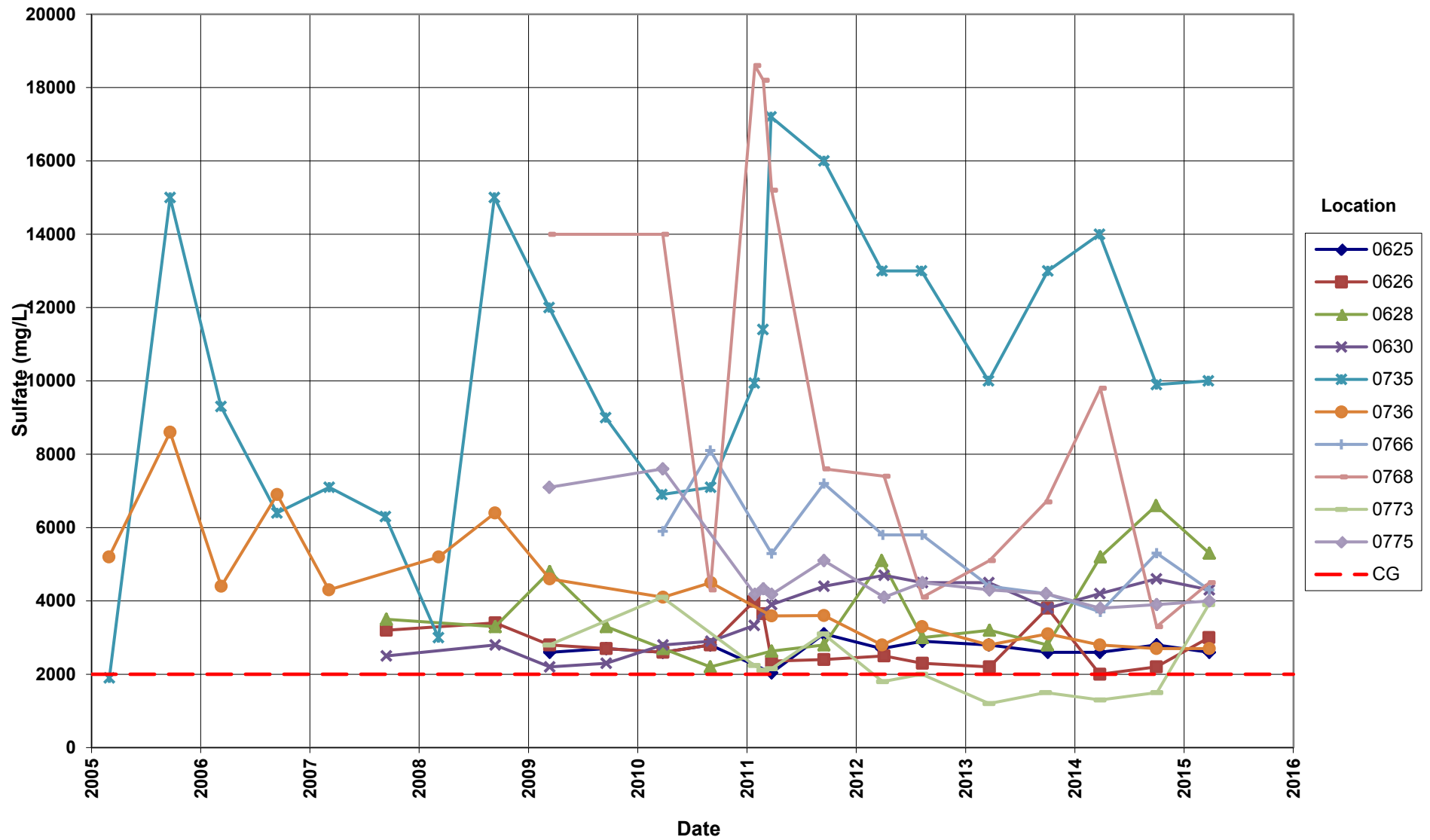
Shiprock Disposal Site (Floodplain)
Sulfate Concentration
Cleanup Goal (CG) = 2,000 mg/L



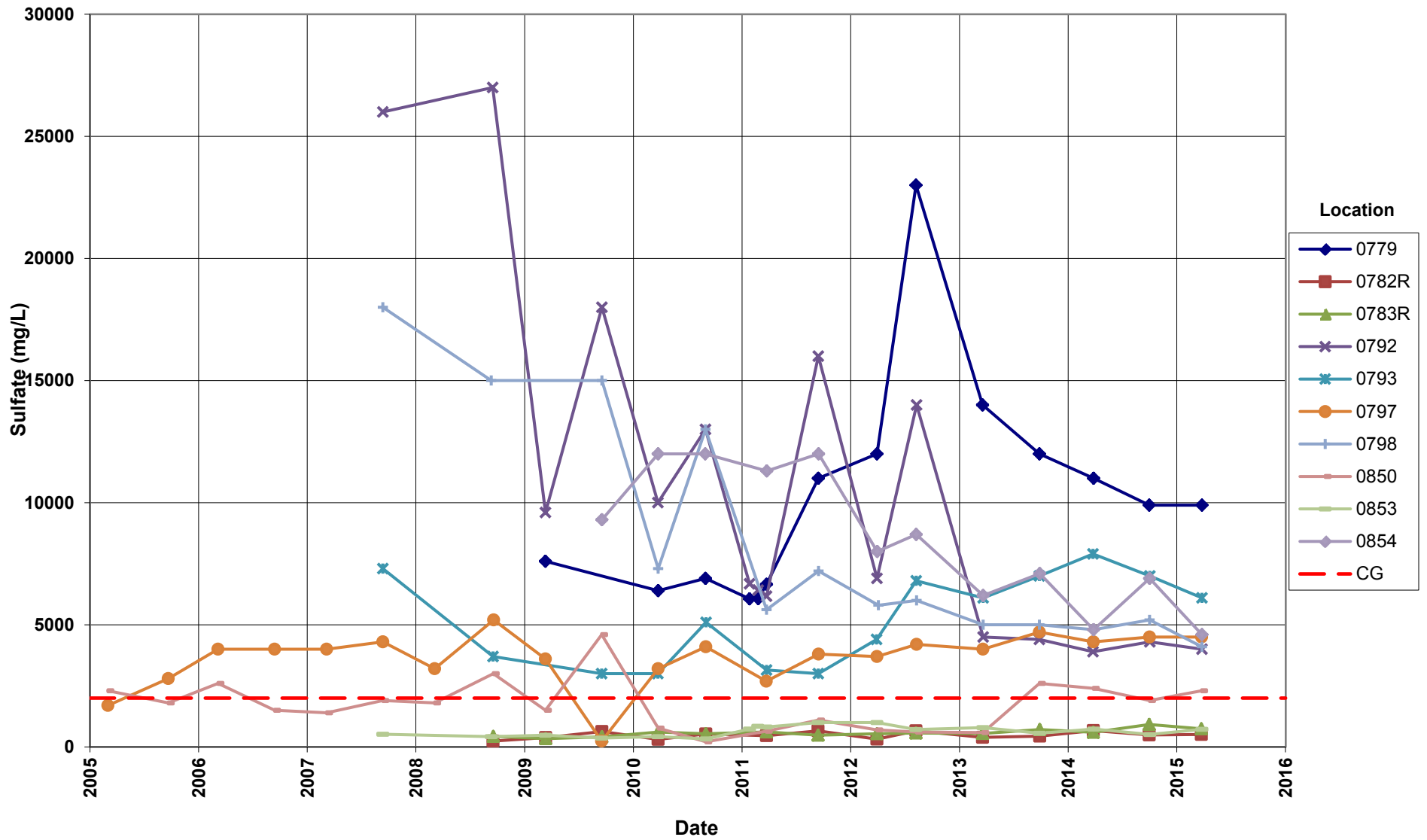
Shiprock Disposal Site (Floodplain)

Sulfate Concentration

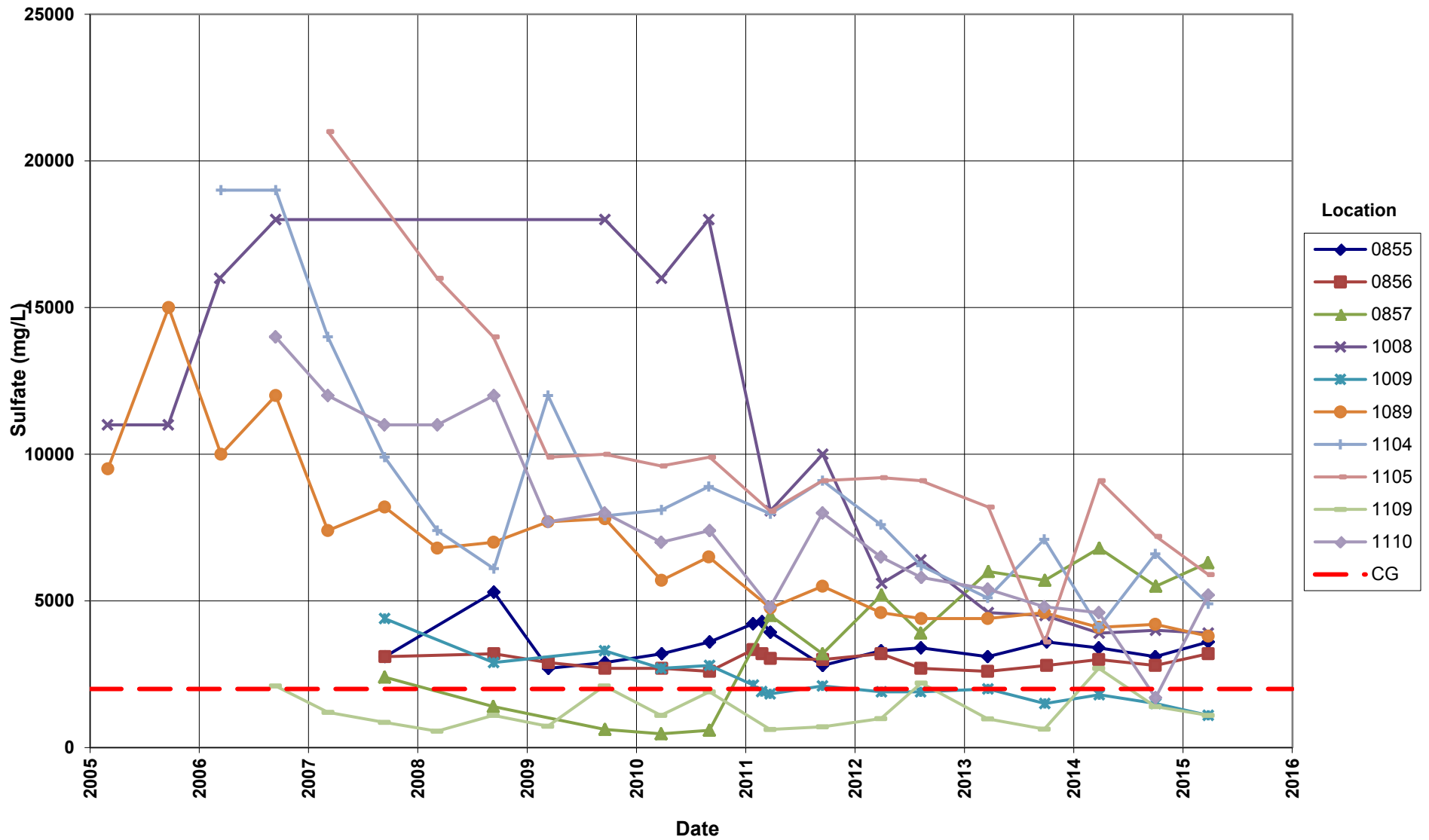
Cleanup Goal (CG) = 2,000 mg/L



Shiprock Disposal Site (Floodplain)
Sulfate Concentration
Cleanup Goal (CG) = 2,000 mg/L



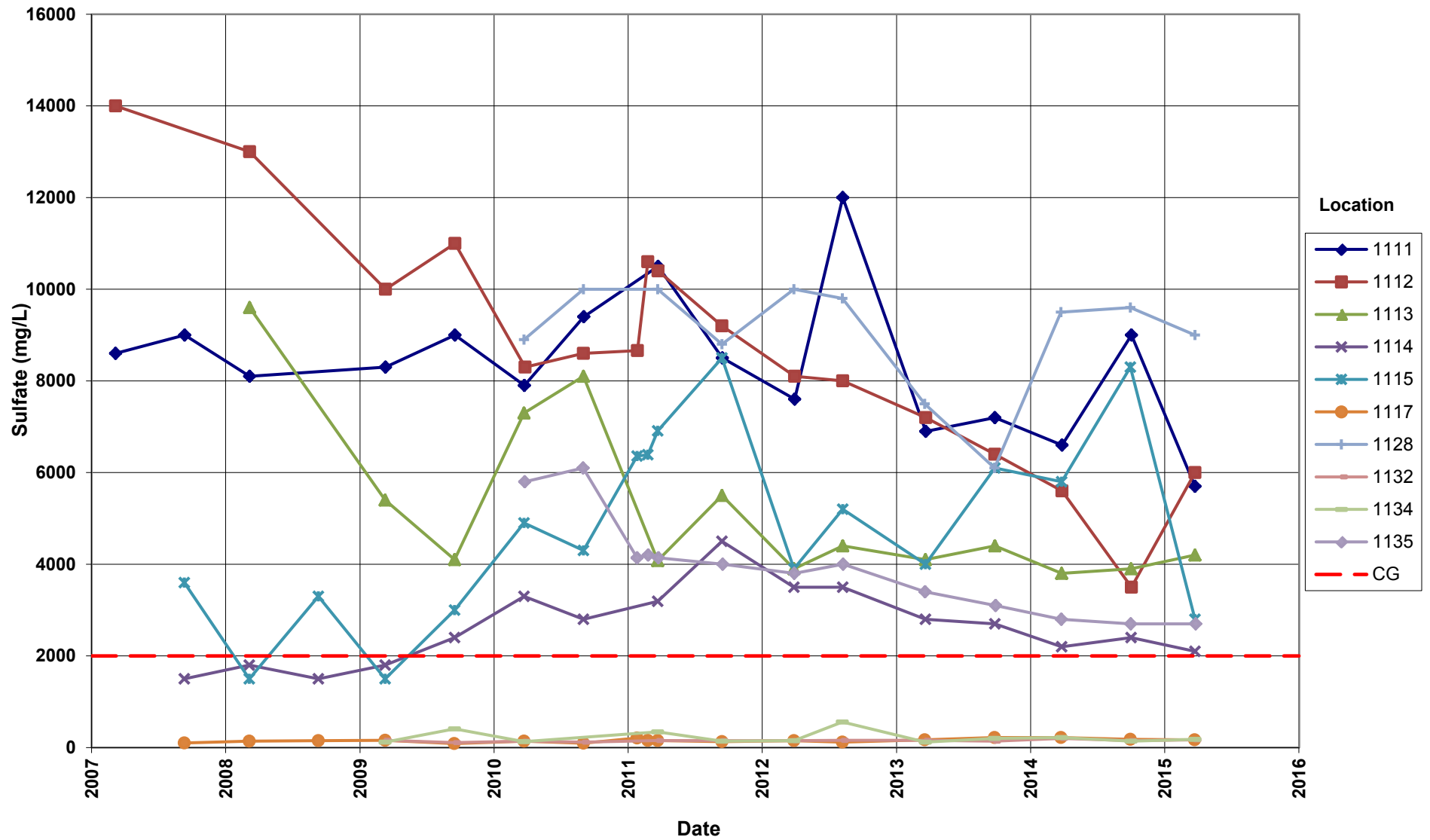
Shiprock Disposal Site (Floodplain)
Sulfate Concentration
Cleanup Goal (CG) = 2,000 mg/L



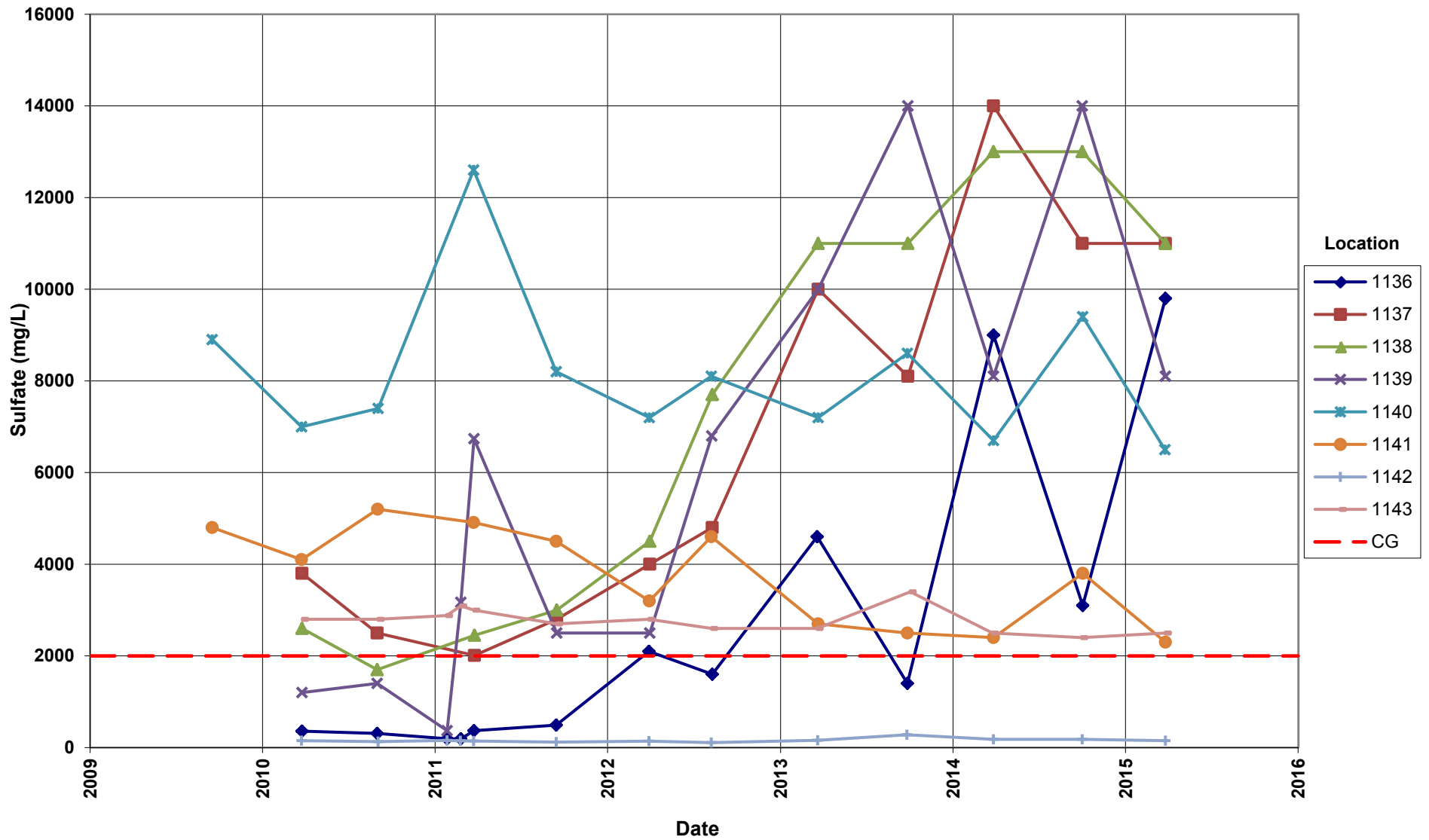
Shiprock Disposal Site (Floodplain)

Sulfate Concentration

Cleanup Goal (CG) = 2,000 mg/L



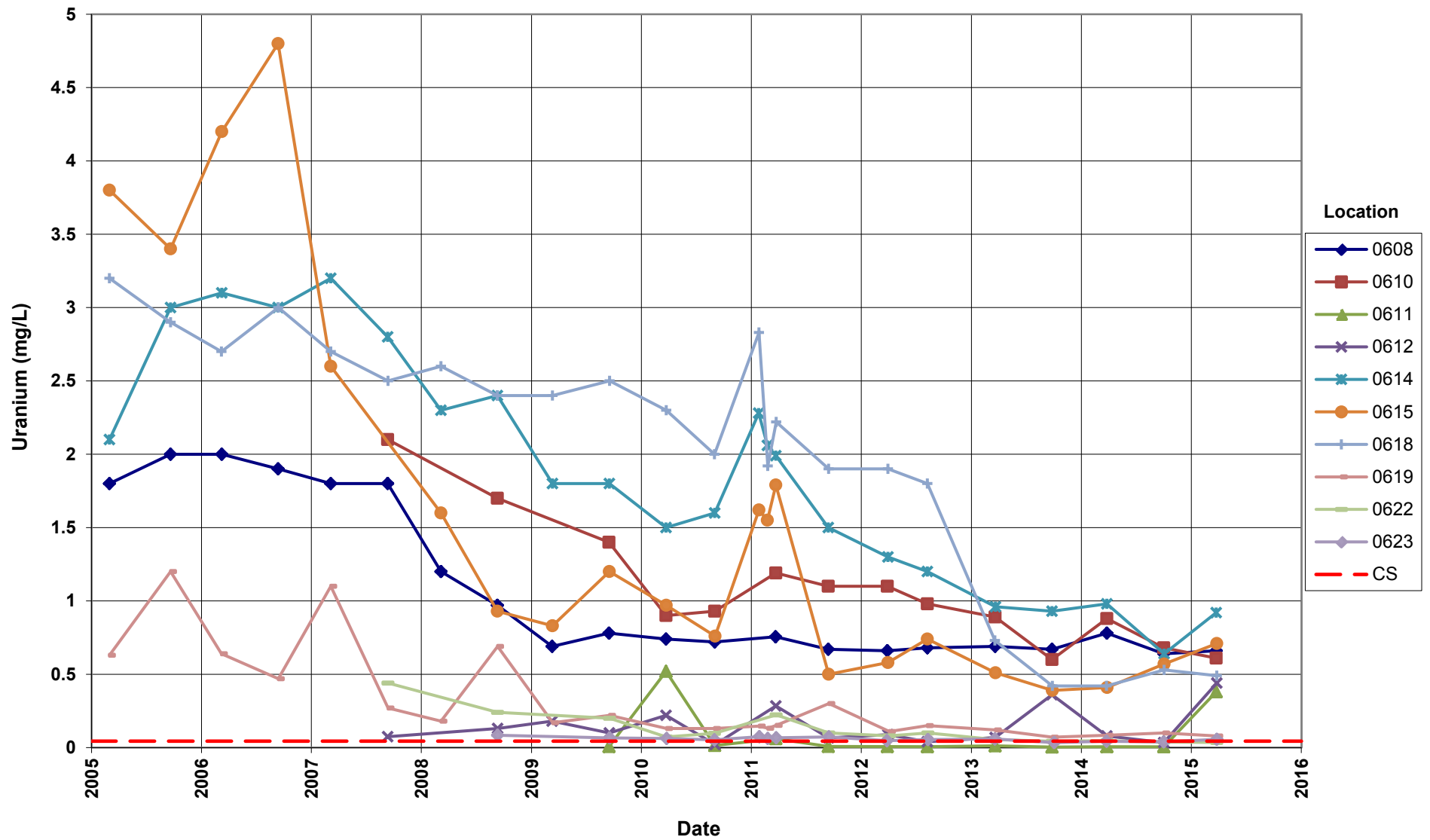
Shiprock Disposal Site (Floodplain)
Sulfate Concentration
 Cleanup Goal (CG) = 2,000 mg/L



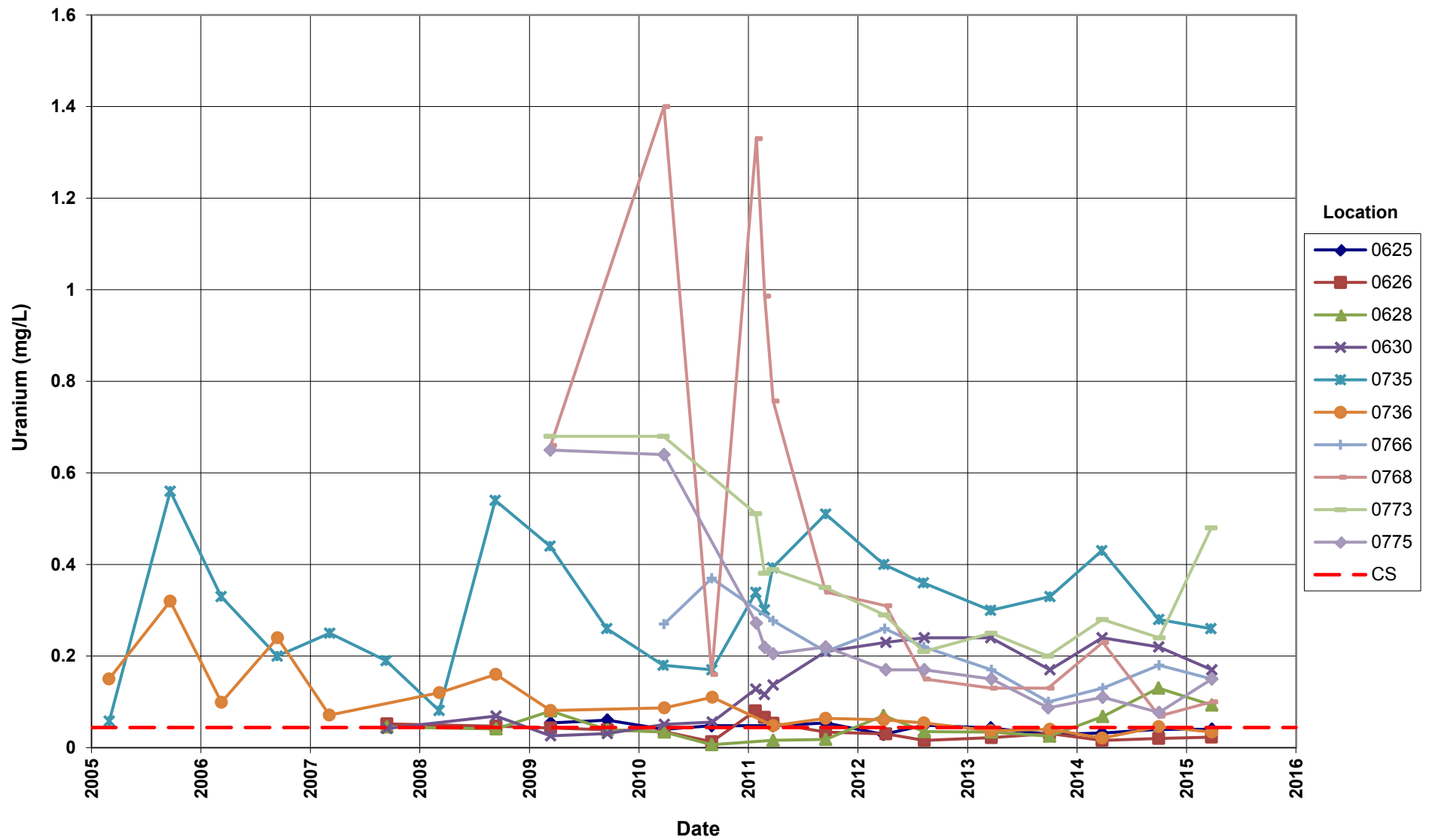
Shiprock Disposal Site (Floodplain)

Uranium Concentration

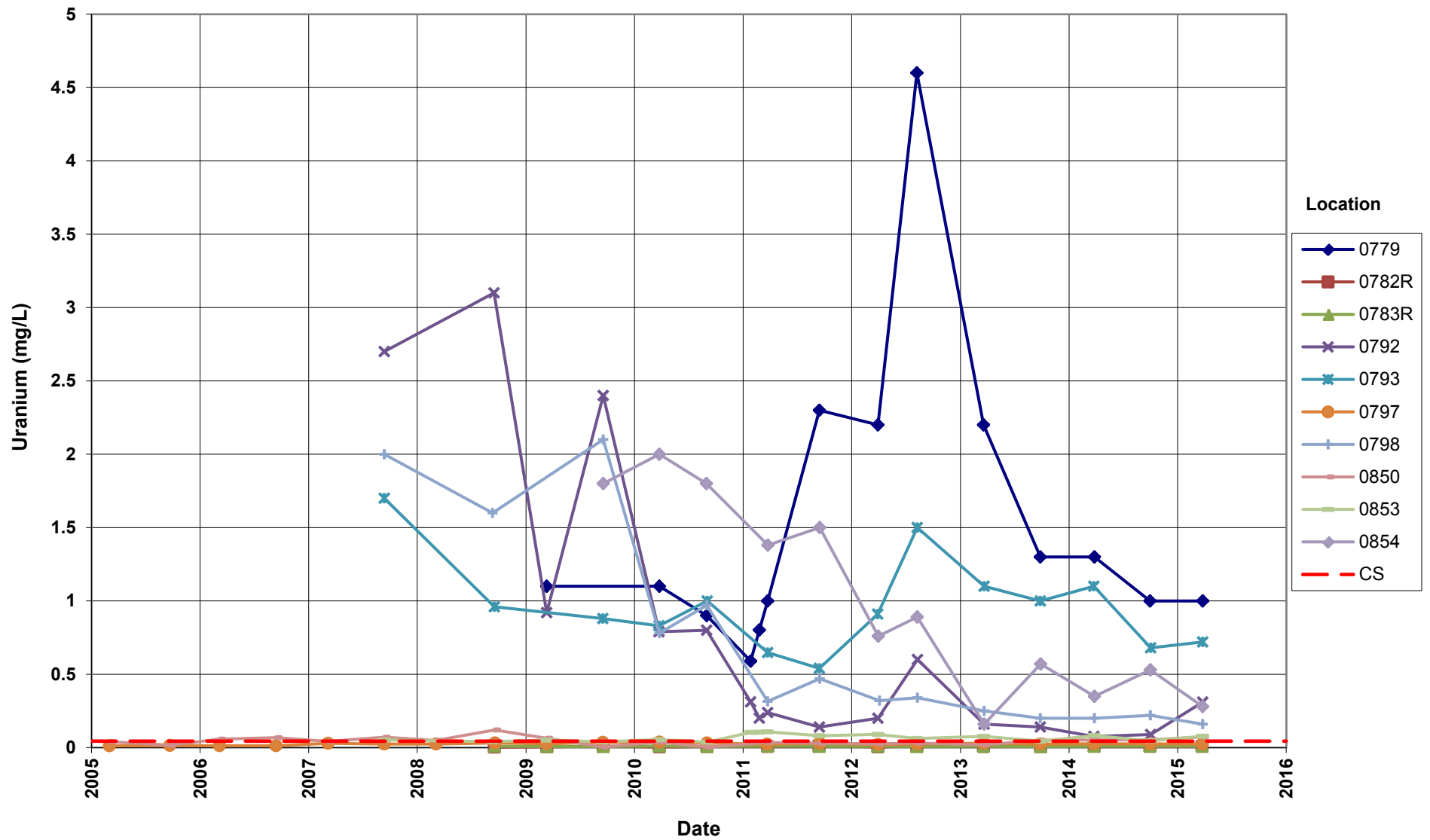
Compliance Standard (CS) = 0.044 mg/L



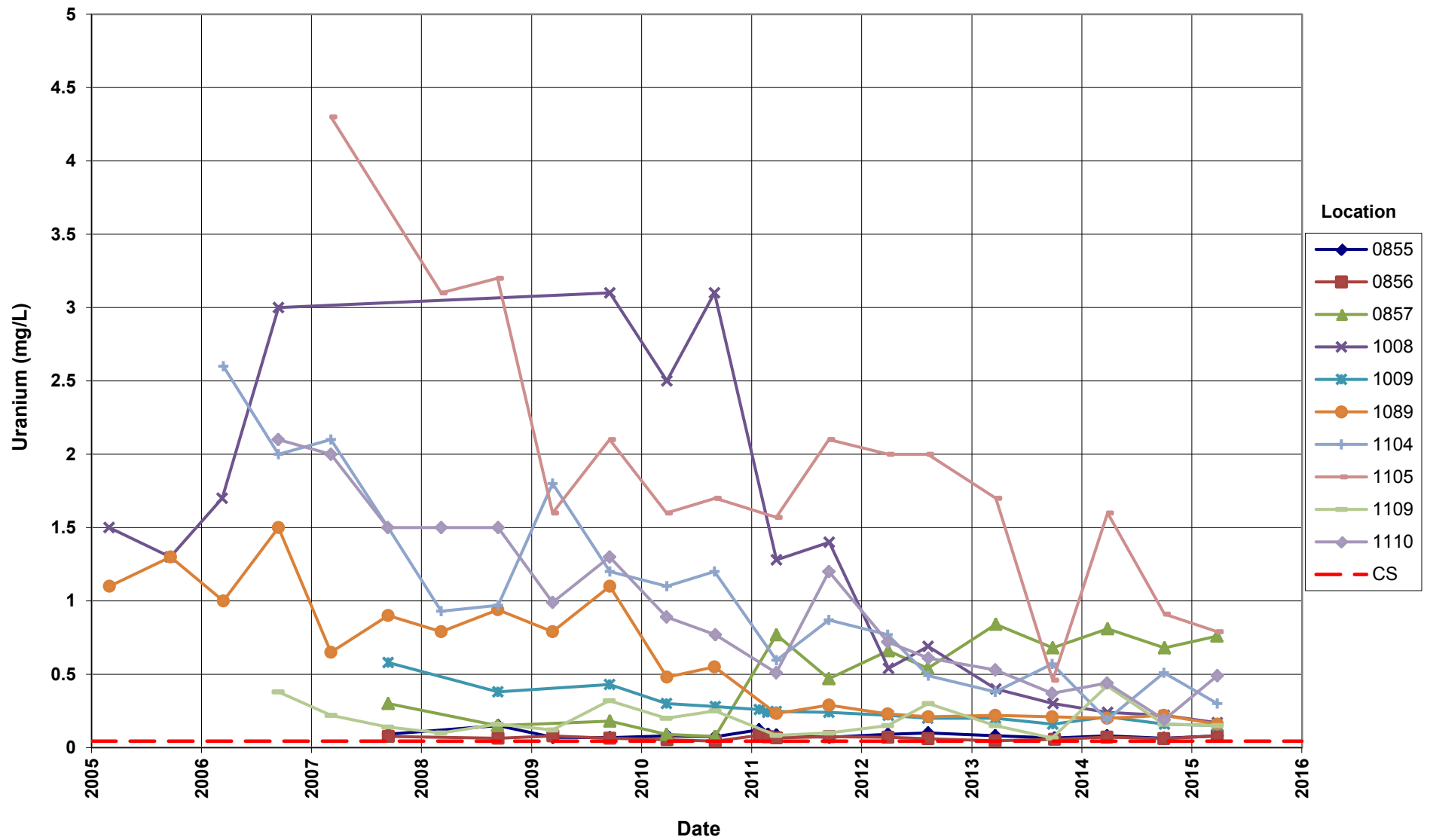
Shiprock Disposal Site (Floodplain)
Uranium Concentration
Compliance Standard (CS) = 0.044 mg/L



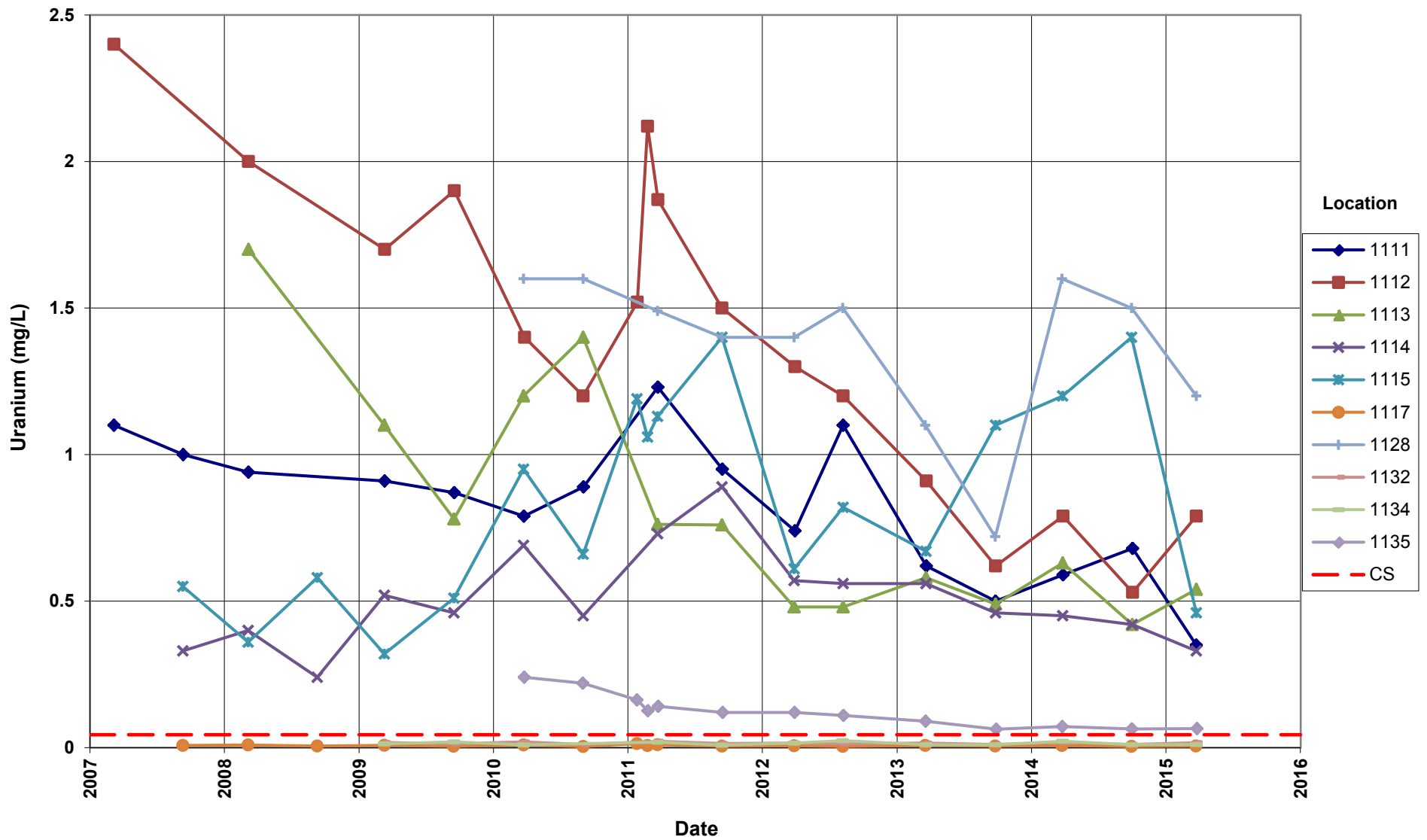
Shiprock Disposal Site (Floodplain)
Uranium Concentration
Compliance Standard (CS) = 0.044 mg/L



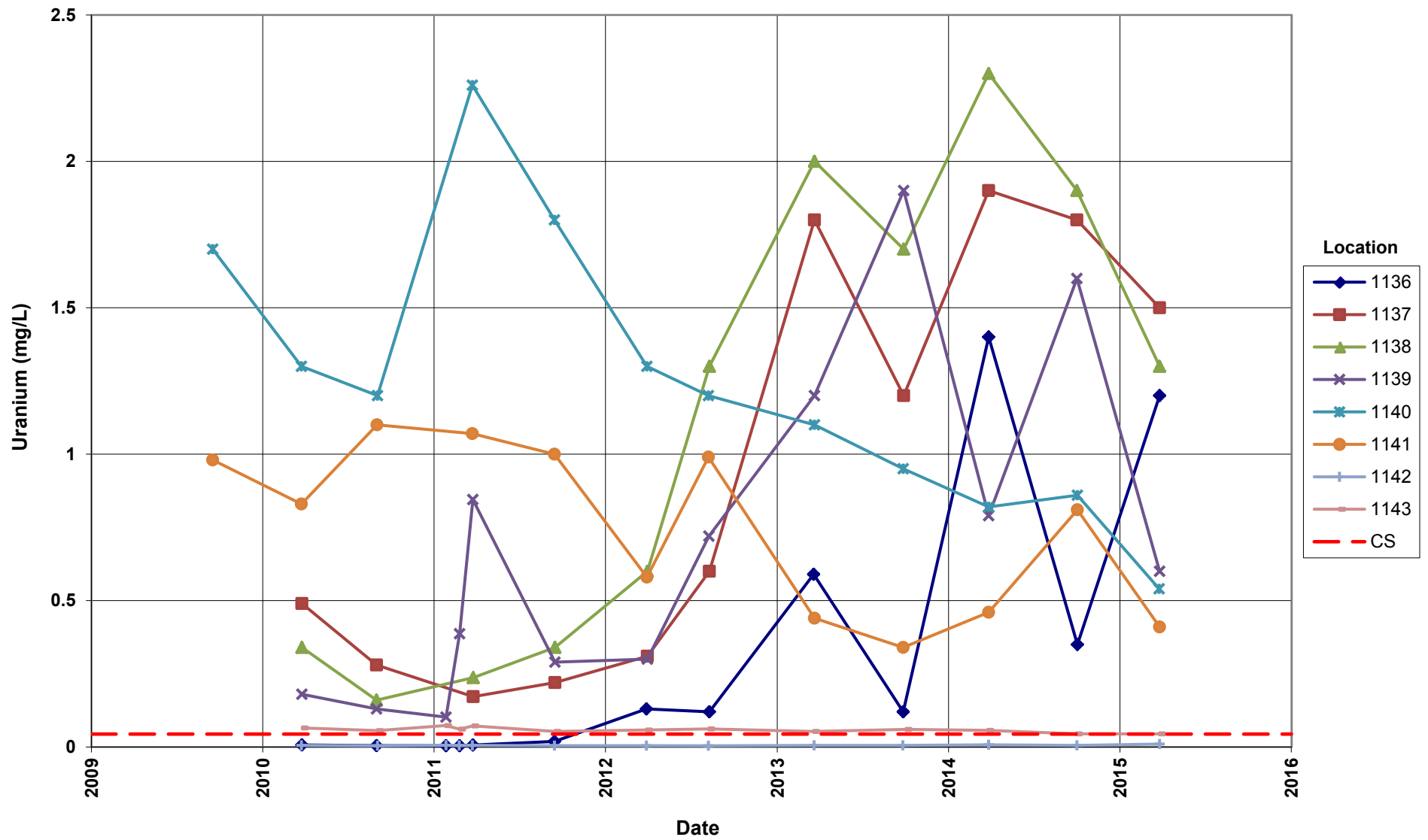
Shiprock Disposal Site (Floodplain)
Uranium Concentration
Compliance Standard (CS) = 0.044 mg/L



Shiprock Disposal Site (Floodplain)
Uranium Concentration
Compliance Standard (CS) = 0.044 mg/L



Shiprock Disposal Site (Floodplain)
Uranium Concentration
Compliance Standard (CS) = 0.044 mg/L



Attachment 3

Sampling and Analysis Work Order

This page intentionally left blank



Stoller Newport News Nuclear

February 27, 2015

Task Assignment 103
Control Number 15-0284

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

SUBJECT: Contract No. DE-LM0000415, Stoller Newport News Nuclear, Inc. (SN3),
a wholly owned subsidiary of Huntington Ingalls Industries, Inc.
Task Assignment 103 LTS&M - UMTRCA TI & TII, D&D, Others, and AS&T
March 2015 Environmental Sampling at the Shiprock, New Mexico, Disposal
Site

REFERENCE: Task Assignment 103, 3-103-1-02-119, Shiprock, New Mexico, Disposal Site

Dear Mr. Kautsky:

The purpose of this letter is to inform you of the upcoming sampling event at the Shiprock, New Mexico, disposal site. Enclosed are the map and tables specifying sample locations and analytes for monitoring at the site. Water quality data will be collected at this site as part of the routine environmental sampling currently scheduled to begin the week of March 23, 2015.

Samples collected at the following SHP01 (floodplain) locations will be both filtered and unfiltered: 0501, 0897, 0898, 0899, 0940, 0956, 0965, 1203, and 1205.

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

A SUBSIDIARY OF HUNTINGTON INGALLS INDUSTRIES

2597 Legacy Way • Grand Junction, CO 81503-1789 • Telephone (970) 248-6000 • Fax (970) 248-6040

Terrace

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

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

SURFACE LOCATIONS

Floodplain

501	897	940	965	1118	1203	1205
655	899	956	967			

Terrace

662	949	1215	1218	1219	1220	1221
889						

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)

A SUBSIDIARY OF HUNTINGTON INGALLS INDUSTRIES

2597 Legacy Way • Grand Junction, CO 81503-1789 • Telephone (970) 248-6000 • Fax (970) 248-6040

Mark Kautsky
Control Number 15-0284
Page 3

cc: (electronic)
Christina Pennal, DOE
Steve Donovan, SN3
Lauren Goodknight, SN3
David Miller, SN3
EDD Delivery
rc-grand.junction
File: SHP 410.02

A SUBSIDIARY OF HUNTINGTON INGALLS INDUSTRIES

2597 Legacy Way • Grand Junction, CO 81503-1789 • Telephone (970) 248-6000 • Fax (970) 248-6040

This page intentionally left blank

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
Monitoring Wells						
FLOODPLAIN - SHP01						
1008		X				Data logger
1009		X				
1062					X	WLs only

Sampling Frequencies for Locations at Shiprock, New Mexico

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
1089		X				U, SO ₄ , NO ₃ as N only at vault
1104		X				U, SO ₄ , N as NO ₃ only at vault
1105		X				
1109		X				Trench 2; U, SO ₄ , NO ₃ as N only at vault
1110		X				Trench 1; U, SO ₄ , NO ₃ as N only at vault
1111		X				Well point; U, SO ₄ , NO ₃ as N only. Purge 1 casing vol then sample
1112		X				Well point; U, SO ₄ , NO ₃ as N only. Purge 1 casing vol then sample
1113		X				Well point; U, SO ₄ , NO ₃ as N only. Purge 1 casing vol then sample
1114		X				Well point; U, SO ₄ , NO ₃ as N only. Purge 1 casing vol then sample
1115		X				Well point; U, SO ₄ , NO ₃ as N only. Purge 1 casing vol then sample
1117		X				Well point; U, SO ₄ , NO ₃ as N 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 3/2015
725		X				Data logger
726		X				
727		X				

Sampling Frequencies for Locations at Shiprock, New Mexico

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
Monitoring Wells						
TERRACE - SHP02						
728		X				Data logger
730		X				Data logger
731		X				Data logger
800					X	WLs only
801					X	WLs only
802					X	WLs only
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, SO ₄ , NO ₃ as N 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				
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				
848		X				Data logger
1002		X				
1003		X				
Monitoring Wells						
TERRACE - SHP02						
1004		X				
1007		X				
1011		X				
1048		X				

Sampling Frequencies for Locations at Shiprock, New Mexico

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
1049		X				
1057		X				
1058		X				
1059		X				
1060		X				
1067					X	WL only; Bob Lee Wash
1068		X				Bob Lee Wash
1069		X				Bob Lee Wash; data logger
1070		X				Ext. well; U, SO ₄ , NO ₃ as N only at vault
1071		X				Ext. well; U, SO ₄ , NO ₃ as N only at vault
1073		X				Data logger
1074		X				
1078		X				Ext. well; U, SO ₄ , NO ₃ as N only at vault
1079		X				Low flow
1087		X				SUMP-Bob Lee Wash
1088		X				SUMP-Many Devils Wash
1091		X				Ext. well; U, SO ₄ , NO ₃ as N only at vault
1092		X				Ext. well; U, SO ₄ , NO ₃ as N only at vault
1093R		X				Ext. well; U, SO ₄ , NO ₃ as N only at vault
1095		X				Ext. well; U, SO ₄ , NO ₃ as N only at vault
1096		X				Ext. well; U, SO ₄ , NO ₃ as N 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
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 ft below dist. Channel

Sampling Frequencies for Locations at Shiprock, New Mexico

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
Surface Locations						
FLOODPLAIN - SHP01						
967		X				San Juan River upgradient
1118		X				Seep sump (423/426) U, SO ₄ , NO ₃ as N 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
889		X				Many Devils Wash
949		X				
1215		X				
1218		X				
1219		X				
1220		X				
1221		X				

Sampling conducted in March and September

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

This page intentionally left blank

Constituent Sampling Breakdown

Site	Shiprock		Required Detection Limit (mg/L)	Analytical Method	Line Item Code
Analyte	Groundwater r	Surface Water			
Approx. No. Samples/yr	256	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 (NH ₃ -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 (NO ₃ +NO ₂)-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			

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

This page intentionally left blank

Attachment 4

Trip Report

This page intentionally left blank

Memorandum

DATE: April 7, 2015
TO: David Miller
FROM: Alison Kuhlman
SUBJECT: Sampling Trip Report

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

Dates of Sampling Event: March 23–26, 2015

Team Members: Sam Campbell, Gretchen Baer, Jeff Price, Lauren Goodknight, Jennifer Graham, David Dander, and Alison Kuhlman

Number of Locations Sampled: Samples were collected from 131 of the 148 locations identified on the sampling notification letter as follows:

	Locations That Were Sampled	Planned Locations
SHP01 monitoring wells	58	59
SHP02 monitoring wells	57	70
SHP01 surface locations	11	11
SHP02 surface locations	5	8

Locations Not Sampled/Reason: A total of 17 locations were not sampled for the following reasons:

- 3 dry surface water locations: SHP02-0949, 1218, and 1219.
- 13 well locations: SHP01-0734 and SHP02-0821, 0823, 0829, 1002, 1003, 1004, 1011, 1048, 1060, 1120, 1122, and DM7 were dry or had insufficient water to sample.
- 1 well location, SHP02-1088, was not sampled per the direction of the site lead.

Location Specific Information:

Location IDs	Site	Comments
0655	SHP01	The stream was stagnant and very low
0734	SHP01	The initial water level was measured at 5.88 ft from the top of the casing which was below the screen. The well was purged dry and did not recover at all in 20 minutes. The well was marked as dry. The total depth was measured and confirmed recorded depth as from the top of the casing. Roots were observed in the purge water.
0736	SHP01	Roots observed in purge water. The total depth was measured and confirmed the recorded total depth of 7.79 ft. from the top of the casing.
0773, 1111, 1112, 1113, 1114, 1115	SHP01	PVC casing only, no outer casing. Well not able to be locked.
0797	SHP01	Well is hand marked as 0797, but 253 is stamped on the lid. Well was relabeled as 0797.
0850	SHP01	Iron bacteria present in purge water. Turbidity stabilization criteria could not be met and the samples were filtered.
0855, 1143	SHP01	Small black particles present in purge water.
1203	SHP01	Access needs clearing, there are Russian olive thorns growing there as well.
0501, 0897, 0899, 0940, 0956, 0965, 0967, 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.
0730, 0814, 0820, 0822, 0825, 0826, 0832, 1068, 1069, 1073	SHP02	Listed as a CAT II, CAT III, or CAT IV and was filtered due to turbidity >10 NTUs
0826	SHP02	Listed as a CAT I, sampled as a CAT II. At a flow rate less than 100 mL per minute the water level could not be maintained.
0828	SHP02	Well was redeveloped on March 23, 2015, and sampled March 24, 2015.
0832	SHP02	Approximately 400 mL was collected for metals analyses due to limited water.
0833	SHP02	Pump was on the bottom of the well. After sampling reset the pump and threads to be 1 foot above the bottom. The well was missing a flush mount bolt.
0836	SHP02	The protective casing lid was lying next to the well upon arrival. The well was relabeled.
0837	SHP02	Black flecks present in purge water and sample
0838	SHP02	The well did not have a PVC cap; a plastic bag was used to cover the well.
0841	SHP02	An obstruction in the well prevented water level measurement. Sampled as a CAT I based on well history and consistent flow rate.
1068	SHP02	Limited water: a limited metals sample was collected, no anions were collected
1219	SHP02	Entire wash was dry with no mud or signs of recent water
1220	SHP02	Sample collected from seep per site lead direction.

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	NET 482	1132	Duplicate	Water
2211	SHP01	NET 483	0956	Duplicate	Water
2215	SHP01	NET 481	1135	Duplicate	Water
2592	SHP01	NET 486	0736	Duplicate	Water
2319	SHP02	NET 545	1078	Duplicate	Water
2320	SHP02	NET 546	0818	Duplicate	Water
2665	SHP02	NET 554	1096	Duplicate	Water
2811	SHP02	NET 538	1070	Duplicate	Water
2593	SHP01, SHP02	NET 487	Associated with samples collected with non-dedicated equipment: 0501, 0897, 0899, 0940, 0956, 0965, 0967, 1203, 1205	Equipment Blank	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 15036862 (SHP01-Floodplain) and 15036863 (SHP02-Terrace). Field data sheets can be found in Crow\sms\15036862 and Crow\sms\15036863 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 30, 2015.

Water Level Measurements: Water levels were measured in all sampled wells and in 11 additional wells. Water level data reports for these 11 wells (SHP01_3302015pdf, SHP01_3272015, and SHP02_432015) can be found in Crow\sms\FDCS\WATER LEVELS.

Well Inspection Summary: Multiple wells only had PVC casing with no outer casing and were unable to be locked. All wells were in good condition unless otherwise noted in the FDCS Water Sampling Logs.

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, continually updated) and Program Directive SHP-2015-01.

Field Variance: Turbidity stability requirements could not be met at CAT I monitoring well SHP01-0850, and the associated samples were filtered. Additionally the flow rate at the artesian well SHP02-0648 could not be measured because the casing was deteriorated and leaking in multiple places

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 by container immersion or by using a peristaltic

pump and either a tubing reel with stainless steel weight or dedicated tubing. 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: No issues observed.

Trespassing/Site Disturbances: None observed.

Regulatory/Stakeholder: Department of Energy Site Manager Mark Kautsky observed sampling activities on March 24, 2015.

Site Issues:

Disposal Cell/Drainage Structure Integrity: No issues observed.

Vegetation/Noxious Weed Concerns: None.

Maintenance Requirements: None.

Access Issues: Some wells on the floodplain are only accessible by RZR due to sandy or muddy conditions. Surface location SHP01-1203 was difficult to access due to vegetation growth.

Safety Issues: No issues observed. Work was stopped for approximately one hour for the site safety standdown meeting on Wednesday March 25. Air monitoring results for all vaults indicated proper oxygen levels and no hazardous atmosphere.

Corrective Action Required/Taken:

- A water level was unable to be taken at monitoring well SHP02-0841 due to an obstruction. A down-hole camera survey should be conducted to determine the cause of the obstruction and then corrected if possible.
- Protective casings and locks should be installed on numerous wells that have only PVC casing.
- Vegetation should be cleared to improve access to surface location SHP01-1203.
- The following monitoring wells should be redeveloped because of issues that include turbidity, roots, black particles, and iron bacteria: SHP-01 0736, 0850, 0855, and 1143; and SHP-02 0837.

(AK/lcg)

cc: (electronic)
Mark Kautsky, DOE
David Miller, Stoller
Steve Donovan, Stoller
EDD Delivery